PRODUCT CATALOG

2023 | TEMPERATURE, HUMIDITY, PRESSURE, CURRENT, GAS, INTERFACE, WIRELESS & BACnet™

ACI CATALOG INDEX

ACI's company motto is "Engineering a Better Sensor Solution" and we provide reliable and economical products in the following categories: **Temperature, Relative Humidity, Pressure, Current, Gas, Wireless & Interface Devices.**

INTRODUCTION

- Our Company
- ISO9001 Certification
- Warranty

TEMPERATURE

Thermistors

- **Bullet Probe**
- **Copper Averaging**
- **Duct**
- **Duct, without Box**
- **Flexible Averaging**
- **Flush Mount Buttons**
- **Immersion**
- **Outside Air**
- **Pipe Mount**
- **Probe Only**
- **Rigid Probe Averaging**
- **Room** (LCD Option)
- **Strap On**
- **Wall Plates**

Platinum RTDs

- **Bullet Probe**
- **Copper Averaging**
- **Duct**
- **Duct, without Box**
- **Flexible Averaging**
- **Flush Mount Buttons**
- **Immersion**
- **Outside Air**
- **Pipe Mount**
- **Probe Only**
- **Rigid Probe Averaging**
- **Room** (LCD Option)
- **Strap On**
- **Wall Plates**

Nickel RTDs

- **Bullet Probe**
- **Copper Averaging**
- **Duct**
- **Duct, without Box**
- **Flexible Averaging**
- **Flush Mount Buttons**
- **Immersion**
- **Outside Air**
- **Pipe Mount**
- **Probe Only**
- **Rigid Probe Averaging**
- **Room** (LCD Option)
- **Strap On**
- **Wall Plates**

Balco RTDs

- **Bullet Probe**
- **Copper Averaging**
- **Duct**
- **Duct, without Box**
- **Flexible Averaging**
- **Flush Mount Buttons**
- **Immersion**
- **Outside Air**
- **Pipe Mount**
- **Probe Only**
- **Rigid Probe Averaging**
- **Room** (LCD Option)
- **Strap On**
- **Wall Plates**

Transmitters

- **Board Only**
- **Bullet Probe**
- **Copper Averaging**
- **Duct**
- **Immersion**
- **Outside Air**
- **Rigid Probe Averaging**
- **Room** (LCD Option)
- **Strap On**
- **Wall Plates**
- **Potted Transmitter**

TEMPERATURE *(continued)*

High/Low Sensor & Transmitters

- **Low Temperature Duct**
- **Low Temperature Immersion**
- **Low Temperature Outside Air**
- **High Temperature Duct**
- **High Temperature Immersion**

Freezer Sensors & Transmitters

- **Thermistor Freezer**
- **RTD Freezer**
- **Transmitter Freezer**
- **Temperature Probe Thermal Buffer**
- **Thermal Buffer Bottle Kit**

Additional Temperature Sensors

- **Hazardous Thermistor**
- **Hazardous RTD**
- **Hazardous Transmitter**
- **Sun Shield Thermistor & RTD**
- **Sun Shield Transmitter**

Temperature Accessories

- **Loop Powered LCD Display**
- **Thermowells** (Welded, Two Part)
- **Thermowells** (Machined, One Part)
- **Thermostat Locking Cover**
- **Wall Mounting Plates**

HUMIDITY

Room

- **Humidity Room**
- **Humidity with Thermistor**
- **Humidity with Platinum RTD**
- **Humidity with Nickel RTD**
- **Humidity with Balco RTD**
- **Humidity with Temperature Transmitter**
- **TUCH2** (Microprocessor Based Sensor)
- **Humidity with LCD**

Duct

- **Humidity Duct**
- **Humidity with Thermistor**
- **Humidity with Platinum RTD**

Duct *(continued)*

- **Humidity with Nickel RTD**
- **Humidity with Balco RTD**
- **Humidity with Temperature Transmitter**

Outside Air

- **Humidity Outside Air**
- **Humidity with Thermistor**
- **Humidity with Platinum RTD**
- **Humidity with Nickel RTD**
- **Humidity with Balco RTD**
- **Humidity with Temperature Transmitter**

Wall Plate

- **Humidity Wall Plate**
- **Humidity with Thermistor**
- **Humidity with Platinum RTD**
- **Humidity with Nickel RTD**
- **Humidity with Balco RTD**

Remote Probes

- **Humidity Remote Probes**
- **Humidity with Temperature Transmitter**

Sun Shield

- **Humidity Sun Shield**
- **Humidity with Thermistor**
- **Humidity with Platinum RTD**
- **Humidity with Nickel RTD**
- **Humidity with Balco RTD**
- **Humidity with Temperature Transmitter**

Enthalpy

- **Enthalpy**

PRESSURE

Differential Pressure Transmitters

- **DLP** (0.25% Accuracy, Pitot Tube, DIN-Rail, N.I.S.T. & LCD Option)
- **DLP** (0.50% Accuracy, Pitot Tube, DIN-Rail & LCD Option)
- **MLP2** (Miniature Low Pressure)
- **WPR2** (Wet to Wet, Remote Probes, N.I.S.T. & LCD Option)

Gage Pressure Transducer

- **GP** (Gage Pressure Transducer (Air, Gases, & Liquids))
- **GP** (Gage Pressure with NEMA 4 Enclosure)
- **P51 Series** (Gage Pressure Transducer (Air, Gases & Liquids))
- **Syphons** (Stainless Steel Pigtails)
- **Snubber** (Pressure Surge Protection)

Differential Pressure Switches

- **DBL** (Plastic)
- **AFS** (Metal)

Pitot Tubes

- **Total Pressure** (Plastic)
- **Static Pitot Tubes**
- **Velocity Pitot Tubes** (Aluminum)

Pickup Ports

- **Room**
- **Outside Air** (Vertical & Horizontal)
- **Stainless Wall Plates**
- **Pickup Port Medical Grade Tubing**

CURRENT

Current Switches

- **Fixed Status** ("Go / No Go")
- **Miniature Fixed Status** ("Go / No Go")
- **Adjustable Current Switches**
- **Miniature Adjustable Current Switches**
- **ECM Current Switch**

Current Sensors

- **Current Output** (4-20 mA)
- **Voltage Output** (0-5 VDC & 0-10 VDC)

Power Meters

- **3 Channel Power Meter KW320 Series**
- **3 Channel Power Meter KW320B Series**
- **3 Channel Power Meter KW350 Series** (Serial)
- **18 Channel Power Meter KW1850 Series**

Power Meter CTs

- **Control Transformers** (Multitap Primary: 24 VAC Secondary)
- **ACUCT Split Core** (Standard Accuracy)
- **ACUCT Hinged Split Core** (Standard Accuracy)
- **Rogowski Coil** (Standard Accuracy)
- **S77 Solid Core** (High Accuracy)
- **ACUCT Revenue Grade** (High Accuracy)

Current Relays

- **Command Relay** (SPDT)
- **PAM Series** (Multi-Voltage Control Relays)

GAS

CO & NO2

- **CO Room**
- **CO Duct**
- **NO2 Room**
- **NO2 Duct**
- **Q5 & B5** (CO, NO2, Toxic or Combustibles)
- **Q6 & B6** (Dual Sensors, Remote Installation)

Air Quality

CO2

- **Room** (Temperature, Setpoint & Override Option)
- **Duct** (Universal Outputs)
- **ESENSE Room** (LCD Option)
- **ESENSE Duct** (LCD Option)
- **ESENSE IP54**
- **ESENSE In Duct / Wall Mount**
- **ESENSE Outdoor**
- **ASENSE Room** (Temperature, Relay & LCD Option)
- **ASENSE Duct** (Temperature, Relay & LCD Option)
- **ASENSE GH - LCD** (CO2 Greenhouses / Indoor Agriculture)
- **ASENSE IP54**
- **TSENSE** (Temperature, RH, BACnet™, Relay & LCD Option)

OTHER

- **PM** (Particulate Matter)
- **VOC** (Volatile Organic Compound)

Toxic, Combustibles & Refrigerants

- **QTS-1710** (Combustible, NEMA 4X, Class I, Div 1)
- **QIRF** (Refrigerants, NEMA 4X)
- **Q8** (Toxic / Combustible, NEMA 4X, Class I, Div 1, Div 2)

Controllers

- **Q4C II** (4 Sensor Analog / Digital)
- **M-Controller** (40 Sensor Analog / Digital)
- **Q-Controller** (256 Sensor Analog / Digital)
- **M-Switch** (Microcontroller Based Switch)

Gas Accessories

- **Strobe & Alarms** (Multifunctional LED Beacon/Sounder)
- **Lite Stak** (Multifunctional LED Beacon/Sounder)
- **Gas Cal Kit**

INTERFACE DEVICES *(continued)*

Interface Devices

- **6N1-ISO** (1-6 Analog Inputs, Mathematical Functions)
- **AAR** (Analog to 2 Relay, Adjustable Trip, Adjustable Deadband)
- **AFP** (Analog to Floating Point)
- **AIM1** (Analog Isolation Module,1:1 Input / Output)
- **AIM2** (Analog Isolation Module, Rescaling Output)
- **AIM3** (Analog Isolation Module, Line Voltage, 1:1 Input/Output)
- **ARM** (Analog Rescaling Module)
- **ARM2** (Analog Rescaling Module, Signal Splitter, 0-20 mA)
- **ASA** (Analog Signal Amplifier)
- **ATL** (Analog to 4 Relay, Adjustable Trip, Fixed Deadband)
- **DRC** (DIN Rail Adapter Kit)
- **DRN4** (Analog / PWM / Floating Point to 0-135Ω, Motor Mount)
- **DRN3** (Analog / PWM / Floating Point to Resistance)
- **EPC** (Analog to Pneumatic Output, Field Adjustable)
- **MAO** (Manual Analog Override Switch with Alarm)
- **PXP*.3** (Analog to Pneumatic Output, Factory Calibrated)
- **PTP** (Pneumatic to 4-20 mA Output)
- **EPW** (PWM to Pneumatic Output, Field Adjustable)
- **PTA** (PWM to Analog, Voltage / Current Output)
- **PTA2** (PWM to 0-10 VDC Output)
- **AUD** (Floating Point to Analog Output)
- **EFP** (Floating Point to Pneumatic Output, Field Adjustable)
- **PTS4.1** (Floating Point to Pneumatic Output)
- **RIM5** (Mechanical Relay Isolation Interface)
- **ENC1** (20 Gauge Metal Enclosure)

BACnet™

- **BACnet™ Copper Averaging** (Temperature)
- **BACnet™ Duct** (RH & Temperature)
- **BACnet™ Flexible Averaging** (Temperature)
- **BACnet™ Outside Air** (RH & Temperature)
- **BACnet™ Immersion, Duct** (Temperature)
- **BACnet™ Rigid Probe Averaging** (Temperature)
- **BACnet™ Room** (RH & Temperature)
- **BACnet™ Strap On** (Temperature)

Other Products

- **Light Level Sensors**
- **Adjustable External Power Supply** (PS24)

Freeze Stats

- **Freeze Stats (FLS)** (Manual & Automatic with Relay(s))
- **Freeze Stats (FS)**(Manual & Automatic with Relay(s))

Smoke Detectors

- **SL-2000 Smoke Detector** (Round Ducts)
- **SM-501 Smoke Detector** (Rectangular Ducts)
- **RT-3000 Smoke Detector** (NEMA 4X)
- **MS Series** (Remote Accessories for Duct Smoke Detectors)
- **MSR-50** (Remote Accessories for Duct Smoke Detectors)

Leak Detection

- **LD310** (Single Zone Leak Detection Controller)
- **LD1000** (Single Zone Leak Detection Controller)
- **A/SLD** (Spot Leak Detector)
- **SC** (Leak Detection Sensing Cable)
- **F200** (Facility Monitoring and Single Zone Leak Detection)

AUTOMATION COMPONENTS, INC.

ACI's motto of "Engineering a Better Sensor Solution" is a company-wide theme that starts with ACI's Engineering Department and is followed all the way through our Production, Sales, and Technical Support Departments. Within each department, ACI is committed to provide structured team goals that drive individual growth and overall company success. This structure not only supports overall company success, but ACI also emphasizes philanthropic efforts within our community.

ACI has grown considerably since its inception in 1991. This growth is largely based on ACI's ability to provide the HVAC Industry with great lead times and high-quality sensor solutions. In addition, ACI continually focuses on the needs of our business partners and provides them incomparable value. ACI offers sensors for a wide range of building automation applications including; Temperature, Relative Humidity, Pressure, Current, Gas, Interface Devices, and Wireless.

Every member of our team shares a desire to make your experience with ACI the best it can be. It has been an incredible privilege to build and strengthen our relationships with our customers since our inception. Along the way, we learned so much and hope to continue to do so! Thank you for your past and future support!

To learn more, please visit our website at **www.workaci.com** or call us at **1-888-967-5224.**

Troy Schwenn
CEO & Chairman of the Board
Automation Components, Inc.

ACI IS IS09001 CERTIFIED, WHAT THIS MEANS:

ISO9001 is a standard of quality management. It is a set of policies, processes and procedures required for successful planning and execution within an organization. ISO9001 is rapidly becoming the most popular quality standard in the world, with thousands of certified organizations spanning over one hundred countries.

HOW ACI BECAME CERTIFIED:

Certifications are awarded by accredited third-party organizations, through a series of audits. If the company is found to be compliant with ISO9001 requirements, a certificate will be issued. The certificate must then be renewed at regular intervals, typically every three years.

WHAT ISO9001 MEANS TO YOU:

ACI's certification ensures that our products and services will consistently exceed your expectations. ISO9001 certified companies have proven that our processes are consistent, efficient, and productive. Since 1991, our top priority has been to manufacture a high quality product for our customers; being recognized as ISO9001 certified serves as verification of this commitment.

STANDARD TERMS AND CONDITIONS

Automation Components, Inc.

1) Terms of Payment. Invoices shall be dated no earlier than date of shipment. Terms are cash in advance, credit card, or COD, unless Seller authorizes net 30-day terms to Buyer in writing. Buyer will pay invoices within terms agreed upon by Seller. Invoices not paid on a timely basis shall bear interest at the rate of 18% per annum. Buyer agrees to pay Seller's reasonable attorney's fees and all costs incurred in connection with non-payment of related invoices whether or not litigation is commenced. Prices do not include applicable taxes, which taxes shall be paid by Buyer.

2) Changes. The Seller reserves the right at any time to issue a written change order or amendment to the Purchase Order concerning any of the following: (a) specifications, drawings, and data incorporated in the Purchase Order where the items to be furnished are to be specially manufactured for the Seller; (b) quantity; (c) methods of shipment or packaging, (d) place of delivery, (e) time of delivery; or (f) any other matters affecting this Purchase Order.

3) Excusable Delay. Fires, floods, strikes, accidents, shortages, or other causes beyond the reasonable control of the parties, which prevent Seller from delivering, or Buyer from receiving, any of the goods and services covered by this Purchase Order, shall suspend deliveries until the cause is removed, subject, however, to Seller's right of termination for Seller's convenience.

4) Inspection. All goods furnished hereunder will be subject to inspection and testing by Buyer, and approval by Buyer within a reasonable time after delivery. Payment for any goods or services shall be deemed acceptance by Buyer.

5) Warranties. Automation Components, Inc. (hereafter "ACI") provides a five (5)-Year Limited Warranty to the initial purchaser of any product manufactured by ACI. The term "product manufactured by ACI" means any sensors and transmitters assembled by ACI, even if such sensors and transmitters include component parts manufactured by companies other than ACI. For any part or product sold by ACI, but manufactured entirely by a company other than ACI, whether or not relabeled with ACI product information or product number, or repackaged with ACI information, ACI provides a two (2)-Year Limited Warranty to the initial purchaser. THESE FIVE (5) YEAR OR TWO (2) YEAR LIMITED WARRANTIES SET FORTH ABOVE, PROVIDED TO THE INITIAL PURCHASERS OF ACI PRODUCTS, ARE MADE IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. ANY OTHER IMPLIED WARRANTIES CREATED BY COMMON LAW IN ANY JURISDICTION, ARE ALSO EXPRESSLY WAIVED AND DISCLAIMED. THIS LIMITED WARRANTY APPLIES TO THE ORIGINAL PURCHASER OF PRODUCT FROM ACI AND TO ANY SUBSEQUENT PURCHASERS OF THE SAME PRODUCT, BUT THE LIMITED WARRANTY PERIODS COMMENCE TO RUN ON THE DATE ACI'S PRODUCTS ARE DELIVERED TO THE INITIAL PURCHASER. A copy of ACI's Warranties are printed at the front of ACI's Sensors and Transmitters Catalog, and can also be found at www.workaci.com, under the section entitled "Info – Ordering - Warranty".

6) ACI's Return Policy Items purchased from ACI can be returned for a partial credit. Items must be returned within 30 days after receipt of order to receive credit. Only items in original condition can be returned for credit. ACI will only issue credit to the original purchaser of an item and/or the individual who paid ACI directly for said item. Part numbers starting with the X/ prefix are special orders and can not be returned.

7) Restock Fee Policy ACI's standard restock fee is 40% of the original purchase price. However, thermistor sensors located in the ACI Sensors and Transmitters catalog will have a restock fee of 15% of the original purchase price. Items that are special orders or that have specific shelf lives may have return limitations as they can not be resold. This includes most gas sensors, the exception being CO2 related sensors.

8) Shipping Items found defective will have the return shipping refunded. (Please contact ACI to determine the most economical method). Items returned based on the purchaser's discretion will not qualify for a return shipping refund.

9) Title; Risk of Loss. Title shall pass to Buyer upon shipment to Buyer. Once goods are loaded for shipment to Buyer, the risk of loss passes to Buyer.

STANDARD TERMS AND CONDITIONS *continued*

10) Confidentiality; Limited Use. Unless otherwise agreed by Seller in writing, Buyer shall keep confidential and not disclose to any third party, any confidential and/or proprietary materials provided by Seller to Buyer in connection with Seller's performance of this Purchase Order, or prepared by Seller specifically for Buyer, pursuant to this Purchase Order, including, but not limited to, any drawings, masters, software, specifications, raw materials, components, data, business information or plans, customer lists or other customer information ("Confidential Information").

11) Resolution of Conflicts or Inconsistencies Occurring in the Order. It is Buyer's responsibility to order appropriate goods from ACI and to clarify with Seller, any inconsistencies or conflicts in any parts of the Purchase Order or referenced documents. Should Buyer fail to contact Seller to resolve conflicts or inconsistencies, Buyer will be solely responsible for errors resulting from said conflicts or inconsistencies. Where documents are referenced, the version in effect at the time of order placement shall apply.

12) Seller's Terms and Conditions Apply. Shipment of any goods or commencement of work, pursuant to the Purchase Order, shall be deemed an acceptance of these Standard Terms and Conditions by Buyer. Unless specifically agreed to otherwise by Seller and Buyer, these terms and conditions supersede any submitted by Buyer in any Purchase Order submitted to ACI.

13) Governing Law. This Purchase Order shall be governed by the laws of the State of Wisconsin, USA. Any court action arising under this order shall be venued in Dane County, Wisconsin, in either federal or state court, as is appropriate.

14) Delivery. Delivery dates are given to the best of the knowledge of ACI, based on its knowledge of the conditions existing at the time of sale. ACI will do its best to ship within its quoted delivery estimate, but failure to make shipment as scheduled does not constitute a cause for cancellation by Buyer, does not constitute a breach of contract, and/or does not entitle the Buyer to damages of any kind.

15) Cancellation Policy. Buyer shall pay for any and all unrecoverable costs resulting from the cancellation of any order. Items manufactured that have incurred calibration, menu set up, or a process unique to the customer’s request before order cancellation notification are subject to a 40% restock fee of the original purchase price.

16) Limitation of Liability. The Buyer's sole remedy and the limit of ACI's liability for any loss whatsoever shall not exceed the Buyer's price of the products.

17) Casualty to Identified Goods. In the event that the goods covered by this contract are destroyed or damaged, in whole or in part, prior to the time the risk of loss passes to Buyer, this contract shall be voided and Seller excused from all obligations hereunder. If the loss is partial, Buyer shall have the right to accept that portion of the goods which conform to the written contract.

18) Rejected Goods. In the event Buyer rejects any shipment of the goods, and elects to accept only a part thereof, it is agreed that the portion of goods rejected shall be returned to ACI within ten (10) business days, at the expense and risk of Buyer. Seller shall have the right, in its discretion, either to replace the rejected goods or to refund the purchase price applicable thereto.

19) Finished Goods Held in Stock. Upon request of Buyer that Seller hold a stock of certain finished goods for Buyer, Seller, at its discretion may acquire and maintain in stock an amount of such finished goods for Buyer as determined by Seller. In the event Buyer has not purchased any of such finished goods for a period of 6 months, Seller may charge Buyer, by invoice (terms net 30 days) at the price last charged to Buyer. If Buyer does not pick up or otherwise arrange for delivery of such finished goods, Seller after 30 days may sell or otherwise dispose of such finished goods and retain any resulting proceeds as its stocking charges and Buyer shall remain liable to Seller for the invoiced price.

20) Entire Agreement. This Purchase Order is the entire agreement between Seller and Buyer concerning this purchase transaction, and supersedes all prior understanding and representations, oral or written, concerning this purchase transaction..

BULLET PROBE

1" Bullet Probe, Thermistor

The ACI Thermistor Bullet Probe Series features a one inch stainless steel probe with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. The bullet style sensor is designed to monitor air temperatures and should not be fully submerged in water. This series can be ordered with different wire options and NIST certificates.

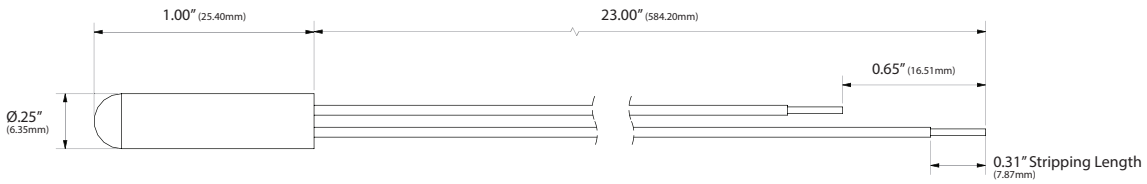
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing.

The ACI Thermistor Bullet Probe Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type:		Thermistor
Sensor Curve:		Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points:		One
Number Wires:		Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Standard Lead Wire Colors):		**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/2252:** 2.252KΩ nominal | (White/Red) **A/3K:** 3KΩ nominal | (White/Brown) **A/5K:** 5KΩ nominal | (Red/Gray) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Orange/Gray) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70°C (32-158°F):		+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F) **A/1.8K Series:** +/- 0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)
Stability:		Sensor Dependent; Contact ACI for more information on the sensor in question.
Response Time (63% Step Change):		10 Seconds nominal
Power Dissipation Constant:		3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C
Probe Material:		304 Stainless Steel
Storage Temperature Range:		-40 to 85°C (-40 to 185°F)
Operating Humidity Range:		10 to 95% RH, non-condensing
Standard Wire	**Lead Length | Conductor Size:**	24" (61cm) | 22 AWG (0.65mm)
	Lead Wire Insulation Wire Rating:	Etched Teflon Colored Leads | MIL-W-16878/4 (Type E)
	Conductor Material:	Silver Plated Copper
	Operating Temperature Range:	-40 to 150°C (-40 to 302°F)
	Rated Applications:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
Plenum Wire	**Lead Length | Conductor Size:**	See Ordering Grid| 22 AWG (0.65mm)
	Lead Wire Insulation | Wire Rating:	FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS
	Conductor Material:	Tinned Copper
	Operating Temperature Range:	-40 to 150°C (-40 to 302°F)
	Rated Applications:	Suitable for Indoor and Outdoor (wet) location. Oil, Gas, Sunlight, Abrasion Acid Resistant
Zip Wire	**Lead Length | Conductor Size:**	20' (6.10m) | 22 AWG (0.65mm)
	Lead Wire Insulation | Wire Rating:	PVC (Poly Vinyl Chloride) | 22 AWG UL AWM style 1007 or STYLE 1569 105c 300v vw-1---CSA 208394 TR-64 90C OR AWM I A/B 105C 300V FT-1
	Conductor Material:	Tinned Copper
	Operating Temperature Range:	-20 to 90°C (-4 to 194°F)
	Rated Applications:	Suitable for Indoor use only. Not for Outdoor use or UV Light Applications
	Lead Color:	White
Product Dimensions (Length x Diameter):		1.00" (25.4mm) x 0.250" (6.35 mm)
Product Weight:		0.02 lbs. (9.07g)
Agency Approvals:		CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/AN-BP -OR- 121336

Model #	Item #	Description
A/1.8K-BP	124579	1.8K Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/2252-BP	120713	2252 Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/3K-BP	121001	3K Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/5K-BP	121239	5K Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/AN-BP	121336	AN (Type III) Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/AN-BC-BP	121349	AN-BC Bullet Probe, 24" (61.0 cm) Leads, 1" Probe, 11K Shunt
A/CP-BP	121942	CP (Type II) Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/CSI-BP	122308	CSI Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/10KS-BP	120198	10KS Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/10K-E1-BP	126744	10K-E1 Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/20K-BP	120588	20K Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/100KS-BP	120117	100KS Bullet Probe, 24" (61.0 cm) Leads, 1" Probe

CUSTOM ORDERING

Model # Example: A/ (A.) 1.8K (B.) BP (C.) 6'CL2P (D.) NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**1.8K | 2252 | 3K | 5K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 50K | 100KS**	
C. Configuration *No Selection Required*	**BP =** 1" Stainless Steel Probe ⟶	**BP**
D. Lead Wire Options *Select One (1)*	**----** = Standard 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable **20'Z** = 20 ft (6.10m), 2 Conductor White Zip Wire	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 3 Points)	

ACCESSORIES ORDERING

Model # Example: A/MOUNTING U-CLIP-1/4" -OR- 143352

Model #	Item #	Description	Galvanized Metal	Plastic w/Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

COPPER AVERAGING

Bendable Multipoint Copper, Thermistor

The ACI Thermistor Copper Averaging Series features a copper sensing element with AWG Etched Teflon colored lead wires to differentiate the different sensor types. Each sensor is manufactured with 4 or 9 sensing points determined by the length of the sensing element. The averaging sensors provide a better average temperature of the air inside the duct when compared to a single point duct sensor. Each of the elements is sealed to prevent moisture intrusion and includes a foam pad to seal the duct and dampen vibrations. The benefits of using a copper sensing element is that it has improved thermal conductivity and higher corrosion resistance than similar aluminum style averaging sensors. Additionally, copper has been proven to have an antibacterial effect to many of the airborne contaminants, mold and bacteria found in duct systems. Our standard enclosures include the galvanized "-GD" or plastic duct enclosure with hinged cover "-PB". Each unit includes nylon wire ties and mounts with optional copper capillary and universal plastic mounting clips, NEMA/IP Rated Weather Proof enclosures and NIST certificates as referenced on the back of the product data sheet.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

The ACI Thermistor Copper Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

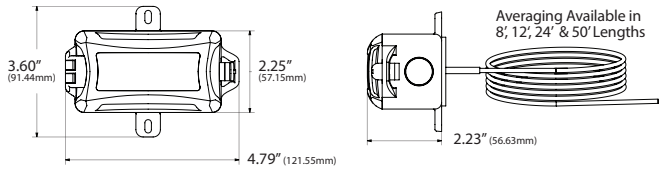
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points | Number Wires:	**8' and 12' Lengths:** Four | **24' and 50' Lengths:** Nine | Two (Non-Polarity Sensitive)
Sensor Series Output @ 25°C (77°F) (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/3K:** 3KΩ nominal | (White/Brown) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Orange/Gray) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70°C (32-158°F):	**8' & 12' Lengths:** +/-0.20°C (+/-0.36°F); **A/1.8K:** +/-1.00°C (+/-1.80°F); **A/10KS:** +/-0.60°C (+/-1.10°F) **24' & 50' Lengths:** +/-0.20°C (+/-0.36°F); **A/1.8K:** +/-1.00°C (+/-1.80°F); **A/10KS:** +/-0.60°C (+/-1.10°F)
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	15 Seconds nominal
Power Dissipation Constant:	**8' and 12' Lengths:** 4 mW/°C except **A/1.8K Series** = 2 mW/°C | **A/100KS Series:** 6 mW/°C **24' & 50' Lengths:** 6 mW/°C except **A/1.8K Series** = 3 mW/°C | **A/100KS Series:** 9 mW/°C
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 115°C (-40 to 239°F), NEMA 3R (IP 14); **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Sensor Operation Temperature Range:	-40 to 302°F (-40 to 150°C)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensor Material | Sensor Diameter:	Copper | 0.210" (5.34 mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material/Flammability Ratings:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5 cm) | 26 AWG (0.40 mm)
Lead Wire Insulation | Wire Ratings:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB]

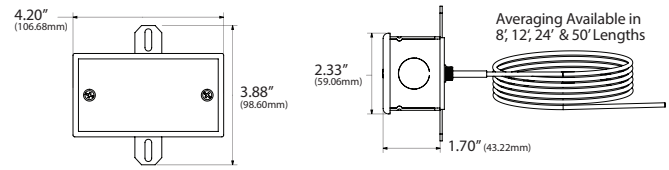


Plastic Box Enclosure [PB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
A/xx-A-yy-PB	0.72 lbs. (0.327 kg)	0.96 lbs. (0.435 kg)

ACI Model #	24' (Probe Length)	50' (Probe Length)
A/xx-A-yy-PB	1.70 lbs. (0.771 kg)	3.28 lbs. (1.488 kg)

Galvanized Enclosure [GD]

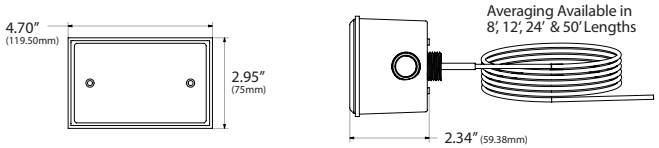


Galvanized Enclosure [GD] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
A/xx-A-yy-GD	1.16 lbs. (0.526 kg)	1.40 lbs. (0.635 kg)

ACI Model #	24' (Probe Length)	50' (Probe Length)
A/xx-A-yy-GD	2.20 lbs. (0.998 kg)	3.78 lbs. (1.715 kg)

Bell Box Enclosure [BB]

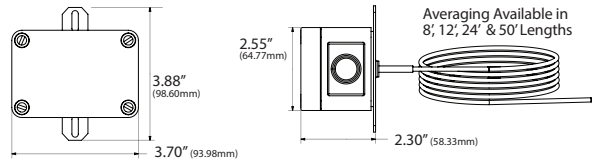


Bell Box Enclosure [BB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
A/xx-A-yy-BB	1.22 lbs. (0.553 kg)	1.44 lbs. (0.653 kg)

ACI Model #	24' (Probe Length)	50' (Probe Length)
A/xx-A-yy-BB	2.18 lbs. (0.988 kg)	3.74 lbs. (1.696 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
A/xx-A-yy-4X	0.84 lbs. (0.381 kg)	1.06 lbs. (0.481 kg)

ACI Model #	24' (Probe Length)	50' (Probe Length)
A/xx-A-yy-4X	1.80 lbs. (0.816 kg)	3.36 lbs. (1.696 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | A (C.) | 12' (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *No Selection Required*	**A** = Bendable Copper Averaging →	**A**
D. Probe Length *Select One (1)*	**8'** = 8' Sensor | **12'**= 12' Sensor | **24'** = 24' Sensor | **50'** = 50' Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

DUCT

Duct Sensor, Thermistor

The ACI Thermistor Duct Series features a stainless steel probe with two, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proved double encapsulation process to eliminate the effects of moisture on the sensors and increased response times from our high quality, thermally conductive epoxy. The duct sensor is designed to be used in smaller duct applications and includes an insulation pad for sealing your duct and dampening vibration. The sensor length should be determined by the width or diameter of your duct such that the tip of the probe reaches the approximate center of the duct. Our standard enclosure options are the galvanized enclosure "-GD" or plastic duct enclosure with hinged cover "-PB". On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. This series can be ordered with optional NEMA/IP rated weather proof enclosures and NIST certificates as referenced on the back of the product data sheet.

Applications: Roof Top Units, Air Handlers, Supply/Discharge/Return/Mixed Air Temperatures

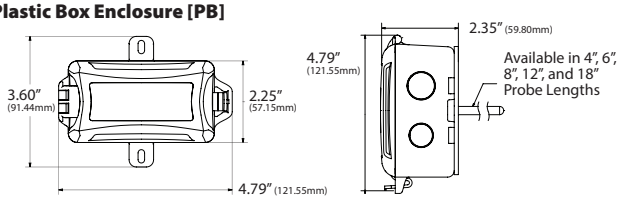
The ACI Thermistor Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/3K:** 3KΩ nominal | (White/Brown) **A/10K-E1:** 10KΩ nominal | (Gray/Orange) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/100KS:** 100KΩ nominal | (Black/Yellow) **A/CSI:** 10KΩ nominal | (Green/Yellow)
Sensor Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F) **A/1.8K Series:** +/- 0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	10 Seconds nominal
Sensor Operating Temperature Range:	-40°C (-40°F) to 150°C (302°F)
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, UL94-HB, -30 to 90°C (-22 to 194°F), Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, UL94-V2, -40 to 70°C (-40 to 158°F), NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Probe Diameter:	304 Stainless Steel | 0.250" (6.35mm)
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	4", 6" and 8" Probes: 14" (35.6 cm) | 12" and 18" Probes: 24" (61 cm) | 22 AWG (0.65 mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



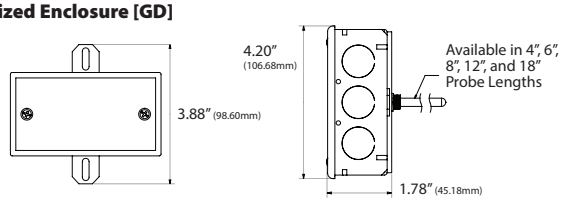
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-PB	0.24 lbs. (0.109 kg)	0.25 lbs. (0.113 kg)	0.26 lbs. (0.117 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

Galvanized Enclosure [GD]

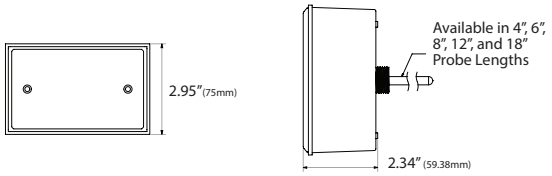


Galvanized Enclosure [GD] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.67 lbs. (0.303 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]

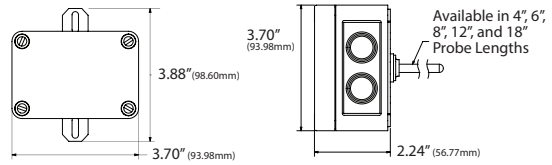


Bell Box Enclosure [BB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.71 lbs. (0.322 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-4X	0.34 lbs. (0.154 kg)	0.35 lbs. (0.159 kg)	0.36 lbs. (0.163 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | D (C.) | 8″ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *No Selection Required*	**D** = Duct →	**D**
D. Probe Length *Select One (1)*	**4″** = 4″ Probe | **6″** = 6″ Probe | **8″** = 8″ Probe | **12″** = 12″ Probe | **18″** = 18″ Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

DUCT WITHOUT BOX

Flange Mounted Duct Sensor, Thermistor

The ACI Thermistor Duct without Box Series features a stainless steel probe with two 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and increased response times using our high quality, thermally conductive epoxy. The duct style sensor is designed to be used in smaller duct applications and includes an insulation pad for sealing your duct as well as to dampen vibration. For best results, the sensor length should be determined by the actual width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. The Duct without Box Series can be ordered with optional plenum rated cables and NIST Certificates.

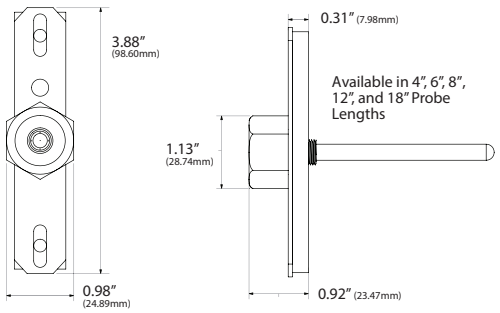
Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

The ACI Thermistor Duct without Box Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:		Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points | Number Wires:		One | Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Lead Wire Colors):		**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/3K:** 3KΩ nominal | (White/Brown) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Gray/Orange) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70°C (32-158°F):		+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F) **A/1.8K Series:** +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)
Stability:		Sensor Dependent; Contact ACI for more information on the sensor in question
Response Time (63% Step Change):		10 Seconds nominal
Power Dissipation Constant:		3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C
Operating | Storage Temperature Range:		-40 to 115°C (-40 to 239°F) | -40 to 85°C (-40 to 185°F)
Operating Humidity Range:		10 to 95% RH, non-condensing
Probe Material | Flange Material:		304 Stainless Steel | Galvanized Steel
Fitting Material | Flammability Rating:		Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:		Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions | Probe Diameter:		See table on back of Product Data sheet | 0.250" (6.35 mm)
Agency Approvals:		CE, RoHS2, WEEE
Standard Wire	**Lead Wire Insulation | Wire Rating:**	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
	Temperature Rating:	-55°C (-67°F) to 200°C (392°F)
	Conductor Material:	Silver Plated Copper
	Rated Applications:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
Plenum Wire	**Lead Wire Insulation | Wire Rating:**	**CL2P:** FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS **CMP:** Low Smoke PVC (Poly Vinyl Chloride) | NEW Article 800; UL Listed C(UL)US CMP
	Temperature Rating:	**CL2P:** -80°C (-112°F) to 150°C (302°F) **CMP:** 0°C (32°F) to 75°C (167°F)
	Conductor Material:	**CL2P:** Tinned Copper **CMP:** Bare Copper
	Rated Applications:	**CL2P:** Suitable for Indoor and Outdoor (wet) location. Oil, Gas, Sunlight, Abrasion Acid Resistant **CMP:** Suitable for Indoor use only. Not for Outdoor use or UV Light Applications

DIMENSIONAL DRAWING



Standard View

xx = Sensor Type | **yy** = Insertion Length

Duct Without Box [DO] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-DO-yy	0.10 lbs. (0.045 kg)	0.11 lbs. (0.050 kg)	0.12 lbs. (0.054 kg)
A/xx-DO-yy-6′-CL2P	0.15 lbs. (0.068 kg)	0.16 lbs. (0.073 kg)	0.17 lbs. (0.077 kg)
A/xx-DO-yy-10′-CL2P	0.20 lbs. (0.091 kg)	0.21 lbs. (0.095 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-20′-CL2P	0.27 lbs. (0.122 kg)	0.28 lbs. (0.127 kg)	0.29 lbs. (0.132 kg)

ACI Model #	12″ (Insertion Length)	18″ (Insertion Length)
A/xx-DO-yy	0.14 lbs. (0.064 kg)	0.16 lbs. (0.073 kg)
A/xx-DO-yy-6′-CL2P	0.20 lbs. (0.091 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-10′-CL2P	0.24 lbs. (0.108 kg)	0.27 lbs. (0.122 kg)
A/xx-DO-yy-20′-CL2P	0.31 lbs. (0.141 kg)	0.34 lbs. (0.154 kg)

Product Weight

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | DO (C.) | 4″ (D.) | (E.) | NIST (F.)

MODEL

A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 50K | 100KS**	
C. Configuration *No Selection Required*	**DO =** Duct without Box (Mounting Flange Only) →	**DO**
D. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6′CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10′CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20′CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable **6′CMP** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable *(Not for Outdoor use or UV Light Application)* **10′CMP** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable *(Not for Outdoor use or UV Light Application)* **20′CMP** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable *(Not for Outdoor use or UV Light Application)*	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 3 Points)	

FLEXIBLE AVERAGING

Multipoint Averaging Sensor, Thermistor

The ACI Thermistor Flexible Averaging Series features an 18 AWG Plenum Rated cable sensing element with two, 12 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are multi-point. Averaging sensors provide a better overall average temperature of the actual air inside larger ducts when compared to that of a single point sensor. All flexible averaging sensors are limited to being used in applications where operating temperatures are limited and high humidity, chemical resistance, and UV light sources aren't required. Each of the sensing elements is protected using a dual wall adhesive lined heat shrink tubing to provide a basic level of moisture protection. The sensor length should be determined by the size of your duct. Standard enclosure options include a galvanized junction box "-GD" or plastic duct enclosure with hinged cover "-PB". Each unit includes nylon wire ties and mounts for mounting. Optional copper capillary or universal plastic mounting clips, NEMA/IP Weather proof enclosures and NIST Certificates are available as referenced in the ordering grid on the back of the product data sheet.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

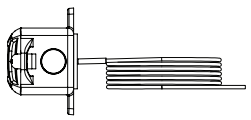
The ACI Thermistor Flexible Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

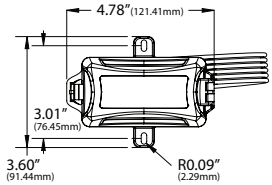
PRODUCT SPECIFICATIONS

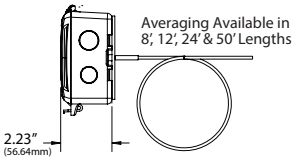
Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points | Number Wires:	**8' and 12' Lengths:** Four | **24' and 50' Lengths:** Nine | Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F)	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
(Lead Wire Colors):	**A/3K:** 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Accuracy 0-70°C (32-158°F):	**8' & 12' Lengths:** +/-0.20°C (+/-0.36°F); **A/1.8K:** +/-1.00°C (+/-1.80°F); **A/10KS:** +/-0.60°C (+/-1.10°F)	
	24' & 50' Lengths: +/-0.20°C (+/-0.36°F); **A/1.8K:** +/-1.00°C (+/-1.80°F); **A/10KS:** +/-0.60°C (+/-1.10°F)	
Power Dissipation Constant:	**8' & 12' Lengths:** 6 mW/°C except **A/AN**, **A/CP**, **A/10KE1**: 4 mW | **A/1.8K:** 2 mW	
	24' & 50' Lengths: 9 mW/°C except **A/AN**, **A/CP**, **A/10KE1:** 6 mW | **A/1.8K:** 3 mW	
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor	
Response Time (63% Step Change):	15 Seconds nominal	
Operating | Storage Temperature Range:	0 to 75°C (32 to 167°F) | -20 to 75°C (-4 to 167°F)	
Operating Humidity Range:	10 to 90% RH, non-condensing	
Enclosure Specifications (Material Type,	**"-GD" Enclosure:** Galvanized Steel, NEMA 1 (IP10);	
Flammability, NEMA/IP Ratings):	**"-PB" Enclosure:** ABS Plastic, UL94-HB, Plenum Rated	
	"-BB" Enclosure: Aluminum, NEMA 3R (IP 14)	
	"-4X" Enclosure: Polystyrene Plastic, UL94-V2, NEMA 4X (IP 66)	
Sensor Jacket Material | Cable Ratings:	Low Smoke PVC | CL2P | CMP Plenum Rated Cable	
Sensor Cable Diameter:	0.170" (4.32mm) nominal	
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Lead Wire Conductor Material:	Silver Plated Copper	
Product Dimensions | Product Weight:	See table on back of Product Data sheet	
Agency Approvals:	RoHS2, WEEE	

DIMENSIONAL DRAWING

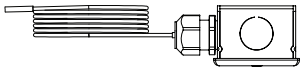
Plastic Box Enclosure [PB]

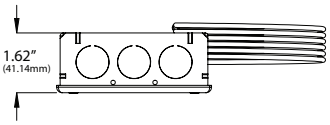


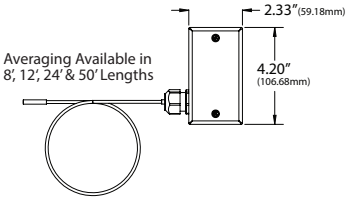




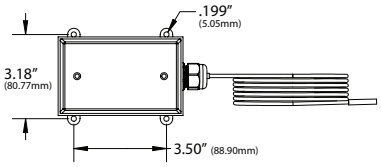
Galvanized Enclosure [GD]

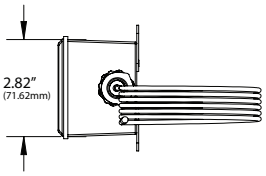


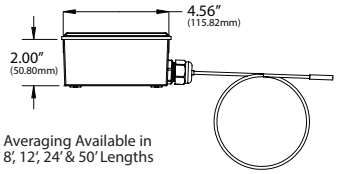




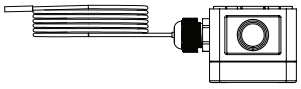
Bell Box Enclosure [BB]

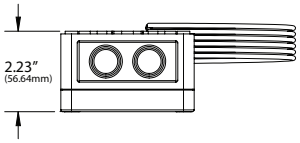


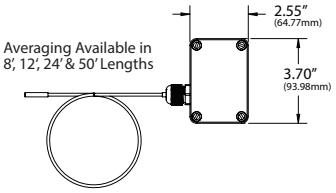




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | FA (C.) | 24' (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *No Selection Required*	**FA** = Flexible Plenum Rated Cable Averaging Sensor →	**FA**
D. Probe Length *Select One (1)*	**8'** = 8' Sensor | **12'**= 12' Sensor | **24'** = 24' Sensor | **50'** = 50' Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

FLUSH MOUNT BUTTONS

Brass, Stainless Steel & Plastic Thermistors

The ACI Thermistor Flush Mount Button Sensors Series features a stainless steel, brass or white plastic button sensor with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven encapsulation process to eliminate the effects of moisture upon the sensors and to increase the response times using our high quality, thermally conductive epoxy. This sensor uses a small, low profile design, and should be used in applications where aesthetics is your primary concern. Each unit is supplied with a mounting kit such that they can be hidden underneath cabinets or shelving units, in decorative metal plates, trim, drywall or from a ½" piece of conduit coming down from the ceiling or roof. Note that if painting the sensors, be sure to coat with as little paint as possible to not affect the accuracy or responsiveness of the sensor.

Applications: Museums, Historical Buildings, Monitoring Space Temperatures, Office Buildings, Schools, Retail, Remote Sensor

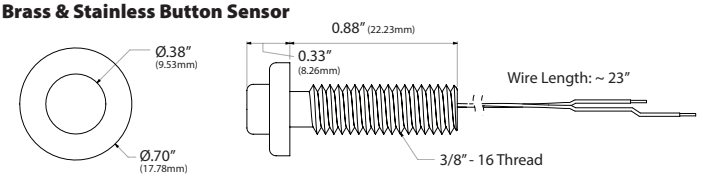
The Thermistor Flush Mount Button Sensor Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

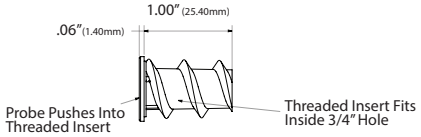
Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
	A/3K: 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F)	
	A/1.8K Series: +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor	
Response Time (63% Step Change):	10 Seconds nominal	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C	
Button Sensor Enclosure Material:	**A/XX-BBS Series:** Brass | **A/XX-SBS Series:** 304 Stainless Steel | **A/XX-PBS Series:** ABS	
Plastic Button Flammability Rating:	UL94-HB	
Operating | Storage Temperature Range:	**A/XX-PBS Series:** -40 to 70°C (-40 to 158°F) | -40 to 85°C (-40 to 185°F)	
	A/XX-BBS & A/XX-SBS Series: -40 to 150°C (-40 to 302°F) | -40 to 85°C (-40 to 185°F)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions (Length x Diameter):	**A/XX-PBS Series:** 1.00" (25.4mm) x 0.750" (19mm)	
	A/XX-BBS and **A/XX-SBS Series:** 1.20" (30.48mm) x 0.700" (17.78mm)	
Product Weight:	**A/XX-PBS Series:** 0.04 lbs. (18.15g) | **A/XX-BBS** & **A/XX-SBS Series:** 0.10 lbs. (45.36g)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING

Brass & Stainless Button Sensor



Plastic Button Sensor



Front & Top / Right Views | **Spacers / Anchors**

STANDARD ORDERING

Model # Example: A/CP-PBS -OR- 122113

Model #	Item #	Description
A/1.8K-PBS	132241	1.8K Plastic Button Sensor, 24" Leads, Anchor
A/1.8K-SBS	124140	1.8K Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/3K-PBS	129302	3K Plastic Button Sensor, 24" Leads, Anchor
A/3K-SBS	121089	3K Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/AN-PBS	124534	AN Plastic Button Sensor, 24" Leads, Anchor
A/AN-SBS	121738	AN Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/AN-BC-SBS	121334	AN-BC Stainless Steel Button Sensor, 24" Leads, 11K Shunt, Spacers & Brass Nut
A/CP-PBS	122113	CP Plastic Button Sensor, 24" Leads, Anchor
A/CP-SBS	122262	CP Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/CSI-PBS	122359	CSI Plastic Button Sensor, 24" Leads, Anchor
A/CSI-SBS	122418	CSI Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/10KS-SBS	120232	10KS Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/10K-E1-PBS	130259	10K-E1 Plastic Button Sensor, 24" Leads, Anchor
A/10K-E1-SBS	126483	10K-E1 Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/20K-PBS	120664	20K Plastic Button Sensor, 24" Leads, Anchor
A/20K-SBS	120702	20K Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut
A/100KS-PBS	135773	100KS Plastic Button Sensor, 24" Leads, Anchor
A/100KS-SBS	125730	100KS Stainless Steel Button Sensor, 24" Leads, Spacers & Brass Nut

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 3K (B.) | SBS (C.) | NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC*** | **CP** | **CSI** | **10KS*** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *Select One (1)*	**PBS** = Plastic Button | **BBS** = Brass Button | **SBS** = Stainless Steel Button	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: AN-BC and 10KS are not available in PBS

IMMERSION

Stainless Steel Immersion, Thermistor

The ACI Thermistor Immersion Series features a ¼" diameter stainless steel probe with two, 14 inch 22 AWG Etched Teflon colored lead wires depending on the probe length ordered to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture and to increase the response times using our high quality, thermally conductive epoxy. The immersion sensors include a welded thermowell "-I" version but can be ordered without the welded thermowell "-INW" version. The "INW" version includes a standard ½" NPS Male process thread to be used with an optional machined thermowell or in an existing thermowell application. Optional NEMA/IP rated enclosures and NIST certificates are available the back of the product data sheet.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressor, Chillers

The ACI Thermistor Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

Disclaimer: Specification of any thermowell and the materials of construction are the sole responsibility of the designer of the system that incorporates the thermowell. Sole responsibility for ensuring compatibility of the process fluid with the system rests with the end user.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | Lead Wire Colors:	**A/1.8K:** 1.8KΩ nominal | Red/Yellow **A/3K:** 3KΩ nominal | White/Brown **A/AN (Type III):** 10KΩ nominal | White/White **A/AN-BC:** 5.238KΩ nominal | White/Yellow **A/CP (Type II):** 10KΩ nominal | White/Green **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Gray/Orange) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F) **A/1.8K Series:** +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	10 Seconds nominal
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C
Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F)
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40°C to 121°C (-40°F to 250°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30°C to 90°C (-22°F to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40°C to 121°C (-40°F to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40°C to 70°C (-40°F to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35mm) | 0.260"
Probe Material | Thermowell Material:	304 Stainless Steel | 304 Series Stainless Steel
Thermowell Instrument | Process Thread Size:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	½" NPS (National Pipe Straight) Male Thread
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"				
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**	**12.0" (304.8 mm)**	**18.0" (457.2 mm)**	**24" (609.6 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	73.6 ft/s (22.4 m/s)	19.4 ft/s (5.9m/s)	8.8 ft/s (2.7m/s)	5.2 ft/s (1.6m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	26.9 ft/s (8.2 m/s)	11.3 ft/s (3.4m/s)	4.7 ft/s (1.43m/s)	2.5 ft/s (0.8m/s)

Note 1: Values are for Air/Gas/ Steam and similar density media based upon Max pressure of 2900 PSI @ 1000ºF (537.8ºC) | **Note 2:** Values are for Water (No Glycol or other Chemicals factored in) @ 68 ºF (20ºC) and max pressure of 5700 PSI. (Calculated to ASME PTC 19.3 TW-2016 Code B31.1) | **Note 3:** 6-24" Machined Thermowells meet ASME PTC 19.3 TW-2016 Code B31.1.

MAXIMUM PRESSURE VS TEMPERATURE RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Material:	70°F (21.1°C)	200°F (93.3°C)	400°F (204.4°C)	600°F (315.6°C)	800°F (426.7°C)	1000°F (537.8°C)	1200°F (648.9°C)
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.6 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

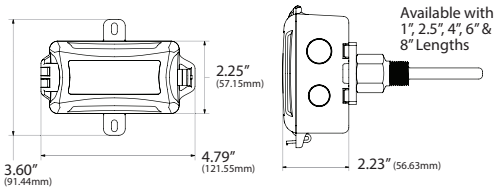
MAXIMUM FLUID VELOCITY RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/ Steam and similar density media

DIMENSIONAL DRAWINGS. WEIGHTS

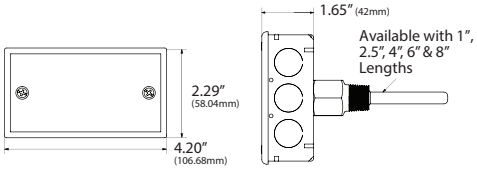
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-PB	0.20 lbs. (0.091 kg)	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs (0.163 kg)
A/xx-I-yy-PB	N/A	0.24 lbs. (0.109 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)	N/A
A/xx-IM-yy-PB	0.40 lbs. (0.182 kg)	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)	1.15 lbs (0.522 kg)

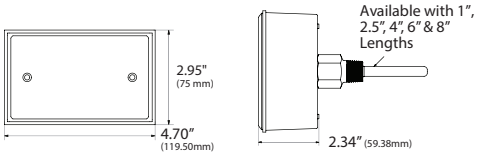
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-GD	0.62 lbs. (0.281 kg)	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.78 lbs (0.354 kg)
A/xx-I-yy-GD	N/A	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-GD	0.81 lbs. (0.367 kg)	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.55 lbs (0.703 kg)

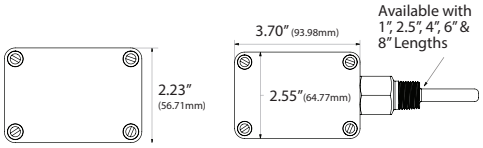
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-BB	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.80 lbs (0.363 kg)
A/xx-I-yy-BB	N/A	1.02 lbs. (0.463 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-BB	0.83 lbs. (0.376 kg)	1.02 lbs. (0.463 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.59 lbs (0.721 kg)

NEMA 4X Enclosure [4X]

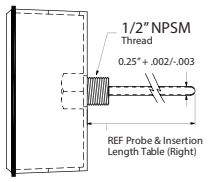


NEMA 4X Enclosure [4X] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-4X	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)	0.44 lbs (0.200 kg)
A/xx-I-yy-4X	N/A	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)	N/A
A/xx-IM-yy-4X	0.48 lbs. (0.218 kg)	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)	1.27 lbs (0.576 kg)

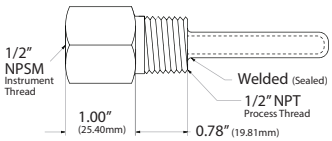
N/A = Not Available | **xx** = Sensor Type | **yy** = Insertion Length

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
3"	2.81" +/- 0.13"	A/xx-INW-1"-yy-zz	A/M1"
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/2.5" or A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/4" or A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/6" or A/M6"
10"	9.81" +/- 0.13"	A/xx-INW-8"-yy-zz	A/M8"
13"	12.75" +/- 0.13"	A/xx-INW-12"-yy-zz	A/M12"
19"	18.75" +/- 0.13"	A/xx-INW-18"-yy-zz	A/M18"
25"	24.75" +/- 0.13"	A/xx-INW-24"-yy-zz	A/M24"

CUSTOM ORDERING WELDED THERMOWELL

Model # Example: A/ (A.) | 1.8K (B.) | I (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 100KS**	
C. Configuration *Select One (1)*	**I**=Immersion with Welded Thermowell	
D. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate **| NIST**= NIST Certificate (3 Points)	

CUSTOM ORDERING MACHINED THERMOWELL

Model # Example: A/ (A.) | 1.8K (B.) | IM (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 100KS**	
C. Configuration *Select One (1)*	**IM**=Immersion with Machined Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion **| 2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion **| 8"** = 8" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate **| NIST**= NIST Certificate (3 Points)	

Note: Machined Thermowells with lengths of 12", 18" and 24" are available and must be ordered separately **|** See the Machined Thermowells Data Sheet (Accessories)

CUSTOM ORDERING SENSOR ONLY NO THERMOWELL

Model # Example: A/ (A.) | 1.8K (B.) | INW (C.) | 1" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 100KS**	
C. Configuration *Select One (1)*	**INW** = Immmersion without Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion **| 2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion **| 8"** = 8" Insertion **| 12"** = 12" Insertion **| 18"** = 18" Insertion **| 24"** = 24" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate **| NIST**= NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTRE 2 oz Or 102595

Model #	Item #	Description
NSG Heat Transfer Paste 2 oz.	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG Heat Transfer Paste 16 oz.	140574	Thermal Grease, 16 oz. Jar, Silicon Free, -40 to 390°F (-40 to 198°C)
A/2.5"	128349	2.5" (63.5 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/4"	128350	4" (101.6 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/6"	128351	6" (152.4 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/M1"	128337	1" (25.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"	128338	2.5" (63.5 mm) Insertion, 304 Stainless, Machined , 1/2" NPT Thermowell
A/M4"	128343	4" (101.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M8"	138725	8" (203.2 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M12"	128339	12" (304.80 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M18"	128341	18" (457.20 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M24"	128342	24" (609.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5" - 316SS	128352	2.5" (63.5 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4" - 316SS	128353	4" (101.6 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6" - 316SS	128354	6" (152.4 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell

OUTSIDE AIR

Weatherproof Outside Air, Thermistors

The ACI Thermistor Outside Air Series features a weather proof European Style Plastic enclosure with twist off cover and water tight cord grip fitting. The sensing element contains two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. All sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as to increase the thermal response time using our high quality, thermally conductive epoxy. The outside air sensor is a single point sensor designed to be mounted under an eave or on the North side of a building in a shaded location. The sensing tube pointed must be pointed downward to prevent any water or ice from settling in the sensing tube. Optional NEMA 4X "-4X" or NEMA 3R rated "-BB" cast Aluminum enclosure and NIST Certificates are available as specified in the ordering grid on the back of the product data sheet. For Applications in which the sensor must be mounted in direct sunlight, please see the Sun Shield data sheet which will allow you to order a Temperature or Temperature/Humidity Combination sensor.

Applications: Outside Air Temperature Sensing, Cold Storage Facilities, High Dew Point/Condensing Environments

The ACI Thermistor Outside Air Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

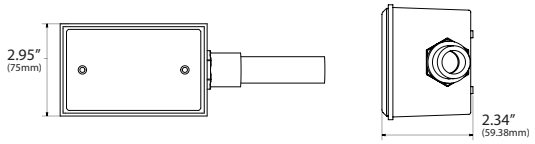
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points:	One	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Output @25°C (77°F) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
	A/3K: 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F)	
	A/1.8K Series: +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C	
Stability:	Sensor Dependent; Contact ACI for more information on the sensor in question.	
Response Time (63% Step Change):	25 Seconds nominal	
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-EH" Enclosure:** PC/ASA Plastic w/ UV Protectant; -40 to 88°C (-40 to 190°F); UL94-V0	
	"-4X" Enclosure: Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)	
	"-BB" Enclosure: Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R	
Operating Temperature Range:	-40 to 70°C (-22 to 158°F)	
Storage Temperature Range:	-40 to 70°C (-22 to 158°F)	
Operating Humidity Range:	10 to 100% RH	
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions:	See Drawings on back of Data Sheet	
Product Weight:	**A/XX-O-EH:** 0.46 lbs. (0.21kg) | **A/XX-O-4X:** 0.38 lbs. (0.17kg) | **A/XX-O-BB:** 0.76 lbs. (0.35kg)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type

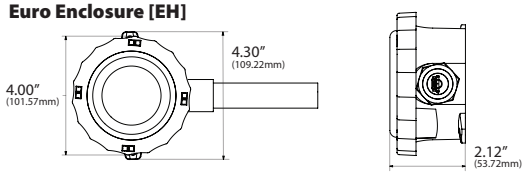
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

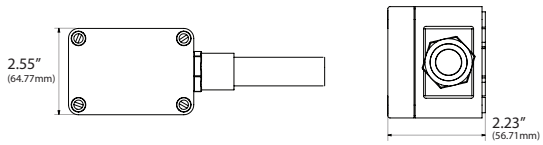
Euro Enclosure [EH]



Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Front & Right Views | **Top View** | **Product Weight**

STANDARD ORDERING

Model # Example: A/CP-O-EH -OR- 125283

Model #	Item #	Description
A/1.8K-O-EH	125163	1.8K Outside Air Sensor, 14″ Leads, Euro Housing
A/1.8K-O-BB	137419	1.8K Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/3K-O-EH	125241	3K Outside Air Sensor, 14″ Leads, Euro Housing
A/3K-O-BB	121056	3K Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/AN-O-EH	125268	AN Outside Air Sensor, 14″ Leads, Euro Housing
A/AN-O-BB	121524	AN Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/AN-BC-O-EH	125262	AN-BC Outside Air Sensor, 14″ Leads, 11K Shunt, Euro Housing
A/AN-BC-O-BB	135315	AN-BC Outside Air Sensor, 14″ Leads, 11K Shunt, Aluminum Bell Box
A/CP-O-EH	125283	CP Outside Air Sensor, 14″ Leads, Euro Housing
A/CP-O-BB	122112	CP Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/CSI-O-EH	125289	CSI Outside Air Sensor, 14″ Leads, Euro Housing
A/CSI-O-BB	139372	CSI Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/10KS-O-EH	125197	10KS Outside Air Sensor, 14″ Leads, Euro Housing
A/10KS-O-BB	142405	10KS Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/10K-E1-O-EH	125609	10K-E1 Outside Air Sensor, 14″ Leads, Euro Housing
A/10K-E1-O-BB	142406	10K-E1 Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/20K-O-EH	125226	20K Outside Air Sensor, 14″ Leads, Euro Housing
A/20K-O-BB	120663	20K Outside Air Sensor, 14″ Leads, Aluminum Bell Box
A/100KS-O-EH	125176	100KS Outside Air Sensor, 14″ Leads, Euro Housing
A/100KS-O-BB	142407	100KS Outside Air Sensor, 14″ Leads, Aluminum Bell Box

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | O-EH (C.) | NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *Select One (1)*	**O-EH** = Euro Housing | **O-BB** = Aluminum Bell Box | **O-4X** = NEMA 4X Enclosure	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

PIPE MOUNT

Small Pipe/Coil Sensor, Thermistor

The ACI Thermistor Pipe Mount Series features a 1.1" long Brass probe with a small curvature on the bottom that is designed to increase the surface area and improve the thermal conductivity between the pipe and the sensor. Each sensor has two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. All sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to improve the thermal response times using our high quality, thermally conductive epoxy. The Pipe Mount sensor should be used to monitor pipe or coil sizes from 1/2" to 1" in diameter. A 7.5" nylon wire tie is supplied for fastening the sensor to the top of the pipe. For best accuracy and increased thermal conduction between the pipe and sensor, ACI recommends to clean the pipe and to apply thermal grease between the sensor and pipe before securely fastening to the pipe and insulating the sensor from any effects of the ambient air. An optional Plenum rated cable, Zip wire or NIST Certificate are available as referenced in the ordering grid on the back of the Product Data Sheet.

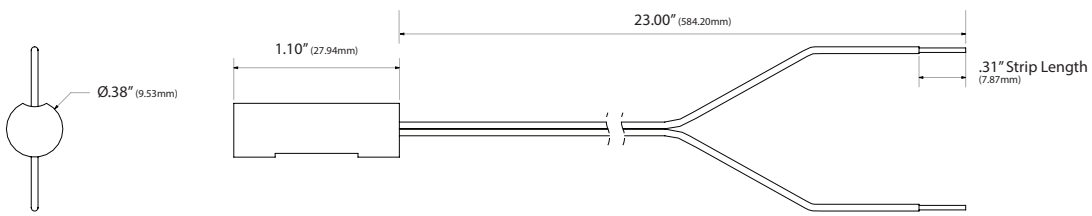
Applications: Cooling Coils, Heating Coils, Hot Water Systems, Chilled Water Systems, Hydronic Heating Systems, Chillers

The ACI Thermistor Pipe Mount Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points:	One	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
	A/3K: 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Sensor Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F); **A/1.8K Series:** +/- 0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C	
Stability:	Sensor Dependent; Contact ACI for more information on the sensor in question.	
Response Time (63% Step Change):	20 Seconds nominal	
Pipe Mount Sensor Enclosure Material:	Brass	
Pipe Sizes Acceptable:	½" (12.7mm) to 1" (25.4mm)	
Operating Temperature Range:	-40 to 150°C (-40 to 302°F)	
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)	
Operating Humidity Range:	10 to 95% RH, Condensing	
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions (Length x Diameter):	1.10" (27.9mm) x 0.375" (9.53mm)	
Product Weight:	0.05 lbs. (22.68g)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/AN-PM -OR- 138628

Model #	Item #	Description
A/1.8K-PM	138644	1.8K Pipe Mount, 24" Leads
A/3K-PM	138659	3K Pipe Mount, 24" Leads
A/AN-PM	138628	AN (Type III) Pipe Mount, 24" Leads
A/AN-BC-PM	138996	AN-BC Pipe Mount, 24" Leads, 11K Shunt
A/CP-PM	138629	CP (Type II) Pipe Mount, 24" Leads
A/CSI-PM	138662	CSI Pipe Mount, 24" Leads
A/10KS-PM	142395	10KS Pipe Mount, 24" Leads
A/10K-E1-PM	138655	10K-E1 Pipe Mount, 24" Leads
A/20K-PM	138631	20K Pipe Mount, 24" Leads
A/100KS-PM	138654	100KS Pipe Mount, 24" Leads

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | PM (C.) | 20' (D.) | Z (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *No Selection Required*	**PM** = 1.1" Brass Pipe Mount Sensor →	**PM**
D. Lead Length *Select One (1)*	**----** = Standard (24" Etched Teflon) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet* (6.10m)	
E. Lead Wire Type *Select One (1)*	**CL2P** = Plenum Rated Cable | **Z** = 2 Conductor White Zip Wire	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: HARDWARE, 2" HOSE CLAMP -OR- 100235

Model #	Item #	Description
HARDWARE, 2" HOSE CLAMP	100235	Hardware, 2" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

PROBE ONLY

Stainless Steel Prode, Thermistor

The ACI Thermistor Probe Only Series features a ¼" diameter stainless steel probe with two, 14" or 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. The probe is designed to be used in duct and immersion applications when used with the proper length thermowell. Optional lead lengths, cable types and NIST Certificates are avalible as referenced in the ordering grid on the Product Data Sheet. Please contact ACI for more information regarding this sensor or to discuss your application in further detail. Other options that may be avalible upon request.

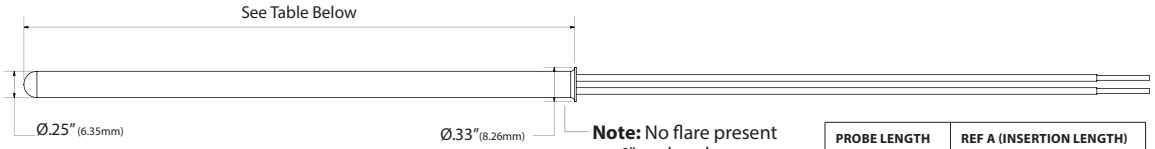
Applications: Roof Top Units, Air Handlers, Supply/Discharge Air/Return/Mixed/Exhaust Air Duct Temperature Sensing, Immersion Temperature Sensors, Replacement Temperature Sensors.

The ACI Thermistor Probe Only Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type:		Thermistor
Sensor Curve:		Non-Linear NTC (Negative Temperature Coefficient)
Number Sensing Points:		One
Number Wires:		Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Standard Lead Wire Colors):		**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/3K:** 3KΩ nominal | (White/Brown) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Gray/Orange) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70ºC (32-158ºF):		+/-0.2ºC (+/-0.36ºF) except **A/10K-E1 Series:** +/- 0.3ºC (+/-0.54ºF) **A/1.8K Series:** +/- 0.5ºC @ 25ºC (77ºF) and (+/-1.0ºC) (+/-1.8ºF)
Stability:		Sensor Dependent; Contact ACI for more information on the sensor in question.
Response Time (63% Step Change):		10 Seconds nominal
Power Dissipation Constant:		3 mW/ºC except **A/1.8K Series:** 1 mW/ºC | **A/10K-E1 Series:** 2 mW/ºC
Operating Temperature Range:		-40 to 150ºC (-40 to 302ºF)
Storage Temperature Range:		-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:		10 to 95% RH, non-condensing
Probe Material:		304 Stainless Steel
Standard Wire	**Lead Wire Insulation | Wire Rating:**	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
	Temperature Rating:	-55°C (-67°F) to 200°C (392°F)
	Conductor Material:	Silver Plated Copper
	Rated Application:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
	Lead Length | Conductor Size:	**4", 6" and 8" Probes:** 14" (35.6 cm) | **12" and 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Plenum Wire	**Lead Wire Insulation | Wire Rating:**	**CL2P**: FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS
	Temperature Rating:	**CL2P:** -80°C (-112°F) to 150°C (302°F)
	Conductor Material:	**CL2P:** Tinned Copper
	Rated Application:	**CL2P:** Suitable for Indoor and Outdoor (wet) locations. Oil, Gas, Sunglight, Abrasion Acid Resistant
Product Dimensions | Probe Diameter:		See table on back of product data sheet | 0.250" (6.35mm)
Product Weight:		**4"** = 0.028 lbs. (12.7g) | **6"** = 0.036 lbs. (16.3g) | **8"** = 0.044 lbs. (20g) | **12"** = 0.066 lbs. (29.9g) | **18"** = 0.09 lbs. (40.8g)
Agency Approvals:		CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Note: No flare present on 6" and under

PROBE LENGTH	REF A (INSERTION LENGTH)
2"	2.00" ± 0.13"
4"	4.00" ± 0.13"
6"	6.00" ± 0.13"
8"	8.00" ± 0.13"
12"	12.00" ± 0.25"
18"	18.00" ± 0.25"

Standard View

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | PO (C.) | 4" (D.) | 6'CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 50K | 100KS**	
C. Configuration *Select One (1)*	**PO =** Probe Only	**PO**
D. Probe Length *Select One (1)*	**2"** = 2" Probe | **4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	---- = Standard 14 or 24" Etched PTFE Colored Leads 6'CL2P = 6 ft (1.83m), 2 Conductor Plenum Rated Cable 10'CL2P = 10 ft (3.05m), 2 Conductor Plenum Rated Cable 20'CL2P = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**---- =** No NIST Certificate **| NIST =** NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

RAW POTTED

Remote Sensing Plastic Cap, Thermistor

The ACI Thermistor Raw Series features a one inch long, ¼" diameter plastic cup with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven manufacturing process to eliminate the effects of moisture on the sensors and increased thermal response times using our high quality, thermally conductive epoxy. The raw sensor configuration is designed to monitor air temperatures and should not be fully submerged in liquid. This series can be ordered with optional NIST Certificate and a plenum rated cable option as shown in the ordering grid on the back of the product data sheet. All additional wire specifications can be found on our products download page on-line. Please contact ACI for more information regarding this product or to discuss your application in further detail. Other options may be available upon request.

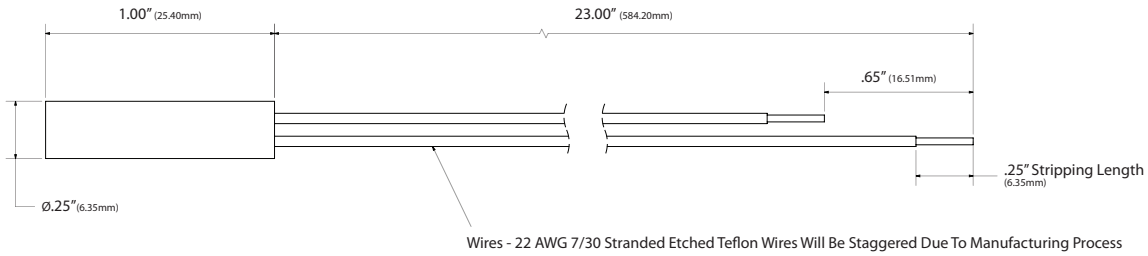
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing

The ACI Thermistor Raw Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points:	One	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F)	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/CSI:** 10KΩ nominal | (Green/Yellow)
(Lead Wire Colors):	**A/3K:** 3KΩ nominal | (White/Brown)	**A/10KS:** 10KΩ nominal | (White/Blue)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
Sensor Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F)	
	A/1.8K Series: +/- 0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series**: 2 mW/°C	
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor	
Response Time (63% Step Change):	10 Seconds nominal	
Cup Plastic Material | Flammability Rating:	Glass Filled, Flame Retardant, Diallyl Ortho Phthalate | UL94-V0	
Cup MIL-M-14, ASTM D-5948-96:	Type SDG-F	
Operating Temperature Range:	-40 to 150°C (-40 to 302°F)	
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Lead Length | Conductor Size:	24" (0.61m) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)	
Product Weight:	0.04 lbs. (18.15g)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/3K-W -OR- 121091

Model #	Item #	Description
A/1.8K-W	125493	1.8K Raw, 24" Leads, 1" Cup
A/3K-W	121091	3K Raw, 24" Leads, 1" Cup
A/AN-W	121744	AN (Type III) Raw, 24" Leads, 1" Cup
A/AN-BC-W	121745	AN-BC Raw, 24" Leads, 1" Cup, 11K Shunt
A/CP-W	122274	CP (Type II) Raw, 24" Leads, 1" Cup
A/CSI-W	122420	CSI Raw, 24" Leads, 1" Cup
A/10KS-W	120234	10KS Raw, 24" Leads, 1" Cup
A/10K-E1-W	142390	10K-E1 Raw, 24" Leads, 1" Cup
A/20K-W	120706	20K Raw, 24" Leads, 1" Cup
A/100KS-W	120140	100KS Raw, 24" Leads, 1" Cup

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 3K (B.) | W (C.) | 20' (D.) | CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **100KS**	
C. Configuration *No Selection Required*	**W** = 1" Plastic Cup →	**W**
D. Lead Length *Select One (1)*	**6'** = 6 Feet (1.83m) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet (6.10m)*	
E. Lead Wire Type *No Selection Required*	**CL2P** = 2 Conductor FEP/FEP Plenum Rated Cable →	**CL2P**
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: ¼" Mount Clip -OR- 108169

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
¼" Mount Clip	108169	Hardware, ¼" Mounting Clip	•	
¼" U-Mount CL	100090	Hardware, ¼" U-Mounting Clip Adhesive		•

RIGID AVERAGING

Four Point Averaging, Thermistor

The ACI Thermistor Rigid Averaging Series features a ¼" Diameter stainless steel sensing element with two, 12 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured with 4 sensing points in lengths from 12" to 48". The rigid averaging sensors will provide a better average temperature of the air inside the duct when compared to a single point sensing element. Each of the elements is hermetically sealed to prevent any moisture intrusion and includes an integrated foam pad to properly seal the duct and dampen vibrations when installed. The benefits of using the rigid averaging sensor is that it mounts like a standard single point duct sensor but includes three additional sensing points for better control. The sensor length should be determined by the size of your duct. Our standard enclosures include the galvanized junction box "-GD" or plastic duct enclosure "-PB" with the hinged cover depending on your preference. This series can be ordered with optional NEMA/IP rated weather proof enclosures as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply/Return Air Temperature Monitoring, Data Centers, Hospitals

The ACI Thermistor Rigid Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

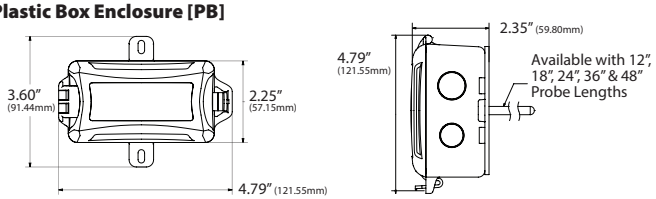
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points:	Four	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Output @ 25°C (77°F)	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
(Lead Wire Colors):	**A/3K:** 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Gray/Orange)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Accuracy 0-70°C (32-158°F):	+/-0.20°C (+/-0.36°F)	
Stability:	Sensor Dependent; Contact ACI for more information on the sensor in question.	
Response Time (63% Step Change):	10 Seconds nominal	
Power Dissipation Constant:	4 mW/°C except A/1.8K Series = 2 mW; A/100KS Series: 6 mW	
Enclosure Temperature Range:	**"-GD" Enclosure:** -40 to 115°C (-40 to 239°F), Galvanized Steel, NEMA 1 (IP10)	
	"-PB" Enclosure: -30 to 90°C (-22 to 194°F), ABS Plastic, UL94-HB, Plenum Rated	
	"-BB" Enclosure: -40 to 115°C (-40 to 239°F), Aluminum, NEMA 3R (IP14)	
	"-4X" Enclosure: -40 to 70°C (-40 to 158°F), Polystyrene Plastic, NEMA 4X (IP66)	
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Probe Material:	304 Stainless Steel	
Probe Diameter:	0.250" (6.35mm)	
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB	
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C	
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions | Product Weight:	See table on back of Product Data sheet	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB]

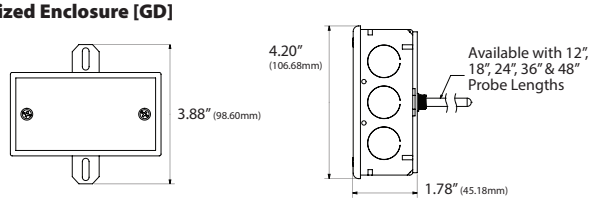


Plastic Box Enclosure [PB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

Galvanized Enclosure [GD]

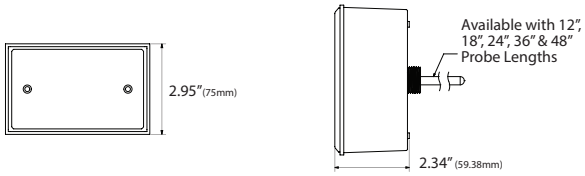


Galvanized Enclosure [GD] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

Bell Box Enclosure [BB]

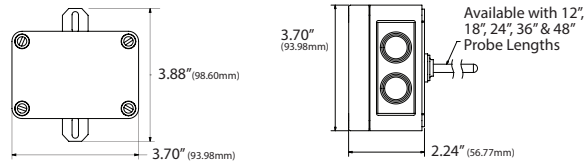


Bell Box Enclosure [BB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [PB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | RA (C.) | 18″ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *No Selection Required*	**RA** = Rigid Averaging →	**RA**
D. Probe Length *Select One (1)*	**12″** = 12″ Probe | **18″** = 18″ Probe | **24″** = 24″ Probe | **36″** = 36″ Probe | **48″** = 48″ Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ROOM

Wall Mount Enclosure, Thermistor

The ACI Thermistor Room Series combines option flexibility with attractive styling in our "-R2" or "-R" style enclosures which include four-way air flow design too minimize self-heating to the sensor. These enclosures are offered in a White "-R2" or Beige "-R" color depending on the enclosure style. These units are designed to be mounted over a single gang junction box or hole in the wall using drywall anchors. Screw terminal blocks are available for making all connections to your building management system (network). An optional 1/8" Black foam pad with pressure sensitive adhesive is available to insulate the sensor from thermal drafts within the wall or wall surface. A 1/16" Hex driver is needed to secure the cover from being easily removed. The "LCD" option uses two temperature sensors to monitor the ambient air temperature in the space and is factory calibrated at a single point.

Applications: Space Temperature Sensing, Decorative Wall Sensor Applications, Office Buildings, Schools, Colleges, Commercial Buildings, OEM Opportunities

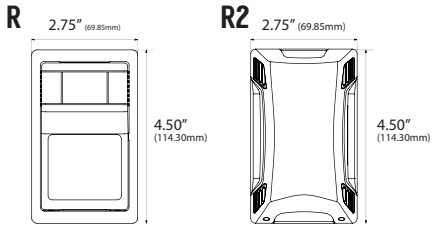
The ACI Thermistor Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

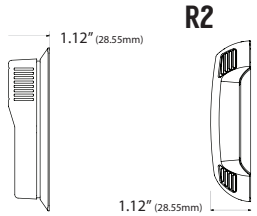
Sensor Type | Sensor Curve:	Thermistor **|** Non-Linear, NTC (Negative Temperature Coefficient)
Number Temperature Sensing Points:	One
Sensor Output @ 25°C (77°F):	**A/1.8K Series:** 1.8KΩ nominal **A/3K Series:** 3KΩ nominal **A/AN Series (Type III):** 10KΩ nominal **A/AN-BC Series:** 5.238KΩ nominal **A/20K Series:** 20KΩ nominal **A/CP Series (Type II):** 10KΩ nominal **A/CSI Series:** 10KΩ nominal **A/10KS Series:** 10KΩ nominal **A/10K-E1 Series:** 10KΩ nominal **A/50K Series: 50KΩ** nominal **|** Brown/Yellow) **A/100KS Series:** 100KΩ nominal
Accuracy 0-70°C (32-158°F):	+/- 0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/-0.3°C (+/-0.54°F) **A/1.8K Series:** +/-0.5°C @ 25°C (77°F) and +/-1.0°C (+/-1.8°F)
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	10 Seconds nominal
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C **| A/10K-E1 Series:** 2 mW/°C
LCD Display Supply Voltage:	+9 to 35 VDC / 24 VAC (50-60 Hz)
LCD Display Supply Current/VA:	< 4 mA / 0.12 VA
LCD Display Accuracy:	+/- 2°F or +/- 2°C @ 71°F (21.5°C) Typical
LCD Display Descriptor | Number of Digits:	°F (Fahrenheit) or °C (Celsius) **|** 3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Set Point Specifications | Set Point Indication:	See Ordering Grid options on back of Product Data Sheet
Set Point Tolerance:	+/- 10% of Range
Override Options:	Short Thermistor (Default); Field (Jumper) Selectable "Dry Contact" Closure (Separate Input); Short Set Point available upon request
Operating | Storage Temperature Range:	1.5 to 50°C (35 to 122°F) **| Non-LCD:** -40 to 65°C (-40 to 149°F), **LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humidity Range:	10 to 95%RH, non-condensing
Connections | Wire Size:	Screw Terminal Blocks **|** 16 (1.31 mm^2) to 26 (0.129 mm^2) AWG
Terminal Block Torque Rating:	0.5 Nm (minimum); 0.6 Nm (maximum)
Enclosure Material | Color:	**"-R2" Enclosure:** ABS Plastic, White, UL94-HB **| "R" Enclosure:** ABS Plastic, Beige UL94-HB
Product Dimensions:	See Drawing on back of Product Data Sheet
Product Weight:	**A/XX-R/RS/RO Series:** 0.14 lbs. (63.5g) **| A/XX-RSO Series:** 0.18 lbs. (81.6g) **A/XX-R2/R2S/R2O Series:** 0.16 lbs. (72.6g) **| A/XX-R2SO Series:** 0.20 lbs. (90.7g) **All LCD Display Units:** 0.18 lbs. (81.6g)
Agency Approvals:	CE**, RoHS2, WEEE

Note:** All LCD Display Units are not CE Compliant, but they are RoHS2 Compliant

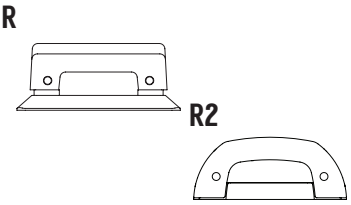
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model #	Item #	Description
A/CP-R	144212	10K (Type II), "R" Version, Beige, No Options
A/CP-R2	144213	10K (Type II), "R2" Version, White, No Options
A/AN-R	144208	10K (Type III), "R" Version, Beige, No Options
A/AN-R2	144209	10K (Type III) "R2" Version, White, No Options
A/20K-R	144160	20K, "R" Version, Beige, No Options
A/20K-R2	144170	20K, "R2" Version, White, No Options

CUSTOM ORDERING

CUSTOM ORDERING		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**1.8K | 3K | AN | AN-BC | CP | CSI | 10KS | 10K-E1 | 20K | 50K | 100KS**	
C. Configuration *Select One (1)*	**R** = Room **| RO** = Room with Override **| RS** = Room with Set Point **|** **RSO** = Room with Setpoint and Override **| R2** = Room **| R2O** = Room with Override **|** **R2S** = Room with Set Point **| R2SO** = Room with Set Point and Override	
D. Communication Jack *Select One (1)*	**----** = No Jack **RJ4** = 4 Pin 4 Conductor RJ9, RJ10 or RJ22 Style Head Set Modular Connector **RJ6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **232** = 3.5mm (1/8") Stereo Jack	
E. LCD Display[2] *Select One (1)*	**----** = No LCD Display **| LCD**[2] = With LCD Display (Only Available with "R" Style Enclosure)	
F. LCD Display Descriptor *Select One (1)*	**F =** °F (Fahrenheit) **| C =** °C (Celsius)	
G. NIST[3] *Select One (1)*	**---- =** No NIST Certificate **| NIST =** NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Slidepots[4] *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A01 =** 0 to 100K **| A02 =** 0 to 20K **| A03 =** 0 to 10K **| A06 =** 4.75K to 24.75K **|** **A07 =** 10K to 30K **| A08 =** 1K to 11K **| A09 =** 0 to 2K **| A10 =** 0 to 1K **|** **A11 =** 2.05K to 3.05K **| A12 =** 0 to 400 **| A16 =** 0 to 5K **| A18 =** 10K to 15K **|** **A20 =** 6.19K to 26.19K **| A26 =** 866 to 1,266 **| A29 =** 7.87K to 27.8K **Reverse Acting** *(Range in Ohms)* **A04 =** 1051.1 to 51.1 **| A14 =** 10K to 0 **| A24 =** 9.5K to 1K	
2. Setpoint Indication *Select One (1)*	**A3 =** 18-28 DEG C **| A4 =** 20-30 DEG C **| B4 =** 55-85 DEG F **| B7 =** 60-90 DEG F **|** **C5 =** COOL/WARM **| C6 =** COOLER/WARMER **| D3 =** WARM/COOL **|** **G5 =** BLUE/RED (R2 Enclosure)	

Note[1]: A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI **| Note[2]:** LCD Display is not compatible with NIST **| Note[3]:** NIST is available in "R" and "R2" only configurations **| Note[4]:** Other Setpoint configurations are available. Please contact ACI **| Note*:** Short Sensor is factory default, but the Dry Contact option is field selectable with jumper shunts included

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige (“R”)
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White (“R”)
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White (“R2”)
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

STRAP ON

Non-Intrusive Pipe Mount, Thermistor

The ACI Thermistor Strap-On Series features a 1.5" square copper plate with the sensor encapsulated to the back side of the plate to improve the thermal conductivity between the pipe and the sensor when an Immersion style sensor can't be inserted into the pipe. Each sensor has two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as to improve the thermal response times using our high quality, thermally conductive epoxy. The Strap-On Series sensors can be used to monitor pipe sizes from 1 ¼" to 10" in diameter. For best accuracy and increased thermal conduction between the pipe and the sensor, ACI recommends to clean the pipe before applying thermal grease as well as to insulate the sensor from the effects of the ambient air. Optional weather proof enclosure and NIST certificates are available upon request.

Applications: Cold Water Systems, Hot Water Systems, Retrofit, Hydronic Heating Systems, Chillers

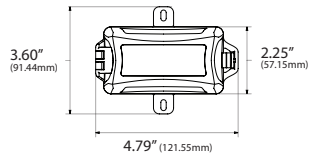
The ACI Thermistor Strap-On Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

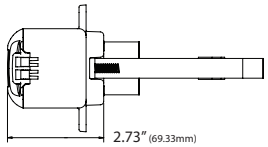
PRODUCT SPECIFICATIONS

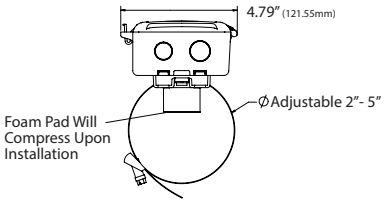
Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Series Output @ 25ºC (77ºF) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow) **A/3K:** 3KΩ nominal | (White/Brown) **A/AN (Type III):** 10KΩ nominal | (White/White) **A/AN-BC:** 5.238KΩ nominal | (White/Yellow) **A/CP (Type II):** 10KΩ nominal | (White/Green) **A/CSI:** 10KΩ nominal | (Green/Yellow) **A/10KS:** 10KΩ nominal | (White/Blue) **A/10K-E1:** 10KΩ nominal | (Gray/Orange) **A/20K:** 20KΩ nominal | (Brown/Blue) **A/50K:** 50KΩ nominal | (Brown/Yellow) **A/100KS:** 100KΩ nominal | (Black/Yellow)
Accuracy 0-70ºC (32-158ºF):	+/-0.2ºC (+/-0.36ºF) except **A/10K-E1 Series:** +/-0.3ºC (+/-0.54ºF); **A/1.8K Series:** +/- 0.5ºC @ 25ºC (77ºF) and (+/-1.0ºC) (+/-1.8ºF)
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	30 Seconds nominal
Power Dissipation Constant:	3 mW/ºC except **A/1.8K Series:** 1 mW/ºC | **A/10K-E1 Series:** 2 mW/ºC
Enclosure Specifications, Operating Temperature Range, Ratings:	**A/XX-S-GD:** Galvanized Steel, -40 to 93ºC (-40 to 200ºF), NEMA 1 (IP 10) **A/XX-S-PB:** ABS Plastic, -30 to 85ºC (-22 to 185ºF), UL94-HB, Plenum Rated **A/XX-S-4X:** Polystyrene Plastic, -40 to 70ºC (-40 to 158ºF), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80ºC (-40 to 176ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Pipe Mount Sensor Enclosure Material:	14" (35.6cm) | 22 AWG (0.65mm)
Acceptable Pipe Size:	A/X-S-XX: 1 1/4" (32mm) to 4" (100mm); A/X-S10-XX: 2" (50mm) to 10" (250mm)
Foam Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HF1; MIL-R-6130C; FMVSS-302
Lead Length | Conductor Size:	**A/XX-S-XX:** 14" (35.6cm) | **A/XX-S10-XX:** 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions:	See Drawing on Back of Data Sheet
Product Weight:	**A/XX-S-GD:** 0.80 lbs. (0.37kg) | **A/XX-S-PB:** 0.40 lbs. (0.18kg) | **A/XX-S-4X:** 0.55 lbs. (0.25kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

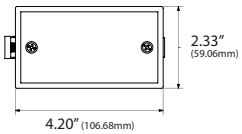
Plastic Box Enclosure [PB]

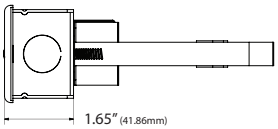


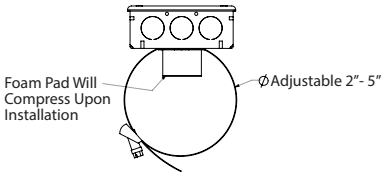




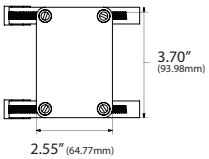
Galvanized Enclosure [GD]

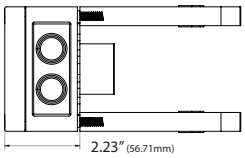


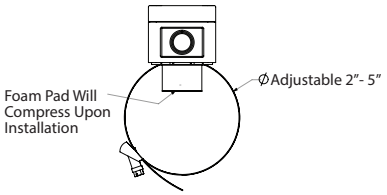




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ | 1.8K | S | PB | NIST (A. | B. | C. | D. | E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *Select One (1)*	**S** = Strap-On (1.25" to 4" Pipe Size) | **S10** = Strap-On (2" to 10" pipe size)	
D. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **4X** = NEMA 4X Weather Proof	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/HOSE CLAMP-2-12" -OR- 142631

Model #	Item #	Description
A/HOSE CLAMP-2-5"	142630	Hardware, 2-5" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
A/HOSE CLAMP-2-12"	142631	Hardware, 2-12" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

WALL PLATES

Stainless & Aluminum Wall Plate, Thermistor

The ACI Thermistor Wall Plate Series features a decorative, single gang brushed Stainless Steel or Smooth Satin Finished Anodized Aluminum wall plate with two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. A foam pad is included to insulate the sensor from thermal drafts within the wall, since they are designed to be mounted over a standard single gang junction box or directly over a hole in the wall with the use of drywall anchors to monitor ambient air temperatures in a space. Tamper Proof mounting screws are available upon request.

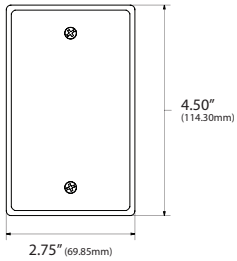
Applications: Space Temperature Sensing, Decorative Wall Plate Applications, Tamper Proof Applications, Schools, Gymnasiums

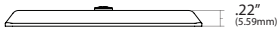
The ACI Thermistor Wall Plate Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)	
Number Sensing Points:	One	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Series Outputs @ 25°C (77°F) | (Lead Wire Colors):	**A/1.8K:** 1.8KΩ nominal | (Red/Yellow)	**A/10KS:** 10KΩ nominal | (White/Blue)
	A/3K: 3KΩ nominal | (White/Brown)	**A/10K-E1:** 10KΩ nominal | (Orange/Gray)
	A/AN (Type III): 10KΩ nominal | (White/White)	**A/20K:** 20KΩ nominal | (Brown/Blue)
	A/AN-BC: 5.238KΩ nominal | (White/Yellow)	**A/50K:** 50KΩ nominal | (Brown/Yellow)
	A/CP (Type II): 10KΩ nominal | (White/Green)	**A/100KS:** 100KΩ nominal | (Black/Yellow)
	A/CSI: 10KΩ nominal | (Green/Yellow)	
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F)	
	A/1.8K Series: +/- 0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)	
Stability:	Sensor Dependent; Contact ACI for more information on sensor in question	
Response Time (63% Step Change):	15 Seconds nominal	
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1 Series:** 2 mW/°C	
Plate Material:	**A/XX-SP Series:** 430 Stainless Steel (Brushed Stainless Steel Finish)	
	A/XX-AP Series: Aluminum (Smooth Satin Finish, Clear Anodized)	
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMVSS-302	
Operating | Storage Temperature Range:	-40 to 71°C (-40 to160°F) | -40 to 71°C (-40 to 160°F)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Lead Length | Conductor Size:	14" (35.56cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions (L x W x D):	4.50" (114.3mm) x 2.78" (70.6mm) x 0.187" (4.76mm)	
Product Weight:	**A/XX-SP Series:** 0.14 lbs. (63.5g) | **A/XX-AP Series:** 0.08 lbs. (36.29g)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING





Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/1.8K-SP -OR- 125491

Model #	Item #	Description
A/1.8K-SP	125491	1.8K Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/1.8K-AP	124244	1.8K Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/3K-SP	121084	3K Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/3K-AP	132346	3K Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/AN-SP	121727	AN (Type III) Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/AN-AP	121330	AN (Type III) Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/AN-BC-SP	121732	AN-BC Stainless Wall Plate, 14" Leads, 1/8" Foam Pad, 11K Shunt
A/AN-BC-AP	132310	AN-BC Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad, 11K Shunt
A/CP-SP	122251	CP (Type II) Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/CP-AP	121937	CP (Type II) Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/CSI-SP	122412	CSI Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/CSI-AP	142419	CSI Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/10KS-SP	120230	10KS Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/10KS-AP	142416	10KS Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/10K-E1-SP	142028	10K-E1 Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/10K-E1-AP	142418	10K-E1 Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/20K-SP	120697	20K Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/20K-AP	125531	20K Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad
A/100KS-SP	120139	100KS Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/100KS-AP	142417	100KS Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad

CUSTOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | SP (C.) | OR (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **AN-BC** | **CP** | **CSI** | **10KS** | **10K-E1** | **20K** | **50K** | **100KS**	
C. Configuration *Select One (1)*	**SP** = 1 Gang Stainless Steel Wall Plate | **AP** = 1 Gang Aluminum Wall Plate	
D. Override Options *Select One (1)*	**----** = No Override | **OR** = Override Short Sensor	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/TAMPER PROOF SCREWS -OR- 144865

Model #	Item #	Description
A/TAMPER PROOF SCREWS	144865	Two (2) Screws, Tamper Proof, #6 x 5/8", Zinc Plated, Flat Head, 1/8"
SCREWDRIVER INSERT BIT	143067	Screwdriver Bit, Tamper Proof Screw, 5/64

BULLET PROBE

1" Bullet Probe, Platinum RTD

The ACI Platinum Bullet Probe Series features a one inch stainless steel probe with two or three, 24 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. Note that the three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect the accuracy of your sensors output signal. For best results, ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the response time using our high quality, thermally conductive epoxy. The bullet style sensor is designed to be used to monitor air temperatures and should not be fully submerged in water. This series can be ordered with different wire options and NIST Certification as referenced in the Ordering Grid on the back of the product data sheet.

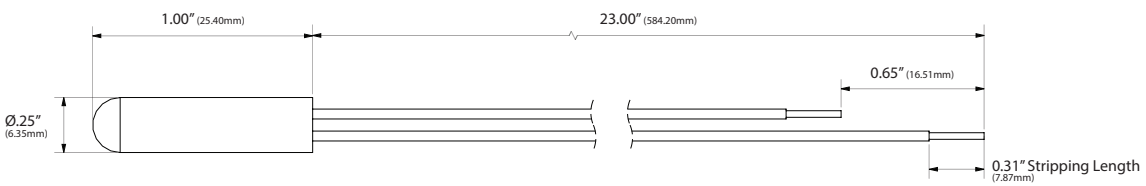
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing, Hydronic Systems

The ACI Platinum Bullet Probe Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-BP Series** and **A/1K-2W-BP Series:** Two (Non-Polarity Sensitive) **A/100-3W-BP Series** and **A/1K-3W-BP Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-BP Series:** 100 Ohms nominal | **A/1K-xW-BP Series:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **200ºC (392ºF):** +/- 0.55ºC (+/- 0.99ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA **1K Ohm RTD:** 4mW/ºC (Still Air) | 3 mA
Operating | Storage Temperature Range:	-40 to 200ºC (-40 to 392ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Probe Material:	304 Stainless Steel
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)
Product Weight:	0.02 lbs. (9.07g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/100-2W-BP -OR- 119937

Model #	Item #	Description
A/100-2W-BP	119937	100 Ohm RTD, 2 Wire, Bullet Probe, 24" (61.0 cm) Leads, 1" Probe, Brown/Brown Lead Wires
A/100-3W-BP	119993	100 Ohm RTD, 3 Wire, Bullet Probe, 24" (61.0 cm) Leads, 1" Probe, Brown/Brown/Black Lead Wires
A/1K-2W-BP	120262	1K Ohm RTD, 2 Wire, Bullet Probe, 24" (61.0 cm) Leads, 1" Probe, Black/Black Lead Wires
A/1K-3W-BP	120389	1K Ohm RTD, 3 Wire, Bullet Probe, 24" (61.0 cm) Leads, 1" Probe, Black/Black/White Lead Wires

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 100 (B.) | 3W (C.) | BP (D.) | 6'CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1000 Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**BP** = 1" Stainless Steel Probe →	**BP**
E. Lead Wire Type *Select One (1)*	**----** = Standard 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/MOUNTING U-CLIP-1/4" -OR- 143352

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

COPPER AVERAGING

Bendable Copper/Continuous, Platinum RTD

The ACI Platinum Copper Averaging Series features a copper sensing element with Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect your sensor output. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD style sensor. The sensing element includes a continuous sensing element, which covers the entire length of the copper tube. This produces a better average temperature over the entire cross sectional area of your duct or unit when compared to a single point duct sensor or multi-point averaging sensor. These sensors are hermetically sealed to ensure that moisture and other contaminants won't affect the reliability of the sensing element. The copper averaging sensor includes a foam pad to seal the duct and dampen vibrations once installed. The sensor length should be determined by the total cross sectional area of your duct. Standard enclosure options include the "-GD" galvanized or "-PB" plastic enclosure with hinged cover. Optional NEMA/IP rated weather proof enclosures and NIST Certificates are available as referenced in the ordering grid. For higher accuracies, see the A/TTM1K (Matched) Averaging transmitter Product Data Sheet.

Applications: Roof Top Units, Air Handlers, Monitoring Duct Supply/Discharge/Return/Mixed Air

The ACI Platinum Bendable Copper Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

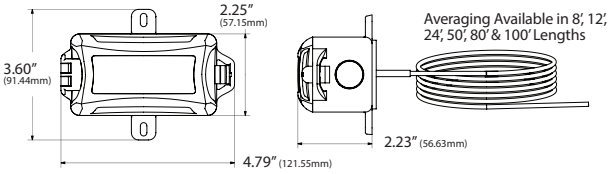
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	Continuous
Number Wires:	**A/1K-2W-A-xx'-xx Series:** Two (Non-Polarity Sensitive) **A/1K-3W-A-xx'-xx Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	1000 Ohms nominal
Sensor Accuracy:	+/- 0.1% @ 0ºC (32ºF) | +/- 0.25% @ 21ºC (70ºF) | +/- 1.0% @ 130ºC (266ºF)
Temperature Coefficient:	3850 ppm / ºC
Response Time (63% Step Change):	15 Seconds nominal
Self-Heating | Maximum Operating Current:	4 mW/ºC (Still Air) | 3 mA
Sensor Operating Temperature Range:	-40 to 135ºC (-40 to 275ºF)
Enclosure Specifications (Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115ºC (-40 to 239ºF); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90ºC (-22 to 194ºF); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** -40 to 115ºC (-40 to 239ºF); Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensing Element Material | Sensor Diameter	Copper | 0.210" (5.34mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data Sheet
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB]

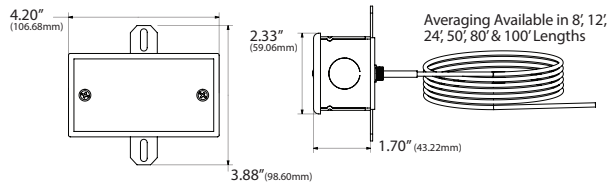


Plastic Box Enclosure [PB] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)	24′ (Probe Length)
A/xx-A-yy-PB	0.72 lbs. (0.327 kg)	0.96 lbs. (0.435 kg)	1.70 lbs. (0.771 kg)

ACI Model #	50′ (Probe Length)	80′ (Probe Length)	100′ (Probe Length)
A/xx-A-yy-PB	3.28 lbs. (1.488 kg)	4.54 lbs. (2.059 kg)	5.62 lbs. (2.549 kg)

Galvanized Enclosure [GD]

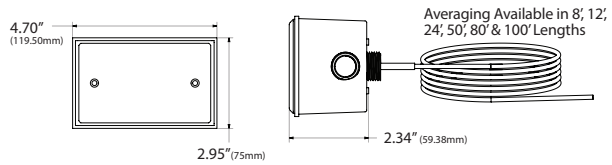


Galvanized Enclosure [GD] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)	24′ (Probe Length)
A/xx-A-yy-GD	1.16 lbs. (0.526 kg)	1.40 lbs. (0.635 kg)	2.20 lbs. (0.998 kg)

ACI Model #	50′ (Probe Length)	80′ (Probe Length)	100′ (Probe Length)
A/xx-A-yy-GD	3.78 lbs. (1.715 kg)	5.08 lbs. (2.304 kg)	6.16 lbs. (2.794 kg)

Bell Box Enclosure [BB]

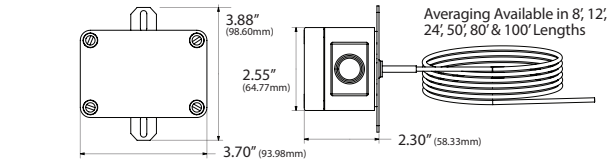


Bell Box Enclosure [BB] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)	24′ (Probe Length)
A/xx-A-yy-BB	1.22 lbs. (0.553 kg)	1.44 lbs. (0.653 kg)	2.18 lbs. (0.989 kg)

ACI Model #	50′ (Probe Length)	80′ (Probe Length)	100′ (Probe Length)
A/xx-A-yy-BB	3.74 lbs. (1.696 kg)	5.04 lbs. (2.286 kg)	6.12 lbs. (2.776 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)	24′ (Probe Length)
A/xx-A-yy-4X	0.84 lbs. (0.381 kg)	1.06 lbs. (0.481 kg)	1.80 lbs. (0.816 kg)

ACI Model #	50′ (Probe Length)	80′ (Probe Length)	100′ (Probe Length)
A/xx-A-yy-4X	3.36 lbs. (1.524 kg)	4.66 lbs. (2.114 kg)	5.74 lbs. (2.604 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | A (D.) | 80′ (E.) | GD (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**1K** = 1K Ohm Platinum RTD →	1K
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**A** = Bendable Copper Averaging Sensors →	A
E. Sensor Length *Select One (1)*	**8′** = 8′ (2.44m) | **12′**= 12′(3.66m) | **24′** = 24′ (7.31m) | **50′** = 50′ (15.24m) **80′** = 80′ (24.39m) Length | **100′** = 100′ (30.48m) Length	
F. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

DUCT

Duct Sensor, Platinum RTD

The ACI Platinum Duct Series features a stainless steel probe with Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output. ACI recommends the use of an 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The sensors are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors and to increase response times using our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for sealing the duct and dampening vibration. The sensor length should be determined by the width or diameter of your duct, such that the tip of the probe is in the approximate center of the duct. Standard enclosure options include the "-GD" Galvanized or "-PB" plastic enclosure with hinged cover. On larger ducts, our Rigid or Bendable Copper Averaging sensor may offer better coverage based upon the size of your duct system and sensor location. Optional NEMA/IP rated weather proof enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

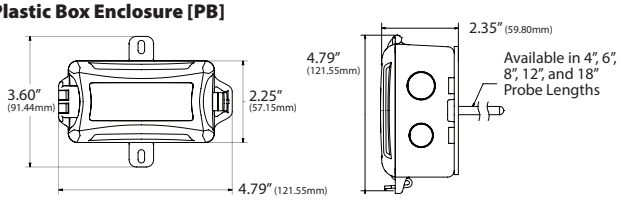
The ACI Platinum Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-D Series** and **A/1K-2W-D Series:** Two (Non-Polarity Sensitive) **A/100-3W-D Series** and **A/1K-3W-D Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-D Series:** 100 Ohms nominal | **A/1K-xW-D Series:** 1000 Ohms nominal +/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC)
Sensor Accuracy @ 0ºC (32ºF):	**-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **115ºC (239ºF):** +/- 0.38ºC (+/- 0.69ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/ºC (Still Air) | 3 mA
Enclosure Specifications (Operating Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115ºC (-40 to 239ºF); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90ºC (-22 to 194ºF); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 121ºC (-40 to 250ºF), Plenum Rated, NEMA 3R **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Sensor Operating Temperature Range:	-40 to 392ºF (-40 to 200ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material:	304 Stainless Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6" & 8" Sensors:** 14" (35.6cm) | **12" or 18" Sensors**: 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Probe Diameter:	0.250" (6.35mm)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



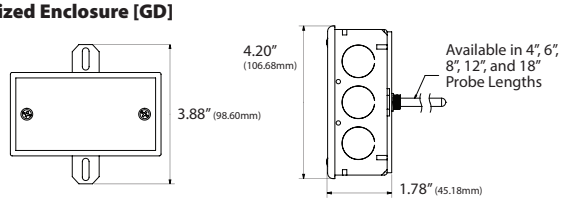
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-PB	0.24 lbs. (0.109 kg)	0.25 lbs. (0.113 kg)	0.26 lbs. (0.117 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

Galvanized Enclosure [GD]

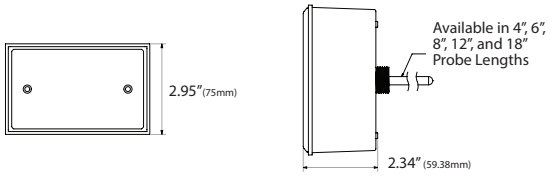


Galvanized Enclosure [GD] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.67 lbs. (0.303 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]

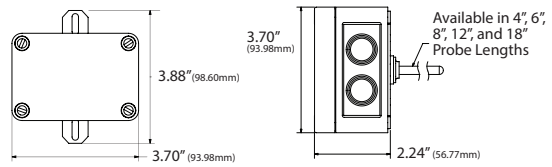


Bell Box Enclosure [BB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.71 lbs. (0.322 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-4X	0.34 lbs. (0.154 kg)	0.35 lbs. (0.159 kg)	0.36 lbs. (0.163 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 100 (B.) | 2W (C.) | D (D.) | 8″ (E.) | GD (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *Select One (1)*	**100** = 100 Ohm | **1K** = 1K Ohm	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**D** = Duct →	D
E. Probe Length *Select One (1)*	**4″** = 4″ Probe | **6″** = 6″ Probe | **8″** = 8″ Probe | **12″** = 12″ Probe | **18″** = 18″ Probe	
F. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

DUCT WITHOUT BOX

Flange Mounted Duct Sensor, Platinum RTD

The ACI Platinum Duct without Box Series features a 1/4" diameter stainless steel sensing element with two, 14 or 24 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect the accuracy of your sensors output signal. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor and its lower sensor resolution. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as increased response times using our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for properly sealing your duct as well as to dampen vibration. Sensor length should be determined by the actual width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. The Duct without Box Series can be ordered with optional plenum rated cables, jacket materials and standard lead lengths.

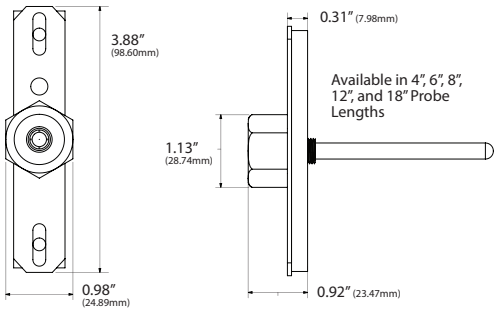
Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

The ACI Platinum Duct without Box Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-DO Series** and **A/1K-2W-DO Series:** Two (Non-Polarity Sensitive) **A/100-3W-DO Series** and **A/1K-3W-DO Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-DO Series:** 100 Ohms nominal | **A/1K-xW-DO Series:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **115ºC (239ºF):** +/- 0.38ºC (+/- 0.69ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751(IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/ºC (Still Air) | 3 mA
Operating | Storage Temperature Range:	-40 to 115ºC (-40 to 239ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Flange Material:	304 Stainless Steel | Galvanized Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6"** and **8" Probes:** 14" (35.6 cm) | **12"** and **18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Probe Diameter:	0.250" (6.35mm)
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS



Standard Views

xx = Sensor Type | **yy** = Insertion Length

Duct Without Box [DO] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-DO-yy	0.10 lbs. (0.045 kg)	0.11 lbs. (0.050 kg)	0.12 lbs. (0.054 kg)
A/xx-DO-yy-6'-CL2P	0.15 lbs. (0.068 kg)	0.16 lbs. (0.073 kg)	0.17 lbs. (0.077 kg)
A/xx-DO-yy-10'-CL2P	0.20 lbs. (0.091 kg)	0.21 lbs. (0.095 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-20'-CL2P	0.27 lbs. (0.122 kg)	0.28 lbs. (0.127 kg)	0.29 lbs. (0.132 kg)

ACI Model #	12" (Insertion Length)	18" (Insertion Length)
A/xx-DO-yy	0.14 lbs. (0.064 kg)	0.16 lbs. (0.073 kg)
A/xx-DO-yy-6'-CL2P	0.20 lbs. (0.091 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-10'-CL2P	0.24 lbs. (0.108 kg)	0.27 lbs. (0.122 kg)
A/xx-DO-yy-20'-CL2P	0.31 lbs. (0.141 kg)	0.34 lbs. (0.154 kg)

Product Weights

STANDARD ORDERING

Model # Example: A/100-2W-DO-4" -OR- 119951

Model #	Item #	Description
A/100-2W-DO-4"	119951	100 Ohm RTD, 2-Wire, Duct 4" w/o Box, Flange Only, 14" Brown/Brown Leads
A/100-2W-DO-6"	133370	100 Ohm RTD, 2-Wire, Duct 6" w/o Box, Flange Only, 14" Brown/Brown Leads
A/100-2W-DO-8"	119952	100 Ohm RTD, 2-Wire, Duct 8" w/o Box, Flange Only, 14" Brown/Brown Leads
A/100-2W-DO-12"	142486	100 Ohm RTD, 2-Wire, Duct 12" w/o Box, Flange Only, 24" Brown/Brown Leads
A/100-2W-DO-18"	133019	100 Ohm RTD, 2-Wire, Duct 18" w/o Box, Flange Only, 24" Brown/Brown Leads
A/1K-2W-DO-4"	120290	1K Ohm RTD, 2-Wire, Duct 4" w/o Box, Flange Only, 14" Black/Black Leads
A/1K-2W-DO-6"	133175	1K Ohm RTD, 2-Wire, Duct 6" w/o Box, Flange Only, 14" Black/Black Leads
A/1K-2W-DO-8"	120291	1K Ohm RTD, 2-Wire, Duct 8" w/o Box, Flange Only, 14" Black/Black Leads
A/1K-2W-DO-12"	120289	1K Ohm RTD, 2-Wire, Duct 12" w/o Box, Flange Only, 24" Black/Black Leads
A/1K-2W-DO-18"	142487	1K Ohm RTD, 2-Wire, Duct 18" w/o Box, Flange Only, 24" Black/Black Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | DO (D.) | 6" (E.) | 6'CL2P (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**DO** = Duct without Box (Mounting Flange Only) →	**DO**
E. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
F. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

FLEXIBLE AVERAGING

Multipoint Averaging Sensor, Platinum RTD

The ACI Platinum Flexible Averaging Series features an 18 AWG Plenum rated cable with Etched Teflon colored lead wires to differentiate the different sensor types. ACI recommends using 18 AWG lead wires to reduce external lead wire resistance when using a Platinum RTD. All sensors are manufactured with 4 or 9 sensing points determined by the length of the sensor. Averaging sensors provide a better average temperature of the air inside larger ducts when compared to that of a single point sensor. The flexible averaging sensors are limited to applications where operating temperatures are limited and where high humidity, chemical resistance and UV Light Air Treatment Systems aren't required. Each of the sensing elements is protected by a dual wall adhesive lined heat shrink tubing to provide a level of moisture protection to the sensing elements. The sensor length should be determined by the dimensional size of your duct. Standard enclosure options include a "-GD" Galvanized or "-PB" plastic duct enclosure with hinged cover. Each unit includes nylon wire ties and mounts for mounting. Optional copper capillary or universal plastic mounting clips, NEMA/IP rated enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed/Discharge or Supply/Return Air Monitoring, Data Centers, Hospitals

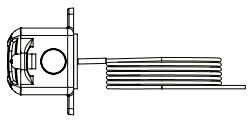
The ACI Platinum Flexible Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

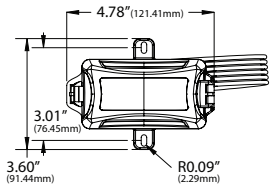
PRODUCT SPECIFICATIONS

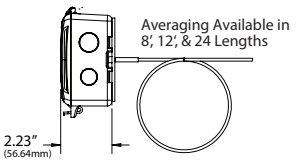
Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	**8' and 12' Models:** Four | **24' & 50' Models:** Nine
Number Wires:	**A/1K-2W-FA Series:** Two (Non-Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	1000 Ohms nominal
Sensor Tolerance:	+/- 0.06% Class A
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Accuracy @ 20ºC (68ºF):	**8'** = +/- 0.34ºC (+/- 0.62ºF) | **12'** = +/- 0.45ºC (+/- 0.81ºF) **24'** = +/- 0.80ºC (+/- 1.44ºF)
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	15 Seconds nominal
Self-Heating | Maximum Operating Current:	4 mW/ºC (Still Air) | 3 mA
Operating | Storage Temperature Range:	0 to 75ºC (32 to 167ºF) | -20 to 75ºC (-4 to 167ºF)
Operating Humidity Range:	10 to 90% RH, non-condensing
Enclosure Specifications (Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel; NEMA 1 (IP10); **"-PB" Enclosure**: ABS Plastic, UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Sensor Jacket Material | Cable Ratings:	Low Smoke PVC | CL2P or CMP Plenum Rated Cable
Sensor Cable Diameter:	0.170" (4.32mm) nominal
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Lead Wire Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING

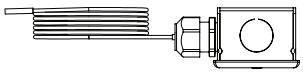
Plastic Box Enclosure [PB]

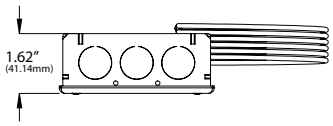


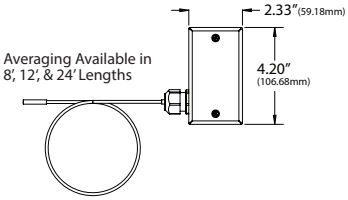




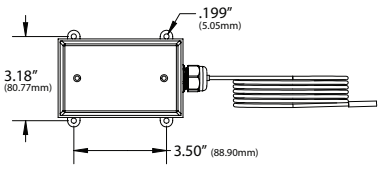
Galvanized Enclosure [GD]

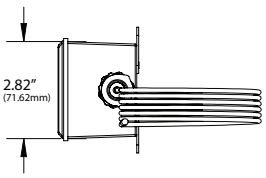


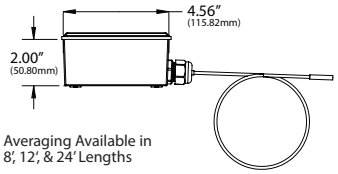




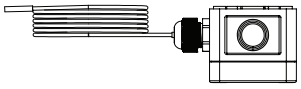
Bell Box Enclosure [BB]

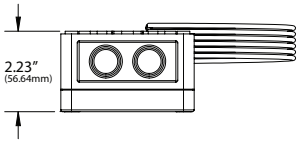


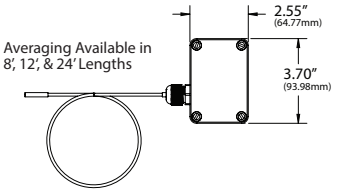




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | FA (D.) | 8' (E.) | GD (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K** = 1K Ohm Platinum RTD →	**1K**
C. Number of Wires *No Selection Required*	**2W** = Two Wires →	**2W**
D. Configuration *No Selection Required*	**FA** = Flexible Plenum Rated Cable Averaging Sensor →	**FA**
E. Sensor Length *Select One (1)*	**8'** = 8' (2.44m) | **12'**= 12'(3.66m) | **24'** = 24' (7.31m)	
F. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

FLUSH MOUNT BUTTONS

Brass, Stainless Steel & Plastic Platinum RTDs

The ACI Platinum Flush Mount Button Series features a stainless steel, brass or white plastic button sensor with Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect your sensor output. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. Sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensor and to increase response time using our high quality, thermally conductive epoxy. This sensor uses a small, low profile design and should be used in applications where aesthetics is one of your primary concerns. Each unit is supplied with a mounting kit to aid in the installation process so that they can be easily hidden or blended into the environment or space. Note that if painting the sensors, be sure to coat with as little paint as possible, to limit the effect on accuracy and responsiveness of the sensor. This series can be ordered with optional NIST Certificates as referenced in the product ordering grid.

Applications: Museums, Historical Buildings, Space Temperatures, Office Buildings, Schools, Retail, Remote Sensors, Commercial Spaces

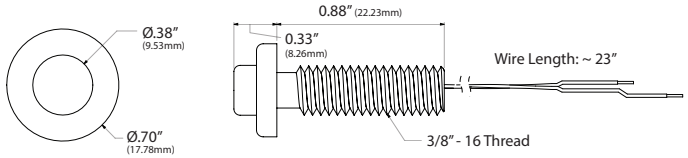
The Platinum Flush Mount Button Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

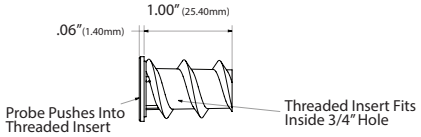
Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-XXX** and **A/1K-2W-XXX:** Two (Non-Polarity Sensitive) **A/100-3W-XXX** and **A/1K-3W-XXX:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-XXX:** 100 Ohms nominal | **A/1K-xW-XXX:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **70ºC (158ºF):** +/- 0.29ºC (+/- 0.53ºF) | **200ºC (392ºF):** +/- 0.55ºC (+/- 0.99ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/ºC (Still Air) | 3 mA
Button Sensor Enclosure Material:	**A/100/1K-BBS:** Brass | **A/100/1K-SBS:** 304 Stainless Steel | **A/100/1K-PBS:** ABS Plastic
Plastic Button "-PBS" Flammability Rating:	UL94-HB
Operating | Storage Temperature Range:	**A/100/1K-PBS:** -40 to 70ºC (-40 to 158ºF | -40 to 85ºC (-40 to 185ºF) **A/100/1K-BBS & A/100/1K-SBS:** -40 to 200ºC (-40 to 392ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	**A/100/1K-PBS:** 1.00" (25.4mm) x 0.750" (19mm) **A/100/1K-BBS** and **A/100/1K-SBS:** 1.20" (30.48mm) x 0.700" (17.78mm)
Product Weight:	**A/100/1K-PBS:** 0.06 lbs. (27.72g) | **A/100/1K-BBS & A/100/1K-SBS:** 0.12 lbs. (54.44g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

Brass & Stainless Button Sensor



Plastic Button Sensor



Front & Top / Right Views | **Spacers / Anchors**

STANDARD ORDERING

Model # Example: A/100-2W-PBS -OR- 129782

Model #	Item #	Description
A/100-2W-PBS	129782	100 Ohm RTD, 2-Wire, Plastic Button Sensor, 24" Leads, Brown/Brown Leads, Anchor
A/100-2W-BBS	135454	100 Ohm RTD, 2-Wire, Brass Button Sensor, 24" Leads, Brown/Brown Leads, Spacers & Brass Nut
A/100-2W-SBS	119980	100 Ohm RTD, 2-Wire, Stainless Button Sensor, 24" Leads, Brown/Brown Leads, Spacers & Brass Nut
A/100-3W-PBS	132081	100 Ohm RTD, 3-Wire, Plastic Button Sensor, 24" Leads, Brown/Brown/Black Leads, Anchor
A/100-3W-BBS	119984	100 Ohm RTD, 3-Wire, Brass Button Sensor, 24" Leads, Brown/Brown/Black Leads, Spacers & Brass Nut
A/100-3W-SBS	120060	100 Ohm RTD, 3-Wire, Stainless Button Sensor, 24" Leads, Brown/Brown/Black Leads, Spacers & Brass Nut
A/1K-2W-PBS	128969	1K Ohm RTD, 2-Wire, Plastic Button Sensor, 24" Leads, Black/Black Leads, Anchor
A/1K-2W-BBS	120261	1K Ohm RTD, 2-Wire, Brass Button Sensor, 24" Leads, Black/Black Leads, Spacers & Brass Nut
A/1K-2W-SBS	120372	1K Ohm RTD, 2-Wire, Stainless Button Sensor, 24" Leads, Black/Black Leads, Spacers & Brass Nut
A/1K-3W-PBS	142473	1K Ohm RTD, 3-Wire, Plastic Button Sensor, 24" Leads, Black/Black/White Leads, Anchor
A/1K-3W-BBS	142476	1K Ohm RTD, 3-Wire, Brass Button Sensor, 24" Leads, Black/Black/White Leads, Spacers & Brass Nut
A/1K-3W-SBS	131951	1K Ohm RTD, 3-Wire, Stainless Button Sensor, 24" Leads, Black/Black/White Leads, Spacers & Brass Nut

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) 100 (B.) 2W (C.) PBS (D.) NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**PBS** = Plastic Button | **BBS** = Brass Button | **SBS** = Stainless Steel Button	
E. NIST *Select One (1)*	**----** = No NIST Certification | **NIST** = NIST Certificate (3 Points)	

IMMERSION

Stainless Steel Immersion, Platinum RTD

The ACI Platinum Immersion Series features a stainless steel probe with Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that affects the sensor output. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase thermal response times using our high quality, thermally conductive epoxy. The immersion sensors "-I" include a welded thermowell but can be ordered without the thermowell "-INW" version. The "-INW" includes a standard ½" NPS process thread to be used with an optional machined thermowell or an existing thermowell application. Optional NEMA/IP rated weather proof enclosures and NIST Certificates are available as referenced on the back of the product data sheet.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressors, Chillers, Cooling Towers

The ACI Platinum Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

Disclaimer: Specification of any thermowell and the materials of construction are the sole responsibility of the designer of the system that incorporates the thermowell. Sole responsibility for ensuring compatibility of the process fluid with the system rests with the end user.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-I Series and A/1K-2W-I Series:** Two (Non-Polarity Sensitive) **A/100-3W-I Series and A/1K-3W-I Series:** Three (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-xW-I Series:** 100 Ohms nominal | **A/1K-xW-I Series:** 1000 Ohms nominal
Sensor Accuracy 0°C (32°F):	+/- 0.06% Class A (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/- 0.23°C (+/- 0.414°F) | **0°C (32°F):** +/- 0.15°C (+/- 0.27°F) **200°C (392°F):** +/- 0.55°C (+/- 1.00°F)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Sensor Operating Temperature Range:	-40 to 200°C (-40 to 392°F)
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40°C to 121°C (-40°F to 250°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30°C to 90°C (-22°F to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40°C to 121°C (-40°F to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40°C to 70°C (-40°F to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35mm) | 0.260"
Probe Material | Thermowell Material:	304 Stainless Steel | 304 Series Stainless Steel
Thermowell Instrument | Process Thread Size:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Fitting Thread Size:	½" NPS (National Pipe Straight) Male Thread
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"				
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**	**12.0" (304.8 mm)**	**18.0" (457.2 mm)**	**24" (609.6 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	73.6 ft/s (22.4 m/s)	19.4 ft/s (5.9m/s)	8.8 ft/s (2.7m/s)	5.2 ft/s (1.6m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	26.9 ft/s (8.2 m/s)	11.3 ft/s (3.4m/s)	4.7 ft/s (1.43m/s)	2.5 ft/s (0.8m/s)

Note 1: Values are for Air/Gas/Steam and similar density media based upon Max pressure of 2900 PSI @ 1000ºF (537.8ºC) | **Note 2:** Values are for Water (No Glycol or other Chemicals factored in) @ 68 ºF (20ºC) and max pressure of 5700 PSI. (Calculated to ASME PTC 19.3 TW-2016 Code B31.1) | **Note 3:** 6-24" Machined Thermowells meet ASME PTC 19.3 TW-2016 Code B31.1.

MAXIMUM PRESSURE VS TEMPERATURE RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Material:	70°F (21.1°C)	200°F (93.3°C)	400°F (204.4°C)	600°F (315.6°C)	800°F (426.7°C)	1000°F (537.8°C)	1200°F (648.9°C)
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.6 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

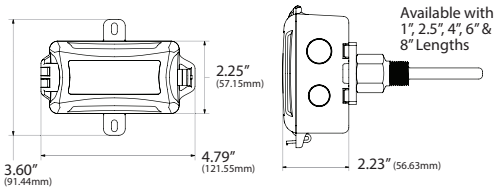
MAXIMUM FLUID VELOCITY RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/Steam and similar density media

DIMENSIONAL DRAWINGS. WEIGHTS

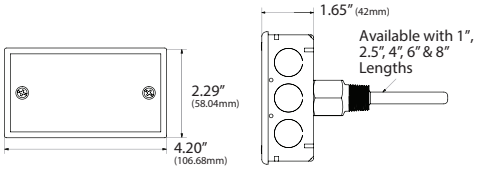
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-PB	0.20 lbs. (0.091 kg)	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs (0.163 kg)
A/xx-I-yy-PB	N/A	0.24 lbs. (0.109 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)	N/A
A/xx-IM-yy-PB	0.40 lbs. (0.182 kg)	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)	1.15 lbs (0.522 kg)

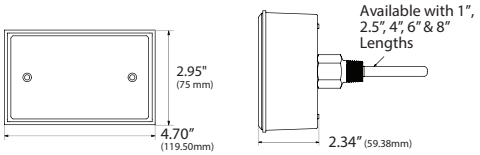
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-GD	0.62 lbs. (0.281 kg)	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.78 lbs (0.354 kg)
A/xx-I-yy-GD	N/A	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-GD	0.81 lbs. (0.367 kg)	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.55 lbs (0.703 kg)

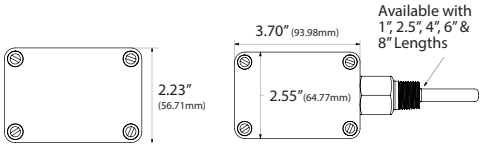
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-BB	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.80 lbs (0.363 kg)
A/xx-I-yy-BB	N/A	1.02 lbs. (0.463 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-BB	0.83 lbs. (0.376 kg)	1.02 lbs. (0.463 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.59 lbs (0.721 kg)

NEMA 4X Enclosure [4X]

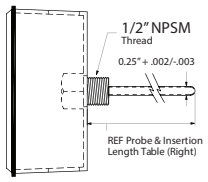


NEMA 4X Enclosure [4X] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-4X	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)	0.44 lbs (0.200 kg)
A/xx-I-yy-4X	N/A	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)	N/A
A/xx-IM-yy-4X	0.48 lbs. (0.218 kg)	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)	1.27 lbs (0.576 kg)

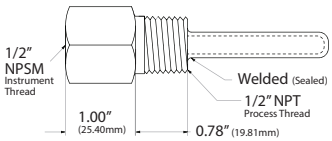
N/A = Not Available | **xx** = Sensor Type | **yy** = Insertion Length

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below : welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
3"	2.81" +/- 0.13"	A/xx-INW-1"-yy-zz	A/M1"
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/2.5" or A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/4" or A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/6" or A/M6"
10"	9.81" +/- 0.13"	A/xx-INW-8"-yy-zz	A/M8"
13"	12.75" +/- 0.13"	A/xx-INW-12"-yy-zz	A/M12"
19"	18.75" +/- 0.13"	A/xx-INW-18"-yy-zz	A/M18"
25"	24.75" +/- 0.13"	A/xx-INW-24"-yy-zz	A/M24"

CUSTOM ORDERING WELDED THERMOWELL

Model # Example: A/ | 1K | 2W | I | 1" | GD | NIST
A. B. C. D. E. F. G.

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD | **1K =** 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**I**=Immersion with Welded Thermowell	
E. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion	
F. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

CUSTOM ORDERING MACHINED THERMOWELL

Model # Example: A/ | 1K | 2W | IM | 1" | GD | NIST
A. B. C. D. E. F. G.

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD | **1K =** 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**IM**=Immersion with Machined Thermowell	
E. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion	
F. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

Note: Machined Thermowells with lengths of 12", 18" and 24" are available and must be ordered separately | See the Machined Thermowells Data Sheet (Accessories)

CUSTOM ORDERING SENSOR ONLY NO THERMOWELL

Model # Example: A/ | 1K | 2W | INW | 1" | GD | NIST
A. B. C. D. E. F. G.

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD | **1K =** 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**INW** = Immmersion without Thermowell	
E. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion | **12"** = 12" Insertion | **18"** = 18" Insertion | **24"** = 24" Insertion	
F. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTRE 2 oz Or 102595

Model #	Item #	Description
NSG Heat Transfer Paste 2 oz.	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG Heat Transfer Paste 16 oz.	140574	Thermal Grease, 16 oz. Jar, Silicon Free, -40 to 390°F (-40 to 198°C)
A/2.5"	128349	2.5" (63.5 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/4"	128350	4" (101.6 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/6"	128351	6" (152.4 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/M1"	128337	1" (25.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"	128338	2.5" (63.5 mm) Insertion, 304 Stainless, Machined , 1/2" NPT Thermowell
A/M4"	128343	4" (101.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M8"	138725	8" (203.2 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M12"	128339	12" (304.80 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M18"	128341	18" (457.20 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M24"	128342	24" (609.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5" - 316SS	128352	2.5" (63.5 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4" - 316SS	128353	4" (101.6 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6" - 316SS	128354	6" (152.4 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell

OUTSIDE AIR

Weatherproof Outside Air, Platinum RTD

The ACI Platinum Outside Air Series features a weather proof European style, plastic enclosure with twist off cover and water tight cord grip. The sensing element contains Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect your sensors output signal. ACI recommends the use of 18 AWG lead wires to reduce external lead wire resistance when using a Platinum RTD sensor. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensor and to increase response time using our high quality, thermally conductive epoxy. The outdoor air sensor is a single point sensor designed to be mounted under an eave or on the North side of a building in a shaded location with the sensing tube pointed downward. Optional NEMA 4X "-4X" plastic or NEMA 3R "-BB" weatherproof Aluminum enclosures and NIST Certificates are available as referenced on the back of the product data sheet. For Applications in which the sensor must be mounted in direct sunlight, please see the Sun Shield data sheet which will allow you to order a Temperature or Temperature/Humidity Combination sensor.

Applications: Outside Air Temperature Sensing, Cold Storage Facilities, High Dew Point/Condensing Environments

The ACI Platinum Outside Air Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

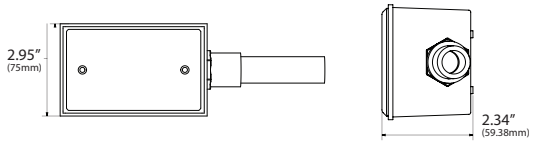
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-xx-O Series and A/1K-2W-xx-O Series:** Two (Non-Polarity Sensitive) **A/100-3W-xx-O Series and A/1K-3W-xx-O Series:** Three (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-xW-xx-O Series:** 100 Ohms nominal | **A/1K-xW-xx-O Series:** 1000 Ohms nominal
Sensor Accuracy @ 0°C (32°F):	+/- 0.06% Class A (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/- 0.23°C (+/- 0.414°F) | **0°C (32°F):** +/- 0.15°C (+/- 0.27°F) **70°C (158°F):** +/- 0.29°C (+/- 0.53°F)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	25 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/°C (Still Air) | 3 mA
Operating | Storage Temperature Range:	-40 to 70°C (-40 to 158°F) | -40 to 70°C (-40 to 158°F)
Operating Humidity Range:	10 to 100% RH, Condensing
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-EH" Enclosure:** PC/ASA Plastic w/ UV Protectant; -40 to 88°C (-40 to 190°F); UL94-V0 **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched (PTFE) Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions:	See Drawings on back of Data Sheet
Product Weight:	**A/100/1K-xx-O-EH:** 0.46 lbs. (0.21kg) | **A/100/1K-xx-O-4X:** 0.38 lbs. (0.17kg) **A/100/1K-xx-O-BB:** 0.76 lbs. (0.35kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type

Bell Box Enclosure [BB]



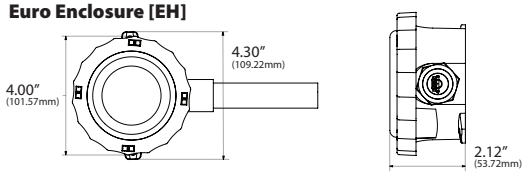
Front & Right Views | **Top View**

Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

Product Weight

Euro Enclosure [EH]



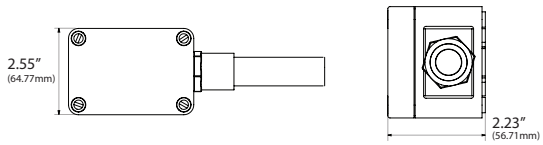
Front & Right Views | **Top View**

Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

Product Weight

NEMA 4X Enclosure [4X]



Front & Right Views | **Top View**

NEMA 4X Enclosure [4X] Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Product Weight

STANDARD ORDERING

Model # Example: A/100-2W-O-EH -OR- 125166

Model #	Item #	Description
A/100-2W-O-EH	125166	100 Ohm RTD, 2-Wire, Outside Air Sensor, Euro Enclosure, 14″ Brown/Brown Leads
A/100-2W-O-BB	119961	100 Ohm RTD, 2-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 14″ Brown/Brown Leads
A/100-2W-O-4X	135278	100 Ohm RTD, 2-Wire, Outside Air Sensor, NEMA 4X Weather Proof Enclosure, 14″ Brown/Brown Leads
A/100-3W-O-EH	125178	100 Ohm RTD, 3-Wire, Outside Air Sensor, Euro Enclosure, 14″ Brown/Brown/Black Leads
A/100-3W-O-BB	120044	100 Ohm RTD, 3-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 14″ Brown/Brown/Black Leads
A/100-3W-O-4X	120043	100 Ohm RTD, 3-Wire, Outside Air Sensor, NEMA 4X Weather Proof Enclosure, 14″ Brown/Brown/Black Leads
A/1K-2W-O-EH	125211	1K Ohm RTD, 2-Wire, Outside Air Sensor, Euro Enclosure, 14″ Black/Black Leads
A/1K-2W-O-BB	120315	1K Ohm RTD, 2-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 14″ Black/Black Leads
A/1K-2W-O-4X	119398	1K Ohm RTD, 2-Wire, Outside Air Sensor, NEMA 4X Weather Proof Enclosure, 14″ Black/Black Leads
A/1K-3W-O-EH	125216	1K Ohm RTD, 3-Wire, Outside Air Sensor, Euro Enclosure, 14″ Black/Black/White Leads
A/1K-3W-O-BB	142485	1K Ohm RTD, 3-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 14″ Black/Black/White Leads
A/1K-3W-O-4X	131776	1K Ohm RTD, 3-Wire, Outside Air Sensor, NEMA 4X Weather Proof Enclosure, 14″ Black/Black/White Leads

CUSTOM ORDERING

Model # Example: A/ (A.) 100 (B.) 2W (C.) O-EH (D.) NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Enclosure *Select One (1)*	**O-EH** = Euro Enclosure | **O-BB** = Aluminum Enclosure | **O-4X** = NEMA 4X Enclosure	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

PIPE MOUNT

Small Pipe/Coil Sensor, Platinum RTD

The ACI Platinum Pipe Mount Series features a 1.1" long Brass sensing element with a slight curvature on the bottom that is designed to increase the surface area and improve thermal conductivity between the pipe and sensor. Each sensor has two, 24 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect the sensor output. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor. The sensors are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to improve the thermal response times with our high quality, thermally conductive epoxy. The Pipe Mount sensor should be used on pipe or coil sizes from 1/2" to 1" in diameter. A 7.5" nylon wire tie is supplied for fastening the sensor to the top of the pipe. For best accuracy and increased conduction between the pipe and the sensor, we recommend that you clean the pipe before applying thermal grease between the mating surfaces and then to insulate the sensor from the external effects of the ambient air. An optional plenum rated cable and NIST Certificate can be ordered as referenced in the ordering grid.

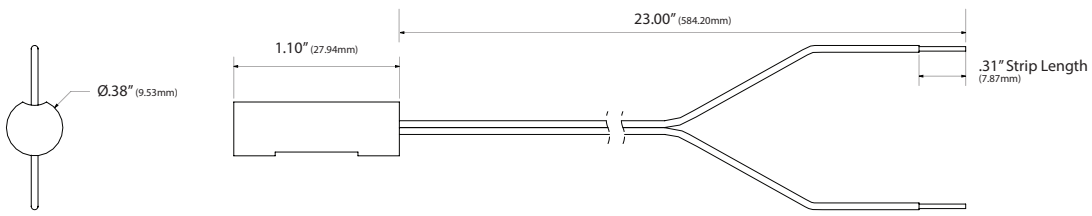
Applications: Cooling Coils, Heating Coils, Hot Water Systems, Chilled Water Systems, Hydronic Heating Systems, Chillers

The ACI Platinum Pipe Mount Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-PM Series and A/1K-2W-PM Series:** Two (Non-Polarity Sensitive) **A/100-3W-PM Series and A/1K-3W-PM Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-PM Series**: 100 Ohms nominal | **A/1K-xW-PM Series:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **200ºC (392ºF):** +/- 0.55ºC (+/- 0.99ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/ºC (Still Air) | 3 mA
Pipe Mount Sensor Enclosure Material:	Brass
Pipe Sizes Accepted:	½" (12.7mm) to 1" (25.4mm)
Operating | Storage Temperature Range:	-40 to 200ºC (-40 to 392ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.10" (27.9mm) x 0.375" (9.53mm)
Product Weight:	0.06 lbs. (27.22g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/100-2W-PM -OR- 138646

Model #	Item #	Description
A/100-2W-PM	138646	100 Ohm Platinum, 2-Wire, Pipe Mount, 24" Brown/Brown Leads
A/100-3W-PM	142484	100 Ohm Platinum, 3-Wire, Pipe Mount, 24" Brown/Brown/Black Leads
A/1K-2W-PM	138643	1K Ohm Platinum, 2-Wire, Pipe Mount, 24" Black/Black Leads
A/1K-3W-PM	142483	1K Ohm Platinum, 3-Wire, Pipe Mount, 24" Black/Black/White Leads

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | PM (D.) | 20' (E.) | (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**PM** = 1.1" Brass Pipe Mount Sensor →	**PM**
E. Lead Length *Select One (1)*	**----** = Standard (24" Etched Teflon) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet* (6.10m)	
F. Lead Wire Type *Select One (1)*	**----** = Standard (24" Teflon Colored Leads) | **CL2P** = Plenum Rated Cable	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: HARDWARE, 2" HOSE CLAMP -OR- 100235

Model #	Item #	Description
HARDWARE, 2" HOSE CLAMP	100235	Hardware, 2" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

PROBE ONLY

Stainless Steel Prode, Platinum RTD

The ACI Platinum Probe Only Series features a ¼" diameter stainless steel probe with two or three, 14 or 24 inch, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect your sensor output. ACI recommends the use of an 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. The probe is designed to be used in duct and immersion applications when used with the proper length thermowell. Optional lead length, cable types and NIST Certificates are available as referenced in the ordering grid on the Product Data Sheet.

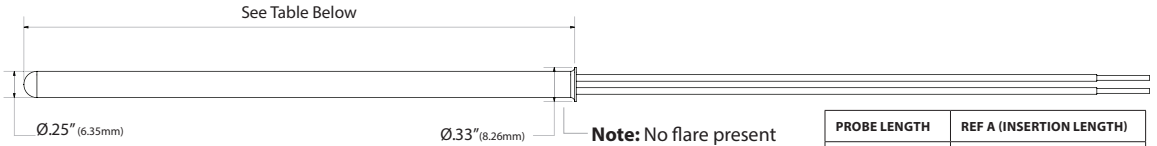
Applications: Roof Top Units, Air Handlers, Supply/Discharge Air/Return/Mixed/Exhaust Air Duct Temperature Sensing, Immersion Temperature Sensors, Replacement Temperature Sensors, Hydronic Water Systems

The ACI Platinum RTD Probe Only Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:		Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:		One
Number Wires:		**A/100-2W-PO-XX" Series** and **A/1K-2W-PO-XX Series:** Two (Non-Polarity Sensitive) **A/1K-2W-PO-XX" Series** and **A/1K-3W-PO-XX Series:** Three (Polarity Sensitive)
Sensor Output @ 0°C (32°F):		**A/100-xW-PO Series:** 100 Ohms nominal | **A/1K-xW-PO Series:** 1000 Ohms nominal
Sensor Accuracy @ 0°C (32°F):		+/- 0.06% Class A **(Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/- 0.23°C (+/- 0.414°F) **| 0°C (32°F):** +/- 0.15°C (+/- 0.27°F) **| 200°C (392°F):** +/- 0.55°C (+/- 0.99°F)
Din Standard | Temperature Coefficient:		DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:		+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):		8 Seconds nominal
Self-Heating | Maximum Operating Current:		**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/°C (Still Air) | 3 mA
Operating | Storage Temperature Range:		-40 to 200°C (-40 to 392°F) | -40 to 85°C (-40 to 185°F)
Operating Humidity Range:		10 to 95% RH, non-condensing
Probe Material:		304 Stainless Steel
Standard Wire	**Lead Wire Insulation | Wire Rating:**	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
	Temperature Rating:	-55°C (-67°F) to 200°C (392°F)
	Conductor Material:	Silver Plated Copper
	Rated Application:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
	Lead Length | Conductor Size:	**4", 6" and 8" Probes:** 14" (35.6 cm) | **12" and 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Plenum Wire	**Lead Wire Insulation | Wire Rating:**	**CL2P:** FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS
	Temperature Rating:	**CL2P:** -80°C (-112°F) to 150°C (302°F)
	Conductor Material:	**CL2P:** Tinned Copper
	Rated Application:	**CL2P:** Suitable for Indoor and Outdoor (wet) locations. Oil, Gas, Sunglight, Abrasion Acid Resistant
Product Dimensions | Probe Diameter:		See table on back of product data sheet | 0.250" (6.35mm)
Product Weight:		**4"** = 0.028 lbs. (12.7g) | **6"** = 0.036 lbs. (16.3g) | **8"** = 0.044 lbs. (20g) | **12"** = 0.066 lbs. (29.9g) | **18"** = 0.09 lbs. (40.8g)
Agency Approvals:		CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Note: No flare present on 6" and under

PROBE LENGTH	REF A (INSERTION LENGTH)
2"	2.00" ± 0.13"
4"	4.00" ± 0.13"
6"	6.00" ± 0.13"
8"	8.00" ± 0.13"
12"	12.00" ± 0.25"
18"	18.00" ± 0.25"

Standard View

CUSTOM ORDERING

MODEL # EXAMPLE: A/ (A.) | 1K (B.) | 2W (C.) | PO (D.) | 4" (E.) | 6' CL2P (F.) | NIST (G.)

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD **| 1K =** 1000 Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W =** Two Wires | **3W =** Three Wires	
D. Configuration *Select One (1)*	**PO =** Probe Only →	**PO**
E. Probe Length *Select One (1)*	**2"** = 2" Probe | **4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
F. Lead Wire Options *Select One (1)*	---- = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
G. NIST *Select One (1)*	**---- =** No NIST Certificate **| NIST =** NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

RAW POTTED

Remote Sensing Plastic Cap, Platinum RTD

The ACI Platinum Raw Series features a one inch long, ¼" diameter plastic cup with two or three, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered if using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect your sensors output signal. For best results, ACI recommends the use of an 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor. The sensors in this series are manufactured using ACI's proven manufacturing process to eliminate the effects of moisture upon the sensors and increased thermal response times using our high quality, thermally conductive epoxy. The raw sensor configuration is designed to monitor air temperatures and should not be fully submerged in liquid. This series can be ordered with optional NIST Certificate or plenum rated cable as shown in the ordering grid on the back of the product data sheet. All additional wire specifications can be found on our products download page on-line. Please contact ACI for more information regarding this product or to discuss your application in further detail. Other options may be available upon request.

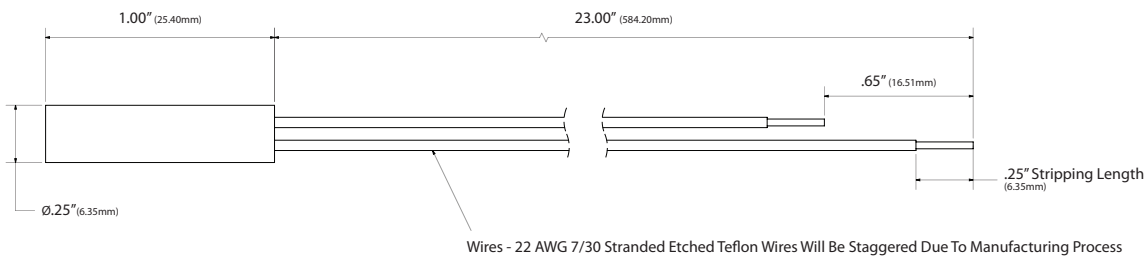
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing

The ACI Platinum Raw Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-W Series** and **A/1K-2W-W Series:** Two (Non-Polarity Sensitive) **A/100-3W-W Series** and **A/1K-3W-W Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-W Series:** 100 Ohms nominal | **A/1K-xW-W Series:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **200ºC (392ºF):** +/- 0.55ºC (+/- 0.99ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm | ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/ºC (Still Air) | 3 mA
Cup Plastic Material:	Glass Filled, Flame Retardant, Diallyl Ortho Phthalate
Cup Flammability Rating | NASA Outgassing Tests:	UL94-V0 | Passed NASA Outgassing Tests
Cup MIL-M-14, ASTM D-5948-96:	Type SDG-F
Operating | Storage Temperature Range:	-40 to 200ºC (-40 to 392ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (0.61m) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)
Product Weight:	0.06 lbs. (27.22g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/100-2W-W -OR- 119981

Model #	Item #	Description
A/100-2W-W	119981	100 Ohm RTD, 2-Wire, Raw, 24" Leads, 1" Cup, Brown/Brown Leads
A/100-3W-W	120061	100 Ohm RTD, 3-Wire, Raw, 24" Leads, 1" Cup, Brown/Brown/Black Leads
A/1K-2W-W	120373	1K Ohm RTD, 2-Wire, Raw, 24" Leads, 1" Cup, Black/Black Leads
A/1K-3W-W	----	1K Ohm RTD, 3-Wire, Raw, 24" Leads, 1" Cup, Black/Black/White Leads

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | W (D.) | 20' (E.) | CL2P (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**W** = 1" Plastic Cup →	**W**
E. Lead Length *Select One (1)*	**6'** = 6 Feet (1.83m) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet (6.10m)**	
F. Lead Wire Type *No Selection Required*	**CL2P** = 2 Conductor FEP/FEP Plenum Rated Cable →	**CL2P**
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: ¼" Mount Clip -OR- 108169

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
¼" Mount Clip	108169	Hardware, ¼" Mounting Clip	●	
¼" U-Mount CL	100090	Hardware, ¼" U-Mounting Clip Adhesive		●

RIGID AVERAGING

Continuous Averaging, Platinum RTD

The ACI Platinum Rigid Averaging features a stainless steel probe with Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that affects the accuracy of your sensor output. ACI recommends the use of 18 AWG lead wires to reduce external lead wire resistance when using a Platinum RTD. The rigid averaging sensors include a continuous sensing element, which covers the entire length of the probe. This allows for a better average temperature over the entire length of the sensor when compared to that of a single point duct sensor or multi-point averaging sensor. These sensors are hermetically sealed with epoxy to ensure that moisture and other contaminants can't affect the sensing element. The Rigid Averaging sensor also includes a foam pad to seal the duct and dampen vibrations once installed. The sensor length should be determined by the width or diameter of your duct such that the sensor covers most of the internal width or height of the duct. Our standard enclosure options include the "-GD" galvanized or "-PB" plastic duct enclosure with hinged cover. On larger ducts, our Platinum bendable copper averaging sensor can be used for larger ducts and increased coverage area. This series can be ordered with optional NEMA/IP rated weather proof enclosures and NIST Certificates as referenced in the ordering grid.

Applications: Roof Top Units, Air Handlers, Monitoring Duct Supply/Discharge/Return/Mixed Air Temperatures

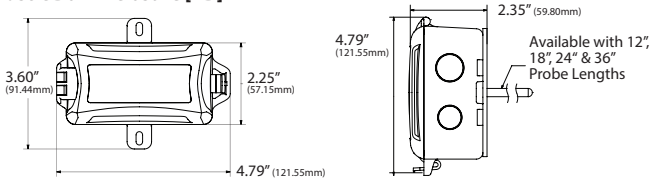
The ACI Platinum Rigid Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	Continuous
Number Wires:	**A/1K-2W-RA-xx":** Two (Non-Polarity Sensitive) | **A/1K-3W-RA-xx":** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	1000 Ohms nominal
Sensor Accuracy:	+/- 0.1% @ 0ºC (32ºF) | +/- 0.25% @ 21ºC (70ºF) | +/- 1.0% @ 130ºC (266ºF)
Temperature Coefficient:	3850 ppm / ºC
Response Time (63% Step Change):	15 Seconds nominal
Sensor Operating Temperature Range:	-40 to 135ºC (-40 to 275ºF)
Enclosure Specifications (Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115ºC (-40 to 239ºF); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90ºC (-22 to 194ºF); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** -40 to 115ºC (-40 to 239ºF); Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material:	304 Series Stainless Steel
Probe Diameter:	0.250" (6.35mm)
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data Sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



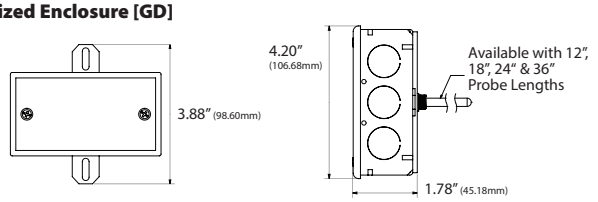
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

Galvanized Enclosure [GD]

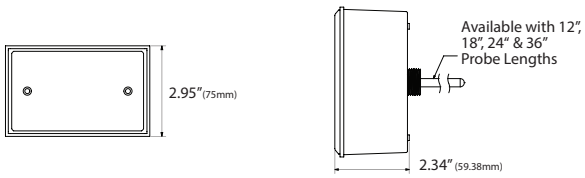


Galvanized Enclosure [GD] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

Bell Box Enclosure [BB]

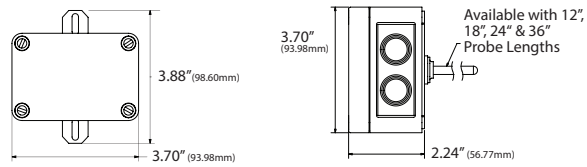


Bell Box Enclosure [BB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K (B.) | 2W (C.) | RA (D.) | 36" (E.) | GD (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**1K** = 1K Ohm Platinum RTD →	1K
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**RA** = Rigid Averaging Sensors →	RA
E. Probe Length *Select One (1)*	**12"** = 12" (30.5 cm) Probe | **18"** = 18" (45.72 cm) Probe | **24"** = 24" (61 cm) Probe **36"** = 36" (91.45 cm) Probe	
F. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ROOM

Wall Mount Enclosure, Platinum RTD

The ACI Platinum Room Series combines flexibility with attractive styling in our "-R2" or "-R" style enclosures which include four-way air flow design too minimize self-heating to the sensor. These enclosures are offered in a White "-R2" or Beige "-R" color depending on enclosure style and designed to be mounted over a single gang junction box or hole in the wall using drywall anchors. An optional LCD Display is available in the Beige "-R" style enclosure. Screw terminal blocks are provided for making connections to your building management system. An optional 1/8" Black foam pad with pressure sensitive adhesive is available to insulate the sensor from thermal drafts within the wall or wall surface temperature. A 1/16" Hex driver can be used to secure the cover from being easily removed. The "LCD" option uses two temperature sensors to monitor the ambient air temperature in the space and is factory calibrated at a single point.

Applications: Space Temperature Sensing, Office Buildings, Schools, Colleges, Commercial Buildings, OEM Opportunities

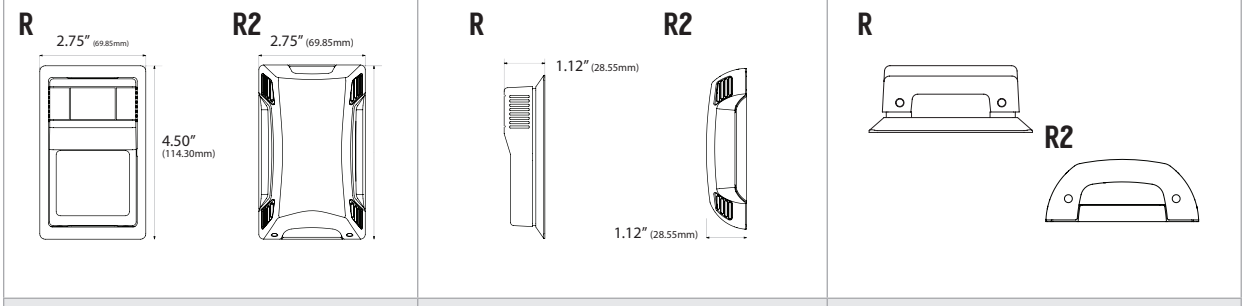
The ACI Platinum Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD **|** PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Sensor Terminals:	**A/100-2W Series** and **A/1K-2W Series:** Two (Non-Polarity Sensitive) **A/100-3W Series** and **A/1K-3W Series:** Three (Polarity Sensitive)
Sensor Output @ 32°F (0°C):	**A-100-xW Series:** 100 Ohms **| A/1K-xW Series:** 1000 Ohms Nominal
Sensor Accuracy @ 32°F (0°C):	+/- 0.06% Class A (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C **0°C (32°F):** +/- 0.15°C (+/- 0.27°F) **| 50°C (122°F):** +/- 0.25°C (+/- 0.45°F)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) **|** 3850 ppm/°C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	8 Seconds Nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) **|** 5 mA **| 1K Ohm RTD:** 4 mW/°C (Still Air) **|** 3 mA
LCD Display Supply Voltage:	+9 to 35 VDC / 24 VAC (50/60 Hz)
LCD Display Supply Current/VA:	<4 mA / 0.12VA
LCD Display Accuracy:	+/- 2°F or +/- 2°C @ 71°F (21.5°C) Typical
LCD Display Descriptor | Number of Digits:	°F (Fahrenheit) or °C (Celsius) **|** 3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Set Point Specifications | Set Point Indication:	See Ordering Grid Options on back of Product Data Sheet
Set Point Tolerance:	+/- 10% of Range
Override Options:	Short Thermistor (Default); Field (Jumper) Selectable "Dry Contact" Closure (Separate Input); Short Set Point available upon request
Operating | Storage Temperature Range:	1.5 to 50°C (35 to 122°F) **| Non-LCD:** -40 to 65°C (-40 to 149°F) **| LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) **|** 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum) **|** 0.6 Nm (Maximum)
Enclosure Material | Flammability Rating | Color:	**"-R2" Enclosure:** ABS Plastic, UL94-HB, White **| "-R" Enclosure:** ABS Plastic, UL94-HB, Beige
Product Dimensions:	See Drawing on back of Product Data Sheet
Product Weight:	**A/1K-2W/3W-R/RS/RO Series:** 0.14 lbs. (63.5g) **| A/1K-2W/3W-RSO Series:** 0.18 lbs. (81.6g) **|** **A/1K-2W/3W-R2/R2S/R2O Series:** 0.16 lbs. (72.6g) **| A/1K-2W/3W-R2SO Series:** 0.20 lbs. (90.7g) **|** **A/1K-2W/3W-RSO-RJ6-LCD Series:** 0.18 lbs. (81.6g) **|** **All LCD Display Units:** 0.18 lbs. (81.6g)
Agency Approvals:	CE**, RoHS2, WEEE

Note:** All LCD Display Units are not CE Compliant, but they are RoHS2 Compliant

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model #	Item #	Description
A/100-2W-R	144136	100 Platinum RTD (2 Wire), "R" Version, Beige, No Options
A/100-2W-R2	144138	100 Platinum RTD (2 Wire), "R2" Version, White, No Options
A/100-3W-R	144137	100 Platinum RTD (3 Wire), "R" Version, Beige, No Options
A/100-3W-R2	144139	100 Platinum RDT (3 Wire), "R2" Version, White, No Options
A/1K-2W-R	144154	1K Platinum RTD (2 Wire),"R" Version, Beige, No Options
A/1K-2W-R2	144156	1K Platinum RTD (2 Wire), "R2" Version, White, No Options
A/1K-3W-R	144155	1K Platinum RTD (3 Wire), "R" Version, Beige, No Options
A/1K-3W-R2	144157	1K Platinum RTD (3 Wire), "R2" Version, White, No Options

CUSTOM ORDERING

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD **| 1K =** 1K Ohm Platinum RTD	
C. Configuration *Select One (1)*	**R** = Room **| RO** = Room with Override **| RS** = Room with Set Point **|** **RSO** = Room with Setpoint and Override **| R2** = Room **| R2O** = Room with Override **|** **R2S** = Room with Set Point **| R2SO** = Room with Set Point and Override	
D. Communication Jack *Select One (1)*	**----** = No Jack **RJ4** = 4 Pin 4 Conductor RJ9, RJ10 or RJ22 Style Head Set Modular Connector **RJ6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **232** = 3.5mm (1/8") Stereo Jack	
E. LCD Display[2] *Select One (1)*	**----** = No LCD Display **| LCD**[2] = With LCD Display (Only Available with "R" Style Enclosure)	
F. LCD Display Descriptor *Select One (1)*	**F =** °F (Fahrenheit) **| C =** °C (Celsius)	
G. NIST[3] *Select One (1)*	**---- =** No NIST Certificate **| NIST =** NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Slidepots[4] *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A01 =** 0 to 100K **| A02 =** 0 to 20K **| A03 =** 0 to 10K **| A08 =** 1K to 11K **| A09 =** 0 to 2K **|** **A10 =** 0 to 1K **| A12 =** 0 to 400 **| A16 =** 0 to 5K **| A28 =** 806 to 1206 **|** **A32 =** 900 to 1300 **Reverse Acting** *(Range in Ohms)* **A14 =** 10K to 0	
2. Setpoint Indication *Select One (1)*	**A3 =** 18-28 DEG C **| A4 =** 20-30 DEG C **| B4 =** 55-85 DEG F **| B7 =** 60-90 DEG F **|** **C5 =** COOL/WARM **| C6 =** COOLER/WARMER **| D3 =** WARM/COOL **|** **G5 =** BLUE/RED (R2 Enclosure)	

Note[1]**:** A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI **| Note**[2]**:** LCD Display is not compatible with NIST **| Note**[3]**:** NIST is available in "R" and "R2" only configurations **| Note**[4]**:** Other Setpoint configurations are available. Please contact ACI **| Note*:** Short Sensor is factory default, but the Dry Contact option is field selectable with jumper shunts included

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige (“R”)
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White (“R”)
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White (“R2”)
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

STRAP ON

Non-Intrusive Pipe Mount, Platinum RTD

The ACI Platinum Strap-On Series features a 1.5" square copper plate with the sensor encapsulated to the back side of the copper plate to improve the thermal conductivity between the pipe and sensor. Each sensor has Etched Teflon colored lead wires to differentiate the different sensor types. The three-wire "-3W" option should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for any external lead wire resistance that will affect your sensors output signal. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD sensor. Sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensor as well as to improve thermal response times with our high quality, thermally conductive epoxy. Strap-On sensors can be used to monitor pipe sizes from 1 ¼" to 10" in diameter. ACI recommends to clean the pipe before applying thermal grease and installing the sensor before finally insulating the sensor from the effects of the ambient air. Optional Weather Proof enclosures and NIST Certificates are available as referenced on the back of the Product Data Sheet.

Applications: Cold Water Systems, Hot Water Systems, Retrofit applications, Hydronic Heating Systems, Chillers

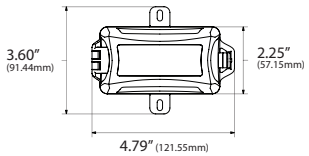
The ACI Platinum Strap-On Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

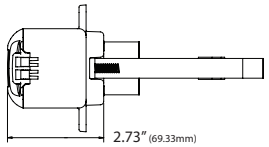
PRODUCT SPECIFICATIONS

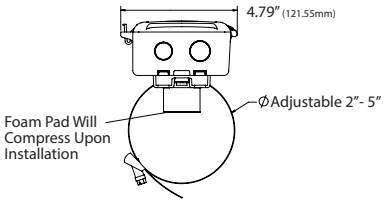
Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-S Series** and **A/1K-2W-S Series**: Two (Non-Polarity Sensitive) **A/100-3W-S Series** and **A/1K-3W-S Series:** Three (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-xW-S Series:** 100 Ohms nominal | **A/1K-xW-S Series:** 1000 Ohms nominal
Sensor Accuracy @ 0°C (32°F):	+/- 0.06% Class A (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/- 0.23°C (+/- 0.41°F) | **0°C (32°F):** +/- 0.15°C (+/- 0.27°F) **93°C (200°F):** +/- 0.34°C (+/- 0.61°F)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	30 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/°C (Still Air) | 3 mA
Enclosure Specifications (Operating Temperature Range, Flammability, NEMA/IP Rating):	**A/100/1K-S-GD:** Galvanized Steel, -40 to 93°C (-40 to 200°F), NEMA 1 (IP 10) **A/100/1K-PB:** ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **A/100/1K-S-4X:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Acceptable Pipe Size:	**A/100/1K-S-XX:** 1 1/4" (32mm) to 4" (100mm) | **A/100/1K-S10-XX:** 2" (50mm) to 10" (250mm)
Foam Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HF1; MIL-R-6130C; FMVSS-302
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions:	See Drawing on Back of Data Sheet
Product Weight:	**A/100/1K-XX-GD:** 0.81 lbs. (0.37kg) | **A/100/1K-XX-PB:** 0.41 lbs. (0.19kg); **A/100/1K-XX-4X:** 0.56 lbs. (0.25kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

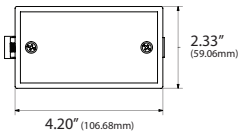
Plastic Box Enclosure [PB]

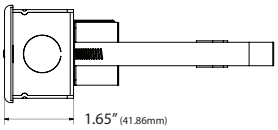


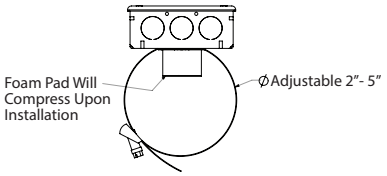




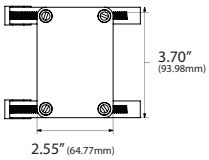
Galvanized Enclosure [GD]

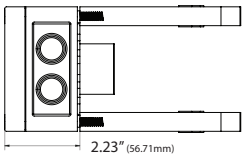


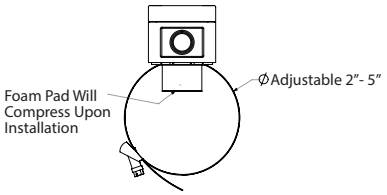




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A100-2W-S-GD -OR- 119447

Model #	Item #	Description
A/100-2W-S-GD	119447	100 Ohm RTD, 2-Wire, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 14" Brown/Brown Leads
A/100-2W-S-PB	135211	100 Ohm RTD, 2-Wire, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 14" Brown/Brown Leads
A/100-3W-S-GD	119468	100 Ohm RTD, 3-Wire, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 14" Brown/Brown/Black Leads
A/100-3W-S-PB	124218	100 Ohm RTD, 3-Wire, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 14" Brown/Brown/Black Leads
A/1K-2W-S-GD	119549	1K Ohm RTD, 2-Wire, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 14" Black/Black Leads
A/1K-2W-S-PB	124202	1K Ohm RTD, 2-Wire, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 14" Black/Black Leads
A/1K-3W-S-GD	119571	1K Ohm RTD, 3-Wire, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 14" Black/Black/White Leads
A/1K-3W-S-PB	142480	1K Ohm RTD, 3-Wire, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 14" Black/Black/White Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | 100 (B.) | 2W (C.) | S (D.) | PB (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**S** = Strap-On (1.25" to 4" Pipe Size) | **S10** = Strap-On (2" to 10" pipe size)	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **4X** = NEMA 4X Weather Proof	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/HOSE CLAMP-2-12" -OR- 142631

Model #	Item #	Description
A/HOSE CLAMP-2-5"	142630	Hardware, 2-5" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
A/HOSE CLAMP-2-12"	142631	Hardware, 2-12" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

WALL PLATES

Stainless & Aluminum Wall Plate, Platinum RTD

The ACI Platinum Wall Plate Series features a decorative Stainless Steel or Aluminum wall plate with two or three Teflon colored lead wires to differentiate between the different sensor types. All three-wire "-3W" sensors should be ordered when using with a 3-Wire temperature transmitter or sensor configuration on your building management system or PLC (Programmable Logic Controller). The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor. ACI recommends the use of 18 AWG lead wires to reduce the effect of external lead wire resistance when using a Platinum RTD. The sensors in this series are manufactured using ACI's double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response using our high quality, thermally conductive epoxy. A foam pad is included to insulate the sensor from thermal drafts within the wall. All wall plates are will provide a level of security and protection to the sensor when mounted over a single gang junction box or hole in the wall with the use of drywall anchors. Tamper Proof mounting screws, screw driver bits and NIST Certificates are available as referenced on the back of the data sheet. Other options including override and communication jacks may be available upon request.

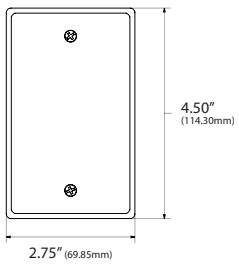
Applications: Ambient Air/Space Temperature Sensing, Tamper Proof/Secure Applications, Schools, Gymnasiums, Office Buildings, Hallways

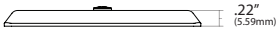
The ACI Platinum Wall Plate Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-xP Series** and **A/1K-2W-xP Series:** Two (Non-Polarity Sensitive) **A/100-3W-xP Series** and **A/1K-3W-xP Series:** Three (Polarity Sensitive)
Sensor Output @ 0ºC (32ºF):	**A/100-xW-xP Series:** 100 Ohms nominal | **A/1K-xW-xP Series:** 1000 Ohms nominal
Sensor Accuracy @ 0ºC (32ºF):	+/- 0.06% Class A (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC) **-40ºC (-40ºF):** +/- 0.23ºC (+/- 0.414ºF) | **0ºC (32ºF):** +/- 0.15ºC (+/- 0.27ºF) **71ºC (160ºF):** +/- 0.292ºC (+/- 0.53ºF)
Din Standard | Temperature Coefficient:	DIN EN 6075 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	25 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4mW/ºC (Still Air) | 3 mA
Operating | Storage Temperature Range:	-40 to 71ºC (-40 to 160ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Plate Material:	**A/100/1K-SP Series:** 430 Stainless Steel (Brushed Stainless Steel Finish) **A/100/1K-AP Series:** Aluminum (Smooth Satin Finish, Clear Anodized)
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMVSS-302
Lead Length | Conductor Size:	14" (35.56cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (L x W x D):	4.50" (114.3mm) x 2.78" (70.6mm) x 0.187" (4.76mm)
Product Weight:	**A/100/1K-SP Series:** 0.15 lbs. (68.04g) | **A/100/1K-AP Series:** 0.09 lbs. (40.82g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING





Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/100-2W-SP -OR- 119979

Model #	Item #	Description
A/100-2W-SP	119979	100 Ohm RTD, 2-Wire, Stainless Wall Plate, 14" Brown/Brown Leads, 1/8" Foam Pad
A/100-3W-SP	120059	100 Ohm RTD, 3-Wire, Stainless Wall Plate, 14" Brown/Brown/Black Leads, 1/8" Foam Pad
A/1K-2W-SP	120368	1K Ohm RTD, 2-Wire, Stainless Wall Plate, 14" Black/Black Leads, 1/8" Foam Pad
A/1K-3W-SP	142479	1K Ohm RTD, 3-Wire, Stainless Wall Plate, 14" Black/Black/White Leads, 1/8" Foam Pad

CUSTOM ORDERING

Model # Example: A/ (A.) 100 (B.) 2W (C.) SP (D.) NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**SP** = 1 Gang Stainless Steel Wall Plate | **AP** = 1 Gang Aluminum Wall Plate	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/TAMPER PROOF SCREWS -OR- 144865

Model #	Item #	Description
A/TAMPER PROOF SCREWS	144865	Two (2) Screws, Tamper Proof, #6 x 5/8", Zinc Plated, Flat Head, 1/8"
SCREWDRIVER INSERT BIT	143067	Screwdriver Bit, Tamper Proof Screw, 5/64

BULLET PROBE

1" Bullet Probe, Nickel RTD

The ACI Nickel Bullet Probe Series features a one inch stainless steel probe with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. The bullet style sensor is designed to be used to monitor air temperatures and should not be fully submerged in water. This series can be ordered with different wire options and NIST Certification as referenced in the Ordering grid on the back of the product data sheet.

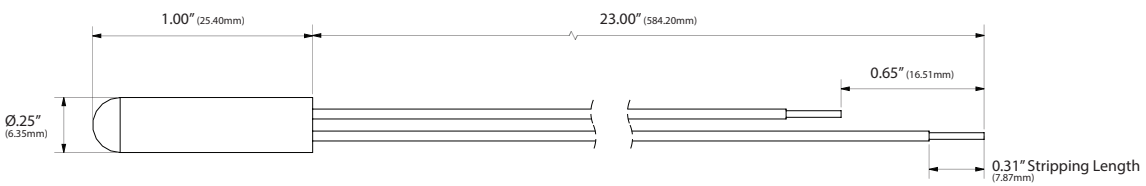
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing

The ACI Nickel Bullet Probe Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F)) **54.4°C (130°F):** +/- 0.56°C (1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Probe Material:	304 Stainless Steel
Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)
Product Weight:	0.02 lbs. (9.07g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/1K-NI-BP -OR- 120490

Model #	Item #	Description
A/1K-NI-BP	120490	1K Nickel Bullet Probe, 24" (61.0 cm) (Leads, 1" Probe
A/1K-NI-BP-10'CL2P	130028	1K Nickel Bullet Probe, 10' (3.05m) CL2P Plenum Leads, 1" Probe
A/1K-NI-BP-20'CL2P*	131900	1K Nickel Bullet Probe, 20' (6.10m) CL2P Plenum Leads, 1" Probe
A/1K-NI-BP-20'Z*	130472	1K Nickel Bullet Probe, 20' (6.10m) Zip Cord Leads, 1" Probe

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | BP (C.) | 6'CL2P (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *No Selection Required*	**BP** = 1" Stainless Steel Probe →	**BP**
D. Lead Wire Type *Select One (1)*	**----** = Standard 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/MOUNTING U-CLIP-1/4" -OR- 143352

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

COPPER AVERAGING

Bendable Copper, Nickel RTD

The ACI Nickel Copper Averaging Series features a bendable copper sensing element with two colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured with multiple sensing points determined by the length of the sensing element. Averaging sensors provide a more accurate average temperature of the air inside large ducts when compared to that of a single point sensor. Each of the elements is hermetically sealed to prevent moisture intrusion and includes an integrated foam pad to seal the duct and dampen vibrations. The benefits of copper sensing elements are that they have improved thermal conductivity and higher corrosion resistance when compared to similar aluminum style sensors. Copper has also been proven to provide an additional antibacterial effect to many of the airborne contaminants, molds and bacteria found in duct systems. Sensor lengths should be selected based upon the dimensional area of your duct. ACI's standard enclosures include the "-GD" Galvanized or "-PB" plastic box with hinged cover. Each unit includes nylon wire ties and mounts for mounting. Optional copper capillary and universal mounting clips, NEMA/IP rated weather proof enclosures and NIST Certificates are also available.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

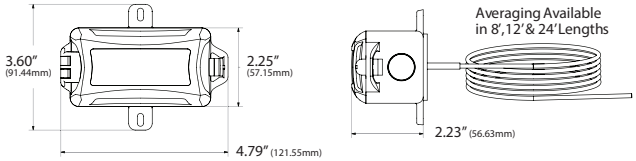
The ACI Nickel Copper Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)	
Number Sensing Points:	**8' & 12' Lengths:** Four | **24' Length:** Nine	
Number Wires:	Two (Non-Polarity Sensitive)	
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red	
Sensor Accuracy:	**8' & 12' Lengths:** +/- 0.31°C (+/- 0.56°F) @ 21.1°C (70°F) +/- 0.71°C (+/- 1.28°F) @ 54.4°C (130°F)	**24' Lengths:** +/- 0.41°C (+/- 0.74°F) @ 21.1°C (70°F) +/- 0.87°C (+/- 1.56°F) @ 54.4°C (130°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C	
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)	
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA	
Response Time (63% Step Change):	8 Seconds nominal	
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40°C to 115°C (-40°F to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30°C to 90°C (-22°F to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40°C to 115°C (-40°F to 239°F), NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40°C to 70°C (-40°F to 158°F), UL94-V2, NEMA 4X (IP 66)	
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)	
Sensor Operating Temperature Range:	-40 to 250°F (-40 to 121°C)	
Operating Humidity Range:	10 to 95% RH, non-condensing	
Sensing Element Material | Element Diameter:	Copper | 0.210" (5.34mm) nominal	
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB	
Foam Pad Material | Flammability Ratings:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C	
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Ratings:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Conductor Material:	Silver Plated Copper	
Product Dimensions | Product Weight:	See table on back of Product Data sheet	
Agency Approvals:	RoHS2, WEEE	

DIMENSIONAL DRAWING. WEIGHTS

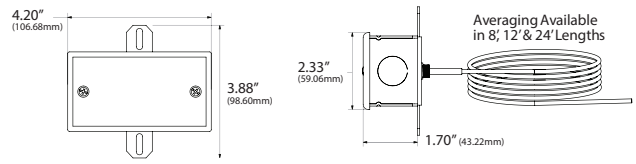
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI MODEL #	8' (PROBE LENGTH)	12' (PROBE LENGTH)
A/xx-A-yy-PB	0.72 LBS. (0.327 KG)	0.96 LBS. (0.435 KG)
ACI MODEL #	**24' (PROBE LENGTH)**	
A/xx-A-yy-PB	1.70 LBS. (0.771 KG)	

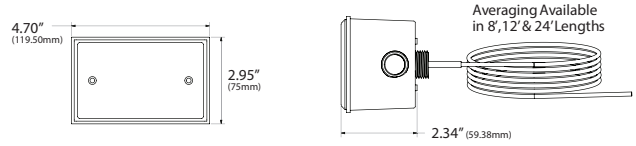
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI MODEL #	8' (PROBE LENGTH)	12' (PROBE LENGTH)
A/xx-A-yy-GD	1.16 LBS. (0.526 KG)	1.40 LBS. (0.635 KG)
ACI MODEL #	**24' (PROBE LENGTH)**	
A/xx-A-yy-GD	2.20 LBS. (0.998 KG)	

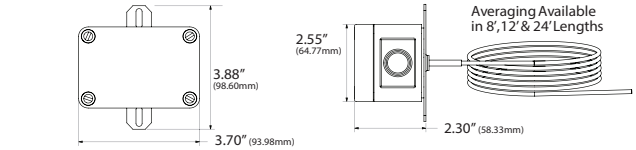
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI MODEL #	8' (PROBE LENGTH)	12' (PROBE LENGTH)
A/xx-A-yy-BB	1.22 LBS. (0.553 KG)	1.44 LBS. (0.653 KG)
ACI MODEL #	**24' (PROBE LENGTH)**	
A/xx-A-yy-BB	2.18 LBS. (0.988 KG)	

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI MODEL #	8' (PROBE LENGTH)	12' (PROBE LENGTH)
A/xx-A-yy-4X	0.84 LBS. (0.381 KG)	1.06 LBS. (0.481 KG)
ACI MODEL #	**24' (PROBE LENGTH)**	
A/xx-A-yy-4X	1.80 LBS. (0.816 KG)	

Standard View | **Product Weights**

xx = Sensor Type | **yy** = Insertion Length

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | A (C.) | 24' (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *No Selection Required*	**1K-NI**	**1K-NI**
C. Configuration *No Selection Required*	**A** = Bendable Copper Averaging	**A**
D. Probe Length *Select One (1)*	**8'** = 8' Sensor | **12'**= 12' Sensor | **24'** = 24' Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST[3] *Select One (1)*	**----** = No NIST Certificate **| NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

DUCT

Duct Sensor, Nickel RTD

The ACI Nickel Duct Series features a 1/4" diameter stainless steel probe with two, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The Nickel sensors are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased thermal response times from our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for sealing the duct and dampening vibration. For best results, the sensor length should be determined by the width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. Our standard enclosure options include the galvanized junction box "-GD" or plastic duct enclosure with the hinged cover "-PB". On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. This series can be ordered with optional NEMA/IP rated weather proof enclosures and NIST Certificates as referenced in the ordering grid.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

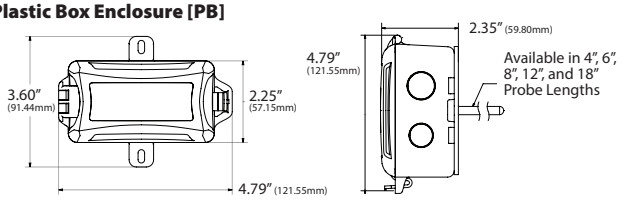
The ACI Nickel Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coeffcient)
Number Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) | **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F)) | **54.4°C (130°F):** +/- 0.56°C (1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coeffcient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	8 Seconds nominal
Response Time (63% Step Change):	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Enclosure Specifications (Operating Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115°C (-40 to 239°F); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90°C (-22 to 194°F); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** -40 to 70°C (-40 to 158°F); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Sensor Operation Temperature Range:	-40 to 250°F (-40 to 121°C)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material:	304 Stainless Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6" & 8" Sensors:** 14" (35.6cm) | **12"or 18" Sensors:** 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Probe Diameter:	0.250" (6.35mm)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



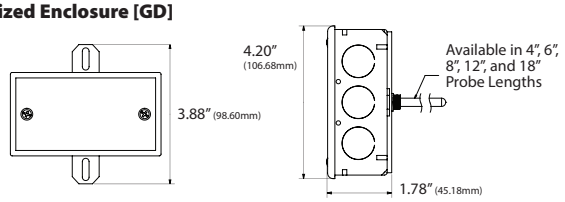
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-PB	0.24 lbs. (0.109 kg)	0.25 lbs. (0.113 kg)	0.26 lbs. (0.117 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

Galvanized Enclosure [GD]

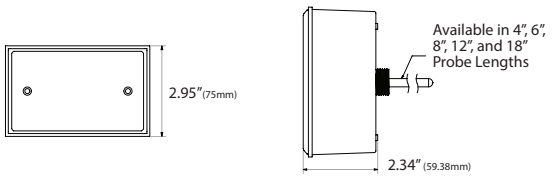


Galvanized Enclosure [GD] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.67 lbs. (0.303 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]

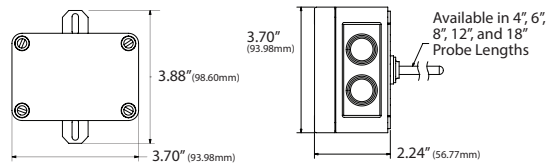


Bell Box Enclosure [BB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.71 lbs. (0.322 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-4X	0.34 lbs. (0.154 kg)	0.35 lbs. (0.159 kg)	0.36 lbs. (0.163 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | D (C.) | 8″ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	A/
B. Model Series *No Selection Required*	**1K-NI** ⟶	1K-NI
C. Configuration *No Selection Required*	**D** = Duct ⟶	D
D. Probe Length *Select One (1)*	**4″** = 4″ Probe | **6″** = 6″ Probe | **8″** = 8″ Probe | **12″** = 12″ Probe | **18″** = 18″ Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

DUCT WITHOUT BOX

Flange Mounted Duct Sensor, Nickel RTD

The ACI Nickel Duct without Box series features a 1/4" diameter stainless steel probe with etched teflon lead wires. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as increased thermal response times using our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for properly sealing your duct as well as to dampen vibration. For best results, the sensor length should be determined by the actual width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. This series can be ordered with optional plenum rated cable in standard lead lengths.

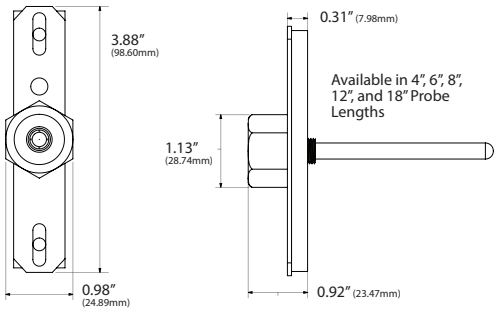
Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

ACI's Nickel Duct Without Box is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F)) **54.4°C (130°F):** +/- 0.56°C (1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Operating Temperature Range:	-40 to 115°C (-40 to 239°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Flange Material:	304 Stainless Steel | Galvanized Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6" & 8" Probes:** 14" (35.6 cm) | **12" & 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Probe Diameter:	0.250" (6.35mm)
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS



Standard Views

xx = Sensor Type | **yy** = Insertion Length

Duct Without Box [DO] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-DO-yy	0.10 lbs. (0.045 kg)	0.11 lbs. (0.050 kg)	0.12 lbs. (0.054 kg)
A/xx-DO-yy-6'-CL2P	0.15 lbs. (0.068 kg)	0.16 lbs. (0.073 kg)	0.17 lbs. (0.077 kg)
A/xx-DO-yy-10'-CL2P	0.20 lbs. (0.091 kg)	0.21 lbs. (0.095 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-20'-CL2P	0.27 lbs. (0.122 kg)	0.28 lbs. (0.127 kg)	0.29 lbs. (0.132 kg)

ACI Model #	12" (Insertion Length)	18" (Insertion Length)
A/xx-DO-yy	0.14 lbs. (0.064 kg)	0.16 lbs. (0.073 kg)
A/xx-DO-yy-6'-CL2P	0.20 lbs. (0.091 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-10'-CL2P	0.24 lbs. (0.108 kg)	0.27 lbs. (0.122 kg)
A/xx-DO-yy-20'-CL2P	0.31 lbs. (0.141 kg)	0.34 lbs. (0.154 kg)

Product Weights

STANDARD ORDERING

Model # Example: A/1K-NI-DO-4" -OR- 120510

Model #	Item #	Description
A/1K-NI-DO-4"	120510	1K Nickel, Duct 4" without Box, Flange Only, 14" Leads
A/1K-NI-DO-6"	133239	1K Nickel, Duct 6" without Box, Flange Only, 14" Leads
A/1K-NI-DO-8"	120512	1K Nickel, Duct 8" without Box, Flange Only, 14" Leads
A/1K-NI-DO-12"	120507	1K Nickel, Duct 12" without Box, Flange Only, 24" Leads
A/1K-NI-DO-18"	120508	1K Nickel, Duct 18" without Box, Flange Only, 24" Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | DO (C.) | 6" (D.) | 6'CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *No Selection Required*	**DO** = Duct without Box (Mounting Flange Only) →	**DO**
D. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

FLEXIBLE AVERAGING

Multipoint Averaging Sensors, Nickel RTD

The ACI Nickel Flexible Averaging Series features an 18 AWG Plenum Rated cable sensing element with two, 12 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. All sensors are manufactured with 4 or 9 sensing points determined by the length of the sensing element. Averaging sensors provide a better average temperature of the air inside larger ducts when compared to a single point sensor. The flexible averaging sensors are limited to applications where operating temperatures are limited to 0 to 75ºC (32 to 158ºF) or high humidity, chemical resistance and UV Light Air Treatment Systems aren't required. Each of the sensing elements is sealed using a dual wall adhesive lined heat shrink tubing to provide a level of moisture protection to each of the sensing elements. The sensor length should be determined by the dimensional size of your duct. Our standard enclosure options include a galvanized junction box "-GD" or plastic duct enclosure with hinged cover "-PB". Each unit includes nylon wire ties and mounts for standard mounting. Optional copper capillary or universal plastic mounting clips, NEMA/IP Rated weather proof enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

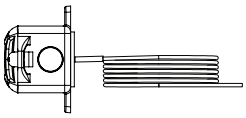
The ACI Nickel Flexible Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

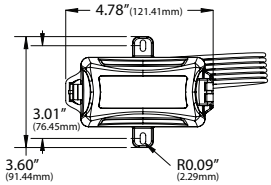
PRODUCT SPECIFICATIONS

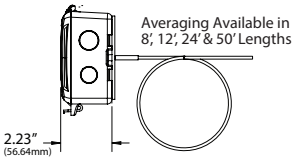
Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)	
Number Sensing Points | Number Wires:	**8' and 12' Lengths:** Four | **24' and 50' Lengths:** Nine | Two (Non-Polarity Sensitive)	
Sensor Output @ 21.1ºC (70ºF) | Lead Wire Colors:	1000 Ohms nominal | (Red/Red)	
Sensor Accuracy:	**8' and 12' Models:**	**24' and 50' Models:**
	+/- 0.23C (+/- 0.40ºF) @ 21.1ºC (70ºF)	+/- 0.24ºC (+/- 0.42ºF) @ 21.1ºC (70ºF)
	+/- 1.59ºC (+/- 1.06ºF) @ 54.4ºC (130ºF)	+/- 0.61ºC (+/- 1.09ºF) @ 54.4ºC (130ºF)
Din Standard | Temperature Coefficient (0-100ºC):	Din 43760 | 6370 ppm/ºC	
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150ºC (302ºF)	
Response Time (63% Step Change):	15 Seconds nominal	
Self-Heating | Maximum Operating Current:	0.3ºC/mW (Still Air) | 5 mA	
Operating Temperature Range:	0 to 75ºC (32 to 167ºF)	
Storage Temperature Range:	-20 to 75ºC (-4 to 167ºF)	
Operating Humidity Range:	10 to 90% RH, non-condensing	
Enclosure Specifications (Material, Flammability, NEMA | IP Ratings):	**"-GD" Enclosure:** Galvanized Steel; NEMA 1 (IP10); **"-PB" Enclosure:** ABS Plastic, UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)	
Sensor Jacket Material | Cable Ratings:	Low Smoke PVC | CL2P or CMP Plenum Rated Cable	
Sensor Cable Diameter:	0.170" (4.32mm) nominal	
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)	
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)	
Lead Wire Conductor Material:	Silver Plated Copper	
Product Dimensions | Product Weight:	See table on back of Product Data sheet	
Agency Approvals:	RoHS2, WEEE	

DIMENSIONAL DRAWING

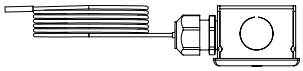
Plastic Box Enclosure [PB]

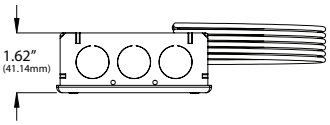


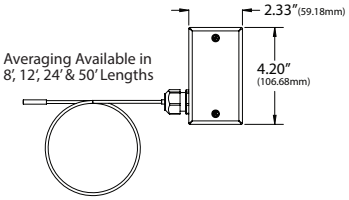




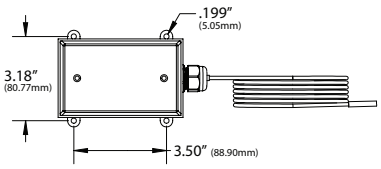
Galvanized Enclosure [GD]

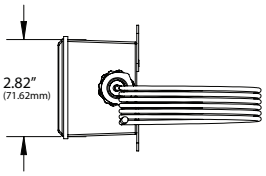


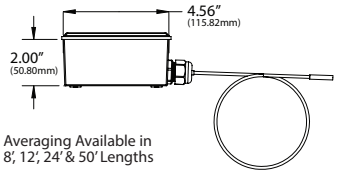




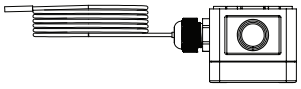
Bell Box Enclosure [BB]

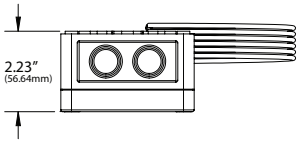


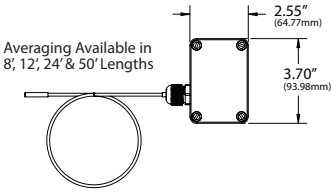




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | FA (C.) | 24' (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *No Selection Required*	**FA** = Flexible Plenum Rated Cable Averaging Sensor →	**FA**
D. Probe Length *Select One (1)*	**8'** = 8' Sensor | **12'**= 12' Sensor | **24'** = 24' Sensor | **50'** = 50' Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

FLUSH MOUNT BUTTONS

Brass, Stainless Steel & Plastic Nickel RTDs

The ACI Nickel Flush Mount Button Series features a stainless steel, brass or white plastic button sensor with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven encapsulation process to eliminate the effects of moisture on the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. This sensor uses a small, low profile design and should be used in applications where aesthetics is one of your primary concerns. Each unit is supplied with a mounting kit such that they can be hidden underneath cabinets or shelving units, in decorative metal plates, trim, drywall or from a ½" piece of conduit coming down from the ceiling or roof. Note that if painting the sensors, be sure to coat with as little paint as possible so as to not limit the effect on the accuracy or responsiveness of the sensor. This series can be ordered with an optional NIST Certificate as designated in the product ordering grid.

Applications: Museums, Historical Buildings, Monitoring Space Temperatures, Office Buildings, Schools, Retail, Remote Sensor

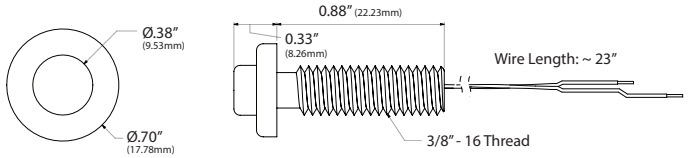
The Nickel Flush Mount Button Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

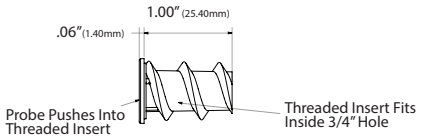
Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F)
	0°C (32°F): +/- 0.4°C (+/- 0.72°F)
	21.1°C (70°F): +/- 0.17°C (+/- 0.34°F))
	54.4°C (130°F): +/- 0.56°C (1.00°F)
	121°C (250°F): +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change)	8 Seconds nominal
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Button Sensor Enclosure Material:	**A/1K-NI-BBS:** Brass | **A/1K-NI-SBS:** 304 Stainless Steel | **A/1K-NI-PBS:** ABS
Plastic Button Flammability Rating:	UL94-HB
Operating | Storage Temperature Range:	**A/1K-NI-PBS:** -40 to 70°C (-40 to 158°F) | -40 to 85°C (-40 to 185°F)
	A/1K-NI-BBS & A/1K-NI-SBS: -40 to 121°C (-40 to 250°F) | -40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	**A/1K-NI-PBS:** 1.00" (25.4mm) x 0.750" (19mm)
	A/1K-NI-BBS and **A/1K-NI-SBS:** 1.20" (30.48mm) x 0.700" (17.78mm)
Product Weight:	**A/1K-NI-PBS:** 0.04 lbs. (18.15g) | **A/1K-NI-BBS & A/1K-NI-SBS:** 0.10 lbs. (45.36g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

Brass & Stainless Button Sensor



Plastic Button Sensor



Front & Top / Right Views | **Spacers / Anchors**

STANDARD ORDERING

Model # Example: A/1K-NI-PBS -OR- 125600

Model #	Item #	Description
A/1K-NI-PBS	125600	1K Nickel Plastic Button Sensor, 24″ Leads, Anchor
A/1K-NI-BBS	120488	1K Nickel Brass Button Sensor, 24″ Leads, Spacers & Brass Nut
A/1K-NI-SBS	120551	1K Nickel Stainless Steel Button Sensor, 24″ Leads, SPacers & Brass Nut

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) 1K-NI (B.) PBS (C.) NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *Select One (1)*	**PBS** = Plastic Button | **BBS** = Brass Button | **SBS** = Stainless Steel Button	
D. NIST *Select One (1)*	**----** = No NIST Certification | **NIST** = NIST Certificate (3 Points)	

IMMERSION

Stainless Steel Immersion, Nickel RTD

The ACI Nickel Immersion Series features a ¼" diameter stainless steel probe with two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. The immersion sensors come standard with a welded thermowell "-I" version but can also be ordered without the thermowell "-INW" version. The "-INW" Version includes a standard ½" NPS (National Pipe Straight) process thread to be used with an optional machined thermowell or in an existing thermowell application. This series can be ordered with optional NEMA rated weather proof enclosures and NIST Certificates as referenced on the back of the product data sheet. Please contact ACI for more information regarding this sensor or if you would like to discuss your application in further detail.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressors, Chillers

The ACI Nickel Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

Disclaimer: Specification of any thermowell and the materials of construction are the sole responsibility of the designer of the system that incorporates the thermowell. Sole responsibility for ensuring compatibility of the process fluid with the system rests with the end user.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | (Red/Red)
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) | **0°C (-40°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F) | **54.4°C (130°F):** +/- 0.56°C (+/- 1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	DIN 43760 | 6370 ppm / °C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Sensor Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40°C to 121°C (-40°F to 250°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30°C to 90°C (-22°F to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40°C to 121°C (-40°F to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40°C to 70°C (-40°F to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35mm) | 0.260"
Probe Material | Thermowell Material:	304 Stainless Steel | 304 Series Stainless Steel
Thermowell Instrument | Process Thread Size:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	½" NPS (National Pipe Straight) Male Thread
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"				
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**	**12.0" (304.8 mm)**	**18.0" (457.2 mm)**	**24" (609.6 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	73.6 ft/s (22.4 m/s)	19.4 ft/s (5.9m/s)	8.8 ft/s (2.7m/s)	5.2 ft/s (1.6m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	26.9 ft/s (8.2 m/s)	11.3 ft/s (3.4m/s)	4.7 ft/s (1.43m/s)	2.5 ft/s (0.8m/s)

Note 1: Values are for Air/Gas/Steam and similar density media based upon Max pressure of 2900 PSI @ 1000ºF (537.8ºC) | **Note 2:** Values are for Water (No Glycol or other Chemicals factored in) @ 68 ºF (20ºC) and max pressure of 5700 PSI. (Calculated to ASME PTC 19.3 TW-2016 Code B31.1) | **Note 3:** 6-24" Machined Thermowells meet ASME PTC 19.3 TW-2016 Code B31.1.

MAXIMUM PRESSURE VS TEMPERATURE RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Material:	70°F (21.1°C)	200°F (93.3°C)	400°F (204.4°C)	600°F (315.6°C)	800°F (426.7°C)	1000°F (537.8°C)	1200°F (648.9°C)
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.6 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

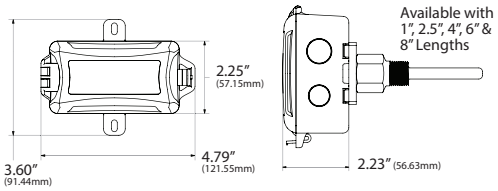
MAXIMUM FLUID VELOCITY RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/Steam and similar density media

DIMENSIONAL DRAWINGS. WEIGHTS

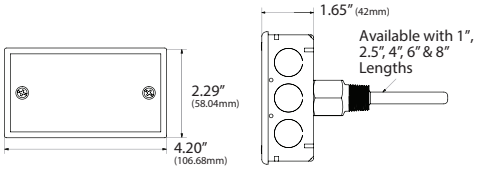
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-PB	0.20 lbs. (0.091 kg)	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs (0.163 kg)
A/xx-I-yy-PB	N/A	0.24 lbs. (0.109 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)	N/A
A/xx-IM-yy-PB	0.40 lbs. (0.182 kg)	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)	1.15 lbs (0.522 kg)

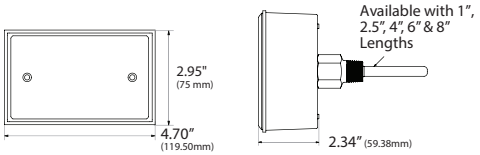
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-GD	0.62 lbs. (0.281 kg)	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.78 lbs (0.354 kg)
A/xx-I-yy-GD	N/A	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-GD	0.81 lbs. (0.367 kg)	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.55 lbs (0.703 kg)

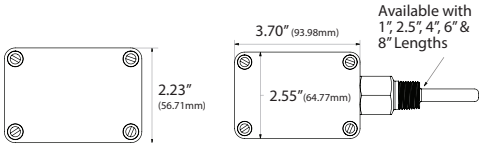
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-BB	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.80 lbs (0.363 kg)
A/xx-I-yy-BB	N/A	1.02 lbs. (0.463 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-BB	0.83 lbs. (0.376 kg)	1.02 lbs. (0.463 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.59 lbs (0.721 kg)

NEMA 4X Enclosure [4X]

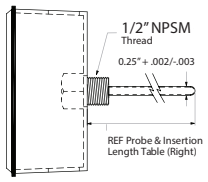


NEMA 4X Enclosure [4X] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-4X	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)	0.44 lbs (0.200 kg)
A/xx-I-yy-4X	N/A	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)	N/A
A/xx-IM-yy-4X	0.48 lbs. (0.218 kg)	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)	1.27 lbs (0.576 kg)

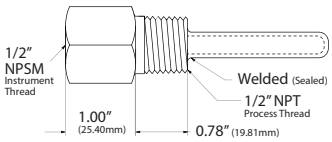
N/A = Not Available | **xx** = Sensor Type | **yy** = Insertion Length

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
3"	2.81" +/- 0.13"	A/xx-INW-1"-yy-zz	A/M1"
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/2.5" or A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/4" or A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/6" or A/M6"
10"	9.81" +/- 0.13"	A/xx-INW-8"-yy-zz	A/M8"
13"	12.75" +/- 0.13"	A/xx-INW-12"-yy-zz	A/M12"
19"	18.75" +/- 0.13"	A/xx-INW-18"-yy-zz	A/M18"
25"	24.75" +/- 0.13"	A/xx-INW-24"-yy-zz	A/M24"

CUSTOM ORDERING WELDED THERMOWELL

Model # Example: A/ (A.) | 1K-NI (B.) | I (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *Select One (1)*	**I**=Immersion with Welded Thermowell	
D. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

CUSTOM ORDERING MACHINED THERMOWELL

Model # Example: A/ (A.) | 1K-NI (B.) | IM (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *Select One (1)*	**IM**=Immersion with Machined Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

Note: Machined Thermowells with lengths of 12", 18" and 24" are available and must be ordered separately | See the Machined Thermowells Data Sheet (Accessories)

CUSTOM ORDERING SENSOR ONLY NO THERMOWELL

Model # Example: A/ (A.) | 1K-NI (B.) | INW (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *Select One (1)*	**INW** = Immmersion without Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion | **12"** = 12" Insertion | **18"** = 18" Insertion | **24"** = 24" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTRE 2 oz. Or 102595

Model #	Item #	Description
NSG Heat Transfer Paste 2 oz.	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG Heat Transfer Paste 16 oz.	140574	Thermal Grease, 16 oz. Jar, Silicon Free, -40 to 390°F (-40 to 198°C)
A/2.5"	128349	2.5" (63.5 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/4"	128350	4" (101.6 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/6"	128351	6" (152.4 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/M1"	128337	1" (25.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"	128338	2.5" (63.5 mm) Insertion, 304 Stainless, Machined , 1/2" NPT Thermowell
A/M4"	128343	4" (101.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M8"	138725	8" (203.2 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M12"	128339	12" (304.80 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M18"	128341	18" (457.20 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M24"	128342	24" (609.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5" - 316SS	128352	2.5" (63.5 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4" - 316SS	128353	4" (101.6 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6" - 316SS	128354	6" (152.4 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell

OUTSIDE AIR

Weatherproof Outside Air, Nickel RTD

The ACI Nickel Outside Air Series features a weather proof European Style Plastic enclosure with twist off cover and water tight cord grip. The sensing element contains two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. All sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as to increase the thermal response time using our high quality, thermally conductive epoxy. The outdoor air sensor is a single point sensor designed to be mounted under an eave or on the North side of a building in a shaded location with the sensing tube pointed downward to prevent any water or ice from settling in the sensing tube. Optional NEMA 4X "-4X" plastic or NEMA 3R rated "-BB" Aluminum enclosures and NIST Certificates are available as referenced in the ordering information on the back of the product data sheet. For Applications in which the sensor must be mounted in direct sunlight, please see the Sun Shield data sheet which will allow you to order a Temperature or Temperature/Humidity Combination sensor.

Applications: Outside Air Temperature Sensing, Cold Storage Facilities, High Dew Point/Condensing Environments, Wash Down Environments

The ACI Nickel Outside Air Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

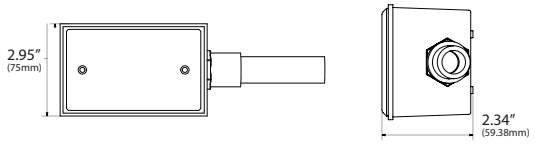
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F)) **54.4°C (130°F):** +/- 0.56°C (1.00°F)
Standardization | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change)	30 Seconds nominal
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Operating Temperature Range:	-40 to 70°C (-22 to 158°F)
Storage Temperature Range:	-40 to 70°C (-22 to 158°F)
Operating Humidity Range:	10 to 100% RH, Condensing
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-EH" Enclosure:** PC/ASA Plastic w/ UV Protectant; -40 to 88°C (-40 to 190°F); UL94-V0 **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched (PTFE) Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions:	See Drawings on back of Data Sheet
Product Weight:	**A/1K-NI-O-EH:** 0.46 lbs. (0.21kg) | **A/1K-NI-O-4X:** 0.38 lbs. (0.17kg); **A/1K-NI-O-BB:** 0.76 lbs. (0.35kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type

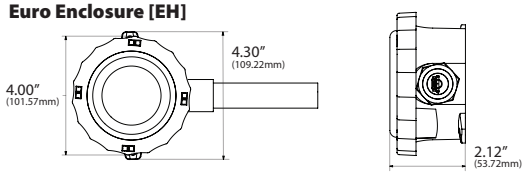
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

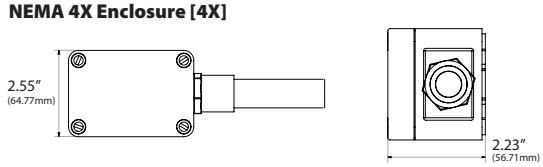
Euro Enclosure [EH]



Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Front & Right Views | **Top View** | **Product Weight**

STANDARD ORDERING

Model # Example: A/1K-NI-O-EH -OR- 125209

Model #	Item #	Description
A/1K-NI-O-EH	125209	1K Nickel, Outside Air Sensor, 14″ Leads, Euro Enclosure
A/1K-NI -O-BB	120526	1K Nickel, Outside Air Sensor, 14″ Leads, Cast Aluminum Enclosure
A/1K-NI -O-4X	126720	1K Nickel, Outside Air Sensor, 14″ Leads, NEMA 4X Enclosure

CUSTOM ORDERING

Model # Example: A/ (A.) 1K-NI (B.) O-4X (C.) NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Enclosure *Select One (1)*	**O-EH** = Euro Enclosure | **O-BB** = Aluminum Enclosure | **O-4X** = NEMA 4X Enclosure	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

PIPE MOUNT

Small Pipe/Coil Sensor, Nickel RTD

The ACI Nickel Pipe Mount Series features a 1.1" long Brass sensing enclosure with slight curvature on the bottom that is designed to increase the surface area and improve thermal conductivity between the pipe and sensor. Each sensor has two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to improve the thermal response times using our high quality, thermally conductive epoxy. The Pipe Mount sensor should be used on pipe or coil sizes from 1/2" to 1" in diameter and condensing environments. A 7.5" nylon wire tie is supplied for fastening the sensor to the top of the pipe. For best accuracy and increased thermal conduction between the pipe and the sensor, we recommend cleaning the pipe and to use thermal grease between the mating surfaces and then to insulate the sensor from the effects of the ambient air. An optional plenum rated cable or NIST Certificates can be ordered as referenced in the ordering grid. Please contact ACI for more information regarding this sensor or to discuss your application in further detail. Other Options may be available upon request.

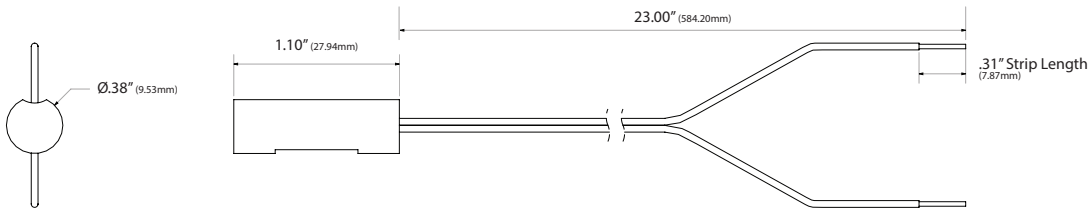
Applications: Cooling Coils, Heating Coils, Hot Water Systems, Chilled Water Systems, Hydronic Heating Systems, Chillers

The ACI Nickel Pipe Mount Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F)
	0°C (32°F): +/- 0.4°C (+/- 0.72°F)
	21.1°C (70°F): +/- 0.17°C (+/- 0.34°F))
	54.4°C (130°F): +/- 0.56°C (1.00°F)
	121°C (250°F): +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	15 Seconds nominal
Self-Heating | Maximum Operating Current:	0.3°C / mW (Still Air) | 5 mA
Pipe Mount Sensor Enclosure Material:	Brass
Pipe Sizes Accepted:	½" (12.7mm) to 1" (25.4mm)
Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.10" (27.9mm) x 0.375" (9.53mm)
Product Weight:	0.05 lbs. (22.68g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/1K-NI-PM -OR- 138656

Model #	Item #	Description
A/1K-NI-PM	138656	1K Nickel, Pipe Mount, 24" Leads

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | PM (C.) | 20' (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *No Selection Required*	**PM** = 1.1" Brass Pipe Mount Sensor →	**PM**
D. Lead Length *Select One (1)*	**----** = Standard (24" Etched Teflon) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet** (6.10m)	
E. Lead Wire Type *Select One (1)*	**----** = Standard (24" Teflon Colored Leads) | **CL2P** = Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: HARDWARE, 2" HOSE CLAMP -OR- 100235

Model #	Item #	Description
HARDWARE, 2" HOSE CLAMP	100235	Hardware, 2" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

PROBE ONLY

Stainless Steel Prode, Nickel RTD

The ACI Nickel Probe Only Series features a ¼" diameter stainless steel probe with two, 14" or 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. The probe is designed to be used in either duct and immersion applications when used with the proper length thermowell. Optional lead lengths, cable types and NIST Certificates are available as referenced in the ordering grid on the Product Data Sheet. Please contact ACI for more information regarding this sensor or to discuss your application in further detail. Other options that may be available upon request.

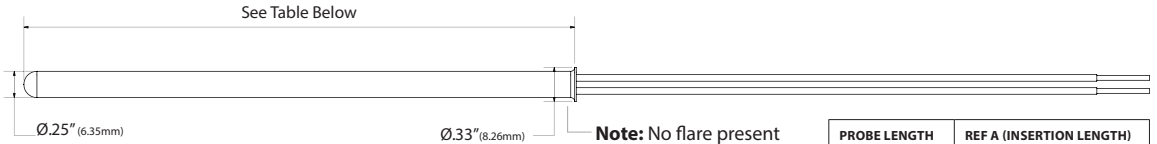
Applications: Roof Top Units, Air Handlers, Supply/Discharge Air/Return/Mixed/Exhaust Air Duct Temperature Sensing, Immersion Temperature Sensors, Replacement Temperature Sensors.

The ACI Nickel RTD Probe Only Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:		Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:		One
Number Wires:		Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Standard Lead Wire Colors):		1000 Ohms nominal | (Red/Red)
Sensor Accuracy:		**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) **0°C (-40°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F) **54.4°C (130°F):** +/- 0.56°C (+/- 1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):		Din 43760 | 6370 ppm/°C
Sensor Stability:		+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):		8 Seconds nominal
Power Dissipation Constant:		0.3°C/mW (Still Air) | 5 mA
Operating Temperature Range:		-40 to 121°C (-40 to 250°F)
Storage Temperature Range:		-40 to 85°C (-40 to 185°F)
Operating Humidity Range:		10 to 95% RH, non-condensing
Probe Material:		304 Stainless Steel
Standard Wire	**Lead Wire Insulation | Wire Rating:**	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
	Temperature Rating:	-55°C (-67°F) to 200°C (392°F)
	Conductor Material:	Silver Plated Copper
	Rated Application:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
	Lead Length | Conductor Size:	**4", 6" and 8" Probes:** 14" (35.6 cm) | **12" and 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Plenum Wire	**Lead Wire Insulation | Wire Rating:**	**CL2P:** FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS
	Temperature Rating:	**CL2P:** -80°C (-112°F) to 150°C (302°F)
	Conductor Material:	**CL2P:** Tinned Copper
	Rated Application:	**CL2P:** Suitable for Indoor and Outdoor (wet) locations. Oil, Gas, Sunglight, Abrasion Acid Resistant
Product Dimensions | Probe Diameter:		See table on back of product data sheet | 0.250" (6.35mm)
Product Weight:		**4"** = 0.028 lbs. (12.7g) | **6"** = 0.036 lbs. (16.3g) | **8"** = 0.044 lbs. (20g) | **12"** = 0.066 lbs. (29.9g) | **18"** = 0.09 lbs. (40.8g)
Agency Approvals:		CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Note: No flare present on 6" and under

PROBE LENGTH	REF A (INSERTION LENGTH)
2"	2.00" ± 0.13"
4"	4.00" ± 0.13"
6"	6.00" ± 0.13"
8"	8.00" ± 0.13"
12"	12.00" ± 0.25"
18"	18.00" ± 0.25"

Standard View

CUSTOM ORDERING

Model # Example: A/ (A.) - 1K-NI (B.) - PO (C.) - 4" (D.) - 6' CL2P (E.) - NIST (F.)

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**1K-NI**	**1K-NI**
C. Configuration *Select One (1)*	**PO =** Probe Only	**PO**
D. Probe Length *Select One (1)*	**2"** = 2" Probe | **4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate **| NIST =** NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

RAW POTTED

Remote Sensing Plastic Cap, Nickel RTD

The ACI Nickel Raw Series features a one inch long, ¼" diameter plastic cup with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate many different sensor types. The sensors in this series are manufactured using ACI's proven manufacturing process to eliminate the effects of moisture upon the sensors and increased thermal response times using our high quality, thermally conductive epoxy. The raw sensor configuration is designed to monitor air temperatures and should not be fully submerged in liquid. This series can be ordered with optional NIST Certificate and a plenum rated cable option as shown in the ordering grid on the back of the product data sheet. All additional wire specifications can be found on our products download page on-line. Please contact ACI for more information regarding this product or to discuss your application in further detail. Other options may be available upon request.

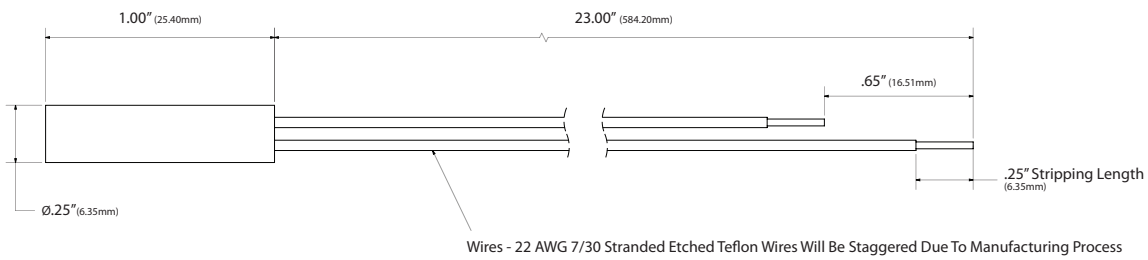
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing

The ACI Nickel Raw Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type:	Nickel RTD
Sensor Curve:	PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	**A/1K-NI Series:** 1000 Ohms @21.1°C (70°F) nominal | (Red/Red)
Accuracy:	21.1°C (70°F) (+/- 0.17°C (+/-0.34°F)) 1183.5Ω +/- 3.181Ω (+/- 0.56°C (1.0°F) @ 54.4°C (130°F) -40 to 0°C (-40 to 32°F): +/-(0.8C + (0.056 x |°C|))°C; 0 to 121°C (32 to 250°F): +/-(0.8C + (0.0144 x |°C|))°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Din Standard:	Din 43760
Temperature Coefficient (0-100°C):	6370 ppm/°C
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating:	0.3°C/mW (Still Air)
Operating Current (Maximum)	5 mA
Cup Plastic Material:	Glass Filled, Flame Retardant, Diallyl Ortho Phthalate
Cup Flammability Rating:	UL94-V0
Cup MIL-M-14, ASTM D-5948-96:	Type SDG-F
Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (0.61m) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)
Product Weight:	0.04 lbs. (18.15g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/1K-NI-W -OR- 120554

Model #	Item #	Description
A/1K-NI-W	120554	1K-Nickel Raw, 24" Leads, 1" Cup

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | W (C.) | 6' (D.) | CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *No Selection Required*	**1K-NI**	**1K-NI**
C. Configuration *No Selection Required*	**W** = 1" Plastic Cup	**W**
D. Lead Length *Select One (1)*	**6'** = 6 Feet (1.83m) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet (6.10m)*	
E. Lead Wire Type *No Selection Required*	**CL2P** = 2 Conductor FEP/FEP Plenum Rated Cable	**CL2P**
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: ¼" Mount Clip -OR- 108169

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
¼" Mount Clip	108169	Hardware, ¼" Mounting Clip	●	
¼" U-Mount CL	100090	Hardware, ¼" U-Mounting Clip Adhesive		●

RIGID AVERAGING

Four Point Averaging, Nickel RTD

The ACI Nickel Rigid Averaging Series features a stainless steel, probe style sensing element with two 12 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The Nickel Rigid Averaging sensors are manufactured with 4 sensing points to provide a better average temperature in smaller to medium sized ducts when compared to that of a single point duct sensor or the longer Flexible and Copper averaging sensors can't be easily incorporated. Each of the elements is hermetically sealed to prevent moisture intrusion and includes an integrated foam pad to seal the duct and dampen vibrations. Some of the benefits of using a stainless steel Rigid Averaging sensor is that it can be installed easily in either a horizontal or vertical position, like that of a single point duct sensor and can be used in applications where a longer Flexible or Copper averaging sensor aren't easily installed. As an added benefit, the stainless steel probe also offers a higher level of corrosion resistance to chemicals and moisture in the air stream when compared to that of the Flexible or Copper Averaging sensors. Actual sensor length should be selected based upon the overall dimensional area of your duct. ACI's standard enclosures include the galvanized junction box "-GD" or plastic duct enclosure with the hinged cover "-PB". Optional NEMA/IP rated Weather Proof enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

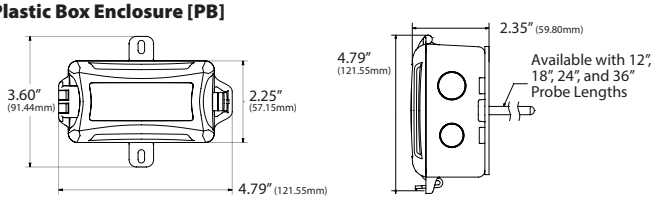
The ACI Nickel Rigid Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points | Number Wires:	Four | Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**21.1°C (70°F)** = +/- 0.22°C (+/- 0.39°F) | **54.4°C (130°F)** = +/- 0.60°C (+/- 1.07°F)
Din Standard | Temperature Coefficient (0-100°C)	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Response Time (63% Step Change):	10 Seconds nominal
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 115°C (-40 to 239°F), NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensing Element Material | Element Diameter:	304 Series Stainless Steel | 0.250" (6.35mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Ratings:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Ratings:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



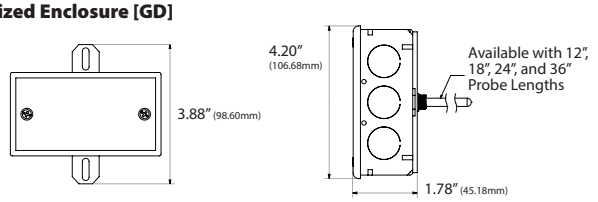
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

Galvanized Enclosure [GD]

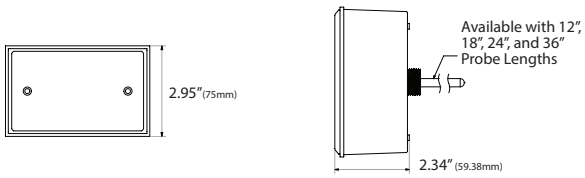


Galvanized Enclosure [GD] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

Bell Box Enclosure [BB]

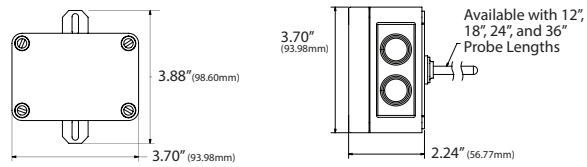


Bell Box Enclosure [BB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [PB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views **Product Weights**

STANDARD ORDERING

Model # Example: A/1K-NI-RA-12″-GD -OR- 142466

Model #	Item #	Description
A/1K-NI-RA-12″-GD	142466	1K Nickel, Rigid Averaging, Stainless Steel, 12″ (30.5cm), Galvanized Enclosure, 12″ Leads
A/1K-NI-RA-12″-PB	138666	1K Nickel, Rigid Averaging, Stainless Steel, 12″ (30.5cm), Plastic Enclosure, 12″ Leads
A/1K-NI-RA-18″-GD	131112	1K Nickel, Rigid Averaging, Stainless Steel, 18″ (45.7cm), Galvanized Enclosure, 12″ Leads
A/1K-NI-RA-18″-PB	126522	1K Nickel, Rigid Averaging, Stainless Steel, 18″ (45.7cm), Plastic Enclosure, 12″ Leads
A/1K-NI-RA-24″-GD	131113	1K Nickel, Rigid Averaging, Stainless Steel, 24″ (61cm), Galvanized Enclosure, 12″ Leads
A/1K-NI-RA-24″-PB	129210	1K Nickel, Rigid Averaging, Stainless Steel, 24″ (61cm), Plastic Enclosure, 12″ Leads
A/1K-NI-RA-36″-GD	131114	1K Nickel, Rigid Averaging, Stainless Steel, 36″ (91.5cm), Galvanized Enclosure, 12″ Leads
A/1K-NI-RA-36″-PB	134238	1K Nickel, Rigid Averaging, Stainless Steel, 36″ (91.5cm), Plastic Enclosure, 12″ Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | RA (C.) | 18″ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *No Selection Required*	**RA** = Rigid Averaging →	**RA**
D. Probe Length *Select One (1)*	**12″** = 12″ Probe | **18″** = 18″ Probe | **24″** = 24″ Probe | **36″** = 36″ Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ROOM

Wall Mount Enclosure, Nickel RTD

The ACI Nickel Room Series combines option flexibility with attractive styling in our "-R2" or "-R" style enclosures which both include four-way air flow design too minimize self-heating to the sensor. These enclosures are offered in a White "-R2" or Beige "-R" color depending on the enclosure style. All units are designed to be mounted over a single gang junction box or hole in the wall with the use of drywall anchors. Screw terminal blocks are provided for making all connections to the temperature sensor, Set Point, "After Hours" Override, and Communication Jacks for easy access to your building management system. An optional 1/8" Black foam pad with pressure sensitive adhesive is available to insulate the sensor from thermal drafts within the wall or wall surface temperature. A 1/16" Hex driver should be used to secure the cover from being easily removed. The "LCD" option uses two temperature sensors to monitor the ambient air temperature in the space and is factory calibrated at a single point.

Applications: Space Temperature Sensing, Decorative Wall Sensor Applications, Office Buildings, Schools, Colleges, Commercial Buildings, OEM Opportunities

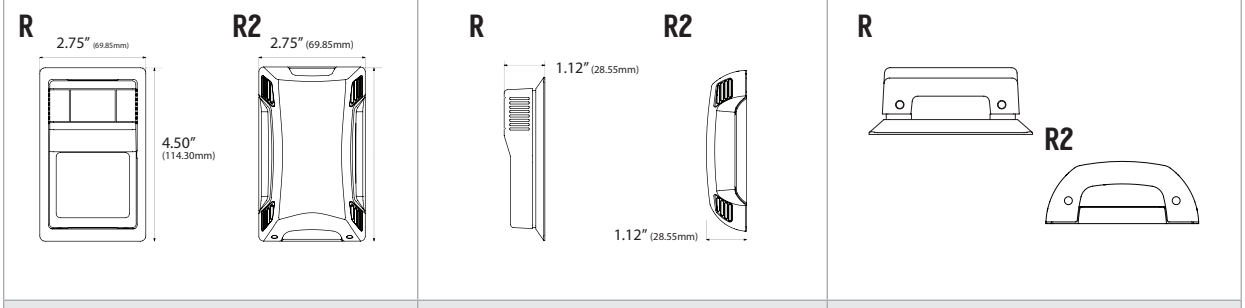
The ACI Nickel Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD **|** PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Sensor Output @ 21.1°C (70°F):	1000 Ohms Nominal
Sensor Accuracy:	**0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **| 21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F) **| 54.4°C (130°F):** +/- 0.56°C (1°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds Nominal
Self-Heating | Maximum Operating Current:	0.3 mW/°C (Still Air) **|** 5 mA
LCD Display Supply Voltage:	+9 to 35 VDC / 24 VAC (50/60 Hz)
LCD Display Supply Current/VA:	<4 mA / 0.12VA
LCD Display Accuracy:	+/- 2°F or +/- 2°C @ 71°F (21.5°C) Typical
LCD Display Descriptor | Number of Digits:	°F (Fahrenheit) or °C (Celsius) **|** 3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Set Point Specifications | Set Point Indication:	See Ordering Grid Options on back of Product Data Sheet
Set Point Tolerance:	+/- 10% of Range
Override Options:	Short Thermistor (Default); Field (Jumper) Selectable "Dry Contact" Closure; Short Set Point available upon request
Operating | Storage Temperature Range:	1.5 to 50°C (35 to 122°F) | **Non-LCD:** -40 to 65°C (-40 to 149°F) **| LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) **|** 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum) **|** 0.6 Nm (Maximum)
Enclosure Material | Flammability Rating | Color:	**"-R2" Enclosure:** ABS Plastic, UL94-HB, White **| "-R" Enclosure:** ABS Plastic, UL94-HB, Beige
Product Dimensions:	See Drawing on back of Product Data Sheet
Product Weight:	**A/1K-NI-R/RS/RO Series:** 0.14 lbs. (63.5g) **| A/1K-NI-RSO Series:** 0.18 lbs. (81.6g) **|** **A/1K-NI-R2/R2S/R2O Series:** 0.16 lbs. (72.6g) **| A/1K-NI-R2SO Series:** 0.20 lbs. (90.7g) **|** **All LCD Display Units:** 0.18 lbs. (81.6g)
Agency Approvals:	CE**, RoHS2, WEEE

Note:** All LCD Display Units are not CE Compliant, but they are RoHS2 Compliant

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model #	Item #	Description
A/1K-NI-R	144152	1K Nickel RTD, "R" Version, Beige, No Options
A/1K-NI-R2	144153	1K Nickel RTD, "R2" Version, White, No Options

CUSTOM ORDERING

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**1K-NI**	**1K-NI**
C. Configuration *Select One (1)*	**R** = Room | **RO** = Room with Override | **RS** = Room with Set Point | **RSO** = Room with Setpoint and Override | **R2** = Room | **R2O** = Room with Override | **R2S** = Room with Set Point | **R2SO** = Room with Set Point and Override	
D. Communication Jack *Select One (1)*	**----** = No Jack **RJ4** = 4 Pin 4 Conductor RJ9, RJ10 or RJ22 Style Head Set Modular Connector **RJ6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **232** = 3.5mm (1/8") Stereo Jack	
E. LCD Display[2] *Select One (1)*	**----** = No LCD Display | **LCD**[2] = With LCD Display (Only Available with "R" Style Enclosure)	
F. LCD Display Descriptor *Select One (1)*	**F** = °F (Fahrenheit) | **C** = °C (Celsius)	
G. NIST[3] *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Slidepots[4] *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A02** = 0 to 20K | **A03** = 0 to 10K | **A09** = 0 to 2K | **A10** = 0 to 1K	
2. Setpoint Indication *Select One (1)*	**A3** = 18-28 DEG C | **A4** = 20-30 DEG C | **B4** = 55-85 DEG F | **B7** = 60-90 DEG F | **C5** = COOL/WARM | **C6** = COOLER/WARMER | **D3** = WARM/COOL | **G5** = BLUE/RED (R2 Enclosure)	

Note[1]: A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI | **Note[2]:** LCD Display is not compatible with NIST | **Note[3]:** NIST is available in "R" and "R2" only configurations | **Note[4]:** Other Setpoint configurations are available. Please contact ACI | **Note*:** Short Sensor is factory default, but the Dry Contact option is field selectable with jumper shunts included

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

STRAP ON

Non-Intrusive Pipe Mount, Nickel RTD

The ACI Nickel Strap-On Series features a 1.5" square copper plate with the sensor encapsulated to the back side of the plate to improve the thermal conductivity between the pipe and the sensor when an Immersion style sensor can't be inserted into the pipe in a retrofit application. Each sensor has two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as to improve the thermal response times using our high quality, thermally conductive epoxy. The Strap-On Series sensors can be used to monitor pipe sizes from 1 ¼" to 10" in diameter. For best accuracy and increased thermal conduction between the pipe and sensor, ACI recommends to clean the pipe before applying thermal grease and insulating the sensor from the effects of the ambient air. Optional Weather Proof enclosure and NIST Certificates are available as referenced in the ordering grid on the back of the Product Data Sheet. Please contact ACI for more information regarding this sensor or to discuss your application in further detail. Other Options may be available upon request.

Applications: Cold Water Systems, Hot Water Systems, Retrofit applications, Hydronic Heating Systems, Chillers

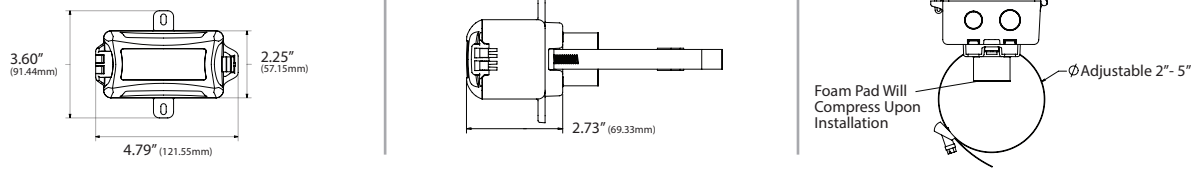
The ACI Nickel Strap-On Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

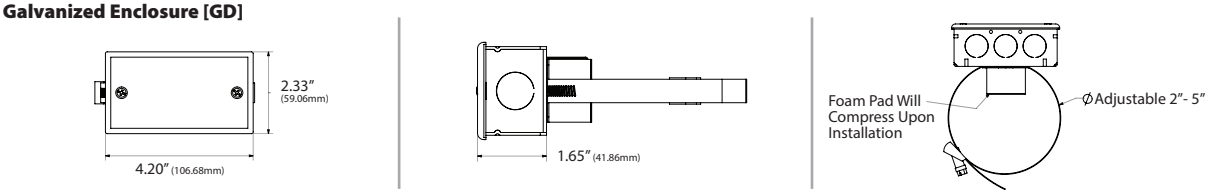
Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) (Lead Wire Colors):	1000 Ohms nominal | (Red/Red)
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) | **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F) | **54.4°C (130°F):** +/- 0.56°C (+/- 1.00°F) **121°C (250°F):** +/- 1.25°C (+/- 2.25°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Operating Current (Maximum):	0.3°C/mW (Still Air) | 5 mA
Enclosure Specifications (Operating Temperature Range, Flammability, NEMA/IP Rating):	**A/1K-NI-S-GD:** Galvanized Steel, -40 to 93°C (-40 to 200°F), NEMA 1 (IP 10) **A/1K-NI-PB:** ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **A/1K-NI-S-4X:** Polystyrene, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Acceptable Pipe Size:	**A/1K-NI-S-XX:** 1 1/4" (32mm) to 4" (100mm) | **A/1K-NI-S10-XX:** 2" (50mm) to 10" (250mm)
Foam Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HF1; MIL-R-6130C; FMVSS-302
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	See Drawing on Back of Data Sheet
Product Weight:	**A/1K-NI-XX-GD:** 0.80 lbs. (0.37kg) | **A/1K-NI-XX-PB:** 0.40 lbs. (0.18kg); **A/1K-NI-XX-4X:** 0.55 lbs. (0.25kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

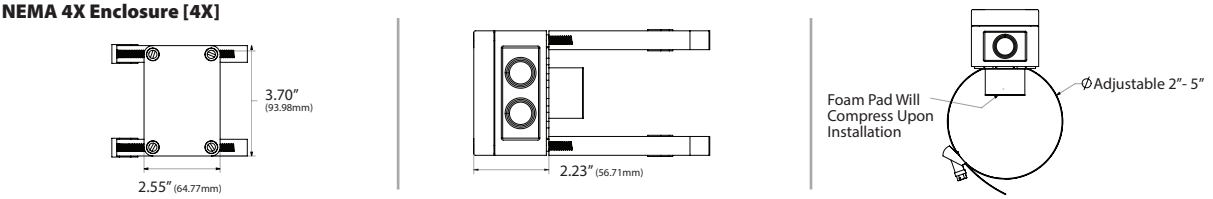
Plastic Box Enclosure [PB]



Galvanized Enclosure [GD]



NEMA 4X Enclosure [4X]



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/1K-NI-S-GD -OR- 114893

Model #	Item #	Description
A/1K-NI-S-GD	114893	1K Nickel, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 24" Leads
A/1K-NI-S-PB	124206	1K Nickel, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 24" Leads
A/1K-NI-S-4X	120547	1K Nickel, Strap-On, 1 ¼" to 4" Pipe, NEMA 4X Plastic Enclosure, 24" Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | 1K-NI (B.) | S (C.) | PB (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**1K-NI** →	1K-NI
C. Configuration *Select One (1)*	**S** = Strap-On (1.25" to 4" Pipe Size) | **S10** = Strap-On (2" to 10" pipe size)	
D. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **4X** = NEMA 4X Weather Proof	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/HOSE CLAMP-2-12" -OR- 142631

Model #	Item #	Description
A/HOSE CLAMP-2-5"	142630	Hardware, 2-5" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
A/HOSE CLAMP-2-12"	142631	Hardware, 2-12" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

WALL PLATES

Stainless & Aluminum Wall Plate, Nickel RTD

The ACI Nickel Wall Plate Series features a decorative, single gang brushed Stainless Steel or Smooth Satin Finished Anodized Aluminum wall plate with two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate between the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. A foam pad is included to insulate the sensor from thermal drafts within the wall, since the plates are designed to be mounted over a standard single gang junction box or directly over a hole in the wall with the use of drywall anchors. These plates are designed to provide a level of protection and security when monitoring the ambient air temperatures in a space. Tamper Proof mounting screws, tamper proof screw driver bits and NIST Certificates are available as referenced on the back of the product data sheet. Please contact ACI for more information regarding the wall mount sensors or to discuss your application in further detail. Other options including override and communication jacks may be available upon request.

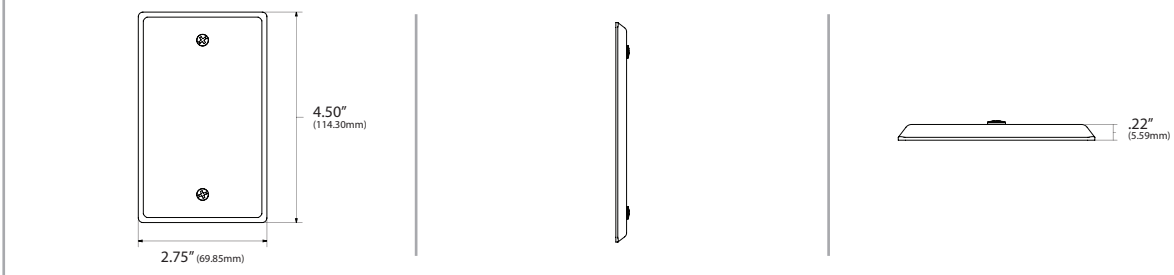
Applications: Space Temperature Sensing, Decorative Wall Plate Applications, Tamper Proof Applications, Schools, Gymnasiums

The ACI Nickel Wall Plate Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Nickel RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | Red/Red
Sensor Accuracy:	**-40°C (-40°F):** +/- 1.52°C (+/- 2.73°F) **0°C (32°F):** +/- 0.4°C (+/- 0.72°F) **21.1°C (70°F):** +/- 0.17°C (+/- 0.34°F)) **54.4°C (130°F):** +/- 0.56°C (1.00°F)
Din Standard | Temperature Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	25 Seconds nominal
Self-Heating | Operating Current (Maximum)	0.3°C/mW (Still Air) | 5 mA
Plate Material:	**A/1K-NI-SP Series:** 430 Stainless Steel (Brushed Stainless Steel Finish) **A/1K-NI-AP Series:** Aluminum (Smooth Satin Finish, Clear Anodized)
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMVSS-302
Operating | Storage Temperature Range:	-40 to 71°C (-40 to 160°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	14" (35.56cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (L x W x D):	4.50" (114.3 mm) x 2.78" (70.6 mm) x 0.187" (4.76 mm)
Product Weight:	**A/1K-NI-SP Series:** 0.14 lbs. (63.5g) | **A/1K-NI-AP Series:** 0.08 lbs. (36.29g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/1K-NI-SP -OR- 120549

Model #	Item #	Description
A/1K-NI-SP	120549	1K Nickel Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/1K-NI-AP	120487	1K Nickel Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad

CUSTOM ORDERING

Model # Example: A/ (A.) 1K-NI (B.) SP (C.) NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**1K-NI** →	**1K-NI**
C. Configuration *Select One (1)*	**SP** = 1 Gang Stainless Steel Wall Plate | **AP** = 1 Gang Aluminum Wall Plate	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/TAMPER PROOF SCREWS -OR- 144865

Model #	Item #	Description
A/TAMPER PROOF SCREWS	144865	Two (2) Screws, Tamper Proof, #6 x 5/8", Zinc Plated, Flat Head, 1/8"
SCREWDRIVER INSERT BIT	143067	Screwdriver Bit, Tamper Proof Screw, 5/64

BULLET PROBE

1" Bullet Probe, Balco RTD

The ACI Balco Bullet Probe Series features a one inch stainless steel probe with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. The bullet style sensor is designed to be used to monitor air temperatures and should not be fully submerged in water. This series can be ordered with different wire options and NIST Certification as referenced in the Ordering grid on the back of the product data sheet.

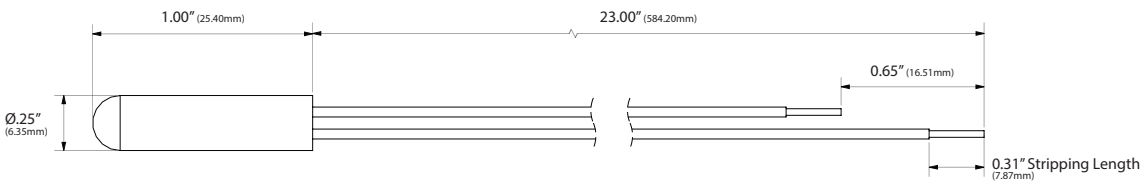
Applications: Roof Top Units, Air Handlers, Discharge Air/Supply/Return/Mixed Air Duct Temperature, Remote Temperature Sensing

The ACI Balco Bullet Probe Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C) :** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Maximum Operating Current:	5 mA
Probe Material:	304 Stainless Steel
Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.00" (25.4mm) x 0.250" (6.35mm)
Product Weight:	0.02 lbs. (9.07g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/BALCO-BP -OR- 121866

Model #	Item #	Description
A/BALCO-BP	121866	Balco Bullet Probe, 24" (61.0 cm) Leads, 1" Probe
A/BALCO-BP-10'CL2P	142712	Balco Bullet Probe, 10' (3.05m) CL2P Plenum Leads, 1" Probe
A/BALCO-BP-20'CL2P*	129139	Balco Bullet Probe, 20' (6.10m) CL2P Plenum Leads, 1" Probe

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) BALCO (B.) BP (C.) 6'CL2P (D.) NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *No Selection Required*	**BP** = 1" Stainless Steel Probe →	**BP**
D. Lead Wire Options *Select One (1)*	**----** = Standard 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/MOUNTING U-CLIP-1/4" -OR- 143352

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

COPPER AVERAGING

Bendable Copper, Balco RTD

The ACI Balco Copper Averaging Series features a bendable copper sensing element with two colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured with multiple sensing points determined by the length of the sensing element. Averaging sensors provide a more accurate average temperature of the air inside large ducts when compared to that of a single point sensor. Each of the elements is hermetically sealed to prevent moisture intrusion and includes an integrated foam pad to seal the duct and dampen vibrations. The benefits of copper sensing elements are that they have improved thermal conductivity and higher corrosion resistance when compared to similar aluminum style sensors. Copper has also been proven to provide an additional antibacterial effect to many of the airborne contaminants, molds and bacteria found in duct systems. Sensor lengths should be selected based upon the dimensional area of your duct. ACI's standard enclosures include the "-GD" Galvanized or "-PB" plastic box with hinged cover. Each unit includes nylon wire ties and mounts for mounting. Optional copper capillary and universal mounting clips, NEMA/IP rated weather proof enclosures and NIST Certificates are also available.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

The ACI Balco Copper Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

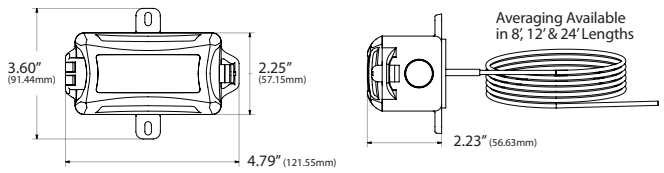
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	**8' & 12' Lengths:** Four | **24' Length:** Nine
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**8' Length:** +/- 1.26% @ 70°F (21.1°C) **12' Length:** +/- 1.37% @ 70°F (21.1°C) **24' Length:** +/- 1.64% @ 70°F (21.1°C)
Temperature Coefficient (0-100°C)	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Maximum Operating Current:	5 mA
Response Time (63% Step Change):	8 Seconds nominal
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 115°C (-40 to 239°F), NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Sensor Operation Temperature Range:	-40 to 239°F (-40 to 115°C)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensing Element Material | Element Diameter:	Copper | 0.210" (5.34mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Ratings:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Ratings:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB]

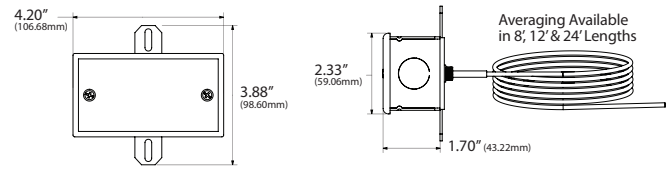


Plastic Box Enclosure [PB] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)
A/xx-A-yy-PB	0.72 lbs. (0.327 kg)	0.96 lbs. (0.435 kg)

ACI Model #	24′ (Probe Length)
A/xx-A-yy-PB	1.70 lbs. (0.771 kg)

Galvanized Enclosure [GD]

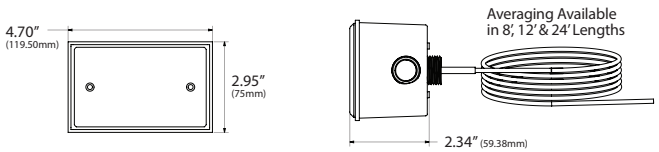


Galvanized Enclosure [GD] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)
A/xx-A-yy-GD	1.16 lbs. (0.526 kg)	1.40 lbs. (0.635 kg)

ACI Model #	24′ (Probe Length)
A/xx-A-yy-GD	2.20 lbs. (0.998 kg)

Bell Box Enclosure [BB]

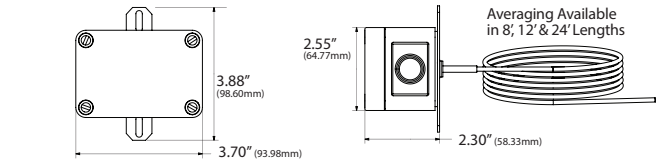


Bell Box Enclosure [BB] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)
A/xx-A-yy-BB	1.22 lbs. (0.553 kg)	1.44 lbs. (0.653 kg)

ACI Model #	24′ (Probe Length)
A/xx-A-yy-BB	2.18 lbs. (0.988 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	8′ (Probe Length)	12′ (Probe Length)
A/xx-A-yy-4X	0.84 lbs. (0.381 kg)	1.06 lbs. (0.481 kg)

ACI Model #	24′ (Probe Length)
A/xx-A-yy-4X	1.80 lbs. (0.816 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | A (C.) | 24′ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**BALCO** →	BALCO
C. Configuration *No Selection Required*	**A** = Bendable Copper Averaging →	A
D. Probe Length *Select One (1)*	**8′** = 8′ Sensor | **12′**= 12′ Sensor | **24′** = 24′ Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

DUCT

Duct Sensor, Balco RTD

The ACI Balco Duct Series features a 1/4" diameter stainless steel probe with two, 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The Balco sensors are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased thermal response times from our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for sealing the duct and dampening vibration. For best results, the sensor length should be determined by the width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. Our standard enclosure options include the galvanized junction box "-GD" or plastic duct enclosure with the hinged cover "-PB". On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. This series can be ordered with optional NEMA/IP rated weather proof enclosures and NIST Certificates as referenced in the ordering grid.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

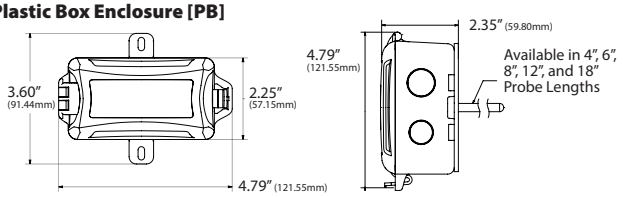
The ACI Balco Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Enclosure Specifications (Operating Temperature Range, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115°C (-40 to 239°F); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90°C (-22 to 194°F); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** -40 to 70°C (-40 to 158°F); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Sensor Operating Temperature Range:	-40 to 115°C (-40 to 239°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Flange Material:	304 Stainless Steel | Galvanized Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6" & 8" Probes:** 14" (35.6 cm) | **12" & 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Probe Diameter:	0.250" (6.35mm)
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



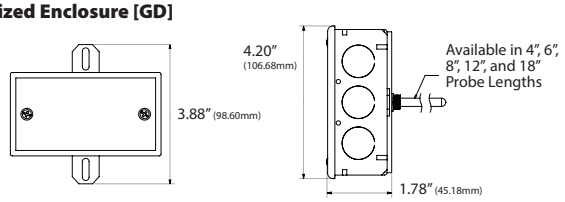
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-PB	0.24 lbs. (0.109 kg)	0.25 lbs. (0.113 kg)	0.26 lbs. (0.117 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

Galvanized Enclosure [GD]

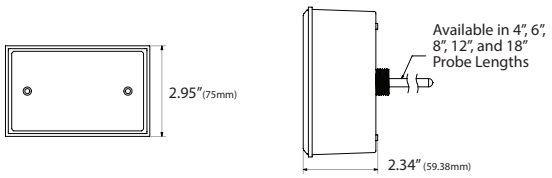


Galvanized Enclosure [GD] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.67 lbs. (0.303 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]

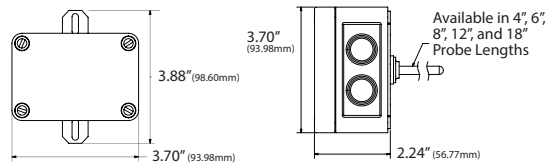


Bell Box Enclosure [BB] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.71 lbs. (0.322 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	4″ (Probe Length)	6″ (Probe Length)	8″ (Insertion Length)
A/xx-D-yy-4X	0.34 lbs. (0.154 kg)	0.35 lbs. (0.159 kg)	0.36 lbs. (0.163 kg)

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
A/xx-D-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | D (C.) | 8″ (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *No Selection Required*	**BALCO** ⟶	**BALCO**
C. Configuration *No Selection Required*	**D** = Duct ⟶	**D**
D. Probe Length *Select One (1)*	**4″** = 4″ Probe | **6″** = 6″ Probe | **8″** = 8″ Probe | **12″** = 12″ Probe | **18″** = 18″ Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

DUCT WITHOUT BOX

Flange Mounted Duct Sensor, Balco RTD

The ACI Balco Duct without Box series features a 1/4" diameter stainless steel probe with etched teflon lead wires. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as increased thermal response times using our high quality, thermally conductive epoxy. The duct style sensor is a single point sensor designed to be used in smaller duct applications and includes an insulation pad for properly sealing your duct as well as to dampen vibration. For best results, the sensor length should be determined by the actual width or diameter of your duct such that the tip of the probe is in the approximate center of the duct. On larger ducts, you may want to refer to our Rigid or Bendable Copper Averaging sensor for increased sensing points and better temperature control. This series can be ordered with optional NIST Certificates and plenum rated cable in 6', 10' and 20' lead lengths.

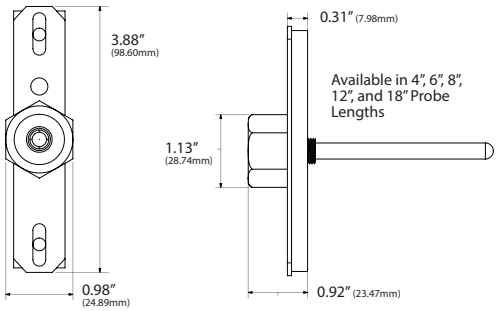
Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures

ACI's Balco Duct Without Box is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Operating Temperature Range:	-40 to 115°C (-40 to 239°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Flange Material:	304 Stainless Steel | Galvanized Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	**4", 6" & 8" Probes:** 14" (35.6 cm) | **12" & 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Probe Diameter:	0.250" (6.35mm)
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS



Standard Views

xx = Sensor Type | **yy** = Insertion Length

Duct Without Box [DO] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-DO-yy	0.10 lbs. (0.045 kg)	0.11 lbs. (0.050 kg)	0.12 lbs. (0.054 kg)
A/xx-DO-yy-6'-CL2P	0.15 lbs. (0.068 kg)	0.16 lbs. (0.073 kg)	0.17 lbs. (0.077 kg)
A/xx-DO-yy-10'-CL2P	0.20 lbs. (0.091 kg)	0.21 lbs. (0.095 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-20'-CL2P	0.27 lbs. (0.122 kg)	0.28 lbs. (0.127 kg)	0.29 lbs. (0.132 kg)

ACI Model #	12" (Insertion Length)	18" (Insertion Length)
A/xx-DO-yy	0.14 lbs. (0.064 kg)	0.16 lbs. (0.073 kg)
A/xx-DO-yy-6'-CL2P	0.20 lbs. (0.091 kg)	0.22 lbs. (0.100 kg)
A/xx-DO-yy-10'-CL2P	0.24 lbs. (0.108 kg)	0.27 lbs. (0.122 kg)
A/xx-DO-yy-20'-CL2P	0.31 lbs. (0.141 kg)	0.34 lbs. (0.154 kg)

Product Weights

STANDARD ORDERING

Model # Example: A/BALCO-DO-4" -OR- 121876

Model #	Item #	Description
A/BALCO-DO-4"	121876	Balco, Duct 4" without Box, Flange Only, 14" Leads
A/BALCO-DO-6"	133340	Balco, Duct 6" without Box, Flange Only, 14" Leads
A/BALCO-DO-8"	121877	Balco, Duct 8" without Box, Flange Only, 14" Leads
A/BALCO-DO-12"	142001	Balco, Duct 12" without Box, Flange Only, 24" Leads
A/BALCO-DO-18"	121875	Balco, Duct 18" without Box, Flange Only, 24" Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | DO (C.) | 6" (D.) | 6'CL2P (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *No Selection Required*	**DO** = Duct without Box (Mounting Flange Only) →	**DO**
D. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

FLEXIBLE AVERAGING

Multipoint Averaging Sensors, Balco RTD

The ACI Balco Flexible Averaging Series features an 18 AWG Plenum Rated cable sensing element with two, 12 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. All sensors are manufactured with 4 or 9 sensing points determined by the length of the sensing element. Averaging sensors provide a better average temperature of the air inside larger ducts when compared to a single point sensor. The flexible averaging sensors are limited to applications where operating temperatures are limited to 0 to 75ºC (32 to 158ºF) or high humidity, chemical resistance and UV Light Air Treatment Systems aren't required. Each of the sensing elements is sealed using a dual wall adhesive lined heat shrink tubing to provide a level of moisture protection to each of the sensing elements. The sensor length should be determined by the dimensional size of your duct. Our standard enclosure options include a galvanized junction box "-GD" or plastic duct enclosure with hinged cover "-PB". Each unit includes nylon wire ties and mounts for standard mounting. Optional copper capillary or universal plastic mounting clips, NEMA/IP Rated weather proof enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

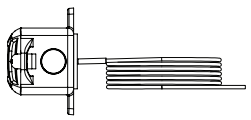
The ACI Balco Flexible Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

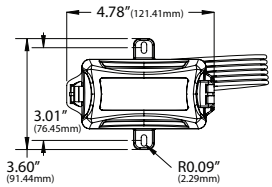
PRODUCT SPECIFICATIONS

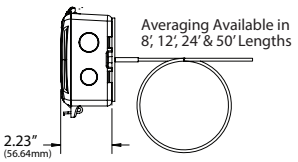
Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points | Number Wires:	**8' and 12' Lengths:** Four, **24' and 50' Lengths:** Nine | Two (Non-Polarity Sensitive)
Sensor Output @ 70ºF (21.1ºC) | Lead Wire Colors:	1000 Ohms nominal | (Red/Red)
Sensor Accuracy:	**8' Length:** +/- 1.04% @ 70ºF (21.1ºC) **12' Length:** +/- 1.08% @ 70ºF (21.1ºC) **24' Length:** +/- 1.11% @ 70ºF (21.1ºC) **50' Length:** +/- 1.22% @ 70ºF (21.1ºC)
Temperature Coefficient (0-100ºC):	4618 ppm/ºC
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150ºC (302ºF)
Response Time (63% Step Change):	15 Seconds nominal
Maximum Operating Current:	5 mA
Operating Temperature Range:	0 to 75ºC (32 to 167ºF)
Storage Temperature Range:	-20 to 75ºC (-4 to 167ºF)
Operating Humidity Range:	10 to 90% RH, non-condensing
Enclosure Specifications (Material, Flammability, NEMA | IP Ratings):	**"-GD" Enclosure:** Galvanized Steel; NEMA 1 (IP10); **"-PB" Enclosure:** ABS Plastic, UL94-HB; Plenum Rated **"-BB" Enclosure:** Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Sensor Jacket Material | Cable Ratings:	Low Smoke PVC | CL2P or CMP Plenum Rated Cable
Sensor Cable Diameter:	0.170" (4.32mm) nominal
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Lead Wire Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING

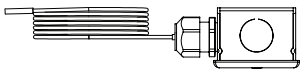
Plastic Box Enclosure [PB]

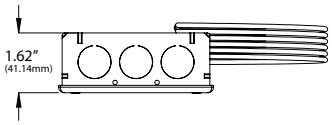


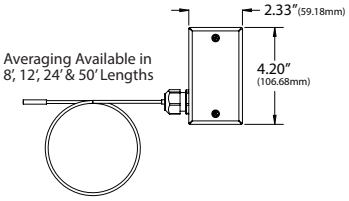




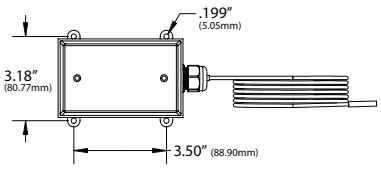
Galvanized Enclosure [GD]

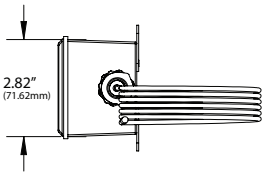


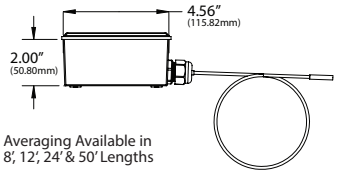




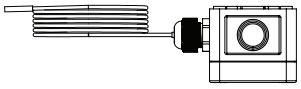
Bell Box Enclosure [BB]

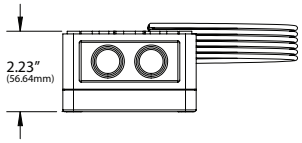


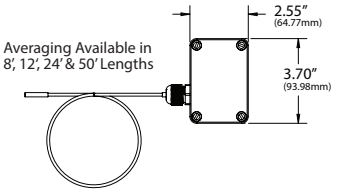




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | FA (C.) | 24' (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *No Selection Required*	**BALCO** ⟶	**BALCO**
C. Configuration *No Selection Required*	**FA** = Flexible Plenum Rated Cable Averaging Sensor ⟶	**FA**
D. Probe Length *Select One (1)*	**8'** = 8' Sensor | **12'**= 12' Sensor | **24'** = 24' Sensor | **50'** = 50' Sensor	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY:1 -OR- 130525

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
UNIVERSAL CLIP 50	145430	Capillary Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

FLUSH MOUNT BUTTONS

Brass, Stainless Steel & Plastic Balco RTDs

The ACI Balco Flush Mount Button Series features a stainless steel, brass or white plastic button sensor with two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven encapsulation process to eliminate the effects of moisture on the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. This sensor uses a small, low profile design and should be used in applications where aesthetics is one of your primary concerns. Each unit is supplied with a mounting kit such that they can be hidden underneath cabinets or shelving units, in decorative metal plates, trim, drywall or from a ½" piece of conduit coming down from the ceiling or roof. Note that if painting the sensors, be sure to coat with as little paint as possible so as to not limit the effect on the accuracy or responsiveness of the sensor. This series can be ordered with optional NIST Certificates as designated in the product ordering grid.

Applications: Museums, Historical Buildings, Monitoring Space Temperatures, Office Buildings, Schools, Retail, Remote Sensor

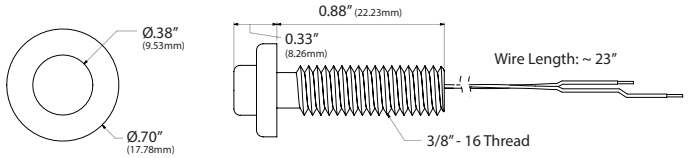
The Balco Flush Mount Button Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

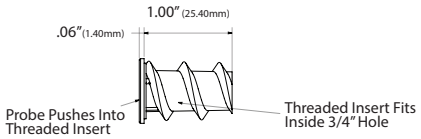
Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change)	8 Seconds nominal
Maximum Operating Current:	5 mA
Button Sensor Enclosure Material:	**A/BALCO-BBS:** Brass | **A/BALCO-SBS:** 304 Stainless Steel | **A/BALCO-PBS:** ABS
Plastic Button Flammability Rating:	UL94-HB
Operating | Storage Temperature Range:	**A/BALCO-PBS:** -40 to 70°C (-40 to 158°F) | -40 to 85°C (-40 to 185°F) **A/BALCO-BBS & A/BALCO-SBS:** -40 to 121°C (-40 to 250°F) | -40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	**A/BALCO-PBS:** 1.00" (25.4mm) x 0.750" (19mm) **A/BALCO-BBS** and **A/BALCO-SBS:** 1.20" (30.48mm) x 0.700" (17.78mm)
Product Weight:	**A/BALCO-PBS:** 0.04 lbs. (18.15g) | **A/BALCO-BBS & A/BALCO-SBS:** 0.10 lbs. (45.36g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

Brass & Stainless Button Sensor



Plastic Button Sensor



Front & Top / Right Views | **Spacers / Anchors**

STANDARD ORDERING

Model # Example: A/BALCO-PBS -OR- 130120

Model #	Item #	Description
A/BALCO-PBS	130120	Balco Plastic Button Sensor, 24″ Leads, Anchor
A/BALCO-BBS	121853	Balco Brass Button Sensor, 24″ Leads, Spacers & Brass Nut
A/BALCO-SBS	121860	Balco Stainless Steel Button Sensor, 24″ Leads, Spacers & Brass Nut

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) - BALCO (B.) - PBS (C.) - NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *Select One (1)*	**PBS** = Plastic Button | **BBS** = Brass Button | **SBS** = Stainless Steel Button	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

IMMERSION

Stainless Steel Immersion, Balco RTD

The ACI Balco Immersion Series features a ¼" diameter stainless steel probe with two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. The immersion sensors come standard with a welded thermowell "-I" version but can also be ordered without the thermowell "-INW" version. The "-INW" Version includes a standard ½" NPS (National Pipe Straight) process thread to be used with an optional machined thermowell or in an existing thermowell application. This series can be ordered with optional NEMA rated weather proof enclosures and NIST Certificates as referenced on the back of the product data sheet.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressor, Chillers

The ACI Balco Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

Disclaimer: Specification of any thermowell and the materials of construction are the sole responsibility of the designer of the system that incorporates the thermowell. Sole responsibility for ensuring compatibility of the process fluid with the system rests with the end user.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 21.1°C (70°F) | Lead Wire Colors:	1000 Ohms nominal | (Orange/Yellow)
Sensor Accuracy:	**21°C (70°F):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm / °C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Operating Current (Maximum):	5 mA
Sensor Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Enclosure Specifications (Temperature, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40°C to 121°C (-40°F to 250°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30°C to 90°C (-22°F to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40°C to 121°C (-40°F to 250°F), Plenum Rated, NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40°C to 70°C (-40°F to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35mm) | 0.260"
Probe Material | Thermowell Material:	304 Stainless Steel | 304 Series Stainless Steel
Thermowell Instrument | Process Thread Size:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	½" NPS (National Pipe Straight) Male Thread
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"				
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**	**12.0" (304.8 mm)**	**18.0" (457.2 mm)**	**24" (609.6 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	73.6 ft/s (22.4 m/s)	19.4 ft/s (5.9m/s)	8.8 ft/s (2.7m/s)	5.2 ft/s (1.6m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	26.9 ft/s (8.2 m/s)	11.3 ft/s (3.4m/s)	4.7 ft/s (1.43m/s)	2.5 ft/s (0.8m/s)

Note 1: Values are for Air/Gas/Steam and similar density media based upon Max pressure of 2900 PSI @ 1000ºF (537.8ºC) | **Note 2:** Values are for Water (No Glycol or other Chemicals factored in) @ 68 ºF (20ºC) and max pressure of 5700 PSI. (Calculated to ASME PTC 19.3 TW-2016 Code B31.1) | **Note 3:** 6-24" Machined Thermowells meet ASME PTC 19.3 TW-2016 Code B31.1.

MAXIMUM PRESSURE VS TEMPERATURE RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Material:	70°F (21.1°C)	200°F (93.3°C)	400°F (204.4°C)	600°F (315.6°C)	800°F (426.7°C)	1000°F (537.8°C)	1200°F (648.9°C)
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.6 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

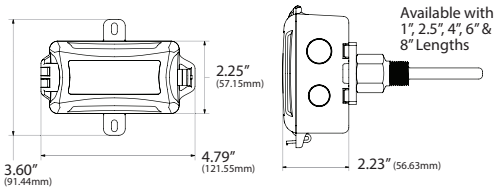
MAXIMUM FLUID VELOCITY RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/Steam and similar density media

DIMENSIONAL DRAWINGS. WEIGHTS

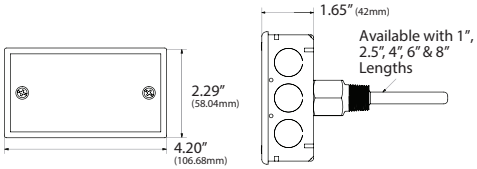
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-PB	0.20 lbs. (0.091 kg)	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs (0.163 kg)
A/xx-I-yy-PB	N/A	0.24 lbs. (0.109 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)	N/A
A/xx-IM-yy-PB	0.40 lbs. (0.182 kg)	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)	1.15 lbs (0.522 kg)

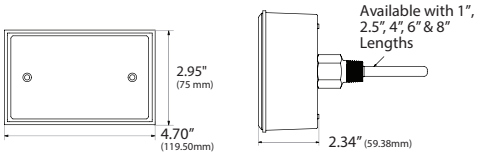
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-GD	0.62 lbs. (0.281 kg)	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.78 lbs (0.354 kg)
A/xx-I-yy-GD	N/A	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-GD	0.81 lbs. (0.367 kg)	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.55 lbs (0.703 kg)

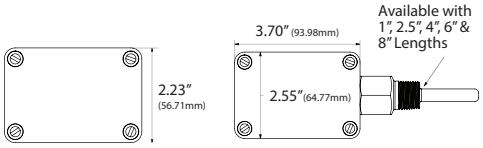
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-BB	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.80 lbs (0.363 kg)
A/xx-I-yy-BB	N/A	1.02 lbs. (0.463 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-BB	0.83 lbs. (0.376 kg)	1.02 lbs. (0.463 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.59 lbs (0.721 kg)

NEMA 4X Enclosure [4X]

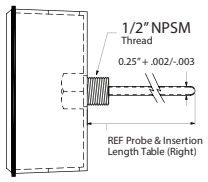


NEMA 4X Enclosure [4X] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-4X	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)	0.44 lbs (0.200 kg)
A/xx-I-yy-4X	N/A	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)	N/A
A/xx-IM-yy-4X	0.48 lbs. (0.218 kg)	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)	1.27 lbs (0.576 kg)

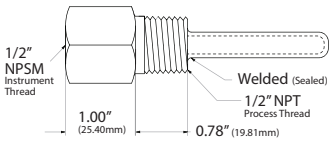
N/A = Not Available | **xx** = Sensor Type | **yy** = Insertion Length

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below : welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
3"	2.81" +/- 0.13"	A/xx-INW-1"-yy-zz	A/M1"
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/2.5" or A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/4" or A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/6" or A/M6"
10"	9.81" +/- 0.13"	A/xx-INW-8"-yy-zz	A/M8"
13"	12.75" +/- 0.13"	A/xx-INW-12"-yy-zz	A/M12"
19"	18.75" +/- 0.13"	A/xx-INW-18"-yy-zz	A/M18"
25"	24.75" +/- 0.13"	A/xx-INW-24"-yy-zz	A/M24"

CUSTOM ORDERING WELDED THERMOWELL

Model # Example: A/ (A.) | BALCO (B.) | I (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *Select One (1)*	**I**=Immersion with Welded Thermowell	
D. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

CUSTOM ORDERING MACHINED THERMOWELL

Model # Example: A/ (A.) | BALCO (B.) | IM (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *Select One (1)*	**IM**=Immersion with Machined Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

Note: Machined Thermowells with lengths of 12", 18" and 24" are available and must be ordered separately | See the Machined Thermowells Data Sheet (Accessories)

CUSTOM ORDERING SENSOR ONLY NO THERMOWELL

Model # Example: A/ (A.) | BALCO (B.) | INW (C.) | 4" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *Select One (1)*	**INW** = Immmersion without Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion | **2.5"** = 2.5" Insertion | **4"** = 4" Insertion | **6"** = 6" Insertion | **8"** = 8" Insertion | **12"** = 12" Insertion | **18"** = 18" Insertion | **24"** = 24" Insertion	
E. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTRE 2 oz Or 102595

Model #	Item #	Description
NSG Heat Transfer Paste 2 oz.	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG Heat Transfer Paste 16 oz.	140574	Thermal Grease, 16 oz. Jar, Silicon Free, -40 to 390°F (-40 to 198°C)
A/2.5"	128349	2.5" (63.5 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/4"	128350	4" (101.6 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/6"	128351	6" (152.4 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/M1"	128337	1" (25.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"	128338	2.5" (63.5 mm) Insertion, 304 Stainless, Machined , 1/2" NPT Thermowell
A/M4"	128343	4" (101.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M8"	138725	8" (203.2 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M12"	128339	12" (304.80 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M18"	128341	18" (457.20 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M24"	128342	24" (609.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5" - 316SS	128352	2.5" (63.5 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4" - 316SS	128353	4" (101.6 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6" - 316SS	128354	6" (152.4 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell

OUTSIDE AIR

Weatherproof Outside Air, Balco RTD

The ACI Balco Outside Air Series features a weather proof European Style Plastic enclosure with twist off cover and water tight cord grip. The sensing element contains two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. All sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as to increase the thermal response time using our high quality, thermally conductive epoxy. The outdoor air sensor is a single point sensor designed to be mounted under an eave or on the North side of a building in a shaded location with the sensing tube pointed downward to prevent any water or ice from settling in the sensing tube. Optional NEMA 4X "-4X" plastic or NEMA 3R rated "-BB" Aluminum enclosures and NIST Certificates are available as referenced in the ordering information on the back of the product data sheet. For Applications in which the sensor must be mounted in direct sunlight, please see the Sun Shield data sheet which will allow you to order a Temperature or Temperature/Humidity Combination sensor.

Applications: Outside Air Temperature Sensing, Cold Storage Facilities, High Dew Point/Condensing Environments, Wash Down Environments

The ACI Balco Outside Air Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

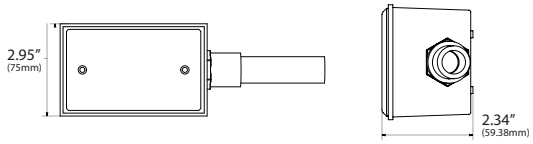
PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change)	30 Seconds nominal
Maximum Operating Current:	5 mA
Operating Temperature Range:	-40 to 70°C (-22 to 158°F)
Storage Temperature Range:	-40 to 70°C (-22 to 158°F)
Operating Humidity Range:	10 to 100% RH, Condensing
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-EH" Enclosure:** PC/ASA Plastic w/ UV Protectant; -40 to 88°C (-40 to 190°F); UL94-V0 **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched (PTFE) Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions:	See Drawings on back of Data Sheet
Product Weight:	**A/BALCO-O-EH:** 0.46 lbs. (0.21kg) | **A/BALCO-O-4X:** 0.38 lbs. (0.17kg); **A/BALCO-O-BB:** 0.76 lbs. (0.35kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type

Bell Box Enclosure [BB]



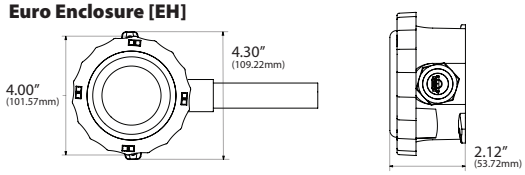
Front & Right Views | **Top View**

Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

Product Weight

Euro Enclosure [EH]



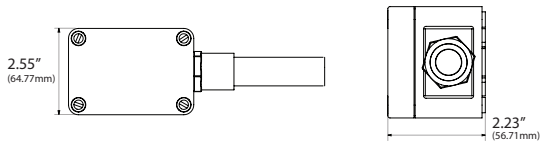
Front & Right Views | **Top View**

Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

Product Weight

NEMA 4X Enclosure [4X]



Front & Right Views | **Top View**

NEMA 4X Enclosure [4X] Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Product Weight

STANDARD ORDERING

Model # Example: A/BALCO-O-EH -OR- 125274

Model #	Item #	Description
A/BALCO-O-EH	125274	Balco, Outside Air Sensor, 14″ Leads, Euro Enclosure
A/BALCO-O-BB	121833	Balco, Outside Air Sensor, 14″ Leads, Cast Aluminum Enclosure
A/BALCO-O-4X	134237	Balco, Outside Air Sensor, 14″ Leads, NEMA 4X Enclosure

CUSTOM ORDERING

Model # Example: A/ (A.) BALCO (B.) O-4X (C.) NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *No Selection Required*	**BALCO** ⟶	**BALCO**
C. Enclosure *Select One (1)*	**O-EH** = Euro Enclosure | **O-BB** = Aluminum Enclosure | **O-4X** = NEMA 4X Enclosure	
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

PIPE MOUNT

Small Pipe/Coil Sensor, Balco RTD

The ACI Balco Pipe Mount Series features a 1.1" long Brass sensing enclosure with slight curvature on the bottom that is designed to increase the surface area and improve thermal conductivity between the pipe and sensor. Each sensor has two, 24 inch 22 AWG Etched Teflon colored lead wires to differentiate many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to improve the thermal response times using our high quality, thermally conductive epoxy. The Pipe Mount sensor should be used on pipe or coil sizes from 1/2" to 1" in diameter and condensing environments. A 7.5" nylon wire tie is supplied for fastening the sensor to the top of the pipe. For best accuracy and increased thermal conduction between the pipe and the sensor, we recommend cleaning the pipe and to use thermal grease between the mating surfaces and then to insulate the sensor from the effects of the ambient air. An optional plenum rated cable and NIST Certificates can be ordered as referenced in the ordering grid.

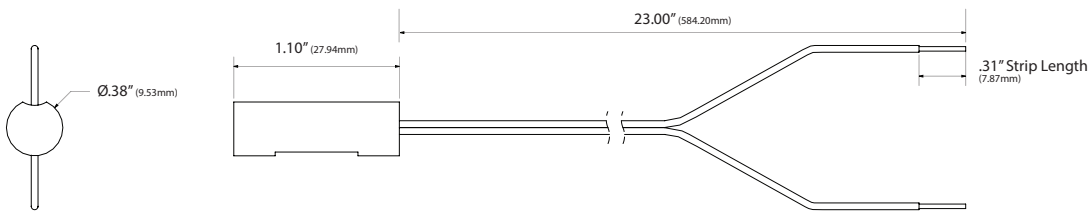
Applications: Cooling Coils, Heating Coils, Hot Water Systems, Chilled Water Systems, Hydronic Heating Systems, Chillers

The ACI Balco Pipe Mount Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	15 Seconds nominal
Maximum Operating Current:	5 mA
Pipe Mount Sensor Enclosure Material:	Brass
Pipe Sizes Accepted:	½" (12.7mm) to 1" (25.4mm)
Operating Temperature Range:	-40 to 121°C (-40 to 250°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH condensing
Lead Length | Conductor Size:	24" (61cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	1.10" (27.9mm) x 0.375" (9.53mm)
Product Weight:	0.05 lbs. (22.68g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/BALCO-PM -OR- 138661

Model #	Item #	Description
A/BALCO-PM	138661	Balco, Pipe Mount, 24" Leads

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) BALCO (B.) PM (C.) 20' (D.) (E.) NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *No Selection Required*	**BALCO** →	**BALCO**
C. Configuration *No Selection Required*	**PM** = 1.1" Brass Pipe Mount Sensor →	**PM**
D. Lead Length *Select One (1)*	**----** = Standard (24" Etched Teflon) | **10'** = 10 Feet (3.05m) | **20'** = 20 Feet** (6.10m)	
E. Lead Wire Type *Select One (1)*	**----** = Standard (24" Teflon Colored Leads) | **CL2P** = Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: The 20' Length is not CE Compliant but it is RoHS Compliant

ACCESSORIES ORDERING

Model # Example: HARDWARE, 2" HOSE CLAMP -OR- 100235

Model #	Item #	Description
HARDWARE, 2" HOSE CLAMP	100235	Hardware, 2" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

PROBE ONLY

Stainless Steel Prode, Balco RTD

The ACI Balco Probe Only Series features a ¼" diameter stainless steel probe with two, 14" or 24 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors and to increase the thermal response time using our high quality, thermally conductive epoxy. The probe is designed to be used in either duct and immersion applications when used with the proper length thermowell. Optional NIST Certificates are available as referenced in the ordering grid on the Product Data Sheet.

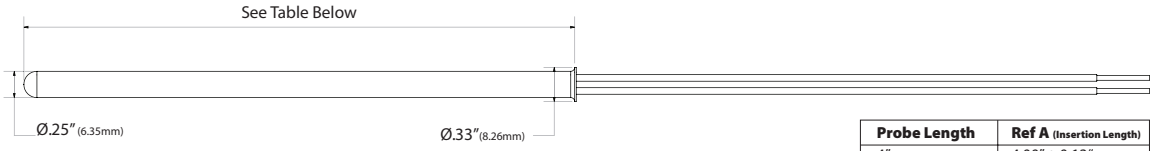
Applications: Roof Top Units, Air Handlers, Supply/Discharge Air/Return/Mixed/Exhaust Air Duct Temperature Sensing, Immersion Temperature Sensors, Replacement Temperature Sensors

The ACI Balco RTD Probe Only Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:		Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:		One
Number Wires:		Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | (Standard Lead Wire Colors):		1000 Ohms nominal | (Orange/Yellow)
Sensor Accuracy:		**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):		4618 ppm/°C
Sensor Stability:		+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):		8 Seconds nominal
Maximum Operating Current:		5mA
Operating Temperature Range:		-40 to 121°C (-40 to 250°F)
Storage Temperature Range:		-40 to 85°C (-40 to 185°F)
Operating Humidity Range:		10 to 95% RH, non-condensing
Probe Material:		304 Stainless Steel
Standard Wire	**Lead Wire Insulation | Wire Rating:**	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
	Temperature Rating:	-55°C (-67°F) to 200°C (392°F)
	Conductor Material:	Silver Plated Copper
	Rated Application:	Suitable for Indoor and Outdoor (wet) location. Oil, Moisture, Acids, Oils and Moisture Resistant
	Lead Length | Conductor Size:	**4", 6" and 8" Probes:** 14" (35.6 cm) | **12" and 18" Probes:** 24" (61cm) | 22 AWG (0.65mm)
Plenum Wire	**Lead Wire Insulation | Wire Rating:**	**CL2P:** FEP (Fluorinated Ethylene Propylene) | TYPE CL2P - TYPE CMP 22 AWG (UL), C(UL) FEP/FEP E130356 ROHS
	Temperature Rating:	**CL2P:** -80°C (-112°F) to 150°C (302°F)
	Conductor Material:	**CL2P:** Tinned Copper
	Rated Application:	**CL2P:** Suitable for Indoor and Outdoor (wet) locations. Oil, Gas, Sunglight, Abrasion Acid Resistant
Product Dimensions | Probe Diameter:		See table on back of product data sheet | 0.250" (6.35mm)
Product Weight:		**4"** = 0.028 lbs. (12.7g) | **6"** = 0.036 lbs. (16.3g) | **8"** = 0.044 lbs. (20g) | **12"** = 0.066 lbs. (29.9g) | **18"** = 0.09 lbs. (40.8g)
Agency Approvals:		CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Probe Length	Ref A (Insertion Length)
4"	4.00" ± 0.13"
6"	6.00 ± 0.13"
8"	8.00" ± 0.13"
12"	12.00" ± 0.25"
18"	18.00" ± 0.25"

Standard View

CUSTOM ORDERING

odel # Example: A/ (A.) - BALCO (B.) - PO (C.) - 4" (D.) - 6' CL2P (E.) - NIST (F.)

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/**	**A/**
B. Model Series *No Selection Required*	**BALCO**	**BALCO**
C. Configuration *No Selection Required*	**PO =** Probe Only	**PO**
D. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Lead Wire Options *Select One (1)*	**----** = Standard 14 or 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
F. NIST *Select One (1)*	**----** = No NIST Certificate **| NIST =** NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

RIGID AVERAGING

Four Point Averaging, Balco RTD

The ACI Balco Rigid Averaging Series features a stainless steel, probe style sensing element with two 12 inch 22 AWG Etched Teflon colored lead wires to differentiate the different sensor types. The Nickel Rigid Averaging sensors are manufactured with 4 sensing points to provide a better average temperature in smaller to medium sized ducts when compared to that of a single point duct sensor or the longer Flexible and Copper averaging sensors can't be easily incorporated. Each of the elements is hermetically sealed to prevent moisture intrusion and includes an integrated foam pad to seal the duct and dampen vibrations. Some of the benefits of using a stainless steel Rigid Averaging sensor is that it can be installed easily in either a horizontal or vertical position, like that of a single point duct sensor and can be used in applications where a longer Flexible or Copper averaging sensor aren't easily installed. As an added benefit, the stainless steel probe also offers a higher level of corrosion resistance to chemicals and moisture in the air stream when compared to that of the Flexible or Copper Averaging sensors. Actual sensor length should be selected based upon the overall dimensional area of your duct. ACI's standard enclosures include the galvanized junction box "-GD" or plastic duct enclosure with the hinged cover "-PB". Optional NEMA/IP rated Weather Proof enclosures and NIST Certificates are available as referenced in the ordering grid.

Applications: Air Handlers, Roof Top Units, Mixed Air/Discharge/Supply Air Temperature Monitoring, Data Centers, Hospitals

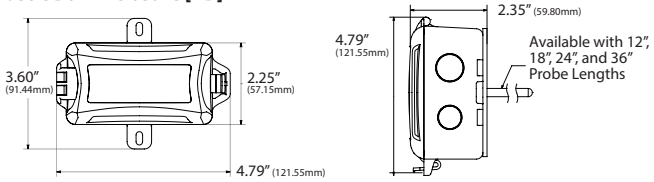
The ACI Balco Rigid Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points | Number Wires:	Four | Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Yellow
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C)	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Maximum Operating Current:	5 mA
Response Time (63% Step Change):	10 Seconds nominal
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 115°C (-40 to 239°F), NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensing Element Material | Element Diameter:	304 Series Stainless Steel | 0.250" (6.35mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Foam Pad Material | Flammability Ratings:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Ratings:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



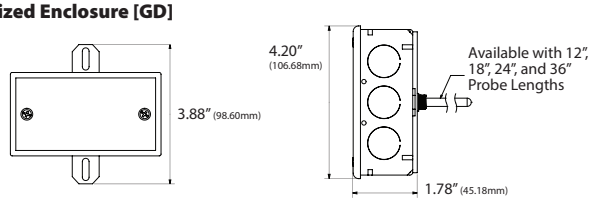
xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

Galvanized Enclosure [GD]

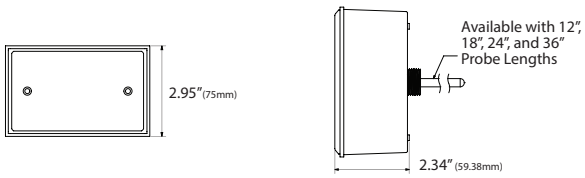


Galvanized Enclosure [GD] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

Bell Box Enclosure [BB]

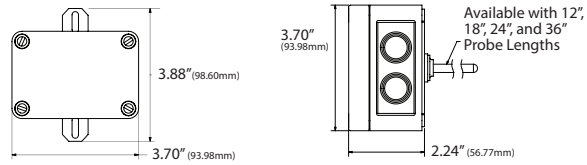


Bell Box Enclosure [BB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | RA (C.) | 18" (D.) | GD (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**BALCO** →	BALCO
C. Configuration *No Selection Required*	**RA** = Rigid Averaging →	RA
D. Probe Length *Select One (1)*	**12"** = 12" Probe | **18"** = 18" Probe | **24"** = 24" Probe | **36"** = 36" Probe	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum | **4X** = NEMA 4X	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ROOM

Wall Mount Enclosure, Balco RTD

The ACI Balco Room Series combines option flexibility with attractive styling in our "-R2" or "-R" style enclosures which both include four-way air flow design too minimize self-heating to the sensor. These enclosures are offered in a White "-R2" or Beige "-R" color depending on the enclosure style. All units are designed to be mounted over a single gang junction box or hole in the wall with the use of drywall anchors. Screw terminal blocks are provided for making all connections to the temperature sensor, Set Point, "After Hours" Override, and Communication Jacks for easy access to your building management system. An optional 1/8" Black foam pad with pressure sensitive adhesive is available to insulate the sensor from thermal drafts within the wall or wall surface temperature. A 1/16" Hex driver should be used to secure the cover from being easily removed. The "LCD" option uses two temperature sensors to monitor the ambient air temperature in the space and is factory calibrated at a single point.

Applications: Space Temperature Sensing, Decorative Wall Sensor Applications, Office Buildings, Schools, Colleges, Commercial Buildings, OEM Opportunities

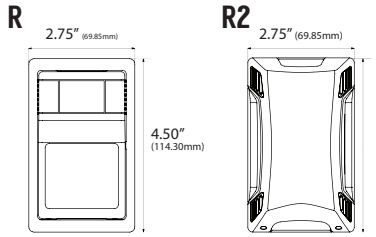
The ACI Balco Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

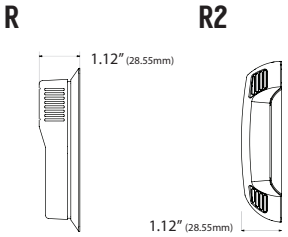
Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Temperature Sensing Points:	One
Sensor Output @ 70°F (21.1°C):	1000 Ohms Nominal
Sensor Accuracy:	70°F (21.1°C): +/- 1%
Temperature Coefficient (0-100°C):	4681 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds Nominal
Maximum Operating Current:	5 mA
LCD Display Supply Voltage:	+9 to 35 VDC / 24 VAC (50/60 Hz)
LCD Display Supply Current/VA:	<4 mA / 0.12VA
LCD Display Accuracy:	+/- 2°F or +/- 2°C @ 71°F (21.5°C) Typical
LCD Display Descriptor | Number of Digits:	°F (Fahrenheit) or °C (Celsius) | 3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Set Point Specifications | Set Point Indication:	See Ordering Grid Options on back of Product Data Sheet
Set Point Tolerance:	+/- 10% of Range
Override Options:	Short Thermistor (Default); Field (Jumper) Selectable "Dry Contact" Closure Short Set Point available upon request
Operating Temperature Range:	1.5 to 50°C (35 to 122°F)
Storage Temperature Range:	**Non-LCD:** -40 to 65°C (-40 to 149°F) | **LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm^2) - 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum) | 0.6 Nm (Maximum)
Enclosure Material | Flammability Rating | Color:	**"-R2" Enclosure:** ABS Plastic, UL94-HB, White | **"-R" Enclosure:** ABS Plastic, UL94-HB, Beige
Product Dimensions:	See Drawing on back of Product Data Sheet
Product Weight:	**A/BALCO-R/RS/RO Series:** 0.14 lbs. (63.5g) | **A/BALCO-RSO Series:** 0.18 lbs. (81.6g) | **A/BALCO-R2/R2S/R2O Series:** 0.16 lbs. (72.6g) | **A/BALCO-R2SO Series:** 0.20 lbs. (90.7g) | **All LCD Display Units:** 0.18 lbs. (81.6g)
Agency Approvals:	CE**, RoHS2, WEEE

Note:** All LCD Display Units are not CE Compliant, but they are RoHS2 Compliant

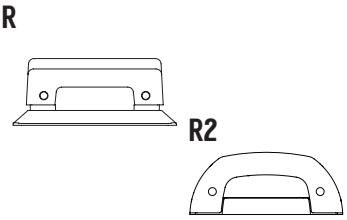
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model #	Item #	Description
A/BALCO-R	144158	1K Balco RTD, "R" Version, Beige, No Options
A/BALCO-R2	144159	1K Balco RTD, "R2" Version, White, No Options

CUSTOM ORDERING

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**BALCO** →	**BALCO**
C. Configuration *Select One (1)*	**R** = Room | **RO** = Room with Override | **RS** = Room with Set Point | **RSO** = Room with Setpoint and Override | **R2** = Room | **R2O** = Room with Override | **R2S** = Room with Set Point | **R2SO** = Room with Set Point and Override	
D. Communication Jack *Select One (1)*	**----** = No Jack **RJ4** = 4 Pin 4 Conductor RJ9, RJ10 or RJ22 Style Head Set Modular Connector **RJ6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **232** = 3.5mm (1/8") Stereo Jack	
E. LCD Display[2] *Select One (1)*	**----** = No LCD Display | **LCD**[2] = With LCD Display (Only Available with "R" Style Enclosure)	
F. LCD Display Descriptor *Select One (1)*	**F** = °F (Fahrenheit) | **C** = °C (Celsius)	
G. NIST[3] *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Slidepots[4] *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A03** = 0 to 10K | **A09** = 0 to 2K | **A10** = 0 to 1K | **A28** = 806 to 1206	
2. Setpoint Indication *Select One (1)*	**A3** = 18-28 DEG C | **A4** = 20-30 DEG C | **B4** = 55-85 DEG F | **B7** = 60-90 DEG F | **C5** = COOL/WARM | **C6** = COOLER/WARMER | **D3** = WARM/COOL | **G5** = BLUE/RED (R2 Enclosure)	

Note[1]: A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI | **Note[2]:** LCD Display is not compatible with NIST | **Note[3]:** NIST is available in "R" and "R2" only configurations | **Note[4]:** Other Setpoint configurations are available. Please contact ACI | **Note*:** Short Sensor is factory default, but the Dry Contact option is field selectable with jumper shunts included

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

STRAP ON

Non-Intrusive Pipe Mount, Balco RTD

The ACI Balco Strap-On Series features a 1.5" square copper plate with the sensor encapsulated to the back side of the plate to improve the thermal conductivity between the pipe and the sensor when an Immersion style sensor can't be inserted into the pipe in a retrofit application. Each sensor has two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate the many different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors as well as to improve the thermal response times using our high quality, thermally conductive epoxy. The Strap-On Series sensors can be used to monitor pipe sizes from 1 ¼" to 10" in diameter. For best accuracy and increased thermal conduction between the pipe and sensor, ACI recommends to clean the pipe before applying thermal grease and insulating the sensor from the effects of the ambient air. Optional Weather Proof enclosure and NIST Certificates are available as referenced in the ordering grid on the back of the Product Data Sheet.

Applications: Cold Water Systems, Hot Water Systems, Retrofit applications, Hydronic Heating Systems, Chillers

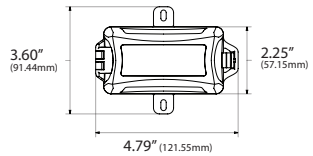
The ACI Balco Strap-On Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

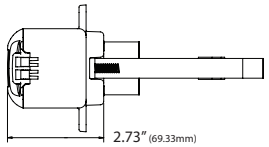
PRODUCT SPECIFICATIONS

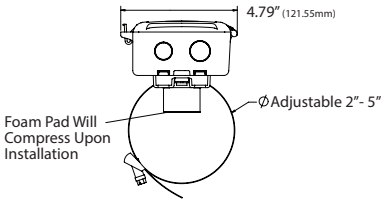
Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) (Lead Wire Colors):	1000 Ohms nominal | (Orange/Yellow)
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	8 Seconds nominal
Operating Current (Maximum):	5 mA
Enclosure Specifications (Operating Temperature Range, Flammability, NEMA/IP Rating):	**A/BALCO-S-GD:** Galvanized Steel, -40 to 93°C (-40 to 200°F), NEMA 1 (IP 10) **A/BALCO-PB:** ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **A/BALCO-S-4X:** Polystyrene, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Acceptable Pipe Size:	**A/BALCO-S-XX:** 1 1/4" (32mm) to 4" (100mm) | **A/BALCO-S10-XX:** 2" (50mm) to 10" (250mm)
Foam Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HF1; MIL-R-6130C; FMVSS-302
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (Length x Diameter):	See Drawing on Back of Data Sheet
Product Weight:	**A/BALCO-XX-GD:** 0.80 lbs. (0.37kg) | **A/BALCO-XX-PB:** 0.40 lbs. (0.18kg); **A/BALCO-XX-4X:** 0.55 lbs. (0.25kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

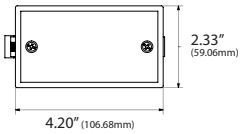
Plastic Box Enclosure [PB]

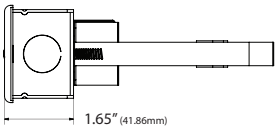


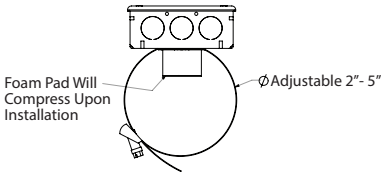




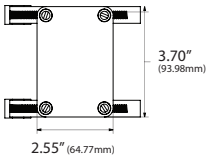
Galvanized Enclosure [GD]

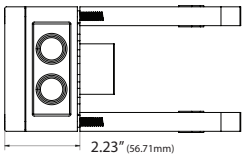


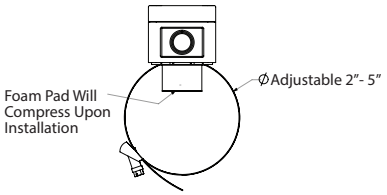




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/BALCO-S-GD -OR- 114910

Model #	Item #	Description
A/BALCO-S-GD	114910	Balco, Strap-On, 1 ¼" to 4" Pipe, Galvanized Enclosure, 24" Leads
A/BALCO-S-PB	124210	Balco, Strap-On, 1 ¼" to 4" Pipe, Plastic Enclosure, 24" Leads
A/BALCO-S-4X	137376	Balco, Strap-On, 1 ¼" to 4" Pipe, NEMA 4X Plastic Enclosure, 24" Leads

CUSTOM ORDERING

Model # Example: A/ (A.) | BALCO (B.) | S (C.) | PB (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *No Selection Required*	**BALCO** →	BALCO
C. Configuration *Select One (1)*	**S** = Strap-On (1.25" to 4" Pipe Size) | **S10** = Strap-On (2" to 10" pipe size)	
D. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **4X** = NEMA 4X Weather Proof	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/HOSE CLAMP-2-12" -OR- 142631

Model #	Item #	Description
A/HOSE CLAMP-2-5"	142630	Hardware, 2-5" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
A/HOSE CLAMP-2-12"	142631	Hardware, 2-12" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)

WALL PLATES

Stainless & Aluminum Wall Plate, Balco RTD

The ACI Balco Wall Plate Series features a decorative, single gang brushed Stainless Steel or Smooth Satin Finished Anodized Aluminum wall plate with two, 14 inch 22 AWG Etched Teflon colored lead wires to differentiate between the different sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase the thermal response times using our high quality, thermally conductive epoxy. A foam pad is included to insulate the sensor from thermal drafts within the wall, since the plates are designed to be mounted over a standard single gang junction box or directly over a hole in the wall with the use of drywall anchors. These plates are designed to provide a level of protection and security when monitoring the ambient air temperatures in a space. Tamper Proof mounting screws, tamper proof screw driver bits and NIST Certificates are available as referenced on the back of the product data sheet.

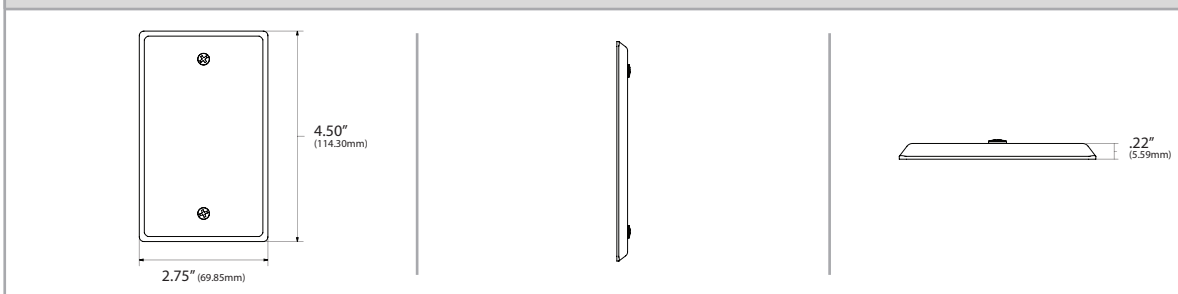
Applications: Space Temperature Sensing, Decorative Wall Plate Applications, Tamper Proof Applications, Schools, Gymnasiums

The ACI Balco Wall Plate Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Sensor Type | Sensor Curve:	Balco RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Two (Non-Polarity Sensitive)
Sensor Output @ 70°F (21.1°C) | Lead Wire Colors:	1000 Ohms nominal | Orange/Red
Sensor Accuracy:	**70°F (21.1°C):** +/- 1%
Temperature Coefficient (0-100°C):	4618 ppm/°C
Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
Response Time (63% Step Change):	25 Seconds nominal
Operating Current (Maximum)	5 mA
Plate Material:	**A/BALCO-SP Series:** 430 Stainless Steel (Brushed Stainless Steel Finish) **A/BALCO-AP Series:** Aluminum (Smooth Satin Finish, Clear Anodized)
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMVSS-302
Operating | Storage Temperature Range:	-40 to 71°C (-40 to 160°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Lead Length | Conductor Size:	14" (35.56cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions (L x W x D):	4.50" (114.3mm) x 2.78" (70.6mm) x 0.187" (4.76mm)
Product Weight:	**A/BALCO-SP Series:** 0.14 lbs. (63.5g) | **A/BALCO-AP Series:** 0.08 lbs. (36.29g)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/BALCO-SP -OR- 121894

Model #	Item #	Description
A/BALCO-SP	121894	Balco Stainless Wall Plate, 14" Leads, 1/8" Foam Pad
A/BALCO-AP	142711	Balco Aluminum Wall Plate, 14" Leads, 1/8" Foam Pad

CUSTOM ORDERING

Model # Example: A/ (A.) - BALCO (B.) - SP (C.) - NIST (D.)

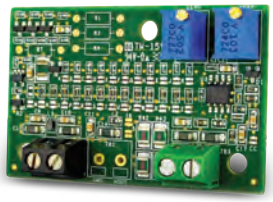
A. Sensor Series *No Selection Required*	**A/** →
B. Model Series *No Selection Required*	**BALCO** →
C. Configuration *Select One (1)*	**SP** = 1 Gang Stainless Steel Wall Plate | **AP** = 1 Gang Aluminum Wall Plate
D. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)

MODEL #
A/
BALCO

ACCESSORIES ORDERING

Model # Example: A/TAMPER PROOF SCREWS -OR- 144865

Model #	Item #	Description
A/TAMPER PROOF SCREWS	144865	Two (2) Screws, Tamper Proof, #6 x 5/8", Zinc Plated, Flat Head, 1/8"
SCREWDRIVER INSERT BIT	143067	Screwdriver Bit, Tamper Proof Screw, 5/64



BOARD ONLY

Calibrated Transmitter, No Sensor

The ACI Transmitter Board Only Series features a two-wire, 4 to 20 mA loop powered output signal with optional 3-Wire voltage output signals available. Sensors are not included with the board only transmitter since they are designed to be used with any existing 100 or 1000 Ohm Platinum RTD sensor with a 385 temperature coefficient. All transmitters must be ordered with the temperature span that you require, since the boards are tuned to give you the best performance characteristics for the temperature span specified. Zero and Span adjustments are available for recalibration in the field when using NIST Certified equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to protect against the introduction of noise onto the signal lines. ACI does offer recalibration services for any transmitters sent back to us for a nominal fee.

Applications: Replacement Temperature Transmitters, High Moisture and Corrosive Environments, Conversion of existing Platinum 2 or 3 Wire RTD's to linear current or voltage output signal, transmit signals over long wire runs

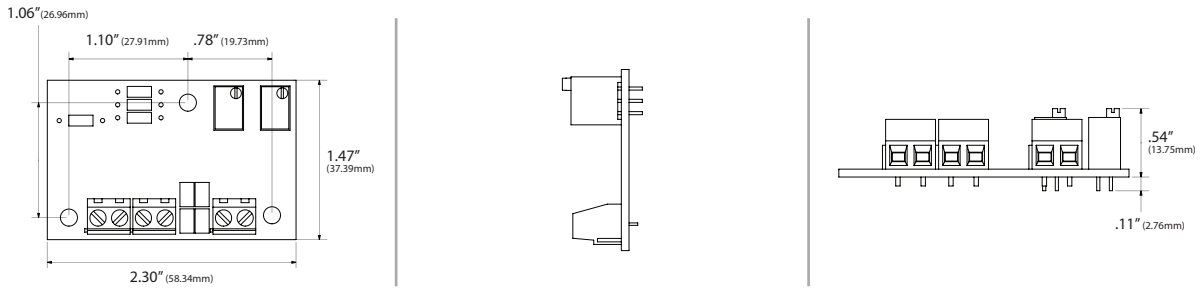
The ACI Transmitter Board Only Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) / 0.020 A
Transmitter Output Signals:	**Current:** 4-20 mA (2-Wire, Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity [1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2% | **Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift [2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Calibrated Temperature Spans [1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 1000°F (538°C)
Sensor Type Accepted | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Sensor Resistance Characteristics (Nominal):	**A/TT100 Series:** 100 Ohms @ 32°F (0°C) | **A/TT1K Series:** 1000 Ohms @ 32°F (0°C)
Sensor Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating Temperature Range:	-40°F to 185°F (-40 to 85°C)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	0 to 90%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Mounting Configuration:	Three Adhesive Standoffs included
Standoff Material Type | Flammability Rating:	Nylon 66 | UL94-V2
Standoff Temperature Rating:	-40 to 85°C (-40 to 185°F)
Standoff Dimensions:	0.70" (17.8 mm) x 0.70" (17.8 mm) x 0.65" (16.5 mm)
Product Dimensions (L x W x H) | Product Weight:	2.30" (58.42 mm) x 1.478" (37.54 mm) x 0.775" (19.69 mm) | 0.034 lbs. (15.4 g)
Agency Approvals:	RoHS2, WEEE

Note [1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note [2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/TT100-BO-4 -OR- 118462

Model #	Item #	Description
A/TT100-BO-1	118459	TT100 Board Only with 1-5 VDC Output and Adhesive Standoffs (Specify Temperature Span)
A/TT100-BO-2	118460	TT100 Board Only with 2-10 VDC Output and Adhesive Standoffs (Specify Temperature Span)
A/TT100-BO-4	118462	TT100 Board Only with 4-20 mA Output and Adhesive Standoffs (Specify Temperature Span)
A/TT1K-BO-1	118689	TT1K Board Only with 1-5 VDC Output and Adhesive Standoffs (Specify Temperature Span)
A/TT1K-BO-2	118692	TT1K Board Only with 2-10 VDC Output and Adhesive Standoffs (Specify Temperature Span)
A/TT1K-BO-4	118694	TT1K Board Only with 4-20 mA Output and Adhesive Standoffs (Specify Temperature Span)

CUSTOM ORDERING

Model # Example: A/ (A.) | TT100 (B.) | BO (C.) | 1 (D.) | 0 to 40°C (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = Accepts 100 Ohm Platinum RTD | **TT1K** = Accepts 1K Ohm Platinum RTD	
C. Configuration *No Selection Required*	**BO** = Board Only →	**BO**
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
E. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

BULLET PROBE

Remote Probes with Transmitters

The ACI Transmitter Bullet Probe Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. We recommend the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to help eliminate the possibility of noise being introduced onto the signal lines. The sensor assemblies are manufactured using a 2 conductor unshielded FEP/FEP Plenum rated, unshielded cable and ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased response times using our high quality, thermally conductive epoxy. The Bullet Probe remote sensors include an optional 10 or 20 Foot Plenum rated cable for use in remote sensor applications. All TT100 and TT1K Series Bullet Probe transmitter's sensor leads may be shortened in the field as needed but all Matched TTM100 and TTM1K Series transmitter's sensor leads should not be shortened due to the affect that it would have on the calibration accuracy of the sensor and transmitter. Optional NEMA/IP rated weather proof enclosures are available as specified on the back of the product data sheet. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressors, Chillers, Remote Sensing, Process Control

The ACI Transmitter Bullet Probe Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

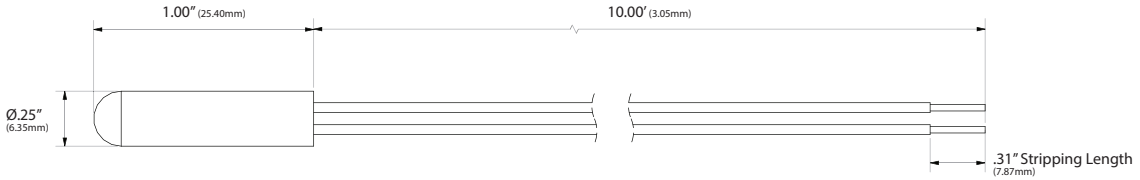
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2%
Thermal Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
Min./Max. Calibrated Temperature Spans:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 400°F (204°C)
Matched Calibrated Temperature Spans (A/TTM models) Range:	-45 to 155°C (-49 to 311°F)
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40 to 200°C (-40 to 392°F)
Transmitter Operating Humidity Range:	0 to 90%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm2) to 26 AWG (0.129 mm2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires | Wire Colors:	Two | Red and Black (Non Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/TT100/TTM100 Series:** 100 Ohms nominal | **A/TT1K/TTM1K Series:** 1000 Ohms nominal
RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of temperature above or below 0°C in °C)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	8 Seconds nominal
Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** Galvanized Steel, -40 to 85°C (-40 to 185°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 85°C (-40 to 185°F), NEMA 3R (IP 14) **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	5 to 95% RH, non-condensing
Probe Diameter | Probe Material:	0.250" (6.35mm) | 304 Stainless Steel
Cord Grip Fitting Material | Flammability Rating:	Polyamide 6.6 | UL94-V2
Cord Grip Seal Material | NEMA/IP Rating:	Neoprene | IP68 (NEMA 4X)
Torque Recommendation Cord Grip:	1.83 ft-lbs (2.50 Nm)

PRODUCT SPECIFICATIONS

Lead Length | Cable Diameter | Conductor Size:	10' (3.05 m) or 20' (6.1 m) | 0.106" nominal (2.69 mm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	FEP/FEP Teflon Unshielded Cable | UL CL2P or CL3P; CMP C(UL) US 150ºC, FT-6
Conductor Material:	Tin Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71ºF (22ºC) nominal | **Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

DIMENSIONAL DRAWING



Standard View

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | TT100 (B.) | BP (C.) | 1 (D.) | PB (E.) | 10'CL2P (F.) | 0 to 40ºC (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = 100Ω | **TTM100** = Matched 100Ω* | **TT1K** = 1KΩ | **TTM1K** = Matched 1KΩ*	
C. Configuration *No Selection Required*	**BP** = 1" Stainless Steel Probe →	**BP**
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic |**BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
F. Lead Wire Type *Select One (1)*	**----** = Standard 24" Etched PTFE Colored Leads **6'CL2P** = 6 ft (1.83m), 2 Conductor Plenum Rated Cable **10'CL2P** = 10 ft (3.05m), 2 Conductor Plenum Rated Cable **20'CL2P** = 20 ft (6.10m), 2 Conductor Plenum Rated Cable	
G. Calibration Span	**Specify Span in ºF or ºC (Best Accuracy in 100ºF Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING | MOUNTING CLIPS

Model #	Item #	Description	Galvanized Metal	Plastic w/ Adhesive
A/MOUNTING CLIP-1/4"	143351	Hardware, ¼" Mounting Clip	•	
A/MOUNTING U-CLIP-1/4"	143352	Hardware, ¼" U-Mounting Clip Adhesive		•

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

COPPER AVERAGING

Bendable Copper, Transmitter

The ACI Transmitter Copper Averaging Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. The Copper Averaging sensors are designed to be installed in medium to large ducts or air handling units where moisture, UV Light Air Treatment equipment, critical temperature control, higher corrosion resistance and faster response times when compared to similar Aluminum sensing elements. Copper has also been proven to provide an anti-bacterial effect on molds, fungus and other bacteria typically found in ducts. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to reduce the possibility of noise being introduced onto the signal lines. The 1K Ohm Rigid Averaging sensor assemblies include a continuous sensing element the covers the entire length of the 8 to 100 foot sensing elements and are manufactured using Etched Teflon lead wires to differentiate between the different sensor types. All units are hermetically sealed using our epoxy material to eliminate the effects of moisture on the sensors. All Copper Averaging transmitters include a foam pad to properly seal the duct and limit vibration once installed. Optional NEMA/IP rated weather proof enclosures are available as specified on the back of the product data sheet. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with a 3 or 5 Point NIST Calibration Certificate, since they include a second calibration process in which the RTD and transmitter are calibrated together as a system.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures, Data Centers, Hospitals, Laboratories

The ACI Copper Averaging Transmitter Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

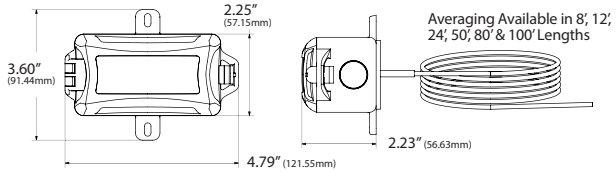
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2%
Thermal Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
Min/Max Temperature Spans:	**Minimum Span:** 50°F (28°C) | **Maximum Span:** 400°F (204°C)
TTM1K NIST Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40°F to 185°F (-40 to 85°C)
Transmitter Operating Humidity Range:	0 to 90%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | Continuous
Number Wires | Wire Colors:	Three | Black/Black/White (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	1000 Ohms nominal
Sensor Accuracy:	+/- 0.1% @ 0°C (32°F) | +/- 0.25% @ 21°C (70°F) | +/- 1.0% @ 130°C (266°F)
Temperature Coefficient:	3850 ppm / °C
Response Time (63% Step Change):	15 Seconds nominal
Sensor Operating Temperature Range:	-40 to 135°C (-40 to 275°F)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115°C (-40 to 239°F); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90°C (-22 to 194°F); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** -40 to 115°C (-40 to 239°F); Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** -40 to 70°C (-40 to 158°F); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	5 to 90% RH, non-condensing
Sensing Element Material | Sensor Diameter:	Copper | 0.210" (5.34mm) nominal
Probe Diameter | Probe Material:	0.250" (6.35mm) | 304 Stainless Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	1/8"-27 NPSM
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

DIMENSIONAL DRAWING. WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

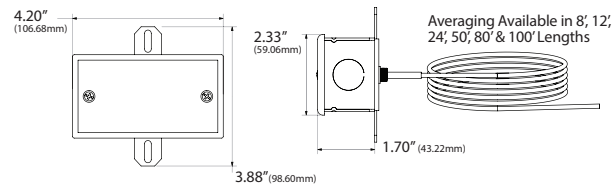
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)	24' (Probe Length)
A/xx-A-yy-PB	0.72 lbs. (0.327 kg)	0.96 lbs. (0.435 kg)	1.70 lbs. (0.771 kg)
ACI Model #	**50' (Probe Length)**	**80' (Probe Length)**	**100' (Probe Length)**
A/xx-A-yy-PB	3.28 lbs. (1.488 kg)	4.54 lbs. (2.059 kg)	5.62 lbs. (2.549 kg)

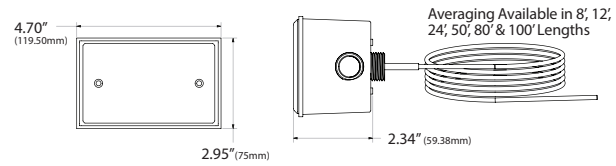
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)	24' (Probe Length)
A/xx-A-yy-GD	1.16 lbs. (0.526 kg)	1.40 lbs. (0.635 kg)	2.20 lbs. (0.998 kg)
ACI Model #	**50' (Probe Length)**	**80' (Probe Length)**	**100' (Probe Length)**
A/xx-A-yy-GD	3.78 lbs. (1.715 kg)	5.08 lbs. (2.304 kg)	6.16 lbs. (2.794 kg)

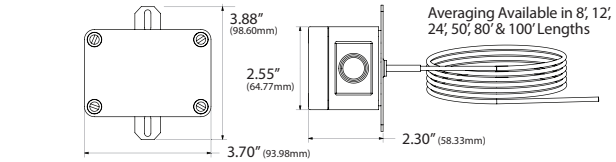
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)	24' (Probe Length)
A/xx-A-yy-BB	1.22 lbs. (0.553 kg)	1.44 lbs. (0.653 kg)	2.18 lbs. (0.989 kg)
ACI Model #	**50' (Probe Length)**	**80' (Probe Length)**	**100' (Probe Length)**
A/xx-A-yy-BB	3.74 lbs. (1.696 kg)	5.04 lbs. (2.286 kg)	6.12 lbs. (2.776 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)	24' (Probe Length)
A/xx-A-yy-4X	0.84 lbs. (0.381 kg)	1.06 lbs. (0.481 kg)	1.80 lbs. (0.816 kg)
ACI Model #	**50' (Probe Length)**	**80' (Probe Length)**	**100' (Probe Length)**
A/xx-A-yy-4X	3.36 lbs. (1.524 kg)	4.66 lbs. (2.114 kg)	5.74 lbs. (2.604 kg)

Standard Views | **Product Weights**

CUSTOM ORDERING

Model # Example: A/ (A.) | TT1K (B.) | A (C.) | 24' (D.) | 1 (E.) | PB (F.) | 0 to 40°C (G.)

		MODEL #
A. **Sensor Series** *No Selection Required*	**A/** →	A/
B. **Model Series** *Select One (1)*	**TT1K =** 1K Ω RTD, Temperature Transmitter | **TTM1K =** 1K Ω Matched RTD/Transmitter*	
C. **Configuration** *No Selection Required*	**A =** Bendable Copper Averaging →	A
D. **Probe Length** *Select One (1)*	**8'** = 8' (2.44 m) | **12'** = 12' (3.66 m) | **24'** = 24' (7.32 m) | **50'** = 50' (15.24 m) **80'** = 80' (24.38 m) | **100'** = 100' (30.48 m)	
E. **Output Signal** *Select One (1)*	**1**=1 to 5 VDC | **2**=2 to 10 VDC | **4**=4 to 20 mA	
F. **Enclosure** *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
G. **Calibration Span**	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING

Model #	Item #	Description
A/CAPILLARY CLIP QTY: 1	130525	Capillary Mounting Clip, Copper, Quantity: 1
A/CAPILLARY CLIP QTY: 50/BAG	142410	Capillary Mounting Clip, Copper, Quantity: 50/Bag
UNIVERSAL CLIP 50	145430	Universal Mounting Clip, Plastic, Quantity: 50/Bag
UNIVERSAL CLIP 6	145421	Universal Mounting Clip, Plastic, Quantity: 6/Bag

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

DUCT

Duct Sensors with Transmitters

The ACI Transmitter Duct Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to help eliminate the possibility of noise being introduced onto the signal lines. The sensor assemblies are manufactured using colored Etched Teflon lead wires and ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased response times using our high quality, thermally conductive epoxy. The duct sensors include a foam pad to properly seal the duct and limit vibration once installed. Optional NEMA/IP rated weather proof enclosures are available as specified on the back of the product data sheet. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system.

Applications: Roof Top Units, Air Handlers, Supply/Discharge/Return/Mixed Air Temperatures

The ACI Transmitter Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

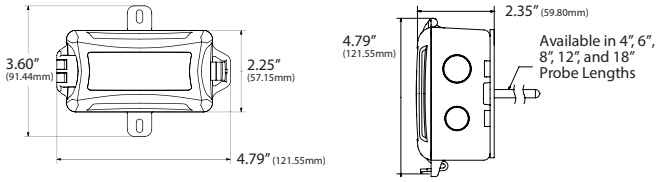
PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum 250 Ohm Load: +13.5 to 32 VDC | 500 Ohm Load: +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	Current: 4-20 mA (2-Wire Loop Powered) | Voltage: 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	Temp. Spans < 500ºF (260ºC): +/- 0.2% | Temp. Spans > 500ºF (260ºC): +/- 0.5%
Temperature Drift[2]:	Temp. Spans < 100ºF (38ºC): +/- 0.04%/ºF | Temp. Spans > 100ºF (38ºC): +/- 0.02%
TTM100/TTM1K Certification Points:	3 Point NIST: 20%, 50% & 80% of span | 5 Point NIST: 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 90%, non-condensing
Calibrated Temperature Spans[1]:	Minimum Temp. Span: 50ºF (28ºC) | Maximum Temp. Span: 500ºF (260ºC)
Matched Calibrated Temperature Spans (A/TTM models) Range:	-45 to 155ºC (-49 to 311ºF)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires | Wire Colors:	Two | A/TT100/TTM100 Series: Brown/Brown | A/TT1K/TTM1K Series: Black/Black
Sensor Output @ 0°C (32°F):	A/TT100/TTM100 Series: 100 Ohms nominal | A/TT1K/TTM1K Series: 1000 Ohms nominal
RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | (Tolerance Formula: +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Sensor Operating Temperature Range:	-40 to 200ºC (-40 to 392ºF)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	"-GD" Enclosure: Galvanized Steel, -40 to 121ºC (-40 to 250ºF), NEMA 1 (IP10) "-PB" Enclosure: ABS Plastic, -30 to 90ºC (-22 to 194ºF), UL94-HB "-BB" Enclosure: Aluminum, -40 to 121ºC (-40 to 250ºF), Plenum Rated, NEMA 3R "-4X" Enclosure: Polystyrene Plastic, -40 to 70ºC (-40 to 158ºF), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 90% RH, non-condensing
Probe Diameter | Probe Material:	0.250" (6.35mm) | 304 Stainless Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71ºF (22ºC) nominal | **Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

DIMENSIONAL DRAWING

Plastic Box Enclosure [PB]

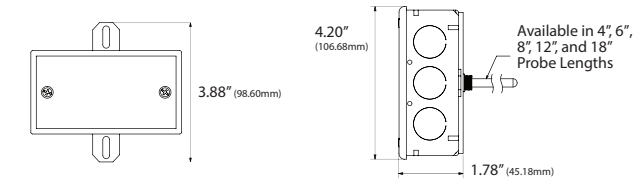


Plastic Box Enclosure [PB] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-PB	0.24 lbs. (0.109 kg)	0.25 lbs. (0.113 kg)	0.26 lbs. (0.117 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

Galvanized Enclosure [GD]

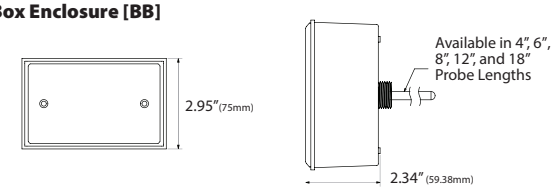


Galvanized Enclosure [GD] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.67 lbs. (0.303 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB]

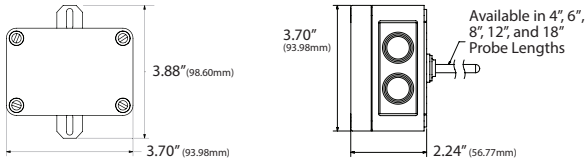


Bell Box Enclosure [BB] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.71 lbs. (0.322 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-4X	0.34 lbs. (0.154 kg)	0.35 lbs. (0.159 kg)	0.36 lbs. (0.163 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

Standard View | **Product Weights**

xx = Sensor Type | **yy** = Insertion Length

CUSTOM ORDERING | HIGHER ACCURACY

Model # Example: A/ | TT1K | D | 4" | 1 | GD | (A. B. C. D. E. F. G.)

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**TT100 =** 100Ω | **TTM100 =** Matched 100Ω* | **TT1K =** 1KΩ | **TTM1K =** Matched 1KΩ*	
C. Configuration *No Selection Required*	**D** = Duct ⟶	**D**
D. Probe Length *Select One (1)*	**4"** = 4" Probe | **6"** = 6" Probe | **8"** = 8" Probe | **12"** = 12" Probe | **18"** = 18" Probe	
E. Output Signal *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
F. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **BB** = Aluminum, NEMA 3R | **4X** = NEMA 4X	
G. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments**[3]**)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

IMMERSION

Stainless Steel Immersion, Transmitters

The ACI Transmitter Immersion Series features a two-wire, 4 to 20 mA loop powered output signal with optional three-wire voltage output signal available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. We recommend the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to keep noise from being introduced onto the signal lines. The sensor assemblies are manufactured using Etched Teflon colored lead wires and ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increased response times from our high quality, thermally conductive epoxy. The immersion sensors "-I" include a welded thermowell but can be ordered without the thermowell "-INW" version. The "-INW" includes a standard ½" NPS process thread to be used with a machined thermowell or existing thermowell application. Optional NEMA/IP rated weather proof enclosures and NIST Calibration Certificates are available when ordering the A/TTM Series transmitters as referenced in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters which includes a 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system.

Applications: Chilled Water Systems, Hot Water Systems, Boilers, Pumps, Compressors, Chillers, Cooling Towers, Process Control

The ACI Transmitter Immersion Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

Disclaimer: Specification of any thermowell and the materials of construction are the sole responsibility of the designer of the system that incorporates the thermowell. Sole responsibility for ensuring compatibility of the process fluid with the system rests with the end user.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2% | **Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04% | **Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature:	-40 to 185°F (-40 to 85°C)
Operating Humidity Range:	0 to 90%, non-condensing
Calibrated Temperature Spans[1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 500F (260°C)
Matched Calibrated Temperature Spans (A/TTM models) Range:	-45 to 155°C (-49 to 311°F)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires | Wire Colors:	Two | **A/TT100/TTM100 Series:** Brown/Brown | **A/TT1K/TTM1K Series:** Black/Black
Sensor Output @ 0°C (32°F):	**A/TT100/TTM100 Series:** 100 Ohms nominal | **A/TT1K/TTM1K Series:** 1000 Ohms nominal
RTD Class | Accuracy:	+/- 0.06% Class A | **(Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of temperature above or below 0°C
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm/°C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	8 Seconds nominal
Sensor Operating Temperature Range:	-40 to 200ºC (-40 to 392ºF)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings:	**"-GD" Enclosure:** Galvanized Steel, -40 to 121°C (-40 to 250°F), NEMA 1 (IP10) **"-PB" Enclosure:** ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), NEMA 3R **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 90% RH, non-condensing
Probe Diameter | Thermowell Bore Diameter:	0.250" (6.35 mm) | 0.260" (6.60mm)

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

PRODUCT SPECIFICATIONS CONTINUED

Probe Material | Thermowell Material:	304 Stainless Steel | 304 Stainless Steel
Thermowell Instrument Thread | Process Thread:	1/2" NPS (National Pipe Straight) | 1/2" NPT (National Pipe Tapered)
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	1/2" NPS (National Pipe Straight) Male Thread
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data Sheet
Agency Approvals:	RoHS2, WEEE

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGTH MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"				
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**	**12.0" (304.8 mm)**	**18.0" (457.2 mm)**	**24" (609.6 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	73.6 ft/s (22.4 m/s)	19.4 ft/s (5.9m/s)	8.8 ft/s (2.7m/s)	5.2 ft/s (1.6m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	26.9 ft/s (8.2 m/s)	11.3 ft/s (3.4m/s)	4.7 ft/s (1.43m/s)	2.5 ft/s (0.8m/s)

Note 1: Values are for Air/Gas/ Steam and similar density media based upon Max pressure of 2900 PSI @ 1000ºF (537.8ºC) | **Note 2:** Values are for Water (No Glycol or other Chemicals factored in) @ 68 ºF (20ºC) and max pressure of 5700 PSI. (Calculated to ASME PTC 19.3 TW-2016 Code B31.1) | **Note 3:** 6-24" Machined Thermowells meet ASME PTC 19.3 TW-2016 Code B31.1.

MAXIMUM PRESSURE VS TEMPERATURE RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Material:	**70°F (21.1°C)**	**200°F (93.3°C)**	**400°F (204.4°C)**	**600°F (315.6°C)**	**800°F (426.7°C)**	**1000°F (537.8°C)**	**1200°F (648.9°C)**
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.6 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

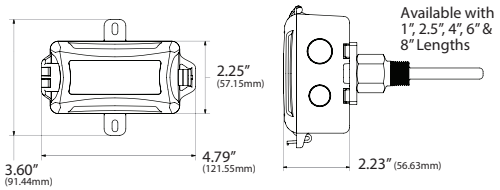
MAXIMUM FLUID VELOCITY RATINGS TWO-PART FABRICATED | WELDED THERMOWELL

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/ Steam and similar density media

DIMENSIONAL DRAWINGS, WEIGHTS

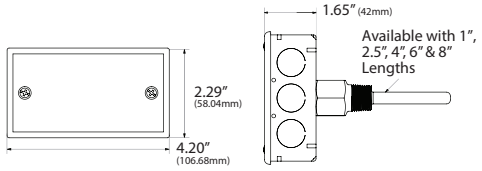
Plastic Box Enclosure [PB]



Plastic Box Enclosure [PB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-PB	0.20 lbs. (0.091 kg)	0.24 lbs. (0.109 kg)	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs (0.163 kg)
A/xx-I-yy-PB	N/A	0.24 lbs. (0.109 kg)	0.60 lbs. (0.272 kg)	0.64 lbs. (0.290 kg)	N/A
A/xx-IM-yy-PB	0.40 lbs. (0.182 kg)	0.58 lbs. (0.263 kg)	0.74 lbs. (0.336 kg)	0.92 lbs. (0.417 kg)	1.15 lbs (0.522 kg)

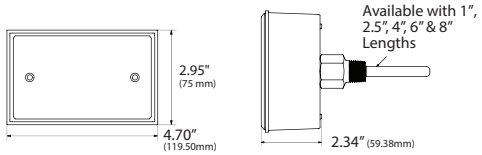
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-GD	0.62 lbs. (0.281 kg)	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.78 lbs (0.354 kg)
A/xx-I-yy-GD	N/A	0.88 lbs. (0.399 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-GD	0.81 lbs. (0.367 kg)	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.55 lbs (0.703 kg)

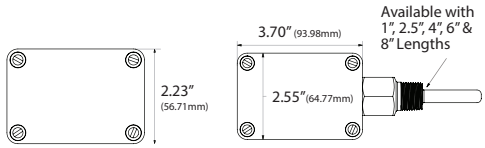
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-BB	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)	0.80 lbs (0.363 kg)
A/xx-I-yy-BB	N/A	1.02 lbs. (0.463 kg)	1.00 lbs. (0.454 kg)	1.04 lbs. (0.472 kg)	N/A
A/xx-IM-yy-BB	0.83 lbs. (0.376 kg)	1.02 lbs. (0.463 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)	1.59 lbs (0.721 kg)

NEMA 4X Enclosure [4X]

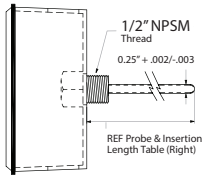


NEMA 4X Enclosure [4X] Weights

ACI Model #	1.0"	2.5"	4.0"	6.0"	8.0"
A/xx-INW-yy-4X	0.28 lbs. (0.127 kg)	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.181 kg)	0.44 lbs (0.200 kg)
A/xx-I-yy-4X	N/A	0.64 lbs. (0.290 kg)	0.68 lbs. (0.308 kg)	0.72 lbs. (0.327 kg)	N/A
A/xx-IM-yy-4X	0.48 lbs. (0.218 kg)	0.66 lbs. (0.299 kg)	0.82 lbs. (0.372 kg)	1.00 lbs. (0.454 kg)	1.27 lbs (0.576 kg)

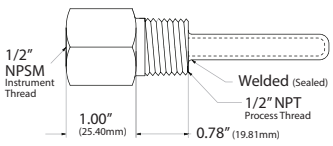
N/A = Not Available | **xx** = Sensor Type | **yy** = Insertion Length

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion no well (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
3"	2.81" +/- 0.13"	A/xx-INW-1"-yy-zz	A/M1"
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/2.5" or A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/4" or A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/6" or A/M6"
10"	9.81" +/- 0.13"	A/xx-INW-8"-yy-zz	A/M8"
13"	12.75" +/- 0.13"	A/xx-INW-12"-yy-zz	A/M12"
19"	18.75" +/- 0.13"	A/xx-INW-18"-yy-zz	A/M18"
25"	24.75" +/- 0.13"	A/xx-INW-24"-yy-zz	A/M24"

CUSTOM ORDERING WELDED THERMOWELL

Model # Example: A/ (A.) | TT100 (B.) | I (C.) | 4" (D.) | 2 (E.) | GD (F.) | 100 °F (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100 =** 100Ω **| TTM100 =** Matched 100Ω* **| TT1K =** 1KΩ **| TTM1K =** Matched 1KΩ*	
C. Configuration *Select One (1)*	**I**=Immersion with Welded Thermowell	
D. Insertion Length *Select One (1)*	**2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion	
E. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
F. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

CUSTOM ORDERING MACHINED THERMOWELL

Model # Example: A/ (A.) | TT100 (B.) | IM (C.) | 4" (D.) | 2 (E.) | GD (F.) | 100 °F (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100 =** 100Ω **| TTM100 =** Matched 100Ω* **| TT1K =** 1KΩ **| TTM1K =** Matched 1KΩ*	
C. Configuration *Select One (1)*	**IM**=Immersion with Machined Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion **| 2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion **| 8"** = 8" Insertion	
E. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
F. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note: Machined Thermowells with lengths of 12", 18" and 24" are available and must be ordered separately **|** See the Machined Thermowells Data Sheet (Accessories). **Note*:** For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

CUSTOM ORDERING SENSOR ONLY NO THERMOWELL

Model # Example: A/ (A.) | TT100 (B.) | IMW (C.) | 4" (D.) | 2 (E.) | GD (F.) | 100 °F (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100 =** 100Ω **| TTM100 =** Matched 100Ω* **| TT1K =** 1KΩ **| TTM1K =** Matched 1KΩ*	
C. Configuration *Select One (1)*	**INW** = Immmersion without Thermowell	
D. Insertion Length *Select One (1)*	**1"** = 1" Insertion **| 2.5"** = 2.5" Insertion **| 4"** = 4" Insertion **| 6"** = 6" Insertion **| 8"** = 8" Insertion **| 12"** = 12" Insertion **| 18"** = 18" Insertion **| 24"** = 24" Insertion	
E. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
E. Enclosure *Select One (1)*	**GD**=Galvanized **| PB**=Plastic **| BB**=Aluminum, NEMA 3R **| 4X**=NEMA 4X	
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTRE 2 oz Or 102595

Model #	Item #	Description
NSG Heat Transfer Paste 2 oz.	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG Heat Transfer Paste 16 oz.	140574	Thermal Grease, 16 oz. Jar, Silicon Free, -40 to 390°F (-40 to 198°C)
A/2.5"	128349	2.5" (63.5 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/4"	128350	4" (101.6 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/6"	128351	6" (152.4 mm) Insertion, 304 Stainless, Welded, 1/2" NPT Thermowell
A/M1"	128337	1" (25.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5"	128338	2.5" (63.5 mm) Insertion, 304 Stainless, Machined , 1/2" NPT Thermowell
A/M4"	128343	4" (101.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M6"	128344	6" (152.4 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M8"	138725	8" (203.2 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M12"	128339	12" (304.80 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M18"	128341	18" (457.20 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M24"	128342	24" (609.6 mm) Insertion, 304 Stainless, Machined, 1/2" NPT Thermowell
A/M2.5" - 316SS	128352	2.5" (63.5 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M4" - 316SS	128353	4" (101.6 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
A/M6" - 316SS	128354	6" (152.4 mm) Insertion, 316 Stainless, Machined, 1/2" NPT Thermowell
NIST TTM CERT-5PT.	129743	5 Point Calibration & Certificate

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

OUTSIDE AIR

Weatherproof Outside Air Transmitters

The ACI Transmitter Outside Air Series features a two-wire, 4 to 20 mA loop powered output with optional 3-Wire voltage output signals available. These units are designed to be mounted out of direct sunlight on the North side of a building or under an eave or intake hood. The Ruggedized epoxy coated transmitters "-POT" option should be used in extreme environments or in applications where you are looking for improved accuracy and reduced thermal drift due to the thermally conductive epoxy and more consistent board temperatures. Zero and Span adjustments are available for recalibration in the field when using NIST Certified equipment. All units include a Weather Proof or NEMA/IP rated enclosure and 1/2" knockouts or ½" NPT threaded hubs for use during installation. ACI recommends the use of 18 to 22 AWG shielded cable for all temperature transmitter installations to protect against the introduction of noise onto the signal lines. ACI does offer recalibration services for any transmitters sent back to us for a nominal fee.

Applications: Outside Air Temperature Sensing, Economizer Control, Cold Storage Facilities or Warehouses, High Moisture Environments

The ACI Transmitter Outside Air Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

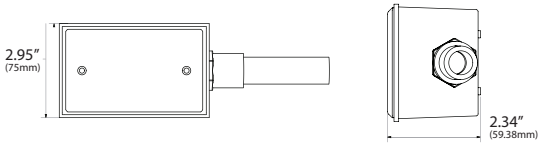
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Transmitter Output Signals:	**Current:** 4-20 mA (2-Wire, Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2%
Thermal Drift[2]:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%/ºF
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Min./Max. Calibrated Temperature Spans:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 300ºF (148ºC)
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40ºF to 185ºF (-40 to 85ºC)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Sensor Resistance @ 0ºC (32ºF) | Lead Colors:	**A/TT/TTM100 Series:** 100 Ohms (Brown/Brown) | **A/TT/TTM1K Series:** 1000 Ohms (Black/Black)
RTD Tolerance Class | Sensor Accuracy:	+/- 0.06% Class A | (**Class A Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC)
Sensor Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Operating | Storage Temperature Range:	-40 to 71ºC (-40 to 160ºF) | -40 to 71ºC (-40 to 160ºF)
Operating Humidity Range:	0 to 100% RH
Enclosure Specifications (Temperature, Material, Flammability, NEMA/IP Ratings):	**"-EH" Enclosure:** PC/ASA Plastic w/ UV Protectant; -40 to 88ºC (-40 to 190ºF); UL94-V0 **"-4X" Enclosure:** Polystyrene Plastic, -40 to 70ºC (-40 to 158ºF), UL94-V2, NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum, -40 to 121ºC (-40 to 250ºF), NEMA 3R
Lead Length | Conductor Size:	14" (35.6cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched (PTFE) Teflon Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Cord Grip Fitting Material | Flammability Rating:	Polyamide 6.6 | UL94-V2 (Included with "-4X" enclosure option only)
Cord Grip Seal Material | NEMA/IP Rating:	Neoprene | IP68 (NEMA 4X)
Torque Recommendation Cord Grip:	1.83 ft-lbs (2.50 Nm)
Product Dimensions:	See Drawings on back of Data Sheet
Product Weight:	A/TT/TTM-O-EH Series: 0.49 lbs. (0.222 kg) | A/TT/TTM-O-4X Series: 0.41 lbs. (0.180 kg); A/TT/TTM-O-BB Series: 0.79 lbs. (0.358 kg) | "-POT" Option: +0.12 lbs. (0.055 kg) to other weights
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type

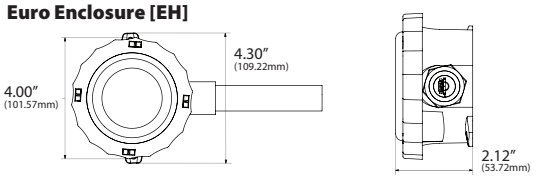
Bell Box Enclosure [BB]



Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-O-BB	0.76 lbs. (0.172 kg)

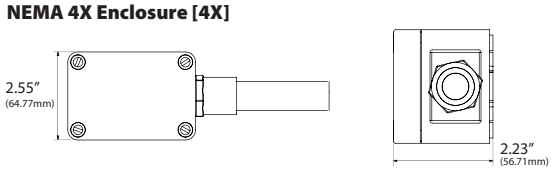
Euro Enclosure [EH]



Euro Enclosure [EH] Weight

ACI Model #	Weight
A/xx-O-EH	0.46 lbs. (0.345 kg)

NEMA 4X Enclosure [4X]



NEMA 4X Enclosure [4X]Weight

ACI Model #	Weight
A/xx-O-4X	0.38 lbs. (0.209 kg)

Front & Right Views | **Top View** | **Product Weight**

STANDARD ORDERING

Model #	Item #	Description
A/TT100-O-1-EH	142557	TT100 Outside Air; Euro Enclosure; 1-5 VDC Output | (Specify Temperature Span)
A/TT100-O-2-BB	130413	TT100 Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output | (Specify Temperature Span)
A/TT100-O-4-4X	118434	TT100 Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output | (Specify Temperature Span)
A/TT100-O-2-EH*	142558	TT100 Outside Air; Euro Enclosure; 2-10 VDC Output | (Specify Temperature Span)
A/TTM100-O-2-BB*	130413	TT100 Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output | (Specify Temperature Span)
A/TTM100-O-4-4X*	131180	TT100 Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output | (Specify Temperature Span)
A/TT1K-O-1-EH	138289	TT1K Outside Air; Euro Enclosure; 1-5 VDC Output | (Specify Temperature Span)
A/TT1K-O-2-BB	118636	TT1K Outside Air; Aluminum NEMA 3R Enclosure; 2-10 VDC Output | (Specify Temperature Span)
A/TT1K-O-4-4X	118640	TT1K Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output | (Specify Temperature Span)
A/TTM1K-O-4*	118972	TT1K Outside Air; Euro Enclosure; 4-20 mA Output | (Specify Temperature Span)
A/TTM1K-O-4-BB*	133615	TT1K Outside Air; Aluminum NEMA 3R Enclosure; 4-20 mA Output | (Specify Temperature Span)
A/TTM1K-O-4-4X*	118969	TT1K Outside Air; Plastic NEMA 4X Enclosure; 4-20 mA Output | (Specify Temperature Span)

CUSTOM ORDERING

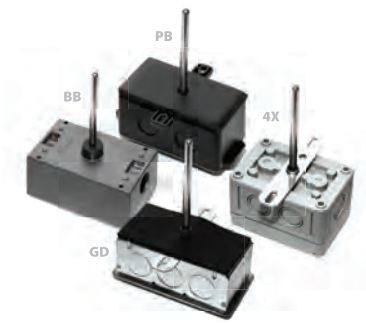
Model # Example: A/ (A.) | TT100 (B.) | O (C.) | 2 (D.) | EH (E.) | (F.) | 0 to 70°C (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**TT100**=100Ω | **TTM100**=Matched 100Ω * | **TT1K**=1KΩ | **TTM1K**=Matched 1KΩ *	
C. Configuration *No Selection Required*	**O** = Outside Air ⟶	**O**
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
E. Enclosure *Select One (1)*	**EH** = Euro Enclosure | **BB** = Aluminum NEMA 3R | **4X** = **Plastic** NEMA 4X Enclosure	
F. Potted Transmitter *No Selection Required*	**----** = Standard | **POT** = Epoxy Potted Transmitter, Plastic Cup**	
G. Calibration Span *Select One (1)*	**Specify Span in °F or °C (Best Accuracy in 100 °F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.
Note:** Not available in "EH" style enclosure option

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts



RIGID AVERAGING

Continuous Averaging, Transmitter

The ACI Transmitter Rigid Averaging Series features a two-wire, 4 to 20 mA loop powered output signal with an optional 3-Wire voltage output signal available. The Rigid Averaging sensors are designed to be installed in small to medium size ducts to give you a better average compared to that of a single point sensor. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to help eliminate the possibility of noise being introduced onto the signal lines. The 1K Ohm Rigid Averaging sensor assemblies include a continuous sensing element the covers the entire length of the stainless steel probe and are manufactured using colored Etched Teflon lead wires to differentiate between the different sensor types. All units are hermetically sealed using our epoxy material to eliminate the effects of moisture on the sensors. The Rigid Averaging transmitters include a foam pad to properly seal the duct and limit vibration once installed. Optional NEMA/IP rated weather proof enclosures are available as specified on the back of the product data sheet. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with a 3 or 5 Point NIST Calibration Certificate, since they include a second calibration process in which the RTD and transmitter are calibrated together as a system. On larger ducts, ACI's bendable copper averaging transmitter should be used for better coverage and control of the air inside of the duct.

Applications: Roof Top Units, Air Handlers, Monitoring Supply/Discharge/Return/Mixed Air Temperatures, Data Centers, Hospitals

The ACI Rigid Averaging Transmitter Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

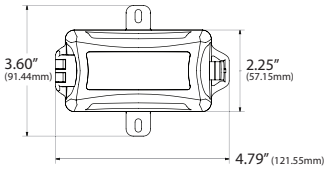
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2%
Thermal Drift[2]:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%
Min/Max Temperature Spans:	**Minimum Span:** 50ºF (28ºC) | **Maximum Span:** 400ºF (204ºC)
TTM100/TTM1K NIST Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40ºF to 185ºF (-40 to 85ºC)
Transmitter Operating Humidity Range:	0 to 90%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | Continuous
Number Wires | Wire Colors:	Three | Black/Black/White (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	1000 Ohms nominal
Sensor Accuracy:	+/- 0.1% @ 0ºC (32ºF) | +/- 0.25% @ 21ºC (70ºF) | +/- 1.0% @ 130ºC (266ºF)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Response Time (63% Step Change):	15 Seconds nominal
Sensor Operating Temperature Range:	-40 to 135ºC (-40 to 275ºF)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 115ºC (-40 to 239ºF); Galvanized Steel; NEMA 1 (IP10) **"-PB" Enclosure:** -30 to 90ºC (-22 to 194ºF); ABS Plastic; UL94-HB; Plenum Rated **"-BB" Enclosure:** -40 to 115ºC (-40 to 239ºF); Aluminum; NEMA 3R (IP 14) **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80ºC (-40 to 176ºF)
Operating Humidity Range:	5 to 90% RH, non-condensing
Probe Diameter | Probe Material:	0.250" (6.35mm) | 304 Stainless Steel
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon 66) | UL94-HB
Fitting Thread Size:	1/8"-27 NPSM
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	12" (30.5 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

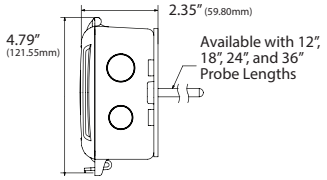
Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

DIMENSIONAL DRAWING, WEIGHTS

xx = Sensor Type | **yy** = Insertion Length

Plastic Box Enclosure [PB]



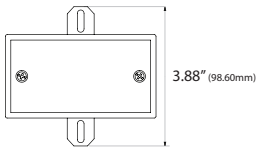


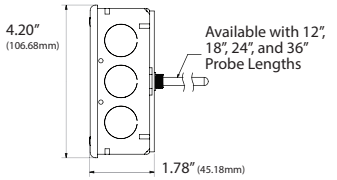
Plastic Box Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)

Galvanized Enclosure [GD]



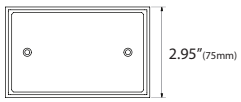


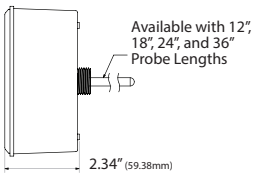
Galvanized Enclosure [GD] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-GD	0.78 lbs. (0.354 kg)	0.82 lbs. (0.372 kg)

Bell Box Enclosure [BB]



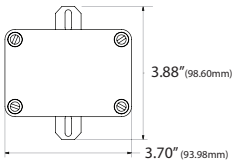


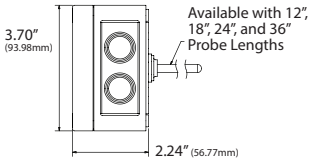
Bell Box Enclosure [BB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-BB	0.78 lbs. (0.354 kg)	0.84 lbs. (0.381 kg)

NEMA 4X Enclosure [4X]





NEMA 4X Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-RA-yy-4X	0.38 lbs. (0.172 kg)	0.40 lbs. (0.181 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)
A/xx-RA-yy-4X	0.44 lbs. (0.200 kg)	0.50 lbs. (0.227 kg)

Standard Views | **Product Weights**

PRODUCT WEIGHT

Model #	Weight (lbs.)	Weight (kg)	Model #	Weight (lbs.)	Weight (kg)
A/TT1K-RA-18"-x-PB	0.32	0.145	**A/TT1K-RA-24"-x-BB**	0.83	0.376
A/TT1K-RA-18"-x-GD	0.76	0.345	**A/TT1K-RA-24"-x-4X**	0.47	0.213
A/TT1K-RA-18"-x-BB	0.80	0.363	**A/TT1K-RA-36"-x-PB**	0.43	0.195
A/TT1K-RA-18"-x-4X	0.44	0.200	**A/TT1K-RA-36"-x-GD**	0.89	0.404
A/TT1K-RA-24"-x-PB	0.35	0.159	**A/TT1K-RA-36"-x-BB**	0.91	0.413
A/TT1K-RA-24"-x-GD	0.79	0.358	**A/TT1K-RA-36"-x-4X**	0.57	0.259

CUSTOM ORDERING

Model # Example: A/ (A.) | TT1K (B.) | RA (C.) | 24" (D.) | 1 (E.) | GD (F.) | 0 to 40ºC (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *Select One (1)*	**TT1K =** 1K Ω RTD, Temperature Transmitter* | **TTM1K =** 1K Ω Matched RTD/Transmitter*	
C. Configuration *No Selection Required*	**RA =** Rigid Averaging →	RA
D. Probe Length *Select One (1)*	**12" =** 12" Probe | **18" =** 18" Probe | **24" =** 24" Probe | **36" =** 36" Probe	
E. Output Signal *Select One (1)*	**1**=1 to 5 VDC | **2**=2 to 10 VDC | **4**=4 to 20 mA	
F. Enclosure *Select One (1)*	**GD**=Galvanized | **PB**=Plastic | **BB**=Aluminum, NEMA 3R | **4X**=NEMA 4X	
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

ROOM

Wall Mount Enclosures, Transmitter

The ACI Transmitter Room Series features a two-wire, 4 to 20 mA loop powered output with optional 3-Wire voltage output signals available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to reduce the chances of noise being introduced onto the signal lines. The room transmitters are designed to be mounted over a standard single gang junction box or hole in the wall. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system. A/TTM series matched transmitters include a foam pad to reduce the effects of self-heating from the transmitter and thermal drafts from within the wall. Optional Set Point, Override and Loop Powered LCD Display.

Applications: Space Temperature Sensing, Office Buildings, Schools, Gyms, Manufacturing Plants, Pharmaceutical, Hospitals, Data Centers

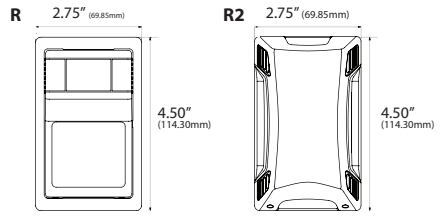
The ACI Transmitter Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

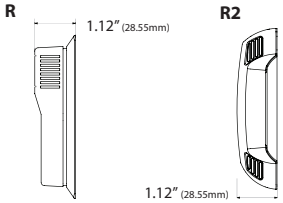
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC **"-LCD" Loop Powered:** Add +7 VDC to 250/500 Ohm Load Supply Voltage above
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2%
Temperature Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65% & 80% of span
Warm Up Time | Warm Up Drift:	10 minutes | +/- 0.1%
Calibration Temperature Spans [1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 200°F (93°C)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 N-3m) nominal
Override Contact Type | Contact Ratings:	Dry Contact "N/O" Contact | **Minimum:** 10 uA @ 1 VDC | **Maximum:** 50 mA @ 24 VDC
Set Point Accuracy:	+/- 10% | **4-20 mA:** 4 mA (Far Left) / 20 mA (Far Right)(DA-Direct Acting (Default)) 20 mA (Far Left) / 4 mA (Far Right)(RA-Reverse Acting (Optional))
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Postive Temperature Coefficient) | One
Number Wires | Wire Colors (TTM Series only):	Two | **A/TTM100-R/R2:** Brown/Brown | **A/TTM1K-R/R2:** Black/Black
Nominal Sensor Output @ 0°C (32°F):	**A/TT100/TTM100-R/R2:** 100 Ohms | **A/TT1K/TTM1K-R/R2:** 1000 Ohms
RTD Tolerance Class | Sensor Accuracy:	+/- 0.06% Class A | (**Tolerance Formula:** +/- °C = (0.002 * |t|)) where |t| is the absolute valuse of temperature above or below 0°C in °C
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 hours @ 300°C (572°F)
LCD Display Input Signal:	4 to 20 mA Only (2-Wire Loop Powered)
LCD Display Accuracy:	+/- 1.0% of Calibrated Temperature Span or +/- Whichever is Greater
LCD Display Descriptor | Number of Digits:	°F (Fahrenheit) or °C (Celsius) | 3 1/2 Segment Display
LCD Display Life Expectancy:	50,000 Hours Minimum
Operating Temperature Range[3]:	35 to 122°F (1.5 to 50°C)
Storage Temperature Range[3]:	**Non-LCD:**-40 to 65°C (-40 to 149°F) | **LCD Display:** -10 to 65°C (14 to 149°F)
Operating Humitity Range:	5 to 95% RH non-condensing
Enclosure Specifications (Material Type, Color, UL Flammability Range):	**"-R2" Enclosure:** ABS Plastic | White | UL94-HB **"-R" Enclosure:** ABS Plastic | Beige | UL94-HB
Foam Pad Material | Flammability Rating (TTM Only):	Neoprene/EPDM/SBR Polymer | UL94-HBD; FMVSS-302; MIL-R-6130C
Product Dimentions (L x W x H):	4.50" (114.3 mm) x 2.78" (70.6 mm) x 1.00" (25.4 mm)
Product Weight:	**"-R/RS/RO" Series:** 0.17 lbs. (0.375 kg) | **"-RSO" Series:** 0.21 lbs. (0.46 kg) **"-R2/R2S/R2O" Series:** 0.19 lbs. (0.42 kg) | **"-R2SO" Series:** 0.23 lbs. (0.51 kg) **All LCD Display Units:** 0.174 lbs (0.079 kg)
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F (22°C) nominal calibration temperature | **Note[3]:** Temperature spans may go outside of the operating temperature range but the unit must be used within the operating temperature limit

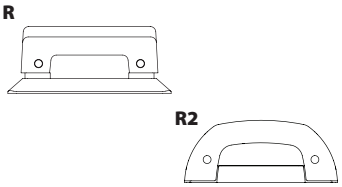
DIMENSIONAL DRAWING



Front View



Side View



Top View

CUSTOM ORDERING | STANDARD ACCURACY

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**TT100** = 100 Ohm Platinum RTD **| TT1K** = 1K Ohm Platinum RTD	
C. Configuration *Select One (1)*	**R** = Room **| RO** = Room with Override **| RS** = Room with Set Point **| RSO** = Room with Setpoint and Override **| R2** = Room **| R2O** = Room with Override **| R2S** = Room with Set Point **| R2SO** = Room with Set Point and Override	
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
E. LCD Display[2] *Select One (1)*	**----** = No LCD Display **| LCD**[2] = With LCD Display (Only Available with "R" Style Enclosure)	
F. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments**[3]**)**	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Potentiometer *Select One (1)*	**4-20 mA**	
2. Setpoint Indication *Select One (1)*	**A3 = 18-28 DEG C | A4 = 20-30 DEG C | B4 = 55-85 DEG F | B7 = 60-90 DEG F | C5 = COOL/WARM | C6 = COOLER/WARMER | D3 = WARM/COOL | G5 = BLUE/RED (R2 Enclosure)**	

Note[1]**:** A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI **| Note**[2]**:** LCD Display is not compatible with NIST **| Note**[3]**:** Best transmitter accuracy with spans in 100°F Increments (ie. 0 to 100°F or 1.5 to 40°C)

CUSTOM ORDERING | HIGHER ACCURACY

		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**TTM100** = Matched 100Ω Platinum RTD **| TTM1K** = Matched 1KΩ Platinum RTD[2]	
C. Configuration *Select One (1)*	**R** = Room **| R2** = Room	
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
E. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments**[3]**)**	

Note[1]**:** A/ part numbers come without logo. For custom logo, replace A/ with Company abbreviation. Please contact ACI **| Note**[2]**:** For TTM100 or TTM1K part numbers, the default NIST is 3 points / 5 points may be specified by using "-5PTNIST" at the end of any TTM part number. **| Note**[3]**:** Best transmitter accuracy with spans in 100°F Increments (ie. 0 to 100°F or 1.5 to 40°C)

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R	126386	Wall Mounting Back Plate, Plastic, White ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

STRAP ON

Non-Intrusive Pipe Mount, Transmitter

The ACI Transmitter Strap-On Series features a standard two-wire, 4 to 20 mA loop powered output signal with optional 3-Wire voltage output signals available. The Strap-On transmitter should be used in retrofit applications where an immersionstyle sensor can't be inserted into the pipe or in applications where high accuracy is not required. For best results, ACI recommends cleaning the pipes with a brush or small piece of sand paper before applying thermal grease to the top of the copper plate and securing to the pipe. Be sure not to over tighten before insulating the transmitter from the effects of the ambient air. For best results the sensor should be mounted on the top or sides of the pipe such that moisture and condensation will not cause the transmitter to fail prematurely. All transmitters must be ordered with the temperature span that you require, since the boards are tuned to give you the best performance characteristics for the temperature span specified. Zero and Span adjustments are available for recalibration in the field when using NIST Certified equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to protect against the introduction of noise onto the signal lines.

Applications: Hot Water Systems, Chilled Water Systems, Hydronic Systems, Chillers, Boilers

The ACI Transmitter Strap-On Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

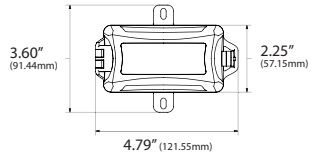
PRODUCT SPECIFICATIONS

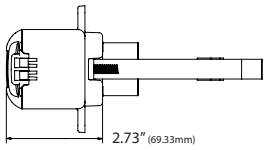
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	Terminal Voltage - 8.5 V) | 0.020 A
Transmitter Output Signals:	**Current:** 4-20 mA (2-Wire, Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2% | **Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K NIST Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Calibrated Temperature Spans:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 300°F (148°C)
Transmitter Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature Range:	-40°F to 185°F (-40 to 85°C)
Transmitter Operating Humidity Range:	0 to 90%, non condensing
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 Nm) nominal
Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Nominal Sensor Resistance @ 32°F (0°C):	**A/TT/TTM100 Series:** 100 Ohms | **A/TT/TTM1K Series:** 1000 Ohms
RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C)
Sensor Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Enclosure Specifications (Operating Temp. Range, Flammability, NEMA/IP Ratings):	**A/XX-S-GD:** Galvanized Steel, -40 to 93°C (-40 to 200°F), NEMA 1 (IP 10) **A/XX-S-PB:** ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated **A/XX-S-4X:** Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 75°C (-40 to 167°F)
Operating Humidity Range:	10 to 90% RH, non-condensing
Sensing Plate Material:	Copper
Fits Pipe Sizes:	1 1/4" (32 mm) to 4" (100 mm)
Foam Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HF1; MIL-R-6130C; FMVSS-302
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | MIL-W-16878/4 (Type E)
Conductor Material:	Silver Plated Copper
Product Weight:	**A/XX-S-GD:** 0.83 lbs. (0.38kg) | **A/XX-S-PB:** 0.43 lbs. (0.20kg) | **A/XX-S-4X:** 0.58 lbs. (0.27kg)
Agency Approvals:	RoHS2, WEEE

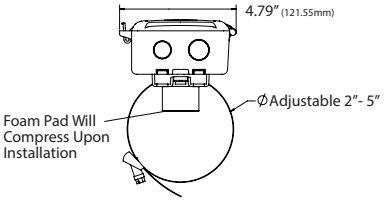
Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

DIMENSIONAL DRAWING

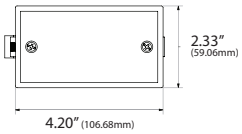
Plastic Box Enclosure [PB]

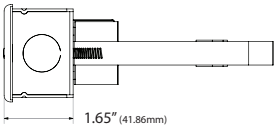


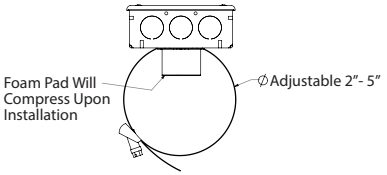




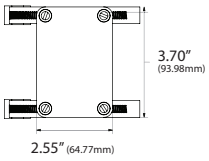
Galvanized Enclosure [GD]

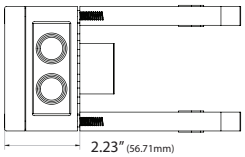


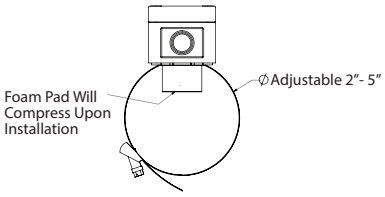




NEMA 4X Enclosure [4X]







Front View	Side View	Back View

CUSTOM ORDERING

Model # Example: A/ (A.) | TT100 (B.) | S (C.) | 2 (D.) | GD (E.) | 10 to 110°F (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**TT100** = 100Ω | **TTM100** = Matched 100Ω* | **TT1K** = 1KΩ | **TTM1K** = Matched 1KΩ*	
C. Configuration *No Selection Required*	**S** = Strap-On (1.25" to 4" Pipe Size)	**S**
D. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
E. Enclosure *Select One (1)*	**GD** = Galvanized | **PB** = Plastic | **4X** = NEMA 4X Weather Proof	
F. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING

Model #	Item #	Description
A/HOSE CLAMP-2-5"	142630	Hardware, 2-5" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
A/HOSE CLAMP-2-12"	142631	Hardware, 2-12" Hose Clamp, Quick Release Worm Gear, 201/301 Stainless Steel
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320°F (-40 to 160°C)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390°F (-40 to 198°C)

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

WALL PLATES

Wall Plates with Transmitters

The ACI Transmitter Wall Plate Series features a two-wire, 4 to 20 mA loop powered output with optional 3-Wire voltage output signals available. All transmitters include Zero and Span adjustments for field calibration and are calibrated using NIST Certified Calibration equipment. We recommend the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to reduce the chances of noise being introduced onto the signal lines. The sensor assemblies are manufactured using colored Etched Teflon lead wires and ACI's proven double encapsulation process to eliminate the effects of moisture on the sensors as well as increase the thermal response times using our high quality, thermally conductive epoxy. The wall plate transmitters are designed to be mounted over a standard single gang junction box or hole in the wall and includes a foam pad to reduce the effects of self-heating from the transmitter and thermal drafts from within the wall. For best accuracy, ACI recommends the use of the A/TTM Series Matched transmitters with 3 or 5 Point NIST Calibration Certificate, since they include a second calibration step in which the RTD and transmitter are calibrated together as a system. Optional tamper proof mounting screws and screw driver bits are available to keep people from removing the plates from the wall.

Applications: Space Temperature Sensing, Office Buildings, Hallways, Schools, Gyms, Manufacturing Plants, Clean Rooms, Pharmaceutical, Hospitals, Secure Installations

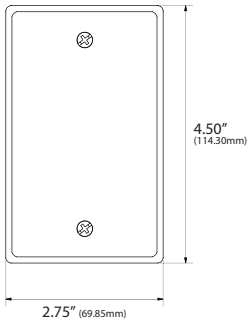
The ACI Transmitter Wall Plate Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

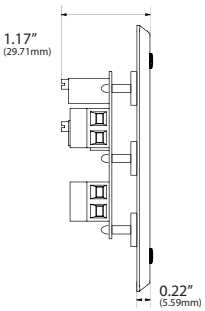
Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) **|** 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC **| 500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) **|** 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) **| Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity[1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2%
Temperature Drift[2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F **| Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span **| 5 Point NIST:** 20%, 35%, 50%, 65% & 80% of span
Warm Up Time | Warm Up Drift:	10 minutes **|** +/- 0.1%
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50°F (28°C) **| Maximum Temp. Span:** 200°F (93°C)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) **|** 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.37 ft-lb (0.5 N-3m) nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires | Wire Colors:	Two | **A/TT100/TTM100-SP:** Brown/Brown | **A/TT1K/TTM1K-SP:** Black/Black
Sensor Output @ 0°C (32°F):	**A/TT100/TTM100-SP:** 100 Ohms nominal | **A/TT1K/TTM1K-SP:** 1000 Ohms nominal
RTD Tolerance Class | Sensor Accuracy:	+/- 0.06% Class A | **(Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of temperature above or below 0°C in °C)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572vF)
Response Time (63% Step Change):	20 Seconds nominal
Operating Temperature Range:	35°F to 160°F (1.5 to 71°C)
Storage Temperature Range:	-40 to 160°F (-40 to 71°C)
Operating Humidity Range:	5 to 90% RH, non-condensing
Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Lead Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Conductor Material:	Silver Plated Copper
Product Dimensions (L x W x D):	4.50" (114.3 mm) x 2.78" (70.6 mm) x 1.00" (25.4 mm)
Product Weight:	0.19 lbs. (86.2 g)
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal **|** **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

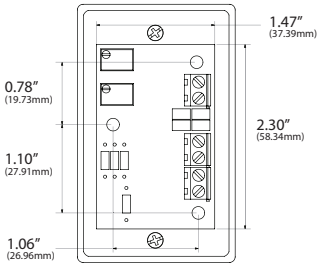
DIMENSIONAL DRAWING



Front View



Side View



Back View

ACCESSORIES ORDERING

Model #	Item #	Description
A/TT100-SP-1	142559	TT100 Stainless Plate; 100 Ohm RTD; 1-5 VDC (3-Wire) Output; Foam Pad
A/TT100-SP-2	118450	TT100 Stainless Plate; 100 Ohm RTD; 2-10 VDC (3-Wire) Output; Foam Pad
A/TT100-SP-4	118451	TT100 Stainless Plate; 100 Ohm RTD; 4-20 mA (2-Wire) Output; Foam Pad
A/TTM100-SP-1*	134459	TTM100 Matched Sensor/Transmitter; Stainless Plate; 1-5 VDC (3-Wire) Output, Foam Pad*
A/TTM100-SP-2*	142560	TTM100 Matched Sensor/Transmitter; Stainless Plate; 2-10 VDC (3-Wire) Output, Foam Pad*
A/TTM100-SP-4*	118904	TTM100 Matched Sensor/Transmitter; Stainless Plate; 4-20 mA (2-Wire) Output, Foam Pad*
A/TT1K-SP-1	118661	TT1K Stainless Plate; 1K Ohm RTD; 1-5 VDC (3-Wire) Output; Foam Pad
A/TT1K-SP-2	118663	TT1K Stainless Plate; 1K Ohm RTD; 2-10 VDC (3-Wire) Output; Foam Pad
A/TT1K-SP-4	118664	TT1K Stainless Plate; 1K Ohm RTD; 4-20 mA (2-Wire) Output; Foam Pad
A/TTM1K-SP-1*	142561	TTM1K Matched Sensor/Transmitter; Stainless Plate; 1-5 VDC (3-Wire) Output, Foam Pad*
A/TTM1K-SP-2*	118982	TTM1K Matched Sensor/Transmitter; Stainless Plate; 2-10 VDC (3-Wire) Output, Foam Pad*
A/TTM1K-SP-4*	118983	TTM1K Matched Sensor/Transmitter; Stainless Plate; 4-20 mA (2-Wire) Output, Foam Pad*

CUSTOM ORDERING		MODEL #
A. Sensor Series[1] *No Selection Required*	**A/** ——————————▶	**A/**
B. Model Series *Select One (1)*	**TT100 = 100Ω | TTM100 = Matched 100Ω* | TT1K = 1KΩ | TTM1K = Matched 1KΩ***	
C. Configuration *No Selection Required*	**SP =** 1 Gang Stainless Steel Wall Plate	**SP**
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC **| 2** = 2 to 10 VDC **| 4** = 4 to 20 mA	
E. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments**[3]**)**	

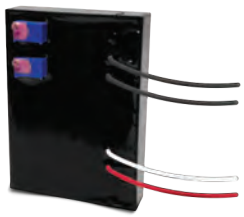
Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING

Model #	Item #	Description
A/TAMPER PROOF SCREWS	144865	Two (2) Screws, Tamper Proof, #6 x ⅝", Zinc Plated, Flat Head, ⅛"
SCREWDRIVER INSERT BIT	143067	Screwdriver Bit, Tamper Proof Screw, ⅝₆₄

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts



POTTED TT

Calibrated Transmitter, No Sensor

The ACI Potted transmitter with the transmitter board encapsulated in epoxy for extra moisture and corrosion protection. ACI's epoxy is thermally conductive which allows the heat from the transmitter to dissipate more freely than would occur in air or with other conformal coatings and reduces hot spots by evenly distributing the heat over the entire PCB assembly. The potted transmitter can be ordered with a two-wire 4 to 20mA loop powered output signal or 3-wire 1 to 5V or 2 to 10V output based upon the ordered temperature span range. The transmitter can be used with any existing 100 or 1K ohm Platinum RTD sensor with a 385 temperature coefficient and features flying leads for easy wiring. Zero and Span adjustments are standard for recalibration in the field when using NIST Certified equipment. ACI recommends the use of an 18 to 22 AWG shielded cable for all temperature transmitter installations to protect against the introduction of noise onto the signal lines. ACI does offer recalibration services for any transmitters sent back to us for a nominal fee.

Applications: Replacement Temperature Transmitters, High Moisture and Corrosive Environments, Conversion of existing Platinum 2 or 3 Wire RTD's to linear current or voltage output signal, transmit signals over long wire runs

The ACI Potted Transmitter is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) / 0.020 A
Transmitter Output Signals:	**Current:** 4-20 mA (2-Wire, Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Accuracy | Linearity [1]:	**Temp. Spans < 500°F (260°C):** +/- 0.2% | **Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift [2]:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
Calibrated Temperature Spans [1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 1000°F (538°C)
Sensor Type Accepted | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Sensor Resistance Characteristics (Nominal):	**A/TT100 Series:** 100 Ohms @ 32°F (0°C) | **A/TT1K Series:** 1000 Ohms @ 32°F (0°C)
Sensor Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating Temperature Range:	-40°F to 185°F (-40 to 85°C)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	0 to 90%, non-condensing
Potting Material:	Two (2) part epoxy / resin
Dielectric Strength:	420V / mil
Thermal Conductivity:	0.642 w / m.k
Hardness, Share Scale:	92D ASTM D 2240
Mounting Configuration:	Double Sided Tape
Product Dimensions (L x W x H) | Product Weight:	2.30" (58.42 mm) x 1.478" (37.54 mm) x 0.775" (19.69 mm) | 0.15 lbs. (68.04 g)
Agency Approvals:	RoHS2, WEEE

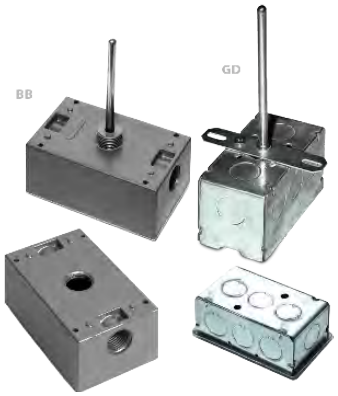
Note [1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note [2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

STANDARD ORDERING

Model # Example: A/TT100-BO-4-POTTED -OR- 118464

Model #	Item #	Description
A/TT100-BO-4-POTTED	118464	Potted Transmitter, Board Only for 100 Ohm Platinum RTD Sensor
A/TT1K-BO-4-POTTED	129768	Potted Transmitter, Board Only for 1000 Ohm Platinum RTD Sensor

For Additional Potted TT Configurations & Ordering, Contact ACI (888) 967-5224



DUCT

Low Temperature Duct Sensors & Transmitters

The ACI Low Temperature Duct Series sensors and transmitters are a single point duct sensor featuring a three wire RTD sensor assembly using Teflon Lead wires and a 316 Series stainless steel probe. The three wire sensors can be used with a two wire transmitter by connecting the two (Red) colored wires to one of the RTD Terminal blocks with the third wire (White) wire going to the second RTD Terminal block. The purpose of the third wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The operating specifications are for both the sensor and transmitter as designated in the specification table. Standard enclosure options include the "-GD" Galvanized or "-BB" Aluminum weather proof enclosure. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters since they include a second calibration step in which the RTD and transmitter are calibrated together as a system, in order to remove most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Pharmaceutical, Liquid Nitrogen, Refrigerators, Freezers, Hydronic Heating, Remote Sensor Applications

The ACI Low Temperature Duct Sensors and Transmitters Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

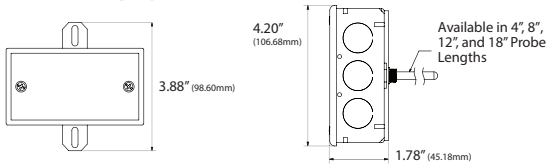
PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signal:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibration Transmitter Accuracy | Linearity:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2% | **Temp. Spans > 500ºF (260ºC):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 90%, non-condensing
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 700ºF (370ºC)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensor Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-LT-I-XX" and A/1K-3W-LT-I-xx":** Three (White / Two Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-LT-I-xx":** 100 Ohms nominal | **A/1K-3W-LT-I-xx":** 1000 Ohms nominal
Sensor Tolerance | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- ºC = (0.30ºC + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	< 0.04 % at 1000 hours at 400ºC
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Sensor Operating Temperature Range:	-198 to 150ºC (-324 to 302ºF)
Enclosure Specificaitons (Operating Temperature Range, Material, Flammability, NEMA/IP Rating):	**"-GD" Enclosure:** -40 to 199ºC (-40 to 390ºF); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** Aluminum, -40 to 121ºC (-40 to 250ºF), Plenum Rated, NEMA 3R
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material:	316 Stainless Steel
Lead Length | Conductor Size:	8' (2.44 m) | 22 AWG (0.25 mm)
Lead Wire Insulation | Conductor Material:	Etched Teflon (PTFE) | Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

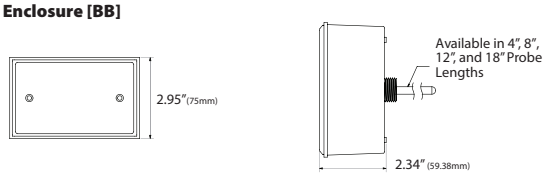
Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0ºC in Centigrade

DIMENSIONAL DRAWING

Galvanized Enclosure [GD]



Bell Box Enclosure [BB]



Standard Views

Galvanized Enclosure [GD] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

Product Weights

Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

CUSTOM ORDERING LOW TEMPERATURE DUCT SENSORS

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | LT (D.) | D (E.) | 4" (F.) | GD (G.) | NIST (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD only | **1K =** 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W =** Three Wires (Specify for 100 and 1K RTD Sensors only) →	**3W**
D. High Temperature *No Selection Required*	**LT =** Low Temperature Series →	**LT**
E. Configuration *Select One (1)*	**D =** Duct →	**D**
F. Thermowell Insertion Length *Select One (1)*	**4" =** 4" Probe | **8" =** 8" Probe | **12" =** 12" Probe | **18" =** 18" Probe	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST =** NIST Certificate (3 Points)	

CUSTOM ORDERING LOW TEMPERATURE DUCT TRANSITTERS

Model # Example: A/ (A.) | TT100 (B.) | LT (C.) | D (D.) | 8" (E.) | 2 (F.) | GD (G.) | (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor (Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters)	
C. High Temperature *No Selection Required*	**LT** = Low Temperature Series →	**LT**
D. Configuration *Select One (1)*	**D**= Duct →	**D**
E. Thermowell Insertion Length *Select One (1)*	**4" =** 4" Probe | **8" =** 8" Probe | **12" =** 12" Probe | **18" =** 18" Probe	
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

ACCESSORIES ORDERING

Model # Example: A/316SS_1-8IN_NPT_COMPRESS_FIT -OR- 143457

Model #	Item #	Description
A/316SS_1-8IN_NPT_COMPRESS_FIT	143457	1/8" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting
A/316SS_1-2IN_NPT_COMPRESS_FIT	143458	1/2" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting

IMMERSION

Low Temperature Immersion Sensors & Transmitters

The ACI Low Temperature Immersion Series sensors and transmitters are a single point immersion sensor featuring a three wire RTD sensor assembly using Teflon insulated lead wires and a 316 Series stainless steel probe. The three wire sensors can be used with a two wire transmitter by connecting the two (Red) colored wires to one of the RTD Terminal blocks with the 3rd (White) wire going to the second RTD Terminal block. The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The operating specifications are for both the sensor and transmitter as designated in the specification table. The overall accuracy of the temperature transmitter must be calculated using the transmitter calibrated accuracy plus that of the sensor error over temperature unless ordering as a TTM matched transmitter. Standard enclosure options include the "-GD" Galvanized or "-BB" Aluminum weather proof enclosure. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters since they include a second calibration step in which the RTD and transmitter are calibrated together as a system, in order to remove most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Chillers, Pharmaceutical, Refrigeration, Process Cooling, Industrial Process Control

The ACI Low Temperature Immersion Sensors and Transmitters Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signal:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibration Transmitter Accuracy | Linearity:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2% | **Temp. Spans > 500ºF (260ºC):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 90%, non-condensing
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 700ºF (370ºC)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensor Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-LT-I-XX" and A/1K-3W-LT-I-xx":** Three (White / Two Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-LT-I-xx":** 100 Ohms nominal | **A/1K-3W-LT-I-xx":** 1000 Ohms nominal
Sensor Tolerance | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- ºC = (0.30ºC + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	< 0.04 % at 1000 hours at 400ºC
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Sensor Operating Temperature Range:	-198 to 150ºC (-324 to 302ºF)
Enclosure Specificaitons (Operating Temperature Range, Material, Flammability, NEMA/IP Rating):	**"-GD" Enclosure:** -40 to 199ºC (-40 to 390ºF); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** -50 to 115ºC (-58 to 239ºF); Aluminum; NEMA 3R
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material:	316 Stainless Steel
Lead Length | Conductor Size:	8' (2.44 m) | 22 AWG (0.25 mm^2)
Lead Wire Insulation | Conductor Material:	Etched Teflon (PTFE) | Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0ºC in Centigrade

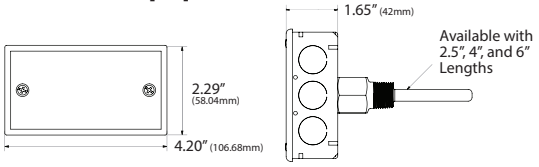
MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"	
Material:	**Media Type:**	**1.0" (25.4 mm)**	**2.5" (63.5 mm)**	**8.0" (203.2 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	39.5 ft/s (12.0 m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	39.5 ft/s (12.0 m/s)

Note 1: Values are for Air/Gas/ Steam and similar density media | All velocity ratings are based upon an operating temperature of 1000°F (537.8°C)

DIMENSIONAL DRAWING

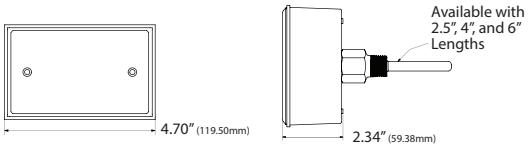
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	2.5" (Insertion Length)	4" (Insertion Length)	6" (Insertion Length)
A/xx-INW-yy-GD	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)
A/xx-IM-yy-GD	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)

Bell Box Enclosure [BB]



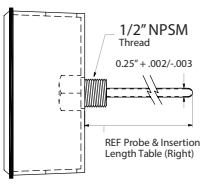
Bell Box Enclosure [BB] Weights

ACI Model #	2.5" (Insertion Length)	4" (Insertion Length)	6" (Insertion Length)
A/xx-INW-yy-BB	0.68 lbs. (0.308 kg)	0.72 lbs. (0.326 kg)	0.76 lbs. (0.345 kg)
A/xx-IM-yy-BB	1.02 lbs. (0.463 kg)	1.20 lbs. (0.544 kg)	1.36 lbs. (0.617 kg)

Standard Views | **Product Weights**

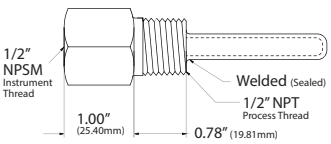
Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion now ell (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/M6"

Standard Views | **Product Weights**

CUSTOM ORDERING LOW TEMPERATURE IMMERSION SENSORS

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | LT (D.) | I (E.) | 4" (F.) | GD (G.) | NIST (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD only | **1K =** 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W =** Three Wires (Specify for 100 and 1K RTD Sensors only) →	**3W**
D. High Temperature *No Selection Required*	**LT =** Low Temperature Series →	**LT**
E. Configuration *Select One (1)*	**IM =** Immersion with Machined Thermowell | **INW =** Immersion without Thermowell	
F. Thermowell Insertion Length *Select One (1)*	**2.5"** = 2.5" Probe | **4"** = 4" Probe | **6"** = 6" Probe	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. NIST *Select One (1)*	**---- =** No NIST Certificate | **NIST =** NIST Certificate (3 Points)	

CUSTOM ORDERING LOW TEMPERATURE TRANSITTERS

Model # Example: A/ (A.) | TT100 (B.) | LT (C.) | I (D.) | 6" (E.) | 2 (F.) | GD (G.) | (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor (Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters)	
C. High Temperature *No Selection Required*	**LT** = Low Temperature Series →	**LT**
D. Configuration *Select One (1)*	**IM** = Immersion with Machined Thermowell | **INW** = Immersion without Thermowell	
E. Thermowell Insertion Length *Select One (1)*	**2.5"** = 2.5" Probe | **4"** = 4" Probe | **6"** = 6" Probe	
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

ACCESSORIES ORDERING

Model # Example: A/316SS_1-8IN_NPT_COMPRESS_FIT -OR- 143457

Model #	Item #	Description
A/316SS_1-8IN_NPT_COMPRESS_FIT	143457	1/8" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting
A/316SS_1-2IN_NPT_COMPRESS_FIT	143458	1/2" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting

OUTSIDE AIR

Low Temperature Outside Air Sensor & Transmitters

The ACI Low Temperature Outside Air Series temperature sensors and transmitters are a single point sensor featuring a three wire RTD sensor assembly with a 316 Series stainless steel probe. The three wire sensors can be used with a two wire transmitter by connecting the two (Red) colored wires to one of the RTD terminal blocks with the 3rd wire (White) wire connected to the second RTD Terminal block. The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using the A/100/1K-3W-O style Platinum RTD series sensors without temperature transmitter. The operating specifications are for both the sensor and transmitter as designated in the specification table. The transmitter is mounted in the Galvanized junction and should be mounted inside your building with the sensor assembly mounted in the Aluminum Bell Box for mounting outdoors due to the extreme temperatures. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters with a 3 or 5 Point NIST Calibration Certificate since they include a second calibration step in which the RTD and transmitter are calibrated together as a system, which will remove most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Freezers, Outside Air Temperature, Cold Storage Facilities, Manufacturing Facilities, Process Control

The ACI Low Temperature Outside Air Sensors and Transmitters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

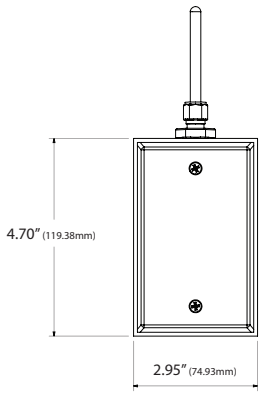
PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum
	250 Ohm Load (1-5 VDC): +13.5 to 32 VDC | **500 Ohm Load (2-10 VDC):** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2% | **Temp. Spans > 500ºF (260ºC):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 90%, non-condensing
Calibrated Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 700ºF (370ºC)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-LT-O** and **A/1K-3W-LT-O:** Three (Two Red / White) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-LT- O:** 100 Ohms nominal | **A/1K-3W-LT-O:** 1000 Ohms nominal
Sensor Tolerance Class | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- ºC = (0.30ºC + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	< 0.04 % at 1000 hours at 400ºC
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW | ºC (Still Air) | 5 mA
	1K Ohm RTD: 4 mW | ºC (Still Air) | 3 mA
Sensor Operating Temperature Range:	-198 to 150ºC (-324 to 302ºF)
Enclosure Specifications (Operating Temperature	**"-GD" Enclosure:** -40 to 199ºC (-40 to 390ºF); Galvanized Steel; NEMA 1 (IP10)
Range, Material, Flammability, NEMA/IP Ratings):	**"-BB" Enclosure:** Aluminum, -40 to 121ºC (-40 to 250ºF), NEMA 3R
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	5 to 100% RH
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material:	316 Stainless Steel
Lead Length | Conductor Size:	8' (2.44 m) | 22 AWG (0.25 mm²)
Lead Wire Insulation | Conductor Material:	Etched Teflon (PTFE) | Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

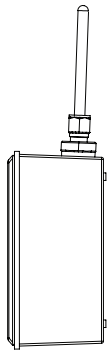
Note[1]: Transmitter's calibrated at 71ºF (22ºC) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0ºC in Centigrade)

DIMENSIONAL DRAWING. WEIGHTS

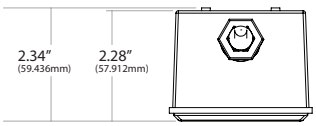
xx = Sensor Type



Front View



Right View



Top View, Product Weight

Bell Box Enclosure [BB] Weight

ACI Model #	Weight
A/xx-3W-LT-O-BB	0.94 lbs. (0.252 kg)

STANDARD ORDERING

Model # Example: A/1K-3W-LT-O-BB -OR- 125205

Model #	Item #	Description
A/100-3W-LT-O-BB	142523	100 Ohm RTD, 3-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 8 Foot Leads
A/1K-3W-LT-O-BB	125205	1K Ohm RTD, 3-Wire, Outside Air Sensor, Aluminum Weather Proof Enclosure, 8 Foot Leads

CUSTOM ORDERING | LOW TEMPERATURE OUTSIDE AIR

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | LT (D.) | O (E.) | BB (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD only | **1K** = 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W** = Three Wires (Specify for 100 and 1K RTD Sensors only) →	**3W**
D. Low Temperature *No Selection Required*	**LT** = Low Temperature Series →	**LT**
E. Configuration *No Selection Required*	**O** = Outside Air →	**O**
F. Enclosure *No Selection Required*	**BB** = Cast Aluminum Weather Proof Enclosure →	**BB**
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

CUSTOM ORDERING | LOW TEMPERATURE OUTSIDE AIR TRANSMITTERS

Model # Example: A/ (A.) | TT100 (B.) | LT (C.) | O (D.) | 2 (E.) | BB (F.) | (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor (Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters)	
C. Low Temperature *No Selection Required*	**LT** = Low Temperature Series →	**LT**
D. Configuration *No Selection Required*	**O** = Outside Air →	**O**
E. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
F. Enclosure *No Selection Required*	**BB** = Cast Aluminum Weather Proof Enclosure →	**BB**
G. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

DUCT

High Temperature Duct Sensors & Transmitters

The ACI High Temperature Duct Series sensors and transmitters are a single point duct sensor featuring a three wire RTD sensor assembly and a 316 Series stainless steel probe. The three wire sensors can be used with a two wire transmitter by connecting the two (White) colored wires to one of the RTD terminal blocks with the third wire (Red) wire going to the second RTD Terminal block. The purpose of the third wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using the A/100/1K-3W-D style Platinum RTD series sensors without temperature transmitter. The operating specifications are for both the sensor and transmitter as designated in the specification table. Standard enclosure options include the "-GD" Galvanized or "-BB" Aluminum weather proof enclosure. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters with a 3 NIST Calibration Certificate since they include a second calibration step in which the RTD and transmitter are calibrated together as a system, which will remove most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Burners, Boilers, Stacks, Exhaust, Incinerators, Ovens, Conveyor Systems, Process Heating, Process Control.

The ACI High Temperature Duct Sensors and Transmitters Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

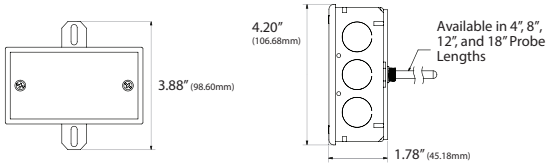
PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signal:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibration Transmitter Accuracy | Linearity:	**Temp. Spans < 500°F (260°C):** +/- 0.2% | **Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100°F (38°C):** +/- 0.04%/°F | **Temp. Spans > 100°F (38°C):** +/- 0.02%
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40°F (-40°C) to 185°F (85°C)
Operating Humidity Range:	0 to 90%, non-condensing
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50°F (28°C) | **Maximum Temp. Span:** 800°F (426°C)
Matched Callibratede Temperature Spans (A/TTM Models) Ranges:	-49°F to 311°F (-45°C to 155°C)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensor Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-HT-D-XX" and A/1K-3W-HT-D-xx":** Three (White / Two Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-HT-D-xx":** 100 Ohms nominal | **A/1K-3W-HT-D-xx":** 1000 Ohms nominal
Sensor Tolerance | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- °C = (0.30°C + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	< 0.04 % at 1000 hours at 400°C
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Sensor Operating Temperature Range:	-40 to 395°C (-40 to 743°F)
Enclosure Specificaitons (Operating Temperature Range, Material, Flammability, NEMA/IP Rating):	**"-GD" Enclosure:** -40 to 199°C (-40 to 390°F); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** Aluminum, -40 to 121°C (-40 to 250°F), Plenum Rated, NEMA 3R
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 90% RH, non-condensing
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material:	316 Stainless Steel
Lead Length | Conductor Size:	8' (2.44 m) | 24 AWG (0.20 mm^2)
Lead Wire Insulation | Conductor Material:	Fiberglass Braided Insulation with Mica Tape | 27% Nickel Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

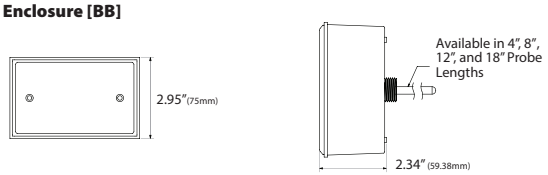
Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0°C in Centigrade

DIMENSIONAL DRAWING

Galvanized Enclosure [GD]



Bell Box Enclosure [BB]



Standard Views

Galvanized Enclosure [GD] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-GD	0.66 lbs. (0.299 kg)	0.68 lbs. (0.308 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-GD	0.70 lbs. (0.317 kg)	0.74 lbs. (0.336 kg)

Bell Box Enclosure [BB] Weights

ACI Model #	4" (Probe Length)	8" (Insertion Length)
A/xx-D-yy-BB	0.70 lbs. (0.317 kg)	0.72 lbs. (0.326 kg)

ACI Model #	12" (Probe Length)	18" (Probe Length)
A/xx-D-yy-BB	0.74 lbs. (0.336 kg)	0.78 lbs. (0.354 kg)

Product Weights

Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

CUSTOM ORDERING HIGH TEMPERATURE DUCT SENSORS

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | HT (D.) | D (E.) | 4" (F.) | GD (G.) | NIST (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD only | **1K =** 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W =** Three Wires (Specify for 100 and 1K RTD Sensors only)	**3W**
D. High Temperature *No Selection Required*	**HT =** High Temperature Series	**HT**
E. Configuration *Select One (1)*	**D =** Duct	**D**
F. Thermowell Insertion Length *Select One (1)*	**4" =** 4" Probe | **8" =** 8" Probe | **12" =** 12" Probe | **18" =** 18" Probe	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. NIST *Select One (1)*	**---- =** No NIST Certificate | **NIST =** NIST Certificate (3 Points)	

CUSTOM ORDERING HIGH TEMPERATURE DUCT TRANSMITTERS

Model # Example: A/ (A.) | TT100 (B.) | HT (C.) | D (D.) | 8" (E.) | 2 (F.) | GD (G.) | (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor (Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters)	
C. High Temperature *No Selection Required*	**HT** = High Temperature Series	**HT**
D. Configuration *Select One (1)*	**D**= Duct	**D**
E. Thermowell Insertion Length *Select One (1)*	**4" =** 4" Probe | **8" =** 8" Probe | **12" =** 12" Probe | **18" =** 18" Probe	
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

ACCESSORIES ORDERING

Model # Example: A/316SS_1-8IN_NPT_COMPRESS_FIT -OR- 143457

Model #	Item #	Description
A/316SS_1-8IN_NPT_COMPRESS_FIT	143457	1/8" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting
A/316SS_1-2IN_NPT_COMPRESS_FIT	143458	1/2" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting

IMMERSION

High Temperature Immersion Sensors & Transmitters

The ACI High Temperature Immersion Series sensors and transmitters are a single point immersion sensor featuring a three wire RTD sensor assembly using Nickel Fiberglass Lead wires, a 316 Series stainless steel probe, and a Machined 304 SS Steel thermowell. The "INW" version of the product can be ordered without the thermowell for applications in which there is an existing thermowell, increased design parameters or other materials are required for higher corrosion resistance. The three wire sensors can be used with a two wire transmitter by connecting the two (Red) colored wires to one of the RTD Terminal blocks with the 3rd wire (White) wire going to the second RTD Terminal block. The purpose of the 3rd wire is to compensate for external lead wire resistance that will affect the accuracy of your sensor output when using with a three wire temperature transmitter or sensor configuration on your Building Management System or PLC (Programmable Logic Controller. ACI recommends the use of 18 AWG lead wires to reduce the external lead wire resistance when using a Platinum RTD. The operating specifications are for both the sensor and transmitter as designated in the specification table. Standard enclosure options include the "-GD" Galvanized or "-BB" Aluminum weather proof enclosure. NIST Certificates are available for all of the configurations listed in the ordering grid on the back of the product data sheet. For best accuracy, ACI recommends the use of the TTM100 or TTM1K Series Matched transmitters with a 3 or 5 Point NIST Calibration Certificate since they include a second calibration step in which the RTD and transmitter are calibrated together as a system, which removes most of the sensor error over the calibrated temperature span of the transmitter.

Applications: Burners, Boilers, Stacks, Exhaust, Incinerators, Ovens, Plastics Processing, Process Heating, Process Control, Steam Lines

The ACI High Temperature Immersion Sensors and Transmitters Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) | 0.020 A
Output Signal:	**Current:** 4-20 mA (2-Wire Loop Powered) | **Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibration Transmitter Accuracy | Linearity:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2% | **Temp. Spans > 500ºF (260ºC):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100ºF (38ºC):** +/- 0.04%/ºF | **Temp. Spans > 100ºF (38ºC):** +/- 0.02%
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 90%, non-condensing
Calibration Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 800ºF (426ºC)
Matched Callibratede Temperature Spans (A/TTM Models) Ranges:	-49ºF to 311ºF (-45ºC to 155ºC)
Connections | Wire Size:	Screw Terminal Blocks (Non-Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve | Sensor Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Wires:	**A/100-3W-HT-D-XX" and A/1K-3W-HT-D-xx":** Three (White / Two Red) Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-3W-HT-D-xx":** 100 Ohms nominal | **A/1K-3W-HT-D-xx":** 1000 Ohms nominal
Sensor Tolerance | Accuracy[2]:	+/- 0.12% Class B | **Class B Tolerance Formula:** +/- ºC = (0.30ºC + (0.005 * |t|))
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	< 0.04 % at 1000 hours at 400ºC
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/ºC (Still Air) | 5 mA | **1K Ohm RTD:** 4 mW/ºC (Still Air) | 3 mA
Sensor Operating Temperature Range:	-40 to 395ºC (-40 to 743ºF)
Enclosure Specificaitons (Operating Temperature Range, Material, Flammability, NEMA/IP Rating):	**"-GD" Enclosure:** -40 to 199ºC (-40 to 390ºF); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** -40 to 85ºC (-40 to 185ºF); Aluminum; NEMA 3R
Storage Temperature Range:	-40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	10 to 90% RH, non-condensing
Probe Material | Probe Diameter:	316 Stainless Steel | 0.250" (6.35mm)
Compression Fitting Material | Thread Size:	316 Stainless Steel | ½" NPT
Thermowell Material:	304 Series Stainless Steel
Thermowell Instrument Thread | Process Thread:	½" NPS (National Pipe Straight – Female) | ½" NPT (National Pipe Tapered – Male)
Lead Length | Conductor Size:	8' (2.44 m) | 24 AWG (0.20 mm^2)
Lead Wire Insulation | Conductor Material:	Fiberglass Braided Insulation with Mica Tape | 27% Nickel Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet
Agency Approvals:	RoHS2, WEEE

Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Where |t| is the absolute value of temperature above or below 0ºC in Centigrade

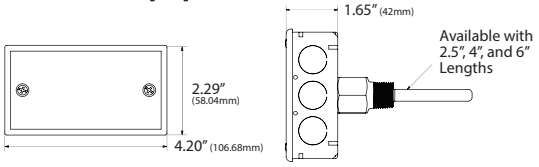
MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGHT MACHINED THERMOWELL

Straight Shank Insertion Length "U"			Stepped Shank Insertion Length "U"	
Material:	**Media Type:**	**2.5" (63.5 mm)**	**4.0" (101.6 mm)**	**6.0" (152.4 mm)**
304/316 SS	Air/Gas/Steam[1]	349 ft/s (106.3 m/s)	109 ft/s (33.2 m/s)	39.5 ft/s (12.0 m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	82.2 ft/s (25.1 m/s)	39.5 ft/s (12.0 m/s)

Note 1: Values are for Air/Gas/ Steam and similar density media | All velocity ratings are based upon an operating temperature of 1000°F (537.8°C)

DIMENSIONAL DRAWING

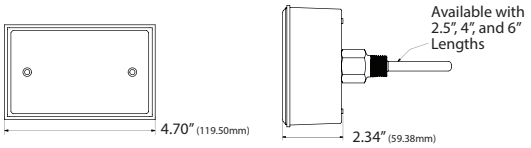
Galvanized Enclosure [GD]



Galvanized Enclosure [GD] Weights

ACI Model #	2.5" (Insertion Length)	4" (Insertion Length)	6" (Insertion Length)
A/xx-INW-yy-GD	0.66 lbs. (0.299 kg)	0.70 lbs. (0.318 kg)	0.74 lbs. (0.336 kg)
A/xx-IM-yy-GD	1.00 lbs. (0.454 kg)	1.16 lbs. (0.526 kg)	1.32 lbs. (0.599 kg)

Bell Box Enclosure [BB]



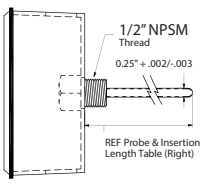
Bell Box Enclosure [BB] Weights

ACI Model #	2.5" (Insertion Length)	4" (Insertion Length)	6" (Insertion Length)
A/xx-INW-yy-BB	0.68 lbs. (0.308 kg)	0.72 lbs. (0.326 kg)	0.76 lbs. (0.345 kg)
A/xx-IM-yy-BB	1.02 lbs. (0.463 kg)	1.20 lbs. (0.544 kg)	1.36 lbs. (0.617 kg)

Standard Views | **Product Weights**

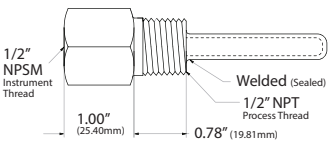
Note: There are two enclosures included with configurations involving Temperature Transmitters. A secondary GD (Galvanized) enclosure contains the transmitter board to protect it from the extreme temperatures exposed to the sensing element

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Above: immersion now ell (INW) sensor in Bell Box Enclosure (BB).

Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
4.5"	4.31" +/- 0.13"	A/xx-INW-2.5"-yy-zz	A/M2.5"
6"	5.81" +/- 0.13"	A/xx-INW-4"-yy-zz	A/M4"
8"	7.81" +/- 0.13"	A/xx-INW-6"-yy-zz	A/M6"

Standard Views | **Product Weights**

CUSTOM ORDERING HIGH TEMPERATURE IMMERSION SENSORS

Model # Example: A/ (A.) | 1K (B.) | 3W (C.) | HT (D.) | I (E.) | 4" (F.) | GD (G.) | NIST (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD only | **1K =** 1K Ohm Platinum RTD only	
C. Number of Wires *No Selection Required*	**3W =** Three Wires (Specify for 100 and 1K RTD Sensors only) →	**3W**
D. High Temperature *No Selection Required*	**HT =** High Temperature Series →	**HT**
E. Configuration *Select One (1)*	**IM =** Immersion with Machined Thermowell | **INW =** Immersion without Thermowell	
F. Thermowell Insertion Length *Select One (1)*	**2.5"** = 2.5" Probe | **4"** = 4" Probe | **6"** = 6" Probe	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. NIST *Select One (1)*	**---- =** No NIST Certificate | **NIST =** NIST Certificate (3 Points)	

CUSTOM ORDERING HIGH TEMPERATURE IMMERSION TRANSMITTERS

Model # Example: A/ (A.) | TT100 (B.) | HT (C.) | I (D.) | 6" (E.) | 2 (F.) | GD (G.) | (H.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100** = Unmatched Temperature Transmitter & 100 Ohm RTD **TT1K** = Unmatched Temperature Transmitter & 1K RTD **TTM100** = Matched 100 Ohm Temperature Transmitter/Sensor **TTM1K** = Matched 1K Ohm Temperature Transmitter/Sensor (Must specify 3 or 5 Point NIST Certificates for all TTM100 and TTM1K Transmitters)	
C. High Temperature *No Selection Required*	**HT** = High Temperature Series →	**HT**
D. Configuration *Select One (1)*	**IM** = Immersion with Machined Thermowell | **INW** = Immersion without Thermowell	
E. Thermowell Insertion Length *Select One (1)*	**2.5"** = 2.5" Probe | **4"** = 4" Probe | **6"** = 6" Probe	
F. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
G. Enclosure *Select One (1)*	**GD** = Galvanized Enclosure | **BB** = Cast Aluminum Weather Proof Enclosure	
H. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

ACCESSORIES ORDERING

Model # Example: A/316SS_1-8IN_NPT_COMPRESS_FIT -OR- 143457

Model #	Item #	Description
A/316SS_1-8IN_NPT_COMPRESS_FIT	143457	1/8" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting
A/316SS_1-2IN_NPT_COMPRESS_FIT	143458	1/2" MNPT x 1/4" Tube Fitting (Bore Through), Compression Fitting

FREEZER

Remote Freezer, Thermistor

The ACI Thermistor Freezer Series features a 3/16" diameter stainless steel probe with a 30 Foot, 3 Conductor, 24 AWG Jacketed Teflon Cable. The sensors in this series are manufactured using ACI's proven encapsulation process to eliminate the effects of moisture upon the sensors. The probe is designed to be used in a Refrigerated, Freezer or Hydronic applications where a remote sensor must be used. An optional NEMA 4X rated weatherproof enclosure and NIST Certificate is available as referenced in the ordering grid on the back of the product data sheet

Applications: Pharmaceutical, Refrigerators, Freezers, Hydronic Heating, Remote Sensor Applications

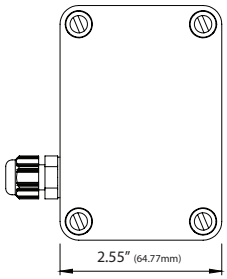
The ACI Thermistor Freezer Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

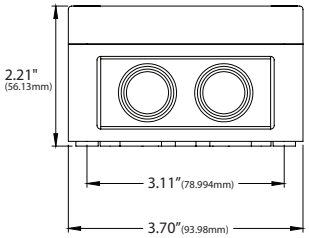
PRODUCT SPECIFICATIONS

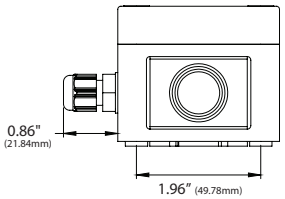
Sensor Type | Sensor Curve	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	Three Conductors (White and Two Red Wires); Polarity Sensitive (Tie Red wires together)
Sensor Output @ 25°C (77°F)	**A/CP (Type II):** 10KΩ nominal | **A/AN (Type III):** 10KΩ nominal
Accuracy 0-70°C (32-158°F):	**A/CP Series & A/AN Series:** +/- 0.85°C (+/-1.53°F);
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Power Dissipation Constant:	**A/CP-Series & A/AN Series:** 2 mW/°C
Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F)
Enclosure Operating Temperature Range:	-40 to 70°C (-40 to 158°F)
Storage Temperature Range:	-40 to 80°C (-40 to 176°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Enclosure Material | Flammability Rating:	Polystyrene | UL94-V2
Enclosure Ratings:	NEMA 4X (IP 66)
Cable Gland (Fitting) Size | Hole Size:	PG7 | 15 mm (0.591")
Cable Gland Material | Sleeve Material:	Polyamide 6 | Neoprene
Cable Gland Wire Clamping Size | IP Rating:	0.098" (2.5 mm) to 0.256" (6.5 mm) | IP 68 (NEMA 6P)
Cable Gland Torque Rating:	2.5 Nm (22.127 lb. inch)
Probe Material:	316 Stainless Steel
Probe Length | Probe Diameter:	2" (50.8 mm) | 0.1875" (4.76 mm)
Lead Length | Cable Diameter:	30' (9.15 m) | 0.106" nominal (2.69 mm)
Conductor Size | Conductor Material:	24 AWG (0.51 mm) | Silver Plated Copper
Lead Wire Insulation | Jacket Color:	FEP/FEP (Teflon) Jacketed Cable | White
Product Weight:	**A/xxK-FRZ2"-30':** 0.36 lbs. (0.163 kg) | **A/xxK-FRZ2"-4X-30':** 0.60 lbs. (0.272 kg)
Agency Approvals:	WEEE, RoHS2

DIMENSIONAL DRAWINGS

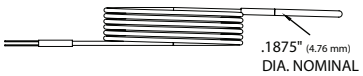
NEMA 4X Enclosure [4X]

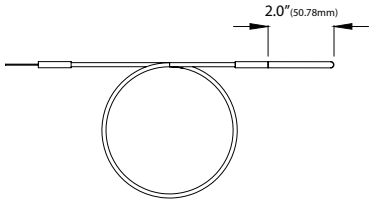






Sensor Probe





Front View	Side View	Top View

STANDARD ORDERING

Model # Example: A/1.8K-FRZ2"-30' -OR- 125164

Model #	Item #	Description
A/AN-FRZ2"-30'	121305	AN Freezer Sensor, 30' Leads, 2" Probe
A/CP-FRZ2"-30'	125285	CP Freezer Sensor, 30' Leads, 2" Probe
A/AN-FRZ2"-4X-30'	134410	AN Freezer Sensor, 30' Leads, 2" Probe, 4X Enclosure
A/CP-FRZ2"-4X-30'	125094	CP Freezer Sensor, 30' Leads, 2" Probe, 4X Enclosure

OPTIONAL SENSOR ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | FRZ2" (C.) | 4X (D.) | 30' (E.) | NIST (F.)

A. Sensor Series *No Selection Required*	**A/** →
B. Model Series *Select One (1)*	**AN** | **CP**
C. Configuration *No Selection Required*	**FRZ2"** = Freezer Sensor →
D. Enclosure *Select One (1)*	**----** = No Enclosure | **4X** = NEMA 4X Weather Proof Plastic Enclosure
E. Lead Length *No Selection Required*	**30'** = 30 Feet (9.15m) →
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST**= NIST Certificate (3 Points)

MODEL #
A/
FRZ2"
30'

ACCESSORIES ORDERING

Model # Example: A/TB-2.0-GLA -OR- 147220

Model #	Item #	Description
A/TB-2.0-GLA	147220	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads
A/TB-2.0-GLY	147221	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol
A/TB-8.5-1-GLA	147223	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads
A/TB-8.5-1-GLY	147225	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol
A/TB-8.5-3-GLA	147227	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Glass Beads
A/TB-8.5-3-GLY	147228	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Food Grade Glycol

FREEZER

Remote Freezer, Platinum RTD

The ACI RTD Freezer Series features a 3/16" diameter stainless steel probe with a 10 Foot or 30 Foot, 3 Conductor, 24 AWG Plenum rated jacketed Teflon cable. The sensors in this series are manufactured using ACI's proven encapsulation process to eliminate the effects of moisture upon the sensors. The sensor is designed to be used in Pharmaceutical, Liquid Nitrogen, Freezers, Refrigerators and Hydronic applications where a remote sensor is required due to the extreme temperature ranges and presence of ice and moisture. An optional "-GD" galvanized or "-4x" NEMA 4X weather proof enclosure and NIST Certificates are available as referenced in the ordering grid on the product data sheet. The Freezer RTD sensors can be used with any of the Single or Triple Point Thermal Buffers for when slower response time is desired.

Applications: Pharmaceutical, Liquid Nitrogen, Refrigerators, Freezers, Hydronic Heating, Remote Sensor Applications, Hospital, Agricultural

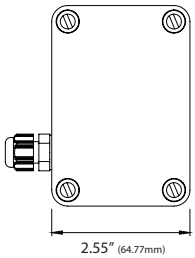
The ACI RTD Freezer Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

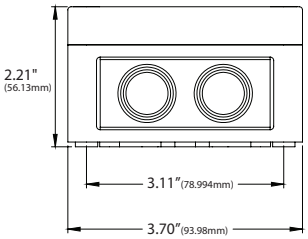
PRODUCT SPECIFICATIONS

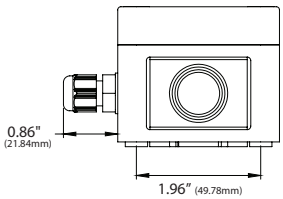
Sensor Type | Sensor Curve	Platinum RTD | Linear, PTC (Positive Temperature Coefficient)
Number Sensing Points | Number Wires:	One | Three Conductors (White and Two Red Wires); Polarity Sensitive (Tie Red wires together)
Sensor Output @ 0ºC (32ºF)	**A/100-LTS Series:** 100 Ohms nominal | **A/1K-LTS Series:** 1000 Ohms nominal
Sensor Tolerance Class:	**Class B Accuracy Formula:** +/- ºC = (+/- 0.30ºC + (0.005 x |t|)) where t is the Absolute Value of temperature in ºC above or below 0ºC **-200ºC (-328ºF):** +/- 1.30ºC (+/- 2.34ºF) | **0ºC (-32ºF):** +/- 0.30ºC (+/- 0.54ºF)
Temperature Coefficient | Din Standard:	3850 ppm / ºC | DIN EN 60751 (IEC 751)
Response Time (63% Step Change):	**A/100-LTS Series:** In still air: 3:40 (Min:Sec) In water: 19 (Sec) | **A/1K-LTS Series:** In still air: 3:50 (Min:Sec) In water: 22 (Sec)
Sensor Operating Temperature Range:	-198 to 150ºC (-324 to 302ºF)
Enclosure Operating Temperature Range:	**"-GD" Enclosure:** -40 to 100ºC (-40 to 212ºF) | **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF)
Storage Temperature Range:	-40 to 80ºC (-40 to 176ºF)
Operating Humidity Range:	10 to 100% RH
Enclosure Material | Flammability Rating:	**"-GD" Enclosure:** Galvanized Steel | **"-4X" Enclosure:** Polystyrene | UL94-V2
Enclosure NEMA/IP Ratings:	**"-GD" Enclosure:** NEMA 1 (IP10) | **"-4X" Enclosure:** NEMA 4X (IP 66)
Cable Gland (Fitting) Size | Hole Size:	PG7 | 15 mm (0.591")
Cable Gland Material | Sleeve Material:	Polyamide 6 | Neoprene
Cable Gland Wire Clamping Size | IP Rating:	0.098" (2.5 mm) to 0.256" (6.5 mm) | IP 68 (NEMA 6P)
Cable Gland Torque Rating:	2.5 Nm (22.127 lb. inch)
Probe Material | Length | Diameter:	316 Stainless Steel | 2" (50.8 mm) | 0.1875" (4.76 mm) nominal
Lead Length | Cable Diameter:	10' (3.05 m) or 30' (9.15 m) | 0.106" nominal (2.69 mm)
Conductor Size | Conductor Material:	24 AWG (0.51 mm) | Silver Plated Copper
Lead Wire Insulation | Jacket Color:	FEP/FEP (Teflon) Jacketed Cable | White
Product Weight:	**A/xx-LTS-10':** 0.16lbs (0.073kg) | **A/xx-LTS-4X-10':** 0.40lbs (0.181kg) **A/xx-LTS-GD-10':** 0.71lbs (0.322kg) | **A/xx-LTS-30':** 0.36lbs (0.163kg) **A/xx-LTS-4X-30':** 0.60lbs (0.272kg) | **A/xx-LTS-GD-30':** 0.91lbs (0.413kg)
Agency Approvals:	WEEE, RoHS

DIMENSIONAL DRAWING

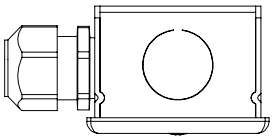
NEMA 4X Enclosure [4X]

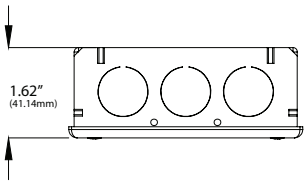


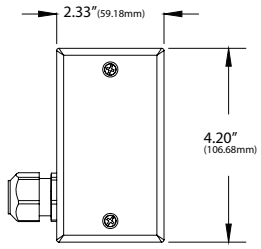




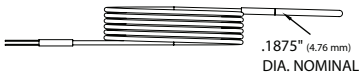
Galvanized Enclosure [GD]

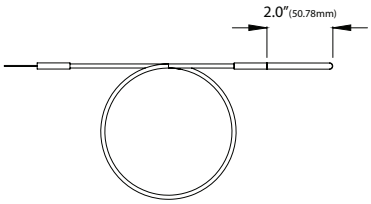






Sensor Probe





Front View	Side View	Top View

STANDARD ORDERING

Model # Example: A/1K-LTS-GD-30' -OR- 142516

Model #	Item #	Description
A/100-LTS-10'	125169	100 Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads
A/100-LTS-GD-10'	142513	100 Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads, Galvanized Enclosure
A/100-LTS-4X-10'	142515	100 Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads; NEMA 4X Enclosure
A/100-LTS-30'	126443	100 Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads
A/100-LTS-GD-30'	142514	100 Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads, Galvanized Enclosure
A/100-LTS-4X-30'	129131	100 Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads; NEMA 4X Enclosure
A/1K-LTS-10'	125213	1K Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads
A/1K-LTS-GD-10'	142139	1K Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads, Galvanized Enclosure
A/1K-LTS-4X-10'	133656	1K Ohm RTD, 2" Probe, Freezer Sensor, 10' Leads; NEMA 4X Enclosure
A/1K-LTS-30'	125214	1K Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads
A/1K-LTS-GD-30'	142516	1K Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads, Galvanized Enclosure
A/1K-LTS-4X-30'	125212	1K Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads, NEMA 4X Enclosure

OPTIONAL SENSOR ORDERING — Model # Example: A/ (A.) 1K (B.) LTS (C.) 4X (D.) 30' (E.) NIST (F.)		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm RTD | **1K** = 1K Ohm RTD	
C. Configuration *No Selection Required*	**LTS** = Freezer Sensor ⟶	**LTS**
D. Enclosure *Select One (1)*	**----** = No Enclosure | **GD** = Galvanized Enclosure | **4X** = NEMA 4X Enclosure	
E. Lead Length *Select One (1)*	**10'** = 10 Feet Leads (3.05 m) | **30'** = 30 Feet (9.15m)	
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

ACCESSORIES ORDERING

Model # Example: A/TB-2.0-GLA -OR- 147220

Model #	Item #	Description
A/TB-2.0-GLA	147220	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-2.0-GLY	147221	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-2.0-XXY	147222	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Empty Bottle, Polyamide Fitting, **Rated to -40°C**
A/TB-2.0-XXA	147653	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Empty Bottle, SS Fitting, **Rated to -100°C**
A/TB-8.5-1-GLA	147223	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-8.5-1-GLY	147225	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-8.5-1-XXX	147226	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Empty Bottle, **Rated to -100°C**
A/TB-8.5-3-GLA	147227	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-8.5-3-GLY	147228	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-8.5-3-XXX	147229	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Empty Bottle, **Rated to -100°C**
A/GLYCOL 250ML	144021	Glycol Filled Bottle (250 ML)
A/GLA 250ML	147328	Glass Bead Filled Bottle (250 ML)

Note: 2.0 (2oz) models are shipped with the original lid in place along with an additional lid drilled out with the sensor cord grip.

FREEZER

Remote Freezer Transmitters

The ACI RTD Freezer Series features a 3/16" diameter stainless steel probe with a 10 Foot or 30 Foot, 3 Conductor, 24 AWG Plenum rated jacketed Teflon cable. The sensor is designed to be used in Pharmaceutical, Liquid Nitrogen, Freezers, Refrigerators and Hydronic applications where a remote sensor is required. Optional "-GD" galvanized, "-BB" Aluminum, or "-4x" NEMA 4X weather proof plastic enclosures are available as well as NIST Certificates as referenced on the back of the product data sheet. A/TT Series transmitter accuracies must be calculated using both the calibration accuracy of the transmitter and the sensor accuracy over your applications operating temperature range. For higher accuracies, the A/TTM Series includes a secondary calibration process designed to eliminate most of the sensor error from the overall system accuracy. Any Freezer Transmitter can be used with the Single or Triple Point Glycol Kits when a Thermal Buffer (slower) response time is desired.

Applications: Pharmaceutical, Liquid Nitrogen, Refrigerators, Freezers, Hydronic Heating, Remote Sensor Applications, Hospital, Agricultural

The ACI Transmitter Freezer Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

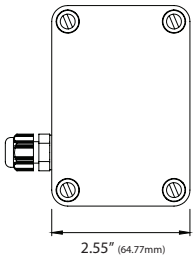
PRODUCT SPECIFICATIONS

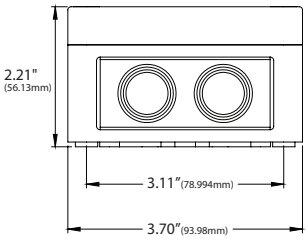
Transmitter Supply Voltage | Supply Current:	+13.5 to 32 VDC into 250 Ohm Load (Reverse Polarity Protected) | 25 mA minimum +18.5 to 32 VDC into 500 Ohm Load
Maximum Load Resistance:	Terminal Voltage - 8.5 V | 0.020 A | (775 Ohms @ 24 VDC)
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered) **| Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity:	**Temp. Spans < 500ºF (260ºC):** +/- 0.2% **| Temp. Spans > 500ºF (260ºC):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100ºF (38ºC): +**/- 0.04%/ºF **| Temp. Spans > 100ºF (38ºC):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span **| 5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40ºF (-40ºC) to 185ºF (85ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Calibrated Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) **| Maximum Temp. Span:** 1000ºF (538ºC)
Matched Calibrated Temperature Spans (A/TTM models) Range:	-45 to 155ºC (-49 to 311ºF)
Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 AWG (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm nominal
Sensor Type | Sensor Curve:	Platinum RTD | Linear, PTC (Positive Temperature Coefficient)
Number Wires:	Three Conductors (White and Two Red Wires); Polarity Sensitive (Red wires tied together)
Sensor Output @ 0ºC (32ºF):	**A/TT/TTM100-LTS Series:** 100 Ohms nominal **| A/TT/TTM1K-LTS Series:** 1000 Ohms nominal
RTD Tolerance Class[2] | Sensory Accuracy:	Class B **| Accuracy Formula:** +/- ºC = (+/- 0.30ºC + (0.005 x |t|)) **-200°C (-328°F):** +/- 1.30°C (+/- 2.43°F) **| 0°C (-32°F):** +/- 0.30°C (+/- 0.54°F)
Response Time (63% Step Change):	**A/TT/TTM100-LTS Series:** In still air: 3:40 (Min:Sec) In water: 19 (Sec) **|** **A/TT/TTM1K-LTS Series:** In still air: 3:50 (Min:Sec) In water: 22 (Sec)
Temperature Coefficient | Din Standard:	3850 ppm / ºC | DIN EN 60751 (IEC 751)
Stability:	< 0.04% @ 1000 hours @ 400ºC (752ºF)
Sensor Operating Temperature Range:	-198 to 150ºC (-324 to 302ºF)
Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):	**"-GD" Enclosure:** -40 to 121ºC (-40 to 250ºF); Galvanized Steel; NEMA 1 (IP10) **"-BB" Enclosure:** Aluminum, -40 to 121ºC (-40 to 250ºF), Plenum Rated, NEMA 3R (IP 14) **"-4X" Enclosure:** -40 to 70ºC (-40 to 158ºF); Polystyrene Plastic; UL94-V2; NEMA 4X (IP 66)
Storage Temperature Range:	-40 to 80ºC (-40 to 176ºF)
Cable Gland (Fitting) Size | Hole Size | Material:	PG7 | 15 mm (0.591") | Polyamide 6
Cable Gland Sleeve Material | Wire Clamping Size:	Neoprene | 0.098" (2.5 mm) to 0.256" (6.5 mm)
Cable Gland IP Rating | Torque Rating:	IP 68 (NEMA 6P) | 2.5 Nm (22.127 lb. inch)
Probe Material | Length | Diameter:	316 Stainless Steel | 2" (50.8 mm) | 0.1875" (4.76 mm) nominal
Lead Length | Cable Diameter:	10' (3.05 m) or 30' (9.15 m) | 0.106" nominal (2.69 mm)
Conductor Size | Conductor Material:	24 AWG (0.51 mm) | Silver Plated Copper
Lead Wire Insulation | Jacket Color:	FEP/FEP (Teflon) Jacketed Cable | White
Product Weights:	**A/TT/TTMxxx-LTS-BB-10':** 0.84 lbs (0.39 kg) **A/TT/TTMxxx-LTS-BB-30':** 1.04 lbs (0.48 kg) **A/TT/TTMxxx-LTS-4X-10':** 0.42 lbs (0.19 kg) **A/TT/TTMxxx-LTS-4X-30':** 0.62 lbs (0.29 kg) **A/TT/TTMxxx-LTS-GD-10':** 0.73 lbs (0.32 kg) **A/TT/TTMxxx-LTS-GD-30':** 0.93 lbs (0.43 kg)
Agency Approvals:	WEEE, RoHS

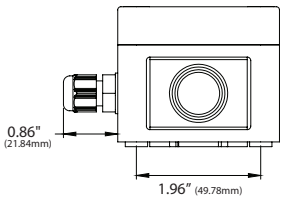
Note[1]: Transmitter's calibrated at 71ºF (22ºC) nominal | Note[2]: Where t is the Absolute Value of temperature in Centigrade above or below 0ºC

DIMENSIONAL DRAWING

NEMA 4X Enclosure [4X]







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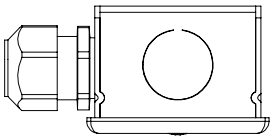
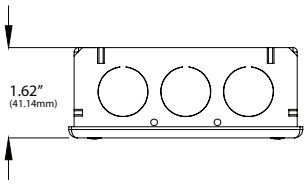
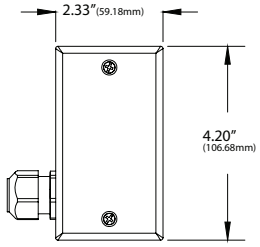
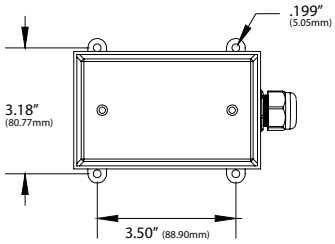
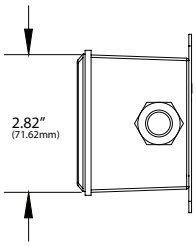


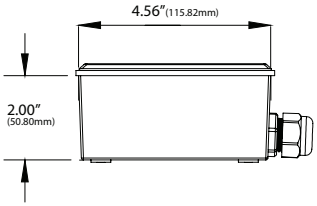




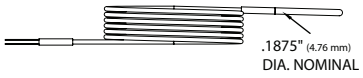
Bell Box Enclosure [BB]

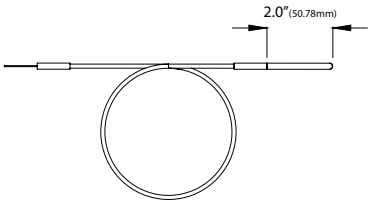






Sensor Probe





Front View	Side View	Top View

OPTIONAL SENSOR ORDERING — Model # Example: A/ (A.) - TT100 (B.) - LTS (C.) - 1 (D.) - GD (E.) - 10' (F.) - (G.)		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *Select One (1)*	**TT100 =** 100Ω RTD **| TTM100 =** Matched 100Ω RTD (Specify 3 or 5 Point NIST)* **TT1K =** 1KΩ RTD **| TTM1K =** Matched 1KΩ RTD (Specify 3 or 5 Point NIST)*	
C. Configuration *No Selection Required*	**LTS =** Freezer Sensor ⟶	**LTS**
D. Output Signal *Select One (1)*	**1** = 1 to 5 VDC (3-Wire) **| 2** = 2 to 10 VDC (3-Wire) **| 4** = 4 to 20 mA (2-Wire Loop Powered)	
E. Enclosure *Select One (1)*	**GD =** Galvanized Enclosure **| BB =** NEMA 3R Enclosure **| 4X =** NEMA 4X Enclosure	
F. Lead Length *Select One (1)*	**10' =** 10 Feet Leads (3.05 m) **| 30' =** 30 Feet (9.15m)	
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1k part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

TEMPERATURE PROBE

Probe w/Buffer for Refrigeration/Freezer

ACI Thermal Buffers counter rapid temperature fluctuations typically caused by doors opening in a walk-in freezer or cooler applications rated down to -40°C (-40°F). The 2 oz Nalgene bottles listed on this data sheet are designed to accept ACI's standard 4 inch probe with 20 foot, Plenum rated FEP/FEP (Teflon) cable. The Platinum, Nickel and Thermistor sensors are manufactured using ACI's proven double encapsulation process and dual wall heat shrinking process to eliminate the effects of moisture on the sensors using our high quality, thermally conductive epoxy. The sensor should be installed inside the bottle such that the tip of the sensor is suspended approximately ½ inch above the bottom of the bottle. NIST Certificates are available when required. (See ACI's Freezer Series Data Sheets for additional sensor and thermal buffer options).

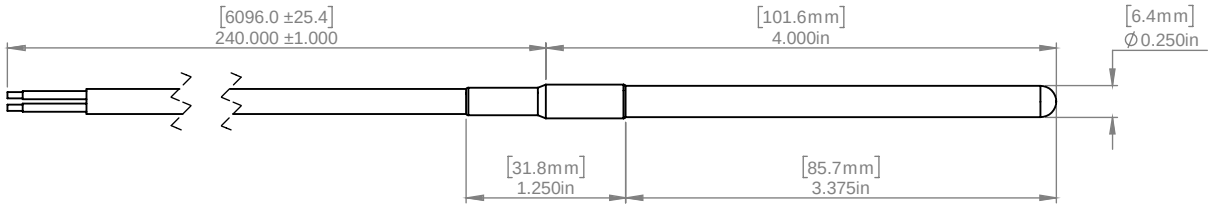
Applications: Monitor Freezer and Refrigerator Temperatures, Pharmaceuticals, Thermal Buffer

The ACI Thermal Buffer Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Platinum RTD Probe	**Sensor Type | Curve Type | Sensing Points:**	Platinum RTD | PTC (Positive Temperature Coefficient) | One
	Number Wires:	**A/100/1K-2W-PO-4":** Two (Non-Polarity Sensitive) | **A/100/1K-3W-PO-4":** Three (Polarity Sensitive)
	RTD Sensor Output @ 0°C (32°F):	**A/100-xW-PO-4":** 100 Ohms nominal | **A/1K-xW-PO-4":** 1000 Ohms nominal
	RTD Sensor Accuracy:	+/- 0.06% Class A (Tolerance Formula: +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/-0.23°C (+/-0.414°F) | **0°C (32°F):** +/-0.15°C (+/-0.27°F) **120°C (248°F):** +/-0.39°C (+/-0.71°F)
	Din Standard | Temperature Coefficient:	Din EN 60751 (IEC 751) | 3850 ppm / °C
	Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
	Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA; **1K Ohm RTD:** 4mW/°C (Still Air) | 3 mA
Nickel RTD Probe	**Sensor Type | Curve Type | Sensing Point:**	Nickel RTD | PTC (Positive Temperature Coefficient) | One
	Number Wires:	Two (Non-Polarity Sensitive)
	Sensor Output @21.1°C (70°F):	1000 Ohms nominal
	Sensor Accuracy:	**-40°C (-40°F):** +/-1.52°C (+/-2.73°F) | **0°C (32°F):** +/-0.4°C (+/-0.72°F) | **21.1°C (70°F):** +/-0.17°C (+/-0.34°F) | **54.4°C (130°F):** +/-0.56°C (+/-1.00°F) | **121°C (250°F):** +/-1.25°C (+/-2.25°F)
	Din Standard | Temp. Coefficient (0-100°C):	Din 43760 | 6370 ppm/°C
	Sensor Stability:	+/- 0.05% after 1000 Hours @ 150°C (302°F)
	Self-Heating | Maximum Operating Current:	0.3°C/mW (Still Air) | 5 mA
Thermistor Probe	**Sensor Type | Curve Type | Sensing Points:**	Thermistor | NTC (Negative Temperature Coefficient) | One
	Thermistor Output @ 25°C (77°F):	**A/1.8K:** 1.8KΩ nom. **A/10KS:** 10KΩ nom. **A/CP (Type II):** 10KΩ nom. **A/3K:** 3KΩ nom. **A/100KS:** 100KΩ nom. **A/AN-BC:** 5.238KΩ nom. **A/AN (Type III):** 10KΩ nom. **A/20K:** 20KΩ nom. **A/CSI:** 10KΩ nom.
	Thermistor Accuray 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) | **A/1.8K:** +/-0.5°C @ 25°C (77°F) & (+/-1.0°C) (+/-1.8°F)
	Stability:	Sensor Dependent; Contact ACI for more information on the sensor in question
	Power Dissipation Constant:	3 mW/°C except **A/1.8K:** 1 mW/°C
General Specs	**Response Time (63% Step Change):**	10 Seconds Nominal
	Operating | Storage Temperature Range:	-40 to 150°C (-40 to 302°F) | -40 to 85°C (-40 to 185°F)
	Operating Humidity Range:	10 to 95% RH, condensing
	Lead Length | Conductor Size | Material:	20 Feet (6.10m) | 22 AWG (0.65mm) | Tin Plated Copper
	Lead Wire Insulation | Wire Rating:	FEP/FEP (Teflon) Cable | CL2P/CMP Plenum Rated Cable (minimum)
	Probe Material | Probe Diameter:	304 Stainless Steel | 0.250" (6.35mm)
	Product Dimensions:	See Table on back of Product Data Sheet
	Product Weight:	**A/xx-PO-4"-20'CL2P:** 0.025 lbs. (113.4g)
	Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Front View

CUSTOM ORDERING

Model # Example: A/ (A.) | 100 (B.) | 3W (C.) | PO (D.) | 4" (E.) | 20' (F.) | CL2P-HS (G.) | NIST (H.)

MODEL

A. Sensor Series *No Selection Required*	**A/** ⟶		**A/**
B. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD **1K =** 1000 Ohm Platinum RTD **1K-NI =** 1000 Ohm Nickel RTD **1.8K =** 1.8K Ohm Thermistor **3K =** 3K Ohm Thermistor **AN =** 10K (Type III) Ohm Thermistor	**AN-BC** = 10K Thermistor Ohm | 11K Shunt **CP** = 10K (Type II) Ohm Thermistor **CSI** = 10K Ohm Thermistor **10KS** = 10K Ohm Thermistor **20K** = 20K Ohm Thermistor **100KS** = 100K Ohm Thermistor	
C. Number of Wires *Select One (1)*	**----** = Any Thermistor/Nickel Sensor | **2W =** Two Wire (100/1K RTD only) | **3W =** Three Wire (100/1K RTD Only)		
D. Configuration *No Selection Required*	**PO =** Probe Only ⟶		**PO**
E. Probe Length *No Selection Required*	**4"** = 4" Probe ⟶		**4"**
F. Lead Length *No Selection Required*	**20'** = 20 Feet* (6.10m) ⟶		**20'**
G. Lead Wire Type *No Selection Required*	**CL2P-HS** = 2 Conductor Plenum Rated Cable with Heat Shrink ⟶		**CL2P-HS**
H. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)		

ACCESSORIES ORDERING

Model # Example: A/GLYCOL KIT -OR- 130127

Model #	Item #	Description
A/TB-2.0-GLY	147221	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol
A/TB-2.0-XXX	147222	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Empty Bottle

THERMAL BUFFER BOTTLE KIT

Thermal Buffer

ACI Thermal Buffers counter rapid temperature fluctuations typically caused by doors opening in a walk-in freezer or cooler. The ACI Thermal Buffer Bottle comes with all the items needed to add a buffer to any new or existing sensor installation. All the parts include the food grade Glycol or Glass beads buffer, 304 series stainless steel Mounting bracket, stainless steel screws, Nalgene Bottle, and probe fitting. The 2oz Glycol bottle includes a PG7 Cable Gland with Neoprene Gasket (Seal) that will fit 3/16" to ¼" probe sizes. The 2oz Glass beads Thermal Buffer bottle includes a 316 stainless steel compression fitting that will fit 3/16" diameter sensing probes only. The 8.5oz bottle will fit 3/16" diameter sensing probes only.

ACI's Glycol buffer should be used in freezer/fridge applications, rated down to -40ºC(-40ºF). ACI's Glass Bead Buffer should be used in extreme low temperature applications, rated down to -100ºC(-148ºF).

The "-3PT" Triple Point Thermal buffer should be used in pharmaceutical or critical applications where multiple sensor redundancy is required with the 3rd sensing opening available for insertion of your NIST Certified standard or reference.

For more information regarding the Glycol or Glass Bead Thermal Buffer Bottles and Accessories, or to discuss your application in more detail, please contact ACI.

Applications: Monitor Freezer and Refrigerator Temperatures, Cryogenic Temperatures, Pharmaceuticals, Meat Packing Plants, Cold Storage Facilities, Thermal Buffer (Slows Response Times)

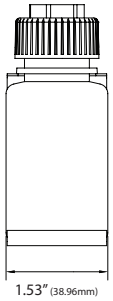
The ACI Thermal Buffer Bottles and Accessories Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site.

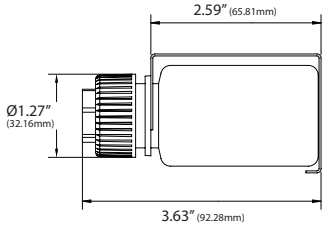
PRODUCT SPECIFICATIONS

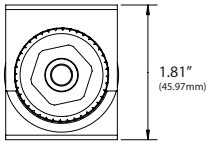
2 oz Thermal Buffer Bottle Glycol	**Thermal Media:**	Glycol
	Bottle Material/Cap Material:	Nalgene (HDPE) / Polypropylene
	Fluid Capacity:	67 ml (2 oz)
	Bottle Dimensions: (Height x Diameter)	3.386" (86.00 mm) x 1.535" (39.00 mm)
	Cable Gland Material / Gland Material	Polyamide 6 / Neoprene
	Cable Gland Torque Rating	1.66 Nm (14.7 lb. inch)
	Probe Size Accepted:	0.098" to 0.256" (2.49mm to 6.50mm)
	Operating Temperature Range:	-40 to 120ºC (-40 to 248ºF)
2 oz Thermal Buffer Bottle Glass Bead	**Thermal Media:**	Glass Beads
	Bottle Material/Cap Material:	Nalgene (HDPE) / Polypropylene
	Fluid Capacity:	67 ml (2 oz)
	Bottle Dimensions: (Height x Diameter)	3.386" (86.00 mm) x 1.535" (39.00 mm)
	Compression Fitting Material:	316 Stainless Steel
	Probe Size Accepted:	0.1875" (4.762 mm)
	Operating Temperature Range:	-100 to 120°C (-148 to 248°F)
8.5 oz Thermal Buffer Bottle	**Thermal Media:**	Glycol or Glass Beads
	Bottle Material/Cap Material:	Nalgene (HDPE) / Polypropylene w/ PTFE Foam Liner
	Fluid Capacity:	250 ml (8.5 oz)
	Bottle Dimensions: (Height x Diameter)	4.04" (102.62 mm) x 2.18" (55.37 mm)
	Thermowell Material (3PT only):	316 SS Steel
	Probe Size Accepted:	0.1875" (4.762 mm)
	Operating Temp Range – Glycol:	-40 to 120°C (-40 to 248°F)
	Operating Temp Range – Glass Bead:	-100 to 120°C (-148 to 248°F)
Bracket	**Bracket Material:**	304 Stainless Steel
	Bracket Size(H x W x D):	2 oz Bottle: 2.541" (64.54 mm) x 1.500" (38.10 mm) x 1.760" (44.71 mm) 8.5 oz Bottle: 3.366" (85.49 mm) x 2.630" (66.80 mm) x 3.00" (76.20 mm)
	Mounting Screws / Material:	#10-16 Thread x 1/2" (12.7mm) / 410 Stainless steel
Thermal Buffer Media	**Glycol Properties / Glycol Freezing Point:**	Food Grade USP (Propylene Glycol); Non-Toxic | -59°C (-74.2°F)
	Glass Bead Properties / Glass Freezing Point:	Soda Lime Glass / NA
General Specs	**Chemical Resistance:**	Resistant to most acids, bases, and alcohols
	Bottle Sterility:	Lab Quality, Non-Sterile
	Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
	Operating Humidity Range:	10 to 100% RH, condensing
	Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING, WEIGHTS

2.0 oz Bottle



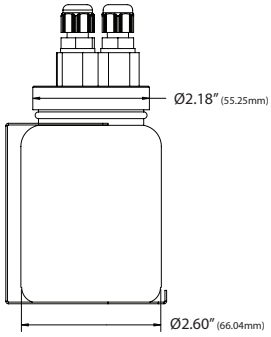


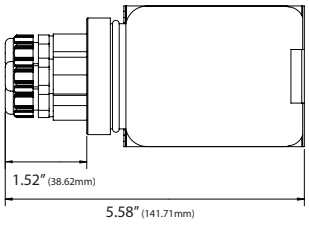


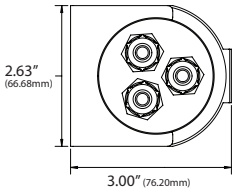
2.0 oz Bottle Weights

ACI Model #	Weight
A/TB-2.0-GLA	0.5 lbs (0.227 kg)
A/TB-2.0-GLY	0.2 lbs (0.091 kg)
A/TB-2.0-XXX	0.14 lbs (0.064 kg)

8.5 oz Bottle







8.5 oz Bottle Weights

ACI Model #	Weight
A/TB-8.5-1-GLA	1.20 lbs (0.544 kg)
A/TB-8.5-1-GLY	0.892 lbs (0.404 kg)
A/TB-8.5-1-XX	0.314 lbs (0.143 kg)
A/TB-8.5-3-GLA	1.37 lbs (0.621 kg)
A/TB-8.5-3-GLY	1.066 lbs (0.484 kg)
A/TB-8.5-3-XXX	0.488 lbs (0.221 kg)

Front View **Right View** **Top View**

STANDARD ORDERING

Model # Example: A/TB-2.0-GLA -OR- 147220

Model #	Item #	Description
A/TB-2.0-GLA	147220	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-2.0-GLY	147221	Thermal Buffer, 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-2.0-XXY	147222	Empty 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Polyamide Fitting, **Rated to -40°C**
A/TB-2.0-XXA	147653	Empty 2 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, SS Fitting, **Rated to -100°C**
A/TB-8.5-1-GLA	147223	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-8.5-1-GLY	147225	Thermal Buffer, 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-8.5-1-XXX	147226	Empty 8.5 oz Nalgene Bottle, 1 Sensing Point, Mounting Bracket, **Rated to -100°C**
A/TB-8.5-3-GLA	147227	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Glass Beads, **Rated to -100°C**
A/TB-8.5-3-GLY	147228	Thermal Buffer, 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, Food Grade Glycol, **Rated to -40°C**
A/TB-8.5-3-XXX	147229	Empty 8.5 oz Nalgene Bottle, 3 Sensing Points, Mounting Bracket, **Rated to -100°C**
A/GLYCOL 250ML	144021	Glycol Filled Bottle (250 ML)
A/GLA 250ML	147328	Glass Bead Filled Bottle (250 ML)

Note: 2.0 (2oz) models are shipped with the original lid in place along with an additional lid drilled out with the sensor cord grip.

ACCESSORIES ORDERING. FOR USE WITH GLYCOL (2 OZ)

Model # Example: A/1K-3W-PO-4"-20'CL2P-HS -OR- 147719

Model #	Item #	Description
A/1K-3W-PO-4"-20'CL2P-HS	147719	1K Ohm RTD, Three Wires, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/100-3W-PO-4"-20'CL2P-HS	147720	100 Ohm RTD, Three Wires, Probe Only, 4", 20' Plenum Cable w/ Additional Moisture Protection
A/1K-NI-PO-4"-20'CL2P-HS	147721	1K Ohm Nickel RTD, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/CP-PO-4"-20'CL2P-HS	144077	10K Ohm (Type II) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/AN-PO-4"-20'CL2P-HS	147723	10K Ohm (Type III) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/CSI-PO-4"-20'CL2P-HS	147724	10K Ohm (CSI) Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/1.8K-PO-4"-20'CL2P-HS	147725	1.8K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/3K-PO-4"-20'CL2P-HS	142215	3K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/AN-BC-PO-4"-20'CL2P-HS	147726	10K Thermistor w/ 11K Shunt, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/10KS-PO-4"-20'CL2P-HS	147727	10K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/20K-PO-4"-20'CL2P-HS	147728	20K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection
A/100KS-PO-4"-20'CL2P-HS	147729	100K Ohm Thermistor, Probe Only, 4", 20' Plenum Cable, w/ Additional Moisture Protection

ACCESSORIES ORDERING. FOR USE WITH GLYCOL OR GLASS BEADS (ANY SIZE)

Model # Example: A/100-LTS-30' -OR- 126443

Model #	Item #	Description
A/100-LTS-30'	126443	100 Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads
A/1K-LTS-30'	125214	1K Ohm RTD, 2" Probe, Freezer Sensor, 30' Leads

ACCESSORIES

Sensor Probes for Refrigerator/Freezer Applications

See Data Sheet: Refrigerator/Freezer Thermistors
https://www.workaci.com/sites/default/files/category-files/Thermistors%20Freezer.pdf

See Data Sheet: Freezer RTDs (100-LTS and 1,000-LTS ohm platinum RTD)
https://www.workaci.com/sites/default/files/product_cutsheet/Platinum%20RTDs%20Freezer.pdf

See Data Sheet: Freezer Transmitters (TT100-LTS, TT1K-LTS, TTM100-LTS, TTM1K-LTS)
https://www.workaci.com/sites/default/files/category-files/Transmitter%20Freezer.pdf

HAZARDOUS

Room, Duct & Immersion Thermistor

The ACI Hazardous Thermistor Series features a ½" NPT Process threaded fitting and ¼" diameter stainless steel probe with two, 22 AWG Etched Teflon colored lead wires to differentiate the different NTC sensor types. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase response times using our high quality, thermally conductive epoxy. The Hazardous sensors come standard with a heavy duty Feraloy® Iron or Aluminum Connection Head depending on the configuration ordered. These sensors can be used in Wall Mounted (Room), Duct, and Immersion style configurations and include an O-Ring Seal, Green Ground Screw, and weather resistant finish. The "INW" Immersion sensor without thermowell can be used with an existing thermowell or paired with any of the Machined thermowells (See Accessories) when higher flow rates, temperatures, pressure rating or corrosion resistance is required. NIST Certificates are available as shown in the ordering grid on the back of the product data sheet. This product should be installed by a trained professional with knowledge of local codes and regulations.

Applications: Hazardous Atmospheres, Industrial Sensor Applications, Process control, Exhaust Systems

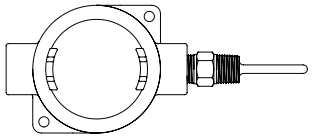
The ACI Hazardous Thermistor Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

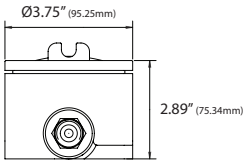
Sensor Type | Sensor Curve	Thermistor | Non-Linear, NTC (Negative Temperature Coefficient)
Sensing Points | Number Wires:	One | Two (Non-Polarity Sensitive)
Sensor Output @ 25°C (77°F) | Lead Wire Colors:	**A/AN (Type III):** 10KΩ nominal | White/White **A/CP (Type II):** 10KΩ nominal | White/Green **A/CP-HT (Type II):** 10KΩ nominal | White/Green **A/10K-E1:** 10KΩ nominal | Gray/Orange **A/1.8K:** 1.8KΩ nominal | Red/Yellow **A/3K:** 3KΩ nominal | White/Brown **A/20K:** 20KΩ nominal | Brown/Blue
Accuracy 0-70°C (32-158°F):	+/-0.2°C (+/-0.36°F) except **A/10K-E1 Series:** +/- 0.3°C (+/-0.54°F) **A/1.8K Series:** +/-0.5°C @ 25°C (77°F) and (+/-1.0°C) (+/-1.8°F)
Accuracy 25°C (77°F):	**A/CP-HT:** +/- 1%
Stability:	Sensor Dependent; Contact ACI for more information on specific sensor
Response Time (63% Step Change):	10 Seconds nominal
Power Dissipation Constant:	3 mW/°C except **A/1.8K Series:** 1 mW/°C | **A/10K-E1** and **A/CP-HT Series:** 2 mW/°C
Enclosure Specifications (Temperature, NEMA Ratings):	**"-D" Enclosure:** Feraloy® Iron Alloy, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG **"-I or -INW" Enclosure:** Feraloy® Iron Alloy, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG **"-R" Enclosure:** Copper-Free Aluminum, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG
Enclosure Explosion Proof Rating:	CL. I, Div. 1 & 2, Groups A, B, C, D
Enclosure Dust-Ignition Proof Rating:	CL. II, Div. 1, Groups E, F, G
Enclosure Raintight Rating:	CL. II, Div. 2, Groups F, G
Enclosure Wet Locations Rating:	CL. III
Enclosure UL | CSA Standards:	UL 1203 | CSA C22.2 No. 30
Sensor Operating Temperature Range:	-40 to 150°C (-40 to 302°F) | **A/CP-HT:** -40 to 200°C (-40 to 392°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Enclosure Hubs | Hub Size:	Two | 1/2" NPT Female Hubs
Probe Diameter | Sensor Threads:	0.250" (6.35mm) | ½" NPT (National Pipe Tapered) Thread
Probe Material:	304 Stainless Steel
Thermowell Material | Bore Diameter:	304 Stainless Steel | 0.260"
Thermowell Instrument Thread | Process Thread:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Lead Length | Conductor Size:	14" (35.6 cm) or 24" (61 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See back of Product Data sheet | **Room:** 1.8 lbs, **Duct:** 4.4 lbs, **Immersion:** 4.75 lbs
Agency Approvals:	CE, RoHS2, WEEE

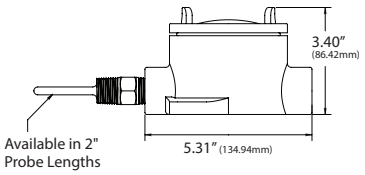
DIMENSIONAL DRAWING

Hazardous Room

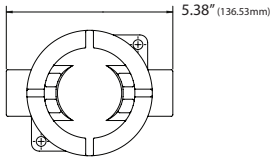


Weight: 1.8 lbs

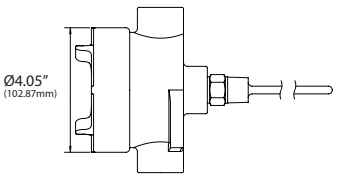


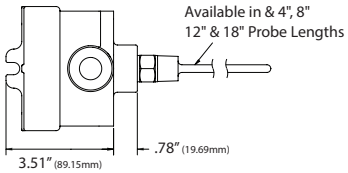


Hazardous Duct

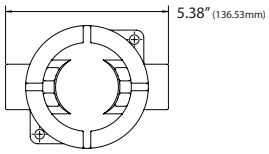


Weight: 4.4 lbs

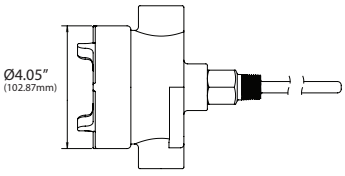


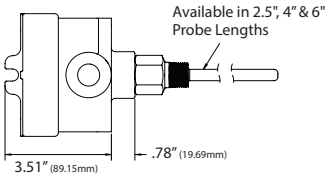


Hazardous Immersion



Weight: 4.75 lbs





Front View | **Right View** | **Top View**

HAZARDOUS ROOM ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | R (C.) | EXPL (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **CP** | **CP-HT** | **10K-E1** | **20K**	
C. Configuration *No Selection Required*	**R** = Room →	**R**
D. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

HAZARDOUS DUCT ORDERING

Model # Example: A/ (A.) | 1.8K (B.) | D (C.) | 4" (D.) | EXPL (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **CP** | **CP-HT** | **10K-E1** | **20K**	
C. Configuration *No Selection Required*	**D** = Duct →	**D**
D. Duct Probe Length *Select One (1)*	**4"** = Duct 4" | **8"** = Duct 8" | **12"** = Duct 12" | **18"** = Duct 18"	
E. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

HAZARDOUS IMMERSION ORDERING

Model # Example: A/ (A.) | 3K (B.) | I (C.) | 4" (D.) | EXPL (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**1.8K** | **3K** | **AN** | **CP** | **CP-HT** | **10K-E1** | **20K**	
C. Configuration *Select One (1)*	**I** = Immersion with Welded Thermowell | **INW** = Immersion without Welded Thermowell	
D. Immersion Probe Length *Select One (1)*	**2.5"** = Immersion 2.5" | **4"** = Immersion 4" | **6"** = Immersion 6"	
E. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

HAZARDOUS

Room, Duct & Immersion Platinum RTD

The ACI Hazardous Platinum RTD Series features a ½" NPT Process threaded fitting and ¼" diameter stainless steel probe with 22 AWG Etched Teflon colored lead wires. The sensors in this series are manufactured using ACI's proven double encapsulation process to eliminate the effects of moisture upon the sensors and to increase response times using our high quality, thermally conductive epoxy. The Hazardous sensors come standard with a heavy duty Feraloy® Iron or Aluminum Connection Head depending on the configuration ordered. These sensors can be used in Wall Mounted (Room), Duct, and Immersion style configurations and include an O-Ring Seal, Ground Screw, and weather resistant finish. The "INW" Immersion sensor without thermowell can be used with an existing thermowell or paired with any of the Machined thermowells (See Accessories) when higher flow rates, temperatures, pressure rating or corrosion resistance is required. NIST Certificates are also available as shown on the back of the product data sheet. This product should be installed by a trained professional with knowledge of local codes and regulations.

Applications: Hazardous Atmospheres, Industrial Sensor Applications, Process control, Exhaust Systems

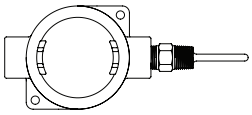
The ACI Hazardous Platinum RTD Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

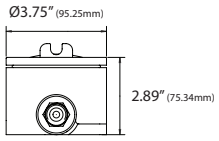
Sensor Type | Sensor Curve:	Platinum RTD | PTC (Positive Temperature Coefficient)
Number Sensing Points:	One
Number Wires:	**A/100-2W-EXP**L and **A/1K-2W-EXPL:** Two (Non-Polarity Sensitive) **A/100-3W-EXPL** and **A/1K-3W-EXPL:** Three (Polarity Sensitive)
Sensor Output @ 0°C (32°F):	**A/100-xW-EXPL Series:** 100 Ohms nominal | **A/1K-xW-EXPL Series:** 1000 Ohms nominal
Sensor Tolerance Class | Accuracy:	+/- 0.06% Class A | (**Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0°C in °C) **-40°C (-40°F):** +/- 0.23°C (+/- 0.414°F) | **0°C (32°F):** +/- 0.15°C (+/- 0.27°F) 200°C (392°F) = +/- 0.55°C (+/- 1.00°F)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / °C
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300°C (572°F)
Response Time (63% Step Change):	8 Seconds nominal
Self-Heating | Maximum Operating Current:	**100 Ohm RTD:** 7 mW/°C (Still Air) | 5 mA **1K Ohm RTD:** 4 mW/°C (Still Air) | 3 mA
Enclosure Specifications (Material, Operating Temperature, NEMA Ratings):	**"-D" Enclosure:** Feraloy® Iron Alloy, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG **"-I or -INW" Enclosure:** Feraloy® Iron Alloy, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG **"-R" Enclosure:** Copper-Free Aluminum, -50 to 60°C (-58 to 140°F), NEMA 3, 4, 7ABCD, 9EFG
Enclosure Explosion Proof Rating:	CL. I, Div. 1 & 2, Groups A, B, C, D
Enclosure Dust-Ignition Proof Rating:	CL. II, Div. 1, Groups E, F, G
Enclosure Raintight Rating:	CL. II, Div. 2, Groups F, G
Enclosure Wet Locations Rating:	CL. III
Enclosure UL | CSA Standards:	UL 1203 | CSA C22.2 No. 30
Sensor Operating Temperature Range:	-40 to 200°C (-40 to 392°F)
Storage Temperature Range:	-40 to 85°C (-40 to 185°F)
Operating Humidity Range:	10 to 95% RH, non-condensing
Enclosure Hubs | Hub Size:	Two | 1/2" NPT Female Hubs
Probe Diameter | Sensor Threads:	0.250" (6.35mm) | ½" NPT (National Pipe Tapered) Thread
Probe Material:	304 Stainless Steel
Thermowell Material | Thermowell Bore Diameter:	304 Stainless Steel | 0.260"
Thermowell Instrument Thread | Process Thread:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Lead Length | Conductor Size:	14" (35.6 cm) or 24" (61 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Product Dimensions | Product Weight:	See table on back of Product Data sheet | **Room:** 1.8 lbs, **Duct:** 4.4 lbs, **Immersion:** 4.75 lbs
Agency Approvals:	CE, RoHS2, WEEE

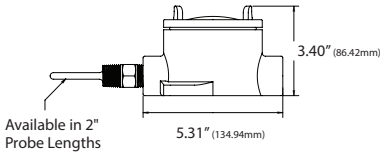
DIMENSIONAL DRAWING

Hazardous Room

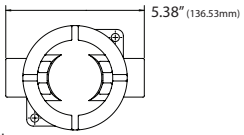


Weight: 1.8 lbs

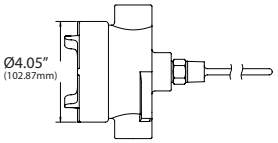


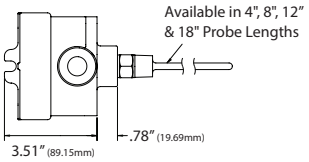


Hazardous Duct

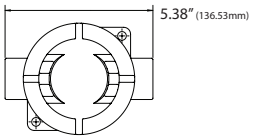


Weight: 4.4 lbs

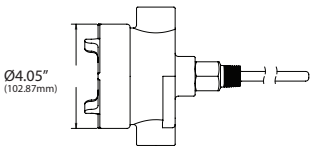


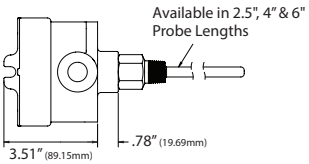


Hazardous Immersion



Weight: 4.75 lbs





Front View | **Right View** | **Top View**

HAZARDOUS ROOM ORDERING

Model # Example: A/ (A.) | 100 (B.) | 2W (C.) | R (D.) | EXPL (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**R** = Room →	**R**
E. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
F. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

HAZARDOUS DUCT ORDERING

Model # Example: A/ (A.) | 100 (B.) | 2W (C.) | D (D.) | 4" (E.) | EXPL (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *No Selection Required*	**D** = Duct →	**D**
E. Duct Probe Length *Select One (1)*	**4"** = Duct 4" | **8"** = Duct 8" | **12"** = Duct 12" | **18"** = Duct 18"	
F. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

HAZARDOUS IMMERSION ORDERING

Model # Example: A/ (A.) | 100 (B.) | 3W (C.) | I (D.) | 4" (E.) | EXPL (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
C. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
D. Configuration *Select One (1)*	**I** = Immersion with Welded Thermowell | **INW** = Immersion without Welded Thermowell	
E. Immersion Length *Select One (1)*	**2.5"** = Immersion 2.5" | **4"** = Immersion 4" | **6"** = Immersion 6"	
F. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	**EXPL**
G. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

HAZARDOUS

Room, Duct & Immersion Transmitters

The ACI Hazardous Transmitter Series features an encapsulated temperature transmitter mounted in an industrial connection head style enclosure. The epoxy coating provides excellent protection of the transmitter from moisture and corrosion when used in harsh environments and improved accuracy due to the thermal conductivity of the epoxy keeping the components at a more stable operating temperature. The sensors are manufactured using ACI's double encapsulation process to eliminate the effects of moisture upon the sensors and to increase response times. For higher accuracies, ACI recommends the use of the A/TTM Series transmitters which includes a secondary calibration process that removes most of the sensor error over the calibrated temperature span of your transmitter and includes a 3 or 5 Point NIST Certificate. The unit includes an O-Ring seal, ground screw, and weather resistant finish. The "INW" Immersion sensor without thermowell can be used with an existing thermowell or paired with one of our machined thermowells when higher flow rates, temperatures, pressure rating or corrosion resistance is required. This product should be installed by a trained professional with knowledge of local codes and regulations.

Applications: Hazardous Atmospheres, Industrial Sensor Applications, Process Control, Exhaust Systems

The ACI Hazardous Transmitter Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Transmitter Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) **|** 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC **| 500 Ohm Load:** +18.5 to 32 VDC
Maximum Load Resistance:	(Terminal Voltage - 8.5 V) **|** 0.020 A
Output Signals:	**Current:** 4-20 mA (2-Wire Loop Powered **| Voltage:** 1-5 VDC or 2-10 VDC (3-Wires)
Calibrated Transmitter Accuracy | Linearity:	**Temp. Spans < 500°F (260°C):** +/- 0.2% **| Temp. Spans > 500°F (260°C):** +/- 0.5%
Temperature Drift:	**Temp. Spans < 100°F (38°C):** +/- 0.04% **| Temp. Spans > 100°F (38°C):** +/- 0.02%
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span **| 5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
Protection Level:	Thermally Conductive, Low Moisture, Corrosion Resistant Epoxy / Plastic Cup
Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating | Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Calibrated Temperature Spans[1]:	**Minimum Temp. Span:** 50ºF (28ºC) | **Maximum Temp. Span:** 500ºF (260ºC)
Connections:	22 AWG (0.654 mm) Colored Leads; Polarity Sensitive | 22 to 15 AWG Wire Nuts
Sensor Type | Sensor Curve | Sensing Points:	Platinum RTD | PTC (Positive Temperature Coefficient) | One
Number Sensor Wires | Wire Colors:	Two | **A/TT100/TTM100-EXPL:** Brown/Brown | **A/TT1K/TTM1K-EXPL:** (Black/Black)
Nominal Sensor Output @ 0°C (32°F):	**A/TT100/TTM100-EXPL:** 100 Ohms | **A/TT1K/TTM1K-EXPL:** 1000 Ohms
Sensor Tolerance Class | Accuracy:	+/- 0.06% Class A | (**Tolerance Formula:** +/- ºC = (0.15ºC + (0.002 * |t|)) where |t| is the absolute value of Temperature above or below 0ºC in ºC)
Din Standard | Temperature Coefficient:	DIN EN 60751 (IEC 751) | 3850 ppm / ºC
Sensor Stability:	+/- 0.03% after 1000 Hours @ 300ºC (572ºF)
Response Time (63% Step Change):	8 Seconds nominal
Lead Length | Conductor Size:	14" (35.6 cm) or 24" (61 cm) | 22 AWG (0.65mm)
Lead Wire Insulation | Wire Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E)
Conductor Material:	Silver Plated Copper
Enclosure Specifications (Material, Operating Temperature, NEMA Ratings):	**"-D" Enclosure:** Feraloy® Iron Alloy, -50 to 60ºC (-58 to 140ºF), NEMA 3, 4, 7ABCD, 9EFG **"-I or -INW" Enclosure:** Feraloy® Iron Alloy, -50 to 60ºC (-58 to 140ºF), NEMA 3, 4, 7ABCD, 9EFG **"-R" Enclosure:** Copper-Free Aluminum, -50 to 60ºC (-58 to 140ºF), NEMA 3, 4, 7ABCD, 9EFG
Enclosure Explosion Proof Rating:	CL. I, Div. 1 & 2, Groups A, B, C, D
Enclosure Dust-Ignition Proof Rating:	CL. II, Div. 1, Groups E, F, G
Enclosure Raintight | Wet Locations Ratings:	CL. II, Div. 2, Groups F, G | CL. III
Enclosure UL | CSA Standards:	UL 1203 | CSA C22.2 No. 30
Sensor Operating | Storage Temperature Ranges:	-40 to 200ºC (-40 to 392ºF) | -40 to 85ºC (-40 to 185ºF)
Operating Humidity Range:	0 to 95% RH, non-condensing
Enclosure Hubs | Hub Size:	Two | 1/2" NPT Female Hubs
Probe Material | Diameter | Sensor Threads:	304 Stainless Steel | 0.250" (6.35mm) nominal | ½" NPT Threads
Thermowell Material | Bore Diameter:	304 Stainless Steel | 0.260" nominal

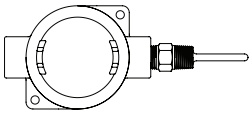
PRODUCT SPECIFICATIONS

Thermowell Instrument Thread | Process Thread:	½" NPS (National Pipe Straight) Female Thread | ½" NPT (National Pipe Tapered) Male Thread
Product Dimensions | Product Weight:	See back of Product Data sheet | **Room:** 1.9 lbs, Duct: 4.5 lbs, **Immersion:** 4.85 lbs
Agency Approvals:	RoHS2, WEEE

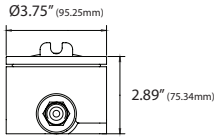
Note[1]: Transmitter's calibrated at 71°F (22°C) nominal | **Note[2]:** Temperature Drift is referenced to 71°F nominal calibration temperature

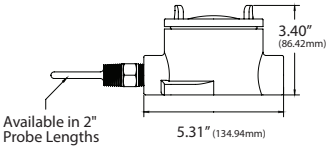
DIMENSIONAL DRAWING

Hazardous Room

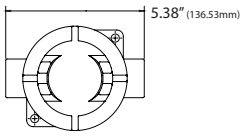


Weight: 1.9 lbs

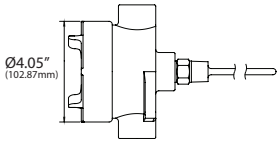


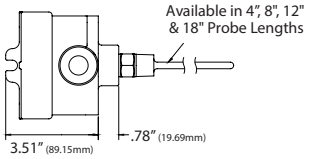


Hazardous Duct

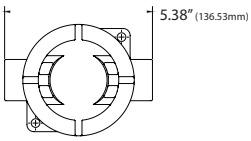


Weight: 4.5 lbs

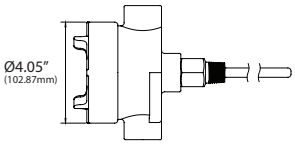


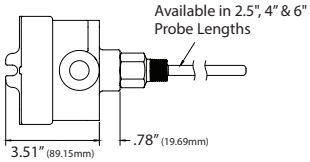


Hazardous Immersion



Weight: 4.85 lbs





Front View	Side View	Top View

HAZARDOUS ROOM ORDERING

Model # Example: A/ (A.) | TT100 (B.) | R (C.) | 2 (D.) | EXPL (E.) | (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *Select One (1)*	**TT100**=100Ω | **TTM100**=Matched 100Ω * | **TT1K**=1KΩ | **TTM1K**=Matched 1KΩ *	
C. Configuration *No Selection Required*	**R** = Room with 2" Stainless Steel Sensing Tube →	R
D. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
E. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	EXPL
F. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

HAZARDOUS DUCT ORDERING

Model # Example: A/ (A.) | TT1K (B.) | D (C.) | 8" (D.) | 1 (E.) | EXPL (F.) | (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	A/
B. Model Series *Select One (1)*	**TT100**=100Ω | **TTM100**=Matched 100Ω * | **TT1K**=1KΩ | **TTM1K**=Matched 1KΩ *	
C. Configuration *No Selection Required*	**D** = Duct →	D
D. Duct Probe Length *Select One (1)*	**4"** = Duct 4" | **8"** = Duct 8" | **12"** = Duct 12" | **18"** = Duct 18"	
E. Analog Output *Select One (1)*	**1** = 1 to 5 VDC | **2** = 2 to 10 VDC | **4** = 4 to 20 mA	
F. Sensor Model *No Selection Required*	**EXPL** = Hazardous Sensor →	EXPL
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

HAZARDOUS IMMERSION ORDERING

Model # Example: A/ (A.) | TT100 (B.) | I (C.) | 4" (D.) | 2 (E.) | EXPL (F.) | (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**TT100**=100Ω | **TTM100**=Matched 100Ω * | **TT1K**=1KΩ | **TTM1K**=Matched 1KΩ *	
C. Configuration *Select One (1)*	**I =** Immersion with Welded Thermowell | **INW =** Immersion without Welded Thermowell	
D. Immersion Length *Select One (1)*	**2.5" =** Immersion 2.5" | **4" =** Immersion 4" | **6" =** Immersion 6"	
E. Analog Output *Select One (1)*	**1 =** 1 to 5 VDC | **2 =** 2 to 10 VDC | **4 =** 4 to 20 mA	
F. Sensor Model *No Selection Required*	**EXPL =** Hazardous Sensor →	**EXPL**
G. Calibration Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST" at the end of any TTM part number.

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	5 Point Calibration & Certificate for TTM parts

SUN SHIELD

Weather Proof, Thermistor / RTD

The ACI Sun Shield is a reliable solution for protecting the temperature sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with any of our standard Balco, Nickel, or Platinum RTDs as well as any of our standard thermistors.

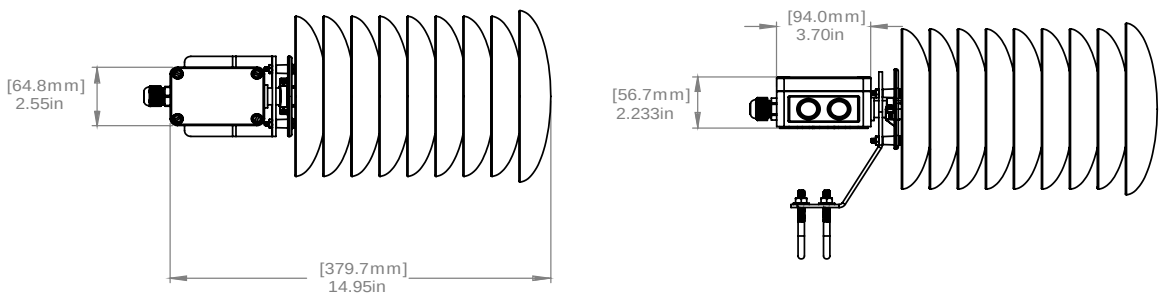
Applications: Outdoor Temperature Monitoring

The ACI Thermistors & RTDs Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):	**1.8K Series:** 1.8KΩ (Red/Yellow)	**CSI Series:** 10KΩ (Green/Yellow)
	3K Series: 3KΩ (White/Brown)	**10KS Series:** 10KΩ (White/Blue)
	AN Series (Type III): 10KΩ (White/White)	**10K-E1 Series:** 10KΩ (Gray/Orange)
	AN-BC Series: 5.238KΩ (White/Yellow)	**20K Series:** 20KΩ (Brown/Blue)
	CP Series (Type II): 10KΩ (White/Green)	**100KS Series:** 100KΩ (Black/Yellow)
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C)	
	1.8K Series: +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)	
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
Thermistor Sensor Response Time (T63):	10 Seconds nominal	
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)	
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E	
Platinum RTD (PTC) | Number Wires (Wire Colors):	**100-2W Series:** (Brown/Brown) & RHx-2W-1K Series: (Black/Black)	
	100-3W Series: (Brown/Brown/Black) & RHx-3W-1K Series: (Black/Black/White)	
Platinum RTD Output @ 32°F (0°C):	**100-xW-O-SUN Series:** 100 Ohms nominal	
	1K-xW-O-SUN Series: 1000 Ohms nominal (x = # of wires)	
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)	
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)	
Temperature Coefficient:	3850 ppm/ °C	
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)	
Nickel RTD (PTC) Output @ 70°F (21.1°C) (Wire Colors):	**1K-NI-O-SUN Series:** 1000 Ohms nominal (1K-Nickel RTD) | Red/Red	
Nickel RTD Sensor Accuracy:	32°F (0°C): +/-0.72°F (0.4°F); 70°F (21.1°C): +/-0.34°F (0.17°C); 130°F (54.4°C): +/-1.00°F (0.56°C)	
Nickel Din Standard:	Din 43760	
Temperature Coefficient (0-100°C):	6370 ppm/°C	
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)	
Balco RTD Output @ 70°F (21.1°C) (Wire Colors):	**BALCO-O-SUN Series:** 1000 Ohms nominal (Balco RTD) | Orange/Yellow	
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%	
Balco RTD Temperature Coefficient (0-100°C):	4618 ppm/°C	
Balco RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)	
Temperature Sensor Response Time (T63):	10 Seconds nominal	
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)	
Probe Material | Probe Dimensions (Length x Diameter):	304 Stainless Steel | 6.00" (152.4 mm) x 0.25" (6.35mm)	
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)	
Product Weight:	4.16 lbs(1.89 kg)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) – AN-BC (B.) – O-SUN (C.) – NIST (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Model Series *Select One (1)*	**100-2W** | **100-3W** | **1K-2W** | **1K-3W** | **1K-NI** | **BALCO** | **1.8K** | **3K** | **10KS** | **10K-E1** **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **20K** | **100KS**	
C. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) →	**O-SUN**
D. NIST (Temperature) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (Must Specify 1, 3 or 5 Points)	

SUN SHIELD

Weather Proof, Temperature Transmitter

The ACI Sun Shield is a reliable solution for protecting the temperature sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our TT100 or TT1K Series 4-20 mA output temperature transmitters.

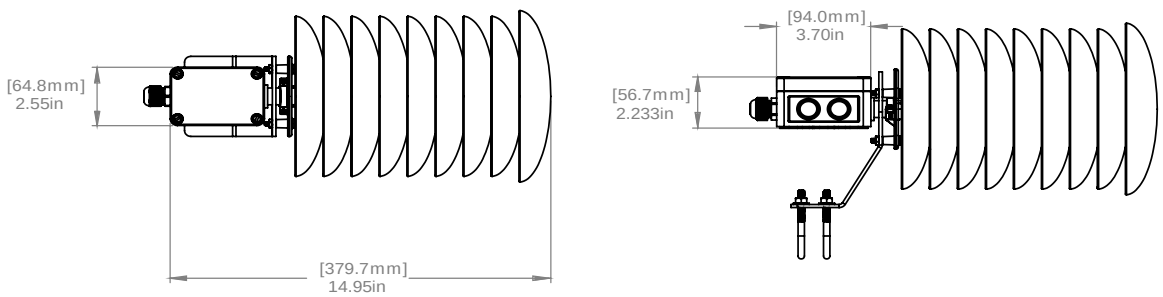
Applications: Outdoor Temperature Monitoring

The ACI TT Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

TT Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) | **Voltage Output:** 1-5 VDC or 2-10 VDC (3-Wires)
TT Calibrated Accuracy | Linearity [1]:	Temperature Spans < 500°F (260°C): +/- 0.2% | Temperature Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F | Temperature Spans > 100°F (38°C): +/- 0.02%/°F
TTM100/TTM1K NIST Certification Points:	**3 Point NIST:** 20%, 50% & 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time:	10 Minutes
Warm Up Drift:	+/- 0.1%
TT Operating Temperature Range:	-40 to 185°F (-40 to 85°C)
RH Range:	0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100 Series:** Brown/Brown | **A/TT1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100 Series:** 100 Ohms Nominal | **A/TT1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	"-4X" Enclosure: Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Probe Material:	304 Stainless Steel
Probe Dimensions (Length x Diameter):	6.00" (152.4 mm) x 0.25" (6.35mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) | TT1K (B.) | O-SUN (C.) | 2 (D.) | 20-120°F (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Temperature Sensor *Select One (1)*	**TT100** = 100 Ohms | **TT1K** = 1K Ohms	
C. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) →	**O-SUN**
D. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | **1**= 1 to 5 VDC* | **2** = 2 to 10 VDC*	
E. Calibrated Span *Select One (1)*	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

LOOP POWER LCD

Wall Display for 4-20 mA Devices

The A/LCD-R-4-20MA is a low power, high accuracy, 3.5 digit LCD display module that is available in an attractive wall mount enclosure. The A/LCD-R-4-20MA may be used with any 4 to 20 mA loop powered Temperature, Relative Humidity, Current, and Differential or Gage Pressure transmitter. The display can be calibrated for any range between (-) 1999 and 1999 and has factory set descriptors which include C, F, and a decimal point. A great solution for remote monitoring of any 4-20 mA loop powered device, these units are designed to be mounted over a single gang junction box or hole in the wall using drywall anchors. Screw terminal blocks are available for making all connections to your building management system (network). An optional 1/8" Black foam pad with pressure sensitive adhesive is available to insulate the sensor from thermal drafts within the wall or wall surface. A 1/16" Hex driver is needed to secure the cover from being easily removed.

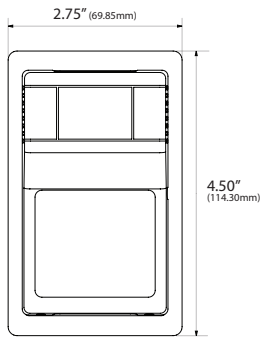
Applications: Remote Monitoring of any 4-20 mA Output Device

ACI's LCD-R series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

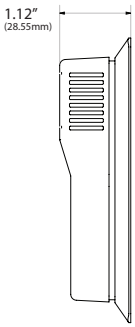
PRODUCT SPECIFICATIONS

Input:	2 Wire, 4-20 mA current loop
Maximum Voltage Drop:	+7 VDC for LCD Display
Display Accuracy:	+/- 0.5% of span
LCD Resolution | Descriptors:	3 ½ Digit LCD (-199.9 to 199.9) | F (Fahrenheit), C (Centigrade) or No Descriptor
Override Contact Type | Contact Ratings:	Dry Contact "N/O" Contact | Minimum: 10 uA @ 1 VDC; Maximum: 50 mA @ 24 VDC
Override Contact Resistance | Life Expectancy:	0.1 Ohms maximum | 100,000 Cycles
Set Point Accuracy:	+/- 10% | 4-20 mA: 4 mA (Far Left) | 20 mA Far Right (DA- Direct Acting (Default) 20 mA (Far Left / 4 mA Far Right (RA- Reverse Acting (Optional)
Setpoint Indication:	Cool/Warm
Setpoint Supply Voltage: (4 to 20 mA Only):	+24 VDC +/-10%
Operating Temperature Range:	35 to 131ºF (1.5 to 55ºC)
Storage Temperature Range:	-40 to 160ºF (-40 to 71ºC)
Operating Relative Humidity Range:	5 to 95% non-condensing
Enclosure Color:	Beige (Standard)
Enclosure Material | UL Flammability Rating:	ABS Plastic | UL94-HB
Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Product Dimensions:	(L) 4.50" (1.00 mm) x (W) 2.78" (70.6 mm) x (H) 1.00" (25.4 mm)
Product Weight:	"-R/RS/RO" Series: 0.17 lbs (0.375 kg) | "-RSO" Series: 0.21 lbs (0.46 kg)
Agency Approvals:	RoHS2, WEEE

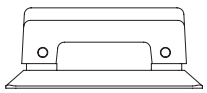
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: A/LCD-R-420 -OR- 122451

Model #	Item #	Description
A/LCD-R-420	122451	Room with Display, 4-20 mA Loop Power
A/LCD-RO-420	139485	Room with Display, Override, 4-20 mA Loop Power
A/LCD-RS-420*	122454	Room with Display, Setpoint, 4-20 mA Loop Power
A/LCD-RSO-420*	122463	Room with Display, Override, Setpoint, 4-20 mA Loop Power

Note*: Must specify a Temperature Span in ºF, ºC or Descriptor

ACCESSORIES ORDERING

Model # Example: LOCKING COVER -OR- 107370

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R	143369	Wall Mounting Back Plate, Plastic, White ("R")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

THERMOWELLS

Two Part Welded Wells

ACI's two part Welded Thermowells are used with temperature instruments in process systems where gas or liquid medias are used to provide a degree of protection to the sensing element when installed inside of a pipe, tank, or piece of equipment. The thermowell provides easy access for NIST Certified applications and enables users to easily replace the sensor without having to drain the entire system. Thermowells also protect the small diameter sensing probes from stresses created by high temperatures and pressures, corrosive environments, or the flow of gas and liquid medias through pipes or equipment. ACI's standard thermowells are made of 304 stainless steel which ensures long lasting reliability and good corrosion resistance. For applications requiring higher flow rates, corrosion resistance, operating temperatures and pressures, please see the ACI Machined Thermowell product data sheet where the thermowells are machined out of a solid piece of 304 or 316 Series Stainless steel. Thermal Grease or Heat Transfer paste is not required to be used with any of the ACI Thermowells due to the tight tolerances maintained between the sensor probe and thermowell. When necessary, thermal grease is available from ACI to improve the sensor's response time. Insertion depth should be long enough to permit the entire temperature-sensitive section of the temperature probe to project into the medium being monitored, thus maximizing measurement accuracy. The ACI Welded Thermowell Series is only offered in three lengths in order to eliminate premature failures.

Applications: Chilled and Hot Water Systems, Hydronic Heating Systems, Boilers, Pumps, Compressors, Chillers, Refrigeration Systems, Tanks, Aquariums, Process Control Systems, Compressed Air and Gas lines

The ACI Thermowells are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

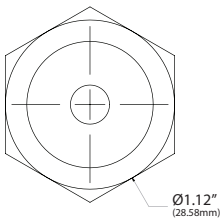
Thermowell Hex Size:	1.125" (28.57 mm)
Insertion Length:	See Ordering Grid | Tolerance: +/- 0.060" (+/- 1.524 mm)
Shank Type:	Straight
Bore Inside Diameter:	0.260" +/- 0.003" (6.60 mm +/- 0.0762 mm)
Shank Outside Diameter:	0.375" (9.52 mm) +/- 0.010" (0.254 mm)
Tip Thickness:	0.060" (1.524 mm) +/- 0.010" (0.254 mm)
Tensile Strenght (304 Stainless Welded Tube)[1]:	75,000 PSI @ Ambient Room Temperature
Allowable Stress (Factor of Safety = 4)[2]:	15,000 PSI (1034 Bar) (Weld Joint Efficiency = 0.80)
Maximum Allowable Working Pressure[2]:	6392 PSI (440.71 Bar) from -20ºF (-28.9ºC) to 100ºF (37.8ºC)
Calculated Burst Pressure[2]:	30,130 PSI (2077.39 Bar)
Maximum Operating Temperature:	700ºF (371ºC) (Weld Integrity due to Corrosion may occur above 700ºF)
Pressure (100% Leak) Tested:	100 PSI nominal @ Ambient Air Temperature
Internal "Instrument" Thread:	½" NPS
External "Process" Thread:	½" MNPT - 14
Material Type:	304 Series Stainless Steel
Surface Finish:	Polished to 16 RMS

Note 1: All maximum ratings have been calculated using the theoretical values of the materials being used | **Note 2:** All of the theoretical pressure ratings above are for reference purposes only using a Safety Factor of 4

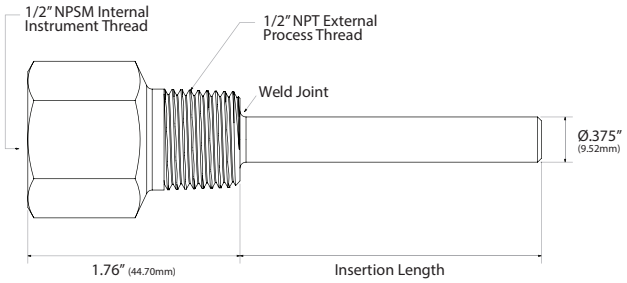
MAXIMUM ALLOWABLE WORKING PRESSURE VS TEMPERATURE RATINGS [304 STAINLESS STEEL]

Temperature:	-20ºF (-28.9ºC)	100ºF (37.8ºC)	200ºF (93.3ºC)	300ºF (148.9ºC)	400ºF (204.4ºC)	500ºF (260.0ºC)	700ºF (371.1ºC)
PSIG (Bar):	6392 (440.7)	6392 (440.7	5369 (370.1)	4794 (330.5)	4410 (304.0)	4154 (286.4)	3835 (264.4)

DIMENSIONAL DRAWING



Front View



Side / Top View

STANDARD ORDERING

Model # Example: A/2.5" -OR- 128349

Model #	Item #	Description	Material Type	Insertion Length	Internal Thread	External Thread	Shipping Weight
A/2.5"	128349	2.50" 2-Part Thermowell	304 SS	2.50" (63.5 mm)	1/2" NPS Thread	1/2" NPT Thread	0.34 lbs (0.16 kg)
A/4"	128350	4" 2-Part Thermowell	304 SS	4.00" (101.6 mm)	1/2" NPS Thread	1/2" NPT Thread	0.36 lbs (0.17 kg)
A/6"	128351	6" 2-Part Thermowell	304 SS	6.00" (152.4 mm)	1/2" NPS Thread	1/2" NPT Thread	0.40 lbs (0.19 kg)

ACCESSORIES ORDERING

Model # Example: A/3/4" TO 1/2" REDUCER -OR- 138479

Model #	Item #	Description
SG	102951	-40-400ºF Silicone Grease, 5.0 oz
NSG HEAT TRANSFER PASTE 2 OZ	102595	-40-392ºF Non-Silicone Grease, 2.0 oz
A/3/4" TO 1/2" REDUCER	138479	3/4" to 1/2" Reducer Steel, 3/4" MNPT to 1/2" FNPT
A/1/8" TO 1/4" ADAPTER	138480	1/8" to 1/4" Adapter Steel, 1/8" FNPT to 1/4" MNPT
A/1/2" TO 1/4" REDUCER	138478	1/2" to 1/4" Reducer Brass, 1/2" FNPT to 1/4" MNPT

THERMOWELLS

Machined Wells

ACI's Machined Thermowells are used with temperature instruments in process systems where gas or liquid medias are used to provide a degree of protection for the sensing element when installed inside of a pipe, tank, or piece of equipment. The thermowell provides easy access for NIST Certified applications and enables users to easily replace the sensor without having to drain the entire system. Thermowells also protect the small diameter sensing probes from stresses created by high temperatures and pressures, corrosive environments, or the flow of gas or liquid medias through pipes or equipment. It is recommended to follow a Wake Frequency calculator using the ASME PTC 19.3 TW-2016 standard to help prevent vibrational destruction from damaging the thermowell. ACI's standard thermowells are made of 304 stainless steel which ensures long lasting reliability and corrosion resistance. Optional 316 Stainless Steel is available for use in applications where higher corrosion resistance is required. This series is machined from solid bar stock to precision tolerances which provides maximum heat transfer when used with a corresponding ACI sensor. When necessary, thermal grease is available from ACI to improve the sensor's response time. Insertion depth should be long enough to permit the entire temperature-sensitive section of the temperature probe to project into the medium being monitored, thus maximizing measurement accuracy.

Applications: Chilled and Hot Water Systems, Hydronic Heating Systems, Boilers, Pumps, Compressors, Chillers, Refrigeration Systems, Tanks, Aquariums, Process Control Systems, Compressed Air and Gas lines

All ACI Thermowells are covered by ACI's Five Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website.

PRODUCT SPECIFICATIONS

Thermowell Hex Size:	1.125" (28.57 mm)
Insertion Length:	See Ordering Grid (Tolerance:+/- 0.050" (+/- 1.27 mm)
Thermowell Bore Diameter:	0.260" +/- 0.003" (6.60 mm +/- 0.0762 mm)
Shank Type:	Stepped and Straight (See Ordering Grid)
Shank Dimensions:	Straight: Root Diameter: 0.500" (12.7 mm); Tip Diameter: 0.500" (12.7 mm)
+/- 0.010" (+/- 0.254 mm):	Stepped: Root Diameter: 0.630" (16.002 mm); Tip Diameter: 0.500" (12.7 mm)
Stepped Thermowell Reduced Tip Length:	2.500" (63.5 mm)
Tip Thickness:	0.250" (6.35 mm)
Internal "Instrument" Thread:	½" NPS
External "Process" Thread:	½" MNPT - 14
Material Type:	304 and 316 Series Stainless Steel Available (See Ordering Grid)
Surface Finish:	Polished to 16 RMS

MAXIMUM PRESSURE VS TEMPERATURE RATINGS [304 STAINLESS STEEL]

Temperature:	70ºF (21.1ºC)	200ºF (93.2ºC)	400ºF (204.2ºC)	600ºF (315.2ºC)	800ºF (426.2ºC)	1000ºF (537.2ºC)	1200ºF (648.2ºC)
PSIG (Bar):	7000 (482.6)	6000 (413.7)	5600 (386.1)	5400 (372.3)	5200 (358.5)	4500 (310.3)	1650 (110.3)

MAXIMUM PRESSURE VS TEMPERATURE RATINGS [316 STAINLESS STEEL]

Temperature:	70ºF (21.1ºC)	200ºF (93.2ºC)	400ºF (204.2ºC)	600ºF (315.2ºC)	800ºF (426.2ºC)	1000ºF (537.2ºC)	1200ºF (648.2ºC)
PSIG (Bar):	7000 (482.6)	7000 (482.6)	6400 (441.2)	6200 (427.4)	6100 (420.5)	5100 (351.6)	2500 (172.3)

Note: All machined thermowells, materials, corrosion resistance, flow rating, temp & pressures are the sole responsibility of the systems engineer that incorporates the thermowell into design

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGTH

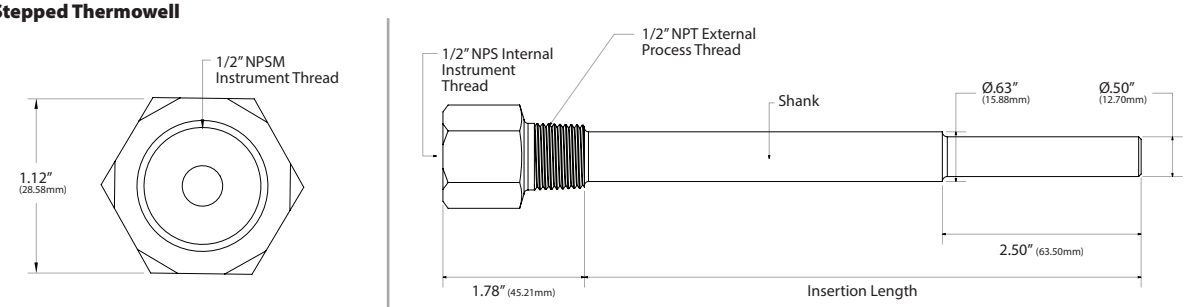
Straight Shank Insertion Length "U"			
Media Type:	**1.0"** (25.4mm)	**2.5"** (63.5mm)	**8.0"** (203.2mm)
Air/Gas/Steam [1]	349 ft/s (106.3m/s)	349 ft/s (106.3m/s)	71.9 ft/s (21.9m/s)
Water	360 ft/s (109.7m/s)	360 ft/s (109.7m/s)	71.9 ft/s (21.9m/s)

Stepped Shank Insertion Length "U"				
4.0" (101.6mm)	**6.0"** (152.4mm)	**12.0"** (304.8mm)	**18.0"** (457.2mm)	**24.0"** (609.6mm)
109 ft/s (33.2m/s)	39.5 ft/s (12.0m/s)	12.2 ft/s (3.7m/s)	5.9 ft/s (1.8m/s)	3.2 ft/s (1.0m/s)
82.2 ft/s (25.1m/s)	39.5 ft/s (12.0m/s)	12.2 ft/s (3.7m/s)	5.9 ft/s (1.8m/s)	3.2 ft/s (1.0m/s)

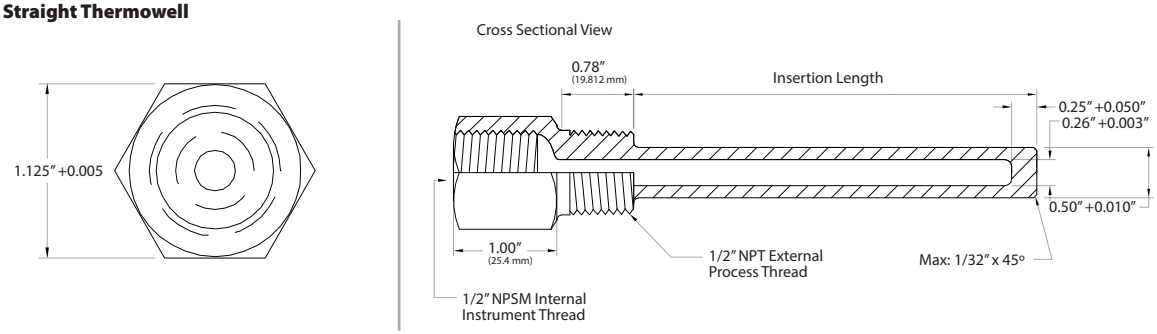
Note 1: Values are for Air/Gas/Steam and similar density media | All velocity ratings are based upon an operating temperature of 1000ºF (537.8ºC)

DIMENSIONAL DRAWING

Stepped Thermowell



Straight Thermowell



Front View **Right/Top Views**

STANDARD ORDERING

Model # Example: A/M24" -OR- 128342

Model #	Item #	Insertion Length	Material Type	Shank Type	Internal Thread	External Thread	Shipping Weight
A/M1"	128337	1.25" (31.7 mm)	304 SS	Straight	½" NPS Thread	1/2" NPT Thread	0.19 lbs (0.08kg)
A/M2.5"	128338	2.5" (63.5 mm)	304 SS	Straight	½" NPS Thread	1/2" NPT Thread	0.39 lbs (0.18kg)
A/M4"	128343	4.0" (101.6 mm)	304 SS	Stepped	½" NPS Thread	1/2" NPT Thread	0.52 lbs (0.24kg)
A/M6"	128344	6.25" (158.7 mm)	304 SS	Stepped	½" NPS Thread	1/2" NPT Thread	0.68 lbs (0.31kg)
A/M8"	138725	8.0" (203.2 mm)	304 SS	Straight	½" NPS Thread	1/2" NPT Thread	0.89 lbs (0.40kg)
A/M12"	128339	12.0" (304.8 mm)	304 SS	Stepped	½" NPS Thread	1/2" NPT Thread	1.11 lbs (0.50kg)
A/M18"	128341	18.0" (457.2 mm)	304 SS	Stepped	½" NPS Thread	1/2" NPT Thread	1.57 lbs (0.71kg)
A/M24"	128342	24.0" (609.6 mm)	304 SS	Stepped	½" NPS Thread	1/2" NPT Thread	2.05 lbs (0.93kg)
A/M2.5"-316SS	128352	2.5" (63.5 mm)	316 SS	Straight	½" NPS Thread	1/2" NPT Thread	0.39 lbs (0.18kg)
A/M4"-316SS	128353	4.0" (101.6 mm)	316 SS	Stepped	½" NPS Thread	1/2" NPT Thread	0.52 lbs (0.24kg)
A/M6"-316SS	128354	6.0" (152.4 mm)	316 SS	Stepped	½" NPS Thread	1/2" NPT Thread	0.68 lbs (0.31kg)

ACCESSORIES ORDERING

Model # Example: A/3/4" TO 1/2" REDUCER -OR- 138479

Model #	Item #	Description
SG	102951	-40-400ºF Silicone Grease, 5.0 oz
NSG HEAT TRANSFER PASTE 2 OZ	102595	-40-392ºF Non-Silicone Grease, 2.0 oz
A/3/4" TO 1/2" REDUCER	138479	3/4" to 1/2" Reducer Steel, 3/4" MNPT to 1/2" FNPT
A/1/8" TO 1/4" ADAPTER	138480	1/8" to 1/4" Adapter Steel, 1/8" FNPT to 1/4" MNPT
A/1/2" TO 1/4" REDUCER	138478	1/2" to 1/4" Reducer Brass, 1/2" FNPT to 1/4" MNPT

LOCKING COVER

For Thermostats

The LOCKING COVER can be used to protect a room mounted enclosure from physical damage or tampering. It includes a clear vented cover and two keys to provide easy access to the enclosed device. The plastic is clear, so mechanical and digital functions are protected but remain visible.

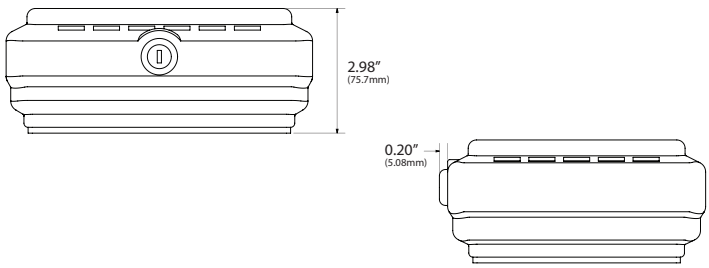
Applications: Gymnasiums, Schools, Prisons, Offices

The LOCKING COVER is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

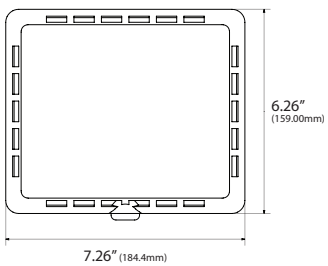
PRODUCT SPECIFICATIONS

Base Material:	High Impact Polymeric Construction
Color(Cover):	Clear
Color(Base):	Beige
Inside Product Dimensions for Thermostat:	6.06" x 5.06" x 2.63" (153.9 x 128.5 x 66.8mm)
Outside Dimensions:	7.26" x 6.26" x 2.98" (184.4 x 159 x 75.7mm)
Features:	• High Impact Thermoplastic Guard, Tamper Resistant internal walls, Crack Resistant • Beige Thermoplastic Base, Brass/Nickel plated keys, Metal Lock, Ring Base for Existing Installations, Solid Base for New Installations
Product Weight:	1.05 lbs. (0.476 Kg)

DIMENSIONAL DRAWING



Front/Right Views



Top View

STANDARD ORDERING

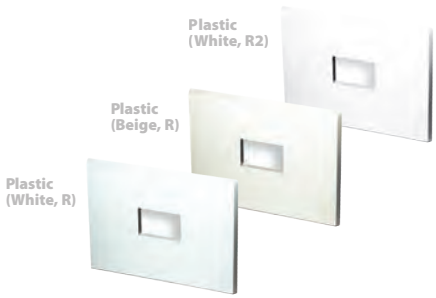
Model # Example: LOCKING COVER -OR- 107370

Model #	Item #	Description
LOCKING COVER	107370	Locking Cover for Thermostats

ACCESSORIES ORDERING

Model # Example: LOCKING COVER KEYS -OR- 144221

Model #	Item #	Description
LOCKING COVER KEYS	144221	Replacement Locking Cover Keys



WALL MOUNTING PLATES

Decorative Backing Plates for Room Sensors

The A/MOUNTING PLATE may be used to mount devices over a larger electrical enclosure or hole in the wall. It is made of a plastic material and contains numerous mounting holes to match most standard electrical boxes used in the industry today. It may be mounted vertically or horizontally. The colors available match ACI's standard room enclosures but will match many similar colored devices.

Applications: Space Temperature Sensing, Decorative Wall Sensor Applications, Office Buildings, Schools, Colleges, Commercial Buildings, OEM Opportunities

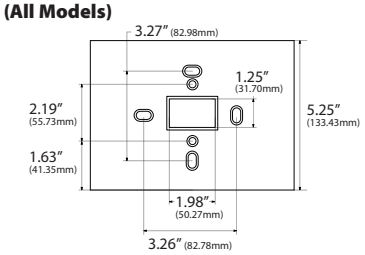
The A/MOUNTING PLATE is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

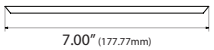
PRODUCT SPECIFICATIONS

Base Material:	ABS 3501
Color:	See Ordering Grid on Back of Data Sheet
Product Dimensions (All Models):	(L) 5.25" (133.43 mm) x (W) 7.00" (177.77 mm) x (H) 0.32" (8.13 mm)
Product Weight:	0.2 lbs. (0.091 Kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

Wall Plate (All Models)





Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/MOUNTING PLATE WHITE R -OR- 126386

Model #	Item #	Color	For Use With
A/MOUNTING PLATE BEIGE R	106821	Beige (9981)	ACI "-R" Beige Room Enclosures, Infinity
A/MOUNTING PLATE WHITE R	126386	White (90201)	ACI "-R-W" White Room Enclosures, Infinity
A/MOUNTING PLATE WHITE R2	143369	White (90198)	ACI "-R2" Room Enclosures, Aries

RH ROOM

Relative Humidity Room

The ACI Relative Humidity Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three point NIST Calibration Certificates are available.

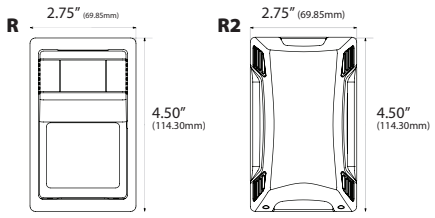
Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

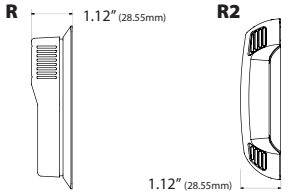
PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing
Operating Temperature Range:	35 to 122°F (1.5 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-R2 Series:** 0.17 lbs. (0.077 kg) | **A/RHx-R Series:** 0.17 lbs. (0.077 kg)
Agency Approvals:	CE, RoHS2, WEEE

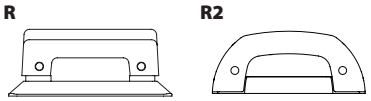
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model #	Item #	Description
A/RH1-R	122538	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH1-R-NIST	149233	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH1-R2	130822	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH1-R2-NIST	149263	RH Room, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-R	122708	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-R-NIST	148191	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-R2	130553	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-R2-NIST	145405	RH Room, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH3-R	122944	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-R-NIST	148194	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH3-R2	130554	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-R2-NIST	148195	RH Room, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH5-R	123099	RH Room, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH5-R2	130555	RH Room, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige (”R”)
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White (”R2”)
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8” Foam Insulation Pad with Adhesive (3” x 2”, Black)

RH ROOM

Relative Humidity Room, Thermistor

The ACI Relative Humidity with Thermistor Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three point NIST Calibration Certificates are available.

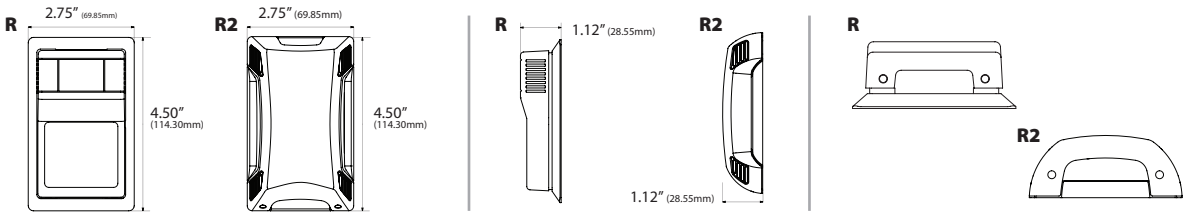
Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Thermistors Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage:	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC	
(Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC	
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)	
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum	
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)	
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%	
RH Measurement Range:	0-100%	
Operating RH Range:	0 to 95% RH, non-condensing	
Operating Temperature Range:	35 to 122°F (1.5 to 60°C)	
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)	
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH	
RH Response Time (T63):	20 Seconds Typical	
RH Sensor Type:	Capacitive with Hydrophobic Filter	
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)	
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)	
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)	
	1% NIST Test Points: 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)	
Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow)	**RHx-10KS Series:** 10KΩ (White/Blue)
	RHx-3K Series: 3KΩ (White/Brown)	**RHx-10K-E1 Series:** 10KΩ (Gray/Orange)
	RHx-AN Series (Type III): 10KΩ (White/White)	**RHx-20K Series:** 20KΩ (Brown/Blue)
	RHx-AN-BC Series: 5.238KΩ (White/Yellow)	**RHx-50K Series:** 50KΩ nominal (Brown/Yellow)
	RHx-CP Series (Type II): 10KΩ (White/Green)	**RHx-100KS Series:** 100KΩ (Black/Yellow)
	RHx-CSI Series: 10KΩ (Green/Yellow)	
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C)	
	1.8K Series: +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)	
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
Thermistor Sensor Response Time (T63):	10 Seconds nominal	
Temperature Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)	
Temperature Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)	
Enclosure Flammability Rating:	UL94-HB	
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)	
	"-R" Enclosure: 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)	
Product Weight:	**A/RHx-xx-R2 Series:** 0.17 lbs. (0.077 kg) | **A/RHx-xx-R Series:** 0.17 lbs. (0.077 kg)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | CP (C.) | RSO (D.) | (E.) | NIST (F.) | 0 Ohms (1.) | 1K Ohms (2.) | DA (3.) | + to - (4.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **10K-E1** | **20K** | **50K** | **100KS**	
D. Configuration *Select One (1)*	**R** = Room **RO** = Room with Override **RS** = Room with Setpoint **RSO** = Room with Setpoint and Override **R2** = Room **R2O** = Room with Override **R2S** = Room with Setpoint **R2SO** = Room with Setpoint and Override	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C).*		
1. Slidepots *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A01** = 0 to 100K | **A02** = 0 to 20K | **A03** = 0 to 10K | **A06** = 4.75K to 24.75K **A07** = 10K to 30K | **A08** = 1K to 11K | **A09** = 0 to 2K | **A10** = 0 to 1K **A11** = 2.05K to 3.05K | **A12** = 0 to 400 | **A16** = 0 to 5K | **A18** = 10K to 15K **A26** = 866 to 1,266 | **A29** = 7.87K to 27.8K **Reverse Acting** *(Range in Ohms)* **A04** = 1051.1 to 51.1 | **A14** = 10K to 0 | **A24** = 9.5K to 1K	
2. Setpoint Stickers *Select One (1)*	**A3** = 18-28 DEG C | **A4** =20-30 DEG C | **B4** = 55-85 DEG F | **B7** = 60-90 DEG F | **C5** = COOL/WARM **C6** = COOLER/WARMER | **D3** = WARM/COOL | **G5** = BLUE/RED (R2 Enclosure)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/MOUNTING PLATE BEIGE R -OR- 106821

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

RH ROOM

Relative Humidity Room, Platinum RTD

The ACI Relative Humidity with Platinum RTD Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three point NIST Calibration Certificates are available.

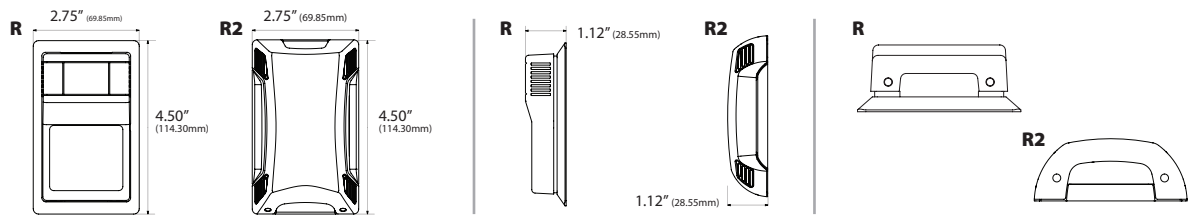
Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Platinum RTDs Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing
Operating Temperature Range:	35 to 122°F (1.5 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Platinum RTD Output @ 32°F (0°C):	**RHx-100-xW-R2 Series:** 100 Ohms nominal | **RHx-1K-xW-R2 Series:** 1000 Ohms nominal
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)
Temperature Coefficient:	3850 ppm/ °C
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Temperature Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Temperature Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69..85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69..85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-xx-xW-R2 Series:** 0.17 lbs. (0.077 kg) | **A/RHx-xx-xW-R Series:** 0.17 lbs. (0.077 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example:

A/	RH2	1K	2W	RSO		NIST	0 Ohms	1K Ohms	DA	+ to -
A.	B.	C.	D.	E.	F.	G.	1.	2.	3.	4.

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
D. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
E. Configuration *Select One (1)*	**R** = Room **RO** = Room with Override **RS** = Room with Setpoint **RSO** = Room with Setpoint and Override **R2** = Room **R2O** = Room with Override **R2S** = Room with Setpoint **R2SO** = Room with Setpoint and Override	
F. Output Signal *Select One (1)*	**-----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
G. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C)*		
1. Slidepots *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A01** = 0 to 100K | **A02** = 0 to 20K | **A03** = 0 to 10K | **A08** = 1K to 11K | **A09** = 0 to 2K **A10** = 0 to 1K | **A12** = 0 to 400 | **A16** = 0 to 5K | **A28** = 806 to 1206 | **A32** = 900 to 1300 **Reverse Acting** *(Range in Ohms)* **A14** = 10K to 0	
2. Setpoint Stickers *Select One (1)*	**A3** = 18-28 DEG C | **A4** =20-30 DEG C | **B4** = 55-85 DEG F | **B7** = 60-90 DEG F | **C5** = COOL/WARM **C6** = COOLER/WARMER | **D3** = WARM/COOL | **G5** = BLUE/RED (R2 Enclosure)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/MOUNTING PLATE BEIGE R -OR- 106821

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

RH ROOM

Relative Humidity Room, Nickel RTD

The ACI Relative Humidity with Nickel RTD Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three point NIST Calibration Certificates are available.

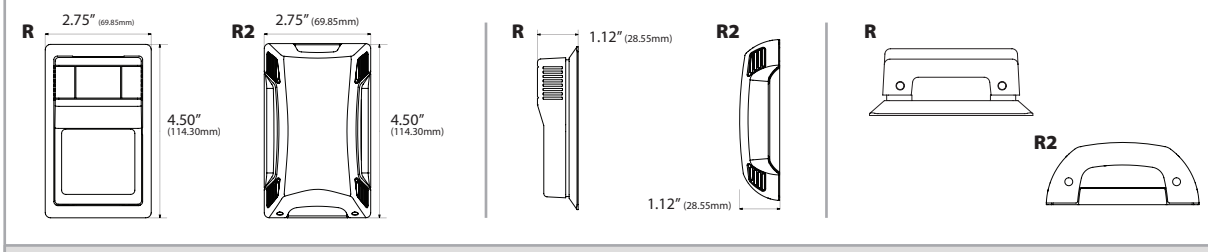
Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Nickel RTD Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing
Operating Temperature Range:	35 to 122°F (1.5 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nickel RTD (PTC) Output @ 70°F (21.1°C)	**RHx-1K-NI-R2 Series:** 1000 Ohms nominal (1K-Nickel RTD)
Nickel RTD Sensor Accuracy:	32°F (0°C): +/-0.72°F (0.4°F); 70°F (21.1°C): +/-0.34°F (0.17°C); 130°F (54.4°C): +/-1.00°F (0.56°C)
Nickel Din Standard	Din 43760
Temperature Coefficient (0-100°C):	6370 ppm/°C
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Temperature Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Temperature Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-1K-NI-R2 Series:** 0.17 lbs. (0.077 kg) | **A/RHx-1K-NI-R Series:** 0.17 lbs. (0.077 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 1K-NI (C.) | RSO (D.) | (E.) | NIST (F.) | 0 Ohms (1.) | 20K Ohms (2.) | DA (3.) | + to - (4.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**1K-NI** ⟶	**1K-NI**
D. Configuration *Select One (1)*	**R** = Room **RO** = Room with Override **RS** = Room with Setpoint **RSO** = Room with Setpoint and Override **R2** = Room **R2O** = Room with Override **R2S** = Room with Setpoint **R2SO** = Room with Setpoint and Override	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C).*		
1. Offset Resistor *Select One (1)*	**0 Ohms** | **51.1 Ohms** | **499 Ohms** | **750 Ohms** | **806 Ohms** | **1K Ohms** | **2K Ohms** **2.49K Ohms** | **4.75K Ohms** | **6.19K Ohms** | **7.87 Ohms** | **10K Ohms** | **20K Ohms**	
2. Potentiometer *Select One (1)*	**400 Ohm** | **1K Ohms** | **2K Ohms** | **5K Ohms** | **8.5K Ohms** | **10K Ohms** **20K Ohms** | **100K Ohms**	
3. Setpoint Direction *Select One (1)*	**DA** = Direct Acting (Bottom to Top (Smaller to Larger)) **RA** = Reverse Acting (Bottom to Top (Larger to Smaller))	
4. Setpoint Indication *Select One (1)*	**+ to -** | **Cool | Warm** | **55 to 85F** | **10-30C** *(R Only)* **Blue | Red** *(R2 Only)*	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/MOUNTING PLATE BEIGE R -OR- 106821

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

RH ROOM

Relative Humidity Room, Balco RTD

The ACI Relative Humidity with Balco RTD Room Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH room sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. There are two enclosure options in this series which should satisfy most commercial decors. Both enclosures feature four-way airflow to minimize self-heating. Three point NIST Calibration Certificates are available.

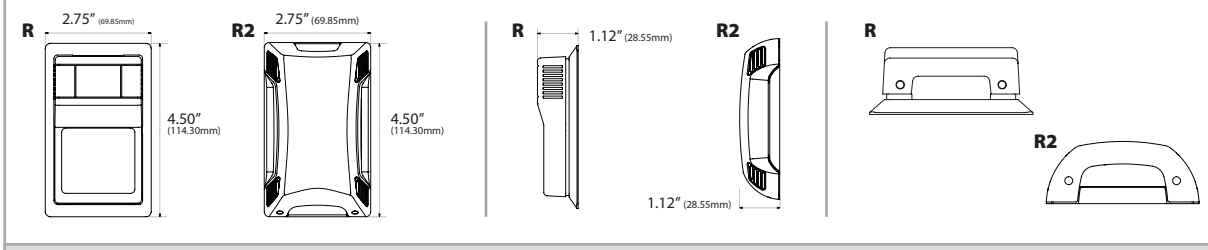
Applications: Humidification, Dehumidification, Monitoring Indoor Space Humidity, Clean Rooms, Hospitals, Process Control, Laboratories, Museums, Schools, Office Buildings, Data Centers, ESD (Anti-Static) Control

The ACI RH Balco RTD Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing
Operating Temperature Range:	35 to 122°F (1.5 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Balco RTD Output @ 70°F (21.1°C):	**RHx-BALCO-R2 Series:** 1000 Ohms nominal (Balco RTD)
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%
Balco RTD Temperature Coefficient (0-100°C):	4618 ppm/°C
Balco RTD Stability:	+/- 0.05% after 1000 Hours @ 302°F (150°C)
Temperature Sensor Response Time (T63):	10 Seconds nominal
Temperature Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Temperature Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-BALCO-R2 Series:** 0.17 lbs. (0.077 kg) | **A/RHx-BALCO-R Series:** 0.17 lbs. (0.077 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | BALCO (C.) | RSO (D.) | (E.) | NIST (F.) | 0 Ohms (1.) | 1K Ohms (2.) | DA (3.) | + to - (4.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**BALCO** ⟶	**BALCO**
D. Configuration *Select One (1)*	**R** = Room **RO** = Room with Override **RS** = Room with Setpoint **RSO** = Room with Setpoint and Override **R2** = Room **R2O** = Room with Override **R2S** = Room with Setpoint **R2SO** = Room with Setpoint and Override	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	
Setpoint Configuration Options *Select Options below if RS, RSO, R2S or R2SO was selected as a Configuration (C).*		
1. Slidepots *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A03** = 0 to 10K | **A09** = 0 to 2K | **A10** = 0 to 1K | **A28** = 806 to 1206	
2. Setpoint Stickers *Select One (1)*	**A3** = 18-28 DEG C | **A4** =20-30 DEG C | **B4** = 55-85 DEG F | **B7** = 60-90 DEG F **C5** = COOL/WARM | **C6** = COOLER/WARMER | **D3** = WARM/COOL **G5** = BLUE/RED (R2 Enclosure)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/MOUNTING PLATE BEIGE R -OR- 106821

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

RH TT ROOM

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Room Series utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Room transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. The temperature transmitter must be powered with 13.5 to 24 VDC power source and can be ordered as either a two-wire 4-20 mA or 3-wire voltage output sensor. The temperature transmitter is installed on the back of the enclosure and must be mounted over a single gang junction box in the wall. There are two styling options in this series which should satisfy most commercial decors. Both styles feature four-way airflow to minimize self-heating. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Monitor Room RH Levels, Humidification, Dehumidification, Hospitals, Clean Rooms, Office Buildings, Schools, Museums, Process Control, ESD (Anti-Static) Control, Data Centers

The ACI RH TT Room is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

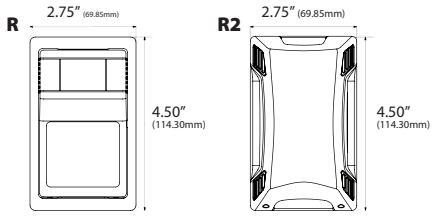
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
TT Supply Voltage | Supply Current::	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) | **Voltage Output:** 1-5 VDC/2-10 VDC (3-Wire)
TT Calibrated Accuracy | Linearity [1]:	**Temperature Spans < 500°F (260°C):** +/- 0.2% | Temp Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	**Temperature Spans < 100°F (38°C):** +/- 0.04%/°F | Temp Spans > 100°F (38°C): +/- 0.02%/°F
TTM1K Certification Points:	**3 Point NIST:** 20%, 50%, 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature/RH Range:	-40 to 185°F (-40 to 85°C) / 0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100/TTM100 Series:** Brown/Brown | **A/TT1K/TTM1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100/TTM100 Series:** 100 Ohms Nominal | **A/TT1K/TTM1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal

PRODUCT SPECIFICATIONS

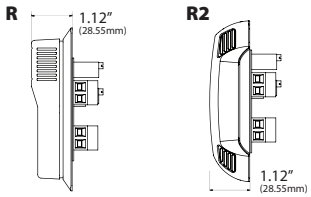
Enclosure Material (Color):	**"-R2" Enclosure:** ABS (White) | **"-R" Enclosure:** ABS (Beige)
Enclosure Flammability Rating:	UL94-HB
Product Dimensions (L x W x D):	**"-R2" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm) **"-R" Enclosure:** 4.50" (114.3 mm) x 2.75" (69.85 mm) x 1.12" (28.45 mm)
Product Weight:	**A/RHx-TT-R2 Series:** 0.21 lbs. (0.096 kg) | **A/RHx-TT-R Series:** 0.21 lbs. (0.096 kg)
Agency Approvals:	RoHS2, WEEE

Note[1]: A Transmitter is calibrated at 71ºF (22ºC) Nominal | **Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

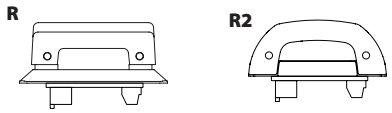
DIMENSIONAL DRAWING



Front View



Right View



Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH1 (B.) | TT100 (C.) | R2 (D.) | 20 (E.) | -100ºF (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**TT100** = 100 Ohms | **TT1K** = 1K Ohms | **TTM1K** = Matched 1K Ohms (3 Point RH & Temperature NIST)	
D. Configuration *Select One (1)*	**R** = Room | **R2** = Room	
E. Transmitter Output *Select One (1)*	**4** = 4 to 20 mA | **1** = 1 to 5 VDC* | **2** = 2 to 10 VDC*	
F. Calibrated Span	**Specify Span in ºF or ºC (Best Accuracy in 100ºF Increments)**	

Note*: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

Note: If a 5 Point NIST is required, put -5PTNIST at the end of the part number.

ACCESSORIES ORDERING

Model #	Item #	Description
A/MOUNTING PLATE BEIGE R	106821	Wall Mounting Back Plate, Plastic, Beige ("R")
A/MOUNTING PLATE WHITE R2	143369	Wall Mounting Back Plate, Plastic, White ("R2")
LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive (3" x 2", Black)

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	TTM Calibration Certificate (5 Point NIST)

Note: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST' at the end of any TTM part number.

TUCH2

Microprocessor Based Sensor (Analog RH & Temp)

The A/TUCH2 Series is a customizable sensor that utilizes an on-board microprocessor and capacitive sensing element with built in hygroscopic filter designed to protect the RH sensor from moisture and chemicals while delivering an analog temperature and a proportional analog RH Output signal. This series includes a large backlit LCD Display which can be used to monitor your space temperature, relative humidity, set points, override and local system status when using the Override Feedback option. These units are factory configured to your desired specifications to reduce onsite programming. Additional features can be modified using the integral keypad and internal menu system, providing you with the flexibility required to meet any additional requests. These features include additional Temperature, RH and Set Point configurations, Display brightness and functionality, Set Point Lockout, Direct and Reverse Acting Output adjustments for temp, RH and set points outputs, temperature and humidity offsets, test functions and more. For additional features including Fan Speed and System Configurations, please contact ACI for more information.

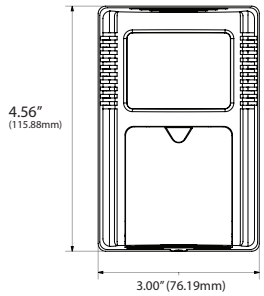
Applications: Schools and Universities, Office Buildings, Commercial Buildings, Labs, Hospitals, Clean Rooms, Pharmaceutical, Process Control, OEM's

The ACI TUCH2 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

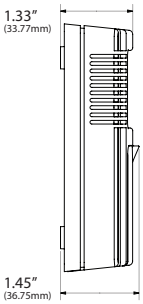
PRODUCT SPECIFICATIONS

Supply Voltage:	20-28 VAC / +12-40 VDC (0-1V, 0-5V, 1-5 VDC Output Signals) 20-28 VAC / +18-40 VDC (0-10V, 2-10V, 0-20 mA, and 4-20 mA Output Signals)
Supply Current:	Current Outputs: 100 mA maximum; Voltage Outputs: 16 mA maximum
Temperature Measurement Range:	40 to 100ºF, 40 to 90ºF, 50 to 90ºF, 50 to 100ºF, 55 to 85ºF (Others available) 4.5 to 40ºC, 4.5 to 32ºC, 10 to 32ºC, 10 to 35ºC, 13 to 32ºC (Others available)
RH Measurement Range:	0 to 100% RH
Analog Outputs (Temperature/Temp Set Point):	0-1V, 0-5V, 1-5V, 0-10V, 2-10V, 0-20 mA, 4-20 mA
Analog Outputs (RH/RH Set Point):	0-1V, 0-5V, 1-5V, 0-10V, 2-10V, 0-20 mA, 4-20 mA
Temperature Accuracy:	+/- 1ºF (+/- 0.5ºC) (Rounded to nearest 0.5ºF/ºC)
RH Accuracy @ 77ºF (25ºC):	+/- 2%, +/- 3% or +/- 5% RH from 10 to 95% RH (Dependent on Model Ordered)
Set Point Accuracy:	+/- 2% Full Scale (VDC/mA Outputs), +/- 5% Full Scall (All resistive outputs)
Set Point Midpoint (Room Temp/RH Set Point):	Select single point Temp from 55 to 89ºF (14 to 31ºC) and/or RH from 33 to 67%
Set Point Differential (Scale Above/Below Midpoint):	Select single point from +/- 1 to +/- 20º and/or +/- 1 to +/- 20% RH
"After Hours" Override Contact Style (Optional):	Normally-Open (N/O) Dry Contact Closure (See Ordering Grid for other Options)
Override Contact Resistance | Life Expectancy:	< 30 Ohms | 500,000 Actuations minimum
Override Feedback Signal:	Dry Contact (Logic Low) or 5-30 VDC / 24 VAC (Logic High) (Specify when Ordering)
LCD Backlight Color | LCD Backlight Function:	Blue | Turns on w/ Button Press (Default); Field adjustable (ALWAYS ON or OFF)
Display Mean Time Between Failure (MTBF):	100,000 Hours Typical (When LCD Backlight set to ALWAYS ON)
Display Numeral Height:	0.600" (15.24 mm) (Large); 0.280" (7.11 mm) (Small)
LCD Display Descriptors:	ºF, ºC, % RH, Occupied / Unoccupied (Override Feedback), Set Point
Communication Jacks (Optional):	RJ4 (4 Pin 4 Cond (RJ9, RJ10, RJ22 Phone)), RJ6 (6 Pin 6 Cond (RJ12 Phone)) and RS232 (1/8" (3.5 mm) Stereo Jack)
Power / Output Connections | Communication Jack:	12 Position Screw Terminal Blocks | 26 AWG Flying Leads with Wire Nuts
Terminal Block Wire Size | UL (SEL) Torque Rating:	Accepts 28 to 14 AWG (0.08 to 2.5 mm²) | 4.4 lb-in (0.5 Nm)
Enclosure Material | Color:	ABS/Polycarbonate Blend | White
Enclosure Flammability Rating:	UL 94-5VB
Operating Temperature / Storage Temperature:	40 to 104ºF (4.5 to 40ºC) | -4 to 158ºF (-20 to 70ºC)
Operating Humidity | Storage Humidity:	5 to 90% RH, non-condensing
Product Dimensions (H x W x D):	4.56" (11.59 cm) x 3.00" (7.62 cm) x 1.26" (3.20 cm)
Product Weight:	0.35 lbs (0.162 kg)
Agency Approvals:	CE (EMC 2014/30/EU); RoHS2 2011/65/EU

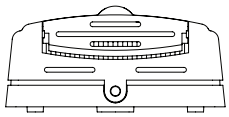
DIMENSIONAL DRAWING



Front View



Right View



Top View

TEMPERATURE ORDERING OPTIONS

Model # Example: TUCH2 (A.) – 16 (B.) | F2 (C.) | 1L (D.)

MODEL

		MODEL #
A. Sensor Series *No Selection Required*	**TUCH2** →	**TUCH2**
B. Temp Output Signal *Select One (1)* *Output Signal can be Reversed in field using integral menu system*	**VDC Output:** **01** = 0 to 1 VDC **04** = 1 to 5 VDC **05** = 0 to 5 VDC **08** = 2 to 10 VDC **10** = 0 to 10 VDC **mA Output:** **16** = 4 to 20 mA **20** = 0 to 20 mA	
C. Analog Output Temperature Scale: *Select One (1)*	**F2** = 40 to 90ºF **F3** = 40 to 100ºF **F4** = 50 to 90ºF **F5** = 50 to 100ºF **F6** = 55 to 85ºF **C1** = 4.5 to 40ºC **C2** = 4.5 to 32ºC **C3** = 10 to 32ºC **C4** = 10 to 35ºC **C5** = 13 to 29.5ºC **C6** = 13 to 32ºC	
D. Set Point Temperature Scale: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **Centigrade:** **1A** = 6 to 30 (Midpoint = 18, Set Point Differential = +/- 12) **1B** = 10 to 30 (Midpoint = 20, Set Point Differential = +/- 10) **1C** = 15 to 31 (Midpoint = 23, Set Point Differential = +/- 8) **1D** = 18 to 28 (Midpoint = 23, Set Point Differential = +/- 5) **Fahrenheit:** **1E** = 50 to 90 (Midpoint = 70, Set Point Differential = +/- 20) **1F** = 55 to 85 (Midpoint = 70, Set Point Differential = +/- 15) **1G** = 55 to 95 (Midpoint = 75, Set Point Differential = +/- 20) **1H** = 60 to 80 (Midpoint = 70, Set Point Differential = +/- 10) **1I** = 62 to 82 (Midpoint = 72, Set Point Differential = +/- 10) **1J** = 65 to 75 (Midpoint = 70, Set Point Differential = +/- 5) **1K** = 67 to 73 (Midpoint = 70, Set Point Differential = +/- 3) **1L** = 67 to 77 (Midpoint = 72, Set Point Differential = +/- 5) **1M** = 68 to 72 (Midpoint = 70, Set Point Differential = +/- 2) **1N** = 68 to 76 (Midpoint = 72, Set Point Differential = +/- 4) **1O** = 68 to 78 (Midpoint = 73, Set Point Differential = +/- 5) **Custom** = Specify (Midpoint = ??, Set Point Differential = +/- ??)	

TEMPERATURE ORDERING OPTIONS *continued*

Model # Example: G0 (E.) X (F.) X (G.) – 2 (H.) 16 (I.) N2 (J.) G0 (K.) X (L.) X (M.)

		MODEL #
E. Set Point Temperature Output: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **A0** = 0 to 1 VDC **B0** = 0 to 5 VDC **C0** = 0 to 10 VDC **D0** = 1 to 5 VDC **E0** = 2 to 10 VDC **F0** = 0 to 20 mA **G0** = 4 to 20 mA **ZZ** = 0 to 1.5K Ohms **ZY** = 0 to 10K Ohms **ZW** = 0 to 20K Ohms **ZT** = 0 to 100K Ohms **ZS** = 100 to 6500 Ohms **ZR** = 333 to 1695 Ohms **ZQ** = 866 to 1290 Ohms **ZP** = 889 to 111 Ohms **ZO** = 1089 to 879 Ohms **ZN** = 3890 to 6110 Ohms **ZM** = 4550 to 6650 Ohms **ZL** = 5K to 15K Ohms **ZK** = 7.8K to 27.8K Ohms **ZJ** = 9577 to 1421 Ohms **ZI** = 9843 to 1290 Ohms **ZH** = 10K to 30K Ohms **ZG** = 10K to 20K Ohms **ZF** = 2.49K to 3.49K Ohms	
F. "After Hours" Override Options: *Select One (1)*	**X** = No Override | **S** = Short Sensor | **C** = Dry Contact/Logic Low | **P** = Short Set Point	
G. Override Feedback Options: *Select One (1)*	**X** = None | **L** = Dry Contact / Logic Low | **H =** Logic High / 24 VAC or 5 to 30 VDC	
H. RH Measurement Accuracy: *Select One (1)*	**2** = +/- 2% RH | **3** = +/- 3% RH	
I. RH Output Signal: *Select One (1)*	**01** = 0 to 1 VDC | **02** = 20 to 0 mA | **04** = 1 to 5 VDC | **05** = 0 to 5 VD**C** | **08** = 2 to 10 VDC **10** = 0 to 10 VDC | **16** = 4 to 20 mA | **20** = 0 to 20 mA | **61** = 20 to 4 mA	
J. RH Set Point Scale: *Select One (1)*	**M1** = 13 to 53% (Midpoint = 33, Set Point Differential = +/- 20) **M2** = 32 to 38% (Midpoint = 35, Set Point Differential = +/- 3) **M3** = 30 to 40% (Midpoint = 35, Set Point Differential = +/- 5) **M4** = 25 to 55% (Midpoint = 40, Set Point Differential = +/- 15) **M5** = 20 to 60% (Midpoint = 40, Set Point Differential = +/- 20) **M6** = 35 to 55% (Midpoint = 45, Set Point Differential = +/- 10) **M7** = 25 to 65% (Midpoint = 45, Set Point Differential = +/- 20) **M8** = 45 to 51% (Midpoint = 48, Set Point Differential = +/- 3) **M9** = 48 to 52% (Midpoint = 50, Set Point Differential = +/- 2) **N1** = 46 to 54% (Midpoint = 50, Set Point Differential = +/- 4) **N2** = 40 to 60% (Midpoint = 50, Set Point Differential = +/- 10) **N3** = 35 to 65% (Midpoint = 50, Set Point Differential = +/- 15) **N4** = 30 to 70% (Midpoint = 50, Set Point Differential = +/- 20) **N5** = 35 to 75% (Midpoint = 55, Set Point Differential = +/- 20) **N6** = 40 to 80% (Midpoint = 60, Set Point Differential = +/- 20) **N7** = 45 to 79% (Midpoint = 62, Set Point Differential = +/- 17) **N8** = 48 to 83% (Midpoint = 65, Set Point Differential = +/- 18) **N9** = 57 to 77% (Midpoint = 67, Set Point Differential = +/- 10) **O1** = 47 to 87% (Midpoint = 67, Set Point Differential = +/- 20) **XX** = No Set Point	
K. RH Set Point Output Signal: *Select One (1)*	**XX** = No RH Set Point **A0** = 0 to 1 VDC **B0** = 0 to 5 VDC **C0** = 0 to 10 VDC **D0** = 1 to 5 VDC **E0** = 2 to 10 VDC **F0** = 0 to 20 mA **G0** = 4 to 20 mA **ZY** = 0 to 10K Ohms **ZW** = 0 to 20K Ohms **ZH** = 10K to 30K Ohms **ZG** = 10K to 20K Ohms **ZF** = 2.49K to 3.49K Ohms	
L. Communication Jack Options: *Select One (1)*	**X** = None **4** = 4 Pin 4 Conductor RJ9, RJ10, or RJ22 Style Head Set Modular Connector **6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **8** = 3.5mm (1/8") Stereo Jack	
M. Manufacturer Provided *No Selection Required*	**X** = Default ⟶	**X**

ACCESSORIES ORDERING

Model # Example: A/LOCKING COVER -OR- 10370

Model #	Item #	Description
A/MOUNT PLATE W	126386	Wall Mounting Back Plate, Plastic, White
A/LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile

TUCH2

Microprocessor Based Sensor (Resistive Temp / Analog RH)

The A/TUCH2 Series is a customizable sensor that utilizes an on-board microprocessor and capacitive sensing element with built in hygroscopic filter designed to protect the RH sensor from moisture and chemicals while delivering a resistive temperature and a proportional analog RH Output signal. This series includes a large backlit LCD Display which can be used to monitor your space temperature, relative humidity, set points, override and local system status when using the Override Feedback option. These units are factory configured to your desired specifications to reduce onsite programming. Additional features can be modified using the integral keypad and internal menu system, providing you with the flexibility required to meet your customers additional requests. These features include additional Set Point configurations, Backlight Display brightness and functionality, Set Point Lockout, Direct and Reverse Acting Output adjustments, temperature and humidity offsets, test functions and more. For additional features including Fan Speed and System Configurations, please contact ACI for more information.

Applications: Schools and Universities, Office Buildings, Commercial Buildings, Labs, Hospitals, Clean Rooms, Pharmaceutical, Process Control, OEM's

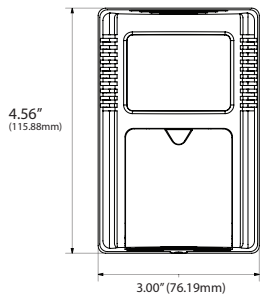
The ACI TUCH2 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

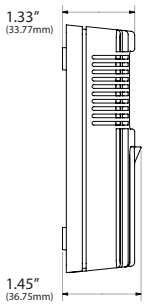
Supply Voltage:	20-28 VAC / +12-40 VDC (Resistive Temp, 0-1V, 0-5V, 1-5 VDC RH Outputs) 20-28 VAC / +18-40 VDC (Resistive Temp, 0-10V, 2-10V, 0-20 mA, and 4-20 mA RH Output Signals)
Supply Current (Maximum):	Resistive / Current RH Output: 60 mA; Resistive / Voltage RH Output: 16 mA
Temperature Sensor Type [1]:	NTC Thermistor's (Single Sensor Technology); PTC RTD's (Dual Sensor Technology)
Temperature Sensor Type:	NTC Thermistor Types: See Ordering Grid PTC RTD Types: See Ordering Grid
Temperature Measurement Range:	40 to 104ºF (4.5 to 40ºC)
RH Measurement Range:	0 to 100% RH
Analog Outputs (RH/RH Set Point):	0-1V, 0-5V, 1-5V, 0-10V, 2-10V, 0-20 mA, 4-20 mA, 20-4 mA, 20 to 0 mA (Specify when ordering)
Temperature Accuracy:	+/- 1ºF (+/- 0.5ºC) (Rounded to nearest 0.5ºF/ºC)
RH Accuracy @ 77ºF (25ºC):	+/- 2%, +/- 3% or +/- 5% RH from 10 to 95% RH (Dependent on Model)
Set Point Accuracy:	+/- 5% Full Scale Output; +/- 2% of FS for all VDC/mA Outputs
Set Point Midpoint (Room Temp/RH Set Point):	Select single point Temp from 55 to 89ºF (14 to 31ºC) and/or RH from 33 to 67%
Set Point Differential (Scale Above/Below Midpoint):	Select single point from +/- 1 to +/- 20º and/or +/- 1 to +/- 20% RH
"After Hours" Override Contact Style (Optional):	Normally-Open (N/O) Short Sensor (Default); Optional Dry Contact or Short Set Point
Override Contact Resistance | Life Expectancy:	< 30 Ohms | 500,000 Actuations minimum
Override Feedback Signal:	Dry Contact (Logic Low) or 5-30 VDC / 24 VAC (Logic High) (Specify when Ordering)
LCD Backlight Color | LCD Backlight Function:	Blue | Turns on w/ Button Press (Default); Field adjustable (ALWAYS ON or OFF)
Display Mean Time Between Failure (MTBF):	100,000 Hours Typical (When LCD Backlight set to ALWAYS ON)
Display Viewing Angle | Numeral Height:	12 O'Clock | Large: 0.600" (15.24 mm); Small: 0.280" (7.11 mm)
LCD Display Descriptors:	ºF, ºC, % RH, Set Point, Occupied/Unoccupied (Override Feedback)
Communication Jacks (Optional):	RJ4 (4 Pin 4 Cond (RJ9, RJ10, RJ22 Phone)), RJ6 (6 Pin 6 Cond (RJ12 Phone)) and RS232 (1/8" (3.5 mm) Stereo Jack)
Power / Output Connections | Communication Jack:	12 Position Screw Terminal Block | 26 AWG Flying Leads with Wire Nuts
Terminal Block Wire Size | UL (SEL) Torque Rating:	Accepts 28 to 14 AWG (0.08 to 2.5 mm²) | 4.4 lb-in (0.5 Nm)
Enclosure Material | Color:	ABS/Polycarbonate Blend | White
Enclosure Flammability Rating:	UL 94-5VB
Operating Temperature / Storage Temperature:	40 to 104ºF (4.5 to 40ºC) | -4 to 158ºF (-20 to 70ºC)
Operating Humidity | Storage Humidity:	5 to 90% RH, non-condensing
Product Dimensions (H x W x D)	4.56" (11.59 cm) x 3.00" (7.62 cm) x 1.26" (3.20 cm)
Product Weight:	0.35 lbs (0.162 kg)
Agency Approvals:	CE (EMC 2014/30/EU); RoHS2 2011/65/EU

Note [1]: Power must be applied to the single sensor version of this unit that includes an NTC Thermistor Output signal

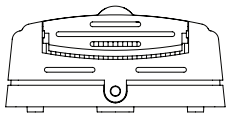
DIMENSIONAL DRAWING



Front View



Right View



Top View

TEMPERATURE ORDERING OPTIONS

Model # Example: TUCH2 (A.) – CP (B.) F1 (C.)

MODEL

A. Sensor Series *No Selection Required*	**TUCH2** →	**TUCH2**
B. Temp Output Sensor Type *Select One (1)*	**NTC Thermistors:** **18** = 1.8K Ohms @ 77ºF (25ºC) **3K** = 3K Ohms @ 77ºF (25ºC) **20** = 20K Ohms @ 77ºF (25ºC) **AS** = 3K Ohms @ 77ºF (25ºC) (3K-ASI) **AN** = 10K Ohms (Type III) @ 77ºF (25ºC) (10K-AN) **BC** = 10K Ohms (Type III) w/ 11K Shunt (5.238K @ 77ºF (25ºC)) (10K-AN-BC) **CP** = 10K Ohms (Type II) @ 77ºF (25ºC) (10K-CP) **CS** = 10K Ohms @ 77ºF (25ºC) (10K-CSI) **KS** = 10K Ohms @ 77ºF (25ºC) (10KS) **PTC RTD's:** **1K** = 1K Ohms @ 32ºF (0ºC); Class A Platinum RTD; 385 TC **NI** = 1000 Ohms @ 70ºF (21.1ºC); Nickel RTD; 6370 TC (1000-NI) **35** = 1035 Ohms @ 77ºF (25ºC); Silicon Sensor; +/- 3% from 40 to 104ºF	
C. Temperature Scale *Select One (1)*	**F1** = 40 to 104ºF **C1** = 4.5 to 40ºC	

TEMPERATURE ORDERING OPTIONS *continued*

Model # Example: 1H (D.) ZW (E.) S (F.) H (G.) – 2 (H.) 16 (I.)

		MODEL #
D. Set Point Temperature Scale: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **Centigrade:** **1A** = 6 to 30 (Midpoint = 18, Set Point Differential = +/- 12) **1B** = 10 to 30 (Midpoint = 20, Set Point Differential = +/- 10) **1C** = 15 to 31 (Midpoint = 23, Set Point Differential = +/- 8) **1D** = 18 to 28 (Midpoint = 23, Set Point Differential = +/- 5) **Fahrenheit:** **1E** = 50 to 90 (Midpoint = 70, Set Point Differential = +/- 20) **1F** = 55 to 85 (Midpoint = 70, Set Point Differential = +/- 15) **1G** = 55 to 95 (Midpoint = 75, Set Point Differential = +/- 20) **1H** = 60 to 80 (Midpoint = 70, Set Point Differential = +/- 10) **1I** = 62 to 82 (Midpoint = 72, Set Point Differential = +/- 10) **1J** = 65 to 75 (Midpoint = 70, Set Point Differential = +/- 5) **1K** = 67 to 73 (Midpoint = 70, Set Point Differential = +/- 3) **1L** = 67 to 77 (Midpoint = 72, Set Point Differential = +/- 5) **1M** = 68 to 72 (Midpoint = 70, Set Point Differential = +/- 2) **1N** = 68 to 76 (Midpoint = 72, Set Point Differential = +/- 4) **1O** = 68 to 78 (Midpoint = 73, Set Point Differential = +/- 5) **Custom** = Specify (Midpoint = ??, Set Point Differential = +/- ??)	
E. Set Point Temperature Output: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **A0** = 0 to 1 VDC **B0** = 0 to 5 VDC **C0** = 0 to 10 VDC **D0** = 1 to 5 VDC **E0** = 2 to 10 VDC **F0** = 0 to 20 mA **G0** = 4 to 20 mA **ZZ** = 0 to 1.5K Ohms **ZY** = 0 to 10K Ohms **ZW** = 0 to 20K Ohms **ZT** = 0 to 100K Ohms **ZS** = 100 to 6500 Ohms **ZR** = 333 to 1695 Ohms **ZQ** = 866 to 1290 Ohms **ZP** = 889 to 111 Ohms **ZO** = 1089 to 879 Ohms **ZN** = 3890 to 6110 Ohms **ZM** = 4550 to 6650 Ohms **ZL** = 5K to 15K Ohms **ZK** = 7.8K to 27.8K Ohms **ZJ** = 9577 to 1421 Ohms **ZI** = 9843 to 1290 Ohms **ZH** = 10K to 30K Ohms **ZG** = 10K to 20K Ohms **ZF** = 2.49K to 3.49K Ohms	
F. "After Hours" Override Options: *Select One (1)*	**X** = No Override | **S** = Short Sensor | **C** = Dry Contact/Logic Low | **P** = Short Set Point	
G. Override Feedback Options: *Select One (1)*	**X** = None | **L** = Dry Contact / Logic Low | **H =** Logic High / 24 VAC or 5 to 30 VDC	
H. RH Measurement Accuracy: *Select One (1)*	**2** = +/- 2% RH | **3** = +/- 3% RH	
I. RH Output Signal: *Select One (1)*	**01** = 0 to 1 VDC | **02** = 20 to 0 mA | **04** = 1 to 5 VDC | **05** = 0 to 5 VD**C** | **08** = 2 to 10 VDC **10** = 0 to 10 VDC | **16** = 4 to 20 mA | **20** = 0 to 20 mA | **61** = 20 to 4 mA	

TEMPERATURE ORDERING OPTIONS *continued*

Model # Example: M6 (J.) G0 (K.) X (L.) X (M.)

		MODEL #
J. RH Set Point Scale: *Select One (1)*	**M1** = 13 to 53% (Midpoint = 33, Set Point Differential = +/- 20) **M2** = 32 to 38% (Midpoint = 35, Set Point Differential = +/- 3) **M3** = 30 to 40% (Midpoint = 35, Set Point Differential = +/- 5) **M4** = 25 to 55% (Midpoint = 40, Set Point Differential = +/- 15) **M5** = 20 to 60% (Midpoint = 40, Set Point Differential = +/- 20) **M6** = 35 to 55% (Midpoint = 45, Set Point Differential = +/- 10) **M7** = 25 to 65% (Midpoint = 45, Set Point Differential = +/- 20) **M8** = 45 to 51% (Midpoint = 48, Set Point Differential = +/- 3) **M9** = 48 to 52% (Midpoint = 50, Set Point Differential = +/- 2) **N1** = 46 to 54% (Midpoint = 50, Set Point Differential = +/- 4) **N2** = 40 to 60% (Midpoint = 50, Set Point Differential = +/- 10) **N3** = 35 to 65% (Midpoint = 50, Set Point Differential = +/- 15) **N4** = 30 to 70% (Midpoint = 50, Set Point Differential = +/- 20) **N5** = 35 to 75% (Midpoint = 55, Set Point Differential = +/- 20) **N6** = 40 to 80% (Midpoint = 60, Set Point Differential = +/- 20) **N7** = 45 to 79% (Midpoint = 62, Set Point Differential = +/- 17) **N8** = 48 to 83% (Midpoint = 65, Set Point Differential = +/- 18) **N9** = 57 to 77% (Midpoint = 67, Set Point Differential = +/- 10) **O1** = 47 to 87% (Midpoint = 67, Set Point Differential = +/- 20) **XX** = No Set Point	
K. RH Set Point Output Signal: *Select One (1)*	**XX** = No RH Set Point **A0** = 0 to 1 VDC **B0** = 0 to 5 VDC **C0** = 0 to 10 VDC **D0** = 1 to 5 VDC **E0** = 2 to 10 VDC **F0** = 0 to 20 mA **G0** = 4 to 20 mA **ZY** = 0 to 10K Ohms **ZW** = 0 to 20K Ohms **ZH** = 10K to 30K Ohms **ZG** = 10K to 20K Ohms **ZF** = 2.49K to 3.49K Ohms	
L. Communication Jack Options: *Select One (1)*	**X** = None **4** = 4 Pin 4 Conductor RJ9, RJ10, or RJ22 Style Head Set Modular Connector **6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **8** = 3.5mm (1/8") Stereo Jack	
M. Manufacturer Provided *No Selection Required*	**X** = Default →	**X**

RH LCD

Humidity Sensor with LCD

The ACI Relative Humidity with LCD utilizes a thermoset polymer capacitive sensing element with integral hydrophobic filter to deliver a proportional analog current or voltage output with long term reliability. The styling of the white, wall mounted enclosure with hinged cover makes it suitable for use in a wide variety of applications. The ACI RH LCD series products can be powered with either an AC or DC supply voltage and features a large, backlit display which improves the overall visibility of the display. Other features include onsite field calibration through a single point offset through the programming of the device using the integral keypad. All units must be ordered with one of the supported output signals of 4-20 mA, 0-5 VDC, or 0-10 VDC. For additional options, including temperature, set point, override, fan and system settings, please see the A/TUCH2 product data sheet.

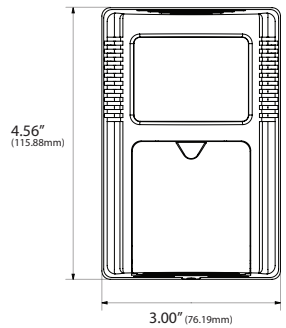
Applications: Local Humidity Display, Hospitals and Operating Rooms, Pharmaceutical Labs, Clean Rooms, ESD Static Control, Humidification, Dehumidification

The ACI RH LCD is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

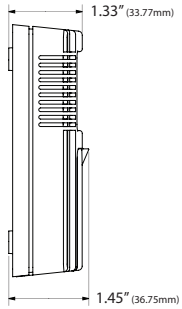
PRODUCT SPECIFICATIONS

Supply Voltage:	+12-40 VDC (0-5V) | +18-40 VDC (0-10V, 4 to 20 mA) | 20-28 VAC (All Outputs)
Supply Current:	**Current Output:** 30 mA maximum | **Voltage Output:** 16 mA maximum
Analog Outputs:	0-5 VDC, 0-10 VDC, or 4-20 mA
RH Measurement Range:	0% to 100% RH
RH Accuracy at 77°F (25°C):	+/- 2%, +/- 3%, +/- 5% from 10 to 95% RH
Operating Temperature Range:	32°F to 104°F (0°C to 40°C)
Operating Relative Humidity Environment:	0 to 95% Relative Humidity (non-condensing)
Sensor Type:	Capacitive
Product Dimensions:	(H) 4.56" (115.88 mm) x (W) 3.00" (76.19 mm) x (D) 1.45" (36.75 mm)

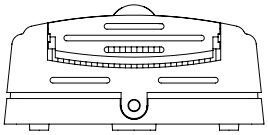
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: A/RH2-R-LCD-010 -OR- 131759

Model #	Item #	Description
A/RH2-R-LCD-010	131759	Humidity, +/-2%, Room, Display, 0 to 10 VDC Output, 4 Button Membrane
A/RH2-R-LCD-05	131760	Humidity, +/-2%, Room, Display, 0 to 5 VDC Output, 4 Button Membrane
A/RH2-R-LCD-420	131761	Humidity, +/-2%, Room, Display, 4 to 20 mA Output, 4 Button Membrane
A/RH3-R-LCD-010	131765	Humidity, +/-3%, Room, Display, 0 to 10 VDC Output, 4 Button Membrane
A/RH3-R-LCD-05	131217	Humidity, +/-3%, Room, Display, 0 to 5 VDC Output, 4 Button Membrane
A/RH3-R-LCD-420	131715	Humidity, +/-3%, Room, Display, 4 to 20 mA Output, 4 Button Membrane
A/RH5-R-LCD-010	142795	Humidity, +/-5%, Room, Display, 0 to 10 VDC Output, 4 Button Membrane
A/RH5-R-LCD-05	131763	Humidity, +/-5%, Room, Display, 0 to 5 VDC Output, 4 Button Membrane
A/RH5-R-LCD-420	131764	Humidity, +/-5%, Room, Display, 4 to 20 mA Output, 4 Button Membrane

Note: RH-LCD Model numbers come with a standard 4 Button Membrane (On/Off/Setup/Select)

RH DUCT

Relative Humidity, Duct

The ACI Relative Humidity Duct utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three point NIST Calibration Certificates are available.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

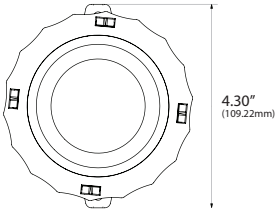
The ACI RH Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

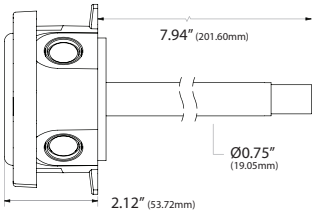
PRODUCT SPECIFICATIONS

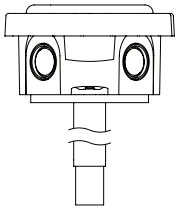
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic | UL94-V0 | -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic | UL94-V2 | -40 to 158°F (-40 to 70°C) | NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum | -40 to 140°F (-40 to 60°C)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter **"-BB" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm) **"-BB" Enclosure:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x H):	See drawings on back of data sheet
Product Weight:	**A/RHx-D Series:** 1.22 lbs. (0.55 kg) | **A/RHx-D-4X Series:** 0.50 lbs. (0.227 kg) | **A/RHx-D-BB Series:** 0.90 lbs. (0.41 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

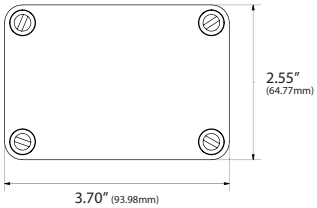
Euro Enclosure [EH]

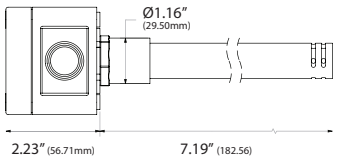


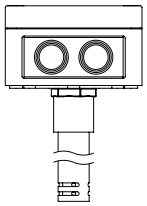




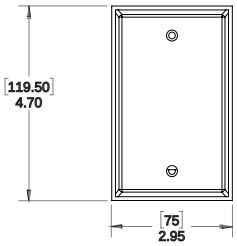
NEMA 4X Enclosure [4X]

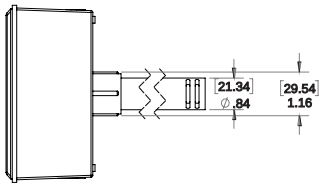


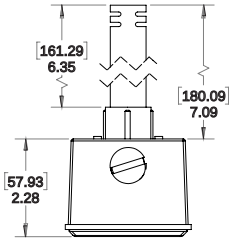




NEMA 3R Enclosure [D-BB]







Front View	Right View	Top View

STANDARD ORDERING

Model # Example: A/RH1-D -OR- 122531

Model #	Item #	Description
A/RH1-D	122531	RH Duct, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH1-D-NIST	148178	RH Duct, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure, NIST Certificate
A/RH2-D	122687	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH2-D-4X	122689	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure
A/RH2-D-BB	122695	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 3R Enclosure
A/RH2-D-NIST	148181	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure, NIST Certificate
A/RH2-D-4X-NIST	148183	RH Duct, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure, NIST Certificate
A/RH3-D	122921	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH3-D-4X	122924	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure
A/RH3-D-BB	122931	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 3R Enclosure
A/RH3-D-NIST	148182	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure, NIST Certificate
A/RH3-D-4X-NIST	148184	RH Duct, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure, NIST Certificate
A/RH5-D	123085	RH Duct, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure

CUSTOM ORDERING	Model # Example: A/ (A.) RH1 (B.) D (C.) (D.)	MODEL #
A. Sensor Series *No Selection Required*	**A/** ——————————→	**A/**
B. Accuracy No Selection *Required*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
A. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** = Duct (NEMA 4X Enclosure) | **D-BB** = Duct (NEMA 3R Enclosure)	
D. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
E. NIST *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probe

RH DUCT

Relative Humidity, Duct, Thermistor

The ACI Relative Humidity with Thermistor Duct Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three point NIST Calibration Certificates are available.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

The ACI RH Thermistor Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

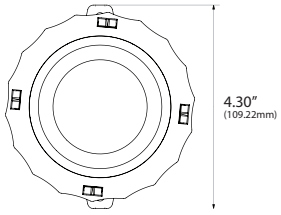
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow) **RHx-3K Series:** 3KΩ (White/Brown) **RHx-AN Series (Type III):** 10KΩ (White/White) **RHx-AN-BC Series:** 5.238KΩ (White/Yellow) **RHx-CP Series (Type II):** 10KΩ (White/Green) **RHx-CSI Series:** 10KΩ (Green/Yellow) **RHx-10KS Series:** 10KΩ (White/Blue) **RHx-10K-E1 Series:** 10KΩ (Gray/Orange) **RHx-20K Series:** 20KΩ (Brown/Blue) **RHx-50K Series:** 50KΩ nominal (Brown/Yellow) **RHx-100KS Series:** 100KΩ (Black/Yellow)
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C) **1.8K Series:** +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C
Thermistor Sensor Response Time (T63):	10 Second nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic | UL94-V0 | -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic | UL94-V2 | -40 to 158°F (-40 to 70°C) | NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum | -40 to 140°F (-40 to 60°C)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter **"-BB" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm) **"-BB" Enclosure:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x H):	See drawings on back of data sheet

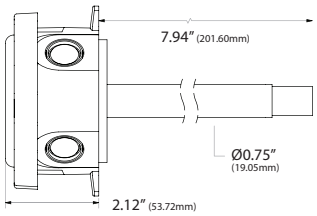
PRODUCT SPECIFICATIONS

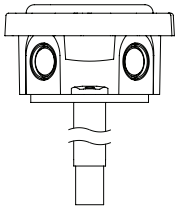
Product Weight:	**A/RHx-xx-D Series:** 1.22 lbs. (0.55 kg) | **A/RHx-xx-D-4X Series:** 0.50 lbs. (0.227 kg) | **A/RHx-D-BB Series:** 0.90 lbs. (0.41 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

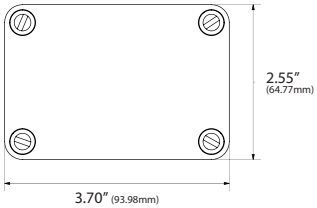
Euro Enclosure [EH]

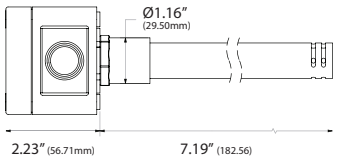


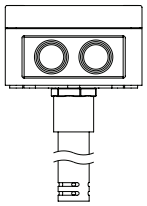




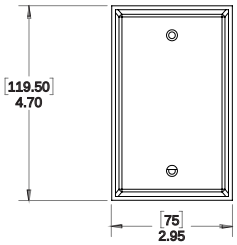
NEMA 4X Enclosure [4X]

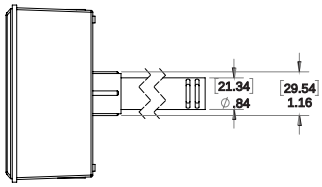


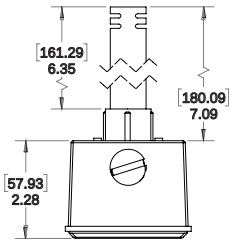




NEMA 3R Enclosure [D-BB]







Front View	Right View	Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | CP (C.) | D (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **10K-E1** | **20K** | **50K** | **100KS**	
D. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** = Duct (NEMA 4X Enclosure) | **D-BB** = Duct (NEMA 3R Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probe

RH DUCT

Relative Humidity, Duct, Platinum RTD

The ACI Relative Humidity with Platinum RTD Duct Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three point NIST Calibration Certificates are available.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

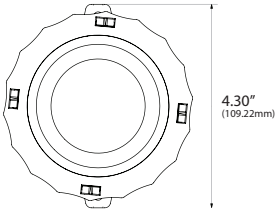
The ACI RH Platinum RTD Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

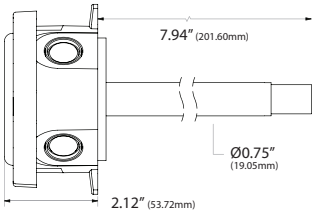
PRODUCT SPECIFICATIONS

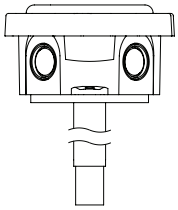
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Platinum RTD (PTC) | Number Wires (Wire Colors):	**RHx-100-2W Series:** (Brown/Brown) & RHx-1K-2W Series: (Black/Black) **RHx-100-3W Series:** (Brown/Brown/Black) & RHx-1K-3W Series: (Black/Black/White)
Platinum RTD Output @ 32°F (0°C):	**RHx-100-xW-D Series:** 100 Ohms nominal | **RHx-1K-xW-D Series:** 1000 Ohms nominal
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)
Temperature Coefficient:	3850 ppm/ °C
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic | UL94-V0 | -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic | UL94-V2 | -40 to 158°F (-40 to 70°C) | NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum | -40 to 140°F (-40 to 60°C)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter **"-BB" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm) **"-BB" Enclosure:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x H):	See drawings on back of data sheet
Product Weight:	**A/RHx-xx-xW-D Series:** 1.22 lbs. (0.55 kg) **| A/RHx-xx-xW-D-4X Series:** 0.50 lbs. (0.227 kg) **|** **A/RHx-xx-xW-D-BB Series:** 0.90 lbs. (0.41 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

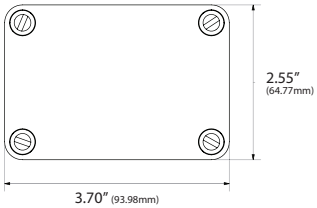
Euro Enclosure [EH]

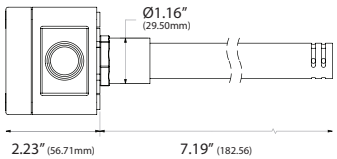


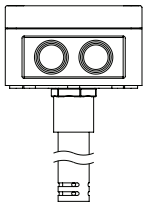




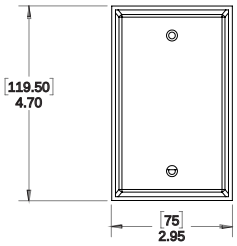
NEMA 4X Enclosure [4X]

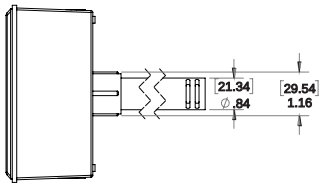


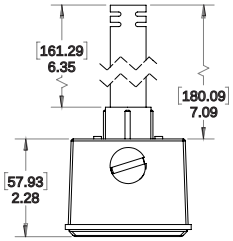




NEMA 3R Enclosure [D-BB]







Front View	Right View	Top View

CUSTOM ORDERING

Model # Example: A/ | RH2 | 1K | 2W | D | | NIST

MODEL #

A. Sensor Series *No Selection Required*	**A/** ——►	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**100 =** 100 Ohm Platinum RTD | **1K =** 1K Ohm Platinum RTD	
D. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
E. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** = Duct (NEMA 4X Enclosure) | **D-BB** = Duct (NEMA 3R Enclosure)	
F. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
G. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probe

RH DUCT

Relative Humidity, Duct, Nickel RTD

The ACI Relative Humidity with Nickel RTD Duct Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three point NIST Calibration Certificates are available.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

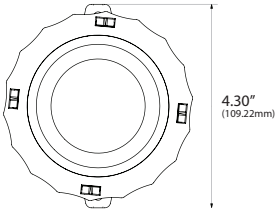
The ACI RH Nickel RTD Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

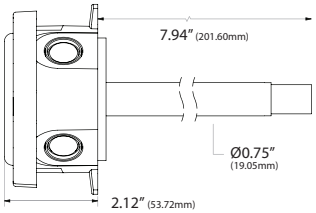
PRODUCT SPECIFICATIONS

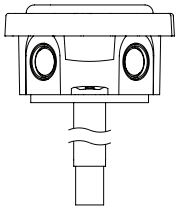
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nickel RTD (PTC) Output @70°F (21.1°C) (Wire Colors):	**RHx-1K-NI-D Series:** 1000 Ohms nominal (1K-Nickel RTD) | Red/Red
Nickel RTD Sensor Accuracy:	32°F (0°C): +/-0.72°F (0.4°F); 70°F (21.1°C): +/-0.34°F (0.17°C); 130°F (54.4°C): +/-1.00°F (0.56°C)
Nickel RTD Din Standard:	Din 43760
Temperature Coefficient:	6370 ppm/ °C
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic | UL94-V0 | -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic | UL94-V2 | -40 to 158°F (-40 to 70°C) | NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum | -40 to 140°F (-40 to 60°C)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter **"-BB" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm) **"-BB" Enclosure:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x H):	See drawings on back of data sheet
Product Weight:	**A/RHx-1K-NI-D Series:** 1.22 lbs. (0.55 kg) | **A/RHx-1K-NI-D-4X Series:** 0.50 lbs. (0.227 kg) | **A/RHx-1K-NI-D-BB Series:** 0.90 lbs. (0.41 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

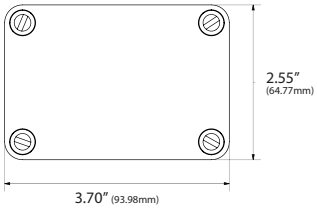
Euro Enclosure [EH]

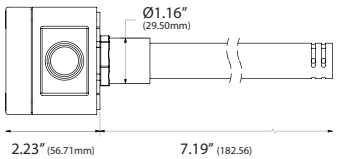


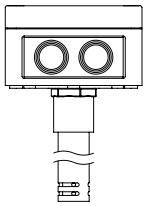




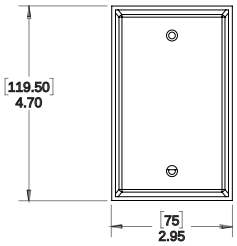
NEMA 4X Enclosure [4X]

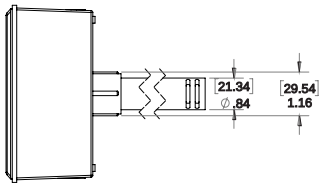


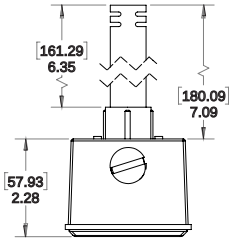




NEMA 3R Enclosure [D-BB]







Front View	Right View	Top View

CUSTOM ORDERING

Model # Example: A/ | RH2 | 1K-NI | D | | NIST (A. B. C. D. E. F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**1K-NI**	**1K-NI**
D. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** = Duct (NEMA 4X Enclosure) | **D-BB** = Duct (NEMA 3R Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probe

RH DUCT

Relative Humidity, Duct, Balco RTD

The ACI Relative Humidity with Balco RTD Duct Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature a weatherproof Euro style enclosure with a gasketed cover and conformally coated circuit boards for increased moisture resistance in high humidity environments. The sensor is protected by a stainless-steel sintered filter. Three point NIST Calibration Certificates are available.

Applications: Humidification, Dehumidification, Supply / Discharge / Return Air, Economizers, Clean Rooms, Data Centers, Process Control, Schools, Hospitals, Office Buildings

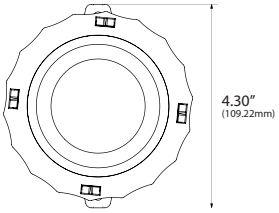
The ACI RH Balco RTD Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

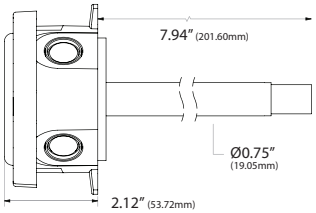
PRODUCT SPECIFICATIONS

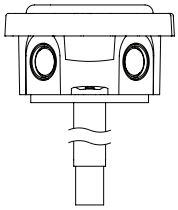
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Balco RTD Output @ 70°F (21.1°C)(Wire Colors):	**RHx-BALCO-D Series:** 1000 Ohms nominal (Balco RTD) | Orange/Yellow
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%
Balco RTD Temperature Coeffiecient (0-100°C):	4618 ppm/°C
Balco RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Temperature Sensor Response Time (T63):	10 Seconds nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic | UL94-V0 | -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic | UL94-V2 | -40 to 158°F (-40 to 70°C) | NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum | -40 to 140°F (-40 to 60°C)
Sensing Tube Material | Filter Material:	**"EH" Enclosure:** 304 Series Stainless Steel | 304 Series Stainless Steel **"-4X" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter **"-BB" Enclosure:** Schedule 40 PVC (White) | Slotted PVC without filter
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models with Sintered Filters:** 7.75" (196.85 mm) x 0.75" (19.05 mm) **"-4X" Models:** 7.20" (182.88 mm) x 0.840" (21.34 mm) **"-BB" Enclosure:** 7.20" (182.88 mm) x 0.840" (21.34 mm)
Product Dimensions (L x W x H):	See drawings on back of data sheet
Product Weight:	**A/RHx-BALCO-D Series:** 1.22 lbs. (0.55 kg) | **A/RHx-BALCO-D-4X Series:** 0.50 lbs. (0.227 kg) | **A/RHx-D-BB Series:** 0.90 lbs. (0.41 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

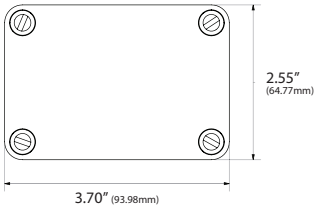
Euro Enclosure [EH]

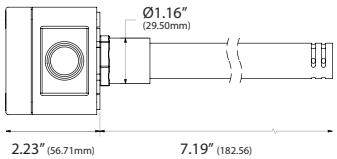


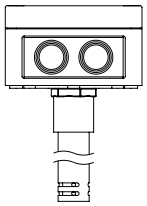




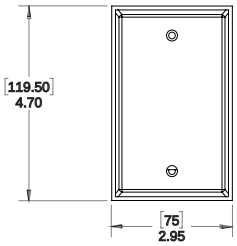
NEMA 4X Enclosure [4X]

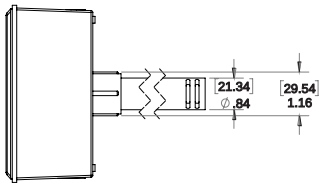


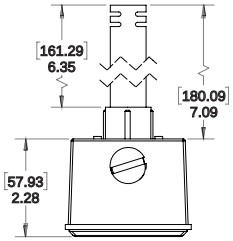




NEMA 3R Enclosure [D-BB]







Front View	Right View	Top View

CUSTOM ORDERING

Model # Example: A/ | RH2 | BALCO | D | | NIST (A. B. C. D. E. F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C.Temperature Sensor *No Selection Required*	**BALCO**	**BALCO**
D. Configuration *Select One (1)*	**D** = Duct (Euro Enclosure) | **D-4X** = Duct (NEMA 4X Enclosure) | **D-BB** = Duct (NEMA 3R Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probe

RH TT DUCT

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Duct Series utilizes a thermoset polymer capacitive sensing element with a factory fitted hydrophobic filter to improve its moisture resistance. The sensing elements multilayer construction also provides excellent resistance in applications where dust, dirt, oils and common environmental chemicals are found. The RH duct sensors include on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources. Single point field calibration can be performed by using the increment and decrement calibration DIP switches to adjust your curve up or down in +/- 0.5% increments with each toggle of the corresponding switches. These enhancements provide increased flexibility and outstanding long-term reliability without the need to replace the sensors in the field. Duct configurations feature either a NEMA 4X or NEMA 3R enclosure and a conformally coated circuit board for increased moisture resistance in high humidity environments. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Humidification, Dehumidification, Supply and Return RH sensors, Economizers, Clean Rooms, Data Centers, Process Control

The ACI RH TT Duct is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
TT Supply Voltage | Supply Current::	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) | **Voltage Output:** 1-5 VDC/2-10 VDC (3-Wire)
TT Calibrated Accuracy | Linearity [1]:	**Temperature Spans < 500°F (260°C):** +/- 0.2% | Temp Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	**Temperature Spans < 100°F (38°C):** +/- 0.04%/°F | Temp Spans > 100°F (38°C): +/- 0.02%/°F
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50%, 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature/RH Range:	-40 to 185°F (-40 to 85°C) / 0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100/TTM100 Series:** Brown/Brown | **A/TT1K/TTM1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100/TTM100 Series:** 100 Ohms Nominal | **A/TT1K/TTM1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal

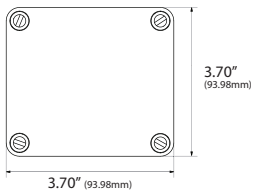
PRODUCT SPECIFICATIONS

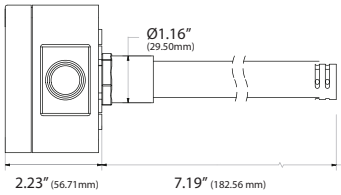
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66) **"-BB" Enclosure:** Aluminum, -40 to 239°F (-40 to 110°C); NEMA 3R
Sensing Tube Dimensions:	7.20" (182.88 mm) x 0.840" (21.34 mm)
Tube Material:	Slotted PVC without filter
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-TT-D-4X Series:** 0.58 lbs. (0.263 kg)
Agency Approvals:	RoHS2, WEEE

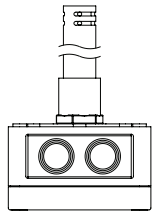
Note[1]: A Transmitter is calibrated at 71ºF (22ºC) Nominal | **Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

DIMENSIONAL DRAWING

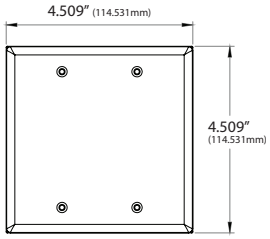
D-4X [NEMA 4X]

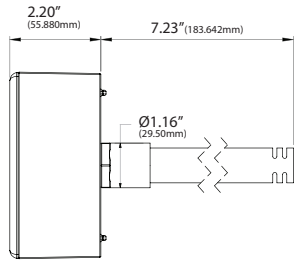


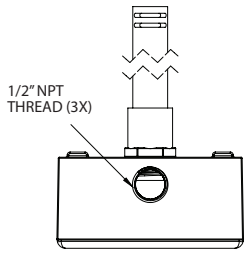




D-BB [NEMA 3R]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | TT1K (C.) | D-4X (D.) | 20 (E.) | -200ºF (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) | **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**TT100** = 100 Ohms | **TTM100** = Matched 100 Ohms (3 Point RH & Temperature NIST) **TT1K** = 1K Ohms | **TTM1K** = Matched 1K Ohms (3 Point RH & Temperature NIST)	
D. Configuration *Select One (1)*	**D-4X =** Duct (NEMA 4X Enclosure) | **D-BB =** Duct (NEMA 3R Enclosure)	
E. Transmitter Output *Select One (1)*	**4 =** 4 to 20 mA | **1 =** 1 to 5 VDC* | **2 =** 2 to 10 VDC*	
F. Calibrated Span	**Specify Span in ºF or ºC (Best Accuracy in 100ºF Increments)**	

Note: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	TTM Calibration Certificate (5 Point NIST)

Note: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST' at the end of any TTM part number.

RH OUTSIDE AIR

Relative Humidity, Outside Air

The ACI Relative Humidity Outside Air utilizes a thermoset polymer capacitive sensing element with factory applied hydrophobic filter to deliver a proportional analog current or voltage output signal. The hydrophobic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three point NIST Calibration Certificates are available.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

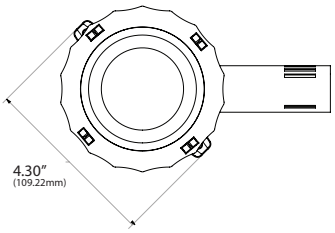
The ACI RH Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

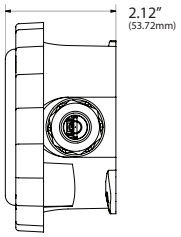
PRODUCT SPECIFICATIONS

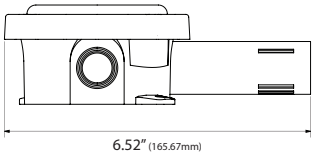
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire**: 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models:** 3.00" (76.20 mm) x 1.125" (28.75 mm) **"-4X" Models:** 4.73" (120.14 mm) x 0.845" (21.46mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-O Series:** 0.59 lbs. (0.27 kg) | **A/RHx-O-4X Series:** 0.45 lbs. (0.204 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

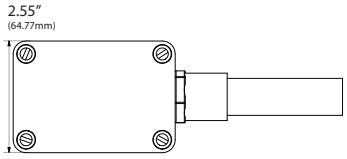
Euro Enclosure [EH]

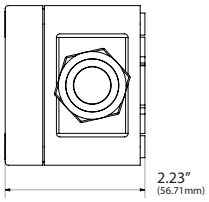


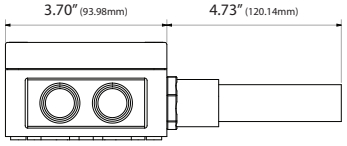




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/RH1-O -OR- 122535

Model #	Item #	Description
A/RH1-O	122535	RH Outside Air, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH1-O-NIST	148185	RH Outside Air, +/- 1%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure, NIST Certificate
A/RH2-O	122701	RH Outside Air, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH2-O-4X	122704	RH Outside Air, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure
A/RH2-O-NIST	148187	RH Outside Air, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure, NIST Certificate
A/RH2-O-4X-NIST	148189	RH Outside Air, +/- 2%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure, NIST Certificate
A/RH3-O	122936	RH Outside Air, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure
A/RH3-O-4X	122940	RH Outside Air, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure
A/RH3-O-NIST	148188	RH Outside Air, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure , NIST Certificate
A/RH3-O-4X-NIST	148190	RH Outside Air, +/- 3%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NEMA 4X Enclosure, NIST Certificate
A/RH5-O	123095	RH Outside Air, +/- 5%, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), Euro Enclosure

CUSTOM ORDERING

Model # Example: A/ (A.) RH1 (B.) O (C.) (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NEMA 4X Enclosure)	
D. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
E. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

RH OUTSIDE AIR

Relative Humidity, Outside Air, Thermistors

The ACI Relative Humidity with Thermistor Outside Air Series utilizes a thermoset polymer capacitive sensing element with factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three point NIST Calibration Certificates are available.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

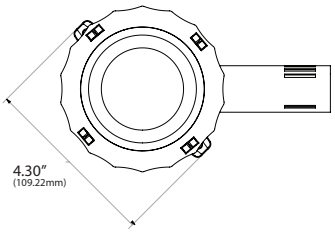
The ACI RH Thermistor Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

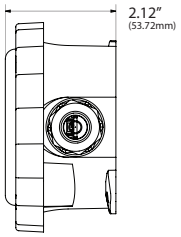
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors):	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow) — **RHx-10KS Series:** 10KΩ (White/Blue) **RHx-3K Series:** 3KΩ (White/Brown) — **RHx-10K-E1 Series:** 10KΩ (Gray/Orange) **RHx-AN Series (Type III):** 10KΩ (White/White) — **RHx-20K Series:** 20KΩ (Brown/Blue) **RHx-AN-BC Series:** 5.238KΩ (White/Yellow) — **RHx-50K Series:** 50KΩ nominal (Brown/Yellow) **RHx-CP Series (Type II):** 10KΩ (White/Green) — **RHx-100KS Series:** 100KΩ (Black/Yellow) **RHx-CSI Series:** 10KΩ (Green/Yellow)
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C) 1.8K Series: +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C
Thermistor Sensor Response Time (T63):	10 Seconds nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models:** 3.00" (76.20 mm) x 1.125" (28.75 mm) **"-4X" Models:** 4.73" (120.14 mm) x 0.845" (21.46mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-xx-O Series:** 0.59 lbs. (0.27 kg) | **A/RHx-xx-O-4X Series:** 0.45 lbs. (0.204 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

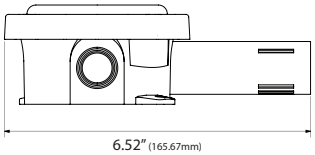
Euro Enclosure [EH]



Front View

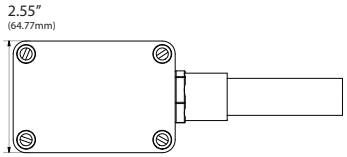


Right View

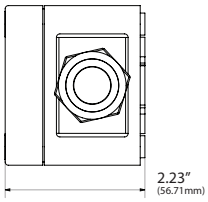


Top View

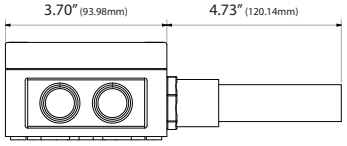
NEMA 4X Enclosure [4X]



Front View



Right View



Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | CP (C.) | O (D.) | (E.) | NIST (F.)

MODEL

A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **10K-E1** | **20K** | **50K** | **100KS**	
D. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NEMA 4X Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

RH OUTSIDE AIR

Relative Humidity, Outside Air, Platinum RTDs

The ACI Relative Humidity with Platinum RTD Outside Air Series utilizes a thermoset polymer capacitive sensing element with factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three point NIST Calibration Certificates are available.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

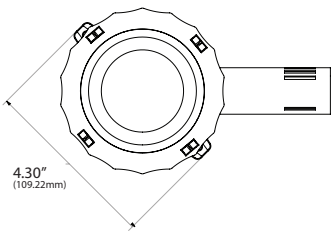
The ACI RH Platinum RTDs Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

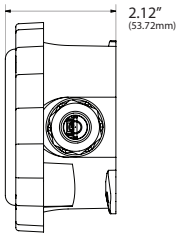
PRODUCT SPECIFICATIONS

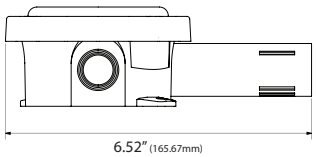
RH Supply Voltage	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC
(Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
	1% NIST Test Points: 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Platinum RTD (PTC) | Number Wires (Wire Colors):	**RHx-100-2W Series:** (Brown/Brown) & **RHx-1K-2W Series:** (Black/Black)
	RHx-100-3W Series: (Brown/Brown/Black) & **RHx-1K-3W Series:** (Black/Black/White)
Platinum RTD Output @ 32°F (0°C):	**RHx-100-xW-O Series:** 100 Ohms nominal | **RHx-1K-xW-O Series:** 1000 Ohms nominal
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)
Temperature Coefficient:	3850 ppm/ °C
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability,	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C)
Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models:** 3.00" (76.20 mm) x 1.12" (28.75 mm)
	"-4X" Models: 4.73" (120.14 mm) x 0.84" (21.46 mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-xx-xW-O Series:** 0.59 lbs. (0.27 kg) | **A/RHx-xx-xW-O-4X Series:** 0.45 lbs. (0.204 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

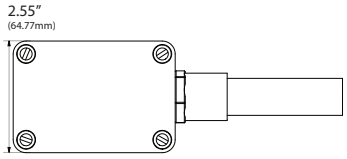
Euro Enclosure [EH]

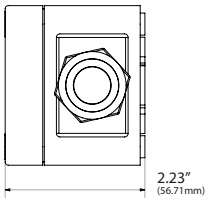


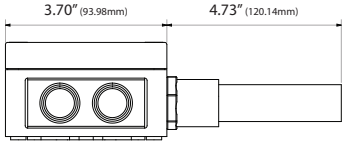




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) - RH2 (B.) - 100 (C.) - 2W (D.) - O (E.) - (F.) - NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
D. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
E. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NIST 4X Enclosure)	
F. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
G. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

RH OUTSIDE AIR

Relative Humidity, Outside Air, Nickel RTD

The ACI Relative Humidity with Nickel RTD Outside Air Series utilizes a thermoset polymer capacitive sensing element with factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three point NIST Calibration Certificates are available.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

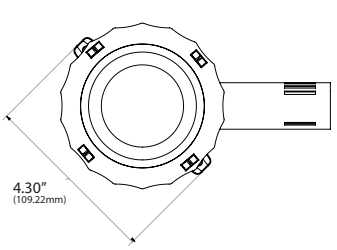
The ACI RH Nickel RTD Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

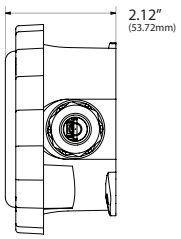
PRODUCT SPECIFICATIONS

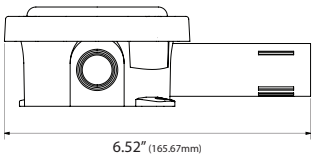
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nickel RTD (PTC) Output @ 70°F (21.1°C) (Wire Colors):	**RHx-1K-NI-O Series:** 1000 Ohms nominal (1K-Nickel RTD) | Red/Red
Nickel RTD Sensor Accuracy:	32°F (0°C): +/-0.72°F (0.4°F); 70°F (21.1°C): +/-0.34°F (0.17°C); 130°F (54.4°C): +/-1.00°F (0.56°C)
Nickel Din Standard:	Din 43760
Temperature Coefficient (0-100°C):	6370 ppm/°C
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C) **"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models:** 3.00" (76.20 mm) x 1.125" (28.75 mm) **"-4X" Models:** 4.73" (120.14 mm) x 0.845" (21.46mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-1K-NI-O Series:** 0.59 lbs. (0.27 kg) | **A/RHx-1K-NI-O-4X Series:** 0.45 lbs. (0.204 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

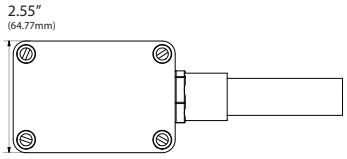
Euro Enclosure [EH]

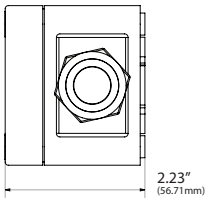


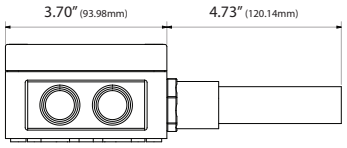




NEMA 4X Enclosure [4X]







Front View | **Right View** | **Top View**

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 1K-NI (C.) | O (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**1K-NI** ⟶	**1K-NI**
D. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NEMA 4X Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

RH OUTSIDE AIR

Relative Humidity, Outside Air, Balco RTD

The ACI Relative Humidity with Balco RTD Outside Air Series utilizes a thermoset polymer capacitive sensing element with factory applied hygroscopic filter to deliver a proportional analog current or voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration also can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. Outside Air configurations feature a weatherproof Euro style enclosure with gasketed cover and conformally coated circuit boards for added moisture and chemical resistance. Three point NIST Calibration Certificates are available.

Applications: Monitor Outdoor Air Humidity, Economizer Control, Psychrometric calculations such as Enthalpy and Dew point, Wash down Applications

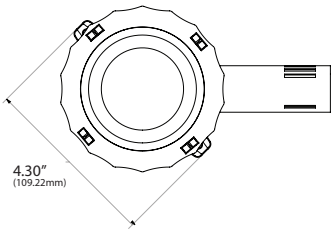
The ACI RH Balco RTD Outside Air is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

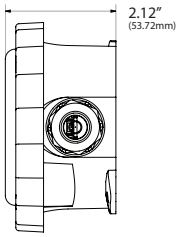
RH Supply Voltage	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC
(Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
Humidity Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
Humidity Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
HumidityTerminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
Humidity NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
	1% NIST Test Points: 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Balco RTD Output @ 70°F (21.1°C) (Wire Colors):	**RHx-BALCO-O Series:** 1000 Ohms nominal (Balco RTD) | Orange/Yellow
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%
Balco RTD Temperature Coefficient (0-100°C):	4618 ppm/°C
Balco RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Temperature Sensor Response Time (T63):	10 Seconds nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability,	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C)
Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	**"-EH" Models:** 3.00" (76.20 mm) x 1.125" (28.75 mm)
	"-4X" Models: 4.73" (120.14 mm) x 0.845" (21.46mm)
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-BALCO-O Series:** 0.59 lbs. (0.27 kg) | **A/RHx-BALCO-O-4X Series:** 0.45 lbs. (0.204 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

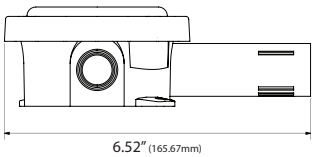
Euro Enclosure [EH]



Front View

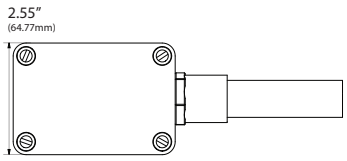


Right View

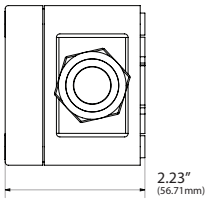


Top View

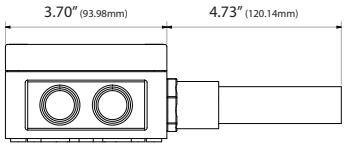
NEMA 4X Enclosure [4X]



Front View



Right View



Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | BALCO (C.) | O (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**BALCO** →	**BALCO**
D. Configuration *Select One (1)*	**O** = Outside Air (Euro Enclosure) | **O-4X** = Outside Air (NEMA 4X Enclosure)	
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

RH TT OUTSIDE AIR

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Outside Air Series utilizes a thermoset polymer capacitive sensing element with a factory applied hydrophobic filter to deliver a proportional analog current or voltage output signal. The hydrophobic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Outside Air transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and wired properly. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. The temperature transmitter can be used as either a two-wire 4 to 20 mA proportional output or as a 3-Wire voltage output transmitter that includes a 100 Ohm or 1K Ohm Class A, Platinum RTD. All RH-TT Series Outside Air transmitters are mounted in a IP66/NEMA 4X enclosure with a 4.5" polycarbonate tube to protect the sensing elements from dust, rain, and snow. These units should be installed under an eave or protective shield on the north side of the building out of direct sunlight. The RH transmitter is conformally coated for added protection from moisture and other contaminants. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Monitoring Outdoor Temperature and Humidity, Humidification, Dehumidification, Roof Top Units, Air Handlers, Enthalpy and Dew Point Control Calculations, Process Control, Wash Down, Warehouse and NIST Certified Applications

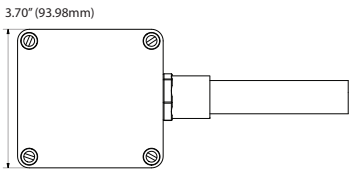
The ACI RH TT Outside AIr is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

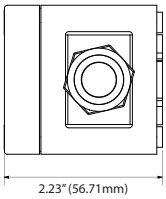
RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 1% over 20% RH Range between 20 to 90% | +/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63)	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
TT Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) **Voltage Output:** 1-5 VDC or 2-10 VDC (3-Wires)
TT Calibrated Accuracy | Linearity [1]:	Temperature Spans < 500°F (260°C): +/- 0.2% | Temperature Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F | Temperature Spans > 100°F (38°C): +/- 0.02%/°F
TTM100/TTM1K Certification Points:	**3 Point NIST:** 20%, 50%, 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Operating TT Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating TT RH Range:	0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100/TTM100 Series:** Brown/Brown | **A/TT1K/TTM1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100/TTM100 Series:** 100 Ohms Nominal | **A/TT1K/TTM1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions | Tube Material	4.73" (120.14 mm) x 0.845" (21.46mm) | ASA/PC FA-30
Product Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-TT-O-4X Series:** 0.56 lbs (0.254 kg)
Agency Approvals:	RoHS2, WEEE

Note [1]: A Transmitter is calibrated at 71ºF (22ºC) Nominal | **Note [2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

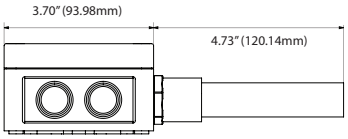
DIMENSIONAL DRAWING



Front View



Right View



Top View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | TT100 (C.) | O-4X (D.) | 1 (E.) | 20-120°F (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH1** = +/-1% (Specify a 20% Range between 20 to 90% RH) **RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**TT100** = 100 Ohms | **TTM100** = Matched 100 Ohms (3 Point RH & Temperature NIST) **TT1K** = 1K Ohms | **TTM1K** = Matched 1K Ohms (3 Point RH & Temperature NIST)	
D. Configuration *No Selection Required*	**O-4X** = Outside Air (NEMA 4X Enclosure) →	**O-4X**
E. Transmitter Output *Select One (1)*	**4** = 4 to 20 mA | **1** = 1 to 5 VDC* | **2** = 2 to 10 VDC*	
F. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note*: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

ACCESSORIES ORDERING [NIST]

Model # Example: NIST RH CERT

Model #	Description
NIST RH TTM CERT - 5PT.	TTM Temperature and RH Calibration Certificate (5 Point NIST)

Note: When ordering NIST certificates, please add an additional line item under the corresponding A/RHx-TTMxx-O Model Number

RH WALL PLATE

Relative Humidity, Wall Plate

The ACI Relative Humidity Stainless Plate utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional analog voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Stainless Plate transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and properly installed. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. All RH Stainless Plate transmitters come standard with an attractive brushed finish stainless steel, single gang wall mounting plate and are designed to mount over a single gang junction box in the wall. The PCBs are conformally coated for added protection from moisture and other contaminants. A temporary plastic sensor cover is included to provide protection for the RH sensor from chemicals used in wash down applications. Three point NIST Calibration Certificates are available.

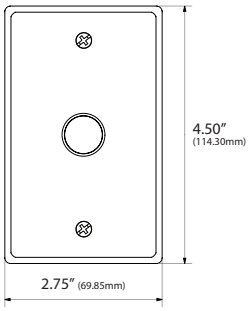
Applications: Pharmaceutical, Hospitals, Operating Rooms, Vivariums, Clean Rooms, Process Control, Wash Down Environments & Stability Chambers

The ACI RH Wall Plate is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

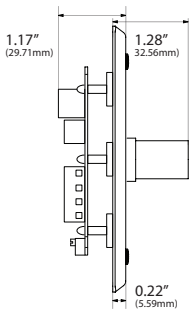
PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	8 mA maximum (0.32 VA)
RH Output Load Resistance:	4K Ohms Minimum
RH Output Signal:	**3-wire:** 0-5 or 0-10 VDC
RH Accuracy @ 77°F (25°C):	+/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
Wall Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)
Foam Material | Foam Thickness:	Cross-linked LPDE (White) | 0.25" (6.35 mm)
Foam Flammability Rating:	FMVSS-302
Sintered Filter Material:	304 Series Stainless Steel
Product Dimensions (L x W x D):	4.51" (114.56 mm) x 2.76" (70.10 mm) x 1.25" (31.75 mm)
Product Weight:	0.235 lbs. (0.107 kg)
Agency Approvals:	CE, RoHS2, WEEE

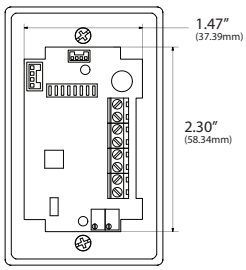
DIMENSIONAL DRAWING



Front View



Right View



Back View

STANDARD ORDERING

Model # Example: A/RH2-SP-05 -OR- 138922

Model #	Item #	Description
A/RH2-SP-05	138922	RH Stainless Plate, +/- 2%, 0-5 VDC Output (default), 0-10 VDC (selectable)
A/RH2-SP-05-NIST	148201	RH Stainless Plate, +/- 2%, 0-5 VDC Output (default), 0-10 VDC (selectable), NIST Certificate
A/RH2-SP-010	137895	RH Stainless Plate, +/- 2%, 0-10 VDC Output (default), 0-5 VDC (selectable)
A/RH2-SP-010-NIST	148202	RH Stainless Plate, +/- 2%, 0-10 VDC Output (default), 0-5 VDC (selectable), NIST Certificate
A/RH3-SP-05	132739	RH Stainless Plate, +/- 3%, 0-5 VDC Output (default), 0-10 VDC (selectable)
A/RH3-SP-05-NIST	148203	RH Stainless Plate, +/- 3%, 0-5 VDC Output (default), 0-10 VDC (selectable), NIST Certificate
A/RH3-SP-010	138166	RH Stainless Plate, +/- 3%, 0-10 VDC Output (default), 0-5 VDC (selectable)
A/RH3-SP-010-NIST	148204	RH Stainless Plate, +/- 3%, 0-10 VDC Output (default), 0-5 VDC (selectable), NIST Certificate

CUSTOM ORDERING

Model # Example: A/ (A.) RH2 (B.) SP (C.) 010 (D.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Configuration *No Selection Required*	**SP** = Stainless Plate →	**SP**
D. Output Signal *Select One (1)*	**010** = 0 to 10 VDC | **05** = 0 to 5 VDC	

Note: Outputs are field selectable between 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1″ VINYL PULL CAP	143462	1″ EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH WALL PLATE

Relative Humidity, Wall Plate, Thermistor

The ACI Relative Humidity with Thermistor Wall Plate Series utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional analog voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Stainless Plate transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and properly installed. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. All RH Stainless Plate transmitters come standard with an attractive brushed finish stainless steel, single gang wall mounting plate and are designed to mount over a single gang junction box in the wall. The PCBs are conformally coated for added protection from moisture and other contaminants. A temporary plastic sensor cover is included to provide protection for the RH sensor from chemicals used in wash down applications. Three point NIST Calibration Certificates are available.

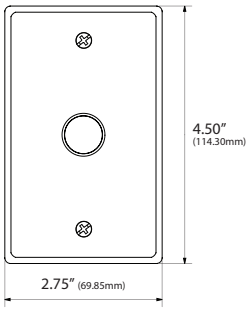
Applications: Pharmaceutical, Hospitals, Operating Rooms, Vivariums, Clean Rooms, Process Control, Wash Down Environments & Stability Chambers

The ACI RH Thermistor Wall Plate is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

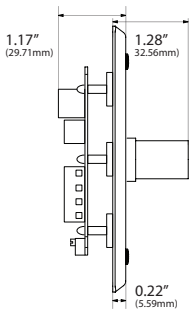
PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC	
RH Supply Current (VA):	8 mA maximum (0.32 VA)	
RH Output Load Resistance:	4K Ohms Minimum	
RH Output Signal:	**3-wire:** 0-5 or 0-10 VDC	
RH Accuracy @ 77°F (25°C):	+/- 2%, 3%, or 5% from 10 to 95%	
RH Measurement Range:	0-100%	
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)	
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)	
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)	
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH	
RH Response Time (T63):	20 Seconds Typical	
RH Sensor Type:	Capacitive with Hydrophobic Filter	
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)	
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)	
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)	
Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors), Non-Linear NTC (Negative Temperature Coefficient):	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow) **RHx-3K Series:** 3KΩ (White/Brown) **RHx-AN Series (Type III):** 10KΩ (White/White) **RHx-AN-BC Series:** 5.238KΩ (White/Yellow) **RHx-CP Series (Type II):** 10KΩ (White/Green) **RHx-CSI Series:** 10KΩ (Green/Yellow)	**RHx-10KS Series:** 10KΩ (White/Blue) **RHx-10K-E1 Series:** 10KΩ (Gray/Orange) **RHx-20K Series:** 20KΩ (Brown/Blue) **RHx-50K Series:** 50KΩ (Brown/Yellow) **RHx-100KS Series:** 100KΩ (Black/Yellow)
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C) **1.8K Series:** +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)	
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
Thermistor Sensor Response Time (T63):	10 Seconds nominal	
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)	
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E	
Wall Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)	
Foam Material | Foam Thickness:	Cross-linked LPDE (White) | 0.25" (6.35 mm)	
Foam Flammability Rating:	FMVSS-302	
Sintered Filter Material:	304 Series Stainless Steel	
Product Dimensions (L x W x D):	4.51" (114.56 mm) x 2.76" (70.10 mm) x 1.25" (31.75 mm)	
Product Weight:	0.235 lbs. (0.107 kg)	
Agency Approvals:	CE, RoHS2, WEEE	

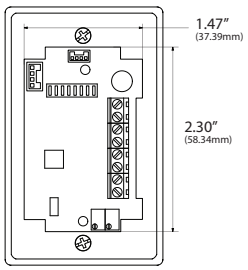
DIMENSIONAL DRAWING



Front View



Right View



Back View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 1.8K (C.) | SP (D.) | 010 (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **10K-E1** | **20K** | **50K** | **100KS**	
D. Configuration *No Selection Required*	**SP** Stainless Wall Plate ⟶	**SP**
E. Output Signal *Select One (1)*	**010** = 0 to 10 VDC | **05** = 0 to 5 VDC	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1″ VINYL PULL CAP	143462	1″ EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH WALL PLATE

Relative Humidity, Wall Plate, Platinum RTD

The ACI Relative Humidity with Platinum RTD Wall Plate Series utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional analog voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Stainless Plate transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and properly installed. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. All RH Stainless Plate transmitters come standard with an attractive brushed finish stainless steel, single gang wall mounting plate and are designed to mount over a single gang junction box in the wall. The PCBs are conformally coated for added protection from moisture and other contaminants. A temporary plastic sensor cover is included to provide protection for the RH sensor from chemicals used in wash down applications. Three point NIST Calibration Certificates are available.

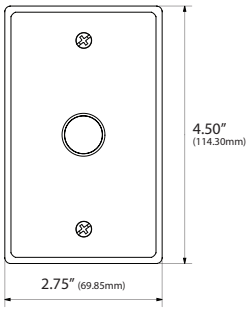
Applications: Pharmaceutical, Hospitals, Operating Rooms, Vivariums, Clean Rooms, Process Control, Wash Down Environments & Stability Chambers

The ACI RH Platinum RTD Wall Plate is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

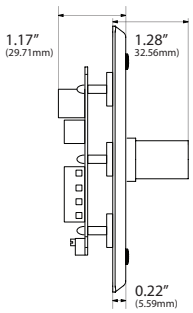
PRODUCT SPECIFICATIONS

RH Supply Voltage	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC
(Reverse Polarity Protected):	**0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	8 mA maximum (0.32 VA)
RH Output Load Resistance:	4K Ohms Minimum
RH Output Signal:	**3-wire:** 0-5 or 0-10 VDC
RH Accuracy @ 77°F (25°C):	+/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
Platinum RTD (PTC) | Number Wires	**RHx-100-2W Series:** (Brown/Brown) & **RHx-2W-1K Series:** (Black/Black)
(Wire Colors):	**RHx-100-3W Series:** (Brown/Brown/Black) & **RHx-3W-1K Series:** (Black/Black/White)
Platinum RTD Output @ 32°F (0°C):	**RHx-100-xW-SP Series:** 100 Ohms nominal | **RHx-1K-xW-SP Series:** 1000 Ohms nominal
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)
Temperature Coefficient:	3850 ppm/ °C
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Wall Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)
Foam Material | Foam Thickness:	Cross-linked LPDE (White) | 0.25" (6.35 mm)
Foam Flammability Rating:	FMVSS-302
Sintered Filter Material:	304 Series Stainless Steel
Product Dimensions (L x W x D):	4.51" (114.56 mm) x 2.76" (70.10 mm) x 1.25" (31.75 mm)
Product Weight:	0.235 lbs. (0.107 kg)
Agency Approvals:	CE, RoHS2, WEEE

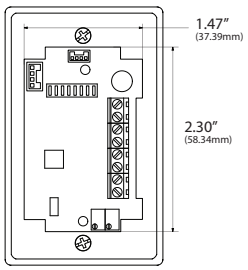
DIMENSIONAL DRAWING



Front View



Right View



Back View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 100 (C.) | 2W (D.) | SP (E.) | 05 (F.) | NIST (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
D. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
E. Configuration *No Selection Required*	**SP** = Stainless Wall Plate ⟶	**SP**
F. Output Signal *Select One (1)*	**010** = 0 to 10 VDC | **05** = 0 to 5 VDC	
G. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1″ VINYL PULL CAP	143462	1″ EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH WALL PLATE

Relative Humidity, Wall Plate, Nickel RTD

The ACI Relative Humidity with Nickel RTD Wall Plate Series utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional analog voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Stainless Plate transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and properly installed. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. All RH Stainless Plate transmitters come standard with an attractive brushed finish stainless steel, single gang wall mounting plate and are designed to mount over a single gang junction box in the wall. The PCBs are conformally coated for added protection from moisture and other contaminants. A temporary plastic sensor cover is included to provide protection for the RH sensor from chemicals used in wash down applications. Three point NIST Calibration Certificates are available.

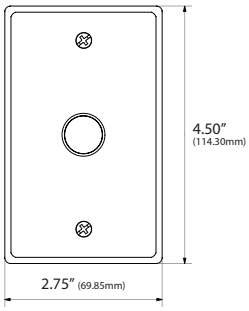
Applications: Pharmaceutical, Hospitals, Operating Rooms, Vivariums, Clean Rooms, Process Control, Wash Down Environments & Stability Chambers

The ACI RH Nickel RTD Wall Plate is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

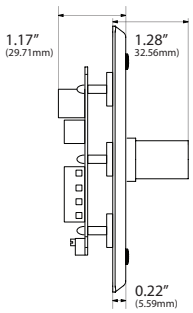
PRODUCT SPECIFICATIONS

RH Supply Voltage	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC
(Reverse Polarity Protected):	**0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	8 mA maximum (0.32 VA)
RH Output Load Resistance:	4K Ohms Minimum
RH Output Signal:	**3-wire:** 0-5 or 0-10 VDC
RH Accuracy @ 77°F (25°C):	+/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
Nickel RTD (PTC) Output @ 70°F (21.1°C)	**RHx-1K-NI-SP Series:** 1000 Ohms nominal (1K-Nickel RTD) | Red/Red
(Wire Colors):	
Nickel RTD Sensor Accuracy:	**32°F (0°C):** +/-0.72°F (0.4°F) | **70°F (21.1°C):** +/-0.34°F (0.17°C) | **130°F (54.4°C):** +/-1.00°F (0.56°C)
Nickel Din Standard:	Din 43760
Temperature Coefficient (0-100°C):	6370 ppm/°C
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Wall Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)
Foam Material | Foam Thickness:	Cross-linked LPDE (White) | 0.25" (6.35 mm)
Foam Flammability Rating:	FMVSS-302
Sintered Filter Material:	304 Series Stainless Steel
Product Dimensions (L x W x D):	4.51" (114.56 mm) x 2.76" (70.10 mm) x 1.25" (31.75 mm)
Product Weight:	0.235 lbs. (0.107 kg)
Agency Approvals:	CE, RoHS2, WEEE

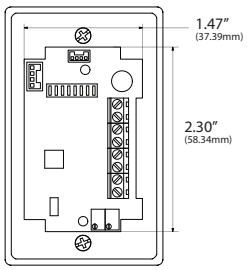
DIMENSIONAL DRAWING



Front View



Right View



Back View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 1K-NI (C.) | SP (D.) | 05 (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**1K-NI** →	**1K-NI**
D. Configuration *No Selection Required*	**SP** Stainless Wall Plate →	**SP**
E. Output Signal *Select One (1)*	**010** = 0 to 10 VDC | **05** = 0 to 5 VDC	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1″ VINYL PULL CAP	143462	1″ EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH WALL PLATE

Relative Humidity, Wall Plate, Balco RTD

The ACI Relative Humidity with Balco RTD Wall Plate Series utilizes a thermoset polymer capacitive sensing element with a factory applied hygroscopic filter to deliver a proportional voltage output signal. The hygroscopic filter provides added resistance to moisture, dust, and other chemicals for greater long term reliability. The RH Stainless Plate transmitter features integral DIP switches for field selection of the proper output signal and supply voltage to meet your applications requirements. Each unit also contains 0%, 50%, and 100% test options to verify that the transmitter is both working and properly installed. Field calibration can be performed by using the increment and decrement calibration DIP switches without the need to replace the sensing element. These enhancements provide increased flexibility and outstanding long-term reliability. All RH Stainless Plate transmitters come standard with an attractive brushed finish stainless steel, single gang wall mounting plate and are designed to mount over a single gang junction box in the wall. The PCBs are conformally coated for added protection from moisture and other contaminants. A temporary plastic sensor cover is included to provide protection for the RH sensor from chemicals used in wash down applications. Three point NIST Calibration Certificates are available.

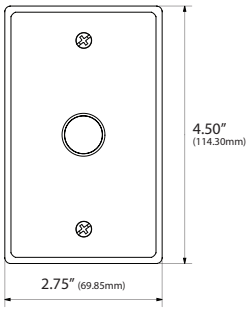
Applications: Pharmaceutical, Hospitals, Operating Rooms, Vivariums, Clean Rooms, Process Control, Wash Down Environments & Stability Chambers

The ACI RH Balco RTD Wall Plate is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

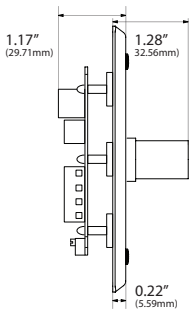
PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	8 mA maximum (0.32 VA)
RH Output Load Resistance:	4K Ohms Minimum
RH Output Signal:	**3-wire:** 0-5 or 0-10 VDC
RH Accuracy @ 77°F (25°C):	+/- 2%, 3%, or 5% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63)	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
Balco RTD Output @ 70°F (21.1°C) (Wire Colors):	1000 Ohms nominal (Balco RTD) | Orange/Yellow
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%
Balco RTD Temperature Coefficient (0-100°C):	4618 ppm/°C
Balco RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Temperature Sensor Response Time (T63):	10 Seconds nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Wall Plate Material:	430 Stainless Steel (Brushed Stainless Steel Finish)
Foam Material | Foam Thickness:	Cross-linked LPDE (White) | 0.25" (6.35 mm)
Foam Flammability Rating:	FMVSS-302
Sintered Filter Material:	304 Series Stainless Steel
Product Dimensions (L x W x D):	4.51" (114.56 mm) x 2.76" (70.10 mm) x 1.25" (31.75 mm)
Product Weight:	0.235 lbs. (0.107 kg)
Agency Approvals:	CE, RoHS2, WEEE

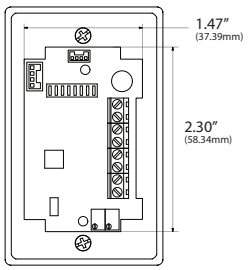
DIMENSIONAL DRAWING



Front View



Right View



Back View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | BALCO (C.) | SP (D.) | 05 (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3% | **RH5** = +/-5%	
C. Temperature Sensor *No Selection Required*	**BALCO** →	**BALCO**
D. Configuration *No Selection Required*	**SP** Stainless Wall Plate →	**SP**
E. Output Signal *Select One (1)*	**010** = 0 to 10 VDC | **05** = 0 to 5 VDC	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8″ Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1″ VINYL PULL CAP	143462	1″ EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH REMOTE PROBES

Relative Humidity (RH), Remote Probe

The ACI Relative Humidity Remote Probe utilizes a thermoset polymer capacitive sensing element with a hydrophobic filter to deliver a proportional relative humidity analog output The remote probe wiring harness comes in lengths of 3, 6, 10, or 20 feet to provide mounting flexibility for your remote sensing applications. Single point field calibration can be done on the humidity transmitter, by using the increment and decrement dip switches. Each toggle of the increment and decrement switches will allow for a ±0.5% RH increase or decrease. Calibration of the RH transmitters electronics can also be done using both the Zero and Span potentiometers depending on whether it is a current or voltage output device. All models feature conformally coated circuit boards to improve the reliability of the product in both high moisture and mildly corrosive atmospheres. A vinyl cap is provided to place over the sintered filter in wash down applications to protect the sensing element from getting moisture sprayed directly on the sensor. Three point NIST Calibration Certificates are available.

Applications: Clean Rooms, Process Control, Environmental Chambers, Stability Chambers, Pharmaceutical Labs, Remote Sensing Applications

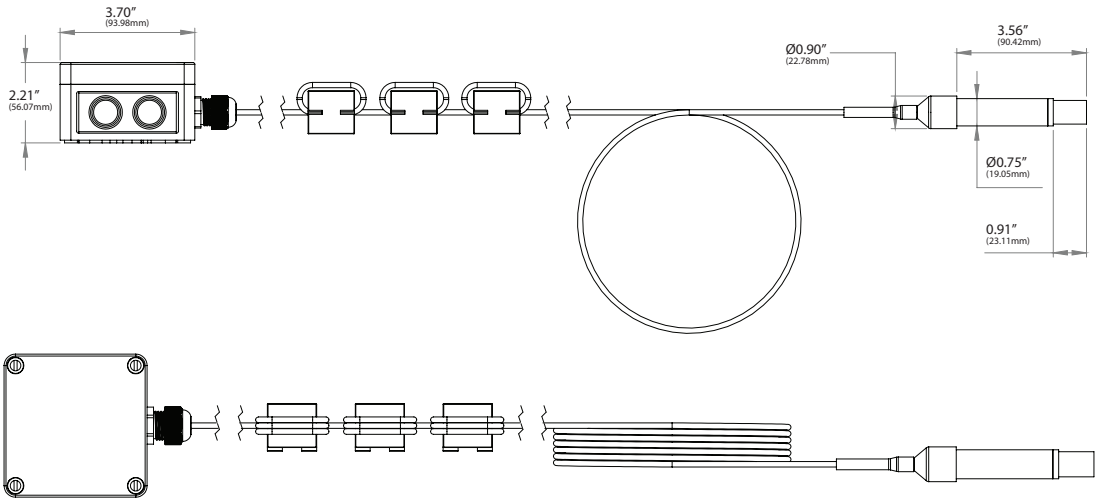
The ACI RH Remote Probes are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

Humidity Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2%, or +/- 3% from 10 to 95% RH
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-13 to 140°F (-25 to 60°C)
Storage Temperature Range:	-13 to 149°F (-25 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
Sensor Lead Length:	3.0' (0.914 m), 6.0' (1.829 m), 10.0' (3.048 m), 20.0' (6.096 m)
Cable Operating Temperature Range:	32 to 167°F (0 to 75°C)
Minimum Cable Bend Radius:	1.92" (48.77 mm) or 10x the Cable Diameter
Cable Ratings | Cable Jacket Material:	UL(CMP, CL3P, FPLP); CSA (CMP, FT6), Plenum Rated | Polyvinyl Chloride (PVC)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Ratings):	**"-EH" Enclosure:** ABS Plastic; UL94-V0; -40 to 140°F (-40 to 60°C)
Sensing Tube Material	304 Series Stainless Steel
Filter Material:	304 Series Stainless Steel
Enclosure Dimensions:	**"-EH" Enclosure (Diameter x Depth):** 4.30" (19.05 mm) x 2.12" (53.85 mm)
Probe Dimensions (Length x Diameter):	5.12" (130.10 mm) x 0.750" (19.05 mm)
Product Weight:	**A/RHx-RP2-EH Series:** 1.20 lbs. (0.545 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING

Remote Probe [4X]



Standard View

STANDARD ORDERING

Model # Example: A/RH3-RP2-20'-EH -OR- 137064

Model #	Item #	Description
A/RH3-RP2-3'-EH	144798	RH Remote Probe, 3 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-RP2-3'-EH-NIST	148196	RH Remote Probe, 3 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-RP2-6'-EH	126625	RH Remote Probe, 6 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-RP2-6'-EH-NIST	148197	RH Remote Probe, 6 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-RP2-10'-EH	125968	RH Remote Probe, 10 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-RP2-10'-EH-NIST	148198	RH Remote Probe, 10 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH2-RP2-20'-EH	125969	RH Remote Probe, 20 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH2-RP2-20'-EH-NIST	148199	RH Remote Probe, 20 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate
A/RH3-RP2-20'-EH	137064	RH Remote Probe, 20 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable)
A/RH3-RP2-20'-EH-NIST	148200	RH Remote Probe, 20 ft Cable, Euro Enclosure, 4-20 mA Output (default), 0-5 VDC or 0-10 VDC (selectable), NIST Certificate

CUSTOM ORDERING

Model # Example: A/ (A.) – RH1 (B.) – RP2-6' (C.) – EH (D.) – (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3%	
C. Configuration *Select One (1)*	**RP2-3'** = 3' Cable | **RP2-6'** = 6' Cable | **RP2-10'** = 10' Cable | **RP2-20'** = 20' Cable	
D. Enclosure *No Selection Required*	**EH** = Euro Enclosure	**EH**
E. Output Signal* *Select One (1)*	---- = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1"VINYL PULL CAP	143462	1" EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

RH TT REMOTE PROBE

Relative Humidity (RH), Temperature Transmitter (TT)

The ACI Relative Humidity with Temperature Transmitter Series Remote Probe utilizes a thermoset polymer capacitive sensing element with a hydrophobic filter to deliver a proportional relative humidity analog output and can also be configured with any resistive temperature sensor such as a thermistor or RTD. The remote probe wiring harness comes in lengths of 3, 6, 10, or 20 feet to provide mounting flexibility for your remote sensing applications. Single point field calibration can be done on the humidity transmitter, by using the increment and decrement dip switches. Each toggle of the increment and decrement switches will allow for a ±0.5% RH increase or decrease. Calibration of the RH transmitters electronics can also be done using both the Zero and Span potentiometers depending on whether it is a current or voltage output device. All models feature conformally coated circuit boards to improve the reliability of the product in both high moisture and mildly corrosive atmospheres. The standard enclosure is an IP66/NEMA 4X rated moisture and corrosion resistant enclosure. A vinyl cap is provided to place over the sintered filter in applications in wash down applications to protect the sensing element from getting moisture sprayed directly on the sensor. NIST Calibration Certificates (Temperature and RH) are included for all TTM RH part series.

Applications: Clean Rooms, Process Control, Environmental Chambers, Stability Chambers, Pharmaceutical Labs, Remote Sensing Applications

The ACI RH TT Remote Probes are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA: 250 Ohm Load:** 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2%, or +/- 3% from 10 to 95% RH
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections | Wire Size:	Screw Terminal Blocks (Polarity Sensitive) | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
TT Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum **250 Ohm Load:** +13.5 to 32 VDC | **500 Ohm Load:** +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) **Voltage Output:** 1-5 VDC or 2-10 VDC (3-Wires)
TT Calibrated Accuracy | Linearity [1]:	Temperature Spans < 500°F (260°C): +/- 0.2% | Temperature Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F | Temperature Spans > 100°F (38°C): +/- 0.02%/°F
TTM1K Certification Points:	**3 Point NIST:** 20%, 50%, 80% of span | **5 Point NIST:** 20%, 35%, 50%, 65%, 80% of span
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
Transmitter Operating Temperature/RH Range:	-40 to 185°F (-40 to 85°C) | 0 to 90% RH, non-condensing
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TTM1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TTM1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal

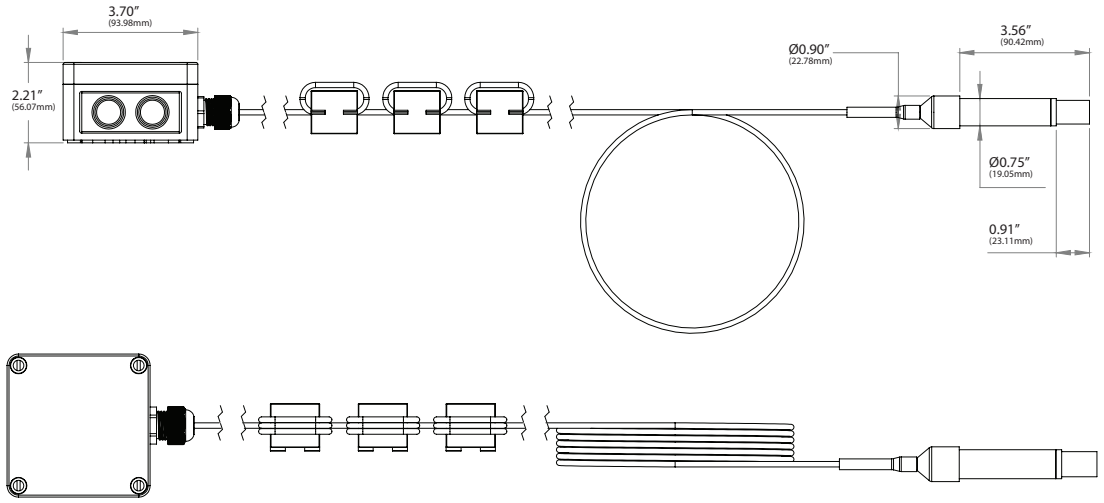
PRODUCT SPECIFICATIONS

Sensor Lead Length:	3.0′ (0.914 m), 6.0′ (1.829 m), 10.0′ (3.048 m), 20.0′ (6.096 m)
Cable Operating Temperature Range:	32 to 167°F (0 to 75°C)
Minimum Cable Bend Radius:	1.92″ (48.77 mm) or 10x the Cable Diameter
Cable Ratings | Cable Jacket Material:	UL(CMP, CL3P, FPLP); CSA (CMP, FT6), Plenum Rated | Polyvinyl Chloride (PVC)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Ratings):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66
Sensing Tube Material | Filter Material:	304 Series Stainless Steel | 304 Series Stainless Steel
Enclosure Dimensions (L x W x D):	See drawings on back of data sheet
Product Weight:	**A/RHx-TTM1K-RP2-4X Series:** 1.25 lbs (0.566 kg)
Agency Approvals:	RoHS2, WEEE

Note[1]: A Transmitter is calibrated at 71ºF (22ºC) Nominal **| Note[2]:** Temperature Drift is referenced to 71ºF nominal calibration temperature

DIMENSIONAL DRAWING

Remote Probe [4X]



Standard View

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | TTM1K (C.) | RP2-6′ (D.) | 4X (E.) | 1 (F.) | 50-150°F (G.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/**	**A/**
B. Accuracy *Select One (1)*	**RH2** = +/-2% | **RH3** = +/-3%	
C. Model Series *No Selection Required*	**TTM1K** = Matched 1K Ohms (3 Point RH & Temperature NIST)	**TTM1K**
D. Configuration *Select One (1)*	**RP2-3′ =** 3′ Cable **| RP2-6′ =** 6′ Cable **| RP2-10′ =** 10′ Cable **| RP2-20′ =** 20′ Cable	
E. Enclosure *No Selection Required*	**4X** = NEMA 4X Enclosure	**4X**
F. Transmitter Output *Select One (1)*	**4 =** 4 to 20 mA **| 1 =** 1 to 5 VDC* **| 2 =** 2 to 10 VDC*	
G. Calibrated Span	**Specify Span in ºF or ºC (Best Accuracy in 100ºF Increments)**	

Note: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

ACCESSORIES ORDERING

Model # Example: A/SINTERED FILTER -OR- 143433

Model #	Item #	Description
A/SINTERED FILTER	143433	3/8" Sintered Filter for RH Duct/Stainless Plate/Remote Probes
A/1"VINYL PULL CAP	143462	1" EZ Vinyl Filter Cover for RH Stainless Plates & Remote Probes

ACCESSORIES ORDERING (NIST)

Model #	Description
-5PTNIST	TTM Calibration Certificate (5 Point NIST)

Note: For TTM100 or TTM1K part numbers, the default NIST is 3 points | 5 points may be specified by using "-5PTNIST' at the end of any TTM part number.

SUN SHIELD

Weather Proof, Relative Humidity

The ACI Sun Shield is a reliable solution for protecting relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter and has field selectable outputs of 4-20mA, 0-5VDC and 0-10VDC. Three point NIST Calibration Certificates are available.

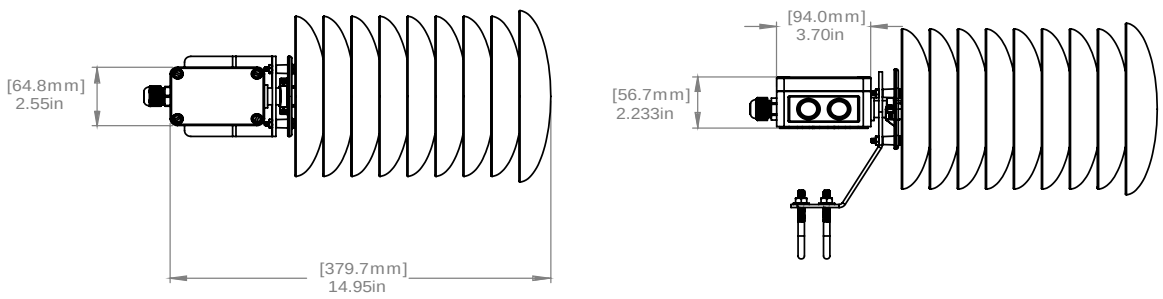
Applications: Outdoor Humidity

The ACI RH Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | O-SUN (C.) | (D.) | NIST (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Model Series *No Selection Required*	**RH2** = +/-2% ⟶	**RH2**
C. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) ⟶	**O-SUN**
D. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
E. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

SUN SHIELD

Weather Proof, Relative Humidity, Thermistor

The ACI Sun Shield is a reliable solution for protecting both the temperature and relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter, any of our standard thermistors, and has field selectable outputs of 4-20mA, 0-5VDC and 0-10VDC. Three point NIST Calibration Certificates are available.

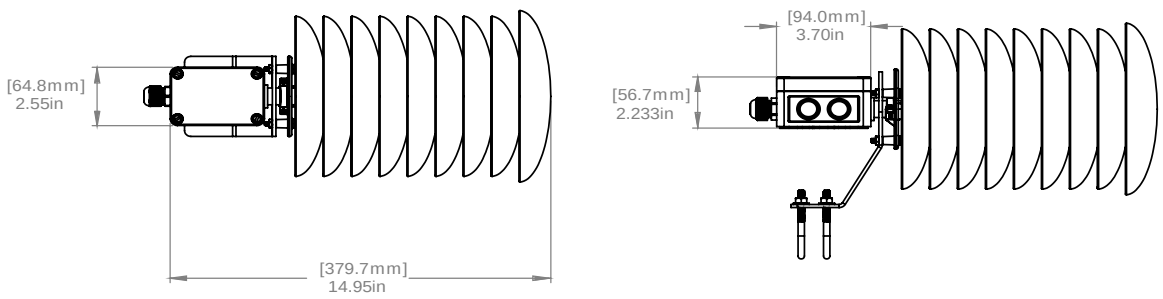
Applications: Outdoor Humidity and Temperature Monitoring

The ACI RH Thermistor Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC	
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)	
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum	
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)	
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%	
RH Measurement Range:	0-100%	
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)	
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)	
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)	
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH	
RH Response Time (T63):	20 Seconds Typical	
RH Sensor Type:	Capacitive with Hydrophobic Filter	
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)	
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)	
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)	
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)	
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)	
Nominal Thermistor Resistive Output @ 77°F (25°C) (Lead Wire Colors) Non-Linear NTC (Negative Temperature Coefficient):	**RHx-1.8K Series:** 1.8KΩ (Red/Yellow) **RHx-3K Series:** 3KΩ (White/Brown) **RHx-AN Series (Type III):** 10KΩ (White/White) **RHx-AN-BC Series:** 5.238KΩ (White/Yellow) **RHx-CP Series (Type II):** 10KΩ (White/Green)	**RHx-CSI Series:** 10KΩ (Green/Yellow) **RHx-10KS Series:** 10KΩ (White/Blue) **RHx-10K-E1 Series:** 10KΩ (Gray/Orange) **RHx-20K Series:** 20KΩ (Brown/Blue) **RHx-100KS Series:** 100KΩ (Black/Yellow)
Thermistor Accuracy 32-158°F (0-70°C):	+/- 0.36°F (0.2°C) except 10K-E1 Series: +/- 0.54°F (0.3°C) **1.8K Series:** +/- 0.9°F (0.5°C) @ 77°F (25°C) & +/- 1.8°F (1.0°C) from 32 to 158°F (0 to 70°C)	
Thermistor Power Dissipation Constant:	3 mW/°C except 1.8K Series: 1 mW/°C; 10K-E1 Series: 2 mW/°C	
Thermistor Sensor Response Time (T63):	10 Seconds nominal	
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)	
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E	
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	"-4X" Enclosure: Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)	
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)	
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)	
Product Weight:	4.16 lbs(1.89 kg)	
Agency Approvals:	CE, RoHS2, WEEE	

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | AN (C.) | O-SUN (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *No Selection Required*	**RH2** = +/-2% ⟶	**RH2**
C. Temperature Sensor *Select One (1)*	**1.8K** | **3K** | **10KS** | **10K-E1** | **AN** (Type III) | **AN-BC** | **CP** (Type II) | **CSI** | **20K** | **100KS**	
D. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) ⟶	**O-SUN**
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

SUN SHIELD

Weather Proof, Relative Humidity, Platinum RTD

The ACI Sun Shield is a reliable solution for protecting both the temperature and relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter, a 100 or 1K ohm standard Platinum RTD, and has field selectable outputs of 4-20mA, 0-5VDC and 0-10VDC. Three point NIST Calibration Certificates are available.

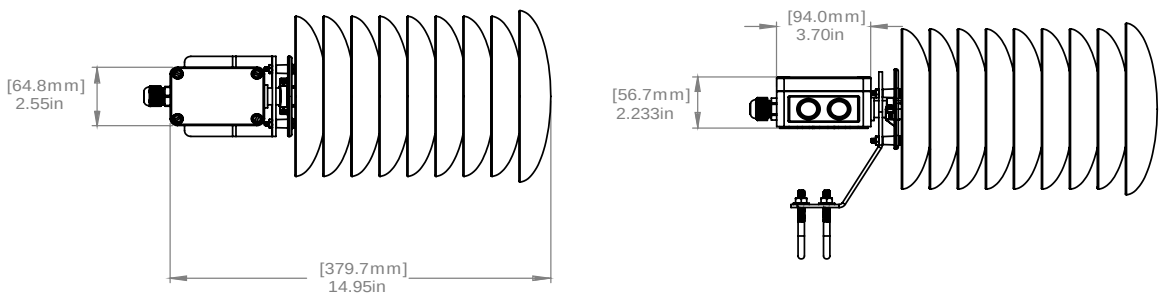
Applications: Outdoor Humidity and Temperature Monitoring

The ACI RH Platinum RTDs Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Platinum RTD (PTC) | Number Wires (Wire Colors):	**RHx-100-2W Series:** (Brown/Brown) & **RHx-2W-1K Series:** (Black/Black) **RHx-100-3W Series:** (Brown/Brown/Black) & **RHx-3W-1K Series:** (Black/Black/White)
Platinum RTD Output @ 32°F (0°C):	**RHx-100-xW-O-SUN Series:** 100 Ohms nominal **RHx-1K-xW-O-SUN Series:** 1000 Ohms nominal (x = # of wires)
Platinum RTD Tolerance Class:	+/-0.06% Class A | **Tolerance Formula:** +/-°C = (0.15°C + (0.002 * |t|)
Platinum RTD Din Standard:	DIN EN 60751 (IEC 751)
Temperature Coefficient:	3850 ppm/ °C
Platinum RTD Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ | RH2 | 1K | 2W | O-SUN | | NIST

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *No Selection Required*	**RH2** = +/-2% ⟶	**RH2**
C. Model Series *Select One (1)*	**100** = 100 Ohm Platinum RTD | **1K** = 1K Ohm Platinum RTD	
D. Number of Wires *Select One (1)*	**2W** = Two Wires | **3W** = Three Wires	
E. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) ⟶	**O-SUN**
F. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
G. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

SUN SHIELD

Weather Proof, Relative Humidity, Nickel RTD

The ACI Sun Shield is a reliable solution for protecting both the temperature and relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter, a standard Nickel RTD, and has field selectable outputs of 4-20mA, 0-5VDC and 0-10VDC. Three point NIST Calibration Certificates are available.

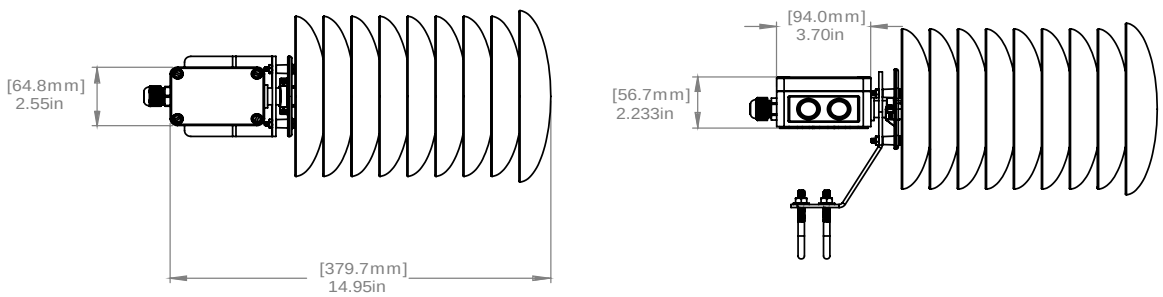
Applications: Outdoor Humidity and Temperature Monitoring

The ACI RH Nickel RTD Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%) **1% NIST Test Points:** 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Nickel RTD (PTC) Output @ 70°F (21.1°C) (Wire Colors):	1000 Ohms nominal (1K-Nickel RTD) | Red/Red
Nickel RTD Sensor Accuracy:	32°F (0°C): +/-0.72°F (0.4°F); 70°F (21.1°C): +/-0.34°F (0.17°C); 130°F (54.4°C): +/-1.00°F (0.56°C)
Nickel Din Standard	Din 43760
Temperature Coefficient (0-100°C):	6370 ppm/°C
Nickel RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | 1K-NI (C.) | O-SUN (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *No Selection Required*	**RH2** = +/-2% ⟶	**RH2**
C. Temperature Sensor *No Selection Required*	**1K-NI** ⟶	**1K-NI**
D. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) ⟶	**O-SUN**
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature& RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

SUN SHIELD

Weather Proof, Relative Humidity, Balco RTD

The ACI Sun Shield is a reliable solution for protecting both the temperature and relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter, a standard Balco RTD, and has field selectable outputs of 4-20mA, 0-5VDC and 0-10VDC. Three point NIST Calibration Certificates are available.

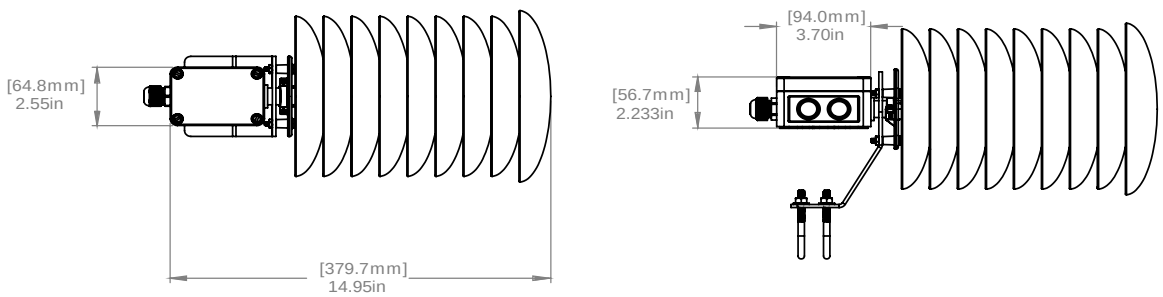
Applications: Outdoor Humidity and Temperature Monitoring

The ACI RH Balco RTD Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC
(Reverse Polarity Protected):	**0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC and 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RHTerminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
	1% NIST Test Points: 5 Points within selected 20% Range (ie. 30%-50% are 30, 35, 40, 45 & 50)
Balco RTD Output @ 70°F (21.1°C) (Wire Colors):	1000 Ohms nominal (Balco RTD) | Orange/Yellow
Balco RTD Sensor Accuracy 70°F (21.1°C):	+/- 1.0%
Balco RTD Temperature Coefficient (0-100°C):	4618 ppm/°C
Balco RTD Stability:	+/-0.05% after 1000 Hours @ 302°F (150°C)
Temperature Sensor Response Time (T63):	10 Seconds nominal
Lead Wire Length | Conductor Size:	14" (35.6 cm) | 22 AWG (0.65 mm)
Insulation | Rating:	Etched Teflon (PTFE) Colored Leads | Mil Spec 16878/4 Type E
Enclosure Specifications (Material, Flammability,	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Temperature, NEMA/IP Rating):	
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) | RH2 (B.) | BALCO (C.) | O-SUN (D.) | (E.) | NIST (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** →	**A/**
B. Accuracy *No Selection Required*	**RH2** = +/-2% →	**RH2**
C. Temperature Sensor *No Selection Required*	**BALCO** →	**BALCO**
D. Configuration *No Selection Required*	**O-SUN** = Outside Sun Shield (NEMA 4X) →	**O-SUN**
E. Output Signal *Select One (1)*	**----** = 4 to 20 mA (Default) | 0 to 10 VDC (Field Selectable) | 0 to 5 VDC (Field Selectable)	
F. NIST (Temperature & RH) *Select One (1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note: Outputs are field selectable between 4-20 mA, 0-5 VDC & 0-10 VDC

SUN SHIELD

Weather Proof, Relative Humidity, Transmitter

The ACI Sun Shield is a reliable solution for protecting both the temperature and relative humidity sensors when mounted in a location where an overhang or shade is unavailable. It consists of nine (9) molded, white plastic plates which are used to reduce the thermal effect of the sun and increasing the air flow between the plates. The Sun Shield also provides an added level of protection for the sensors from rain and snow. The Sun Shield is available with our +/-2% RH transmitter and our TT100 or TT1K Series 4-20 mA output temperature transmitters. NIST Calibration Certificates (RH only) are available.

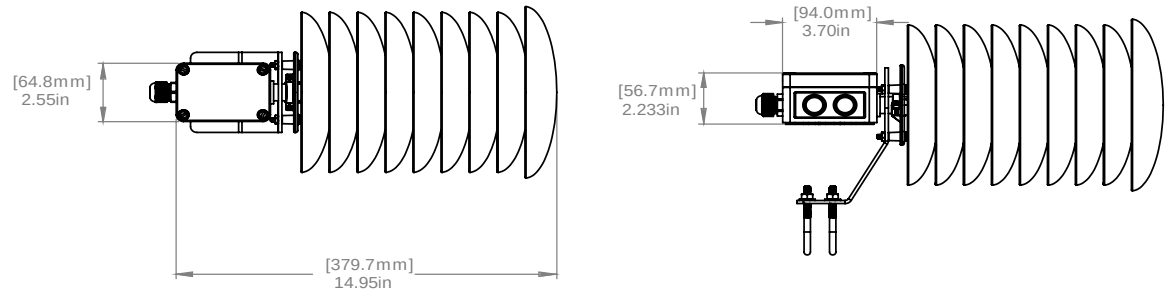
Applications: Outdoor Humidity and Temperature Monitoring

The ACI RH TT Sun Shield is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

RH Supply Voltage (Reverse Polarity Protected):	**4-20 mA:** 250 Ohm Load: 15 - 40 VDC / 18 - 28 VAC | **500 Ohm Load:** 18 - 40 VDC / 18 - 28 VAC **0-5 VDC:** 12 - 40 VDC / 18 - 28 VAC | **0-10 VDC:** 18 - 40 VDC / 18 - 28 VAC
RH Supply Current (VA):	**Voltage Output:** 8 mA maximum (0.32 VA) | **Current Output:** 24 mA maximum (0.83 VA)
RH Output Load Resistance:	**4-20 mA:** 700 Ohms maximum | **0-5 VDC or 0-10 VDC:** 4K Ohms Minimum
RH Output Signal:	**2-wire:** 4 - 20 mA (Factory Default) | **3-wire:** 0-5 or 0-10 VDC & 4 - 20 mA (Field Selectable)
RH Accuracy @ 77°F (25°C):	+/- 2% from 10 to 95%
RH Measurement Range:	0-100%
Operating RH Range:	0 to 95% RH, non-condensing (Conformally Coated PCB's)
Operating Temperature Range:	-40 to 140°F (-40 to 60°C)
Storage Temperature Range:	-40 to 149°F (-40 to 65°C)
RH Stability | Repeatability | Sensitivity:	Less than 2% drift / 5 years | 0.5% RH | 0.1% RH
RH Response Time (T63):	20 Seconds Typical
RH Sensor Type:	Capacitive with Hydrophobic Filter
RH Transmitter Stabilization Time:	30 Minutes (Recommended time before doing accuracy verification)
RH Connections:	Screw Terminal Blocks (Polarity Sensitive)
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
RH Terminal Block Torque Rating:	4.43 to 5.31 lb-in (0.5 to 0.6 Nm)
RH NIST Test Points:	**Default Test Points:** 3 Points (20%, 50% & 80%)
TT Supply Voltage | Supply Current:	+8.5 to 32 VDC (Reverse Polarity Protected) | 25 mA minimum 250 Ohm Load: +13.5 to 32 VDC | 500 Ohm Load: +18.5 to 32 VDC
TT Maximum Load Resistance:	(Terminal Voltage – 8.5 V) | 0.020 A
TT Output Signals:	**Current Output:** 4-20 mA (2-Wire Loop Powered) | **Voltage Output:** 1-5 VDC or 2-10 VDC (3-Wires)
TT Calibrated Accuracy | Linearity [1]:	Temperature Spans < 500°F (260°C): +/- 0.2% | Temperature Spans > 500°F (260°C): +/- 0.5%
TT Temperature Drift [2]:	Temperature Spans < 100°F (38°C): +/- 0.04%/°F | Temperature Spans > 100°F (38°C): +/- 0.02%/°F
TT Warm Up Time | Warm Up Drift:	10 Minutes | +/- 0.1%
TT Operating Temperature Range:	-40 to 185°F (-40 to 85°C)
RH Range:	0 to 100% RH
Platinum RTD (PTC) Number Wires | Wire Colors:	Two | **A/TT100 Series:** Brown/Brown | **A/TT1K Series:** Black/Black
Platinum RTD Sensor Output @ 32°F (0°C):	**A/TT100 Series:** 100 Ohms Nominal | **A/TT1K Series:** 1000 Ohms Nominal
Platinum RTD Tolerance Class | Accuracy:	+/- 0.06% Class A | **Tolerance Formula:** +/- °C = (0.15°C + (0.002 * |t|) where |t| is the absolute value of Temperature above or below 0°C in °C)
Platinum RTD Sensor Stability:	+/-0.03% after 1000 Hours @ 572°F (300°C)
Platinum RTD Response Time (63% Step Change):	8 Seconds nominal
Enclosure Specifications (Material, Flammability, Temperature, NEMA/IP Rating):	**"-4X" Enclosure:** Polystyrene Plastic; UL94-V2; -40 to 158°F (-40 to 70°C); NEMA 4X (IP 66)
Sensing Tube Dimensions (Length x Diameter):	6.83" (173.48 mm) x 0.740" (18.80mm)
Product Dimensions (L x W x D):	14.95" (379.7 mm) x 7.50" (190.50 mm)
Product Weight:	4.16 lbs(1.89 kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Side View(s)

CUSTOM ORDERING

Model # Example: A/ (A.) - RH2 (B.) - TT1K (C.) - O-SUN (D.) - 2 (E.) - 0-100°F (F.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ——►	**A/**
B. Accuracy *No Selection Required*	**RH2 = +/-2%** ——►	**RH2**
C. Temperature Sensor *Select One (1)*	**TT100** = 100 Ohms | **TT1K** = 1K Ohms	
D. Configuration *Select One (1)*	**O-SUN** = Outside Sun Shield (NEMA 4X) ——►	**O-SUN**
E. TT Output Signal *Select One (1)*	**---** = 4 to 20 mA (Default) | **1** = 1 to 5 VDC* | **2** = 2 to 10 VDC*	
F. Calibrated Span	**Specify Span in °F or °C (Best Accuracy in 100°F Increments)**	
G. NIST (RH Only) *Select One(1)*	**----** = No NIST Certificate | **NIST** = NIST Certificate (3 Points)	

Note*: A Temperature Transmitter Output of 1-5 VDC or 2-10 VDC would have a RH Output of 0-5 VDC or 0-10 VDC

ENTHALPY

Indoor/Outdoor Monitoring Controllers

The A/ENT-CTRL and A/DIFF-ENT are enthalpy controllers are used to monitor indoor and outdoor temperature and humidity before converting them into a relay output with the 24 VAC/VDC supply voltage sourced through the relay contacts when reaching its internal trip points. The supply voltage to the A/ENT-CTRL or A/DIFF-ENT is common to both the N/O or N/C contacts of the 10A Form C relay. The A/ENT-CTRL-F1C's version includes a dry contact closure or switch instead of sourcing the supply voltage through the relay contacts.

The A/ENT converts a capacitive type humidity sensor into a linear 2-wire, 4 to 20 mA loop powered output or it can be used in conjunction with the A/DIFF-ENT to determine whether your indoor or outdoor Enthalpy is greater. The A/ENT can be used with your Economizer control to monitor the indoor or outdoor Enthalpy over a range of 0 to 50 BTU's. Each unit in this series features a conformally coated circuit board and field selectable elevation adjustments.

Applications: Economizers, OEM's

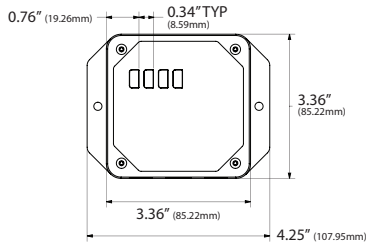
The ACI Enthalpy Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

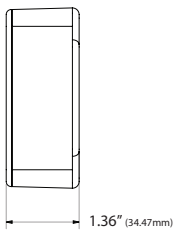
PRODUCT SPECIFICATIONS

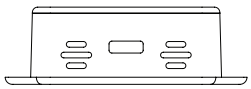
Supply Voltage:	+24 to 36 VDC or 24 VAC +/- 10% | (A/ENT-CTRL & A/DIFF-ENT) +24 to 36 VDC (A/ENT)
Supply Current:	70 mA max (A/ENT-CTRL & A/DIFF-ENT), 25 mA maximum (A/ENT)
External Input (A/DIFF-ENT Only):	4-20 mA (0 to 50 BTU's) from A/ENT
Enthalpy Measurement:	0-50 BTU's (A/ENT)
RangeOutput/Contact Rating:	4-20 mA (A/ENT) 10A @ 250 VAC (A/ENT-CTRL & A/DIFF-ENT)
Relay Deadband:	1 BTU or 0.5ºF (0.27ºC)
Enthalpy Accuracy:	+/- 1 BTU @77ºF (25ºC)
Long-term Stability:	Less than 2% RH Drift/5 years
Sensitivity:	0.1% RH
Repeatability:	0.5% RH
Operating RH Range:	0 to 95% RH (non-condensing)
Operating Temperature Range:	-40ºF to 140ºF (-40ºC to 60ºC)
Standard Elevation:	1000' above sea level (standard)
Product Dimensions (All Enthalpy Types):	(H) 3.36" (85.22mm) x (W) 4.25" (107.95mm) x (D) 1.36" (34.47mm)
Product Weight:	0.35 lbs (0.159 kg)

DIMENSIONAL DRAWING

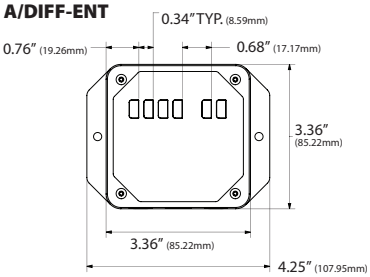
A/ENT-CTRL, A/ENT-CTRL-F1C

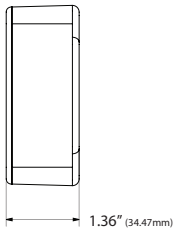


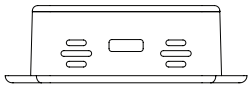




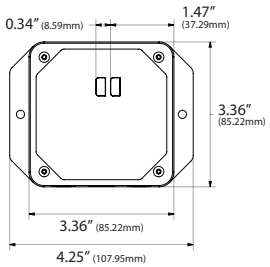
A/DIFF-ENT

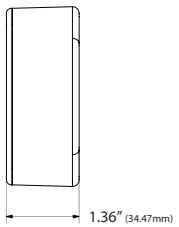


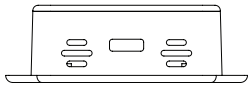




A/ENT







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/ENT-CTRL-F1C -OR- 122441

Model #	Item #	Description
A/DIFF-ENT*	122426	Differential Enthalpy Changeover Control, Indoor vs Outdoor, 24 VAC Form 1C Relay Contact
A/ENT-CTRL	122440	Outdoor Enthalpy/Temperature Changeover Control, 24 VAC Form 1C Relay Contact
A/ENT-CTRL-F1C	122441	Outdoor Enthalpy/Temperature Changeover Control, Form 1C Dry Contact Relay
A/ENT*	122439	Enthalpy Transmitter, 0 to 50 BTU, 4 to 20 mA Loop Powered

Note* : A/DIFF-ENT should be ordered in conjunction with the A/ENT

CUSTOM ORDERING

Model # Example: A/ ENT (A. B. C. D. E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/** ⟶	**A/**
B. Accuracy *Select One (1)*	**DIFF-ENT** = Differential Enthalpy Control **ENT-CTRL** = Outdoor Enthalpy/Temperature Changeover Control **ENT-CTRL-F1C** = Outdoor Enthalpy/Temperature Changeover Control **ENT** = Enthalpy Transmitter, 0 to 50 BTU, 4 to 20 mA Loop Powered	
C. Elevation *No Selection Required*	**----** = 0-2K ft Above Sea Level (Default) ⟶	
D. Curve *No Selection Required*	**----** = 28 BTU/lb 75ºF (Default) ⟶	
E. Slope *No Selection Required*	**----** = Direct Acting / Positive Slope (Default) ⟶	

Note : See product instructions for additional field selections (elevations, curves, slopes)

DLP (CONFIGURABLE OPTIONS)

Differential Low Pressure (Uni/Bi-Directional)

The DLP Series is based on a piezoresistive, silicon sensing element which senses Differential Pressure and provides an analog output. The hinged cover on the DLP can be easily opened using the integrated locking tab on the side of the enclosure. This allows for easy access to the zero function and field selectable ranges and outputs. The DLP Series also includes an optional, five digit LCD for installation and monitoring support. Field selectable analog outputs include 0-5 and 0-10 VDC, or 4-20 mA which correlate to a uni or bi-directional pressure range from 0-0.1" up to 0-40" of water column, depending on your model selection. Each unit must be ordered with the specific pressure range needed to meet desired application requirements. Options include a Pitot Tube or Din Rail Clip.

Applications: Building and Duct Static Pressure, Filter Monitoring, Air Flow Measurement, and Process Control

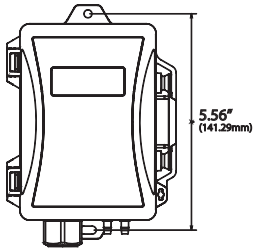
The DLP Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

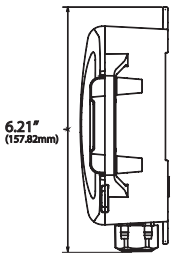
Supply Voltage:	**4-20 mA Output:** 16-36 VDC (250 Ohm Load max.) / 22-36 VDC (500 Ohm Load max) / 24 VAC(+/-10%) 50/60 Hz **0-5 VDC / 0-10 VDC Output:** 15-36 VDC into > 5K Ohm Load / 24 VAC (+/- 10%), 50/60 Hz
Supply Current:	**4-20 mA Output:** 24 mA (0.83 VA) **| 0-5 VDC / 0-10 VDC Outputs:** 6 mA maximum (0.18 VA)
Output Signals:	**4-20 mA:** 2-wire Loop Powered (output limited to 20.5 mA maximum) **4-20 mA:** 3-Wire, VAC Powered (output limited to 20.5 mA maximum) **0-5 VDC or 0-10 VDC:** 3-Wire, VAC or VDC Powered (output limited to 5.25 & 10.25 VDC)
Response Time (0-100% FSO):	4 seconds
Output Update Rate:	0.5 second intervals
Pressure Range:	Specify Single Range (See "Ordering" on Reverse Side)
Accuracy[1]:	**Specify:** +/-0.25% FSO (except for 0.1"(25Pa) range) | +/-0.5% FSO
Zero Function:	Pushbutton Zero Function
Thermal Effects[2]:	±0.067% FSO / °F (0.12% FSO / °C)
Proof Pressure:	**≤ 1" wc (250 Pa):** 270 inWC (67.2 kPa) for 1 inWC (249.8 Pa) range **≥ 1" wc (250 Pa) ≤ 10" wc (2500 Pa):** 350 inWC (87.12 kPa) for 10 inWC (2490.8 Pa) range **≥ 10" (2500 Pa) ≤ 40" wc (10K Pa):** 562 inWC (140 kPa) for 40 inWC (9963.6 Pa) range
Burst Pressure:	**≤ 1" wc (250 Pa):** 415 inWC (103.3 kPa) for 1 inWC (249.8 Pa) range **≥ 1" wc (250 Pa) ≤ 10" wc (2500 Pa):** 550 inWC (136.9 kPa) for 10 inWC (2490.8 Pa) range **≥ 10" *2500 Pa) ≤ 40" wc (10K Pa):** 1004.7 inWC (250 kPa) for 40 inWC (9963.6 Pa) range
Operating Temperature Range:	-4 to 185°F (-20 to 85°C)
Compensated Temperature Range:	32 to 122°F (0 to 50°C)
Storage Temperature Range:	-22 to 185°F (-30 to 85°C)
Operating Humidity:	10 to 95% RH, non-condensing
Media Types:	Intended for use with non-corrosive, non-ionic gases, such as air and other dry gases
Enclosure Material | Flammability Rating:	Flame Retardant Polycarbonate; UL94-5VA
Wiring Connections:	Finger Pushbutton (Spring) Terminal Blocks; accepts 16-24 AWG wires
Conduit Knockouts:	Watertight Cordgrip Installed (1/2" NPT Conduit fittings accepted when Cordgrip removed)
Pressure Fitting Material:	Nickel Plated Brass
Tubing Size Accepted:	1/4" O.D. x 0.170" I.D. Poly Tubing
NIST Certification:	**3 Point NIST Test Points:** 10%, 50%, & 90% FSO **5 Point NIST Test Points:** 10%, 30%, 50%, 70%, & 90% FSO
Approvals:	CE, RoHS2, WEEE, Reach
Product Weight (No Pitot Tube / Din Rail):	**Non-LCD Display Version:** 0.53 lbs (0.240 kg) **| LCD Display Version:** 0.58 lbs (0.263 kg)
Product Weight (With Pitot Tube & Din Rail):	**Non-LCD Display Version:** 0.80 lbs (0.363 kg) **| LCD Display Version:** 0.85 lbs (0.385 kg)

Note[1]: Accuracy includes Linearity, Hysteresis and Repeatability @ 71°F (21.5°C) **| Note[2]:** Shift is relative to 71°F (21.5°C)

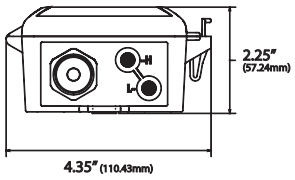
DIMENSIONAL DRAWING



Front View



Side View



Top View

CUSTOM ORDERING

Model # Example: A/DLP (A.) 001 (B.) W (C.) B (D.) D (E.) B (F.) 1 (G.) A (H.) 3P (I.) S (J.)

							MODEL #
A. Sensor Series *No Selection Required*	**A/DLP** →						**A/DLP**
B. Differential Pressure Range *Select One (1)*	**D10 (0.10)***** **D25 (0.25)** **D50 (0.50)** **001 (1)** **002 (2)**	**2D5 (2.5)** **003 (3)** **004 (4)** **005 (5)** **010 (10)**	**015 (15)** **020 (20)** **025 (25)**** **030 (30)** **040 (40)**	**050 (50)*** **100 (100)*** **125 (125)*** **250 (250)*** **300 (300)***	**500 (500)*** **750 (750)*** **1K0 (1,000)*** **1K2 (1,250)*** **1K6 (1,600)***	**2K5 (2,500)*** **3K2 (3,200)*** **5K0 (5,000)*** **7K5 (7,500)*** **10K (10,000)***	
C. Units *Select One (1)*	**W** = Water Column | **P** = Pascal						
D. Bi/Uni Directional *Select One (1)*	**U** = Uni-Directional (i.e. 0 to 1" wc) | **B** = Bi-Directional (i.e. -1 to +1" wc)						
E. Display *Select One (1)*	**N**= No LCD Display | **D** = With LCD Display						
F. Accuracy *Select One (1)*	**A** = +/- 0.5% | **B** = +/- 0.25%						
G. Pitot Tube/Din Rail *Select One (1)*	**0** = No Pitot Tube/Din Rail | **1** = Pitot Tube | **2** = Din Rail | **3** = Pitot Tube & Din Rail						
H. Analog Output *Select One (1)*	**A** = 4 to 20 mA | **B** = 0-5 VDC | **C** = 0-10 VDC						
I. NIST *Select One (1)*	**0P** = None | **3P** = 3 Point NIST | **5P** = 5 Point NIST						
J. Enclosure *No Selection Required*	**S** = Standard Enclosure →						**S**

Note*: Pascal Ranges Only | **Note**:** "025" range is available in either wc or Pa ranges | Note***: 0.10" WC and 025 Pa accuracy is +/- 0.50% only (Use "A" for Accuracy Selection)

STANDARD ORDERING

Model # Example: A/DRC-DLP -OR- 140999

Model #	Item #	Description
A/PT-DLP	140998	Pitot Tube, DLP Duct Static | Size: 7" (6.75" Insertion) | Material: Aluminum
A/DRC-DLP	140999	Din Rail Clip, DLP | Size: 35 mm

Note*: Other compatible products include ACI's Pick up Port (A/PUP) Series, Medical Grade Tubing Kit (A/10'), Transformer Series (A/LE) and DC Power Supply(A/PS24-24V-S)

ACCESSORIES ORDERING | PITOT TUBES

Model # Example: A/PT 5.2 -OR- 130141

Model #	Item #	Description	Insertion Length	Number of Sensing Points
PT 3"	130140	3.0" Pitot Tube with Foam Gasket	3.0" (7.6 cm)	1 Set
PT 5.2"	130141	5.2" Pitot Tube with Foam Gasket	5.2" (13.2 cm)	2 Sets
PT 7.5"	130142	7.5" Pitot Tube with Foam Gasket	7.5" (19.1 cm)	3 Sets
PT 9.7"	130143	9.7" Pitot Tube with Foam Gasket	9.7" (24.6 cm)	4 Sets
SPT - 3.5"	102957	3.5" Aluminum Duct Static (Flat Tip) Pitot Tube	3.5" (88.9 mm)	1 Point
SPT - 8.0"	108976	8.0" Aluminum Duct Static (Flat Tip) Pitot Tube	8.0" (203.2 mm)	1 Point
VPT	103010	4.0" Aluminum Velocity (Pointed Tip) Pitot Tube	4" (101.6 mm)	1 Point
VPT - 8"	125008	8.0" Aluminum Velocity (Pointed Tip) Pitot Tube	8" (203.2 mm)	1 Point

ACCESSORIES ORDERING | PICK UP PORTS

Model # Example: A/SP-PUP -OR- 125585

Model #	Item #	Description	Color
A/SP-PUP	125585	Pickup Port, Wall Mounted Stainless Plate	Brushed Stainless Steel
A/R-PUP	125584	Pickup Port, Wall Mounted Plastic Enclosure	Beige
A/R2-PUP	132711	Pickup Port, Wall Mounted Plastic Enclosure	White
A/O-PUP-H	132892	Pickup Port, Horizontal Mount, Outdoor Weatherproof Euro Enclosure	Light Gray
A/O-PUP-V	132891	Pickup Port, Vertical Mount, Outdoor Weatherproof Euro Enclosure	Light Gray

DLP (+/- 0.50% ACCURACY)

Differential Low Pressure (Uni/Bi-Directional)

The DLP Series is based on a piezoresistive, silicon sensing element which senses Differential Pressure and provides an analog output. The hinged cover on the DLP can be easily opened using the integrated locking tab on the side of the enclosure. This allows for easy access to the zero function and field selectable ranges and outputs. The DLP Series also includes an optional, five digit LCD for installation and monitoring support. Field selectable analog outputs include 0-5 and 0-10 VDC, or 4-20 mA which correlate to a uni or bi-directional pressure range from 0-0.1" up to 0-40" of water column, depending on your model selection. Each unit has up to 8 field selectable, uni or bi-directional ranges. Options include a Pitot Tube or Din Rail Clip.

Applications: Building and Duct Static Pressure, Filter Monitoring, Air Flow Measurement, and Process Control

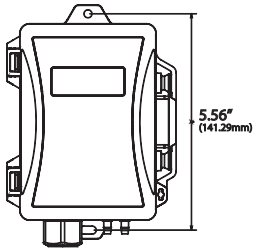
The DLP Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

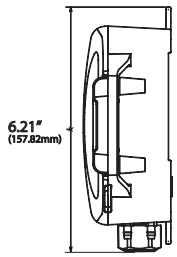
Supply Voltage:	**4-20 mA Output:** 16-36 VDC (250 Ohm Load max.) / 22-36 VDC (500 Ohm Load max.) / 24 VAC (+/-10%) 50/60 Hz **0-5 VDC / 0-10 VDC Output:** 15-36 VDC >5K Ohm Load / 24 VAC (+/- 10%) 50/60 Hz
Supply Current:	**4-20 mA Output:** 24 mA (0.83 VA) **| 0-5 VDC / 0-10 VDC Outputs:** 6 mA maximum (0.18 VA)
Output Signals:	**4-20 mA:** 2-wire Loop Powered (output limited to 20.5 mA maximum) **4-20 mA:** 3-Wire, VAC Powered (output limited to 20.5 mA maximum) **0-5 VDC or 0-10 VDC:** 3-Wire, VAC or VDC Powered (output limited to 5.25 & 10.25 VDC)
Response Time (0-100% FSO):	4 seconds
Output Update Rate:	0.5 second intervals
Pressure Range:	See Product Ordering Grid (next page); Field Selectable Uni and Bi-Directional Ranges
Accuracy[1]:	±0.50% FSO
Zero Function:	Pushbutton Zero Function
Thermal Effects[2]:	±0.067% FSO / °F (0.12% FSO / °C)
Proof Pressure | Burst Pressure:	**A/DLP-001: Proof:** 270 inWC (67.2 kPa) **| Burst:** 415 inWC (103.3 kPa) for 1 inWC (249.8 Pa) **A/DLP-010: Proof:** 350 inWC (87.12 kPa) **| Burst:** 550 inWC (136.9 kPa) for 10 inWC (2490.8 Pa) **A/DLP-040: Proof:** 562 inWC (140 kPa) **| Burst:** 1004.7 inWC (250 kPa) for 40 inWC (9963.6 Pa)
Operating Temperature Range:	-4 to 185°F (-20 to 85°C)
Compensated Temperature Range:	32 to 122°F (0 to 50°C)
Storage Temperature Range:	-22 to 185°F (-30 to 85°C)
Operating Humidity:	10 to 95% RH, non-condensing
Media Types:	Intended for use with non-corrosive, non-ionic gases, such as air and other dry gases
Enclosure Material | Flammability Rating:	Flame Retardant Polycarbonate; UL94-5VA
Wiring Connections:	Finger Pushbutton (Spring) Terminal Blocks; accepts 16-24 AWG wires
Conduit Knockouts:	Watertight Cordgrip Installed (1/2" NPT Conduit fittings accepted when Cordgrip removed)
Pressure Fitting Material:	Nickel Plated Brass
Tubing Size Accepted:	1/4" O.D. x 0.170" I.D. Poly Tubing
Approvals:	CE, RoHS2, WEEE, Reach
Product Weight (No Pitot Tube / Din Rail):	**Non-LCD Display Version:** 0.53 lbs (0.240 kg) **| LCD Display Version:** 0.58 lbs (0.263 kg)
Product Weight (With Pitot Tube & Din Rail):	**Non-LCD Display Version:** 0.80 lbs (0.363 kg) **| LCD Display Version:** 0.85 lbs (0.385 kg)

Note[1]: Accuracy includes Linearity, Hysteresis and Repeatability @ 71°F (21.5°C) **| Note[2]:** Shift is relative to 71°F (21.5°C)

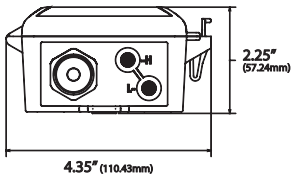
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model # Example: A/ | DLP | 001 | WU | U | N | A | 0 -OR- 140769

Model #	Item #	Ranges (Default in Bold)	Outputs (Default in Bold)	LCD*	PT*	DRC*
A/DLP-001-W-U-N-A-0	140769	0-0.1", 0.2", 0.5", **1"** ±0.1", ±0.2", ±0.5", ±1"	**4-20 mA,** 0-5 VDC, 0-10 VDC			
A/DLP-001-W-U-D-A-0	140773	0-0.1", 0.2", 0.5", **1"** ±0.1", ±0.2", ±0.5", ±1"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙		
A/DLP-010-W-U-N-A-0	140774	0-1", 2", 5", **10"** ±1", ±2", ±5", ±10"	**4-20 mA,** 0-5 VDC, 0-10 VDC			
A/DLP-010-W-U-D-A-0	140776	0-1", 2", 5", **10"** ±1", ±2", ±5", ±10"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙		
A/DLP-040-W-U-N-A-0	140777	0-10", 20", 30", **40"** ±10", ±20", ±30", ±40"	**4-20 mA,** 0-5 VDC, 0-10 VDC			
A/DLP-040-W-U-D-A-0	140778	0-10", 20", 30", **40"** ±10", ±20", ±30", ±40"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙		
A/DLP-001-W-U-N-A-3	141072	0-0.1", 0.2", 0.5", **1"** ±0.1", ±0.2", ±0.5", ±1"	**4-20 mA,** 0-5 VDC, 0-10 VDC		⊙	⊙
A/DLP-001-W-U-D-A-3	141073	0-0.1", 0.2", 0.5", **1"** ±0.1", ±0.2", ±0.5", ±1"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙	⊙	⊙
A/DLP-010-W-U-N-A-3	141074	0-1", 2", 5", **10"** ±1", ±2", ±5", ±10"	**4-20 mA,** 0-5 VDC, 0-10 VDC		⊙	⊙
A/DLP-010-W-U-D-A-3	141075	0-1", 2", 5", **10"** ±1", ±2", ±5", ±10"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙	⊙	⊙
A/DLP-040-W-U-N-A-3	141076	0-10", 20", 30", **40"** ±10", ±20", ±30", ±40"	**4-20 mA,** 0-5 VDC, 0-10 VDC		⊙	⊙
A/DLP-040-W-U-D-A-3	141077	0-10", 20", 30", **40"** ±10", ±20", ±30", ±40"	**4-20 mA,** 0-5 VDC, 0-10 VDC	⊙	⊙	⊙

LCD* (Display Included) | **PT*** (Pitot Tube Included) | **DRC*** (Din Rail Clip Included)

STANDARD ORDERING

Model # Example: A/DRC-DLP -OR- 140999

Model #	Item #	Description
A/PT-DLP	140998	Pitot Tube, DLP Duct Static | Size: 7" (6.75" Insertion) | Material: Aluminum
A/DRC-DLP	140999	Din Rail Clip, DLP | Size: 35 mm

Note*: Other compatible products include ACI's Pick up Port (A/PUP) Series, Medical Grade Tubing Kit (A/10'), Transformer Series (A/LE) and DC Power Supply(A/PS24-24V-S)

ACCESSORIES ORDERING | PITOT TUBES

Model # Example: A/PT 5.2 -OR- 130141

Model #	Item #	Description	Insertion Length	Number of Sensing Points
PT 3"	130140	3.0" Pitot Tube with Foam Gasket	3.0" (7.6 cm)	1 Set
PT 5.2"	130141	5.2" Pitot Tube with Foam Gasket	5.2" (13.2 cm)	2 Sets
PT 7.5"	130142	7.5" Pitot Tube with Foam Gasket	7.5" (19.1 cm)	3 Sets
PT 9.7"	130143	9.7" Pitot Tube with Foam Gasket	9.7" (24.6 cm)	4 Sets
SPT - 3.5"	102957	3.5" Aluminum Duct Static (Flat Tip) Pitot Tube	3.5" (88.9 mm)	1 Point
SPT - 8.0"	108976	8.0" Aluminum Duct Static (Flat Tip) Pitot Tube	8.0" (203.2 mm)	1 Point
VPT	103010	4.0" Aluminum Velocity (Pointed Tip) Pitot Tube	4" (101.6 mm)	1 Point
VPT - 8"	125008	8.0" Aluminum Velocity (Pointed Tip) Pitot Tube	8" (203.2 mm)	1 Point

ACCESSORIES ORDERING | PICK UP PORTS

Model # Example: A/SP-PUP -OR- 125585

Model #	Item #	Description	Color
A/SP-PUP	125585	Pickup Port, Wall Mounted Stainless Plate	Brushed Stainless Steel
A/R-PUP	125584	Pickup Port, Wall Mounted Plastic Enclosure	Beige
A/R2-PUP	132711	Pickup Port, Wall Mounted Plastic Enclosure	White
A/O-PUP-H	132892	Pickup Port, Horizontal Mount, Outdoor Weatherproof Euro Enclosure	Light Gray
A/O-PUP-V	132891	Pickup Port, Vertical Mount, Outdoor Weatherproof Euro Enclosure	Light Gray

MLP2

Miniature Low Pressure Transmitter

The MLP2 Series Low Differential Pressure transmitters are designed for use in OEM or high density panel mounting applications. Key installation features include an integral 35 mm DIN rail mounting foot, vertically orientated wiring and pressure connections, and a pushbutton zero function conveniently located on the front cover. The MLP2 offers two options for DIN Rail mounting; rear and side mount. The rear DIN rail mount is integrated into the enclosure. The side mount adapter is included with the package, and can easily be attached. The side mount offers a much thinner profile for higher density panels. The MLP2 incorporates a high accuracy, piezoresistive, silicon sensing element which senses differential pressure and provides a linear 4 to 20 mA or DC voltage output equal to the specified pressure range. This technology reduces warmup shift while also reducing the effect of package stress for increased long term stability. In addition, the unit contains a de-pluggable terminal block that can be removed for ease of installation. This unit must be ordered with a single uni or bi-directional pressure range and output signal from +/- 0.1" of water column to a maximum pressure of +/- 40" of water column depending on your application. All MLP2 Series pressure transmitters are calibrated using NIST Certified equipment. Optional 3 or 5 point NIST Certificates are available and must be specified when placing your order.

Applications: Building and Duct Static Pressure, Filter Monitoring, Air Flow Measurement, Process Control, Roof Top Units, Air Handlers, Clean Rooms, Isolation Rooms, Data Centers

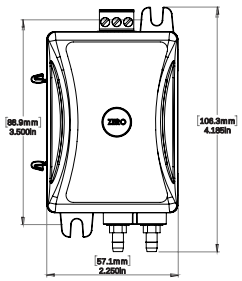
The MLP2 Series Low Differential Pressure Transmitters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

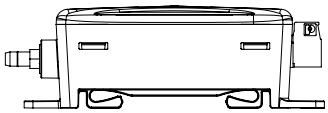
Supply Voltage:	**4-20 mA Output:** 16-36 VDC (250 Ohm Load max.) / 21-36 VDC (500 Ohm Load max) / 24VAC(+/-10%) 50/60 Hz **0-5 VDC Output:** 12-36 VDC / 24 VAC (+/- 10%) 50/60 Hz **0-10 VDC Output:** 16-36 VDC / 24 VAC (+/- 10%) 50/60 Hz
Supply Current mA (Power Consumption):	**4-20 mA Output:** 23 mA minimum (0.83 VA) | **VDC Output Signals:** 5 mA maximum (0.18 VA)
Output Signals:	**4-20 mA:** 2-wire Loop Powered (output limited to 20.5 mA maximum) **4-20 mA:** 3-Wire, VAC Powered (output limited to 20.5 mA maximum) **0-5 VDC or 0-10 VDC:** 3-Wire, VAC or VDC Powered (output limited to 5.25 & 10.25 VDC)
Pressure Ranges:	See Ordering Information on back of Product Data Sheet (Must Specify when ordering)
Accuracy[1]:	+/- 0.5% FSO **(Default)** | +/- 0.25% (Optional) for all ranges except 0.1" and +/- 0.1" wc
Sensor Compensated Temperature Range:	32 to 122ºF (0 to 50ºC)
Thermal Effects[2]:	+/- 0.056% FSO/ºF (+/- 0.10% FSO/ºC)
Warm Up Time:	15 Minutes
Response Time (T95):	4 seconds
Output Update Rate:	500 ms
Zero Function:	Pushbutton Zero Function (Recommended after 15 minutes warm up)
Proof Pressure | Burst Pressure:	**Ranges < 1" wc (248.84 pa): Proof:** 270" wc (67.2 kPa) | **Burst:** 415" wc (103.3 kPa) **Ranges > 1" wc (0.2488 kPa) to < 10" wc (2.488 kPa): Proof:** 350" wc (87.12 kPa) | **Burst:** 550" wc (136.9 kPa) **Ranges > 10" wc (2.488 kPa) to < 40" wc (9953.6 kPa): Proof:** 562" wc (140 kPa) | **Burst:** 1004.7" wc (250 kPa)
Operating Temperature | Humidity:	32 to 185ºF (0 to 85ºC) | 10 to 95% RH, non-condensing
Storage Temperature | Humidity:	-40 to 176ºF (-40 to 80ºC) | 10 to 95% RH, non-condensing
Media Types:	Intended for use with non-corrosive, non-ionic gases, such as air and other dry gases
Enclosure Material | Flammability Rating:	Polycarbonate | UL 94 V-0
Enclosure Temperature Rating:	-40 to 248ºF (-40 to 120ºC)
DIN Rail Mounting:	35 mm (U.S. Patent No. 7,416,421)
Wiring Connections | Wire Size:	3 Position de-pluggable screw terminal block | 14 AWG (1.628 mm2) to 24 AWG (0.5105 mm2)
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Pressure Fitting Material:	Brass
Tubing Size Accepted:	0.250" (6.35 mm) O.D. x 0.170" (4.318 mm) I.D. Push-On Flexible Poly Tubing
NIST Certification:	**3 Point NIST Test Points:** 10%, 50%, & 90% of FSO **5 Point NIST Test Points:** 10%, 30%, 50%, 70%, and 90% of FSO
Product Dimensions (L x W x D):	4.210" (106.94 mm) x 2.085" (52.96 mm) x 1.340" (34.04 mm)
Product Weight:	0.17 lbs. (0.078 kg)
Approvals:	CE, RoHS2, WEEE, Reach, UKCA

Note[1]: Accuracy includes Hysteresis, Linearity, and Repeatability at 71ºF (21.5ºC) Typical **| Note[2]:** Shift is relative to 77ºF (25ºC)

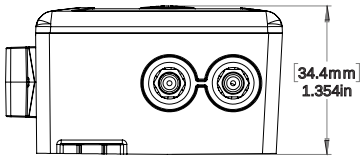
DIMENSIONAL DRAWING



Front View



Side View



Bottom View

CUSTOM ORDERING

Model # Example: A/ (A.) | MLP2 (B.) | D25 (C.) | W (D.) | B (E.) | B (F.) | A (G.) | 5P (H.)

						MODEL #
A. Sensor Series *No Selection Required*	**A/** →					**A/**
B. Pressure Series *No Selection Required*	**MLP2** = Miniature Low Pressure Transmitter →					**MLP2**
C. Pressure Ranges *Select One (1)* **Note*:** Shaded Pressure Ranges are for Pascal Units Only)	**D10**** = 0.10 **D25** = 0.25 **D50** = 0.50 **001** = 1.00 **002** = 2.00	**2D5** = 2.50 **003** = 3.00 **004** = 4.00 **005** = 5.00 **010** = 10.00	**015** = 15.00 **020** = 20.00 **025** = 25.00[1] **030** = 30.00 **040** = 40.00	**050** = 50* **100** = 100* **300** = 300* **500** = 500* **1K0** = 1,000*	**1K6** = 1,600* **2K5** = 2,500* **3K2** = 3,200* **5K0** = 5,000* **10K** = 10,000*	
D. Units of Pressure *Select One (1)*	**W** = Inches of Water Column | **P** = Pascals					
E. Bi/Uni Directional Range *Select One (1)*	**U** = Uni-Directional (ie. 0 to 1" wc) | **B** = Bi-Directional (ie. -1 to +1" wc)					
F. Accuracy *Select One (1)*	**A** = +/- 0.5% FSO | **B** = +/- 0.25%					
G. Output Signal *Select One (1)*	**A** = 4 to 20 mA | **B** = 0 to 5 VDC | **C** = 0 to 10 VDC					
H. NIST Certification *Select One (1)*	**0P** = No NIST Certificate | **3P** = 3 Point NIST Certificate | **5P** = 5 Point NIST Certificate					

Note*: Pascal Ranges Only | **Note[1]:** The "025" Range can be ordered in either Inches of Water Column (W) or Pascal (P) | **Note**:** 0.10" WC and 025 Pa accuracy is +/- 0.50% only (Use "A" for Accuracy Selection)

ACCESSORIES ORDERING | PITOT TUBES

Model # Example: A/PT 5.2 -OR- 130141

Model #	Item #	Description	Insertion Length	Number of Sensing Points
PT 3"	130140	3.0" Pitot Tube with Foam Gasket	3.0" (7.6 cm)	1 Set
PT 5.2"	130141	5.2" Pitot Tube with Foam Gasket	5.2" (13.2 cm)	2 Sets
PT 7.5"	130142	7.5" Pitot Tube with Foam Gasket	7.5" (19.1 cm)	3 Sets
PT 9.7"	130143	9.7" Pitot Tube with Foam Gasket	9.7" (24.6 cm)	4 Sets
SPT - 3.5"	102957	3.5" Aluminum Duct Static (Flat Tip) Pitot Tube	3.5" (88.9 mm)	1 Point
SPT - 8.0"	108976	8.0" Aluminum Duct Static (Flat Tip) Pitot Tube	8.0" (203.2 mm)	1 Point
VPT	103010	4.0" Aluminum Velocity (Pointed Tip) Pitot Tube	4" (101.6 mm)	1 Point
VPT - 8"	125008	8.0" Aluminum Velocity (Pointed Tip) Pitot Tube	8" (203.2 mm)	1 Point

ACCESSORIES ORDERING | PICK UP PORTS

Model # Example: A/SP-PUP -OR- 125585

Model #	Item #	Description	Color
A/SP-PUP	125585	Pickup Port, Wall Mounted Stainless Plate	Brushed Stainless Steel
A/R-PUP	125584	Pickup Port, Wall Mounted Plastic Enclosure	Beige
A/R2-PUP	132711	Pickup Port, Wall Mounted Plastic Enclosure	White
A/O-PUP-H	132892	Pickup Port, Horizontal Mount, Outdoor Weatherproof Euro Enclosure	Light Gray
A/O-PUP-V	132891	Pickup Port, Vertical Mount, Outdoor Weatherproof Euro Enclosure	Light Gray

ACCESSORIES ORDERING | TUBING KIT

Model # Example: A/10'TUBE -OR- 126606

Model #	Item #	Description	Color
A/10'TUBE	126606	10' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/20'TUBE	132226	20' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/100'TUBE	136018	100' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear

Non LCD

LCD

WPR2

Wet to Wet Transmitter

The ACI WPR2 Series Remote Wet to Wet Differential Pressure Transmitter is designed to reduce installation time and provide mounting flexibility, often eliminating the need for additional plumbing and manifolds. The WPR2 can be ordered with standard CMP rated PVC cable or with a metal clad cable. The metal clad cable provides end to end protection of the cables with flexible metal conduit, durable and resistant to abrasions and cuts, with corrosion resistant 304 stainless steel construction. The WPR2 accurately measures wet media pressures in a variety of applications. Commonly used for monitoring pumps, these devices are also ideal for measuring pressure across filters, heat exchangers and compressors. The dual remote sensors feature a ceramic capacitive sensing element with a stainless steel diaphragm that's compatible with liquid, gases, and refrigerants suitable with 304L stainless steel. The pressure transducers are ¼"-18 NPT male (304 stainless steel) fittings. The WPR2's enclosure opens conveniently to allow it to be reconfigured between three additional ranges (see order grid) and outputs of 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC (default). The different configurations in this series can measure both uni or bi-directional pressure ranges as low as 3 psi and as high as 300 psi, depending on the unit. The WPR2 also features a push button auto zero function for remote calibration. The LCD option will display pressure values for both the High and Low side pressures, a differential pressure value, "OVR" for values over the specified range, "ERROR" for differential pressures out of range, and "ZERO" when the auto-zero is in process.

Note: Order the model based upon line pressure, and not differential pressure.

Applications: Monitoring Pumps, Compressors, Filters, Heat Exchangers, Flow

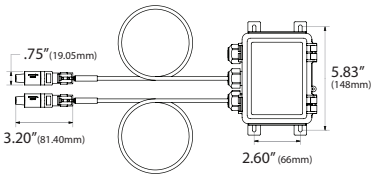
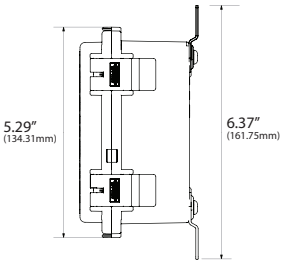
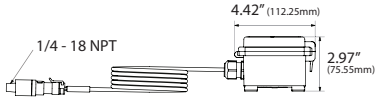
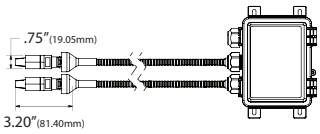
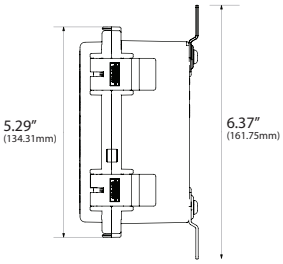
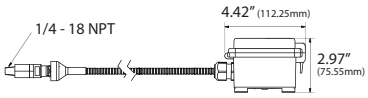
The WPR2 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

Supply Voltage:	**4-20 mA Output:** 18-36 VDC (250 Ohm Load max.) / 20-36 VDC (500 Ohm Load max.) / 24 VAC (+/-10%) 50/60 Hz **0-5 VDC / 0-10 VDC Output:** 16-36 VDC / 24 VAC (+/- 10%) 50/60 Hz
Supply Current:	**4-20 mA Output:** 24 mA minimum **| 0-5 VDC / 0-10 VDC Outputs:** 6 mA minimum
Output Signals:	**2-wire:** Linear 4-20 mA DC Current (Field Selectable) **| 3-wire:** 0-5 VDC; 0-10 VDC (Default) & 4-20 mA (Field Selectable)
Response Time (0-100% FSO):	8 seconds
Output Update Rate:	1 second
Output Load Resistance:	**4 to 20 mA**: 500 ohms maximum **| 0-5 VDC / 0-10 VDC:** 5K ohms minimum
Field Selectable Ranges:	See "Ordering Grid" on back of product data sheet
Warm Up Time:	15 minutes (wait 15 minutes before zeroing)
Accuracy[1] (Three Highest Ranges):	±1.0% FSO
Accuracy[1] (Lowest Range[2]):	±1.5% FSO
Thermal Effects[3]:	±2.0% FSO from 32-140°F (0-60°C)
Operating Temperature:	**Transducer:** -40 to 257°F (-40 to 125°C) **| Electronics/Housing/Cables:** 32-167°F (0-75°C)
Compensated Temperature Range:	32 to 140°F (0 to 60°C)
Storage Temperature:	-13 to 176°F (-25 to 80°C)
Operating Humidity:	10 to 90% RH, non-condensing
Proof Pressure:	**WPR2-30:** 60 PSI **| WPR2-100:** 200 PSI **| WPR2-300:** 600 PSI
Burst Pressure:	**WPR2-30:** 300 PSI **| WPR2-100:** 1000 PSI **| WPR2-300:** 3000 PSI
Media Types:	Any gas or liquid compatible w/ 304L or 316L Stainless Steel
Process Fitting Material:	304 SS
Process Fitting Size:	1/4" - 18 NPT Male; Pressure Snubber included for light oils/water
Recommend Torque Specifiaction:	150 lbs-in (16.95 Nm)
Transducer Cable Rating | Connector Type:	Type CMP - Plenum Rated (UL Standard 444), NEC Article 800 **|** IP65 at the sensors Packard Connector
Metal Clad Rating:	Continuously interlocked Type 304 Stainless Steel core
Enclosure Material | Flammability Rating:	Flame Retardant PC **|** PBT Alloy **|** UL94V-0
Enclosure Rating:	NEMA 4X/IP66
Approvals:	CE, RoHS2, WEEE, Reach
Product Dimensions (L x W x D):	5.30" x 5.07" x 3.00" (13.46 cm x 12.88 cm x 7.62 cm)
Product Weight:	**A/WPR2 (0-xxx psid)-10':** 2.1 lbs (0.953 kg) **| A/WPR2(0-xxx psid)-10'-LCD:** 2.2 lbs (0.998 kg) **A/WPR2 (0-xxx psid)-20':** 2.4 lbs (1.09 kg) **| A/WPR2 (0-xxx psid)-20'-LCD:** 2.5 lbs (1.138 kg) **A/WPR2 (0-xxx psid)-40':** 3 lbs (1.363 kg) **| A/WPR2 (0-xxx psid)-40'-LCD:** 3.1 lbs (1.41 kg)

Note[1]: Accuracy includes Linearity, Hysteresis and Repeatability @ 71°F (21.5°C) **| Note[2]:** See the ordering grid on the back of that data sheet for selectable ranges **| Note[3]:** Shift Relative to 71°F (21.5°C)

DIMENSIONAL DRAWING

LCD & Non LCD Models **Standard Cable** 		
LCD & Non LCD Models **Metal-Clad Cable** 		
Front View	**Side View**	**Top View**

STANDARD ORDERING

Model # Example: A/WPR2-30-10-LCD -OR- 139367

Model #	Item #	Ranges*	Outputs* (Default in Bold)	Armored Cable	10′ Harness	20′ Harness	40′ Harness	No LCD	w/ LCD
A/WPR2-30-10	139365	**Uni-Directional**: 0-30, 0-15, 0-7.5 and 0-3 psid **Bi-Directional:** +/-30, +/-15, +/-7.5 and +/-3 psid	4-20 mA, 0-5 VDC, **0-10 VDC** (Default)		•			•	
A/WPR2-30-M10	147357			•	•			•	
A/WPR2-30-10-LCD	139367				•				•
A/WPR2-30-M10-LCD	147358			•	•				•
A/WPR2-30-20	139366					•		•	
A/WPR2-30-M20	147359			•		•		•	
A/WPR2-30-20-LCD	139368					•			•
A/WPR2-30-M20-LCD	147360			•		•			•
A/WPR2-30-40	147370						•	•	
A/WPR2-30-40-LCD	146111						•		•
A/WPR2-100-10	138180	**Uni-Directional**: 0-100, 0-50, 0-25 and 0-10 psid **Bi-Directional:** +/-100, +/-50, +/-25 and +/-10 psid	4-20 mA, 0-5 VDC, **0-10 VDC** (Default)		•			•	
A/WPR2-100-M10	147346			•	•			•	
A/WPR2-100-10-LCD	138014				•				•
A/WPR2-100-M10-LCD	147347			•	•				•
A/WPR2-100-20	138189					•		•	
A/WPR2-100-M20	147348			•		•		•	
A/WPR2-100-20-LCD	138105					•			•
A/WPR2-100-M20-LCD	147349			•		•			•
A/WPR2-100-40	141010						•	•	
A/WPR2-100-40-LCD	144521						•		•
A/WPR2-300-10	138190	**Uni-Directional**: 0-300, 0-150, 0-75 and 0-30 psid **Bi-Directional:** +/-300, +/-150, +/-75 and +/-30 psid	4-20 mA, 0-5 VDC, **0-10 VDC** (Default)		•			•	
A/WPR2-300-M10	147352			•	•			•	
A/WPR2-300-10-LCD	138041				•				•
A/WPR2-300-M10-LCD	147353			•	•				•
A/WPR2-300-20	138191					•		•	
A/WPR2-300-M20	147354			•		•		•	
A/WPR2-300-20-LCD	138106					•			•
A/WPR2-300-M20-LCD	147355			•		•			•
A/WPR2-300-40	147363						•	•	
A/WPR2-300-40-LCD	146690						•		•

Note*: WPR2 model selection is based on the maximum line pressure. EX: If your maximum line pressure is below 100 PSI, and above 30 PSI, then order the WPR2-100

GP SERIES

Gage Pressure Transducer (Air, Gases & Liquids)

The GP Series is designed to provide excellent accuracy and reliability in commercial, industrial, and process control applications where performance is critical. The bulk micro-machined transducer features a stainless steel diaphragm with welded construction that contains no O-rings, which makes them compatible with any gas or liquid compatible with 304L stainless steel. Some of the compatible gases and liquids include refrigerants, glycol, motor oil, diesel, hydraulic fluid, brake fluid, water, waste water, Hydrogen, Nitrogen and air. The GP Series transducers can also be ordered in an optional NEMA 4 rated, weatherproof metal enclosure (See on-line GP-NEMA 4 data sheet). Accessory items such as pressure snubbers and pigtail syphons are available to protect the transducers from line pressure surges (pulsations) or extreme operating temperatures. This series features packard connectors and seperate harnesses allowing for installation flexibility.

Applications: Refrigeration, Fuel Cells, Pumps, Hydraulics, Compressors, Robotics, Pneumatics, Agriculture, Spraying Systems, Process Control, Flow, Hydrogen Storage, Steam Lines, Boilers, Chillers

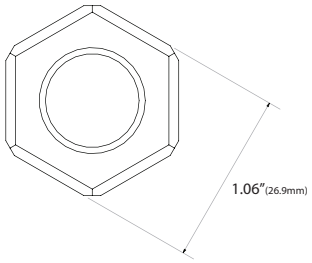
The GP Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

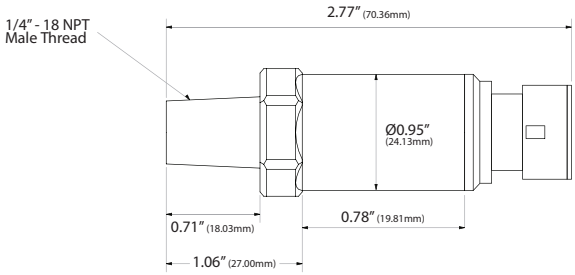
Supply Voltage:	**250 Ohm Load:** +14.5 to 30 VDC | **500 Ohm Load:** +20 to 30 VDC
Reverse Polarity Protection:	+/- 16 V over 5 minutes
Maximum Load Resistance:	800 Ohms @ 24 VDC | **Formula:** (Supply VDC – 8 VDC) / 0.020A
Supply Current:	25 mA minimum
Output Signal:	4 to 20 mA (2-Wire, Loop Powered)
Response TIme:	< 1 ms
Pressure Range:	See "Ordering Grid" on back of data sheet
Accuracy @ 22°C (71.6°F)[1]:	+/-1.5% FS
Stability:	≤ +/- 0.25% of span/year
Proof Pressure	2x FS
Burst Pressure:	3x FS
Thermal Shock:	50 Cycles (105°C to -40°C, 0.5 hr soaks @ Temp. (10s Transfer))
Vibration (100 to 2000Hz, 20g Sinusoidal, 3 Axes):	10 Hours
Operating Temperature Range:	-40 to 257°F (-40 to 125°C)
Storage Temperature Range:	-40 to 176°F (-40 to 80°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Media Type:	Any gas or liquid compatible with 304L Stainless Steel
Transducer Housing Material:	Stainless Steel
Process Fitting Material | Thread Size:	304L Stainless Steel | 1/4"-18 NPT
Recommended Torque Specification:	150 lbs-in (16.95 Nm)
Wiring Connections:	Packard Connector (Cables ordered separately per "Ordering Grid" on back of data sheet)
Approvals:	RoHS2, WEEE, ISO 9001
EMC Compatibility:	150 V/m
Product Dimensions (Length x Diameter):	2.77"(70.36mm) x 0.95 (24.13mm)
Product Weight:	**A/GP Series Transducer:** 0.30 lbs. (0.13 kg) | **A/GP 2' Harness:** 0.09 lbs. (0.04 kg) **A/GP 6' Harness:** 0.20 lbs. (0.09 kg) | **A/GP 10' Harness:** 0.32 lbs. (0.14 kg) **A/GP 20' Harness:** 0.62 lbs. (0.28 kg) | **A/GP 30' Harness:** 0.92 lbs. (0.41 kg) **A/GP 40' Harness:** 1.22 lbs. (0.55 kg)

Note[1]: Accuracy includes Hysteresis, Repeatability and Non-linearity (BFSL) | **Note[2]:** Additional error over temperature range | **Note[3]:** Sealed Gage pressure transducers are not vented to atmosphere, but are calibrated to have 0.5 VDC, 1 VDC or 4 mA at +14.5 PSIG

DIMENSIONAL DRAWING



Front View



Side View

STANDARD ORDERING

Model # Example: GP(0-300G)-20-P -OR- 135749

Model #	Item #	Description	Gage	Sealed Gage	Packard Connector	Harness Required
GP(0-15G)-20-P	135751	0-15 psig (103 kPa), ¼" NPT, Packard	•		•	•
GP(0-30G)-20-P	143160	0-30 psig (207 kPa), ¼" NPT, Packard	•		•	•
GP(0-50G)-20-P	143161	0-50 psig (345 kPa), ¼" NPT, Packard	•		•	•
GP(0-100G)-20-P	135747	0-100 psig (689 kPa), ¼" NPT, Packard	•		•	•
GP(0-200G)-20-P	135748	0-200 psig (1379 kPa), ¼" NPT, Packard	•		•	•
GP(0-300G)-20-P	135749	0-300 psig (2069 kPa), ¼" NPT, Packard	•		•	•
GP(0-500S)-20-P	135750	0-500 psis (3447 kPa), ¼" NPT, Packard		•	•	•

ACCESSORIES ORDERING

Model # Example: A/GP 30' HARNESS -OR- 135703

Model #	Item #	Description
A/GP 2' Harness	142606	A/GP 2' (0.610 m) Packard Wire Harness, Plenum Rated
A/GP 6' Harness	135614	A/GP 6' (1.83 m) Packard Wire Harness, Plenum Rated
A/GP 10' Harness	116601	A/GP 10' (3.05 m) Packard Wire Harness, Plenum Rated
A/GP 20' Harness	135613	A/GP 20' (6.10 m) Packard Wire Harness, Plenum Rated
A/GP 30' Harness	135703	A/GP 30' (9.14 m) Packard Wire Harness, Plenum Rated
A/GP 40' Harness	136995	A/GP 40' (12.19 m) Packard Wire Harness, Plenum Rated
A/0.25" SNUB A/G	137105	¼" NPT Stainless Steel Snubber for Air/Gas
A/0.25" SNUB WTR	137104	¼" NPT Stainless Steel Snubber for Water/Light Oils
A/GP M10'HARNESS	147878	A/GP 10' (3.05m) Harness, Metal Clad
A/GP M20'HARNESS	147881	A/GP 20' (6.1m) Harness, Metal Clad

Note: The A/GP Harness must be ordered separately when ordering transducers with Packard Connector

ADDITIONAL ACCESSORIES ORDERING

Item # Example: 100307

Item #	Description
100307	249 Ohm, 1/4W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 1-5 VDC)
100306	249 Ohm, 1/4W, +/- 0.1% Tolerance, 50 PPM Resistor (Recommended for Best Accuracy) (Only Needed to Convert to 1-5 VDC)
100469	499 Ohm, 1W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 2-10 VDC)

GP NEMA 4

Gage Pressure with NEMA 4 Enclosure

The GP-NEMA 4 Series is designed to provide excellent accuracy and reliability in commercial, industrial, and process control applications where high performance and a NEMA 4 weatherproof enclosure is required. The bulk micro-machined transducer features a stainless steel diaphragm with welded construction that contains no O-rings, which makes them compatible with any gas or liquid compatible with 304L stainless steel. Some of the compatible gases and liquids include refrigerants, glycol, motor oil, diesel, hydraulic fluid, brake fluid, water, waste water, Hydrogen, Nitrogen and air. The GP-NEMA 4 Series transducers include a optional NEMA 4 rated, weatherproof aluminum enclosure and an optional NIST Calibration Certificate. Accessory items such as pressure snubbers and pigtail syphons are available to protect the transducers from line pressure surges and extreme operating temperatures. For more information regarding the temperature and pressure ratings of the Pigtail Syphons, please see the Pigtail Syphon data sheet.

Applications: Refrigeration, Fuel Cells, Pumps, Hydraulics, Compressors, Robotics, Pneumatics, Agriculture, Spraying Systems, Process Control, Flow, Hydrogen Storage, Chiller, Water & Boilers

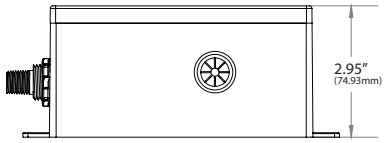
The GP-NEMA 4 Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

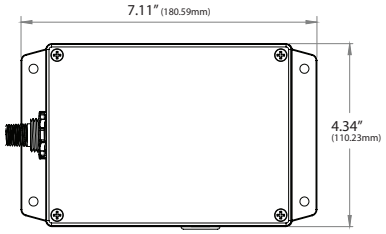
Supply Voltage:	+13 to 30 VDC (250 Ohm Load); +18 to 30 VDC (500 Ohm Load)
Reverse Polarity Protection:	+/- 16 V over 5 minutes
Maximum Load Resistance:	800 Ohms @ 24 VDC | Formula: (Supply VDC – 8 VDC) / 0.020A
Supply Current:	25 mA
Output Signal:	4 to 20 mA (2-Wire, Loop Powered)
Response TIme:	< 1 ms
Pressure Range:	See "Ordering Grid" on back of data sheet
Accuracy @ 22°C (71.6°F)[1]:	**15 to 60 psig:** < +/- 1.0% FS | **75 to 300 psig:** < +/- 0.5% FS | **500 psis3:** < +/- 0.5% FS
Thermal Error (-40 to 105°C)[2]:	**15 to 60 psig:** < +/- 1.0 FS | **75 to 300 psig:** < +/- 0.5% FS | **500 psis3:** < +/- 0.5% FS
Stability (250 Hours @ 225°F (125°C):	+/- 0.03% FS @ 0 psig; +/- 0.12% FS @ 1000 psig
Thermal Shock:	300 Cycles 105°C to -40°C, 0.5 hr soaks @ Temperature (2s Transfer)
Proof Pressure:	**15 to 300 psig:** 3x Full Scale | **500 psis:** 3x Full Scale
Burst Pressure:	**15 to 300 psig:** 3x Full Scale | **500 psis:** 3x Full Scale
Vibration (100 to 2000 Hz, 20g Sinusoidal, 3 Axes):	144 Hours
Operating Temperature Range:	**Transducer:** -40 to 257°F (-40 to 125°C) | **NEMA Enclosure:** -40 to 176°F (-40 to 80°C)
Storage Temperature Range:	-40 to 176°F (-40 to 80°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Media Types:	Any gas or liquid compatible with 304L Stainless Steel
Transducer Housing Material:	Stainless Steel
GP NEMA Enclosure Material:	Aluminum (Natural Color) with Silicone Gasket
GP NEMA 4 Enclosure Ratings:	NEMA 4, 4X, 6, 6P, 12 and 13 (Compare to IP68)
Process Fitting Material:	304L Stainless Steel
Thread Size:	1/4"-18 MNPT
Recommend Torque Specification:	150 lb-in (16.95 Nm) Nominal
Wiring Connections:	Packard Connector (Cables ordered separately per "Ordering Grid" on back of data sheet)
NIST Certificate:	Ordered Separately (See "Ordering Grid" on back of data sheet)
Approvals:	RoHS2, WEEE, ISO 9001, Made in USA
EMC Compatibility:	150 V/m
Product Dimensions:	**Transducer (L x OD):** 2.60" (66.60 mm) x 0.87" (22.20 mm) **NEMA Enclosure (L x W x D):** 7.11" (180.5 mm) x 4.34" (110.3 mm) x 2.95" (75 mm)
Product Weights:	**A/GP-NEMA 4 Series:** 0.34 lbs. (0.15 kg) **A/GP 6' Harness:** 0.20 lbs. (0.09 kg) **A/GP 20' Harness:** 0.62 lbs. (0.28 kg) **A/GP 2' Harness:** 0.06 lbs. (0.03 kg) **A/GP 10' Harness:** 0.32 lbs. (0.14 kg) **A/GP 30' Harness:** 0.92 lbs. (0.41 kg)

Note[1]: Accuracy includes Hysteresis, Repeatability, Temperature Effect and Non-linearity (BFSL) | **Note [2]:** Additional error over temperature range | **Note[3]:** Sealed Gage pressure transducers are not vented to atmosphere, but are calibrated to have 4 mA at 14.5 PSIG to resemble a standard gauge pressure transducer output

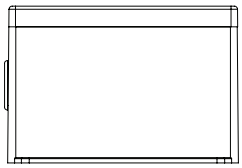
DIMENSIONAL DRAWING



Front View



Top View



Side View

STANDARD ORDERING

Model # Example: A/GP(0-15G)-20-P-N4 -OR- 142607

Model #	Item #	Description	Gage	Sealed Gage	Packard Connector	Harness Required
A/GP(0-15G)-20-P-N4 ***	142607	Gage Pressure, 0-15 psig (103 kPa), NEMA 4	•		•	•
A/GP(0-30G)-20-P-N4 ***	142608	Gage Pressure, 0-30 psig (207 kPa), NEMA 4	•		•	•
A/GP(0-50G)-20-P-N4 ***	142609	Gage Pressure, 0-50 psig (345 kPa), NEMA 4	•		•	•
A/GP(0-100G)-20-P-N4 ***	142610	Gage Pressure, 0-100 psig (689 kPa), NEMA 4	•		•	•
A/GP(0-200G)-20-P-N4 ***	142611	Gage Pressure, 0-200 psig (1379 kPa), NEMA 4	•		•	•
A/GP(0-300G)-20-P-N4 ***	142612	Gage Pressure, 0-300 psig (2069 kPa), NEMA 4	•		•	•
A/GP(0-500S)-20-P-N4 ***	142613	Gage Pressure, 0-500 psis (3447 kPa), NEMA 4		•	•	•

ACCESSORIES ORDERING

Model # Example: A/GP 30' HARNESS -OR- 135703

Model #	Item #	Description
A/GP 2'HARNESS	142606	A/GP 2' (.61m) Packard Wire Harness, Plenum Rated
A/GP 6'HARNESS	135614	A/GP 6' (1.83m) Packard Wire Harness, Plenum Rated
A/GP 10'HARNESS	116601	A/GP 10' (3.05m) Packard Wire Harness, Plenum Rated
A/GP 20'HARNESS	135613	A/GP 20' (6.10m) Packard Wire Harness, Plenum Rated
A/GP 30'HARNESS	135703	A/GP 30' (9.14m) Packard Wire Harness, Plenum Rated
A/GP 40'HARNESS	136995	A/GP 40' (12.19m) Packard Wire Harness, Plenum Rated
A/0.25"SNUB A/G	137105	¼" NPT Stainless Steel Snubber for Air/Gas
A/0.25"SNUB WTR	137104	¼" NPT Stainless Steel Snubber for Water/Light Oils
GP NIST*	142927	GP NIST Calibration Certificate

Note*: The A/GP Harness and GP NIST must be ordered separately when ordering transducers with Packard Connector or any of the Gage Pressure transmitters with a NIST Calibration Certificate

P51 SERIES

Gage Pressure Transducer (Air, Gases & Liquids)

The P51 Series is designed to provide excellent accuracy and reliability in commercial, industrial, and process control applications where performance is critical. The bulk micro-machined transducer features a stainless steel diaphragm with welded construction that contains no O-rings, which makes them compatible with any gas or liquid compatible with 304L or 316L stainless steel. The P51 Series transducers include optional ¼" NPT, 1/8" NPT or a 7/16-20 Female Schrader fitting. Some of the compatible gases and liquids include refrigerants, glycol, motor oil, diesel, hydraulic fluid, brake fluid, water, waste water, Hydrogen, Nitrogen and air. The P51 Series transducers can also be ordered with an optional NIST Calibration Certificate and it must be ordered separately when ordering the transducers for an additional cost. Accessory items such as pressure snubbers and pigtail syphons are available to protect the transducers from line pressure surges (pulsations) or extreme operating temperatures. For more information regarding the temperature and pressure ratings of the pigtail syphons, please see the Pigtail Syphon data sheet. A minimum order quantity of 10 units may apply depending on current inventory levels.

Applications: Refrigeration, Fuel Cells, Pumps, Hydraulics, Compressors, Robotics, Pneumatics, Agriculture, Spraying Systems, Process Control, Flow, Hydrogen Storage, Steam Lines, Boilers, Chillers, Water Systems

The P51 Series Pressure transducers are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

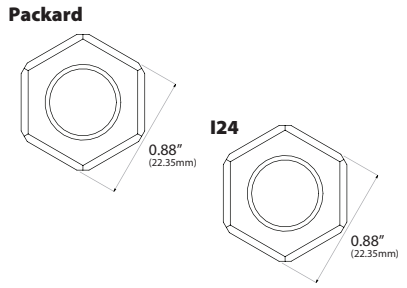
Supply Voltage:	**0.5 to 4.5 VDC Output Only:** 5.00 VDC +/- 0.500 VDC **4 to 20 mA and 1 to 5 VDC Outputs Only:** +8 to 30 VDC (No Load) **4-20 mA Output:** 250 Ohm Load: +13 to 30 VDC | 500 Ohm Load: +18 to 30 VDC
Reverse Polarity Protection:	**4-20 mA** and **1 to 5 VDC Outputs only:** +/- 16 V over 5 minutes
Overvoltage Protection Option:	**0.5 to 4.5 Volt Output ("-4.5OV" option only):** +/- 16V over 5 minutes
Output Load Impedance:	**4-20 mA Output:** 800 Ohms maximum @ 24 VDC | **Formula:** (Supply VDC – 8 VDC) / 0.020A **0.5 to 4.5 VDC and 1-5 VDC Output Signals:** 15K Ohms minimum
Supply Current:	**4 to 20 mA:** 25 mA minimum | **0.5 to 4.5 VDC:** < 3 mA | **1 to 5 VDC:** < 5 mA
Output Signals:	4 to 20 mA (2-Wire, Loop Powered); 0.5 to 4.5 VDC (3-Wires); 1 to 5 VDC (3-Wires)
Response Time:	< 1 ms
Pressure Range:	See "Ordering Grid" on back of data sheet
Accuracy @ 22°C (71.6°F)[1]:	**15 to 60 PSIG/PSIS:** < +/- 1.0% FS | **75 to 300 PSIG/PSIS:** < +/- 0.5% FS **500 to 750 PSIS 3:** < +/- 0.5% FS | **1000 to 5000 PSIS 3:** < +/- 1% FS **15 to 200 PSIA:** < +/- 0.5% FS | **300 to 750 PSIA:** < +/- 0.5% FS | **1000 to 3000 PSIA:** < +/- 1% FS
Thermal Error (-40 to 105°C)[2]:	**15 to 60 PSIG/PSIS:** < +/- 1.0% FS | **75 to 300 PSIG/PSIS:** < +/- 0.5% FS **500 to 750 PSIS**: < +/- 0.5% FS | **1000 to 3000 PSIS:** < +/- 1% FS **15 to 200 PSIA:** < +/- 0.5% FS | **300 to 750 PSIA:** < +/- 0.5% FS | **1000 to 3000 PSIA:** < +/- 1% FS
Stability (250 Hours @ 225°F (125°C)):	+/- 0.03% FS @ 0 PSIG; +/- 0.12% FS @ 1000 PSIG
Proof Pressure | Burst Pressure:	**Proof Pressure:** **3 to 15 PSI:** 3X FS **16 to 3000 PSI (0.5-4.5V, 1-5V):** 2X FS **16 to 3000 PSI (4-20mA):** 3X FS **Burst Pressure:** **3 to 15 PSIA/PSIS:** 3X FS **3 to 300 PSIG:** 3X FS **16 to 3000 PSIA/PSIS:** 10x FS/15,000 PSI *(Whichever is less)*
Thermal Shock:	300 Cycles (105°C to -40°C, 0.5 hour soaks @ Temperature (2s Transfer))
Vibration (100 to 2000Hz, 20g Sinusoidal, 3 Axes):	144 Hours
Operating | Storage Temperature Range:	-40 to 257°F (-40 to 125°C) | -40 to 176°F (-40 to 80°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Media Type:	Any gas or liquid compatible with 304L or 316L Stainless Steel
Transducer Housing Material:	Stainless Steel
Process Fitting Material | Thread Size:	304L or 316L Stainless Steel | See Ordering Grid for more details
Recommended Torque Specification:	All Ports except "U" and "Y": 150 lbs-in (16.95 Nm); Ports "U" and "Y": 120 lbs-in (13.56 Nm)
Wiring Connections:	Packard Connector (Cables ordered separately per "Ordering Grid" on back of data sheet) **"-I24" (24" Lead Length):** PVC Jacketed Cable 18 (0.823 mm^2) or 24 AWG (0.2047 mm^2) **"-MD" Din 43650:** Hirschman® Connector with 90° Mating Connector
NIST Certificate:	Ordered Separately (See "Ordering Grid" on back of data sheet)
Approvals:	RoHS2, WEEE, ISO 9001
EMC Compatibility:	150 V/m
Product Dimensions (Length x Diameter):	2.60" (66.6 mm) x 0.875" (22.23 mm)

PRODUCT SPECIFICATIONS

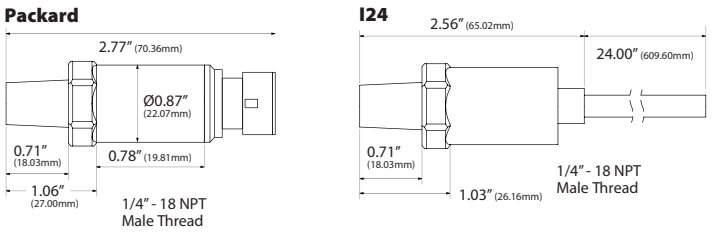
Product Weight:	**P51 Series Transducers:** 0.32 lbs. (0.145 kg) **A/GP 2'Harness:** 0.09 lbs. (0.040 kg) | **A/GP 6'Harness:** 0.20 lbs. (0.091 kg) **A/GP 10'Harness:** 0.32 lbs. (0.145 kg) | **A/GP 20'Harness:** 0.62 lbs. (0.282 kg) **A/GP 30'Harness:** 0.92 lbs. (0.417 kg) | **A/GP 40'Harness:** 1.22 lbs. (0.554 kg)

Note 1: Accuracy includes Hysteresis, Repeatability, and Non-linearity (BFSL) | **Note 2:** Additional error over temperature range | **Note 3:** Sealed Gage pressure transducers are not vented to atmosphere, but are calibrated to have 0.5 VDC, 1 VDC or 4 mA at +14.5 PSIG

DIMENSIONAL DRAWING



Front View



Side View

CUSTOM ORDERING

Model # Example: P51 (A.) - 100 (B.) - A (C.) - B (D.) - 124 (E.) - 20mA (F.) - 000 (G.) - 000 (H.)

		MODEL #
A. Sensor Series *No Selection Required*	***P51*** →	**P51**
B. Full Scale Pressure Range *Select One (1)*	**3** = 3 PSI (20.684 kPa) | **5** = 5 PSI (34.474 kPa) | **10** = 10 PSI (68.948 kPa) | **15** = 15 PSI (103.421 kPa) | **50** = 50 PSI (344.738 kPa) | **75** = 75 PSI (517.107 kPa) | **100** = 100 PSI (689.476 kPa) | **200** = 200 PSI (1.379 MPa) | **300** = 300 PSI (2.068 MPa) | **500** = 500 PSI (3.447 MPa) | **750** = 750 PSI (5.171 MPa) | **1000** = 1000 PSI (6.895 MPa) | **1500** = 1500 PSI (10.342 MPa) | **2000** = 2000 PSI (13.790 MPa) | **3000** = 3000 PSI (20.684 MPa)	
C. Pressure Units *Select One (1)*	**G** = Gage Pressure (Ranges from: 3-300 PSIG) **S** = Sealed Gage Pressure (Ranges from: 15 to 3000 PSIS) **A** = Absolute Pressure (Ranges from: 15 to 3000 PSIA)**	
D. Port/Fitting Configurations *Select One (1)*	**A** = ¼"-18 NPT Thread, 304L SS, 7/8" Hex **B** = 1/8"-27 NPT Thread, 304L SS, 7/8" Hex **U** = 7/16"-20-2B Female (1/4" Flare Female Schrader w/ Depressor) Fitting, 304L SS, 5/8" Hex **UB** = 1/8"-27 NPT Thread 304L SS, 7/8" Hex (Use only with 3 to 10 PSI Pressure Ranges) **UC** = 1/4"-18 NPT Thread 6.0 ID, 304L SS, 7/8" Hex (Use only with 3 to 10 PSI Pressure Ranges) **Z** = ¼"-18 NPT Thread, 316L SS, 7/8" Hex **W** = 1/8"-27 NPT Thread, 316L SS, 7/8" Hex **Y** = 7/16"-20-2B Female (1/4" Flare Female Schrader with Depressor) Fitting, 316L SS, 5/8" Hex	
E. Connector/Lead Style *Select One (1)*	**I24** = 24" PVC Cable | **MD** = Din 43650 micro mini with 90° Right Angle Mating Connector | **P** = Packard Connector (3 Pin) (Requires an A/GP Cable Harness below)	
F. Output Signal *Select One (1)*	**4.5V** = 0.5 to 4.5 VDC (5V Input Only) | **4.5OV** = 0.5 to 4.5 VDC with Over Voltage Protection | **5V** = 1 to 5 VDC | **20mA** = 4 to 20 mA	
G. Factory Supplies *No Selection Required*	**000** = Default →	**000**
H. Factory Supplied *No Selection Required*	**000** = Default →	**000**

Note:** Calibration is as follows: Absolute transducers are calibrated to have 0.5VDC, 1VDC, or 4mA respectively at 0PISA (-14.7PSI)

ACCESSORIES ORDERING

Model #	Item #	Description
A/GP 2' Harness	142606	A/GP 2' (0.610 m) Packard Wire Harness, Plenum Rated
A/GP 6' Harness	135614	A/GP 6' (1.83 m) Packard Wire Harness, Plenum Rated
A/GP 10' Harness	116601	A/GP 10' (3.05 m) Packard Wire Harness, Plenum Rated
A/GP 20' Harness	135613	A/GP 20' (6.10 m) Packard Wire Harness, Plenum Rated
A/GP 30' Harness	135703	A/GP 30' (9.14 m) Packard Wire Harness, Plenum Rated
A/GP 40' Harness	136995	A/GP 40' (12.19 m) Packard Wire Harness, Plenum Rated
A/0.25" SNUB A/G	137105	¼" NPT Stainless Steel Snubber for Air/Gas
A/0.25" SNUB WTR	137104	¼" NPT Stainless Steel Snubber for Water/Light Oils
GP NIST***	142927	GP NIST Calibration Certificate

Note***:** The A/GP Harness and GP NIST must be ordered separately when ordering transducers with Packard Connector or any of the Gage Pressure transmitters with a NIST Calibration Certificate

ADDITIONAL ACCESSORIES ORDERING

Item #	Description
100307	249 Ohm, 1/4W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 1-5 VDC)
100306	249 Ohm, 1/4W, +/- 0.1% Tolerance, 50 PPM Resistor (Recommended for Best Accuracy) (Only Needed to Convert to 1-5 VDC)
100469	499 Ohm, 1W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 2-10 VDC)

SYPHONS

Gage Pressure Transducer

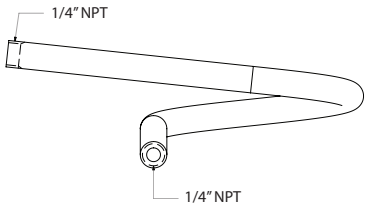
The A/SYPHON Series has been designed to provide protection for the Gage and Wet to Wet Differential Pressure transmitters from damage in boiler applications where the operating temperature of the steam being monitored is higher than the maximum operating temperature of the pressure transducer. Three different bend configurations of 90º, 180º, and 270º are available to allow the mounting of the pressure transducer vertically away from the main pipe. When mounting the pigtail syphons, make sure that the syphon is fully exposed to the ambient air and not covered by any pipe insulation. The Pigtail Syphons feature a stainless steel construction with ¼" Male NPT pipe threads and are compatible with a wide range of gases and liquids.

The A/SYPHON Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

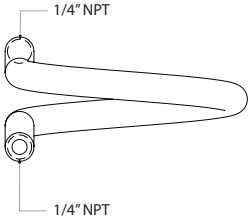
PRODUCT SPECIFICATIONS

Material Type	Welded 316 Series Stainless Steel
Pipe Schedule	Schedule 40 or Schedule 80; See ordering grid below
Thread Size	1/4" Male NPT x 1/4" Male NPT
Operating Temperature Range	See temperature vs pressure table below
Operating Pressure Range	See temperature vs pressure table below
Bend Configurations	90º, 180º, or 270º
Agency Approvals	ASME Boiler and Pressure Vessel Code 1995, MIL-I Certified (Military equivalent of ISO 9000), RoHS2 Compliant, WEEE, Reach
Manufacturing Location	Made in the USA
Product Weights	**A/SYPHON-90:** 0.40 lbs (0.181 kg) | **A/SYPHON-90-H**: 0.50 lbs (0.227 kg) **A/SYPHON-180:** 0.40 lbs (0.181 kg) | **A/SYPHON-180-H:** 0.60 lbs (0.272 kg) **A/SYPHON-270:** 0.50 lbs (0.227 kg) | **A/SYPHON-270-H:** 0.70 lbs (0.318 kg)

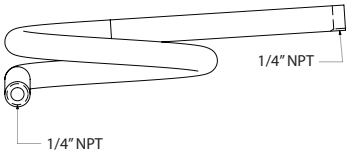
DIMENSIONAL DRAWING



90° Syphon



180° Syphon



270° Syphon

OPERATING TEMPERATURE. OPERATING PRESSURE

Temp (°F)	Temp (°C)	316 SS Schedule 40 (PSI max)	316 SS Schedule 80 (PSI max)	Notes
20 to 100	-6.7 to 37.7	1192	2580	**1)** Pressure/Temperature ratings are established on the basis of calculation in accordance with the ASME Boiler and Pressure Vessel Code, 1996 edition, 1995 Addenda, Section 1, Paragraph PG27. It is the end users responsibiity to ensure that all components used in Pressure retaining service are adequately designed for the anticipated conditions. **2)** No Allowance has been provided for corrosion.
200	93.2	1117	2419	
300	148.7	991	2145	
400	204.2	909	1967	
500	259.7	842	1822	
600	315.2	797	1725	
650	342	782	1693	
700	370.7	767	1661	
750	398.5	752	1629	
800	426.2	737	1596	
850	453	737	1596	
900	481.7	730	1580	
950	509.5	722	1564	
1000	537.2	715	1548	
1050	564	708	1532	
1100	592.7	705	1541	
1150	620.5	632	1406	
1200	648.2	480	1068	
1250	676	358	796	
1300	703.7	267	593	
1350	731.5	198	441	
1400	759.2	145	322	
1450	786	114	254	
1500	814.7	84	186	

ORDERING

Model # Example: A/SYPHON-90 -OR- 137245

Model #	Item #	Description	Pipe Schedule	90° Bend	180° Bend	270° Bend
A/SYPHON-90	137245	¼" MNPT Syphon, 90°, Schedule 40, 316 SS	Schedule 40	•		
A/SYPHON-90-H	137246	¼" MNPT Syphon, 90°, Schedule 80, 316 SS	Schedule 80	•		
A/SYPHON-180	137247	¼" MNPT Syphon, 180°, Schedule 40, 316 SS	Schedule 40		•	
A/SYPHON-180-H	142091	¼" MNPT Syphon, 180°, Schedule 80, 316 SS	Schedule 80		•	
A/SYPHON-270	143945	¼" MNPT Syphon, 270°, Schedule 40, 316 SS	Schedule 40			•
A/SYPHON-270-H	137250	¼" MNPT Syphon, 270°, Schedule 80, 316 SS	Schedule 80			•

SNUBBER SERIES

Surge Protection for Gauges & Tranducers

The ACI Snubber Series should be used to protect pressure gages, transducers and other control instruments by reducing flow and dampening shock due to water hammer and other fluctuating pressure effects. The porous filter design is suitable for use with air, gases, and other low viscosity fluids that are compatible with 316 Series Stainless Steel. When installing the snubber, make sure to install the snubber such that the fluid or air/gas flow is only applied to the snubber in the direction of the arrow.

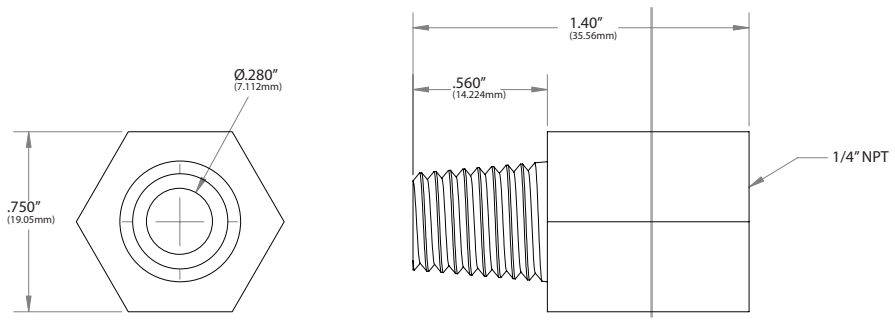
Applications: Fire, Centrifugal, Reciprocating and Boiler Feed Pumps, Compressors, Chillers, Pressure Switches, Hydraulic Presses, Hydraulic Systems, Waste Water, Fluid Power Systems, Orifice Meters, Manifolds, Petro Chemical Industry

The Snubber Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Material Type:	316 Stainless Steel
Male / Female Thread:	1/4" NPT
Filter Size:	**Air / Gases:** 7 Microns | **Water / Fluids:** 20 Microns
Maximum Temperature:	1000°F (537°C)
Maximum Pressure:	5000 PSI (344 Bar)
Overall Length:	1.376"
Hex Length:	0.812"
Hex Size:	3/4"

DIMENSIONAL DRAWING



Standard View

STANDARD ORDERING

Model # Example: A/0.25" SNUB A/G -OR- 137105

Model #	Item #	Product Description
A/0.25" SNUBBER A/G	137105	Air / Gas Snubber
A/0.25" SNUBBER WTR	137104	Water / Fluid Snubber

DBL

Differential Pressure Switches (Plastic)

The DBL Series Differential Pressure Switches are general purpose pressure switches designed for both HVAC and Energy Management applications. These pressure switches can be used to sense positive, negative, or differential air pressures when used in conjunction with an DBZ-06, A/SPT or A/VPT Series sampling tube. The NEMA 3 (IP54) rated weather proof plastic enclosure contains an On/Off, single stage micro switch and two pressure chambers separated by a silicone diaphragm. The enclosure also contains a ½" conduit knockout and guards against accidental contact with the live switch terminal screws as well as the factory calibrated linear set point adjusting knob. The set point can be adjusted without comparing to a field gauge, manometer or magnehelic.

Applications: Monitoring Filter Blockage, Proof of Flow, Prove Excessive or Insufficient Flow, Alarms and Control

The DBL Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

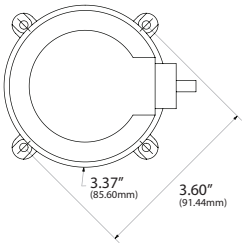
PRODUCT SPECIFICATIONS

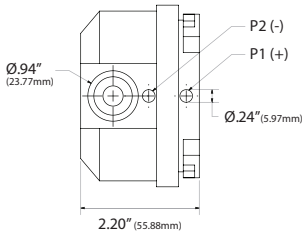
Input Pressure Range:	See ordering on reverse side
Adjustable Set Point Range:	See ordering grid below (Internal Linear Scaled knob)
Adjustable Set Point Switching Differential:	Factory Default: +/- 15% of Trip / Set Point; See ordering grid below for adjustable switching differential range
Contact (Load) Rating:	250 VAC maximum, 1.5A Resistive (0.4A Inductive)
Contact Arrangement:	SPDT (Form 1C) w/ Automatic Reset
Measured Media:	Air and other non-combustible, non-aggressive gases
Diaphragm Material:	Silicone
Maximum Operating Pressure:	40" wc (10 kPa)
Life Expectancy:	1,000,000 cycles
Operating | Storage Temperature Range:	-4 to 185ºF (-20 to 85ºC)
Mounting Direction:	Any vertical plane
Enclosure Material:	Base = PA6.6 / Cover = Polystyrene (Transparent)
Enclosure Rating:	NEMA 3 (IP54)
Sample Line Connections:	Accepts 3/16" ID (8mm) Push on plastic/poly tubing
Electrical Connections:	Spade (Maximum 16 AWG (1.5 mm2))
Conduit Opening:	Accepts ½" NPT Conduit
Agency Approvals:	CE, ISO 9001, RoHS2, WEEE
Dimensions (Diameter x Height):	4.00" x 2.30" (100 x 58 mm)
Weight:	DBL Series: 0.40 lbs (0.20 kg) | DBZ-06: 0.16 lbs (0.072 kg)

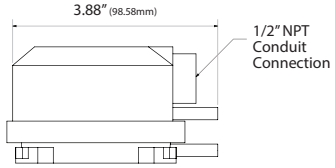
Note: For more information regarding the SPT and VPT Pitot Tubes, see their respective data sheets

DIMENSIONAL DRAWING

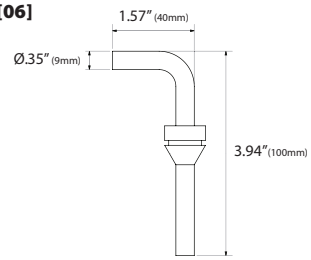
DBL [205]

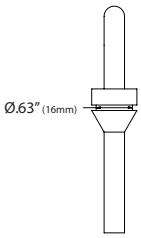


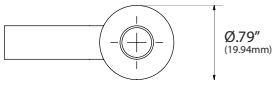




DBZ [06]







Front View	Side View	Top View

STANDARD ORDERING

Model # Example: DBL-205L -OR- 105934

Model #	Item #	Ranges Inches wc (Adjustable Set Point)	Adjustable Switching Differential Inches wc	Contact Form
DBL-205L	105934	0.08 to 0.8″ wc	0.04 to 0.08" wc	SPDT
DBL-205B	102423	0.20 to 2.0″ wc	0.08 to 0.16" wc	SPDT
DBL-205D	102424	0.80 to 4.0″ wc	0.40 to 0.80" wc	SPDT
DBL-205E	106255	2.0 to 10.0″ wc	0.60 to 1.20" wc	SPDT

ACCESSORIES ORDERING | PICK UP PORTS

Model # Example: DBZ-06 -OR- 106657

Model #	Item #	Description
DBZ-06	106657	Duct Mounting Kit – Contains two metal right angle Pitot Tubes, two grommets and 6.5′ (2.0m) tubing

Note*: Other compatible products include ACI's Pick up Port (A/PUP) Series, Medical Grade Tubing Kit (A/10′), Transformer Series (A/LE) and DC Power Supplies (A/PS24-24V-S)

AFS

Differential Pressure Switches (Metal)

The AFS Series Differential Pressure Switches are general purpose proving switches designed for both HVAC and Energy Management applications. These pressure switches can be used to sense positive, negative, or differential air pressures when used in conjunction with an A/SPT or A/VPT Series sampling tube. The plated housing contains a diaphragm, calibration spring and single snap-acting contact closure with either a manual or automatic reset switch depending on the model. The enclosure cover contains a ½" conduit knockout and guards against accidental contact with the live switch terminal screws as well as the set point adjusting screw.

Applications: Monitoring Filter Blockage, Proof of Flow, Prove Excessive or Insufficient Flow, Alarms and Control

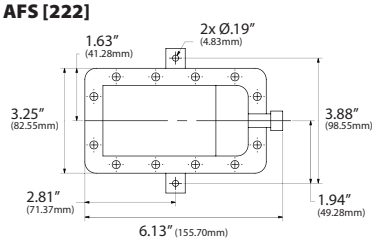
The AFS Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

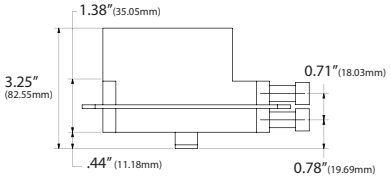
PRODUCT SPECIFICATIONS

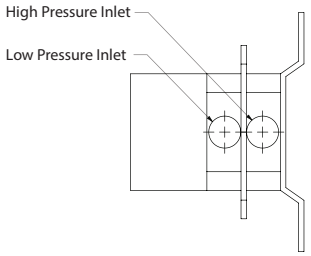
Input Pressure Range:	**AFS-222:** 0.05 +/- 0.02" to 12" wc | **AFS-262:** 0.05 +/- 0.02" to 2.0" wc | **AFS-460:** 0.40 +/- 0.06" to 12.0" wc
Set Point Range:	**AFS-222:** 0.05 +/- 0.02" to 12.0" wc | **AFS-262:** 0.07" to 2.0" wc | **AFS-460:** 0.40 +/- 0.06" to 12" wc
Field Adjustable "Operate" Range:	**AFS-222:** 0.07 to 12.0" wc | **AFS-262:** 0.07" to 2" wc | **AFS-460:** 0.46" to 12" wc
Field Adjustable "Release" Range:	**AFS-222:** 0.04 to 11.2" wc | **AFS-262:** 0.04" to 1.9" wc | **AFS-460:** 0.46"w.c. to 11.2" w.c.
Approximate Switching Differential:	Progressive, increasing from 0.02 +/- 0.01" wc @ minimum set point to 0.8" wc @ maximum set point
Contact (Load) Rating:	**AFS-222/AFS262:** 300 VA pilot duty @ 115 to 277 VAC, 60 Hz; 15A non-inductive to 277 VAC, 60 Hz **AFS-460:** 15A @ 125, 250, or 277 VAC / 1/2A @ 125 VDC, 1/4A @ 250 VDC / ¼ hp @ 125 VAC, ½ hp @ 250 VDC **AFS-460-137:** 8A @ 250 VAC
Contact Arragement:	**AFS-222/AFS-262:** SPDT w/ Automatic Reset | **AFS-460:** SPST-NC w/ Manual Reset | **AFS-460-137:** DPDP w/ Manual Reset
Measured Media:	**AFS-222/AFS-262:** Air or combustion by-products that will not degrade silicone | **AFS-460:** Air
Maximum Pressure:	0.5 PSI (0.03 Bar)
Life Expectancy:	**AFS-222/AFS-262:** 100,000 cycles minimum @ 1/2 psi (0.03 Bar) max pressure / cycle & max load **AFS-460:** 6,000 cycles minimum @ 1/2 psi (0.03 Bar) max pressure / cycle & max load
Operating Temperature Range:	-40 to 180ºF (-40 to 82ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Mounting Direction:	Any vertical plane
Enclosure Material:	Galvanized Steel
Sample Line Connections:	Accepts ¼" OD rigid or semi-rigid metallic tubing using integral compression fitting, ferrule and nut | **"-112 Option":** Includes two barbed fittings that accepts ¼" flexible plastic tubing
Electrical Connections:	Screw type terminal with cup washers
Conduit Opening:	Accepts ½" Conduit (7/8" (22.3 mm) opening)
Dimensions (H x W x D):	6.25" x 4.46" x 3.18" (158.8 mm x 113.3 mm x 80.8 mm)
Weight:	1.2 lbs (0.544 kg)
Agency Approvals:	UL, CUL, FM, CSA, CE, ISO 9001: 2008

DIMENSIONAL DRAWING

AFS [222]







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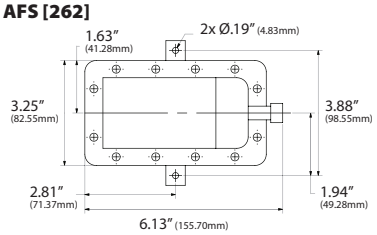
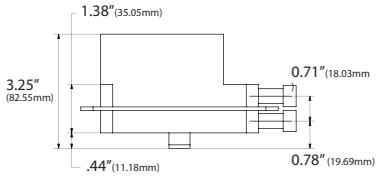
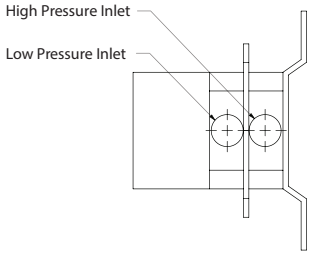
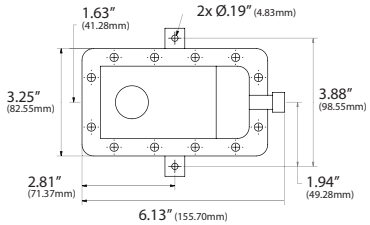
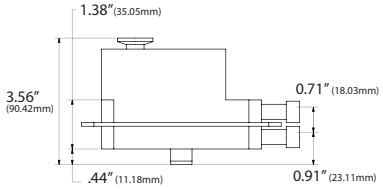


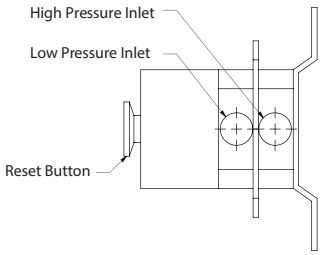




AFS [460]







Front View	Side View	Top View

STANDARD ORDERING

Model # Example: AFS-222 -OR- 101788

Model #	Item #	Pressure Range	Contact Style	Reset Style	Compression Fitting	Barbed Fitting
AFS-222	101788	0.05 to 12.0″ wc	SPDT	Auto	●	
AFS-222-112	108816	0.05 to 12.0″ wc	SPDT	Auto		●
AFS-262	101789	0.05 to 2.0″ wc	SPDT	Auto	●	
AFS-262-112	118041	0.05 to 2.0″ wc	SPDT	Auto		●
AFS-460	101791	0.40 to 12.0″ wc	SPST-N/C	Manual	●	
AFS-460-112	129657	0.40 to 12.0″ wc	SPST-N/C	Manual		●
AFS-460-137	105782	0.60 to 12.0″ wc	DPDT	Manual	●	

PT

Pitot Tubes (Plastic)

ACI carries a full line of differential, static, and velocity (flow) pitot tubes. The PT Series is designed to sense air flow velocity in VAV and other small ducts found in many of today's HVAC Systems. When selecting the proper PT series Pitot Tube, you want to make sure that the insertion length of the pitot tube is long enough to reach the midpoint of the duct and at least 10 straight duct diameters upstream and downstream for best results. Note that the Pitot Tube should also be mounted such that the arrow on the pitot tube is facing in the direction of the air flow. And that the tube is kept free of dirt and debris. A foam pad is adhered to mounting plate to seal the installation opening and to reduce vibrations.

Applications: Used to monitor fan operation and true air flow with varying amounts of static pressure in non-critical applications.

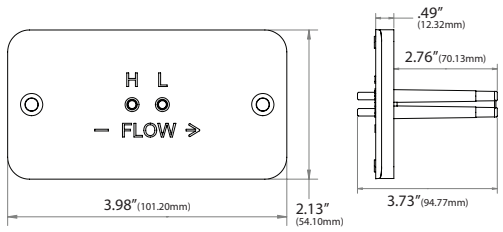
The PT Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

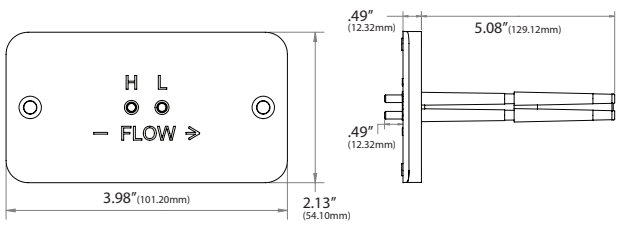
Tubing Connections:	3/16" OD (4.8 mm) connection for ¼" (6.4 mm) OD Poly Tubing
Sensing (Insertion) Length | # Sensing Points:	See ordering grid below
Recommended Duct Size:	4" (10.2 cm) to 18" (45.7 cm)
Recommended Air Flow:	200 FPM (60.96 MPM) minimum to 3000 FPM (914.4 MPM) maximum
Operating Temperature Range:	40 to 120ºF (4 to 49ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	0 to 90% RH non-condensing
Material Type:	ABS
Material Flammability Rating	UL-94 HB
Product Dimensions (W x H x L) | Weight:	**PT 3":** 4.00" (10.2 cm) x 2.1" (5.3 cm) x 3.6" (9.1 cm) / 0.06 lbs (0.03 kg) **PT 5.2":** 4.00" (10.2 cm) x 2.1" (5.3 cm) x 6.0" (15.2 cm) / 0.07 lbs (0.032 kg) **PT 7.5":** 4.00" (10.2 cm) x 2.1" (5.3 cm) x 8.3" (21.1 cm) / 0.075 lbs (0.034 kg) **PT 9.7":** 4.00" (10.2 cm) x 2.1" (5.3 cm) x 10.6" (26.9 cm) / 0.086 lbs (0.04 kg)
Approvals:	RoHS2, WEEE, Reach

DIMENSIONAL DRAWING

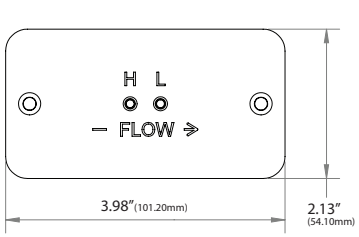
PT 3"



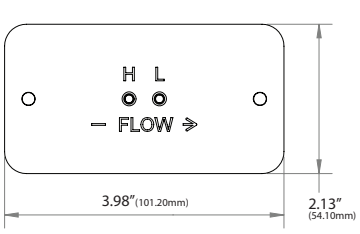
PT 5.2"



PT 7.5"



PT 9.7"



Standard View

STANDARD ORDERING

Model # Example: PT 5.2" -OR- 130141

Model #	Item #	Description	Insertion Length	Sensing Points	Duct Size
PT 3"	130140	3.0" Pitot Tube with Foam Gasket	3.0" (7.6 cm)	1 Set	4 - 6" (10.2 - 15.2 cm)
PT 5.2"	130141	5.2" Pitot Tube with Foam Gasket	5.2" (13.2 cm)	2 Sets	6 - 8" (15.2 - 20.3 cm)
PT 7.5"	130142	7.5" Pitot Tube with Foam Gasket	7.5" (19.1 cm)	3 Sets	8 - 10" (20.3 - 25.4 cm)
PT 9.7"	130143	9.7" Pitot Tube with Foam Gasket	9.7" (24.6 cm)	4 Sets	10 - 18" (25.4 – 45.7 cm)

SPT

Static Pitot Tubes (Aluminum)

The SPT is an Aluminum Static Pressure (Aspiration) probe used to monitor the static pressure in an HVAC duct or equipment application. The static pressure probe should be mounted approximately 5 to 8 duct diameters downstream from elbows, obstructions, or large change in duct area to reduce the amount of turbulence that will affect your readings.

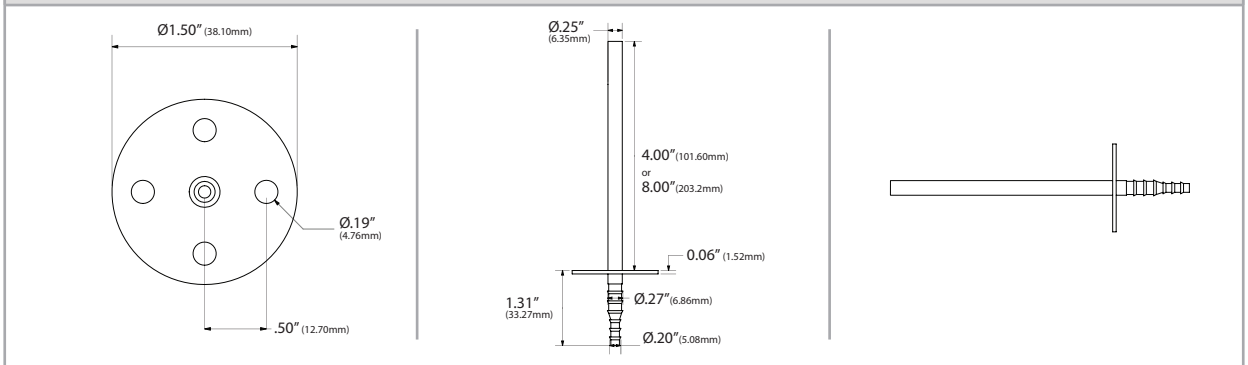
Applications: Used to monitor fan operation, filter blockage, or reduced air flow with little or no static pressure in non-critical applications

The SPT Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Tubing Connection | Tubing Size:	45º Barbed Type (6 Places), accepts 1/8" through 1/4" ID flexible plastic tubing
Probe Insertion Length & Sensing Points:	**SPT-3.5":** (88.9 mm) | Single Point | **SPT-8.0":** 8" (203.2 mm) | Single Point
Tube Mounting Direction:	Tip opens parallel to the air stream
Static Tube Mounting Angle:	Perpendicular to the duct (90 Degrees +/- 3 Degrees)
Mounting Flange (Diameter):	1.50" (38.1 mm)
Measurement Probe Hole Size (Diameter):	1/4" (6.35mm)
Mounting Holes (Diameter):	3/16" (4.76 mm)
Material:	Aluminum
Storage & Operating Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	0 to 90% RH non-condensing
Weight:	**SPT-3.5":** 0.022 lbs (10g) | **SPT-8.0":** 0.034 lbs (15.4g)
Agency Approvals:	RoHS2, WEEE, Reach

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/SPT-8" -OR- 108976

Model #	Item #	Insertion Length	Sensing Points
SPT-3.5"	102957	4" (101.6 mm)	1
SPT-8.0"	108976	8" (203.2 mm)	1

ACCESSORIES ORDERING

Model # Example: A/10'TUBE -OR- 126606

Model #	Item #	Description	Color
A/10' TUBE	126606	10' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/20' TUBE	132226	20' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/100' TUBE	136018	100' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear

VPT

Velocity Pitot Tubes (Aluminum)

The VPT Series is an Aluminum Velocity Pressure or flow (Impact) probe used to sample the air flow in HVAC duct or equipment applications. The VPT should be mounted approximately 5 to 8 duct diameters downstream from elbows, obstructions, or large change in duct area to reduce the amount of turbulence that will affect your readings.

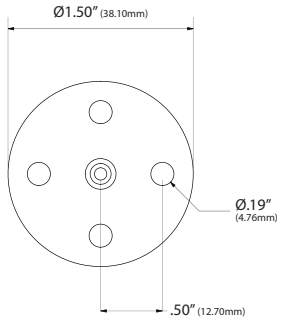
Applications: Used to monitor fan operation and true air flow with varying amounts of static pressure in non-critical applications.

The VPT Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

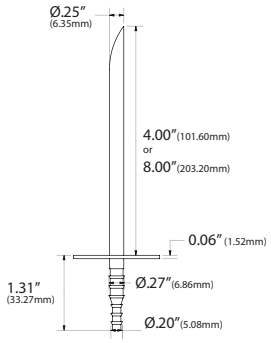
PRODUCT SPECIFICATIONS

Tubing Connection | Tubing Size:	45º Barbed Type (6 Places), accepts 1/8" through 1/4" ID flexible plastic tubing
Probe Insertion Length & Sensing Points:	**VPT:** 4" (101.6 mm) | Single Point **VPT-8":** 8" (203.2 mm) | Single Point
Tube Mounting Direction:	Tip opens directly into the air stream (Mounting arrow on Probe)
Impact Tube Mounting Angle:	Parallel to air stream (+/- 7 Degrees)
Mounting Flange (Diameter):	1.50" (38.1 mm)
Measurement Probe Hole Size (Diameter):	1/4" (6.35 mm)
Mounting Holes (Diameter):	3/16" (4.76 mm)
Material:	Aluminum
Storage & Operating Temperature Range:	-40 to 185ºF (-40ºC to 85ºC)
Operating Humidity Range:	0 to 90% RH (non-condensing)
Weight:	**VPT:** 0.022 lbs (10g) | **VPT-8":** 0.034 lbs (15.4g)
Agency Approvals:	RoHS2, WEEE, Reach

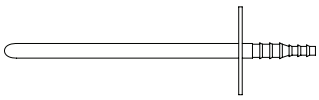
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model #	Item #	Description	Sensing Points
VPT	103010	4" (101.6 mm)	1
VPT-8"	125008	8" (203.2 mm)	1
VPT KIT 4"	135399	4" VPT (2) with Tubing (0.17" ID X 0.25" OD, 10' (2))	2
VPT KIT 8"	150921	8" VPT (2) with Tubing (0.17" ID X 0.25" OD, 10' (2))	2

PICK UP PORTS

Room

The ACI Room Pickup Ports are designed to be used in conjunction with any low differential pressure transmitter (see ACI DLP or MLP Series) to provide an aesthetically pleasing building static reference point (pressure). They are offered in two different room enclosure options. When used in conjunction with a low differential pressure transmitter, the pickup ports provide excellent accuracy and reliability. ACI also offers 10', 20' and 100' Medical tubing kits made of an FDA approved Food/Medical Grade PVC tubing kit. For best results, make sure that the tubing is free of dirt, duct and condensation and that you keep the tubing run as short as possible in order to provide best response time. For more information regarding the Medical Grade Tubing kit, please see the specific data sheet for the Medical Grade tubing kit.

Applications: Monitoring Indoor Building Static Pressure in Commercial/Office Buildings, Clean Rooms, Isolation Rooms, Hospitals, Laboratories, Schools, etc.

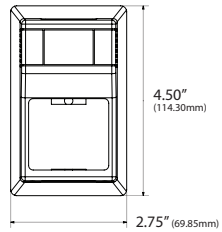
The Pick Up Port Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

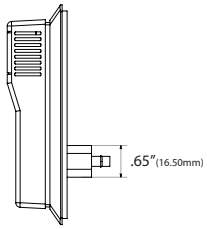
PRODUCT SPECIFICATIONS

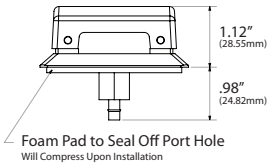
Tubing Connections:	Barbed fitting accepts 3/16" ID flexible Poly tubing
Maximum Operating Pressure:	Filter: 150 psi (10.3 bar) Medical Tubing (A/10' Tube, A/20' Tube, A/100' Tube): 65 psi maximum at 73ºF (23ºC)
Operating Temperature Range:	35º to 140ºF (2º to 60ºC)
Storage Temperature Range:	-40º to 140ºF (-40º to 60ºC)
Enclosure Material | Flammability Rating:	ABS | UL-94 HB
Enclosure Color:	**A/R2-PUP:** White **A/R-PUP:** Beige
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMUSS-302
Filter Material:	Nickel Plated Brass
Product Dimensions (L x W x D) | Weight:	**A/R2-PUP:** 4.50" (11.4 cm) x 2.75" (6.99 cm) x 1.12" (2.84 cm) | 0.20 lbs (0.09 kg) **A/R-PUP:** 4.51" (11.5 cm) x 2.75" (6.99 cm) x 1.14" (2.90 cm) | 0.16 lbs (0.073 kg)
Agency Approvals:	RoHS2, WEEE, Reach

DIMENSIONAL DRAWING

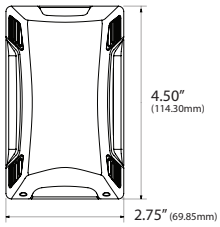
Pickup Port Room [R]

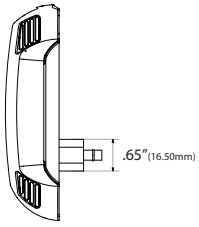


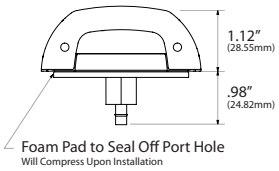




Pickup Port Room [R2]







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/R2-PUP -OR- 132711

Model #	Item #	Description	Color
A/R-PUP	125584	Pickup Port, Wall Mounted	Beige
A/R2-PUP	132711	Pickup Port, Wall Mounted	White

ACCESSORIES ORDERING

Model # Example: A/100' TUBE -OR- 136018

Model #	Item #	Description	Color
A/10' TUBE	126606	10' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/20' TUBE	132226	20' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/100' TUBE	136018	100' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear

PICKUP PORTS

Outside Air (Horizontal & Vertical)

The ACI Outdoor Pickup Ports are designed to be used in conjunction with any low differential pressure transmitter (see ACI DLP or MLP Series) to provide a weatherproof outdoor reference point for monitoring building static pressure. The A/O-PUP-H is designed to be horizontally mounted with the tube in parallel with the ground or roof. The A/O-PUP-V is designed to be vertically mounted with the tube pointed downwards towards the ground or roof. When used in conjunction with a low differential pressure transmitter the pickup ports provide excellent accuracy and reliability. ACI also offers 10', 20' and 100' Medical tubing kits made of an FDA approved Food/Medical Grade PVC tubing kit. For best results, make sure that the tubing is free of dirt, dust and condensation and that you keep the tubing run as short as possible to provide best response time. For more information regarding the Medical Grade Tubing kit, please see the specific data sheet for the Medical Grade tubing kit.

Applications: Indoor/Outdoor Weatherproof Pickup Port for Building Static Pressure

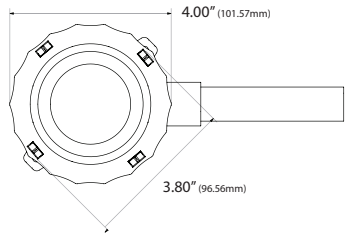
The Pick Up Port Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

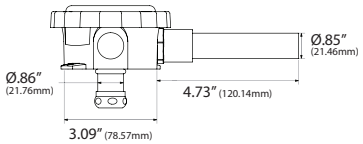
PRODUCT SPECIFICATIONS

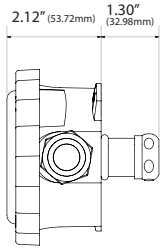
Tubing Connections:	Barbed fitting accepts 3/16" ID flexible Poly tubing
Maximum Operating Pressure:	**Filter:** 150 psi (10.3 bar) **Medical Tubing (A/10' Tube, A/100' Tube):** 65 psi maximum at 73°F (23°C)
Operating Temperature Range:	-22° to 185°F (-30° to 85°C)
Storage Temperature Range:	-40° to 185°F (-40° to 85°C)
Enclosure Material | Flammability Rating:	ASA/PC with UV Protectant | UL 94-V0
Enclosure Color:	Light Gray
Filter Material:	Nickel Plated Brass
Product Dimensions (L x OD x H) | Weight:	9.03" (11.4 cm) x 4.30" (6.99 cm) x 2.29" (5.82 cm) | 0.60 lbs (0.272 kg)
Agency Approvals:	RoHS2, WEEE, Reach

DIMENSIONAL DRAWING

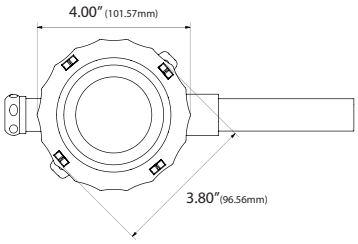
Pickup Port [Horizontal]

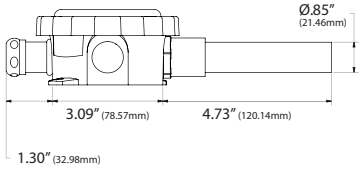


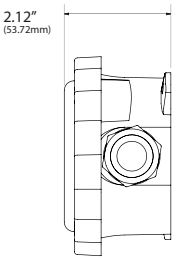




Pickup Port [Vertical]







Front ViewR | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: A/O-PUP-H -OR- 132892

Model #	Item #	Description	Color
A/O-PUP-H	132892	Pickup Port, Horizontal Mount, Outdoor	Light Gray
A/O-PUP-V	132891	Pickup Port, Vertical Mount, Outdoor	Light Gray

ACCESSORIES ORDERING

Model # Example: A/100'TUBE -OR- 136018

Model #	Item #	Description	Color
A/10' TUBE	126606	10' Medical Tubing Kit, 1/8" ID x 1/4"OD	Clear
A/20' TUBE	132226	20' Medical Tubing Kit, 1/8" ID x 1/4"OD	Clear
A/100'TUBE	136018	100' Medical Tubing Kit, 1/8" ID x 1/4"OD	Clear

PICK UP PORTS

Stainless Wall Plates

The wall mounted stainless plate pickup ports are designed to be used in conjunction with any low differential pressure transmitter (see ACI DLP or MLP Series) to provide an aesthetically pleasing building static reference point (pressure). When used in conjunction with a low differential pressure transmitter, the pickup ports provide excellent accuracy and reliability. ACI also offers 10', 20' and 100' Medical tubing kits made of an FDA approved Food/Medical Grade Flexible PVC tubing kit. For best results, make sure that the tubing is free of dirt, dust and condensation and that you keep the tubing run as short as possible to provide the best response time. For more information regarding the Medical Grade Tubing kit, please see the specific data sheet for the Medical Grade tubing kit.

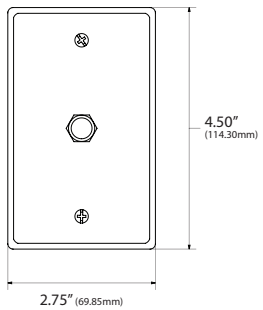
Applications: Monitoring Indoor Building Static Pressure in Commercial/Office Buildings, Clean Rooms, Isolation Rooms, Hospitals, Laboratories, Schools, etc.

The Pick Up Port Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

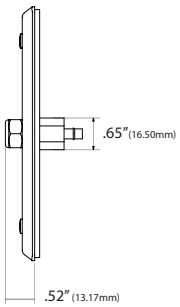
PRODUCT SPECIFICATIONS

Tubing Connections:	Barbed fitting accepts 3/16" ID flexible Poly tubing
Maximum Operating Pressure:	Filter: 150 psi (10.3 bar) Medical Tubing (A/10' Tube, A/20' Tube, A/100' Tube): 65 psi maximum at 73ºF (23ºC)
Operating Temperature Range:	-40º to 150ºF (-40º to 66ºC)
Storage Temperature Range:	-40º to 160ºF (-40º to 71ºC)
Wall Plate Material:	302 Series Stainless Steel
Wall Plate Color | Finish:	Silver (Metallic) | Brushed Stainless Steel
Foam Material | Flammability Rating:	Cross-Linked Polyethylene | FMUSS-302
Filter Material:	Nickel Plated Brass
Product Dimensions (L x W x D) | Weight:	**A/SP-PUP:** 4.51" (11.5 cm) x 2.76" (7.00 cm) x 0.190" (0.48 cm) | 0.16 lbs (0.073 kg)
Agency Approvals:	RoHS2, WEEE, Reach

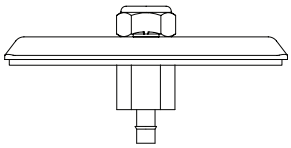
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: A/SP-PUP -OR- 125585

Model #	Item #	Description	Color
A/SP-PUP	125585	Pickup Port, Wall Mounted Stainless Plate	Silver/Metallic

ACCESSORIES ORDERING

Model # Example: A/100' TUBE -OR- 136018

Model #	Item #	Description	Color
A/10' TUBE	126606	10' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/20' TUBE	132226	20' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear
A/100' TUBE	136018	100' Medical Tubing Kit, 1/8" ID x 1/4" OD	Clear

MEDICAL GRADE TUBING

ACI offers a 1/4" diameter, flexible push-on medical grade tubing kit to be used in conjunction with the MLP2, DLP, DBL and PUP Series pressure transmitters, switches and all pickup ports. The standard lengths of 10 Feet, 20 Feet, and 100 Feet are available and can be used with any 3/16" diameter barbed or non-barbed style fittings.

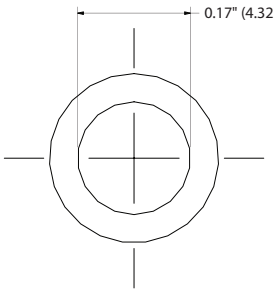
Applications: Indoor/Outdoor Weatherproof Pickup Port for Building Static Pressure Applications

The Pick Up Port Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

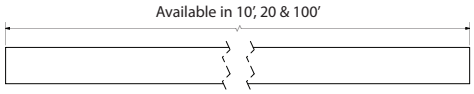
PRODUCT SPECIFICATIONS

Fitting Size Accepted:	3/16" (4.76 mm)
Maximum Operating Pressure:	39 psi maximum @ 70ºF (21.1ºC)
Operating Temperature Range:	35º to 122ºF (2º to 50ºC)
Brittleness Temperature:	-47.2ºF (-44ºC)
Storage Temperature Range:	0 to 122ºF (32º to 50ºC)
Enclosure Material | Flammability Rating:	Medical Grade Flexible PVC | Self Extinguishing
Tubing Color:	Clear
Product Dimensions (ID x OD x L) | Weight:	**A/10' Tube:** 0.17" (4.32 mm) x 1/4" (6.35 mm) x 10' (3.05 m) / 0.30 lbs (0.136 kg) **A/20' Tube:** 0.17" (4.32 mm) x 1/4" (6.35 mm) x 20' (6.10 m) / 0.50 lbs (0.226 kg) **A/100' Tube:** 0.17" (4.32 mm) x 1/4" (6.35 mm) x 100' (30.5 m) / 2.3 lbs (1.05 kg)
Agency Approvals:	Complies with relevant section Title 21 of the Code of Fed. Reg., RoHS2, WEEE, Reach

DIMENSIONAL DRAWING



Front View



Right View

STANDARD ORDERING

Model # Example: A/10'TUBE -OR- 126606

Model #	Item #	Description	Color
A/10' TUBE	126606	10' Medical Tubing Kit, 0.17" ID x 1/4" OD	Clear
A/20' TUBE	132226	20' Medical Tubing Kit, 0.17" ID x 1/4" OD	Clear
A/100' TUBE	136018	100' Medical Tubing Kit, 0.17" ID x 1/4" OD	Clear

FIXED "STATUS" SWITCHES

CS2, CSX2, SCS2 & SCSX2 Series

The ACI Fixed "Status" Current switches are designed for use in any AC current monitoring application in which you are looking for a "Go/No Go" or On/Off status for a particular piece of equipment. The current switches should be installed on the line side of the power to the motor, pump, compressor or other equipment. The current switches are available in both solid and split-core versions which also includes a Patented 35 mm Din Rail mounting foot for easy installation in panel mount applications. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues may be of concern. The split-core version of the current switches work great in retrofit applications and for use in service vehicles since one part will work in most applications and can be installed without disconnecting any wires. The fixed current status switches can also be used to determine the run time of your equipment and basic load trending applications where you want to know when your piece of equipment runs and for how long it runs for when logging the contact closures on your building management system or PLC.

Applications: Pump Status, Fan Status, Compressors, Motor Status, Ovens, Industrial Equipment, Lighting Status and Usage, Electrical Load Status, Local Alarms (Strobes and Audible Alarms)

The Fixed Current Switches are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

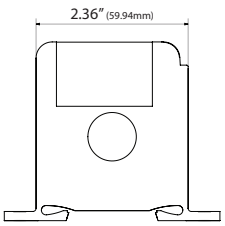
PRODUCT SPECIFICATIONS

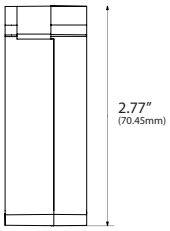
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Operating Frequency Range:	40 to 1 kHz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Sensor Power:	Induced from the Monitored Conductor
Amperage Range:	See Ordering Grid
Isolation Voltage:	2200 VAC
Trip Point Style | Trip Point:	Fixed Trip Point | See Ordering Grid
Contact Type:	Normally-Open "N/O" or Normally-Closed "N/C" (See ordering Grid)
"Status" Contact Rating:	0.2A @ 200 VAC/VDC
"Status" Contact "On" Resistance | "Off" Resistance:	< 10 Ohms (tripped) | > 1 Meg Ohms (Open)
Response Time:	See Response Time Table on back of data sheet
Status LED Indication [1]:	Red LED (Monitored current is above Trip Point)
Aperture Size:	0.75" (19.05 mm)
Din Rail Size:	35 mm | (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position Screw Terminal Block (Not Polarity Sensitive)
Wire Size:	16 to 22 AWG (1.31 mm² to 0.33 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current switch (Relays, Contactors, Transformers)
Agency Approvals:	UL/CUL US Listed (UL 508) Ind. Control Equipment (File # E309723), CE, RoHS2, WEEE
Product Weight:	**A/CS2** and **A/CSX2:** 0.216 lbs. (0.099kg) | **A/SCS2** and **A/SCSX2:** 0.270 lbs. (0.123 kg) **A/SCS2-L:** 0.280 lbs. (0.127 kg)
Product Dimensions (L x W x H):	**Solid Core Versions:** 2.760" (70.11 mm) x 3.343" (84.92 mm) x 1.050" (26.67 mm) **Split Core Versions:** 2.780" (70.51 mm) x 3.238" (82.25 mm) x 1.120" (28.45 mm)

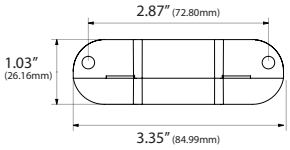
Note[1]: The LED should not be used to determine if current is present. At low currents the LED may not be visible

DIMENSIONAL DRAWING

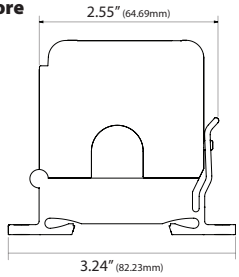
Solid-Core

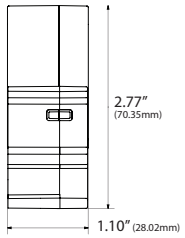


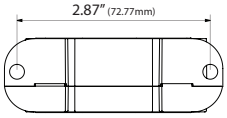




Split-Core







Front View | **Right View** | **Bottom View**

RESPONSE TIME

Green Boxes: response time at specified current above trip point | **Red Boxes:** response time below specified trip point where sensors may trip

Model #	0.15 Amps	0.20 Amps	0.25 Amps	0.50 Amps	0.75 Amps	1.0 Amp	1.20 Amps	1.50 Amps	10 Amps	20 Amps
A/CS2	156mS	100mS	84mS	----	----	32mS	----	----	26mS	24mS
A/CSX2	----	189mS	134mS	----	----	48mS	----	----	42mS	41mS
A/SCS2	----	----	----	484mS	----	72mS	----	45mS	26mS	20mS
A/SCSX2	----	----	----	----	----	----	194mS	102mS	42mS	42mS
A/SCS2-L	----	224mS	144mS	65mS	47mS	39mS	----	----	25mS	22mS

Note: ---- = unit was not tested (below minimum trip point or for that range)

STANDARD ORDERING

Model # Example: A/SCSX2 -OR- 142357

Model #	Item #	Trip Point Type	N/O	N/C	Solid-Core	Split-Core	Amp Range	Trip Point	Contact Rating
A/CS2	142340	Fixed Trip Point	•		•		0 to 250A	0.25A or less	0.2A @ 200 VAC/VDC
A/CSX2	142359	Fixed Trip Point		•	•		0 to 250A	0.25A or less	0.2A @ 200 VAC/VDC
A/SCS2	142358	Fixed Trip Point	•			•	0 to 250A	1.5A or less	0.2A @ 200 VAC/VDC
A/SCSX2	142357	Fixed Trip Point		•		•	0 to 250A	1.5A or less	0.2A @ 200 VAC/VDC
A/SCS2-L	142356	Fixed Trip Point	•			•	0 to 250A	0.5A or less	0.2A @ 200 VAC/VDC

The Fixed Current Switches are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

MINI FIXED STATUS

MCS & MSCS Series

The Miniature Fixed Current Status" Switches are designed for use in any AC current monitoring application in which you are looking for a fixed trip point to monitor the "Go/No Go" (On/Off) "Status" for a particular piece of equipment. The fixed current switches should be installed on the line side of the power to the motor, pump, compressor or other equipment. All of the miniature current switches are available in both solid and split-core versions in a smaller enclosure style than that of the A/CS2 and A/SCS2 Series fixed current switches rated for higher operating currents. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues may be of concern. The split-core version of the current switches work great in retrofit applications and for use in service vehicles since one part will work in most applications and can be installed without disconnecting any wires. Fixed status switches can also be used to determine the run time of your equipment when logging the contact closures on your building management system or PLC.

Applications: On/Off "Status" Indication, Local Alarms such as Strobes/Audible Alarms, Pumps, Fans, Compressors, Lighting Status and Usage Information, Ovens, Process Control, Industrial Equipment, OEM Opportunities

The Miniature Fixed Current "Status" Switches are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

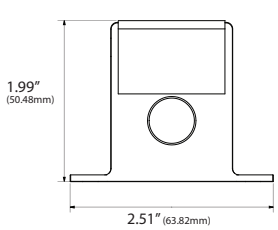
PRODUCT SPECIFICATIONS

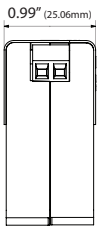
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Operating Frequency Range:	50/60 Hz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Sensor Power:	Induced from the Monitored Conductor (Insulated Conductors only)
Amperage Range:	See Ordering Grid
Isolation Voltage:	2200 VAC
Trip Point Style	Fixed Trip Point
Contact Type:	Normally-Open "N/O"
"Status" Contact Rating:	0.5A Continuous @ 36 VAC/VDC
"Status" Contact "On" Resistance | "Off" Resistance:	< 0.5 Ohms (tripped) | > 1 Meg Ohms (Open)
Response Time:	**A/MCS:** < 50 mS typical | **A/MSCS:** < 40 mS typical
Aperture Size (Diameter):	0.53" (13.46 mm)
Operating Temperature Range:	-22 to 140ºF (-30 to 60ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40 to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position Screw Terminal Block (Not Polarity Sensitive)
Wire Size:	16 to 22 AWG (1.31 mm² to 0.33 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current switch (Relays, Contactors, Transformers)
Agency Approvals[1]:	UL/CUL US Listed (UL 916) Energy Management Equipment (File # E334792), CE, RoHS2, WEEE
Product Weight:	**A/MCS:** 0.15 lbs. (0.068 kg) | **A/MSCS:** 0.20 lbs. (0.091 kg)
Product Dimensions (L x W x H):	**A/MCS (Solid-Core):** 2.510" (63.82 mm) x 0.940" (23.94 mm) x 2.000" (50.80 mm) **A/MSCS (Split-Core):** 2.650" (67.19 mm) x 0.940" (23.94 mm) x 2.380" (60.49 mm)

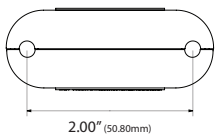
Note[1]: Maximum wire length not to exceed 98.4 Feet (30 meters) in order to meet the CE Requirements

DIMENSIONAL DRAWING

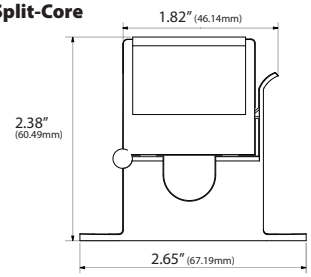
Solid-Core

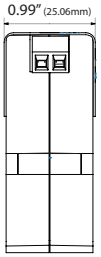


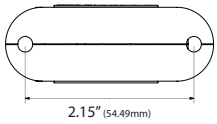




Split-Core







Front View | **Right View** | **Bottom View**

STANDARD ORDERING

Model # Example: A/MCS -OR- 117852

Model #	Item #	Trip Point Type	N/O	Solid-Core	Split-Core	Amp Range	Trip Point	Contact Rating
A/MCS	117852	Fixed Trip Point	•	•		0 to 150A	0.20A or less	0.5A @ 36VAC/VDC
A/MSCS	117853	Fixed Trip Point	•		•	0 to 150A	0.55A or less	0.5A @ 36VAC/VDC

Note: The Miniature Fixed Current Switches are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

ADJUSTABLE SWITCHES

ACS2, ACSX2, ASCS2 & ASCSX2 Series

The Adjustable Current Switches are designed for use in any AC current monitoring application in which you are looking to monitor a particular piece of equipment for equipment failure, preventative maintenance, status, and electrical load status. The current switches should be installed on the line side of the power to the electrical equipment. The current switches are available in both solid and split-core versions which also includes a Patented 35 mm Din Rail mounting foot for easy installation in panel mount applications. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues may be of concern. The split-core version of the current switches work great in retrofit applications and for use on service technicians vehicles since one part will work in most applications and can be easily installed without disconnecting any wires. The adjustable current switches can be used to determine the run time of your equipment as well as basic load trending applications where you want to know when how long your piece of equipment runs when logging the contact closures on your building management system or PLC.

Applications: Overload Conditions, Underload Conditions, Normal Operating Conditions, Broken Belts, Belt Slippage, Locked Rotors, Equipment Failure, Fans, Pumps, Compressors, Motors, Ovens, Industrial Equipment, Lighting Status and Usage, Electrical Load Status, Local Alarms (Strobes and Audible Alarms), Preventative Maintenance Scheduling

The Adjustable Current Switches are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

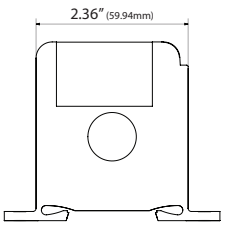
PRODUCT SPECIFICATIONS

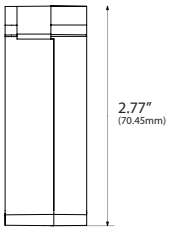
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Operating Frequency Range:	40 to 1 kHz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Sensor Power:	Induced from the Monitored Conductor
Amperage Range:	See Ordering Grid
Isolation Voltage:	2200 VAC
Trip Point Style | Trip Point:	Adjustable Trip Point | See Ordering Grid
Hysteresis:	10% of trip point, typical
Contact Type:	Normally-Open "N/O" or Normally-Closed "N/C" (See ordering Grid)
"Status" Contact Rating:	0.2A @ 200 VAC/VDC
"Status" Contact "On" Resistance | "Off" Resistance:	< 10 Ohms (tripped) | > 1 Meg Ohms (Open)
Response Time:	See Response Time Table on back of data sheet
Status LED Indication [1]:	Red LED (Current above Trip Point) | Blue LED (Current Below Trip Point)
Aperture Size:	0.75" (19.05 mm)
Din Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position, Screw Terminal Block (Not Polarity Sensitive)
Wire Size:	16 to 22 AWG (1.31 mm² to 0.33 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm minimum) between current switch (Relays, Contactors, Transformers)
Agency Approvals:	UL/CUL US Listed (UL 508) Ind. Control Equipment (File # E309723), CE, RoHS2, WEEE
Product Weight:	**A/ACS2** and **A/ACSX2:** 0.216 lbs. (0.097 kg) | **A/ASCS2:** 0.270 lbs. (0.123 kg) **A/ASCSX2:** 0.266 lbs. (0.121 kg) | **A/ASCS2-L:** 0.280 lbs. (0.127 kg)
Product Dimensions (L x W x H):	**Solid Core Versions:** 2.760" (70.11 mm) x 3.343" (84.92 mm) x 1.050" (26.67 mm) **Split Core Versions:** 2.780" (70.51 mm) x 3.238" (82.25 mm) x 1.120" (28.45 mm)

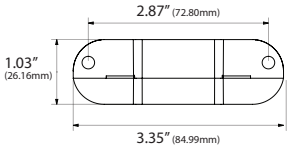
Note[1]: The LED should not be used to determine if current is present. At low currents the LED may not be visible

DIMENSIONAL DRAWING

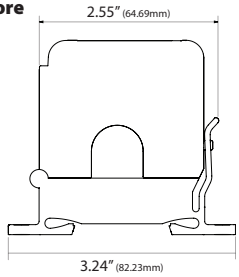
Solid-Core

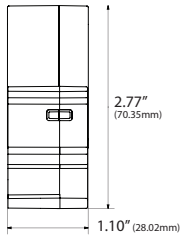


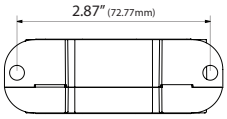




Split-Core







Front View | **Right View** | **Bottom View**

RESPONSE TIME

Model #	0.50 Amps	0.60 Amps	0.75 Amps	1.0 Amp	1.50 Amps	10 Amps	20 Amps
A/ACS2	221mS	----	144mS	109mS	----	63mS	59mS
A/ACSX2	260mS	----	169mS	130mS	----	82mS	74mS
A/ASCS2	----	----	----	----	248mS	68mS	65mS
A/ASCSX-2	----	----	----	----	344mS	92mS	86mS
A/ASCS2-L	----	400mS	270mS	183mS	----	62mS	60mS

Note*: ---- unit was not tested (below minimum trip point or for that range)

STANDARD ORDERING

Model # Example: A/ACS2 **-OR-** 142355

Model #	Item #	Trip Point Type	N/O	N/C	Solid-Core	Split-Core	Amp Range	Trip Point	Contact Rating
A/ACS2	142355	Adjustable	•		•		0 to 250A	0.5 to 220A	0.2A @ 200 VAC/VDC
A/ACSX2	142354	Adjustable		•	•		0 to 250A	0.5 to 220A	0.2A @ 200 VAC/VDC
A/ASCS2	142353	Adjustable	•			•	0 to 250A	1.5 to 220A	0.2A @ 200 VAC/VDC
A/ASCS2-L	142352	Adjustable	•			•	0 to 250A	0.6 to 180A	0.2A @ 200 VAC/VDC
A/ASCSX2	142370	Adjustable		•		•	0 to 250A	1.5 to 220A	0.2A @ 200 VAC/VDC

The Adjustable Current Switches are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

MINI ADJUSTABLE SWITCHES

MCS-A & MSCS-A Series

The Miniature Adjustable Current switches are designed for use in any AC current monitoring application in which you are looking for an adjustable current switch to monitor normal operating conditions, equipment failure or preventative maintenance scheduling for a particular piece of equipment. The adjustable current switches should be installed on the line side of the power to the motor, pump, compressor or other equipment. The miniature adjustable current switches are available in both solid and split-core versions in a smaller enclosure style than that of the A/ACS2 and A/ASCS2 Series adjustable current switches. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues may be of concern. The split-core version of the current switches work great in retrofit applications and for use in service vehicles since one part will work in most applications and can be installed without disconnecting any wires. The adjustable current status switches can also be used to determine the run time of your equipment where you want to know when your piece of equipment runs and for how long it runs when logging the contact closures on your building management system or PLC.

Applications: Overload Conditions, Under Load Conditions, Normal Load Conditions, Broken Belts, Belt Slippage, Locked Rotors, Electrical Failure, Load Status, Local Alarms such as Strobes/Audible Alarms, Pumps, Fans, Compressors, Lighting Status and Usage Information, Ovens, Process Control, Industrial Equipment, Equipment Maintenance, OEM

The Miniature Adjustable Current Switches are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

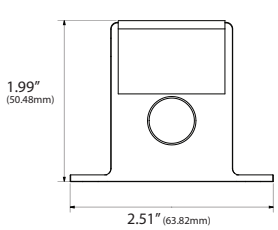
PRODUCT SPECIFICATIONS

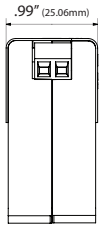
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Operating Frequency Range:	50/60 Hz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Sensor Power:	Induced from the Monitored Conductor (Insulated Conductors only)
Amperage Range:	See Ordering Grid
Isolation Voltage:	2200 VAC
Trip Point Style | Adjustable Trip Point Range:	Adjustable Trip Point | See Ordering Grid
Hysteresis:	10% Trip Point, typical
Contact Type:	Normally-Open "N/O"
Contact Rating:	1A Continuous @ 36 VAC/VDC
Contact "On" Resistance | "Off" Resistance:	< 0.5 Ohms (tripped) | > 1 Meg Ohms (Open)
Response Time:	**A/MCS-A:** < 90 mS, typical | **A/MSCS-A:** < 45 mS typical
Status LED Indication [1]:	Red LED (Current above trip point) | Blue LED (Current below trip point)
Aperture Size (Diameter):	0.53" (13.46 mm)
Operating Temperature Range:	-22 to 140ºF (-30 to 60ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position Screw Terminal Block (Not Polarity Sensitive)
Wire Size:	16 to 22 AWG (1.31 mm² to 0.33 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current switch (Relays, Contactors, Transformers)
Agency Approvals [2]:	UL/CUL US Listed (UL 916) Energy Management Equipment (File # E334792), CE, RoHS2, WEEE
Product Weight:	**A/MCS-A:** 0.15 lbs. (0.068 kg) | **A/MSCS-A:** 0.20 lbs. (0.091 kg)
Product Dimensions (L x W x H):	**A/MCS-A (Solid-Core):** 2.510" (63.82 mm) x 0.940" (23.94 mm) x 2.000" (50.80 mm) **A/MSCS-A (Split-Core):** 2.650" (67.19 mm) x 0.940" (23.94 mm) x 2.380" (60.49 mm)

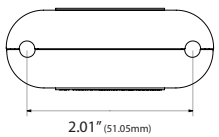
Note[1]: The LED should not be used to determine if current is present. At low currents the LED may not be visible | **Note[2]:** Maximum wire length not to exceed 98.4 Feet (30 meters) in order to meet the CE Requirements

DIMENSIONAL DRAWING

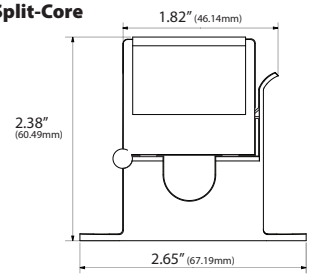
Solid-Core

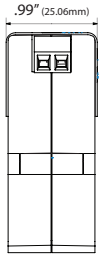


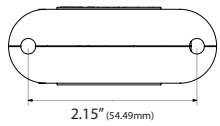




Split-Core







Front View **Right View** **Bottom View**

STANDARD ORDERING

Model # Example: A/MCS-A -OR- 117854

Model #	Item #	Trip Point Type	N/O	Solid-Core	Split-Core	Amp Range	Trip Point	Contact Rating
A/MCS-A	117854	Adjustable	•	•		0.32 to 150A	0.32 to 150A	1A @ 36 VAC/VDC
A/MSCS-A	117855	Adjustable	•		•	0.70 to 150A	0.70 to 150A	1A @ 36 VAC/VDC

Note: The Miniature Adjustable Current Switches are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

ECM

ECMCS Current Switch

ACI ECMCS split-core current switches are designed for use in electronically commutated motor (ECM) applications in which you are looking for status for a particular piece of equipment. ECMs have a unique operating profile that includes a small standby current when the motor is powered but not actively spinning compared to no current draw of traditional PSC motors.

The ECMCS switches do not require external power, since the power for the current switch is induced from the conductor being monitored. ACI's ECMCS switch has an adjustable trip level to set the desired trip level for proper motor status indication in most ECM applications. ACI offers a calibration tool that will help assist the installation process by implementing a visual indication of the state of the output switch to the installer.

The ECM current switch can be secured to the monitored cable using a cable tie and the integrated cable tie anchor feature of the housing. The ECMCS switch also comes with an attachable mounting foot that allows the unit to be mounted in any position using one Tek screw or snapped directly on a 35mm DIN rail.

Note: The ECM switch is not intended to monitor status in VFD motor applications.

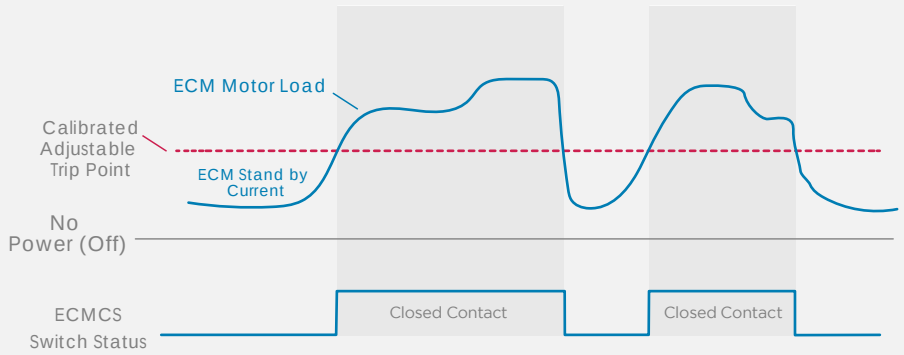
Applications: Pump Status, Fan Status, Compressors, Air Handlers, Residential Furnaces, Motor Status

The ECMCS are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

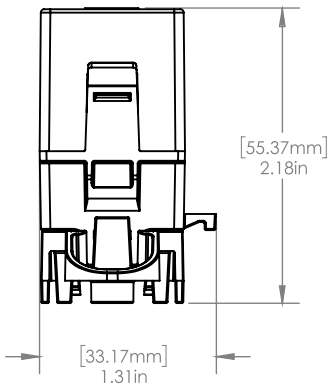
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Operating Frequency Range:	50/60 Hz
Core Style:	Split-Core
Sensor Power:	Induced from the Monitored Conductor (Use Insulated Conductors only)
Amperage Range:	0 to 25 A
Insulation Class:	600 VAC
Trip Point Style | Adjustable Trip Point Range:	Adjustable Trip Point | 0.075 A to 0.50 A
Hysteresis:	10% of Trip Level Current, Typical
Contact Type:	Normally-Open "N/O"
Contact Rating:	100 mA Continuous @ 30 VAC/VDC
Contact "On" Resistance | "Off" Resistance:	< 10 Ohms (when tripped) | > 1 Meg Ohms (Open)
Response Time:	< 5 Seconds Typical
Aperture Size (Diameter) | Wire Size:	0.20"(5.0mm) x 0.49"(12.5mm) | Fits 10 AWG to 14 AWG THHN Insulated Wire
DIN Rail Size:	35 mm
Operating Temperature Range:	32°F to 140°F (0°C to 60°C)
Operating Humidity Range:	10 to 90%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position Screw Terminal Block (Not Polarity Sensitive)
Wire Size:	16 to 22 AWG (1.31 mm^2 to 0.33 mm^2) Copper Wires Only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current switch & other magnetic devices (Relays, Contactors, Transformers)
Agency Approvals:	UL/CUL US Listed (UL 916) Energy Management Equipment (File # E334792), CE, UKCA, RoHS, WEEE, CAN ICES-3 / NMB-3
Product Weight:	0.14 lbs. (0.065 kg)
Product Dimensions (L x W x H):	1.93" (48.99 mm) x 1.31" (33.17 mm) x 2.18" (55.37 mm)

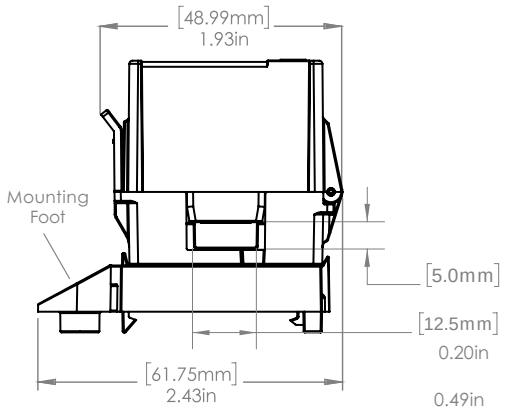
ECM Load Vs ECMCS Switch Status



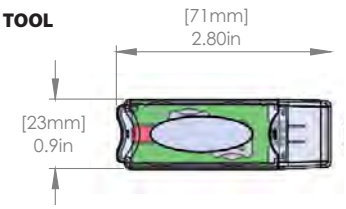
DIMENSIONAL DRAWINGS

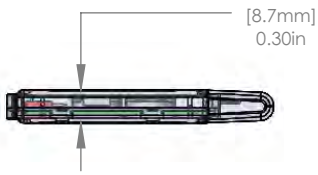
ECMCS25-A





TRIP ADJUST TOOL





Front View | **Side View**

STANDARD ORDERING

Model #	Item #	Trip Point Style	Trip Point	Contact Rating
ECMCS25-A	149979	Adjustable	0.075 to 0.5A	0.1A @ 30 VAC/VDC

Note: The ECM Adjustable Current Switches are not intended to be used in Life / Safety Applications or in Hazardous / Classified locations (environments).

ACCESSORIES ORDERING

Model #	Item #	Description
TRIP ADJUST TOOL	149977	ECM Calibration Tool, Visual Indication of Output Status

4-20 MA OUTPUT

CTA2, SCTA2, CTA2-RMS & SCTA2-RMS Series

The 4-20 mA Output Analog Current Sensors are designed for use in any AC current monitoring application in which you are looking to monitor a particular piece of equipment. The "Average" style current sensors should be used in applications where the Sinusoidal waveform has no distortion or noise on the conductor being monitored. Applications may include monitoring a resistive type load such as an incandescent light bulb, heating element as well as any single speed linear load. Note that the "True RMS" sensors are able to be used in all applications since the "True RMS" current sensors provide the best overall accuracy and should be used in applications which includes Variable Frequency Drives, Switching Power Supplies, Computers and Data Centers, Electronic Ballasts, SCR's, and Variable Speed Loads. For currents monitored above 250 Amps, the CTA2-5 and SCTA2-5 are ideal for use with a step down Ratio:5A Output CT (Current Transformer) in stepping down current in a monitored conductor to a proportional 0 to 5A output signal. The current sensors are available in both solid and split-core versions which also includes a Patented (Pat. No. US 7,416,421) 35 mm Din Rail mounting foot for easy installation in panel mount applications. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues like dust and moisture may be of concern. The split-core version of the current sensors work great in retrofit applications and for use on service technicians vehicles since one or two parts will work in most applications and can be easily installed without disconnecting any wires.

Applications: Load Trending, Basic Power Monitoring, Electronic Ballasts, Computers/Data Centers, Industrial, Variable Speed Loads, Pumps, Compressors, Fans, Preventative Maintenance, LEED, Project Justification (ROI) Process Control, Solid State Environments (SCR's)

The 4-20 mA Output Current Sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

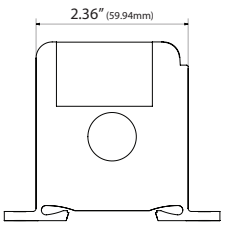
PRODUCT SPECIFICATIONS

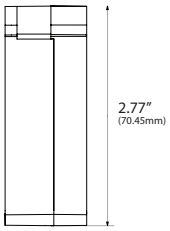
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Isolation Voltage:	2200 VAC
Operating Frequency Range [2]:	**A/CTA2 & A/SCTA2 Series:** 40 to 1KHz | **A/CTA2-50-RMS & A/SCTA2-50 RMS:** 15 to 100 Hz **A/CTA2-250-RMS** (0-100A Range): 15 to 100 Hz | **A/CTA2-250-RMS** (0-200/250A Ranges): 30 to 100 Hz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Supply Voltage:	+8.5 to 30 VDC (Reverse Polarity Protected) **250 Ohm Load (1-5 VDC):** +13.5 to 30 VDC | **500 Ohm Load (2-10 VDC):** +18.5 to 30 VDC
Maximum Load Resistance @ 24 VDC:	775 Ohms (**Formula:** (24 VDC – 8.5 VDC) / 0.020A)
Supply Current:	25 mA minimum
Sensor Amperage Range:	See Ordering Grid (Field Selectable)
Output Signal | Maximum Output Signal:	4 to 20 mA (2-Wire, Loop Powered) | Limited to 25 mA
Accuracy [1]:	All Models: +/- 1% of Selected Range except A/SCTA2-50-RMS: +/- 2% from 15 to 20 Hz +/- 1% from 20 to 100 Hz
Response Time:	A/CTA2-xxx and A/SCTA2-XXX: < 600 mS (Rise and Fall Time) A/CTA2-xxx-RMS & A/SCTA2-50-RMS: 600 mS (Rise Time) and 2800 mS (Fall Time)
Aperture Size:	0.75" (19.05 mm)
Din Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Storage Temperature | RH Range:	41 to 95°F (5 to 35°C) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position, Screw Terminal Block (Polarity Sensitive)
Wire Recommendations:	2 Conductor (Shielded Cable)
Wire Size:	18 to 24 AWG (0.823 mm² to 0.205 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current sensor & other magnetic devices (Relays, Contactors, Transformers)
Agency Approvals:	CE (-RMS Versions): CE to IEC 61326-1: 2012 Class A, UL/CUL US Listed (UL 508) Ind. Control Equipment (File # E309723), RoHS2, WEEE
Product Weight:	**A/CTA2-xxx:** 0.260 lbs. (0.118 kg) | **A/SCTA2-xxx:** 0.274 lbs. (0.124 kg) **A/CTA2-xxx-RMS:** 0.190 lbs. (0.087 kg) | **A/SCTA2-xxx-RMS:** 0.190 lbs. (0.087 kg)
Product Dimensions:	**Solid Core Versions:** 2.760" (70.11 mm) x 3.343" (84.92 mm) x 1.050" (26.67 mm) **Split Core Versions:** 2.780" (70.51 mm) x 3.238" (82.25 mm) x 1.120" (28.45 mm)

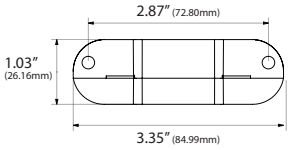
Note[1]: All current output sensors are calibrated at an ambient room temperature of 71ºF (21.5ºC) | **Note[2]:** Only the 0 to 100 Amp range in the A/CTA2-250-RMS will meet accuracy specifications from 15 to 100 Hz

DIMENSIONAL DRAWING

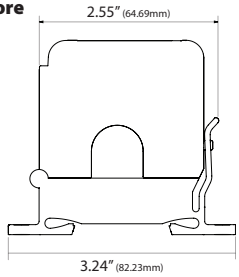
Solid-Core

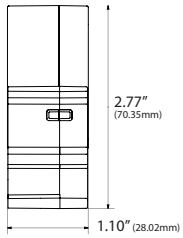


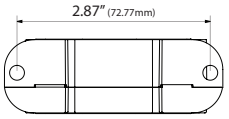




Split-Core







Front View | **Right View** | **Bottom View**

STANDARD ORDERING

Model # Example: A/CTA2-5 -OR- 142379

Model #	Item #	Selectable Ranges	Measurement	AC Waveform	Solid-Core	Split-Core	Output Signal
A/CTA2-5	142379	0 to 5A	Average	Pure Sinusoidal	•		4 to 20 mA
A/CTA2-50	142378	0 to 10/20/50A	Average	Pure Sinusoidal	•		4 to 20 mA
A/CTA2-250	142377	0 to 100/200/250A	Average	Pure Sinusoidal	•		4 to 20 mA
A/SCTA2-5	142376	0 to 5A	Average	Pure Sinusoidal		•	4 to 20 mA
A/SCTA2-50	142375	0 to 10/20/50A	Average	Pure Sinusoidal		•	4 to 20 mA
A/SCTA2-200	142374	0 to 100/150/200A	Average	Pure Sinusoidal		•	4 to 20 mA
A/CTA2-50-RMS	142373	0 to 10/20/50A	True RMS	Distorted & Pure Sinusoidal	•		4 to 20 mA
A/CTA2-250-RMS	142372	0 to 100*/200/250A	True RMS	Distorted & Pure Sinusoidal	•		4 to 20 mA
A/SCTA2-50-RMS	142371	0 to 10/20/50A	True RMS	Distorted & Pure Sinusoidal		•	4 to 20 mA

Note*: Only the 100 Amp Range will meet the accuracies over the operating frequency range of 15 to 100 Hz (See Specification Table)

ACCESSORIES ORDERING

Item # Example: 100307

Item #	Description
100307	249 Ohm, 1/4W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 1-5 VDC)
100306	249 Ohm, 1/4W, +/- 0.1% Tolerance, 50 PPM Resistor (Recommended for Best Accuracy) (Only Needed to Convert to 1-5 VDC)
100469	499 Ohm, 1W, +/- 1% Tolerance, 50 PPM Resistor (Only Needed to Convert to 2-10 VDC)

The 4-20 mA Output Current Sensors are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

VOLTAGE OUTPUT

CTE2, SCTE2, CTV2 & SCTV2 Series

The Voltage Output Analog Current Sensors are designed for use in any AC current monitoring application in which you are looking to monitor a particular piece of equipment for proper operation. All voltage output current sensors use an "Average" current measuring method and should be used in applications where a pure Sinusoidal AC waveform that has very little or no distortion/noise on the conductor being monitored. Applications may include monitoring a resistive type load such as an incandescent light bulb or heating element as well as any single speed linear load. Voltage Output current sensors are available in both solid and split-core versions which also includes a Patented 35 mm Din Rail mounting foot for easy installation in panel mount applications. The solid-core versions are a great choice for new installations or OEM applications in which cost sensitivity, lower trip points and environmental issues like dust and moisture may be of concern. The split-core version of the current sensors work great in retrofit applications and for use on service technicians vehicles since one or two parts will work in most applications and can be easily installed without disconnecting any wires. For best results, the voltage output current sensors should not be used in applications with switching power supplies or variable speed drives due to the limited operating frequency range. In applications where variable speed drives or waveforms include distortion/noise, ACI recommends the use of the A/CTA2-RMS or A/SCTA2-RMS Series sensors where you need to supply 24 VDC power to the current sensors with a 4-20 mA signal. A 249 Ohm or 499 Ohm 1 Watt resistor can be used to convert the 4-20 mA signal into a useable 1-5 or 2-10 VDC output signal at your building management system or PLC.

Applications: Load Trending, Single Speed Loads, Pumps, Compressors, Fans, Preventative Maintenance, LEED, Project Justification (Calculating ROI), Process Control

The Voltage Output Current Sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

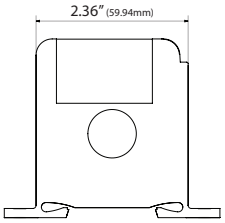
PRODUCT SPECIFICATIONS

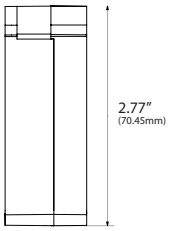
Monitored Current Type:	AC Current
Maximum AC Voltage:	600 VAC
Isolation Voltage:	2200 VAC
Operating Frequency Range:	50 to 600 Hz
Core Style:	Solid-Core and Split-Core Versions available (See Ordering Grid)
Supply Voltage:	Induced from the Monitored Conductor (Insulated Conductors only)
Sensor Amperage Range:	See Ordering Grid (Field Selectable)
Output Signal | Number of Wires:	**A/CTE2 & A/SCTE2 Series:** 0 to 5 VDC | **A/CTV2 & A/SCTV2 Series:** 0 to 10 VDC | 2-Wires
Accuracy [1]:	**A/CTE2 & A/SCTE2 Series:** (0-10A Range Only): +/- 1% from 5-100% of Selected Range **A/CTE2 & A/SCTE2 Series:** (All Other Ranges): +/- 1% from 2-100% of Selected Range **A/CTV2:** +/- 1% from 5-100% of Selected Range **A/SCTV2 Series:** (0 to 10A Range Only): +/- 2% from 5 to 100% of Selected Range **A/SCTV2 Series:** (All Other Ranges): +/- 1% from 5 to 100% of Selected Range
Response Time:	< 300 mS (Rise and Fall Times)
Aperture Size:	0.75" (19.05 mm)
Din Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Recommended Storage Temperature | RH Range:	41 to 95ºF (5 to 35ºC) | 40% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	2 Position, Screw Terminal Block (Polarity Sensitive)
Wire Recommendations:	2 Conductor (Shielded Cable)
Wire Size:	18 to 24 AWG (0.823 mm² to 0.205 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Minimum Mounting Distance:	1" (2.6 cm) between current sensor & other magnetic devices (Relays, Contactors, Transformers)
Agency Approvals:	UL/CUL US Listed (UL 508) Ind. Control Equipment (File # E309723), CE, RoHS2, WEEE
Product Weight:	**A/CTE2-xxx & A/CTV2-xxx Series:** 0.194 lbs. (0.088 kg) **A/SCTE2-xxx & A/SCTV2-xxx Series:** 0.274 lbs. (0.125 kg)
Product Dimensions (L x W x H):	**Solid Core Versions:** 2.760" (70.11 mm) x 3.343" (84.92 mm) x 1.050" (26.67 mm) **Split Core Versions:** 2.780" (70.51 mm) x 3.238" (82.25 mm) x 1.120" (28.45 mm)

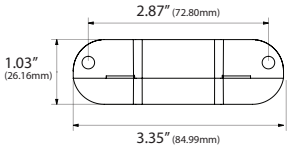
Note[1]: All current output sensors are calibrated at an ambient room temperature of 71ºF (21.5ºC)

DIMENSIONAL DRAWING

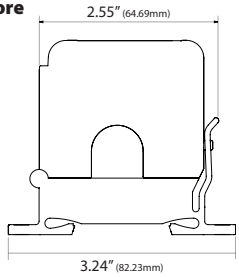
Solid-Core

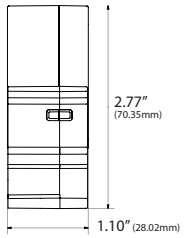


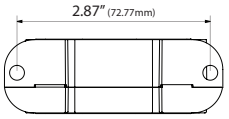




Split-Core







Front View | **Right View** | **Bottom View**

STANDARD ORDERING

Model # Example: A/CTE2-50 -OR- 142389

Model #	Item #	Selectable Ranges	Measurement	AC Waveform	Solid-Core	Split-Core	Output Signal
A/CTE2-50	142389	0 to 10/20/50A	Average	Pure Sinusoidal	•		0 to 5 VDC
A/CTE2-150	142388	0 to 50/100/150A	Average	Pure Sinusoidal	•		0 to 5 VDC
A/SCTE2-50	142385	0 to 10/20/50A	Average	Pure Sinusoidal		•	0 to 5 VDC
A/SCTE2-150	142384	0 to 50/100/150A	Average	Pure Sinusoidal		•	0 to 5 VDC
A/SCTE2-250	142383	0 to 100/200/250A	Average	Pure Sinusoidal		•	0 to 5 VDC
A/CTV2-50	142387	0 to 10/20/50A	Average	Pure Sinusoidal	•		0 to 10 VDC
A/CTV2-150	142386	0 to 50/100/150A	Average	Pure Sinusoidal	•		0 to 10 VDC
A/SCTV2-50	142382	0 to 10/20/50A	Average	Pure Sinusoidal		•	0 to 10 VDC
A/SCTV2-150	142381	0 to 50/100/150A	Average	Pure Sinusoidal		•	0 to 10 VDC
A/SCTV2-250	142380	0 to 100/200/250A	Average	Pure Sinusoidal		•	0 to 10 VDC

The Voltage Output Current Sensors are not intended to be used in Life / Safety Applications or in Hazardous / Classified Locations

KW320

4 Channel Power Meter, 0.1 Class, Multiple Communication Protocols

The KW320 meter combines high performance with ease of integration to provide a power and energy monitoring solution with 400 metering parameters. The KW320 series multifunction digital power meter is designed using modern MCU and DSP technology and its tamper-proof design is approved for revenue applications. It integrates three-phase energy measuring and displaying, energy accumulating, power quality analysis, malfunction alarming, data logging and network communication. The meter measures bidirectional, four quadrants kWh and kvarh. It provides maximum/minimum records for power usage and power demand parameters. All power and energy parameters can be viewed remotely via Accuview Utility Software to monitor various parameters. The meter comes standard to be mounted in a 4" Round or an IEC 92mm DIN Square form or has the flexibility to be mounted to 35mm DIN rail with the AXM-DIN adapter (See Accessories Ordering). In addition, the KW320 also has an optional upgrade that includes a NEMA 4X panel enclosure, pre-wired and labeled terminal for CT's, terminal blocks for voltage input, and industrial grade fuses. The KW320-P1-D-W-PC optional upgrade is an all-in-one Plug n' play Pre-Wired Panel Enclosure that provides a perfect solution for retrofit projects where metering space is not pre-designed in an electrical distribution panel. The meter supports user selectable RS-485 serial Modbus-RTU, BACNet™ MS/TP, multiple Ethernet communication protocols, and Wi-Fi connection allows seamless integration with data acquisition systems. This product provides demand measurement of Current, Active Power, Reactive Power and Apparent Power – see table 1 for all parameters monitored and metered. It also provides demand forecasting as well as the peak demand. The KW320 series meter can record the time and event regarding important parameter events such as the run time of the meter and alarm functions. The KW320 meter will accept both 333mV and Rogowski coil CT inputs (Input Field Selectable). Meters come standard with a four channel CT input to accurately measure neutral current. CTs are sold separately as shown on the ACI Split-Core, Solid-Core and Rogowski Current Transformer product data sheets.

Applications: Tenant Billing, Data Centers, Sub-Metering Electrical Panel, Equipment Load Monitoring, Industrial Applications, Predicted Maintenance, Renewable Energy, Overhead Cost Reduction, "NET ZERO" Buildings, LEED Buildings, Green Buildings, and Refrigeration

The KW320 Power Meters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Service Type:	Single Phase, 3 Phase – Four Wire (WYE), Three Phase – Three Wire (Delta)
Power[1]:	100 - 415VAC, 50/60Hz, 100 - 300VDC on terminals L and N
Burden:	5W
Withstand:	3250VAC, 50/60Hz for 1 minute
Power Supply Wiring:	AWG22-16 (0.6-1.5mm2)
AC Fuse Protection:	External 1A/250VAC Fuse ***(Recommended)***
Rated Voltage:	100-400VAC Line to Neutral (L-N) or 100-690VAC Line to Line (L-L) RMS for three phase or 100-400VAC RMS for single phase
Number of CT Inputs:	4 (L1, L2, L3, and Neutral)
Revenue Grade Accuracy:	**Active Energy -** Class 0.1s (According to IEC 62053-22) and Class 0.1s (According to ANSI C12.20) **Reactive Energy -** Class 2 (According to IEC 62053-23) – See Table 2 for parameter accuracy, resolution, and range
Voltage Channels:	400 Volts AC (L-N), 690 VAC (L-L), 45Hz - 65Hz, 300Hz - 500Hz
Withstand Voltage:	1500VAC Continuous, 2500VAC, 50/60Hz for 1 Minute
Input Impedance:	2M ohm per Phase
Pickup Voltage:	10VAC
Current Channels:	4 Channels, 0.400 VAC max, 333 mV CTs or 0 to 6000 Amps with Rogowski Coils (Field Selectable)
Maximum Current Input:	120% of current sensor rating (mV CTs) to maintain accuracy. Up to 6000 Amps w/ Rogowski Coils
Harmonic Resolution:	63rd Harmonic (50Hz or 60Hz type) or 15th Harmonic (400Hz type)
Measurement Type:	Real-time, True RMS measurement of instantaneous Voltage, Current, Power, Frequency, Harmonics, Phase Angle, Demand, Unbalance Factor, Running Time, and Power Factor
Line Frequency:	50/60 Hz
Measurement Data Parameters:	See Table 1
Real Time Parameter Update Rate:	<20 ms
Accumulated Parameter Update Rate:	1 Sec
LCD Display:	Multiple Display Modes (Important Parameter's, All Parameter's, Settings Display Modes)

PRODUCT SPECIFICATIONS *(Continued)*

Communication Protocols:	**Serial RS-485:** Modbus RTU and BACnet MS/TP **Ethernet:** BACnet™ Over IP, IEC 61850, Modbus®-TCP, HTTP/HTTPs Webserver, SMTP Email, SNMP, HTTP/HTTPs Push, FTP Post, sFTP Server, WiFi
Maximum Distance:	1200 meters (3,937 Feet) with data range of 100K bits/second or less
Termination Resistor:	120 Ohm to 300 Ohm 1/4W Resistor *(Not Included); (Installed at end of RS-485 Comm Bus)*
Supported Baud Rates:	**BACnet MS/TP Protocol:** 9600, 19200, 38400, 76800 Baud Rate (38400 BACnet Default) **Modbus RTU Protocol:** 1200, 2400, 4800, 9600, 19200, 38400 Baud Rate (19200 Modbus Default)
Max Station:	127 MS/TP Masters (MAC Addresses is 0 to 127)
BACnet Device Instance Number:	1 *(Default); Field adjustable from 1 to 4194302*
Modbus Data Bits / Parity / Stop Bit	8 / None, Even, Odd / 2, 1
Datalogging Storage:	8 GB
Enclosure Material / Flammability Rating:	Polycarbonate / UL 94V-0
Operating Temperature Range:	-13 to 158ºF (-25 to 70ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating / Storage Humidity Range:	5 to 95%, non-condensing
Wiring Connections:	Screw Connections
Wire Size:	14-22 AWG (2.5 to 0.34 mm^2)
Mounting:	ANSI C39.1 (4" Round) or an IEC 92mm DIN (Square) form.
Utility Software:	Acuview Utility Software, Windows Based; *(USB-RS485 converter is required to connect to computer)*
Agency Approvals:	BTL Certified, CE, RoHS2, cULus Listed (File # E359521)
Standard Compliance:	**Measurement Standard:** IEC 62053-22; ANSI C12.20 **Environmental Standard:** IEC 60068-2 **Safety Standard:** IEC 61010-1, UL 61010-1, IEC 61557-12 **EMC Standard:** IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22, IEC 61000-3-2, IEC 61000-6-2/4 **Outlines Standard:** DIN 43700, ANSI C39.1
Face Dimensions (L x W x H):	3.80" (96 mm) x 3.80" (96 mm) x 1.99" (50.7 mm)
Power Meter Weight:	0.77 lbs. (350g)
KW320 Panel Upgrade *(Optional)*	
NEMA Rating:	NEMA 4X
Enclosure Material:	Polycarbonate
Fuse:	600 VAC/1A
Wiring:	Two pluggable pre-cut holes to feed wiring, fused terminal blocks for voltage connections pre-installed, color-coded and labelled
Flammability Rating:	94-V0
Enclosure Dimensions (L x W x H):	7.88" (200 mm) x 11.81" (300 mm) x 7.34" (186.5 mm)
Enclosure Product Weight:	8 lbs. (3.63 kg)

Note 1: A power supply can be an independent power supply and a fuse (typical 1A/250Vac) is suggested to be used when connecting the power supply to the meter.

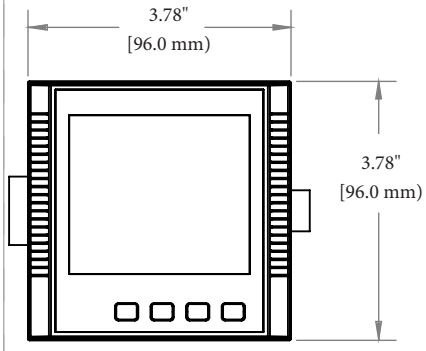
TABLE # 1

CATEGORY		ITEM	Parameters
Metering	Real time metering	Phase Voltage	V1, V2, V3, Vlnavg
		Line Voltage	V12, V23, V31, Vllavg
		Current	I1, I2, I3, In, Iavg
		Power	P1, P2, P3, Psum
		Reactive Power	Q1, Q2, Q3, Qsum
		Apparent Power	S1, S2, S3, Ssum
		Power Factor	PF1, PF2, PF3, PF
		Frequency	F
		Load Features	Load Features
		Four Quadrant Powers	Four Quadrant Powers
	Energy & demand	Energy	Ep_imp, Ep_exp, Ep_total, Ep_net, Epa_imp, Epa_exp, Epb_imp, Epb_exp, Epc_imp, Epc_exp
		Reactive Energy	Eq_imp, Eq_exp, Eq_total, Eq_net, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp
		Apparent Energy	Es, Esa, Esb, Esc
		Demand	Dmd_P, Dmd_Q, Dmd_S, Dmd_I1, Dmd_I2, Dmd_I3
Monitoring	Power quality	Voltage Unbalance Factor	U_unbl
		Current Unbalance Factor	I_unbl
		Voltage THD	THD_V1,THD_V2,THD_V3, THD_Vavg
		Current THD	THD_I1, THD_I2, THD_I, THD_Iavg
		Individual Harmonics	Harmonics 2nd to 63rd (50H or 60Hz) Harmonics 2nd to 15th (400Hz)
		Voltage Crest Factor	Crest Factor
		TIF	THFF
		Current K factor	K Factor
	Statistics	MAX with Time Stamp MIN with Time Stamp	Each phase of V & I; Total of P, Q, S, PF & F; Demand of I1, I2, I3, P, Q&S; Each phase THD of V & I; Unbalance factor of V & I
Others	Alarm	Over/Under Limit Alarm	V, I, P, Q, S, PF, V_THD & I_THD Each Phase and Total or Average; Unbalance Factor of V & I; Load Type; Analog Input of Each Channel; Demand of I1, I2, I3, P, Q&S; Reverse phase sequence; DI1~DI28
	Power quality event logging (KW320Q model only)	Sag/Dips, Swell	Voltage
	Onboard memory size	Memory	8GB on all 4 models
	Communication	RS485 Port, Half Duplex, Optical Isolated	Modbus®-RTU Protocol
	Time	Real Time Clock	Year, Month, Date, Hour, Minute, Second

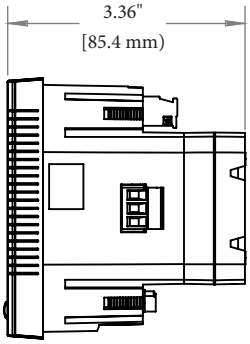
TABLE #2

METERING				
Parameters		**Accuracy**	**Resolution**	**Range**
Voltage		0.1%	0.1V	10V~1000kV
Current		0.1%	0.001A	5mA~50000A
Power		0.1%	1W	-9999MW~9999MW
Reactive Power		0.1%	1var	-9999Mvar~9999Mvar
Apparent Power		0.1%	1VA	0~9999MVA
Power Demand		0.1%	1W	-9999MW~9999MW
Reactive Power Demand		0.1%	1var	-9999Mvar~9999Mvar
Apparent Power Demand		0.1%	1VA	0~9999MVA
Power Factor		0.1%	0.001	-1.000~1.000
Frequency		0.001%	0.001Hz	45.00~65.00Hz (50 or 60Hz type) 300.00Hz~500.00Hz (400Hz type)
Energy	Primary	0.1%	0.1kWh	0-99999999.9kWh
	Secondary	0.1%	0.001kWh	0-999999.999kWh
Reactive Energy	Primary	0.1%	0.1kvarh	0-99999999.9kvarh
	Secondary	0.1%	0.001kvarh	0-999999.999kvarh
Apparent Energy	Primary	0.1%	0.1kVAh	0-99999999.9kVAh
	Secondary	0.1%	0.001kVAh	0-999999.999kVAh
Harmonics		1.0%	0.1%	
Phase Angle		2.0%	0.1°	0.0°~359.9°
Unbalance Factor		2.0%	0.1%	0.0%~100.0%
Running Time			0.01h	0~9999999.99h

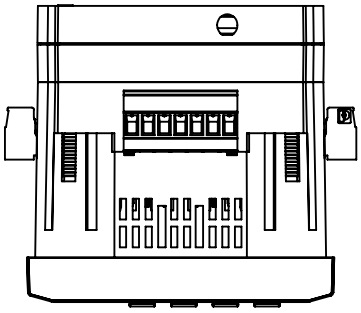
DIMENSIONAL DRAWING



FRONT VIEW

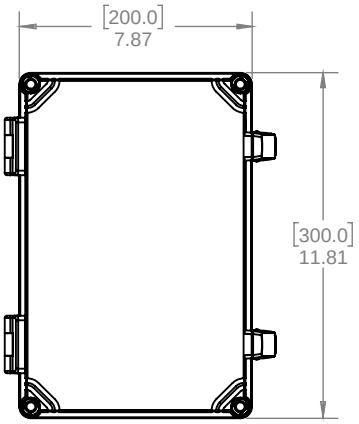


SIDE VIEW

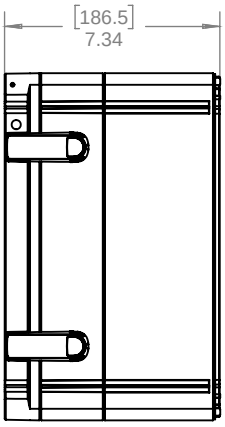


TOP VIEW

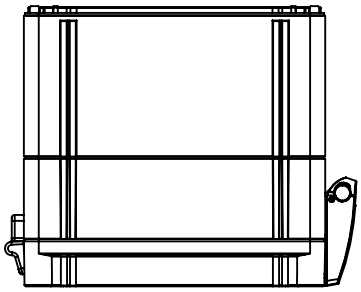
DIMENSIONAL DRAWING POWER METER PANEL UPGRADE



FRONT VIEW



SIDE VIEW



TOP VIEW

STANDARD ORDERING

Model #	Item #	mV CT Input	Rogowski Coil Input	Meter Only	Panel Upgrade	Waveform Capture
KW320-P1-D-W-XX	150984	•	•	•		
KW320-P1-D-W-PC	150985	•	•		•	
KW320Q-P1-D-W-XX	150986	•	•	•		•
KW320Q-P1-D-W--PC	150987	•	•		•	•

ACCESSORIES ORDERING

Model #	Item #	Description
AXM-DIN	148248	KW320 DIN Rail Adapter
USB-RS485	148243	RS485 to USB Converter
AK-03	150827	Three Fuse Pack; Inline Fuse Kit; 600V, 2A; Slow Blow

KW320B

3 Channel Power Meter, 0.2 Class Accuracy, BACnet IP Only

The KW320B meter combines high performance with ease of integration via BACnet-IP (BTL-Listed) to provide a power and energy monitoring solution. Over 100 metering parameters can be monitored in real-time from a built-in web interface and encryption ensures that communication is secure. The mobile-friendly web interface allows users to remotely monitor and configure meter on mobile devices. KW320B meters support all electrical system configurations from single phase to three phase and their tamper-proof design is approved for revenue applications (ANSI C12.20 Class 0.2 and IEC 62053-22 0.2s). The meter comes standard to be mounted in a 4" Round or an IEC 92mm DIN Square form or has the flexibility to be mounted to 35mm DIN rail with the AXM-DIN adapter (See Accessories Ordering). This product provides demand measurement of Current, Active Power, Reactive Power and Apparent Power – see table 1 for all parameters monitored and metered. Current input options are compatible with any ACI 333mV or Flexible Rogowski Coil CT. Meters come standard with a three channel CT input to accurately measure neutral current. CTs are sold separately as shown on the ACI Split-Core, Solid-Core and Rogowski Current Transformer product data sheets.

Applications: Tenant Billing, Data Centers, Sub-Metering Electrical Panel, Equipment Load Monitoring, Industrial Applications, Predictive Maintenance, Renewable Energy, Overhead Cost Reduction, "NET ZERO" Buildings, LEED Buildings, Green Buildings, and Refrigeration

The KW320B Power Meters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Service Type:	Single Phase, 3 Phase – Four Wire (WYE), Three Phase – Three Wire (Delta)
Power[1]:	100 - 415Vac, 50/60Hz, 100 - 300Vdc on terminals L and N
Burden:	5W
Withstand:	3250Vac, 50/60Hz for 1 minute
Power Supply Wiring:	AWG22-16 (0.6-1.5mm2)
AC Fuse Protection:	External 1A/250VAC Fuse ***(Recommended)***
Rated Voltage:	100-400VAC Line to Neutral (L-N) or 100-690VAC Line to Line (L-L) RMS for three phase or 100-400VAC RMS for single phase; 100-300 VDC
Number of CT Inputs:	3
Revenue Grade Accuracy:	**Active Energy:** Class 0.2s (According to IEC 62053-22) and Class 0.2s (According to ANSI C12.20) **Reactive Energy**: Class 2 (According to IEC 62053-23) – See Table 2 for parameter accuracy, resolution, and range
Voltage Channels:	400 Volts AC (L-N), 690 VAC (L-L), 45Hz - 65Hz, 300Hz - 500Hz
Withstand Voltage:	1500Vac Continuous, 2500Vac, 50/60Hz for 1 Minute
Input Impedance:	2M ohm per Phase
Pickup Voltage:	10VAC
Current Channels:	3 Channels, 0.525 VAC max, 333 mV CT's or 0 to 6000 Amps with Rogowski Coils
Maximum Current Input:	150% of current sensor rating (mV CT's) to maintain accuracy. Up to 6000 Amps w/ Rogowski Coils
Harmonic Resolution:	63rd Harmonic (50Hz or 60Hz type) or 15th Harmonic (400Hz type)
Measurement Type:	Real-time, True RMS measurement of instantaneous Voltage, Current, Power, Frequency, Harmonics, Phase Angle, Demand, Unbalance Factor, Running Time, and Power Factor
Line Frequency:	50/60 Hz
Measurement Data Parameters:	See Table 1
Real Time Parameter Update Rate:	100 mS
Accumulated Parameter Update Rate:	1 Sec
LCD Display:	Multiple Display Modes (Important Parameter's, All Parameter's, Settings Display Modes)
Communication Protocol:	**Ethernet:** BACnet Over IP Only
Enclosure Material / Flammability Rating:	Polycarbonate / UL 94V-0
Operating Temperature Range:	-13 to 158oF (-25 to 70oC)
Storage Temperature Range:	-40 to 185oF (-40 to 85oC)
Operating / Storage Humidity Range:	5 to 95%, non-condensing
Wiring Connections:	Screw Connections
Wire Size:	14-22 AWG (2.5 to 0.34 mm2)
Mounting:	ANSI C39.1 (4" Round) or an IEC 92mm DIN (Square) form.
Utility Software:	Acuview Utility Software, Windows Based;
Agency Approvals:	BTL Certified, CE, RoHS2, cULus Listed (File # E359521)

PRODUCT SPECIFICATIONS

Standard Compliance:	***Measurement Standard:*** IEC 62053-22; ANSI C12.20 ***Environmental Standard:*** IEC 60068-2 ***Safety Standard:*** IEC 61010-1, UL 61010-1, IEC 61557-12 ***EMC Standard:*** IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22, IEC 61000-3-2, IEC 61000-6-2/4 ***Outlines Standard:*** DIN 43700, ANSI C39.1
Face Dimensions (L x W x H):	3.80" (96 mm) x 3.80" (96 mm) x 1.99" (50.7 mm)
Power Meter Weight:	0.77 lbs. (350g)

Note 1: A power supply can be an independent power supply and a fuse (typical 1A/250Vac) is suggested to be used when connecting the power supply to the meter.

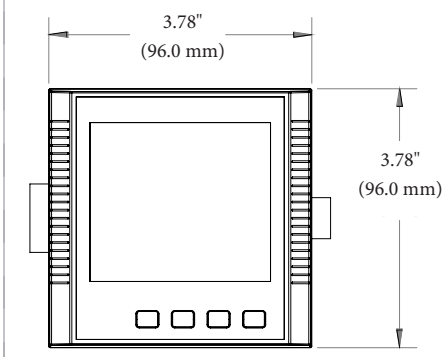
TABLE # 1

CATEGORY		ITEM	Parameters
Metering	**Real time metering**	Phase Voltage	V1, V2, V3, Vlnavg
		Line Voltage	V12, V23, V31, Vllavg
		Current	I1, I2, I3, In, Iavg
		Power	P1, P2, P3, Psum
		Reactive Power	Q1, Q2, Q3, Qsum
		Apparent Power	S1, S2, S3, Ssum
		Power Factor	PF1, PF2, PF3, PF
		Frequency	F
	Energy & demand	Energy	Ep_imp, Ep_exp, Ep_total, Ep_net, Epa_imp, Epa_exp, Epb_imp, Epb_exp, Epc_imp, Epc_exp
		Reactive Energy	Eq_imp, Eq_exp, Eq_total, Eq_net, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp
		Apparent Energy	Es, Esa, Esb, Esc
		Demand	Dmd_P, Dmd_Q, Dmd_S, Dmd_I1, Dmd_I2, Dmd_I3
Monitoring	**Power quality**	Voltage Unbalance Factor	U_unbl
		Current Unbalance Factor	I_unbl
		Voltage THD	THD_V1,THD_V2,THD_V3, THD_Vavg
		Current THD	THD_I1, THD_I2, THD_I, THD_Iavg

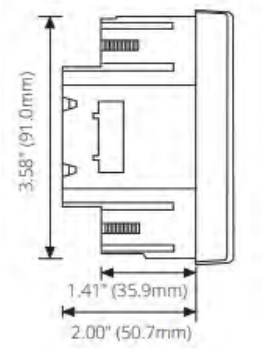
TABLE #2

METERING				
Parameters		**Accuracy**	**Resolution**	**Range**
Voltage		0.2%	0.1V	10V~1000kV
Current		0.2%	0.001A	5mA~50000A
Power		0.2%	1W	-9999MW~9999MW
Reactive Power		0.2%	1var	-9999Mvar~9999Mvar
Apparent Power		0.2%	1VA	0~9999MVA
Power Demand		0.2%	1W	-9999MW~9999MW
Reactive Power Demand		0.2%	1var	-9999Mvar~9999Mvar
Apparent Power Demand		0.2%	1VA	0~9999MVA
Power Factor		0.2%	0.001	-1.000~1.000
Frequency		0.02%	0.01Hz	45.00~65.00Hz (50 or 60Hz type) 300.00Hz~500.00Hz (400Hz type)
Energy	Primary	0.2%	0.1kWh	0-99999999.9kWh
	Secondary	0.2%	0.001kWh	0-999999.999kWh
Reactive Energy	Primary	0.2%	0.1kvarh	0-99999999.9kvarh
	Secondary	0.2%	0.001kvarh	0-999999.999kvarh
Apparent Energy	Primary	0.2%	0.1kVAh	0-99999999.9kVAh
	Secondary	0.2%	0.001kVAh	0-999999.999kVAh

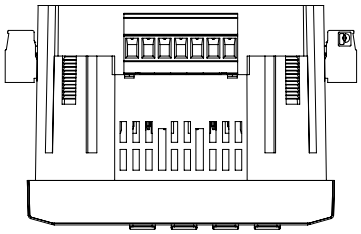
DIMENSIONAL DRAWING



FRONT VIEW



SIDE VIEW



TOP VIEW

STANDARD ORDERING

Model #	Item #	Description
KW320B-P1-D-IP-SC	149480	3 Circuit, Ethernet BACnet IP Only, 0.2 Class Accuracy, Power Meter 333mV CT Input, Panel Mount
KW320B-P1-D-IP-RC	149481	3 Circuit, Ethernet BACnet IP Only, 0.2 Class Accuracy, Power Meter Rogowski Coil Input, Panel Mount

ACCESSORIES ORDERING

Model #	Item #	Description
AXM-DIN	148248	KW320 DIN Rail Adapter
AK-03	150827	Three Fuse Pack; Inline Fuse Kit; 600V, 2A; Slow Blow

KW350

3 Channel Power Meter, 0.5 Class Accuracy, Serial Communication Protocols

The KW350 meter combines high performance with ease of integration to provide a cost-effective power and energy monitoring solution. The meter comes standard to be mounted DIN rail mounted but is also available in a panel upgrade version that comes with NEMA 4X panel enclosure, pre-wired and labeled terminal for CT's, terminal blocks for voltage input, and industrial grade fuses (see ordering grid). The meter can monitor both uni-directional and bi-directional current and features a built-in LCD display designed to simplify setup and local reading of all measurements of meter data. The user interface enables access to configure the meter set-up options. Many of the advanced meter functions connect with the Utility Software which requires an RS-485 to USB converter to connect to a PC or laptop - See Accessory Ordering Grid. The meter supports user selectable Modbus-RTU and BACnet MS/TP communication protocols, and pulse output communication which allows seamless integration with data acquisition systems. Meters also feature a built-in relay that can be used to trigger an alarm. The KW350 provides demand measurement of Current, Active Power, Reactive Power and Apparent Power. It also provides demand forecasting as well as the peak demand. Meters can record the time and event regarding important parameter events such as the run time of the meter and alarm functions. The Auto Phase-check function automatically checks for common wiring mistakes, such as current transformer direction, voltage, and current phase alignment. The tamper-proof design is approved for revenue applications. Model selection is determined by which style of current transformer is required- 333mV or Rogowski coil (see ordering grid). Current Transformers are sold separately as shown on the Hinged, Split Core, Solid Core, or Rogowski Coils CT product data sheets.

Applications: Sub-Metering Electrical Panel, Equipment Load Monitoring, Industrial Applications, Predicted Maintenance, Renewable Energy, Overhead Cost Reduction, "NET ZERO" Buildings, LEED Buildings, Green Buildings, and Refrigeration

The KW350 Power Meters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Service Type:	Single Phase, 3 Phase – Four Wire (WYE), Three Phase – Three Wire (Delta)
Power[1]:	100 - 415Vac, 50/60Hz, 100 - 300Vdc on terminals L and N.
Power Consumption:	<2W or 10VA
AC Fuse Protection:	External 1A/600VAC Fuse
Rated Voltage:	100-400VAC Line to Neutral (L-N) or 100-690VAC Line to Line (L-L)
Number of CT Inputs:	3
Revenue Grade Accuracy:	IEC 62053-22 0.5s Class / ANSI C12.20 0.5 Class
Voltage Channels:	400 Volts AC (L-N), 690 VAC (L-L), 50/60 Hz
Current Channels:	3 Channels, 0.4 VAC max, 333 mV CT's or 0 to 6000 Amps with Rogowski Coils
Maximum Current Input:	150% of current sensor rating (mV CT's) to maintain accuracy. Up to 6000 Amps w/ Rogowski Coils
Measurement Type:	Real-time, True RMS measurement of instantaneous Voltage, Current, Power, Frequency and Power Factor
Line Frequency:	50/60 Hz
Measurement Data Parameters:	See Table 1
Meter Sampling Rate:	3.84kHz @ 60 Hz; 3.2kHz @ 50 Hz
Real Time Parameter Update Rate:	200 mS
Accumulated Parameter Update Rate:	1 Sec
LCD Display:	3 Display Modes (Important Parameter's, All Parameter's, Settings Display Modes)
Energy Pulse Output:	Two-wire pulse train, Isolation Voltage 2500 VAC, 5~60 VDC Load Voltage, 10 mA Max Load Current, Pulse Width 20~100ms, Pulse Constant 1~60,000
Energy Pulse Power Supply:	External 24 VDC Power Supply (Required) Note: 1K Ohm External Current Limiting Resistor (Recommended)
Communication Protocols:	Serial RS-485 Modbus RTU (SunSpec IEEE-754 Single Precision Floating Point Format) or BACnet MS/TP
Maximum Distance:	1200 meters (3,937 Feet) with data range of 100K bits/second or less
Termination Resistor:	120 Ohm to 300 Ohm 1/4W Resistor (Not Included); (Installed at end of RS-485 Comm Bus)
Supported Baud Rates:	BACnet MS/TP Protocol: 9600, 19200, 38400, 76800, 115200 Baud Rate (38400 BACnet Default) Modbus RTU Protocol: 1200, 2400, 4800, 9600, 19200, 38400, 115200 Baud Rate (19200 Modbus Default)
Max Station:	127 MS/TP Masters (MAC Addresses is 0 to 127)
BACnet Device Instance Number:	1 (Default); Field adjustable from 1 to 4194303
Modbus Data Bits / Parity / Stop Bit	8 | None, Even, Odd | 2, 1
Enclosure Material / Flammability Rating:	Polycarbonate | UL 94V-0
Operating Temperature Range:	-13 to 158°F (-25 to 70°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)

PRODUCT SPECIFICATIONS

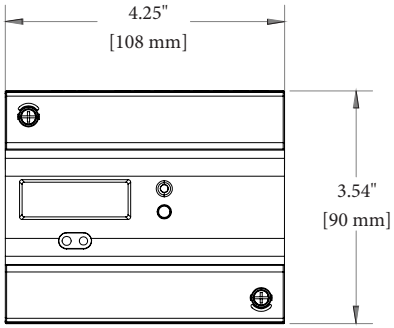
Operating / Storage Humidity Range:	5 to 95%, non-condensing	
Wiring Connections:	Screw Connections	
Wire Size:	14-22 AWG (2.5 to 0.34 mm^2)	
Relay Output		
Load Voltage:	250VAC, 30VDC	
Max Load Current:	5A (Resistant Load)	
Isolation Voltage:	2000VAC (1 min)	
Action Time (MAX):	10 milliseconds	
Mechanical Life:	20,000,000 cycles	
Electrical Life:	Above 50,000 cycles (5A, 250VAC Resistant Load)	
Mounting:	IEC 35mm DIN Rail (Standard)	
Utility Software:	AcuRev 1310 Utility Software, Windows Based; (USB-RS485 converter is required to connect to computer)	
Security:	Password Protected to access Settings. Sealed and Tamper Proof Cover.	
Agency Approvals:	BTL Certified, CE, UKCA, RoHS2, cULus Listed (File # E359521)	
Product Dimensions (L x W x H):	4.25" (108 mm) x 3.54" (90 mm) x 2.46" (62.5 mm)	
Power Meter Weight:	0.82 lbs. (0.372 kg)	
Ingress Protection (EN 60529):	IP67	
Electrical Insulation:	Totally Insulated	
Halogen free (DIN/VDE 0472, Part 815):	0	
UV Resistance and Flammability Rating:	UL 508	
Glow Wire Test (IEC 695-2-1) °C:	960	
KW350-ENC Enclosure Only (Accessory):	**NEMA Rating:**	UL Type 4, 4X, 6, 6P, 12 and 13
	Dimensions (L x W x H):	8.24" (209.3 mm) x 8.24" (209.3 mm) x 4.96" (126 mm)
	Enclosure Product Weight:	3.8 lbs. (1.724 kg)
KW350 Panel Upgrage (Optional):	**NEMA Rating**	NEMA 4X
	Enclosure Material:	Polycarbonate
	Fuse:	600 VAC/2A
	Wiring:	DIN rail mounted pre-labeled terminal blocks for voltage and CT connections pre-installed
	Dimensions (L x W x H):	11.81" (300 mm) x 11.81" (300 mm) x 7.01" (178 mm)
	Enclosure Product Weight:	8 lbs. (3.63 kg)

Note 1: A power supply can be an independent power supply and a fuse (typical 1A/600 Vac) is suggested to be used when connecting the power supply to the meter

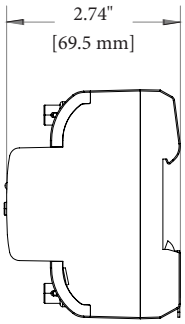
TABLE 1

Parameter	Accuracy	Resolution	Range
Active Energy	0.5%	1Wh	0-999999999
Reactive Energy	0.5%	1varh	0-999999999
Apparent Energy	0.5%	1VAh	0-999999999
Voltage	0.5%	0.1V	10V-1000KV
Current	0.5%	0.001A	5mA-50000A
Active Power	0.5%	1W	-99-99MW
Reactive Power	0.5%	1var	-99-99Mvar
Apparent Power	0.5%	1VA	-99-99MVA
Power Factor	0.5%	0.001	-1.00-1.000
Frequency	0.2%	0.01Hz	50/60
Power Demand	0.5%	1W/var/VA	99MW/Mvar/MVA
Current Demand	0.5%	0.001A	5mA-50000A

DIMENSIONAL DRAWING

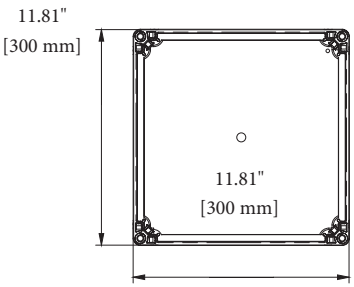


FRONT VIEW

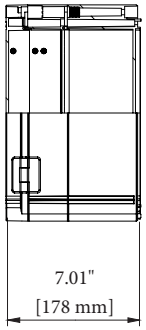


SIDE VIEW

DIMENSIONAL DRAWING POWER METER PANEL UPGRADE



FRONT VIEW



SIDE VIEW

STANDARD ORDERING

Model #	Item #	Description
KW350-P1-D-S-RC	148238	3 Circuit, 0.5 Class Accuracy, Power Meter Rogowski Coil Input w/LCD
KW350-P1-D-S-SC	148233	3 Circuit, 0.5 Class Accuracy, Power Meter 333mV CT Input w/LCD
KW350-P1-D-S-RC-PC	148972	Panel Upgrade, same as KW350-P1-D-S-RC installed in NEMA 4X Enclosure w/ labeled and prewired supply voltage and CT connections
KW350-P1-D-S-SC-PC	148973	Panel Upgrade, same as KW350-P1-D-S-SC installed in NEMA 4X Enclosure w/ labeled and prewired supply voltage and CT connections

ACCESSORIES ORDERING

Model #	Item #	Description
KW350-ENC	148240	NEMA 4X/IP66 Wall Mount Enclosure, includes: Din Rail Mounting Hardware, Swing Panel Kit, Tamper Proof Locking Options
USB-RS485	148243	RS485 to USB Converter
AK-03	150827	Three Fuse Pack; Inline Fuse Kit; 600V, 2A; Slow Blow

KW1850

18 Channel Power Meter, 0.5 Class Accuracy

The KW1850 Series meters combine high performance with ease of integration to provide an energy measurement and monitoring solution. The meter comes standard to be DIN rail mounted but is also available in a panel upgrade version that comes with NEMA 4X panel enclosure, pre-wired and labeled terminal blocks for voltage input, and industrial grade fuses (see ordering grid). The meter supports unidirectional monitoring up to 18 CT inputs or 6 three-phase circuits simultaneously for multi-point energy measurement. The compact design is suited for high density applications to be used in conjunction with commercial, industrial, and residential multi-tenant energy management systems. Key functions include multi-tariff time-of-use (TOU), billing mode feature, and power quality analysis- see table 1 for additional measurement functions and parameters. The meter has either 8MB (KW1850-P1-D-S) or 8GB (KW1850-P1-D-W) memory for data logging, recording system events, and over/under limit alarming information that can be retrieved via a serial connection or remotely by Ethernet, depending on the model selected. The KW1850 Series incorporates Snap On CT technology which reduces polarity errors, installation time, and eliminate CT wiring configuration. For CT connection, the CTs are terminated and plugged directly into the meter using the provided connectors. The meter features a built-in LCD display and a five button keypad designed to simplify setup and provide local readings of all measurements of meter data. Many of the advanced meter functions are accessed via the Accuview Software which requires an RS-485 to USB converter for the KW1850-P1-D-S to connect to a PC or laptop, or the KW1850-P1-D-W which utilizes either Ethernet or Wi-Fi. The meter supports multiple user-selectable communication protocols, pulse output communication, 18 digital inputs, 6 digital outputs, and 2 alarm relays which allows seamless integration with data acquisition systems. The tamper-proof design is approved for revenue applications. The KW1850 Series is compatible with multiple Current Transformer input options, however, 333mV CT or Flexible Rogowski Coil CTs should not be intermixed within a specific meter.

Current Transformers are sold separately as shown on the Hinged, Split Core, Solid Core, or Rogowski Coils CT product data sheets.

Applications: Multi Point Sub-Metering Electrical Panel for Tenant Billing, Equipment Load Monitoring, Power Quality Monitoring, Data Centers, Industrial Applications, Predicted Maintenance, Renewable Energy, Overhead Cost Reduction, "NET ZERO", LEED, Green Buildings and Refrigeration

The KW1850 Power Meters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

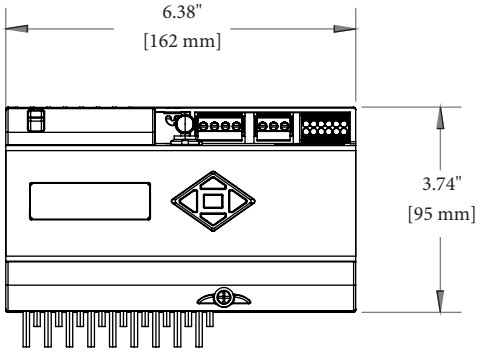
Service Type:	Single Phase, 3 Phase – Four Wire (WYE), Three Phase – Three Wire (Delta)
Power Supply[1]:	100 - 415Vac, 50/60Hz, 100 - 300Vdc on terminals L and N
Power Consumption:	5W
Rated Voltage:	100-400VAC Line to Neutral (L-N) or 100-690VAC Line to Line (L-L) RMS for three phase or 100-400VAC RMS for single phase
Input Impedance:	2MΩ/Phase
PT Burden:	<0.2VA
Number of CT Inputs:	18
Acceptable CT Inputs:	333mV or Rogowski Coil (cannot mix CT's)
Accuracy:	ANSI C 12.20 class 0.5; IEC62053-22 Class 0.5s - See Table 2 for parameter accuracy, resolution, and range
AC Protection:	1A/250VAC External Fuse (not provided)
Measurement Type:	Real-time, True RMS measurement of instantaneous Voltage, Current, Power, Frequency, Harmonics, Phase Angle, Demand, Unbalance Factor, Running Time, and Power Factor
Line Frequency:	45/65Hz
Digital Inputs / Type:	18 Digital Inputs for Water and Gas Metering Pulse Counting / Dry Node
Input Current (MAX):	2mA
Input Voltage:	15-30VDC
Pulse Frequency (MAX):	100Hz, 50% Duty Cycle
SOE Resolution:	2ms
Auxiliary Power Output:	15VDC, 1W
Relay Output	
Load Voltage:	250VAC, 30VDC
Max Load Current:	3A (Resistant Load)
Isolation Voltage:	4000VAC (1 min)
Action Time (MAX):	10 milliseconds
Mechanical Life:	>5,000,000 cycles, typical
Conduction Impedance (MAX):	100mΩ
Measurement Data Parameters:	Energy, time of Use, Power Demand, Current Demand, Real Time Metering, Power Quality, Time, Alarming, Data Logging – See Table 1 complete list of Functions and Parameters
Multi-Tariff Time of Use (TOU):	4 tariffs (sharp, peak, normal, valley), 14 schedules, 14 segments, weekends and 10-year holiday settings

PRODUCT SPECIFICATIONS *(Continued)*

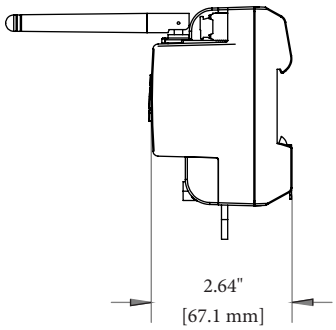
Over/Limit Alarms:	Ten limit alarms configured for peak demand, current, or power quality
Display:	LCD Graphic Display with Backlight High-resolution Display
Pulse Output:	Two-wire pulse train, Isolation Voltage 2500VAC, 0-30 VDC Load Voltage, 10mA Max Load Current, Pulse Width 20~100ms (80ms Default), Pulse Constant 1~60,000 (50000 Default) IMP/kWh
Hardware:	RS-485 Serial, Dual Ethernet (KW1850-P1-D-W Only), Wireless Network Card (KW1850-P1-D-W Only)
Memory Capacity:	8GB or 8MB (based on model selection) onboard memory for data-logging and historical trend analysis
Supported Protocols:	KW1850-P1-D-S: Modbus RTU and BACnet MS/TP via RS485 KW1850-P1-D-W: Modbus TCP, BACnet IP, SNMP, SNTP, WiFi, WPA, WPA2, HTTP/HTTPS, FTP, SMTP, NTP, SNMP MQTT, RSTP, IPV6
Maximum Distance:	1200 meters (3,937 Feet) with data range of 100K bits/second or less
Supported Modbus Baud Rates:	1200 to 115200 Baud Rate (19200 Modbus Default)
Data Bits / Parity / Stop Bit	8 / None (default), Even, Odd / 2, 1 (default)
Modbus Address Range:	1 to 247 (The default is 1)
Operating Temperature Range:	-13 to 158°F (-25 to 70°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating / Storage Humidity Range:	*5 to 95%, non-condensing*
Enclosure Material / Flammability Rating:	Polycarbonate / 94-V0
Wire Size:	16-22 AWG (1.5 to 0.6 mm2)
Mounting:	IEC 35mm DIN Standard
Software:	Accuview Utility Software, Windows Based. USB-RS485 converter is required to connect to computer for KW1850-P1-D-S only.
Security:	Password Protected to access Settings. Sealed and Tamper Proof Cover.
Agency Approvals:	BTL Certified, CE, RoHS2, cULus Listed (File # E359521)
Product Dimensions (L x W x H):	6.38" (162 mm) x 3.74" (95 mm) x 2.64" (67 mm)
KW1850 Panel Upgrade (Optional):	
NEMA Rating:	NEMA 4X / IP66 Enclosure
Material:	Polycarbonate
Fuse:	600 VAC/2A
Wiring:	DIN rail mounted pre-labeled terminal blocks for voltage connection pre-installed
Flammability Rating:	UL 746C 5-inch flame test
Certifications:	UL 508A, EN62208
Dimensions (L x W x H):	11.81" (300 mm) x 11.81" (300 mm) x 7.01" (178 mm)
Enclosure Product Weight:	8 lbs. (3.63 kg)

Note 1: A fuse or small-sized circuit breaker is mandatory. A power supply can be an independent power supply and a fuse (typical 1A/250Vac) is suggested to be used when connecting the power supply to the meter. If a circuit breaker is utilized, it must be CE certified and comply with IEC 947 standard. An isolated transformer or EMC filter should be used in the auxiliary power supply loop if there is a power quality issue in the power supply.

DIMENSIONAL DRAWING

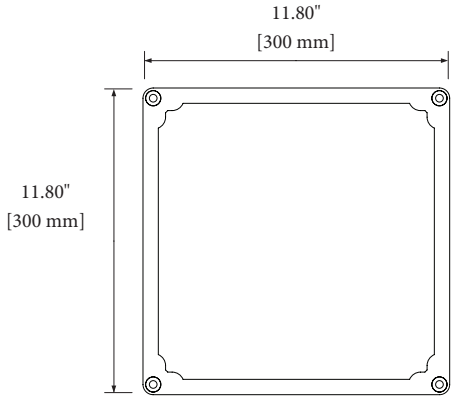


FRONT VIEW

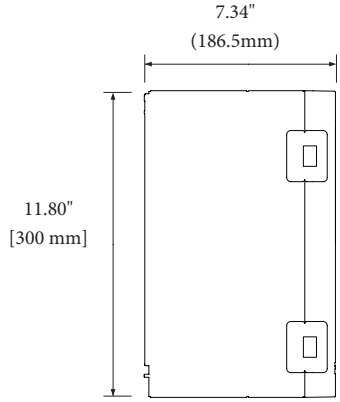


SIDE VIEW

DIMENSIONAL DRAWING POWER METER PANEL UPGRADE



FRONT VIEW



SIDE VIEW

TABLE # 1

Function		Parameters	KW1850-P1-D-S	KW1850-P1-D-W
Energy	Active Energy	Ep	•	•
	Reactive Energy	Eq	•	•
	Apparent Energy	Es	•	•
Time Of Use	4 Tariffs, 14 Schedules	TOU	•	•
Power Demand	Active Power Demand	Demand_P	•	•
	Reactive Power Demand	Demand_Q	•	•
	Apparent Power Demand	Demand_S	•	•
	Peak Power Demand	Demand_P_max	•	•
Current Demand	Current Demand	Total and each circuit	•	•
	Peak Current Demand	Total and each circuit	•	•
Real Time Metering	Phase Voltage	V1,V2,V3	•	•
	Line Voltage	V12,V23,V31	•	•
	Current	Total and each circuit	•	•
	Power	Total and each circuit	•	•
	Reactive Power	Total and each circuit	•	•
	Apparent Power	Total and each circuit	•	•
	Power Factor	Total and each circuit	•	•
	Frequency	F	•	•
Power Quality	Total Harmonic Distortion	THD*	•	•
	Individual Harmonics	2nd ~ 31st (Voltage and Current)*	•	•
	Current K Factor	KF	•	•
	Voltage Crest Factor	CF	•	•
	Voltage Unbalance	U_unbl	•	•
	Current Unbalance	I_unbl	•	•
Time	Real Time Clock (Year, Month, Date, Hour, Minute, Second)		•	•
Alarming	Over/Under Limit Alarming		•	•
Data Logging	8MB Memory		•	•
	8GB Memory			•
	RS485 Modbus®-RTU		•	•
	Ethernet Modbus®-TCP, HTTP, BACnet-IP, SMTP, SNTP, SNMP			•
	WiFi			•
I/O Option	18 Digital Inputs with 15Vdc power supply		•	•
	6 Digital Outputs, Second Pulse, Demand Cycle		•	•
	2 Relay Outputs		•	•
Display	LCD		•	•

TABLE #2

MEASURE			
Parameters	**Accuracy**	**Resolution**	**Range**
Active Energy	0.5s	0.1kWh	0~99999999.9kWh
Reactive Energy	1%	0.1kvarh	0~99999999.9kvarh
Apparent Energy	1%	0.1kVAh	0~99999999.9kVAh
Voltage	0.5%	0.1V	10~400V
Current	0.5%	0.001A	5mA~10,000A
Real Power	0.5%	0.1W	4000.0kW
Reactive Power	0.5%	0.1var	4000.0kvar
Apparent Power	0.5%	0.1VA	4000.0kVA
Power Factor	0.5%	0.001	-1.000~1.000
Frequency	0.2%	0.01Hz	45~65Hz
Real Power Demand	0.5%	0.1W	4000.0kW
Reactive Power Demand	0.5%	0.1var	4000.0kvar
Apparent Power Demand	0.5%	0.1VA	4000.0kVA
Current Demand	0.5%	0.001A	5mA~10,000A
Unbalance	2%	0.01%	0~300%
Harmonics	2%	0.01%	0~100%
Meter Running Time		0.01hour	0~999999.9h
Temperature Drift	less than 100ppm/°C(0-50°C)		

STANDARD ORDERING

Model #	Item #	Description
KW1850-P1-D-S	148259	18 Circut, 0.5 Class Accuracy, Power Meter w/LCD, and serial RS-485 Modbus RTU and BACnet MS/TP Only
KW1850-P1-D-W	148258	18 Circut, 0.5 Class Accuracy, Power Meter w/LCD, Serial and Ethernet Communication protocols, and Wi-Fi enabled
KW1850-P1-D-S-PC	151201	Panel Upgrade, same as KW1850-P1-D-S installed in NEMA 4X Enclosure w/ labeled and prewired supply voltage connections
KW1850-P1-D-W-PC	151202	Panel Upgrade, same as KW1850-P1-D-W installed in NEMA 4X Enclosure w/ labeled and prewired supply voltage connections

ACCESSORIES ORDERING

Model #	Item #	Description
KW1850-ENC	148260	NEMA 4X/IP66 Wall Mount Enclosure with Steel Mounting Plate - DIN Rail not Provided
SO-SP1	148261	Snap On CT Replacement Connector Kit (Package of 20)
USB-RS485	148243	RS485 to USB Converter to connect KW1850-P1-D-S to PC
AK-03	150827	Three Fuse Pack; Inline Fuse Kit; 600V, 2A; Slow Blow

CONTROL TRANSFORMERS

Multitap Primary: 24 VAC Secondary

The LE Series control transformers are designed to provide a stable, clean and reliable 24 VAC power source. Many different styles and VA output ranges are available. Mounting configurations are available with 1/2" conduit hubs and mounting feet. Single and multiple primary input transformers are available in ranges from 40 to 150 VA. A manual reset circuit breaker pushbutton is used in some of the models. The LE Series also incorporates a Class F, 150 insulation system and they are UL, CUL and CSA approved.

A transformer with a hub style "2TF" has a threaded flange hub for both the primary and the secondary. A transformer with a hub style "1TF, 1SO" has a threaded flange on the primary and a side opening on the secondary end bell for the wires. Single hub transformers that have both the primary and secondary wires exiting the same hub will only show one hub style.

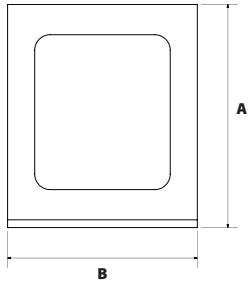
Applications: Temperature Control, Fire Alarm, Security, Energy Management, Lighting Control Systems and Building Automation Systems

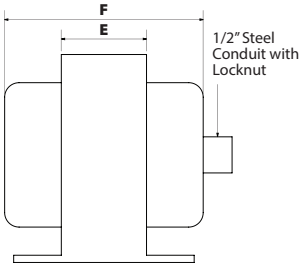
The LE Transformers are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

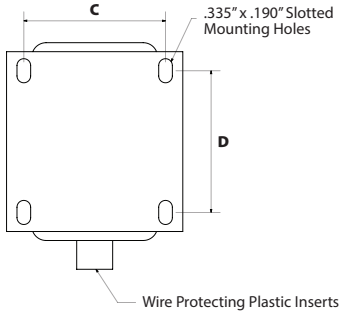
PRODUCT SPECIFICATIONS

Input Voltage:	24 to 480 VAC - See Ordering Grid on Back of Data Sheet
Output Voltage:	24 or 120 VAC - See Ordering Grid on Back of Data Sheet
VA Output Ranges:	20 to 150 VA - See Ordering Grid on Back of Data Sheet
Frequency:	50/60 Hz
Overload Protection:	Manual Reset Circuit Breaker or Thermal Cutout - See Ordering Grid on Back of Data Sheet
Mounting:	Slotted Foot Mounts and ½" Threaded Flange Hub(s) - See Ordering Grid on Back of Data Sheet
Connections:	UL 1015 Insulated 18AWG Lead Wires, 8" Long, 0.375" ends Stripped and Tinned
Insulation System:	UL 1446 Recognized Component Class B Insulation System PG125 (130C, 266F)
Operating Temperature:	14ºF to 104ºF (-10ºC to 40ºC)
Operating Humidity Range:	45 to 85%, Non-Condensing
Product Dimensions:	See Ordering Grid on Back of Data Sheet
Product Weights:	See Ordering Grid on Back of Data Sheet
Agency Approvals:	UL 1585 / UL 5085-1 / UL 5085-3 Listed for USA & Canada | Class 2, Class 3 Transformer

DIMENSIONAL DRAWING







Transformer Type #1 | **Transformer Type #2** | **Transformer Type #3**

DIMENSIONAL DRAWING TABLE

Model #	A	B	C	D	E	F
LE105	2.88" (73.15 mm)	2.19" (55.63 mm)	1.97" (50.04 mm)	1.97" (50.04 mm)	1.18" (29.98 mm)	2.75" (69.85 mm)
LE11145	2.60" (66.04 mm)	1.90" (48.26 mm)	1.70" (43.18 mm)	1.52" (38.60 mm)	1.00" (25.40 mm)	2.32" (58.93 mm)
LE11300	2.88" (73.15 mm)	2.19" (55.63 mm)	1.75" (44.45 mm)	1.97" (50.04 mm)	1.18" (29.98 mm)	2.73" (69.34 mm)
LE117	2.90" (73.66 mm)	2.19" (55.63 mm)	1.75" (44.45 mm)	2.00" (50.80 mm)	1.25" (31.75 mm)	2.82" (71.63 mm)
LE11711	3.06" (77.72 mm)	2.51" (63.75 mm)	2.00" (50.80 mm)	1.92" (48.77 mm)	1.27" (32.26 mm)	3.45" (87.63 mm)
LE1175	2.92" (74.17 mm)	2.19" (55.63 mm)	1.75" (44.45 mm)	2.03" (51.56 mm)	1.26" (32.00 mm)	2.82" (71.63 mm)
LE118	3.06" (77.72 mm)	2.51" (63.75 mm)	2.00" (50.80 mm)	2.31" (58.67 mm)	1.67" (42.42 mm)	3.90" (99.06 mm)
LE119	3.06" (77.72 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	2.31" (58.67 mm)	1.67" (42.42 mm)	3.87" (98.30 mm)
LE120	3.06" (77.72 mm)	2.50" (63.75 mm)	2.02" (51.31 mm)	2.55" (64.77 mm)	1.88" (44.75 mm)	4.05" (102.87 mm)
LE121	3.06" (77.72 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	2.51" (63.75 mm)	1.88" (44.75 mm)	4.05" (102.87 mm)
LE124	3.30" (83.82 mm)	3.80" (96.52 mm)	3.23" (82.04 mm)	2.47" (62.74 mm)	1.37" (37.80 mm)	3.47" (88.14 mm)
LE1501	3.04" (77.22 mm)	2.52" (64.00 mm)	2.03" (51.56 mm)	2.31" (58.67 mm)	1.67" (42.42 mm)	3.87" (98.30 mm)
LE15013	3.06" (77.72 mm)	2.50" (63.50 mm)	2.03" (51.56 mm)	2.35" (59.69 mm)	1.67" (42.42 mm)	3.91" (99.30 mm)
LE15337	2.98" (75.69 mm)	2.19" (55.63 mm)	1.76" (44.70 mm)	1.97" (50.04 mm)	1.19" (30.23 mm)	2.72" (69.09 mm)
LE15550	3.03" (76.96 mm)	2.52" (64.00 mm)	2.03" (51.56 mm)	2.26" (57.40 mm)	1.67" (42.42 mm)	3.91" (99.30 mm)
LE160	3.06" (77.72 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	1.91" (48.50 mm)	1.26" (32.00 mm)	3.48" (88.14 mm)
LE1655	3.07" (77.98 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	1.85" (46.99 mm)	1.26" (32.00 mm)	3.45" (87.63 mm)
LE170	3.06" (77.72 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	2.59" (65.79 mm)	2.06" (52.32 mm)	4.25" (107.95 mm)
LE1755	3.00" (76.20 mm)	2.52" (64.00 mm)	2.00" (50.80 mm)	2.70" (68.58 mm)	2.06" (52.32 mm)	4.25" (107.95 mm)
LE50000	3.07" (77.98 mm)	2.50" (63.50 mm)	2.00" (50.80 mm)	2.03" (51.56 mm)	1.26" (32.00 mm)	3.45" (87.63 mm)
LE50423	3.07" (77.98 mm)	2.50" (63.50 mm)	2.03" (51.56 mm)	2.69" (68.33 mm)	2.06" (52.32 mm)	4.25" (107.95 mm)

STANDARD ORDERING

Model # Example: LE105 -OR- 102553

Model #	Item #	Primary Voltage (VAC)	Secondary Voltage (VAC)	VA Rating	Hub Style	Manual Reset	Approvals	Class
LE105	102553	24	24	40	1TF	NO	UL Recognized	2
LE11145	109130	120	24	20	1TF	NO	UL Recognized	2
LE11300	109747	120	24	40	1TF	NO	UL Listed	2
LE117	102555	120	24	50	1TF	NO	UL Listed	2
LE11711	110250	120	24	50	1TF	YES	UL Listed	2
LE1175	102556	120	24	50	2TF	NO	UL Listed	2
LE118	102557	120	24	75	2TF	YES	UL Listed	2
LE119	102558	120	24	75	1TF	YES	UL Listed	2
LE120	102559	120	24	96	2TF	YES	UL Listed	2
LE121	102560	120	24	96	1TF	YES	UL Listed	2
LE124	102561	120	24	150	1TF	YES	UL Recognized	GP
LE1501	102562	120/208/240/480	24	75	1TF / 1SO	YES	UL Listed	2
LE15013	106215	120/208/240/480	24	75	2TF	YES	UL Listed	2
LE15337	106565	120/208/240	24	40	2TF	NO	UL Listed	2
LE15550	137445	120/208/240/480	24	75	1TF	YES	UL Listed	2
LE160	102563	120/240/277/480	24	50	2TF	YES	UL Listed	2
LE1655	107769	120/240/277/480	24	50	1TF	YES	UL Listed	2
LE170	102564	120/240/277/480	24	96	2TF	YES	UL Listed	2
LE1755	107770	120/240/277/480	24	96	1TF	YES	UL Listed	2
LE50000	110245	120/208/240/277	24	50	1TF	YES	UL Listed	2
LE50423	143947	208/240/277/480	120	96	1TF	YES	UL Listed	2

ACCESSORIES ORDERING

Model # Example: A/PS1.5 -OR- 122486

Model #	Item #	Description
A/PS24-24V-S	144322	24 VDC Power Supply | Converts 24 VAC into 24 VDC

ACUCT SPLIT CORE

Standard Accuracy

The Split-Core Current Transformers are designed to convert an AC operating current into a low voltage AC millivolt signal for use with microprocessor-based circuits that require maximum accuracy and precision. These compact and light-weight split-core current transformers are designed for installation on branch circuits within the electrical panel. The Split-Core CT Series is ideal for easy installation without disconnecting cables. Split-Core CTs come standard unterminated stripped and tinned lead wires for easy connection to any of the Single or 3 Phase ACI power meter. CT models listed here are compatible with the ACI KW350-P1-D-S-SC, KW320-P1-D-W-SC-XX, KW320-P1-D-W-SC-PC, KW1850-P1-D-W, and KW1850-P1-D-S Power Meters where typical power measurements are required. For best accuracy, CTs should be selected based upon the size of the conductors being monitored by selecting the proper window size and referencing the expected maximum and minimum currents for the targeted application. The acceptable Measurement Current Range is referenced in the ordering grid table. Please contact ACI for more information regarding the Split-Core Current Transformers.

Applications: Energy and Demand Metering, Load Surveys, LEED/Green Projects, ROI / Project Justification.

The Split Core mV Output Current Transformers are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

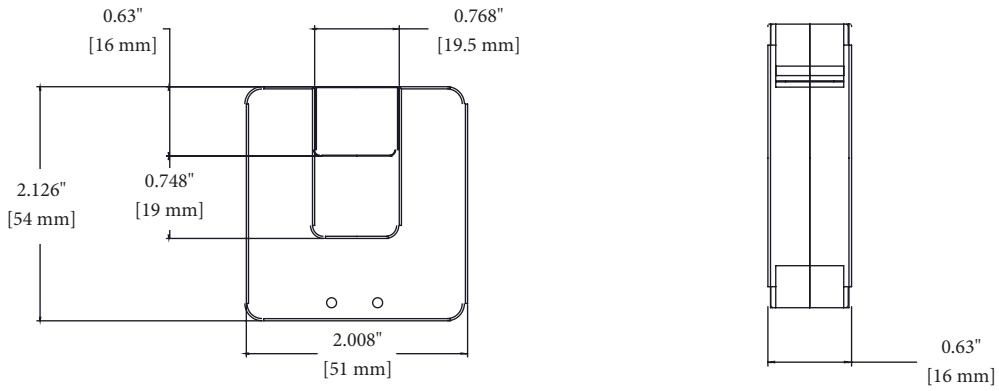
PRODUCT SPECIFICATIONS

Monitored Current Type:	AC Current
Maximum Working Voltage:	600 VAC, Category III
Core Style:	Split-Core (non-hinged)
Rated Output:	333mV @ 50/100/200/300/400/600/800/1000 Amps (see ordering grid)
Operating Frequency Range:	50/60Hz
Withstand Voltage:	3,000VAC
Sendor Amperage Range:	See Ordering Grid
Accuracy[1]:	0.5% from 10-120% of Rated Current, IEC 60044-1
Operating Temperature Range:	5 to 140°F (-15 to 60°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating/Storage Humidity Range:	5 to 95%, non-condensing
Maximum Elevation:	9,842 ft (3 Kilometers)
Case Material/Flammability Rating:	Epoxy Encapsulated/UL94V-0
Wiring Connections:	Stripped and Tinned Lead Wires
Lead Wire Colors:	**White:** Positive (+) **Black:** Negative (-) **Bare-Shield** (Polarity Sensitive)
Wire Size:	22 AWG (0.34 mm^2), 600V Rated VW-1, 105°C White/Brown Twisted Pair (UL 1015)
Lead Length:	8.20' (2.5m) or 32.80' (10m) See Ordering Grid
Agency Approvals:	ULR, CE, & RoHS2 Compliant
Product Weight:	**AcuCT-075 Series:** 0.2lbs (0.09kg) **AcuCT-125 Series:** 0.3lbs (0.14kg) **AcuCT-200 Series:** 0.4lbs (0.18kg)
Product Dimensions (L x W x H):	**AcuCT-075 Series:** 2.00" (50.80 mm) x 2.09" (53.30 mm) x 0.669" (17.00 mm) **AcuCT-125 Series:** 3.25" (82.50 mm) x 3.35" (85.10 mm) x 1.02" (26.00 mm) **AcuCT-200 Series:** 4.76" (121.00 mm) x 5.00" (127.00 mm) x 1.18" (30.00 mm)

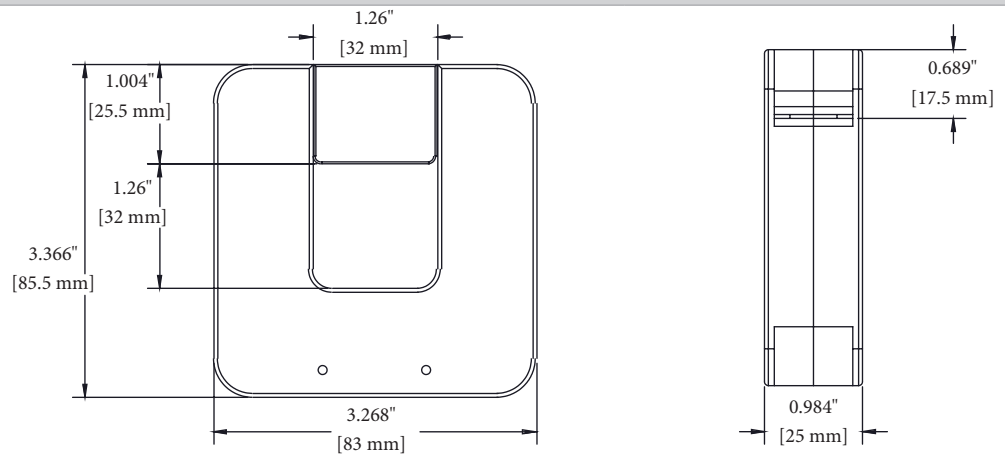
Note 1: For maximum performance, make sure the core contacts are wiped clean and free of debris.

DIMENSIONAL DRAWING

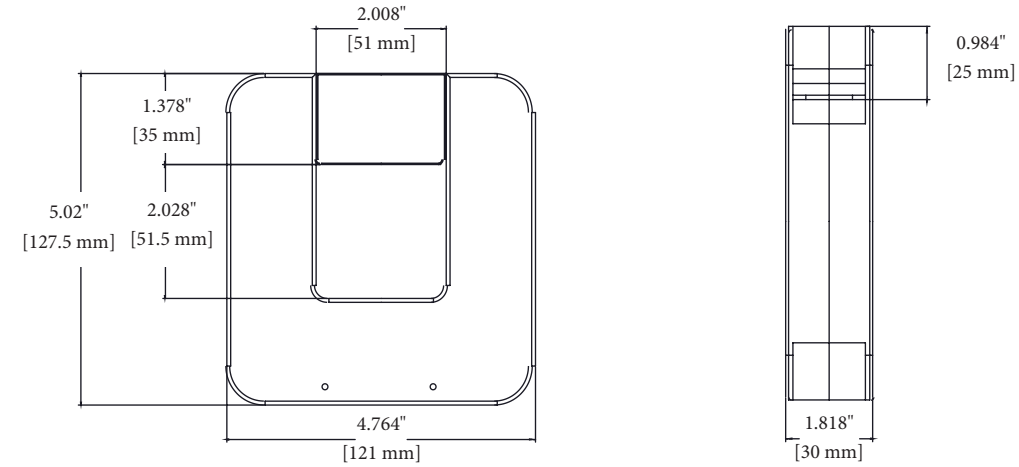
AcuCT-075



AcuCT-125



AcuCT-200



FRONT VIEW **SIDE VIEW**

ORDERING INFORMATION

Model #	Item #	Rated Current	Window Size	Output Signal (At Rated Current)	Lead Length
AcuCT-075-50-333	148170	50A	0.75" (19.05 mm)	333 mV @ 50A	8 ft (2.5m)
AcuCT-075-100-333	148171	100A	0.75" (19.05 mm)	333 mV @ 100A	8 ft (2.5m)
AcuCT-125-200-333	148173	200A	1.25" (31.75 mm)	333 mV @ 200A	8 ft (2.5m)
AcuCT-125-300-333	148174	300A	1.25" (31.75 mm)	333 mV @ 300A	8 ft (2.5m)
AcuCT-125-400-333-10M	148175	400A	1.25" (31.75 mm)	333 mV @ 400A	32 ft (10m)
AcuCT-125-400-333	148176	400A	1.25" (31.75 mm)	333 mV @ 400A	8 ft (2.5m)
AcuCT-125-600-333	148177	600A	1.25" (31.75 mm)	333 mV @ 600A	8 ft (2.5m)
AcuCT-200-600-333	148192	600A	2.00" (50.80 mm)	333 mV @ 600A	8 ft (2.5m)
AcuCT-200-800-333	148193	800A	2.00" (50.80 mm)	333 mV @ 800A	8 ft (2.5m)
AcuCT-200-1000-333	148208	1000A	2.00" (50.80 mm)	333 mV @ 1000A	8 ft (2.5m)

ACUCT HINGED SPLIT-CORE

Standard Accuracy

The Hinged Split-Core Current Transformers are designed to convert an AC operating current into a low voltage AC millivolt signal for use with microprocessor-based circuits that require maximum accuracy and precision. These ultra-compact and light-weight hinged split-core current transformers are designed for installation on branch circuits within the electrical panel. The Hinged Split-Core CT Series is ideal for easy installation without disconnecting cables. Hinged Split-Core CTs come standard unterminated stripped and tinned lead wires for easy connection to any of the Single or 3 Phase ACI power meter. CT models listed here are compatible with the ACI KW350-P1-D-S-SC, KW320-P1-D-W-SC-XX, KW320-P1-D-W-SC-PC, KW1850-P1-D-W, and KW1850-P1-D-S Power Meters where typical power measurements are required. For best accuracy, CTs should be selected based upon the size of the conductors being monitored by selecting the proper window size and referencing the expected maximum and minimum currents for the targeted application. The acceptable Measurement Current Range is referenced in the ordering grid table. Please contact ACI for more information regarding the Hinged Split-Core Current Transformers.

Applications: Retro Fitting Sub-Metering Electrical Panel, Equipment Load Monitoring, Industrial Applications, Predicted Maintenance, Renewable Energy, Overhead Cost Reduction, "NET ZERO" Buildings, LEED Buildings, Green Buildings, and Refrigeration

The Hinged Split Core mV Output Current Transformers are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

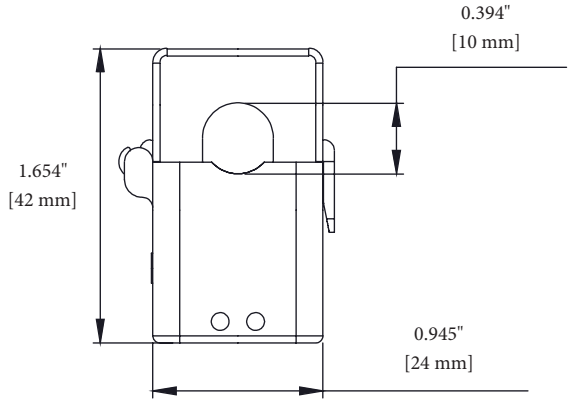
PRODUCT SPECIFICATIONS

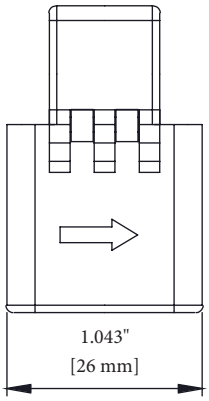
Monitored Current Type:	AC Current
Maximum Working Voltage:	600 VAC, Category III
Core Style:	Hinged Split-Core
Rated Output:	333mV @ 20/30/40/50/60/100/200 Amps (see ordering grid)
Operating Frequency Range:	50/60Hz
Sendor Amperage Range:	See Ordering Grid
Accuracy[1]:	0.5% from 10-120% of Rated Current
Operating Temperature Range:	5 to 140°F (-15 to 60°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating/Storage Humidity Range:	5 to 95%, non-condensing
Maximum Elevation:	9,842 ft (3 Kilometers)
Case Material/Flammability Rating:	Black Nylon/UL94V-0
Wiring Connections:	Stripped and Tinned Lead Wires
Lead Wire Colors:	**White:** Positive (+) **Black:** Negative (-)
Wire Size:	22 AWG (0.14 mm^2), 600V Rated VW-1, 105°C Black/Brown Twisted Pair (UL 1015)
Lead Length:	8.20' (2.5m) or 32.80' (10m) See Ordering Grid
Agency Approvals:	ULR, CE, & RoHS2 Compliant
Product Weight:	**AcuCT-H040 Series:** 0.2lbs (0.09kg) **AcuCT-H100 Series:** 0.4lbs (0.18kg)
Product Dimensions (L x W x H):	**AcuCT-H040 Series:** 1.64" (41.66 mm) x 1.16" (29.47 mm) x 1.04" (26.42 mm) **AcuCT-H100 Series:** 2.76" (70.11 mm) x 2.00" (50.80 mm) x 1.52" (38.61 mm)

Note 1: For maximum performance, make sure the core contacts are wiped clean and free of debris.

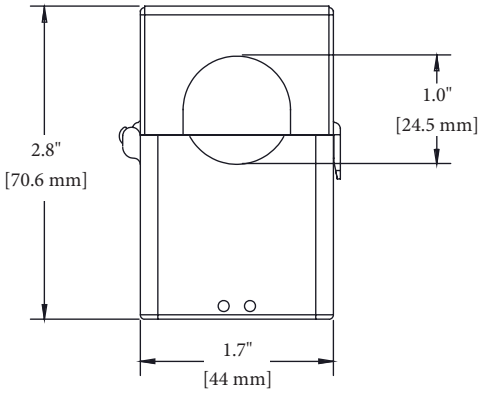
DIMENSIONAL DRAWING

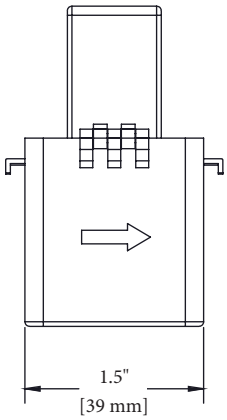
AcuCT-H040





AcuCT-H100





FRONT VIEW **SIDE VIEW**

ORDERING INFORMATION

Model #	Item #	Rated Current	Window Size	Output Signal (At Rated Current)	Lead Length
AcuCT-H040-20:333	148158	20A	0.4" (10.2 mm)	333 mV @ 20A	8 ft (2.5m)
AcuCT-H040-20:333-10M	148159	20A	0.4" (10.2 mm)	333 mV @ 20A	32 ft (10m)
AcuCT-H040-30:333	148160	30A	0.4" (10.2 mm)	333 mV @ 40A	8 ft (2.5m)
AcuCT-H040-40:333	148161	40A	0.4" (10.2 mm)	333 mV @ 40A	8 ft (2.5m)
AcuCT-H040-50:333-10M	148163	50A	0.4" (10.2 mm)	333 mV @ 50A	32 ft (10m)
AcuCT-H040-50:333	148164	50A	0.4" (10.2 mm)	333 mV @ 50A	8 ft (2.5m)
AcuCt-H040-60:333	148165	60A	0.4" (10.2 mm)	333 mV @ 60A	8 ft (2.5m)
AcuCT-H100-100:333	148166	100A	1.00" (25.4 mm)	333 mV @ 100A	8 ft (2.5m)
AcuCT-H100-100:333-10M	148167	100A	1.00" (25.4 mm)	333 mV @ 100A	32 ft (20m)
AcuCT-H100-200:333	148168	200A	1.00" (25.4 mm)	333 mV @ 200A	8 ft (2.5m)
AcuCT-H100-200:333-10M	148169	200A	1.00" (25.4 mm)	333 mV @ 200A	32 ft (10m)

ROGOWSKI COIL

Standard Accuracy

The Rogowski Coil Current Transformers are designed to convert an AC operating current into a low voltage AC millivolt signal for use with microprocessor-based circuits that require the highest accuracy and precision. The Flexible Rogowski Coil is designed to use where regular solid or split core current transformers cannot fit and are ideal for power quality monitoring, such as harmonics. Advantages include high accuracy, wide measurement and frequency range, and no additional integrator or power supply is needed. Rogowski coils come standard unterminated stripped and tinned lead wires for easy connection to any of the Single or 3 Phase ACI power meter. Rogowski Coil models listed here are compatible with the ACI KW350-P1-D-S-RC, KW320-P1-D-W-RC-XX, KW320-P1-D-W-RC-PC, KW1850-P1-D-W, and KW1850-P1-D-S Power Meters where typical power measurements are required. For best accuracy, the coils should be selected based upon the size of the conductors being monitored by selecting the proper window size and referencing the expected maximum and minimum currents for the targeted application. The acceptable Measurement Current Range and Window Size are referenced in the ordering grid table. Please contact ACI for more information regarding the Rogowski Coil Current Transformers.

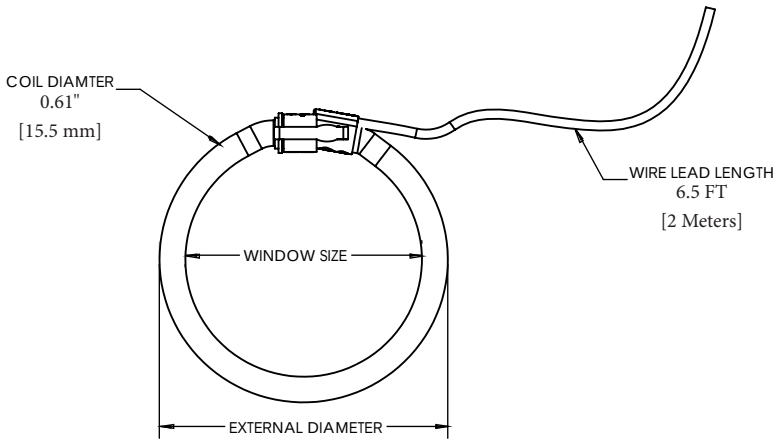
Applications: Tennant Billing, Energy and Demand Metering, Load Surveys, LEED/Green Projects, ROI / Project Justification

The Rogowski Coil mV Output Current Transformers are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Monitored Current Type:	AC Current
Imput Range:	5 to 5000A
Core Style:	Flexible Rope Styles Form Factor
Dielectric Strength:	7400Vac @ 50/60Hz for 1 minute
Operating Frequency Range:	20 Hz to 5 kHz
Withstand Voltage:	5,000VAC
Sensor Amperage Range:	See Ordering Grid
Accuracy:	0.5% From 10 to 120% of Rated Current
Polarity:	Arrow towards load (current flow direction)
Temperature Drift:	+/- 0.07%
Operating Temperature Range:	-4 to 158ºF (-20 to 70ºC)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating/Storage Humidity Range:	5 to 95%, non-condensing
Maximum Elevation:	9,842 ft (3 Kilometers)
Case Material/Flammability Rating:	Orange thermoplastic rubber, flame retardant UL 94 V-0 rated
Over Voltage Category:	1000V CAT III, 600V CATIV
Wiring Connections:	Stripped and Tinned Lead Wires
Lead Wire Colors:	**White:** Positive (+) **Brown:** Negative (-) **Bare-Shield**
Lead Wire Size:	26AWG
Cable Size:	1000V UL STYLE 20940; External diameter 5mm; Wires 2x 26AWG
Lead Length:	6.5 ft (15.5mm)
Coil Diameter:	0.61" (15.5mm)
Agency Approvals:	URL, CE and RoSH2 Compliant
Product Weight:	**RCT16** - 0.2lbs (0.09kg) **RCT24** - 0.4lbs (0.18kg) **RCT36** - 0.6lbs (0.27kg) **RCT47** - 1.0lbs (0.45kg)

DIMENSIONAL DRAWING



DIMENSIONAL MEASUREMENTS

Dimensions	RCT16	RCT24	RCT36	RCT47
Window Size	4.17" (106 mm)	7.01" (178 mm)	10.67" (271 mm)	14.53" (369 mm)
Coil Length	15.75" (400 mm)	23.62" (600 mm)	35.43" (900 mm)	47.24" (1200 mm)
External Diameter	5.63" (143 mm)	8.13" (207 mm)	11.89" (302 mm)	15.66" (398 mm)
Coil Diameter	0.61" (15.5 mm)			
Wire Lead Length	6.5 FT (2 Meters)			

ORDERING INFORMATION

Model #	Item #	Output/1000A @ 50Hz	Output/1000A @ 60Hz	Range Calibrated To[1]
RCT16-1000	148147	100mV	120mV	5 to 1200A
RCT16-2500	148148	40mV	48mV	12.5 to 3000A
RCT24-1000	148149	100mV	120mV	5 to 1200A
RCT24-2500	148151	40mV	48mV	12.5 to 3000A
RCT24-5000	148152	20mV	24mV	25 to 6000A
RCT36-1000	148153	100mV	120mV	5 to 1200A
RCT36-2500	148154	40mV	48mV	12.5 to 3000A
RCT36-5000	148155	20mV	24mV	25 to 6000A
RCT47-2500	148156	40mV	48mV	12.5 to 3000A
RCT47-5000	148157	20mV	24mV	25 to 6000A

Note[1]: The range is when connecting to KW320, KW350 and KW1850.

S77 SOLID CORE

High Accuracy, Measurement Canada Approved

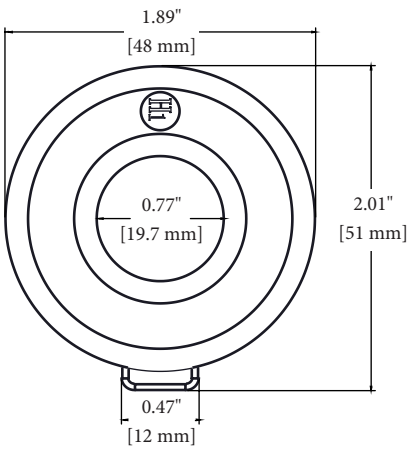
The Solid-Core S77 High Accuracy Current Transformers are designed to convert an AC operating current into a low voltage AC millivolt signal for use with microprocessor-based circuits. These compact and light-weight solid-core current transformers are designed for installation on branch circuits for meter installations that require exceptionally accurate signal transformation. The S77 current transformer has been approved by Measurement Canada to be used in metering applications for installations used for billing purposes. CTs come standard unterminated stripped and tinned lead wires for easy connection to any of the Single or 3 Phase ACI power meter. CT models listed here are compatible with the ACI KW350-P1-D-S-SC, KW320-P1-D-W-SC-XX, KW320-P1-D-W-SC-PC, KW1850-P1-D-W, and KW1850-P1-D-S Power Meters where typical power measurements are required. For best accuracy, CTs should be selected based upon the expected maximum and minimum currents for the targeted application. The acceptable Measurement Current Range is referenced in the ordering grid table. Please contact ACI for more information regarding Solid-Core S77 High Accuracy Current Transformers.

The Solid Core S77 High Accuracy mV Output Current Transformers are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, www.workaci.com**.**

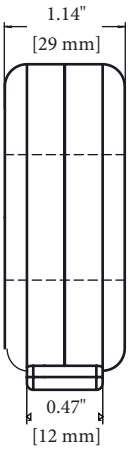
PRODUCT SPECIFICATIONS

Monitored Current Type:	AC Current
Maximum Working Voltage:	600 VAC, Category III
Core Style:	Solid-Core
Rated Output:	333mV @ 5/20/50/100 Amps (See Ordering Grid)
Operating Frequency Range:	50/60 Hz
Withstand Voltage:	3,000VAC
Accuracy:	0.15% Class IEC 60044-1
Burden:	B0.005
Impulse Insulation (BIL):	10kV
Insulation Resistance:	50 MΩ
Operating Temperature Range:	5 to 140°F (-15 to 60°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°C)
Operating/Storage Humidity Range:	5 to 95%, non-condensing
Maximum Elevation:	9,842 ft (3 Kilometers)
Case Material/Flammability Rating:	Plastic Encasulated/UL 94V-0
Wiring Connections:	Stripped and Tinned Lead Wires
Lead Wire Colors:	**White:** Positive (+) **Black:** Negative (-)
Wire Size	18 AWG (0.75 mm^2), UL 1015
Lead Length:	1' (0.30m)
Agency Approvals:	UL2808, 61010-2, CSA 22.2, CE and RoHS Compliant
Product Weight:	0.2lbs (0.09kg)
Product Dimensions (D x W)	2.00" (51.00 mm) x 0.75" (19.00 mm)

DIMENSIONAL DRAWING



FRONT VIEW



SIDE VIEW

STANDARD ORDERING

Model #	Item #	Rated Current	Window Size	Output Signal (At Rated Current)
AcuCT-S77-200-333	148210	200A	0.77" (19.70 mm)	333.mV @ 200A
AcuCT-S77-100-333	148212	100A	0.77" (19.70 mm)	333 mV @ 100A

ACUCT REVENUE GRADE

Split-Core, High Accuracy

The Revenue Grade High Accuracy Split-Core Current Transformers are designed to convert an AC operating current into a low voltage AC millivolt signal for use with microprocessor-based circuits that require maximum accuracy and precision. These compact and light-weight split-core current transformers are designed for installation on branch circuits within the electrical panel. The current transformer features a sturdy latch that locks the split-core CT in place using a press-open mechanism for quick installations without disconnecting cables. Split-Core CTs come standard unterminated stripped and tinned lead wires for easy connection to any of the Single or 3 Phase ACI power meter. CT models listed here are compatible with the ACI KW350-P1-D-S-SC, KW320-P1-D-W-SC-XX, KW320-P1-D-W-SC-PC, KW1850-P1-D-W, and KW1850-P1-D-S Power Meters where typical power measurements are required. For best accuracy, CTs should be selected based upon the size of the conductors being monitored by selecting the proper window size and referencing the expected maximum and minimum currents for the targeted application. The acceptable Measurement Current Range is referenced in the ordering grid table. Please contact ACI for more information regarding the Split-Core Current Transformers.

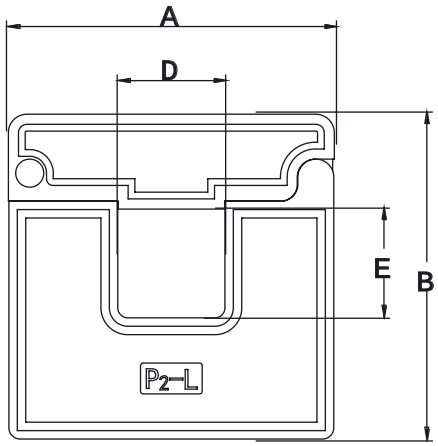
Applications: Tennant Billing, Energy and Demand Metering, Load Surveys, LEED/Green Projects, ROI / Project Justification

The Split Core High Accuracy mV Output Current Transformers are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, www.workaci.com**.**

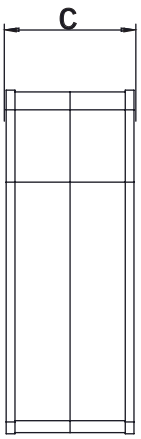
PRODUCT SPECIFICATIONS

Monitored Current Type:	AC Current
Maximum Working Voltage:	600 VAC, Category III
Core Style:	Hinged Split-Core
Rated Output:	333mV @ 50/100/150/200/250/300/400/600/800/1000/2000/4000 Amps (see ordering grid)
Operating Frequency Range:	50/60 Hz
Withstand Voltage:	5,000VAC
Sensor Amperage Range:	See Ordering Grid
Accuracy1:	0.5s Class IEC 60044-1
Operating Temperature Range:	5 to 149ºF (-15 to 60ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating / Storage Humidity Range:	5 to 95%, non-condensing
Maximum Elevation:	9,842 ft (3 Kilometers)
Case Material / Flammability Rating:	Square Pressed / UL 94V-0
Wiring Connections:	Stripped and Tinned Lead Wires
Lead Wire Colors:	**White** = Positive (+) **Black** = Negative (-)
Wire Size:	22 AWG (0.32 mm^2), UL 1015
Lead Length:	8 ft (2.5m)
Agency Approvals:	UL2808, 61010-1 and CSA 22.2
Product Weight:	**AcuCT-075R** - 0.4lbs (0.18kg) **AcuCT-100R** - 0.4lbs (0.18kg) **AcuCT-125R** - 0.4lbs (0.18kg) **AcuCT-200R** - 1.2lbs (0.54kg) **AcuCT-3135R** - 3.0lbs (1.36kg) **AcuCT-4161R** – 5.8lbs (2.63kg) **AcuCT-5170R** – 6.3lbs (2.85kg)
Product Dimensions (L x W x H):	**AcuCT-075R** - 2.3" (58.00 mm) x 2.3" (58.00 mm) x 0.9" (22.00 mm) **AcuCT-100R** - 2.6" (65.00 mm) x 2.6" (65.00 mm) x 0.9" (22.00 mm) **AcuCT-125R** - 3.2" (82.00 mm) x 3.2" (82.00 mm) x 0.9" (22.00 mm) **AcuCT-200R** - 4.4" (111.00 mm) x 4.4" (111.00 mm) x 1.25" (32.00 mm) **AcuCT-3135R** - 5.7" (144.00 mm) x 6.1" (154.00 mm) x 1.25" (32.00 mm) **AcuCT-4161R** – 7.3" (185.00 mm) x 9.3" (235.00 mm) x 1.8" (45.00 mm) **AcuCT-5170R** – 8.3" (210.00 mm) x 10.2" (260.00 mm) x 1.8" (45.00 mm)

DIMENSIONAL DRAWING



FRONT VIEW



SIDE VIEW

TYPE SELECTION

Model #	A	B	C	D	E
AcuCT-075R	2.28" (58 mm)	2.28" (58 mm)	0.87" (22 mm)	0.77" (19.5 mm)	0.77" (19.5 mm)
AcuCT-100R	2.56" (65 mm)	2.56" (65 mm)	0.87" (22 mm)	0.98" (25 mm)	0.98" (25 mm)
AcuCT-0125R	3.23" (82 mm)	3.23" (82 mm)	0.87" (22 mm)	1.26" (32 mm)	1.26" (32 mm)
AcuCT-200R	4.37" (111 mm)	4.37" (111 mm)	1.26" (32 mm)	2.01" (51 mm)	2.01" (51 mm)
AcuCT-3135R	5.67" (144 mm)	6.06" (154 mm)	1.26" (32 mm)	3.15" (80 mm)	3.54" (90 mm)
AcuCT-4161R	7.28" (185 mm)	9.25" (235 mm)	1.77" (45 mm)	4.13" (105 mm)	6.10" (155 mm)
AcuCT-5170R	8.27" (210 mm)	10.24" (260 mm)	1.77" (45 mm)	5.12" (130 mm)	7.09" (180 mm)

STANDARD ORDERING

Model #	Item #	Rated Current	Window Size	Output Signal (At Rated Current)
AcuCT-075R-50-333	148213	50A	0.75" (19.05 mm)	333 mV @ 50A
AcuCT-075R-100-333	148214	100A	0.75" (19.05 mm)	333 mV @ 100A
AcuCT-075R-150-333	148215	150A	0.75" (19.05 mm)	333 mV @ 150A
AcuCT-100R-100-333	148216	100A	0.75" (19.70 mm)	333 mV @ 100A
AcuCT-100R-200-333	148217	200A	1.00" (25.40 mm)	333 mV @ 200A
AcuCT-100R-250-333	148218	250A	1.00" (25.40 mm)	333 mV @ 250A
AcuCT-125R-100-333	148220	100A	1.25" (31.75 mm)	333 mV @ 100A
AcuCT-125R-200-333	148221	200A	1.25" (31.75 mm)	333 mV @ 200A
AcuCT-125R-300-333	148219	300A	1.25" (31.75 mm)	333 mV @ 300A
AcuCT-125R-400-333	148222	400A	1.25" (31.75 mm)	333 mV @ 400A
AcuCT-200R-400-333	148223	400A	2.00" (50.80 mm)	333 mV @ 400A
AcuCT-200R-600-333	148224	600A	2.00" (50.80 mm)	333 mV @ 600A
AcuCT-200R-800-333	148225	800A	2.00" (50.80 mm)	333 mV @ 800A
AcuCT-200R-1000-333	148226	1000A	2.00" (50.80 mm)	333 mV @ 1000A
AcuCT-3135R-1000-333	148234	1000A	3.1" (78.74mm) X 3.5" (88.90mm)	333 mV @ 1000A
AcuCT-4161R-2000-333	148236	2000A	4.1" (104.14mm) X 6.1" (154.94mm)	333 mV @ 2000A
AcuCT-5170R-4000-333	148237	4000A	5.1" (129.54mm) X 7.0" (177.80mm)	333 mV @ 4000A

COMMAND RELAY

CR Series

The Command Relay Series brings control (start/stop) functionality to your load trending and fan/pump/motor status monitoring and control applications. Each unit has a Form 1C - SPDT relay which provides both a Normally-Open "N/O" and a Normally-Closed "N/C" contact in a single device. The patented 35mm Din-Rail mounting flange will allow you to use the A/CR Series with any ACI current sensor or switch that incorporates the 35 mm din rail mounting flange. The stacking feature allows you to reduce the required panel space, since up to two devices may be stacked together during installation and saves cost since two devices can be installed as a single component. An added benefit of the A/CR Series command relays separate from the current sensor or switch is that it allows you to mix and match any command relay model with any current sensor or switch model reducing the number of SKU's needed. All of the command relays can also be used in panel mount applications in place of a typical general purpose relay, since they have been tested to meet the UL 508 Industrial Equipment requirements. Please contact ACI for more information regarding the Command Relays or to discuss your application in further detail.

Applications: Start/Stop/Status, Motors, Pumps, Fans, Compressors, Din Rail Mountable Control Relay, Industrial Equipment

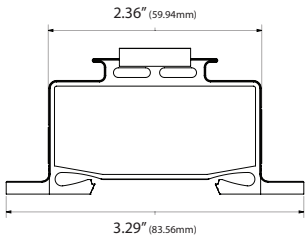
The Command Relays are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

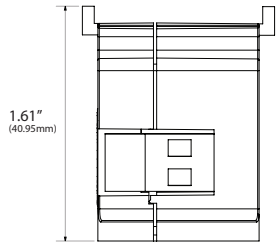
Relay Type:	Electromechanical Relay
Nominal Relay Coil Voltage | Rated Current:	**A/CR-DC-5A:** 23 to 31.2 VDC, 17 mA @ 24 VDC, 60 Hz
	A/CR-DC-12A: 20 to 31.2 VDC, 17 mA @ 24 VDC, 60 Hz
	A/CR-12DC-12A: 10 to 15.6 VDC, 33.33 mA @ 12 VDC, 60 Hz
	A/CR-24AC-10A: 16 to 26.4 VAC, 28.30 mA @ 24 VAC, 60 Hz or 31.30 mA @ 24 VAC, 50 Hz
	A/CR-115AC-8A: 80 to 132 VAC, 5.35 mA @ 115 VAC, 60 Hz or 5.85 mA @ 115 VAC, 50 Hz
	A/CR-230AC-8A: 165 to 264 VAC, 2.76 mA @ 230 VAC, 60 Hz or 3.00 mA @ 230 VAC, 50 Hz
Contact Form:	Form 1C (SPDT Contact)
Relay Contact Rating:	See Ordering Grid on Back of Data Sheet
Maximum Contact Switching Voltage:	See Ordering Grid on Back of Data Sheet
Maximum Contact Switching Current:	See Ordering Grid on Back of Data Sheet
Status LED Indication [1]:	**Red LED "On":** Relay Energized "COM to N/O" | **Red LED "Off":** Relay De-Energized "Com to N/C"
Electrical Life (Relay):	> 30,000 Cycles, typical
Mechanical Life (Relay):	> 10,000,000 Cycles, typical
Din Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Operating Temperature Range:	5 to 104ºF (-15 to 40ºC)
Operating Humidity Range:	0 to 95%, non-condensing
Storage Temperature | Humidity Range:	32 to 104°F (0 to 40°C) | 20% to 85% RH, non-condensing
Enclosure Material | Flammability Rating:	PC/ABS (Polycarbonate/ABS Blend) | UL94-V0
Wiring Connections:	Screw Terminal Blocks
Conductor Size:	**Relay Coil:** 18 to 24 AWG (2.5 mm² to 0.20 mm²) Copper Wires only
	Relay Contacts: 12 to 16 AWG (4.0 mm² to 020 mm²) Copper Wires only
Terminal Block Torque Rating:	4.43 to 5.31 in-lbs. (0.5 to 0.6 Nm)
Agency Approvals:	UL/CUL US Listed (UL 508) Ind. Control Equipment (File # E179139), CE, RoHS2, WEEE
Product Weight:	**A/CR-DC-5A:** 0.135 lbs. (0.061 kg) | **A/CR-12DC-12A & A/CR-24AC-10A:** 0.150 lbs. (0.068 kg)
	A/CR-DC-12A, A/CR-115AC-8A & A/CR-230AC-8A: 0.145 lbs. (0.066 kg)
Product Dimensions (L x W x H):	3.283" (83.39 mm) x 1.305" (33.15 mm) x 1.565" (39.75 mm)

Note[1]: The LED should not be used to determine if current is present

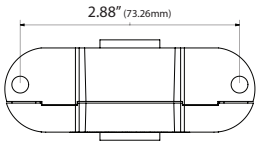
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: A/CR-DC-5A -OR- 126773

Model #	Item #	Nom. Coil Voltage	Contact Rating	Max. Switch Voltage	Max. Switch Current
A/CR-DC-5A	126773	24 VDC	5A @ 250 VAC* | 5A @ 125 VAC** 5A @ 30 VDC** | ¼ HP, 120/250/277 VAC	250 VAC, 30 VDC	5A (N/O) / 3A (N/C
A/CR-DC-12A	128210	24 VDC	12A @ 250 VAC* | 12A @ 250 VAC** | 12A @ 30 VDC** | 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	12 Amps
A/CR-12DC-12A	129176	12 VDC	12A @ 250 VAC* | 12A @ 250 VAC** | 12A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	12 Amps
A/CR-24AC-10A	128214	24 VAC	10A @ 250 VAC* | 10A @ 250 VAC** | 10A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	10 Amps
A/CR-115AC-8A	128215	115 VAC	8A @ 250 VAC* | 8A @ 250 VAC** | 8A @ 30 VDC* 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	8 Amps
A/CR-230AC-8A	128216	230 VAC	8A @ 250 VAC* | 8A @ 250 VAC** | 8A @ 30 VDC** 1 HP, 120/240/480 VAC (N/O) | ½ HP, 120/240/480 VAC (N/C)	250 VAC, 30 VDC	8 Amps

Note*: General Use | **Note**:** Resistive

Command Relays are not intended to be used in either Life / Safety Applications or Hazardous / Classified Locations

PAM SERIES

Multi-Voltage Control Relays

The PAM Relays are encapsulated multi-voltage devices with "flying" leads that offer versatile, reliable performance in a convenient package. The PAM-1 and PAM-2 both have a red LED which indicates when the relay coil is energized. The PAM Relays are packaged with a self-tapping screw and a piece of double sided tape for easy installation almost anywhere. The relays are also packaged with wire-nuts to aid installation. PAM Relays are ideal for applications where remote relays are required for fire alarm control or status feedback. They are only suitable for use within UL864 applications and installed in accordance with NFPA 70® and NFPA 72®. The PAM series of relay including the PAM-1 are marked for DRY INDOOR USE and are not intended or listed for use in any Marine or SIL rated applications which void the parameters of a dry indoor installation.

Applications: Temperature Control, Fire Alarm, Security, Energy Management, Lighting Control Systems and Building Automation Systems

The PAM Relays are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

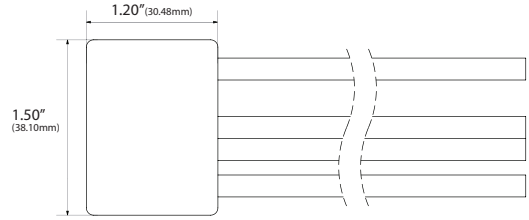
PRODUCT SPECIFICATIONS

Relay Type:	Electromechanical Relay
Nominal Relay Coil Voltage (Rated Current):	**PAM-1:** 24 VDC (20 mA), 24 VAC (50 mA), 120 VAC (50 mA) **PAM-2:** 12 VDC (20 mA), 24 VDC (20 mA) **PAM-4:** 12-40 VDC (20 mA) **PAM-SD:** 20-32 VDC (15 mA – 25 mA)
Contact Form:	Form 1C (SPDT Contact)
Maximum Contact Switching Voltage:	120 VAC / 24 VDC
Maximum Contact Switching Current:	See Ordering Grid on Back of Data Sheet
Relay Pull-In Time:	**PAM-1:** <1 Second (24 VDC, 24 VAC, 120 VAC) **PAM-2:** <1 Second (12 / 24 VDC) **PAM-4:** <1 Second (12 VDC), <3 Second (24 VDC), <1.5 Second (32 VDC) **PAM-SD:** <1 Second (24-32 VDC)
Status LED Indication:	See Ordering Grid on Back of Data Sheet Red LED "On": (Relay Energized "COM to N/O") Red LED "Off": (Relay De-Energized "Com to N/C")
Electrical Life (Relay):	> 100,000 Cycles, typical
Mechanical Life (Relay):	> 10,000,000 Cycles, typical
Wire Lead Length | Size:	12" | 18AWG
Operating Temperature Range:	32 to 120ºF (0 to 49ºC)
Operating Humidity Range:	0 to 100%, condensing
Construction:	100% potted (sealed) with flying leads
Mounting:	Pre-drilled mounting screw hole and self tapping screw provided | Double sided tape provided
Agency Approvals:	**UL:** U0XX/7.S3403* | **UL:** UUKL** | **MEA:** 73-92-E Vol. 21 | **CSFM:** 7300-1004:101
Product Weight:	0.16 lbs (0.073 kg)
Product Dimensions:	(L) 1.50" (38 mm) x (W) 1.20" (31 mm) x (H) 0.77" (20 mm)

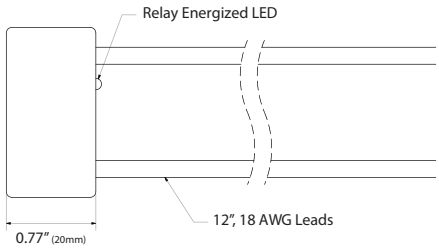
Note*: U0XX = Control Unit Accessories, System **| 7** = Certified for Canada **| Note**:** UUKL (UL864) = Smoke Control System Equipment System

DIMENSIONAL DRAWING

PAM-1, PAM-2
PAM-4, PAM-SD



FRONT VIEW



SIDE VIEW

STANDARD ORDERING

Model # Example: PAM-SD -OR- 106643

Model #	Item #	Nom. Coil Voltage	Contact Form	Max. Contact Rating	LED Indicator	Wire Leads
PAM-1	106640	24 VDC 24VAC 120VAC	Form 1C (SPDT Contact)	250 µ @ 5 VDC (PF* = 0.35) 7A @ 24 VDC (PF* = 0.35) 10A @ 120 VAC	Yes	6 "flying" leads 12" / 18 AWG Wire-nuts provided
PAM-2	106642	12-24 VDC	Form 1C (SPDT Contact)	250 µ @ 5 VDC (PF* = 0.35) 7A @ 24 VDC (PF* = 0.35) 7A @ 120 VAC (PF* = 0.35)	Yes	6 "flying" leads 12" / 18 AWG Wire-nuts provided
PAM-4	106641	12-40 VDC	Form 1C (SPDT Contact)	250 µ @ 5 VDC 7A @ 24 VDC 7A @ 120 VAC	No	5 "flying" leads 12" / 18 AWG Wire-nuts provided
PAM-SD	106643	20-32 VDC	Form 1C (SPDT Contact)	250 µ @ 5 VDC (PF* = 0.35) 7A @ 24 VDC (PF* = 0.35) 7A @ 120 VAC (PF* = 0.35)	No	7 "flying" leads 12" / 18 AWG Wire-nuts provided

PF = Power Factor | **Note*:** PAM Relays are not intended to be used in either Life / Safety Applications or Hazardous / Classified Locations

CO ROOM

Carbon Monoxide Room Sensor

The CO Room Series monitors carbon monoxide (CO) levels and is designed for the continuous monitoring of vehicle exhaust in non-hazardous areas. This series uses a wide spectrum, long life electrochemical sensor to measure the amount of carbon monoxide in the environment. It is offered with an operating range of 0 to 125 ppm. Room CO transmitters are offered in a standard NEMA 1 rated ABS Polycarbonate plastic enclosure. Other options include an LCD display with (2) SPDT Form 1C relays and a buzzer. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. CO-R is not compatible with the Q4C-II or Q-controllers.

Applications: Parking Garages, Arenas, Kitchens, Laundry Rooms, Warehouses, Loading Docks, Service Garages, School Bus Parking Areas

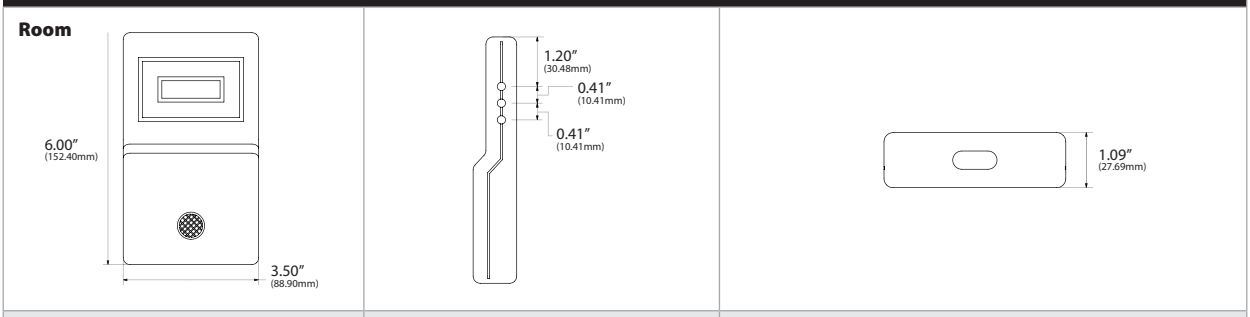
The CO Room Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/- 10% Floating; 24 VAC +/- 10%, One side Grounded; 24 VDC
Supply Current:	100 mA nominal | 250 mA maximum
Power Usage:	6.6 Watts maximum
Operating Temperature:	-4ºF to 104ºF (-20ºC to 40ºC)
Operating Humidity:	15 to 90% RH Continuous, non-condensing; 0 to 99% RH Intermittent, non-condensing
Accuracy:	+/- 2.5% of Reading
Repeatability:	+/- 1% of Reading
Operating Pressure:	Atmospheric +/- 10%
Response Time:	Less than 60 Seconds for 90% of step change
Sensor Type:	Electrochemical
Sensor Life:	~ 5 years under Normal Conditions
Factory Set:	0 – 125 ppm / 0 – 250 ppm Field Adjustable
Coverage Area:	7500 sq. ft; 49' Radius
Indicators:	Alphanumeric, 2 line X 8 digit LCD / (2) Red LED's for Relay Status
Mounting Height:	4' to 6' above the floor
Analog Outputs:	4-20 mA or 2-10V Jumper Selectable
Relay & Buzzer (Optional):	Two SPDT Form C, Dry Contact, 1A @ 30 VDC/0.5A @ 125 VAC (Resistive Load), Buzzer Rating 85 dB @ one foot
Relay Life Expectancy:	200,000 cycles minimum with 1A @ 30 VDC
Time Delays:	**Actuation / De-Actuation:** 0 to 60 Minutes in 5 minute Increments
Storage:	32º to 68ºF (0ºC to 20ºC)
Shelf Life:	6 Months
Enclosure:	**Room:** Polycarbonate/ABS Blend, UL94V-0
Terminal Blocks:	Fixed, Power wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lbs (0.5n-3m) Nominal
RS-485 Wiring:	Beldon 9841 or equal
Product Dimensions:	**Room:** (H) 6.00" (152.4 mm) x (W) 3.5" (88.9 mm) x (D) 1.09" (27.87 mm)
Product Weight:	**Room:** 0.62 lbs (281.2 g)

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary | When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model # Example: CO-R -OR- 102151

Model #	Item #	Description
CO-R	102151	CO Room Mount, Standard Room Enclosure
CO-R-RB-D	107556	CO Room Mount with Display, Relay, Buzzer, Standard Enclosure

ACCESSORIES ORDERING

Model # Example: 83830-020-000 -OR- 127649

Model #	Item #	Description
83830-020-000	127649	Calibration Adapter
6300-0041	134187	Replacement CO Sensing Element
CUSTOM CAL KIT*	148426	Gas Cal Kit

Note*: Refer to GAS CAL KIT data sheet for specific's

CO DUCT

Carbon Monoxide Duct Sensor

The CO Duct Series monitors carbon monoxide (CO) levels and is designed for the continuous monitoring of vehicle exhaust in non-hazardous areas. This series uses a wide spectrum, long life electrochemical sensor to measure the amount of carbon monoxide in the environment. It is offered with an operating range of 0 to 125 ppm. Duct CO transmitters are offered in a standard NEMA 1 rated ABS Polycarbonate plastic enclosure. Other options include an LCD display with (2) SPDT Form 1C relays and a buzzer. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. CO-D is not compatible with the Q4C-II or Q-Controllers.

Applications: Parking Garages, Arenas, Kitchens, Laundry Rooms, Warehouses, Loading Docks, Service Garages, School Bus Parking Areas

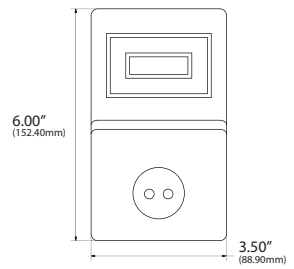
The CO Duct Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

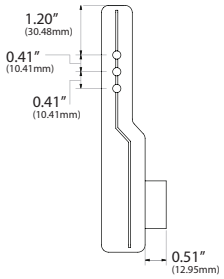
Supply Voltage:	24 VAC +/- 10% Floating; 24 VAC +/- 10%, One side Grounded; 24 VDC
Supply Current:	100 mA nominal | 250 mA maximum
Power Usage:	6.6 Watts maximum
Operating Temperature:	-4ºF to 104ºF (-20ºC to 40ºC)
Operating Humidity:	15 to 90% RH Continuous, non-condensing; 0 to 99% RH Intermittent, non-condensing
Accuracy:	+/- 2.5% of Reading
Repeatability:	+/- 1% of Reading
Operating Pressure:	1 Atmosphere (14.7 psi) +/- 10%
Response Time:	Less than 60 Seconds for 90% of step change
Sensor Type:	Electrochemical
Sensor Life:	~ 5 years under Normal Conditions
Factory Set:	0 – 125 ppm / 0 – 250 ppm Field Adjustable
Indicators:	Alphanumeric – 2 line X 8 digit LCD / (2) Red LED's for Relay Status
Analog Outputs:	4-20 mA or 2-10V Jumper Selectable
Relay & Buzzer (Optional):	Two SPDT Form C, Dry Contact, 1A @ 30 VDC/0.5A @ 125 VAC (Resistive Load), Buzzer Rating 85 dB @ one foot
Relay Life Expectancy:	200,000 cycles minimum with 1A @ 30 VDC
Time Delays:	**Actuation / De-Actuation:** 0 to 60 Minutes in 5 minute Increments
Storage:	32º to 68ºF (0ºC to 20ºC)
Shelf Life:	6 Months from date of purchase
Duct Kit Tubing Material:	Vinyl
Duct Kit Tubing Length:	18"
Duct Kit In-Line Filter:	5 micron
Duct Kit Pitot Tube:	3 5/32", Polycarbonate/ABS Blend / UL94V
Enclosure:	Polycarbonate/ABS Blend, UL94V-0
Terminal Blocks:	Fixed, Power wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lbs (0.5n-3m) Nominal
RS-485 Wiring:	Beldon 9841 or equal
Product Dimensions:	(H) 6.00" (152.4 mm) x (W) 3.5" (88.9 mm) x (D) 1.6" (40.6 mm)
Product Weight:	1.00 lbs (0.45 kg)

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary | When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

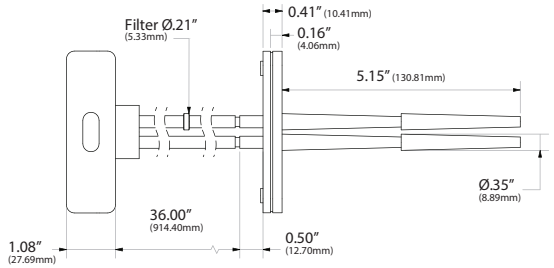
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model #	Item #	Description
CO-D	102147	CO Duct Mount, Standard Enclosure
CO-D-RB-D	107557	CO Duct Mount with Display, Relay, Buzzer, Standard Enclosure

ACCESSORIES ORDERING

Model #	Item #	Description
83830-020-000	127649	Calibration Adapter
6300-0041	134187	Replacement CO Sensing Element
CUSTOM CAL KIT*	148426	Gas Cal Kit

Note*: Refer to GAS CAL KIT data sheet for specific's

NO2 ROOM

Nitrogen Dioxide Room Sensor

The NO2 Room Series monitors nitrogen dioxide (NO2) levels and is designed for the continuous monitoring of vehicle exhaust in non-hazardous areas. This series uses a wide spectrum, electrochemical sensor to measure the amount of nitrogen dioxide in the environment. It is offered with an operating range of 0 to 6 ppm. ACI's NO2 Room transmitter is offered in a standard NEMA 1 rated ABS Polycarbonate plastic enclosure. Other options include an LCD display with (2) SPDT Form 1C relays and a buzzer. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. NO2-R is not compatible with the Q4C-II or Q-controllers.

Applications: Parking Garages, Arenas, Warehouses, Loading Docks, Service Garages, School Bus Parking Areas

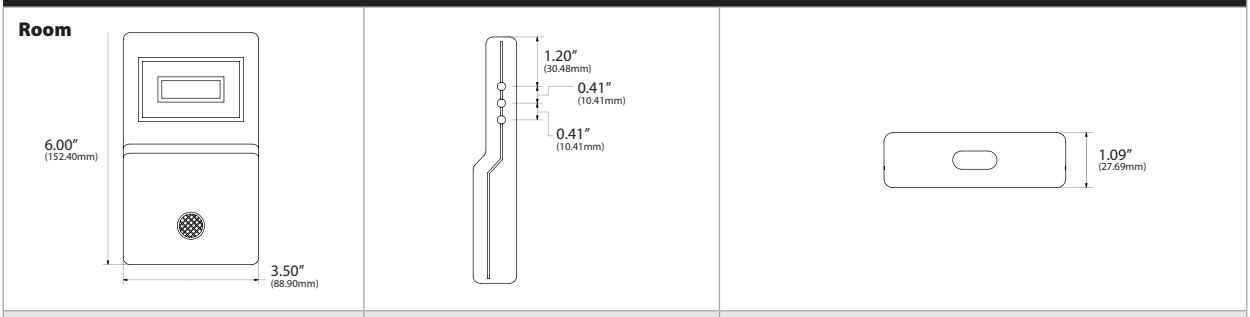
The NO2 Room Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/- 10% Floating; 24 VAC +/- 10%, One side Grounded; 24 VDC
Supply Current:	100 mA nominal | 250 mA maximum
Power Usage:	6.6 Watts maximum
Operating Temperature:	-4ºF to 104ºF (-20ºC to 40ºC)
Operating Humidity:	15 to 90% RH Continuous, non-condensing; 0 to 99% RH Intermittent, non-condensing
Accuracy:	+/- 2.5% of Reading
Repeatability:	+/- 1% of Reading
Operating Pressure:	Atmospheric +/- 10%
Response Time:	Less than 60 Seconds for 90% of step change
Sensor Type:	Electrochemical
Sensor Life:	2-3 years under Normal Conditions
Factory Set Range:	0 to 6 ppm | 0 to 10 ppm Field Adjustable
Coverage Area:	7500 sq. ft; 49' Radius
Indicators:	Alphanumeric, 2 line x 8 digit LCD / (2) Red LED's for Relay Status
Mounting Height:	6 to 18" above the floor
Analog Outputs:	Analog 4-20 mA or 2-10V Jumper Selectable
Relay & Buzzer (Optional):	Two SPDT Form C, Dry Contact, 1A @ 30 VDC/0.5A @ 125 VAC (Resistive Load), Buzzer Rating 85 dB @ one foot
Relay Life Expectancy:	200,000 cycles minimum with 1A @ 30 VDC
Time Delays:	**Actuation / De-Actuation:** 0 to 60 Minutes in 5 minute Increments
Storage:	32º to 68ºF (0ºC to 20ºC)
Unit Shelf Life:	6 months from date of purchase
Enclosures:	**Room:** Polycarbonate/ABS Blend
Terminal Blocks:	Power wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lbs (0.5n-3m) Nominal
Communication Wiring:	Beldon 9841 or equal
Product Dimensions:	**Room:** (H) 6.00" (152.4 mm) x (W) 3.5" (88.9 mm) x (D) 1.09" (27.87 mm)
Product Weight:	**Room:** 0.62 lbs (281.2 g)

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary | When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model # Example: NO2-R-4X -OR- 111575

Model #	Item #	Description
NO2-R	102593	NO2 Room Mount, Standard Room Enclosure
NO2-R-RB-D	108397	NO2 Room Mount with Display, Relays (2 x SPDT), Buzzer, Standard Room Enclosure

ACCESSORIES ORDERING

Model # Example: 83830-020-000 -OR- 127649

Model #	Item #	Description
83830-020-000	127649	Calibration Adapter
6300-0035	128873	Replacement NO2 Sensing Element
CUSTOM CAL KIT*	148426	Gas Cal Kit

Note*: Refer to GAS CAL KIT data sheet for specific's

NO2 DUCT

Nitrogen Dioxide Duct Sensor

The NO2 Duct Series monitors nitrogen dioxide (NO2) levels and is designed for the continuous monitoring of vehicle exhaust in non-hazardous areas. This series uses a wide spectrum electrochemical sensor to measure the amount of nitrogen dioxide in the environment. It is offered with an operating range of 0 to 6 ppm. The Duct NO2 transmitter is offered in a standard NEMA 1 rated ABS Polycarbonate plastic enclosure. Other options include an LCD display with (2) SPDT Form 1C relays and a buzzer. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. NO2-D is not compatible with the Q4C-II or Q-Controllers.

Applications: Parking Garages, Arenas, Warehouses, Loading Docks, Service Garages, School Bus Parking Areas

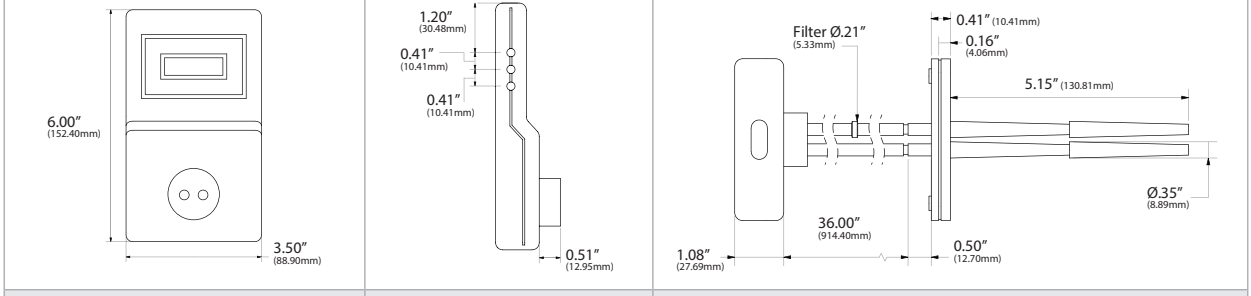
The NO2 Duct Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/- 10% Floating; 24 VAC +/- 10%, One side Grounded; 24 VDC
Supply Current:	100 mA nominal | 250 mA maximum
Power Usage:	6.6 Watts maximum
Operating Temperature:	-4ºF to 104ºF (-20ºC to 40ºC)
Operating Humidity:	15 to 90% RH Continuous, non-condensing; 0 to 99% RH Intermittent, non-condensing
Accuracy:	+/- 2.5% of Reading
Repeatability:	+/- 1% of Reading
Operating Pressure:	Atmospheric +/- 10%
Response Time:	Less than 60 Seconds for 90% of step change
Sensor Type:	Electrochemical
Sensor Life:	2-3 years under Normal Conditions
Factory Set Range:	0 to 6 ppm | 0 to 10 ppm Field Adjustable
Indicators:	Alphanumeric, 2 line X 8 digit LCD / (2) Red LED's for Relay Status
Analog Outputs:	4-20 mA or 2-10V Jumper Selectable
Relay & Buzzer (Optional):	Two SPDT Form C, Dry Contact, 1A @ 30 VDC/0.5A @ 125 VAC (Resistive Load), Buzzer Rating 85 dB @ one foot
Relay Life Expectancy:	200,000 cycles minimum with 1A @ 30 VDC
Time Delays:	**Actuation / De-Actuation:** 0 to 60 Minutes in 5 minute Increments
Storage:	32ºF to 68ºF
Unit Shelf Life:	6 months from date of purchase
Duct Kit Tubing Material:	Vinyl
Duct Kit Tubing Length:	18"
Duct Kit In-Line Filter:	5 micron
Duct Kit Pitot Tube:	3 5/32", Polycarbonate/ABS Blend / UL94V
Enclosure:	Polycarbonate/ABS Blend, Fire Retardant
Terminal Blocks:	Power wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lbs (0.5n-3m) Nominal
Communication Wiring:	Beldon 9841 or equal
Equipment Needed For Calibration:	0.5 lpm Regulator, zero & span gas (supplied by local vendor) Calibration adapter (Part # 83830-020-000)
Replacement NO2 Sensor:	Part# 6300-0035
Product Dimensions:	(H) 6.00" (152.4 mm) x (W) 3.5" (88.9 mm) x (D) 1.6" (40.6 mm)
Product Weights:	1.00 lbs (0.45 kg)

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary | When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model # Example: NO2-D-RB-D -OR- 113012

Model #	Item #	Description
NO2-D	109680	NO2 Duct Mount, Standard Enclosure
NO2-D-RB-D	113012	NO2 Duct Mount with Display, Relays (2x SPDT), Buzzer, Standard Enclosure

ACCESSORIES ORDERING

Model # Example: 83830-020-000 -OR- 127649

Model #	Item #	Description
83830-020-000	127649	Calibration Adapter
6300-0035	128873	Repacement NO2 Sensing Element
CUSTOM CAL KIT*	148426	Gas Cal Kit

Note*: Refer to GAS CAL KIT data sheet for specific's

Q5/B5 SERIES

Toxic/Combustible Gas Transmitter

The B5/Q5 Toxic/Combustible Gas Detectors use various sensing technologies to detect a wide assortment of gases. These units are housed in a NEMA 4X rated plastic enclosure that will meet the most stringent applications. All models feature an internal clock, LCD Display for displaying gas concentrations and setup, LED Status Indication, integral buzzer with three user configurable relays and a number of different communication protocols for use with one of our gas controllers or your building management system. Factory calibrated sensor module replacements are available and are easily replaced in the field by removing two screws on the previous module. All units should be checked for proper functionality and calibration once the replacement sensor module is reinstalled and has had a chance to warm up. A user selectable password can be used to protect the system integrity. The Q5 can be used as a standalone gas detector or in conjunction with the Q4C, M-Controller or Q-Controllers using the proprietary RS-485 Optomux communication protocol. The B5 uses BACnet™ MSTP (RS485) protocol to communicate directly with a BAS. ACI also offers a full line of horns and strobes that can be used with the Gas detectors or building management system to alert building occupants of an alarm condition. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. The Q5/B5-GENL can be ordered to monitor specific combustible gases such as Gasoline, Ethanol, Diesel or Jet fuel. Contact ACI for specific gases.

Applications: Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Leak Detection, Parking Garages, Auto/Truck Maintenance Facilities, Oil and Gas Industry

The Q5/B5 Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

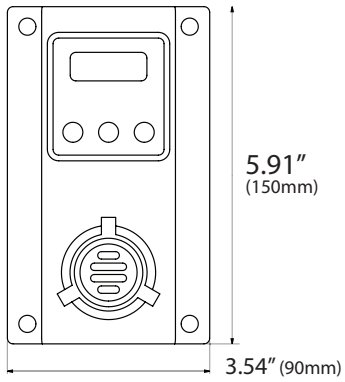
Supply Voltage (Q5):	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal (+15 to 24 VAC) (AC Power must not be grounded)
Supply Voltage (B5):	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal (+15 to 24 VAC) (AC Power can be grounded or non-grounded)
Fuse Protection:	0.750A Polyswitch: (Resets after fault is cleared & power to circuit is removed)
Supply Current | Power Consumption:	0.3A maximum | 8.4 VA
Analog Output Signals (Q5 Only):	**Analog:** 4-20 mA, 1 to 5 VDC or 2 to 10 VDC (All Analog Output Signals require 4-Wires)
Maximum Load Impedance:	**4-20 mA Output:** 600 Ohms maximum | **1-5 VDC or 2-10 VDC:** 3000 Ohms minimum
Communication Protocols:	**Q5 Communication Protocols:** RS-485 Modbus RTU/OptoMux (Proprietary QEL Controller Protocol) **B5 Communication Protocols:** RS-485 Serial BACnet MS/TP (Master and Slave - Default:Master)
Communication Baud Rates (Q5):	1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800)
B5 Communication Baud Rates (B5):	9600, 19200, 38400, 76800 Bits/Second (Default: 38400)
Factory Calibration Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Display:	LCD Graphic Display with backlight (Displays: TWA, STEL and Concentration)
Keypad:	Three Capacitive Touch sensing keys
Relays | Contact Type | Relay Contact Ratings:	Three | SPDT (Form C) Dry Contacts | 1.0A max. @ 30 VDC or 0.3A max. @ 125 VAC (Resistive Loads)
Relay Life Expectancy:	**Mechanical:** 50,000,000 operations minimum @ 36,000 operations/hour **Electrical:** 200,000 operations minimum @ rated load
Status LEDs:	Two Green LEDs (Tx/Rx Communication Status): Three LEDs (Relays 1, 2 & 3)
Buzzer:	80 dB at 3.94" (10 cm), 2700 Hz (3 Programmable Tones)
Warm Up Time:	24 Hours (Allow 24 hours before calibrating sensor after installation)
Sensor Type:	See Sensor Technology Type in Table on back of data sheet
Gas Types:	Combustible, Toxic Gases/Oxygen Sensor & Infrared
Coverage Area | Mounting Height:	See Gas Sensor Selection & Specification Table on back of data sheet
Life Expectancy:	**Electrochemical (Toxic):** 2 to 3 Years, typical | **Oxygen/Hydrogen (Toxic):** 18 months, typical **Catalytic (Combustible):** 3 to 5 Years, typical | **CO:** 7 Years, typical
Unit Shelf Life:	**Electrochemical (Toxic):** 6 months from the date of purchase **Catalytic (Combustible):** 1 year from date of purchase
Replacement Sensor Modules:	See additional on-line Product Literature or Contact ACI
Recommended Maintenance:	**Catalytic (Combustible):** Accuracy & Bump test every 3 months or as required by Code **Electrochemical (Toxic):** Accuracy & Bump test every 6 months or as required by Code **Oxygen/Hydrogen (Toxic):** Calibrate every 3 months
Enclosure Specifications (Material Type, Flammability, NEMA/IP Rating):	Plastic Enclosure; Polycarbonate Lexan; UL94 V-0, NEMA 4, 4X, 12 and 13 (IP66)
Enclosure Knockouts:	3/4" Knockouts (accepts 1/2" Conduit Fittings)

PRODUCT SPECIFICATIONS

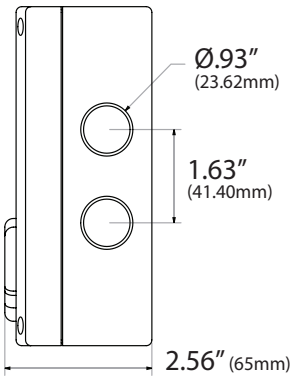
Operating Temperature | Humidity:	See Sensor Selection & Specification Table on back of data sheet | 5 to 95% RH, non-condensing
Operating Atmospheric Pressure[1]:	14.696 psi (1.0132 bar) +/- 10%
Recommended Storage Temperature/ Humidity:	32 to 68°F (0 to 20°C) | 5 to 95% RH, non-condensing
Wiring Connections | Wire Size:	De-pluggable Screw Terminal Blocks | 16 to 24 AWG (0.2047 to 1.301 mm) Shielded Twisted Pair
Communications Cable:	Belden 9841 or Equivalent, 120 Ohms Input Impedance
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Approvals:	RoHS, cETLus Listed, Safety requirement for Electrical Equipment for Measurement, Control & Laboratory Use Part 1: CAN/CSA-22.2 No. 61010-1 Third Edition, Dated May 11, 2012; General Requirements UL 61010-1 Third Edition, Dated May 11 2012 **Q5C-CO & B5C-CO only:** UL 2075 Gas & Vapor Detectors & Sensors (ETL Control# 4010204)
Product Weight:	1.00 lbs. (0454 kg)
Product Dimensions (L x W x H):	5.91" (150 mm) x 3.54" (90 mm) x 2.56" (65 mm)

Note1: When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

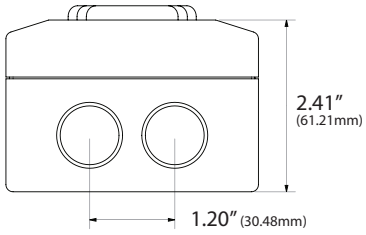
DIMENSIONAL DRAWING



Front View



Side View



Top View

SENSOR SELECTION AND SPECIFICATION

Gas Type	Gas Span Code	Combustible	Toxic	100% LEL[1] in % By Vol.	Measurment Range	Operating Temp °F (°C)	Square Feet ft² (m²)	Radius ft (m)	Mounting Height
Acetone	CH3CO-100L	•		2.6%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Ammonia	NH3-100P		•	N/A	0-100 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Ammonia	NH3-1000P		•	N/A	0-1000 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Arsine	ASH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Benzene	C6H6-100L	•		1.3%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Iso-Butane	C4H10-100L	•		1.8%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Butanol, n-Butane	BUTAN-100L	•		1.9%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Carbon Dioxide	CO2-5000P	Infrared	Infrared	N/A	0-5000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-5V	Infrared	Infrared	N/A	0-5% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-20V	Infrared	Infrared	N/A	0-20% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-100V	Infrared	Infrared	N/A	0-100% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-250P		•	N/A	0-250 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Chlorine	CL2-5P		•	N/A	0-5 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Chlorine Dioxide	CLO2-2P		•	N/A	0-2 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Diborane	B2H6-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene	C2H4-100L	•		2.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene Oxide	ETO-20P		•	N/A	0-20 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Germane	GEH4-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen	H2-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-2000P		•	N/A	0-2000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-100L	•		4.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen Bromide	HBR-30P		•	N/A	0-30 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Chloride	HCL-30P		•	N/A	0-30 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Cyanide	HCN-50P		•	N/A	0-50 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Sulphide	H2S-25P		•	N/A	0-25 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Sulphide	H2S-100P		•	N/A	0-100 PPM	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Methane	CH4-100L	•		5.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Methanol	CH3OH-100L	•		6.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Nitric Oxide	NO-100P		•	N/A	0-100 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Nitrogen Dioxide	NO2-10P		•	N/A	0-10 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Oxygen[3]	O2-25V		•	N/A	0-25% by Vol	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Ozone	O3-1P		•	N/A	0-1 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	High[2]
Iso-Pentane	C5H12-100L	•		1.4%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-5P		•	N/A	0-5 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Propane	C3H8-100L	•		2.1%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Silane	SiH4-50P		•	N/A	0-50 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Sulpher Dioxide	SO2-6P		•	N/A	0-6 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Combustibles[1]	GENL-100L	•		**Specify Gas**	0-100% LEL	-40 to 122 (-40 to 50)	5000 (464.5)	40 (12.2)	Gas Dependent
Acetaldehyde, Benzene, Carbon Disulfide, Dioxane, Ethane, Ethanol, Ethylbenze, Gasoline, Heptane, Hexane, Ipa, Jet Fuel, Kerosene, Naphtha, Styrene, Toluene, Voc's, Xylenes, Acetylene, Diesel, Pentane, Ethyl Acetate, Propylene									

Note 1: Lower Explosive Limit (LEL) | **Note 2:** Low = 0.5 to 1.5' (0.15 to 0.46m) above floor | Mid = 4.0 to 6.0' (1.20 to 1.83m) above floor | High = 0.5 to 1.5' (0.15 to 0.46m) below ceiling | **Note 3:** Oxygen sensors monitor oxygen depletion caused by numerous gases including: Nitrous Oxide, Helium, Nitrogen, Sulfur hexafluoride, Argon, Xenon, Neon.

STANDARD ORDERING		MODEL #
A. Sensor Series *Select One (1)*	**Q5** = Toxic/Combustible Gas Transmitter Series with Analog/Relay/Communicating Output Signals and Display (All gasses except CO) **Q5C** = Carbon Monoxide Toxic Gas Transmitter (Certified to meet UL 2075 Requirements for Carbon Monoxide (CO) only) **B5** = Toxic/Combustible MS/TP BACnet™ Gas Detection Transmitter with Relays and LCD Display (All gases except CO) **B5C** = Carbon Monoxide MS/TP BACnet™ Toxic Gas Transmitter (Certified to meet UL 2075 Requirements for Carbon Monoxide (CO)only)	
B. Gas Span Code	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table**	
C. Enclosure *No Selection Required*	**O** = Standard Wall Mount Enclosure →	**O**
D. Revision *No Seleciton Required*	**X** = Factory Provided →	**X**
E. For GENL Sensors	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table** (See Combustibles)	

STANDARD ORDERING

Model #	Item #	Description
Q5C-CO-250P-O-X	141036	CO, 0-250 ppm, UL2075 Certified
B5C-CO-250P-O-X	140654	BACnet™ CO, 0-250 ppm, UL2075 Certified

ACCESSORIES ORDERING | Q5, B5

Model #	Item #	Description
GAS CAL KIT	148426	Cal Kit includes Carry Case, 0.5lpm regulator, C10 to CGA-600 adapter, tubing
85930-006-000	128901	Calibration Adapter for Q5/B5, Q6/B6
85930-007-000	130812	Sensor Splash Guard Kit for Q5/B5, Q6/B6
85930-040-000	131510	Duct Mount Kit (Adapter, Tubing, Pitot Tubes) for Q5/B5, Q6/B6
GSG-1	141059	Gas Sensor Protective Guard (White)

Note: See GAS CAL KIT Data Sheet if required

ACCESSORIES ORDERING | HORN STROBE

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500C	150028	Streamline Horn and Strobe (Clear)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

Q6/B6 SERIES

Toxic/Combustible Gas Transmitter

The Q6/B6 Toxic/Combustible Gas Detectors use various sensing technologies to detect a wide assortment of gases. These units are housed in a NEMA 4X rated plastic enclosure that will meet a wide variety of applications. The combo unit consists of a main unit (Carbon Monoxide only) with an LCD, LED status indication, 3 user configurable relays and a remote sensing unit (various gas types available) for installation at high or low elevations based on the density of the gas being detected. The main and remote unit gas concentrations levels are both displayed on the main unit's LCD. This series also features a sensor module that can be easily replaced by removing a couple of screws and unplugging the existing module before inserting the new factory calibrated sensing module. All units should be verified for proper functionality and calibration once the replacement sensor module has been reinstalled. A user selectable password can be used to protect the system integrity. The Q6 can be used as a standalone gas detector or in conjunction with one of our Q4C, M-Controller or Q-Controllers using the proprietary RS-485 Optomux communication protocol. ACI also offers a full line of horns and strobes that can be used with the gas detectors or building management system to alert building occupants of an alarm condition.

It is your responsibility to ensure that the Q6/B6 Series will meet all of your applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Leak Detection, Parking Garages, Auto/Truck Maintenance Facilities, Oil and Gas Industry

The Q6/B6 Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

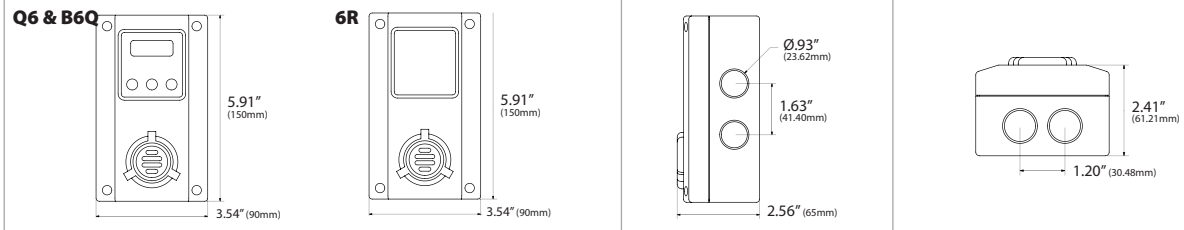
Supply Voltage:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal (+15 to 24 VAC) (AC Power must not be grounded)
Fuse Protection:	0.750A Polyswitch; (Resets after fault is cleared & power to circuit is removed)
Supply Current | Power Consumption:	0.3A maximum | 8.4 VA
Communication Protocols:	**Q6 Communication Protocols:** RS-485 Modbus RTU/OptoMux (Proprietary QEL Controller Protocol) **B6 Communication Protocols:** RS-485 Serial BACnet™ MS/TP (Master and Slave; Default: Master)
Q6 Communication Baud Rates:	1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800)
B6 Communication Baud Rates:	9600, 19200, 38400, 76800 Bits/Second (Default: 38400)
Factory Calibration Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Display:	LCD Graphic Display with backlight (Displays: TWA, STEL and Concentration)
Keypad:	Three Capacitive Touch sensing keys
Relays | Contact Type | Relay Contact Ratings:	Three | SPDT (Form C) Dry Contacts | 1.0A max. @ 30 VDC or 0.3A max. @ 125 VAC (Resistive Loads)
Relay Life Expectancy:	**Mechanical:** 50,000,000 operations minimum @ 36,000 operations/hour **Electrical:** 200,000 operations minimum @ rated load
Status LEDs:	Two Green LEDs (Tx/Rx Communication Status); Three Red LEDs (Relays 1, 2 & 3)
Buzzer:	80 dB at 3.94 (10 cm), 2700 Hz (3 Programmable Tones)
Warm Up Time:	24 Hours (Allow 24 hours before calibrating sensor after installation)
Sensor Type:	**Main:** Carbon Monoxide (CO) **Remote:** See Gas Sensor Selection & Specification Table on back of data sheet
Gas Types:	Combustible, Toxic Gases/Oxygen Sensor & Infrared
Coverage Area | Mounting Height:	See Gas Sensor Selection & Specification Table on back of data sheet
Life Expectancy:	**Electochemical (Toxic):** 2 to 3 Years, typical | **Oxygen/Hydrogen (Toxic):** 18 months, typical **Catalytic (Combustible):** 3 years, typical | **CO:** 7 years, typical
Unit Shelf Life:	**Electrochemical (Toxic):** 6 months from date of purchase **Catalytic (Combustible):** 1 year from date of purchase
Replacement Sensor Modules:	See additional on-line Product Literature or Contact ACI
Recommended Maintenance:	**Catalytic (Combustible):** Accuracy & Bump test every 3 months or as required by Code **Electrochemical (Toxic):** Accuracy & Bump test every 6 months or as required by Code **Oxygen/Hydrogen (Toxic):** Calibrate every 3 months

PRODUCT SPECIFICATIONS

Enclosure Specifications (Material Type, Flammability, NEMA/IP Rating):	Plastic Enclosure; Ploycarbonate Lexan; UL94 V-0, NEMA 4, 4X, 12 and 13 (IP66)
Enclosure Knockouts:	3/4[3] Knockouts (accepts 1/2" Conduit Fittings)
Operating Temperature | Humidity:	See Sensor Selection & Specification Table on back of data sheet | 5 to 95% RH, non-condensing
Operating Atmospheric Pressure[1]:	14.696 psi (1.0132 bar) +/- 10%
Recommended Storage Temperature/ Humidity:	32 to 68°F (0 to 20°C) | 5 to 95% RH, non-condensing
Wiring Connections | Wire Size:	De-pluggable Screw Terminal Blocks | 16 to 24 AWG (0.2047 to 1.301 mm) Shielded Twisted Pair
Communications Cable:	Belden 9841 or Equivalent, 120 Ohms Input Impedance
Termical Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal

Note[1]: When installed @ >3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

DIMENSIONAL DRAWING



Front View | **Side View** | **Top View**

SENSOR SELECTION AND SPECIFICATION

Gas Type	Gas Span Code	Combustible	Toxic	100% LEL[1] in % By Vol.	Measurment Range	Operating Temp °F (°C)	Square Feet ft² (m²)	Radius ft (m)	Mounting Height
Acetone	CH3CO-100L	•		2.6%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Ammonia	NH3-100P		•	N/A	0-100 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Ammonia	NH3-1000P		•	N/A	0-1000 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Arsine	ASH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Benzene	C6H6-100L	•		1.3%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Iso-Butane	C4H10-100L	•		1.8%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Butanol, n-Butane	BUTAN-100L	•		1.9%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Carbon Dioxide	CO2-5000P	Infrared	Infrared	N/A	0-5000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-5V	Infrared	Infrared	N/A	0-5% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-20V	Infrared	Infrared	N/A	0-20% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Dioxide	CO2-100V	Infrared	Infrared	N/A	0-100% by Vol	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-250P		•	N/A	0-250 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Chlorine	CL2-5P		•	N/A	0-5 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Chlorine Dioxide	CLO2-2P		•	N/A	0-2 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Diborane	B2H6-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Ehtylene	C2H4-100L	•		2.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene Oxide	ETO-20P		•	N/A	0-20 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Germane	GEH4-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen	H2-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-2000P		•	N/A	0-2000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-100L	•		4.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen Bromide	HBR-30P		•	N/A	0-30 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Chloride	HCL-30P		•	N/A	0-30 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Cyanide	HCN-50P		•	N/A	0-50 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Sulphide	H2S-25P		•	N/A	0-25 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Sulphide	H2S-100P		•	N/A	0-100 PPM	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Methane	CH4-100L	•		5.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Methanol	CH3OH-100L	•		6.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Nitric Oxide	NO-100P		•	N/A	0-100 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Nitrogen Dioxide	NO2-10P		•	N/A	0-10 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Oxygen[3]	O2-25V		•	N/A	0-25% by Vol	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Ozone	O3-1P		•	N/A	0-1 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	High[2]
Iso-Pentane	C5H12-100L	•		1.4%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-5P		•	N/A	0-5 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Propane	C3H8-100L	•		2.1%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Silane	SiH4-50P		•	N/A	0-50 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Sulpher Dioxide	SO2-6P		•	N/A	0-6 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Combustibles[1]	GENL-100L	•		Specify Gas	0-100% LEL	-40 to 122 (-40 to 50)	5000 (464.5)	40 (12.2)	Gas Dependent
Acetaldehyde, Benzene, Carbon Disulfide, Dioxane, Ethane, Ethanol, Ethylbenze, Gasoline, Heptane, Hexane, Ipa, Jet Fuel, Kerosene, Naphtha, Styrene, Toluene, Voc's, Xylenes, Acetylene, Diesel, Pentane, Ethyl Acetate, Propylene									

Note 1: Lower Explosive Limit (LEL) | **Note 2:** Low = 0.5 to 1.5' (0.15 to 0.46m) above floor | Mid = 4.0 to 6.0' (1.20 to 1.83m) above floor | High = 0.5 to 1.5' (0.15 to 0.46m) below ceiling | **Note 3:** Oxygen sensors monitor oxygen depletion caused by numerous gases including: Nitrous Oxide, Helium, Nitrogen, Sulfur hexafluoride, Argon, Xenon, Neon.

STANDARD ORDERING

Model #	Item #	Description
Q6-CO/NO2-10P	146117	Main Unit: CO (0-250 ppm) | Remote Unit: NO2 (0-10 ppm)
B6-CO/NO2-10P	146119	BACnet™ Main Unit: CO (0-250 ppm) | Remote Unit: NO2 (0-10 ppm)

CUSTOM ORDERING

		MODEL #
A. Sensor Series *Select One (1)*	**Q6-CO** = Main Unit (CO) | **B6-CO** = BACnet™ Main Unit (CO)	
B. Gas Span Code	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table**	
C. For GENL Sensors	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table** (See Combustibles)	

ACCESSORIES ORDERING | Q6, B6

Model #	Item #	Description
GAS CAL KIT	148426	Cal Kit includes Carry Case, 0.5lpm regulator, C10 to CGA-600 adapter and tubing
85930-006-000	128901	Calibration Adaptor for Q5/B5, Q6/B6
85930-007-000	130812	Sensor Splash Gaurd Kit for Q5/B5, Q6/B6
85930-040-000	131510	Duct Mount Kit (Adaptor, Tubing, Pitot Tubes) for Q5/B5, Q6/B6
GSG-1	141059	Gas Sensor Protective Guard (White)

Note: See GAS CAL KIT data sheet if required

ACCESSORIES ORDERING | HORN STROBE

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

ACCESSORIES ORDERING | PROTECTIVE DOME FOR DEEP MOUNTING BASE

Model #	Item #	Description
FSIG-SLMDG2	143149	Optional Protective Dome for Deep Mounting Base and SLM500x Series Horn and Strobe

CO2 ROOM

Sensor with Temperature, Setpoint & Override

The ACI Carbon Dioxide Room Series (A/CO2-R2) monitors the carbon dioxide (CO2) levels in commercial, school, and office-type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The A/CO2 Series is based on a single beam, non-dispersive infrared technology and is a cost-efficient solution for measuring carbon dioxide levels for building climate control. In addition, ABC software eliminates the need for manual calibration. Carbon Dioxide concentration is measured up to 2,000 ppm and is converted into proportional analog outputs. The factory default outputs are 0-10 VDC (Output 1) and 4-20 mA (Output 2), whereas 0-5 VDC is field selectable via integral dip switches. Thermistor temperature outputs, along with setpoint and override, are available as options for this configuration as well. Please see the order grid for the available sensor options. The A/CO2-R2 Series provides data which can be used in conjunction with a Building Automation System or Demand Control Ventilation to decrease energy consumption while creating a healthier indoor climate.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theatres, Demand Control Ventilation & Economizers

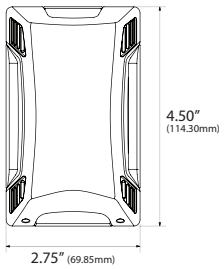
The CO2 Room Series are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

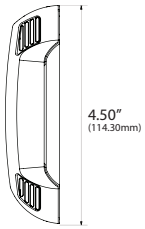
Supply Voltage:	24 VAC +/-20%, 50/60 Hz (half-wave rectifier) | 16.5-40 VDC maximum
Power Consumption:	3 VA for 24 VAC, 3W for 24 VDC (peak); <0.9W (average)
Sensing Technology:	Single beam infrared sensing technology (NDIR)
Sensing Method:	Diffusion
Measurement Range Default:	0 to 2,000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set)
CO2 Accuracy[1]:	+/- 40 ppm and +/- 3% of reading (@ 15-35°C; 20-70% RH and 101.3 kPa)
Extended Range Accuracy:	+/- 30 ppm and +/- 5% of reading
CO2 Output Signal:	**Output 1:** 0-5 VDC or 0-10 VDC (Default) **Output 2:** 4-20 mA (500 Ohm load maximum)
Fail Safe:	Polarity protected
Pressure Dependence:	+ 1.6% reading per kPa (deviation from standard pressure 101.3 kPa)
Response Time:	≤ 2 minutes, diffusion
Warm-Up Time:	< 1 Minute (@ full specs < 15 minutes)
Temperature Output Range:	Various (See Ordering Grid)
Temperature Accuracy:	+/- 1°F (+/- 0.6°C)
Operating Temperature Range:	32 to 122°F (0 to 50°C)
Operating Humidity Range:	0 to 95%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 (0.129 mm^2) AWG
Terminal Block Torque Rating:	0.5 Nm (minimum); 0.6 Nm (maximum)
Enclosure:	ABS, Plastic, White, UL94-HB
Sensor Coverage Area:	7,500 sq. ft maximum
Mounting Height:	4-6 ft
Sensor Life[2]:	> 15 years (typical)
Calibration[3]:	ABC algorithm (Automatic Baseline Correction)
Product Dimensions:	(H) 4.50" (114.30 mm) x (W) 2.75" (69.85 mm) x (D) 1.12" (28.45 mm)
Product Weight:	0.230 lbs (0.104 kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU

Note 1: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note 2:** In normal indoor air quality (IAQ) applications | Corrosive environments are excluded | **Note 3:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hours / day, ABC must be turned off

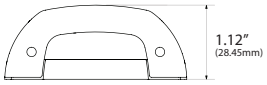
DIMENSIONAL DRAWING



Front View



Right View



Bottom View

STANDARD ORDERING

Model #	Item #	Description
A/CO2-R2	144220	CO2 Room (0-5 VDC, 0-10 VDC, 4-20 mA Outputs)

CUSTOM ORDERING

Model # Example: A/CO2 (A.) | R2SO (B.) | CP (C.) | A01G (D.) | 5 (E.)

		MODEL #
A. Sensor Series *No Selection Required*	**A/CO2** →	**A/CO2**
B. Configuration *Select One (1)*	**R2** = Room | **R2O** = Room with Override* | **R2S** = Room with Set Point | **R2SO** = Room with Set Point and Override*	
C. Temperature Sensor Options *Select One (1)*	**----** (None) | **1.8K** | **3K** | **AN (Type III)** | **AN-BC** | **CP (Type II)** | **10K-E1** | **CSI** | **20K** | **100KS**	
D. Slidepots** *Select One (1)*	**Direct Acting** *(Range in Ohms)* **A01** = 0 to 100K | **A02** = 0 to 20K | **A03** = 0 to 10K | **A06** = 4.75K to 24.75K **A07** = 10K to 30K | **A08** = 1K to 11K | **A09** = 0 to 2K | **A10** = 0 to 1K **A11** = 2.05K to 3.05K | **A12** = 0 to 400 | **A16** = 0 to 5K | **A18** = 10K to 15K **A20** = 6.19K to 26.19K | **A26** = 866 to 1,266 | **A29** = 7.87K to 27.8K **Reverse Acting** *(Range in Ohms)* **A04** = 1051.1 to 51.1 | **A14** = 10K to 0 | **A24** = 9.5K to 1K	
E. Setpoint Indication *Select One (1)*	**G5** = BLUE/RED (R2 Enclosure)	

Note 1: Override options is Dry Contact (Separate Input) only. Short Sensor is not available by jumpers, only field wiring.

Note 2: Other Setpoint configurations are available. Please contact ACI.

ACCESSORIES ORDERING

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration

Note: Contact ACI's Technical Support for custom calibration ranges

CO2 DUCT

Sensor with Conduit Option

The ACI Carbon Dioxide Duct Series (A/CO2-D) monitors the carbon dioxide (CO2) levels in industrial, commercial, school, and office-type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The A/CO2 Series is based on a single beam, non-dispersive infrared technology and is a cost-efficient solution for measuring carbon dioxide levels for building climate control. In addition, ABC software eliminates the need for manual calibration. Carbon Dioxide concentration is measured up to 2,000 ppm and is converted into proportional analog outputs. The factory default outputs are 0-10 VDC (Output 1) and 4-20 mA (Output 2), whereas 0-5 VDC is field selectable via integral dip switches. The A/CO2-D provides data which can be used in conjunction with a Building Automation System or Demand Control Ventilation to decrease energy consumption while creating a healthier indoor climate.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theatres, Demand Control Ventilation & Economizers

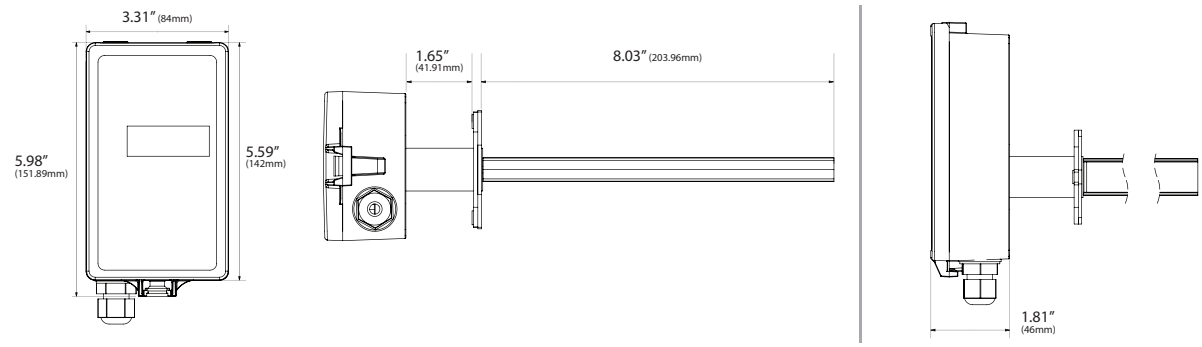
The CO2 Duct Series are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/-20%, 50/60 Hz (half-wave rectifier) | 16.5-40 VDC maximum
Power Consumption:	3 VA for 24 VAC, 3W for 24 VDC (peak); <0.9W (average)
Sensing Technology:	Single beam infrared sensing technology (NDIR)
Sensing Method:	Diffusion
Measurement Range Default:	0 to 2,000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set)
CO2 Accuracy[1]:	+/- 40 ppm and +/- 3% of reading (@ 15-35°C; 20-70% RH and 101.3 kPa)
Extended Range Accuracy>2000 ppm:	+/- 30 ppm and +/- 5% of reading
CO2 Output Signal:	**Output 1:** 0-5 VDC or 0-10 VDC (Default) **Output 2:** 4-20 mA (500Ohm load maximum)
Fail Safe:	Polarity protected
Pressure Dependence:	+ 1.6% reading per kPa (deviation from standard pressure 101.3 kPa)
Response Time:	≤ 2 minutes, diffusion
Warm-Up Time:	< 1 Minute (@ full specs < 15 minutes)
Operating Temperature Range:	32 to 122°F (0 to 50°C)
Operating Humidity Range:	0 to 95%, non-condensing
Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm^2) to 26 (0.129 mm^2) AWG
Terminal Block Torque Rating:	0.5 Nm (minimum); 0.6 Nm (maximum)
Enclosure:	**Duct Box:** IP65 rated, PC & ABS blend, Flammability Rating UL94V-0 **Cover:** Makrolon® 6555 plastic, Flammability Rating UL94V-0 **Pipe:** PC & ABS blend, Flammability Rating UL94V-0
Sensor Life[2]:	**>** 15 years (typical)
Calibration[3]:	ABC algorithm (Automatic Baseline Correction)
Product Dimensions:	(H) 5.59" (142 mm) x (W) 3.31" (84 mm) x (D) 1.81" (46 mm)
Product Weight:	0.79 lbs (0.36 kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU

Note 1: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continous operations | Note 2: In normal indoor air quality (IAQ) applications | Corrosive environments are excluded | Note 3: Building CO2 levels must drop to 400 ppm same time during the week for ABC to work properly | If the building is occupied 24 hours / day, ABC must be turned off

DIMENSIONAL DRAWING



Front & Top ViewsR **ight View**

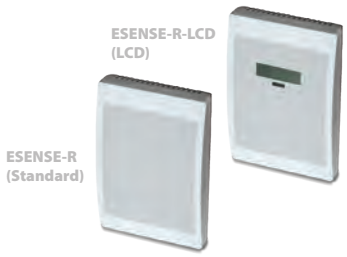
STANDARD ORDERING

Model #	Item #	Description
A/CO2-DUCT	150117	CO2 Duct (0-5 VDC, 0-10 VDC, 4-20 mA)
A/CO2-DUCT-C	137562	CO2 Duct with 1/2" Conduit Adapter (0-5 VDC, 0-10 VDC, 4-20 mA)

ACCESSORIES ORDERING

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration

Note: Contact ACI's Technical Support for custom calibration ranges



ESENSE ROOM

CO2 Room Sensor with LCD Display Option

ESENSE Room series monitors the carbon dioxide (CO2) levels in school and office type environments. The concentration of CO2 is a good indication of the overall indoor air quality. The ESENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ESENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to decrease energy consumption while creating a healthier indoor climate.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theaters, Demand Control Ventilation & Economizers

The ESENSE Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

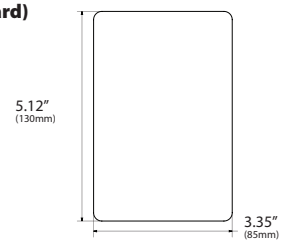
PRODUCT SPECIFICATIONS

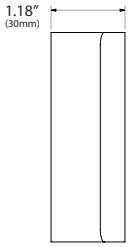
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	<1W
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 – 95% RH Non-condensing
Warm-Up Time:	1 minutes (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm and ±3% of reading
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc/min flow rate, < 3 minutes diffusion time
Operating Environment:	Residential, Commercial spaces
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Mounting Height:	4-6' off the floor
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs:	**Standard:** Out 1: 0-10V for 0 to 2000 ppm | **Out 2:** 2-10V or 4-20mA for 0 to 2000 ppm
Storage:	**ESENSE-R:** -40 to 158ºF (-40 to 70ºC) | **ESENSE-R-LCD:** -4 to 122ºF (-20 to 50ºC)
Enclosure:	ABS, Flammability Rating UL94V-0
Room Dimensions:	(H) 5.12" (130 mm) x (W) 3.35" (85.1 mm) x (D) 1.18" (30 mm)
Product Weight (Standard & LCD):	**ESENSE-R:** 0.294 lbs (0.133 kg) | **ESENSE-R-LCD:** 0.304 lbs (0.138 kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU | RoHS 3 Directive 2015/863/EU

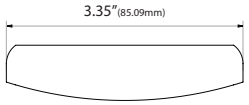
Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Changes can be made using the SADK Calibration Kit and UIP5 software | **Note [3]:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly. If the building is occupied 24 hrs/day, ABC must be turned off

DIMENSIONAL DRAWING

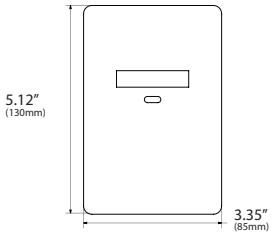
ESENSE Room (Standard)

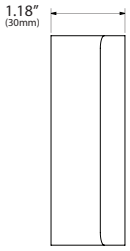


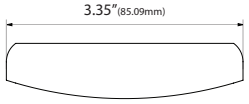




ESENSE Room (LCD)







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: ESENSE-R-5 -OR- 130162

Model #	Item #	Description
ESENSE-R	130079	CO2 Room Mount, 0-10 VDC, 2-10 VDC or 4-20 mA Output
ESENSE-R-LCD	130158	CO2 Room Mount with Display, 0-10 VDC, 2-10 VDC or 4-20 mA Output
ESENSE-R-5-LCD	130163	CO2 Room Mount with Display, 0-5 VDC Output

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
SADK	130502	SADK Calibration Kit
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

RoHS COMPLIANT 2002/95/EC

ESENSE DUCT

CO2 Duct Sensor with LCD

The ESENSE Duct series monitors the carbon dioxide (CO2) levels in industrial, school, and office type environments. The concentration of CO2 is a good indication of the overall indoor air quality. The ESENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ESENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to decrease energy consumption while creating a healthier indoor climate.

Applications: Commercial Office Buildings, Hospitals & Schools

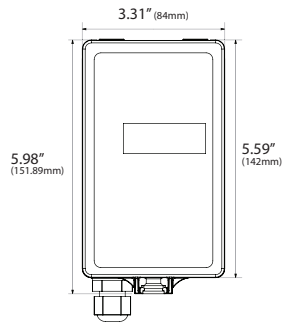
The ESENSE Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

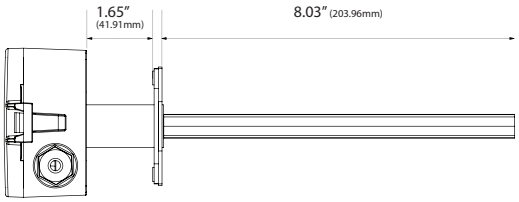
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	<1W
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 – 95% RH Non-condensing
Warm-Up Time:	1 minutes (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm and ±3% of reading
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc/min flow rate, < 3 minutes diffusion time
Operating Environment:	Residential, Commercial and Industrial spaces
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Output:	**Standard:** Out 1: 0-10V for 0-2000 ppm | Out 2: 2-10V or 4-20 mA for 0-2000 ppm
Storage:	-40 to 158ºF (-40 to 70ºC) Non-display, -4 to 122ºF (-20 to 50ºC) Display
Enclosure:	**Duct Box:** IP65 rated, PC & ABS blend, Flammability Rating UL94V-0 **Cover:** Makrolon® 6555 plastic, Flammability Rating UL94V-0 **Pipe:** PC & ABS blend, Flammability Rating UL94V-0
Room Dimensions:	(H) 5.95" (151.8 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm)
Product Weight:	0.80 lbs (0.36 kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU | RoHS 3 Directive 2015/863/EU

Note 1: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note 2:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Changes can be made using the SADK Calibration Kit and UIP5 software | **Note 3:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly. If the building is occupied 24 hrs/day, ABC must be turned off

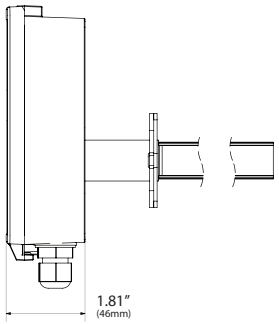
DIMENSIONAL DRAWING



Front View



Top View



Side View

STANDARD ORDERING

Model # Example: ESENSE-D-5 -OR- 130166

ACI Model #	Item #	Description
ESENSE-D	130164	CO2 Duct Mount, 0-10 VDC, 2-10 VDC or 4-20 mA Output
ESENSE-D-LCD	130165	CO2 Duct Mount with Display, 0-10 VDC, 2-10 VDC or 4-20 mA Output

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

ACI Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
SADK	130502	SADK Calibration Kit
UIP	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

ESENSE IP54

CO2 Sensor with LCD & IP54 Rated Enclosure

The ESENSE Duct series monitors the carbon dioxide (CO2) levels in industrial, school, and office type environments. The concentration of CO2 is a good indication of the overall indoor air quality. The ESENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ESENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to decrease energy consumption while creating a healthier indoor climate.

Applications: Commercial Office Buildings, Hospitals & Schools

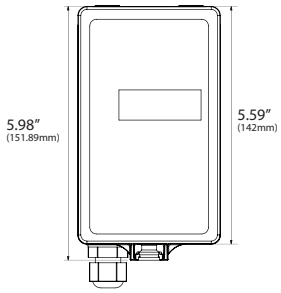
The ESENSE IP54 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

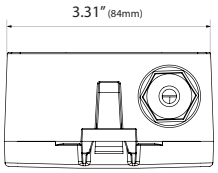
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	<1W
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 – 95% RH Non-condensing
Warm-Up Time:	1 minutes (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm and ±3% of reading
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc/min flow rate, < 3 minutes diffusion time
Operating Environment:	Residential, Commercial and Industrial spaces
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Output:	**Standard:** Out 1: 0-10V for 0-2000 ppm | Out 2: 2-10V or 4-20 mA for 0-2000 ppm
Storage:	-40 to 158ºF (-40 to 70ºC) Non-display, -4 to 122ºF (-20 to 50ºC) Display
Enclosure:	**Duct Box:** IP65 rated, PC & ABS blend, Flammability Rating UL94V-0 **Cover:** Makrolon® 6555 plastic, Flammability Rating UL94V-0 **Pipe:** PC & ABS blend, Flammability Rating UL94V-0
Room Dimensions:	(H) 5.95" (151.8 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm)
Product Weight:	0.80 lbs (0.36 kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU | RoHS 3 Directive 2015/863/EU

Note 1: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note 2:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Changes can be made using the SADK Calibration Kit and UIP5 software | **Note 3:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly. If the building is occupied 24 hrs/day, ABC must be turned off

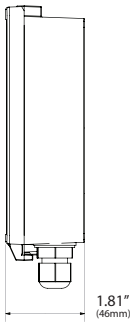
DIMENSIONAL DRAWING



Front View



Top View



Side View

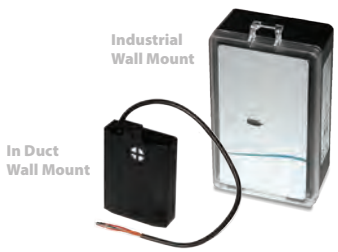
STANDARD ORDERING

ACI Model #	Item #	Description
ESENSE-IP54-LCD	130169	CO2 Duct Mount, 0-10 VDC, 2-10 VDC or 4-20 mA Output

ACCESSORIES ORDERING

ACI Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
SADK	130502	SADK Calibration Kit
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges



ESENSE WALL MOUNTS

Industrial (IP54) & In-Duct (IP50) Wall Mounts

The ESENSE-IP54 Industrial Wall Mount transmitters monitor the carbon dioxide (CO2) levels in industrial, school, and office type environments. The concentration of CO2 is a good indication of the overall indoor air quality. The ESENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ESENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to decrease energy consumption while creating a healthier indoor climate. The enclosure is IP54 rated for Industrial applications.

Applications: Schools, Office Buildings, Auditoriums, Gymnasiums, Shopping Malls, Theaters, Demand Control Ventilation & Economizers

The ESENSE Room IP54 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

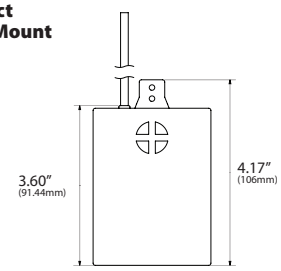
PRODUCT SPECIFICATIONS

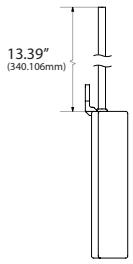
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	<1W Average
Electrical Connections:	**Industrial:** 0.00232 in^2 (1.5 mm^2) screw terminals **In-Duct:** 13.39" (34 cm) 3-wire pigtail
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 – 95% RH Non-condensing
Warm-Up Time:	1 minute (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm ±3% of reading
Annual Zero Drift:	<±10 ppm
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-Dispersive Infrared (NDIR)
Sensor Life [2]:	>15 years
Diffusion Time (T1/e):	<3 minutes
Operating Environment:	Residential, Commercial and Industrial spaces
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges (IP54):	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Mounting Height:	4-6' off the floor or in duct
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[2]:	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs (Industrial):	**Out 1:** 0-10V for 0-2000 ppm | **Out 2:** 2-10V or 4-20 mA for 0-2000 ppm | **Out 1:** 0-10V only (In-Duct Version)
Storage:	-40 to 158ºF (-40 to 70ºC) Non-display, -4 to 122ºF (-20 to 50ºC) Display
Enclosure:	**Industrial:** IP54 rated, Box; PC & ABS blend, Flammability Rating UL94V-0 Cover; Makrolon® 6555 plastic, Flammability Rating UL94V-0 **In-Duct:** IP50 Rated, PC & ABS blend, Flammability Rating UL94V-O
Product Dimensions:	**Industrial:** (H) 5.95" (151.9 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm) **In-Duct:** (H) 4.17" (106 mm) x (W) 2.64" (67 mm) x (D) 1.02" (26 mm)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU | RoHS 3 Directive 2015/863/EU

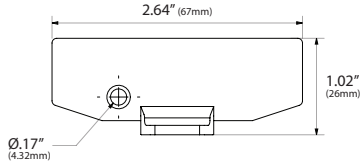
Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Changes can be made using the SADK Calibration Kit and UIP5 software | **Note [3]:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly. If the building is occupied 24 hrs/day, ABC must be turned off

DIMENSIONAL DRAWING

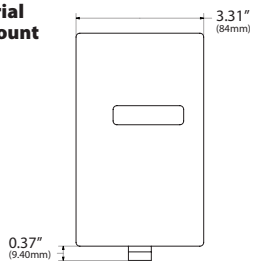
In Duct Wall Mount

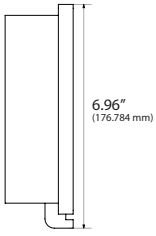


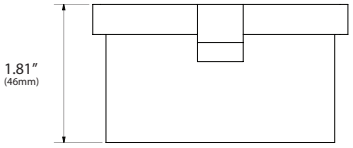




Industrial Wall Mount







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: ESENSE-IP54 -OR- 130168

Model #	Item #	Description
ESENSE-IP54-LCD	130169	CO2 Industrial Wall Mount with Display, 0-10 VDC or 4-20 mA Output
ESENSE-IP50	130030	CO2 Industrial In Duct / Wall Mount, 0-10 VDC Output

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration (IP54 only)
SADK	130502	SADK Calibration Kit
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

RoHS COMPLIANT 2002/95/EC

ESENSE OUTDOOR

CO2 Outdoor Sensor

Carbon Dioxide Sensor The ESENSE-OUTDOOR combines excellent performance with a straightforward design to provide an analog output based on 0 to 2,000 ppm of carbon dioxide. The ESENSE-OUTDOOR is complete with a IP65 housing with side ventilation to support the flow of outdoor air. The ESENSE-OUTDOOR includes an in-line thermostat in order that heating of the housing only takes place when the outdoor temperature warrants the use of the energy to maintain an above freezing temperature in the housing. This device can be mounted to a wall, or other supporting structures, using the four corner mounting holes or the top and bottom mounting holes.

Applications: Outdoor or Non-Heated Structures

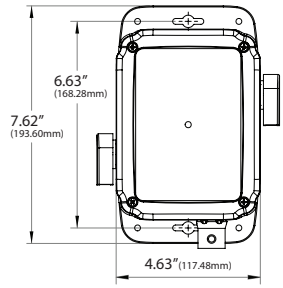
The ESENSE-OUTDOOR Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

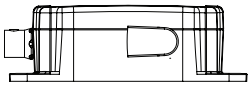
Supply Voltage:	24 VAC/VDC ±20%; 50/60Hz (Half-wave rectified)
Power Consumption:	Sensor: <1W | Heater: 10W | Maximum Total Power: 11W
Enclosure Heater:	24 VAC | Turns on @ 39ºF (4ºC) and below
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	-22ºF to 115ºF (-30ºC to 46ºC)
Operating RH:	0 - 95% RH Non-condensing
Warm-Up Time:	1 minute (@ full specs 15 minutes)
Accuracy[1]:	±30 ppm and ±3% of reading
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc/min flow rate, < 3 minutes diffusion time
Operating Environment:	Outdoor or Non-Heated Structures
Sensing Range:	0 to 2000 ppm
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or SADK Kit required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs:	**Standard:** Out 1: 0-10V for 0 to 2000 ppm | **Out 2:** 2-10V or 4-20mA for 0 to 2000 ppm
Storage:	-4 to 122ºF (-20 to 50ºC)
Enclosure:	IP65, Flammability Rating UL94V-0 | Poly Carbonate
Room Dimensions:	(H) 7.62" (193.55 mm) x (W) 4.63" (117.60 mm) x (D) 2.44" (61.98 mm)
Product Weight:	1.4 lbs (0.64 Kg)
Agency Approvals:	EMC Directive 2014/30/EC | RoHS Directive 2011/65/EU | RoHS 3 Directive 2015/863/EU

Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Changes can be made using the SADK Calibration Kit and UIP5 software | **Note [3]:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly. If the building is occupied 24 hrs/day, ABC must be turned off

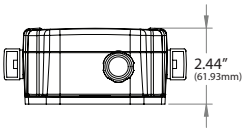
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: ESENSE-OUTDOOR -OR- 135028

Model #	Item #	Description
ESENSE-OUTDOOR	135028	ESENSE-OUTDOOR / CO2 Heated Outdoor Sensor

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration (IP54 only)
SADK	130502	SADK Calibration Kit
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

ASENSE-R (Standard)

ASENSE ROOM

CO2 Room Sensor with Relay Option

The ASENSE Room series monitors the carbon dioxide (CO2) levels in commercial, school, and office type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The ASENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ASENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to create a healthier indoor climate. This series features an analog temperature output (32 to 122°F) and come with combined output options of 0-10 VDC and 0 to 20 mA (4 to 20 mA and 2-10 VDC are field selectable via an onboard jumper). A relay option is available for this series as well. The UIP5 software and programming cable offer a configuration/test utility and provide access to the main features of the ASENSE series.

Applications: Commercial Office Buildings, Gymnasiums, Shopping Malls, Auditoriums, Theaters, Hospitals & Schools

The ASENSE Room Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

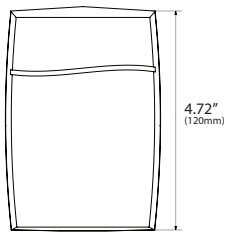
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified)
Power Consumption:	<1W
Wiring Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Environment:	Residential, commercial and industrial spaces
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 to 85% RH Non-condensing
Warm-Up Time:	<5 minutes (@ full specs 15 minutes)
Accuracy:	**CO2[1]:** ±30 ppm and ±3% of reading | **Temperature:** ±1.8ºF (1ºC)
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	<± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life [2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc/minutes flow rate, <3 minutes diffusion time
Sensing Range:	**CO2:** 0 to 2000 ppm | **Temperature:** -4 to 140ºF (-20 to 60ºC)
Extended CO2 Ranges:	Up to 10,000 ppm (factory set or programming cable required)
Extended Range Accuracy > 2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Mounting Height:	4-6' off the floor
Self-Diagnostics:	Complete function check, yellow LED; LCD error indication (display model only)
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration [3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs:	**Output 1 (CO2):** 0/2 to 10V, 0/4 to 20 mA, 0 to 2000 ppm **Output 2 (Temperature):** 0/2 to 10V, 0/4 to 20 mA, 32 to 122ºF (0 to 50ºC)
Relay (Optional):	**Output 3:** N.O. or N.C. rated 0.5A @ 125 VAC; 1A @ 24 VDC
Relay Trip Point:	1000 ppm (factory set)
Relay Deadband/Hysteresis:	100 ppm (factory set)
Relay Durability:	**Mechanical:** 5,000,000 operations minimum (at 36,000 operations/hr) **Electrical:** 100,000 operations minimum (under rated load, at 1,800 operations/hr)
Storage:	**Standard Versions:** -40 to 158ºF (-40 to 70ºC) | **LCD Versions:** -4 to 122ºF (-20 to 50ºC) 0 to 85% RH Non-condensing
Enclosure:	ABS, Flammability Rating UL94-HB
Product Dimensions:	**ASENSE-R & ASENSE-R-LCD:** (H) 5.12" (130 mm) x (W) 3.35" (85.1 mm) x (D) 1.18" (30 mm)
Product Weight:	**ASENSE-R:** 0.300 lbs (0.136 kg) | **ASENSE-R-LCD:** 0.314 lbs (0.142 kg)
Agency Approvals:	EMC Directive 2014/30/EC, RoHS Directive 2011/65/EU & RoHS 3 Directive 2015/863/EU

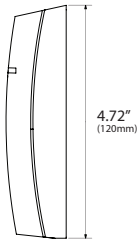
Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | **Note [3]:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hrs/day, ABC must be turned off | Changes can be made using TTL-232R-3V3 cable and UIP5 software

DIMENSIONAL DRAWING

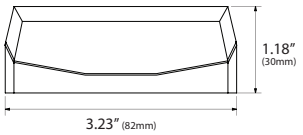
ASENSE Room (Standard)



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: ASENSE-R-REL -OR- 130529

Model #	Item #	Description
ASENSE-R	131189	CO2 Room, 0-10 VDC or 0-20 mA Output, 4-20mA or 2-10 VDC Field Selectable
ASENSE-R-REL	130529	CO2 Room, 0-10 VDC or 0-20 mA Output, Relay, 4-20mA or 2-10 VDC Field Selectable
ASENSE-R-LCD	131191	CO2 Room, with Display, 0-10 VDC or 0-20 mA Output, 4-20mA or 2-10 VDC Field Selectable
ASENSE-R-LCD-REL	130530	CO2 Room, with Display, 0-10 VDC or 0-20 mA Output, Relay, 4-20mA or 2-10 VDC Field Selectable

ACCESSORIES ORDERING

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
TTL-232R-3V3	134207	Programming Cable
UIP5	----	Free Software Download (Contact ACI)

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Note*: Contact ACI's Technical Support for custom calibration ranges

RoHS COMPLIANT 2002/95/EC

ASENSE DUCT

CO2 Duct Sensor with IP65 Rated Enclosure

The ASENSE Duct series monitors the carbon dioxide (CO2) levels in industrial, commercial, school, and office type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The ASENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ASENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to create a healthier indoor climate. This series features an analog temperature output (32 to 122°F) and come with combined output options of 0-10 VDC and 0 to 20 mA (4 to 20 mA and 2-10 VDC are field selectable via an onboard jumper) The relay output can directly control dampers and speed regulated fans. The UIP5 software and programming cable offer a configuration/test utility and provide access to the main features of the ASENSE series.

Applications: Commercial Office Buildings, Hospitals & Schools

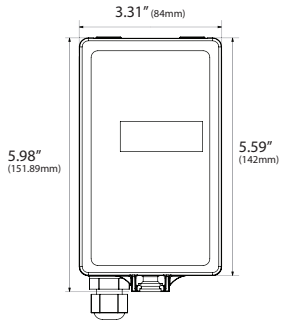
The ASENSE Duct Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com.

PRODUCT SPECIFICATIONS

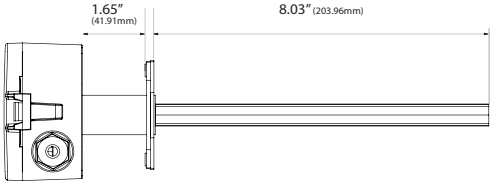
Supply Voltage:	24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified)
Power Consumption:	<1W
Wiring Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Environment:	Residential, commercial, and industrial spaces
Operating Temperature:	32°F to 122°F (0°C to 50°C)
Operating RH:	0 to 85% RH Non-condensing
Warm-Up Time:	<5 minutes (@ full specs 15 minutes)
Accuracy:	**CO2**[1]: ±30 ppm and ±3% of reading | **Temperature:** ±1.8°F (1°C)
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	<± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure | (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]**:**	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc / minimum flow rate, <3 minutes diffusion time
Sensing Range:	**CO2:** 0 to 2000 ppm | **Temperature:** -4 to 140°F (-20 to 60°C)
Extended CO2 Ranges:	2000 to 10,000 ppm (factory set or programming cable required)
Extended Range Accuracy >2,000 PPM:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Self-Diagnostics:	Complete function check, yellow LED; LCD error indication (display model only)
Display:	4 digits, 7 segments LCD with ppm indicator
Calibration[3]**:**	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs:	**Out 1 (CO2):** 0/2 to 10V, 0/4 to 20 mA, 0 to 2000 ppm **Out 2 (Temperature):** 0/2 to 10V, 0/4 to 20 mA, 32 to 122°F (0 to 50°C)
Relay:	**Out 3:** N.O. or N.C. rated 0.5A @ 125 VAC; 1A @ 24 VDC
Relay Trip Point[4]**:**	1000 ppm (factory set)
Relay Deadband/Hysteresis:	100 ppm (factory set)
Relay Durability:	**Mechanical:** 5,000,000 operations minimum (at 36,000 operations/hr) **Electrical:** 100,000 operations minimum (under rated load, at 1,800 operations/hr)
Storage:	**ASENSE-D-LCD:** -4 to 122°F (-20 to 50°C) 0 to 85% RH Non-condensing
Enclosure:	**Duct Box:** PC & ABS blend, Flammability Rating UL94V-0 **Cover:** Makrolon® 6555 plastic, Flammability Rating UL94V-0 **Pipe:** PC & ABS blend, Flammability Rating UL94V-0
Product Dimensions:	(H) 5.95" (151.9 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm)
Product Weight:	0.812 lbs (0.368 kg)
Agency Approvals:	CE, UKCA, RoHS

Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | Note 3: Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hrs/day, ABC must be turned off | Note4: Changes can be made using TTL-232R-3V3 cable and UIP5 software

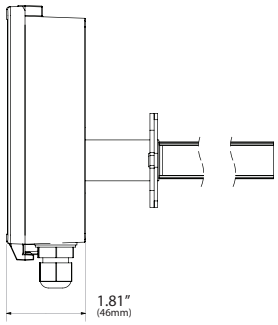
DIMENSIONAL DRAWING



Front View



Top View



Side View

STANDARD ORDERING

Model # Example: ASENSE-D-LCD -OR- 133507

Model #	Item #	Description
ASENSE-D-LCD-REL	130532	CO2, Duct Mount with Display, Relay, 0-10 VDC or 0-20 mA Output, 4-20 mA or 2-10 VDC Field Selectable

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
TTL-232R-3V3	134207	Programming Cable
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

ASENSE-GH-LCD

CO2 Sensor for Greenhouses / Indoor Agriculture

The ASENSE-GH is a device that is designed for monitoring carbon dioxide (CO2) and temperature in areas that have higher Carbon Dioxide levels such as greenhouses and breweries. It has a conformally coated PCB and filter equipped housing to protect against dust and high humidity. The ASENSE-GH-LCD uses State-of-the-art non-dispersive infrared (NDIR) technology and has a membrane covered sample chamber that gives a stable and reliable CO2 reading. There are three (3) outputs on the ASENSE-GH: Output 1 for CO2: 0/2-10V or 0/4-20 mA 0-2000 ppm, Output 2 temperature: 0/2-10V or 0/4-20 mA 0-50ºC, and Output 3 is a relay for fan control. An optional RS485 interface for Modbus communication is available.

Applications: Greenhouses, Grow Houses, Breweries, Indoor Agriculture, Mushroom Farms & Horticultural

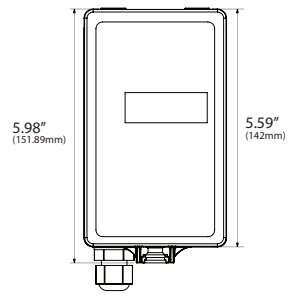
The ASENSE-GH-LCD Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

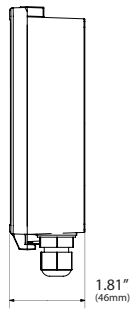
Supply Voltage:	24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified)
Power Consumption:	<3W Average
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 to 85% RH Non-condensing
Warm-Up Time:	< 1 minute (@ full specs 15 minutes)
Sensing Range; CO2 | Temperature:	0 to 2000 ppm | -4º to 140ºF (-20º to 50ºC)
Extended CO2 Ranges:	2000 to 10,000 ppm (factory set or programming cable required)
Accuracy; CO2 | Temperature:	±30 ppm ±3% of reading | ±1.8ºF (1ºC)
Extended Range Accuracy:	+/- 30 ppm and +/- 5% of reading
Annual Zero Drift:	<+/-10 ppm
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Non-dispersive infrared (NDIR) with EQC (Eternal Quality Coating)
Sensor Life [1]:	> 15 years
Diffusion Time (T1/e):	< 3 minutes
Coverage Area:	7500 sq. ft maximum
Mounting Height:	4-6′ off the floor
Display:	4 digits, 7 segments LCD with ppm / ºF
Status LED Indicators:	Yellow = Maintenance Support | Red = Closed Relay
Calibration:	Recommended annually
Outputs [2]:	**Out 1 (CO2):** 0/2-10V, 0/4-20 mA, 0-2000 ppm **Out 2 (Temp):** 0/2-10V, 0/4-20 mA, 32º to 122ºF / 0º to 50ºC **Out 3 Relay:** N.O.; 1A @ 50 VAC / 24 VDC
Protection:	PTC fuse (auto reset) on signal return M, short-circuit safe
Output Limits:	MIN & MAX limits may be individually set to all outputs Linear
OUT1 & OUT2:	0/2-10 VDC, ROUT < 100Ω, RLOAD > 5kΩ (0/1-5 VDC optional) 0/4-20 mA, RLOAD < 500Ω
D/A Resolution:	10 bits, 10 mV / 0.016 mA
D/A Conversion Accuracy:	Voltage mode: ± 2% of reading ± 50 mV current loop : ± 2% of reading ± 0.3 mA
Relay Trip Point [3]:	1000 ppm (factory set)
Relay Deadband / Hysteresis:	100 ppm (factory set)
Agency Approvals:	RoHS directive 2011/65/EU, EMC 2004/108/EC, 92/31/EEG including amendments by the CE-marking Directive 93/68/EEC
Storage:	-40º to 158ºF (-40º to 70ºC) Non-display, -4º to 122ºF (-20 to 50ºC) Display 0 to 85% RH Non-condensing
Enclosure:	Box; PC & ABS blend IP65 Rating, Flammability UL94V-0 Cover; Makrolon® 6555 plastic, Flammability rating UL94V-0
Product Dimensions:	(H) 5.95″ (151.9 mm) x (W) 3.33″ (84.6 mm) x (D) 1.85″ (47 mm)

Note [1]: In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded
Note [2]: Optional Modbus RS485 communication board available
Note [3]: Changes can be made using TTL-232R-3V3 cable and UIP5 software downloaded from Senseair

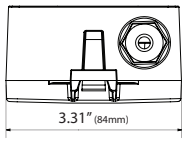
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: ASENSE-GH-LCD -OR- 144119

Model #	Item #	Description
ASENSE-GH-LCD	144119	ASENSE Greehouse, CO2, Temperature, Relay, With Display

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
TTL-232R-3V3	134207	Programming Cable
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

ASENSE IP54

CO2 Sensor with IP54 Rated Enclosure

The ASENSE Duct series monitors the carbon dioxide (CO2) levels in industrial, commercial, school, and office type environments. The concentration of CO2 is a strong indication of the overall indoor air quality. The ASENSE Series is based on a single beam non-dispersive infrared technology and is a cost-optimized solution for the climate control of buildings and other processes. In addition, ABC software eliminates the need for manual calibration. The ASENSE Series measures the CO2 concentration in the ambient air up to 2,000 ppm and converts the data into an analog output. This data can be used in conjunction with a Building Automation or Demand Control Ventilation System to create a healthier indoor climate. This series features an analog temperature output (32 to 122°F) and come with combined output options of 0-10 VDC and 0 to 20 mA (4 to 20 mA and 2-10 VDC are field selectable via an onboard jumper) or 0-5 VDC for "-5" versions. A relay option is available for this series as well. The UIP5 software and programming cable offer a configuration/test utility and provide access to the main features of the ASENSE series.

Applications: Commercial Office Buildings, Hospitals & Schools

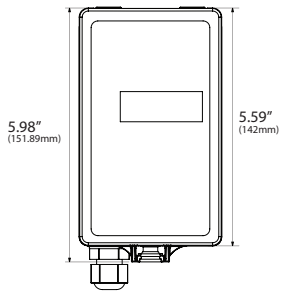
The ASENSE IP54 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

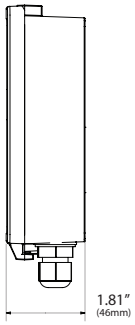
Supply Voltage:	24 VAC/VDC ±20%; 50/60 Hz, 10.5 to 40 VDC maximum (Half-wave rectified)
Power Consumption:	<1W
Wiring Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Environment:	Residential, commercial, and industrial spaces
Operating Temperature:	32ºF to 122ºF (0ºC to 50ºC)
Operating RH:	0 to 85% RH Non-condensing
Warm-Up Time:	<5 minutes (@ full specs 15 minutes)
Accuracy:	**CO2[1]:** ±30 ppm ±3% of reading | **Temperature**: ±1.8ºF (1ºC)
Repeatability:	±20 ppm ±1% of measured value
Annual Zero Drift:	<± 0.3% of measurement range
Operating Pressure:	+1.6% per 0.145 psi (1 kPa) deviation from normal pressure | (1 Atmosphere = 14.7 psi (1.013 KPa))
Sensing Method:	Single beam Non-dispersive Infrared (NDIR)
Sensor Life[2]:	>15 years
Response Time (T1/e):	<10 seconds @ 30 cc / minimum flow rate, <3 minutes diffusion time
Sensing Range:	**CO2:** 0 to 2000 ppm | **Temperature:** -4 to 140ºF (-20 to 60ºC)
Extended CO2 Ranges:	2000 to 10,000 ppm (factory set or programming cable required)
Extended Range Accuracy:	+/- 30 ppm and +/- 5% of reading
Coverage Area:	7500 sq. ft. maximum
Self-Diagnostics:	Complete function check, yellow LED; LCD error indication (display model only)
Display (Optional):	4 digits, 7 segments LCD with ppm indicator
Calibration[3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Outputs:	**Out 1 (CO2):** 0/2 to 10V, 0/4 to 20 mA, 0 to 2000 ppm **Out 2 (Temperature):** 0/2 to 10V, 0/4 to 20 mA, 32 to 122ºF (0 to 50ºC) **"5" Version:** 0-5 VAC for 0-2000 ppm
Relay (Optional):	**Out 3:** N.O. or N.C. rated 0.5A @ 125 VAC; 1A @ 24 VDC
Relay Trip Point[4]:	1000 ppm (factory set)
Relay Deadband/Hysteresis:	100 ppm (factory set)
Relay Durability:	**Mechanical:** 5,000,000 operations minimum (at 36,000 operations/hr) **Electrical:** 100,000 operations minimum (under rated load, at 1,800 operations/hr)
Storage:	**ASENSE-IP54-LCD-REL:** -4 to 122ºF (-20 to 50ºC) 0 to 85% RH Non-condensing
Enclosure:	**Duct Box:** PC & ABS blend, Flammability Rating UL94V-0 **Cover:** Makrolon® 6555 plastic, Flammability Rating UL94V-0
Product Dimensions:	(H) 5.95" (151.9 mm) x (W) 3.33" (84.6 mm) x (D) 1.85" (47 mm)
Product Weight:	0.812 lbs (0.368 kg)
Agency Approvals:	EMC Directive 2014/30/EC, RoHS Directive 2011/65/EU & RoHS 3 Directive 2015/863/EU

Note [1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continuous operations | **Note [2]:** In normal Indoor Air Quality (IAQ) applications | Corrosive environments are excluded | **Note [3]:** Building CO2 levels must drop to 400 ppm some time during the week for ABC to work properly | If the building is occupied 24 hrs/day, ABC must be turned off | **Note[4]:** Changes can be made using TTL-232R-3V3 cable and UIP5 software

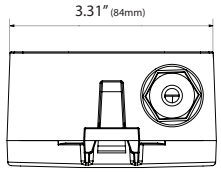
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

Model # Example: ASENSE-1P54-5 -OR- 132732

Model #	Item #	Description
ASENSE-IP54-LCD-REL	134678	ASENSE CO2 IP54 with LCD, Relay

ACCESSORIES ORDERING

Model # Example: A/CUSTOM CAL GAS -OR- 140970

Model #	Item #	Description
A/CUSTOM CAL GAS*	140970	Custom Calibration
TTL-232R-3V3	134207	Programming Cable
UIP5	----	Free Software Download (Contact ACI)

Note*: Contact ACI's Technical Support for custom calibration ranges

TSENSE

CO2 Sensor with Temperature, RH & Display

The TSENSE is an advanced and versatile 3 in 1 transmitter designed for installation in air conditioned zones. It measures carbon dioxide, temperature and relative humidity and features analog and relay outputs or communication protocols of BACnet™ or Modbus, depending on the application specifications. The TSENSE-LCD features a touch screen menu and is suitable for use in numerous energy efficiency strategies for commercial office buildings, hospitals, hotels, schools and other facilities. The TSENSE incorporates a NDIR (non-dispersive infrared) technology and complies with ASHRAE 189.1 allowing for a comfortable and healthy environment for the occupants. The TSENSE-LCD can be configured through the touch screen or with the TTI-232R-3V3-AJ programming cable and UIP5 software. **The TSENSE without LCD must use the TTL-232R-3V3-AJ programming cable and UIP5 software to change settings or for BACnet or Modbus communication.**

Applications: Commercial Office Buildings, Hospitals & Schools

The TSENSE Series Gas Transmitters are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

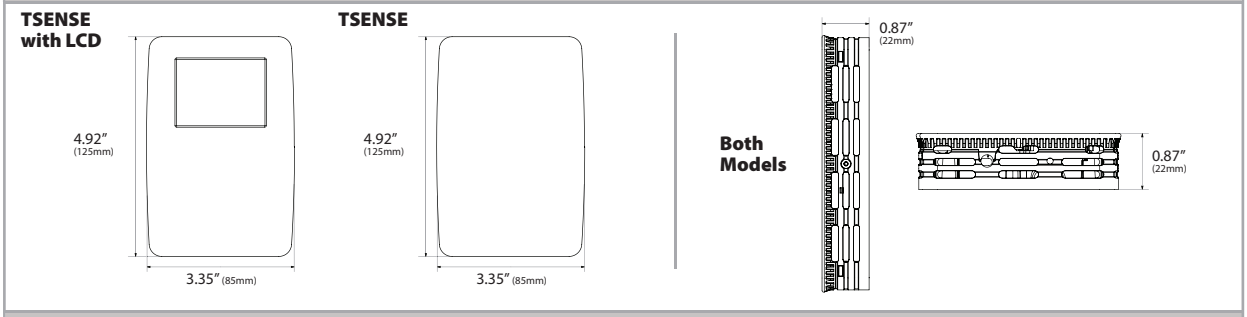
Supply Voltage:	12 VDC, 24 VAC/VDC, ±20%; (Half-wave rectified) (50-60 Hz)
Power Consumption:	<0.35W average non-display, <0.6W display version, <2W maximum
Electrical Connections:	0.00232 in^2 (1.5 mm^2) screw terminals
Operating Environment:	Residential and Commercial spaces
Operating Temperature:	32°F to 122°F (0°C to 50°C)
Operating RH:	0-95% RH Non-condensing
Warm-Up Time:	1 minute (@ full specs 15 mins)
Coverage Area:	7500 sq. ft. maximum
Preassure Dependence:	±1.6% per 0.145 psi (1 kPa) deviation from normal pressure (1 Atmospher = 14.7 psi (1.013 KPa))
Maintenance Interval:	Maintenance free
Mounting Height:	4-6' off the floor
Self-Diagnostics:	Complete function check
Display (Optional):	Touch display, configurable color LCD with CO2 (PPM), Temperature (°F or °C), and Humidity (%RH)
Storage:	-22°F to 158°F (-30°F to 70°F)
Analog Output:	**Out 1 (CO2):** 0 to 10V, 0 to 2000 ppm **Out 2 (Temperature):** 0-10V, 32°F to 122°F (0°C to 50°C) **Out 3 (RH):** 0 to 10V, 0 to 100% RH
Analog Output Signal:	**Voltage Output:** 0 to 10V, R out <100Ω, **Load:** >5KΩ
Analog Output Resolution:	10-bits, 10mV/steps, , 0.1% steps of full ppm/°C/%RH range
CO2 Accuracy[1]:	±50 ppm (@ 1000 ppm, 63°F to 82°F (17°C to 28°C), and Humidity (%RH) Typical full range ±30 ppm ±3% of reading (CO2)
CO2 Sensing Method:	Single bean non-dispersive Infrared (NDIR)
CO2 Sensor Life[2]:	> 15 years (typical)
CO2 Sensor Response Time (T1/e):	<3 minute diffusion time
CO2 Sensing Range[3]:	0 to 2000 ppm (CO2), optional 0 to 3000 ppm
Extended Range Accuracy:	Typically < (+/- 30 ppm +/- 20% of measured value)
CO2 Repeatability:	±20 ppm ±1% of measured value
CO2 Annual Zero Drift:	±0.3% of measurement range
CO2 Calibration [3]:	Senseair ABC algorithm (Automatic Baseline Correction)
Temperature Range:	32°F to 122°F (0°C to 50°C)
Temperature Accuracy:	±0.9°F @ 63 to 82°F (±0.5°C @ 17 to 28°C), ±1.8°F @ 32 to 122°F (±1.0°C @ 0 to 50°C)
Temperature Repeatability:	±0.45°F @ 63 to 82°F (±0.25°C @ 17 to 28°C)
Temperature Response Time:	<6 minutes (Aire velocity of 0.15m/s)
RH Sensor:	Capacitive
RH Measurement Range:	0-100%
RH Accuracy:	±5% @ 20 to 80% RH
RH Hysteresis:	±1% @ 20 to 80% RH
RH Annual Drift:	<±0.5% RH
RH Repeatability:	±0.25% RH @ 63 to 82°F (±0.25% RH @ 17 to 28°C)
RH Response Time:	<6 minutes (Air velocity of 0.15m/s)

PRODUCT SPECIFICATIONS CONTINUED

Relay Trip Point (CO2):	1000 ppm (factory set)
Relay Input Source:	CO2 (Default) / Temp/RH Configurable via Touchscreen or UIP5 Software
Relay Deadband / Hysteresis:	100 ppm (factory set)
Relay Type:	Form C, SPDT 1A @ 50 VAC / 24 VDC
Relay Durability:	**Mechanical:** 100,000,000 operations minimum (@ 36,000 operations/hour)t **Electrical:** 100,000 operations minimum for AC (@ 1,800 operations/hour with rated load) 100,000 operations minimum for DC (@ 1,200 operations/hour with rated load)
Communication Protocol:	Modbus RTU or BACnet MS/TP
Baud Rates:	9600, 19200, 38400, 57600, 76800, 115200
BACnet MAC Address:	0 to 127 (Default 104)
Enclosure:	Bayblend FR3000 (PC & ABS blend), Flammability rating UL 94V-0
Enclosure Dimensions:	(H) 4.92" (125 mm) x (W) 3.35" (85 mm) x (D) 0.87" (22 mm)
Product Weight:	**TSENSE:** 0.361 lbs (0.166kg) | **TSENSE-LCD:** 0.414 lbs (0.188kg)
Agency Approvals:	EMC directive 2004/108/EC, Rohs directive 2011/65/EU, complies with ASHRAE 189.1, Compliant with CA Bill 841 requirements

Note[1]: Accuracy is defined after minimum three (3) ABC periods (1 period = 8 days) of continous operations | **Note[2]:** In normal indoor air quality (IAQ) applications | Corrosive environments are excluded | **Note 3:** Building CO2 levels must drop to 400 ppm same time during the week for ABC to work properly | If the building is occupied 24 hours / day, ABC must be turned off | Changes can be made using TTL-232R-3V3 cable and UIP5 software

DIMENSIONAL DRAWING



Front ViewS **ide, Top Views**

STANDARD ORDERING

Model #	Item #	Description
TSENSE-LCD	135458	TSENSE Transmitter with LCD
TSENSE*	135459	TSENSE Transmitter, Standard (No LCD)

Note*: Must order TTL-232R-3v3-AJ Programming Cable for BACnet ™ or MODBUS communication settings

ACCESSORIES ORDERING

Model #	Item #	Description
A/Custom CAL Gas	140970	Custom Calibration
TTL-232R-3V3-AJ	137011	USB to Serial Programming Cable, 3.5 mm Audio Jack
UIP5	----	Free Software Download (Contact ACI)

Room

Duct

PM
Particulate Matter

"Particulate matter" (PM) is the general term used to describe solid particles and liquid droplets found in the air. The PM series of transmitters are designed to measure Particulates that include smoke, smog, bacteria, ¬fine dust, liquid droplets, and report the total particle concentration of the monitored environment. ACI's PM series transmitters utilize a laser particulate matter sensor, that is offered in two different measuring ranges. The PM series transmitters operate on a laser scattering principle, utilizing a fan sampling method.

The PM2.5 is designed to detect Particles less than 2.5 µm in diameter. The PM10 is designed to detect Particles less than 10 µm in diameter.

The sensor has good long-term stability with an accuracy 10% reading or 10 µg/m3. The room unit features field selectable outputs, 4-20 mA, 0-10 VDC, and Modbus RTU (RS485), relay, and display.

The sensor has two jumper selectable working modes for monitoring PM. The Normal Mode monitors the environment continuously and Auto Mode reduces the measuring time to extend service life. The sensor is sent default in Auto Mode.

Applications: Monitoring air quality, Air purifiers, WELL Building Standard

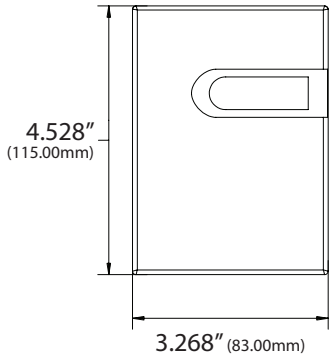
The PM Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

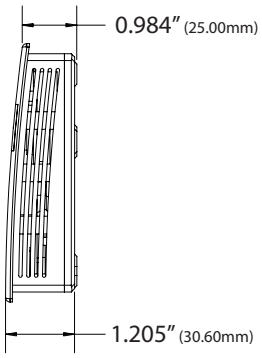
Supply Voltage:	16-28VAC/16-35VDC (Reverse Polarity Protection)
Supply Current:	**LCD:** 50mA **| Non-LCD:** 33mA
Sensor Type:	Laser particulate matter sensor
Detected Particle Size:	PM2.5: 0.3 ~ 2.5 µm **|** PM10: 0.3 ~ 10 µm
Sensing Range:	PM2.5: 0 ~ 500 µ g/m^3 **|** PM10: 0 ~ 600 µg/m^3
Accuracy:	+/- 10 µ g/m^3 @ 0 ~ 100 µ g/m^3, +/- 10% reading @ 100 ~ 500/600 µg/m^3 @ 25°C/50%RH
Resolution:	1 µg/m^3
Output/Load Resistance:	4-20 mA: 500 Ohms maximum (Default) **|** 0-10 VDC: 2K Ohms minimum
Communication Protocol:	Modbus RTY; EIA RS-485
Relay (Room with LCD Only):	1 SPDT, N.O. rated 3A @ 30VDC, 3A @ 250VAC
Relay Trip Point:	100 (Factory set), user adjustable
Sampling Method:	Fan
Response Time:	In continuous service mode, sample time <1s, response time <10s
Warm Up Time:	15 minutes
Service Life:	MTBF more than 3 years in continuous service mode, service life up to 8-10 years in auto (intermittent) service mode
Connection/Wire Size:	Screw Terminal Blocks/16 AWG (1.31 mm^2) to 22 AWG (0.33 mm^2)
Terminal Block Torque Rating:	0.45 lb-in (0.5 Nm) nominal
Operating Temperature Range:	32 to 122°F (0 to 50°C)
Storage Temperature Range:	-30 to 70°F (-34 to 21°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Enclosure Protection:	IP30 (Room) **|** IP65 (Duct) **|** IP30 (Probe)
Enclosure Material/UL Flammability:	ABS Plastic/UL94V-0
Weight:	Room: ~200g **|** Duct: ~270g
Approval:	CE

DIMENSIONAL DRAWING

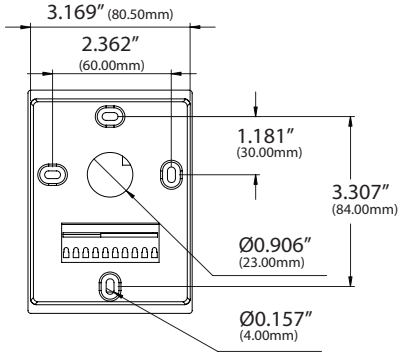
Room



Front View

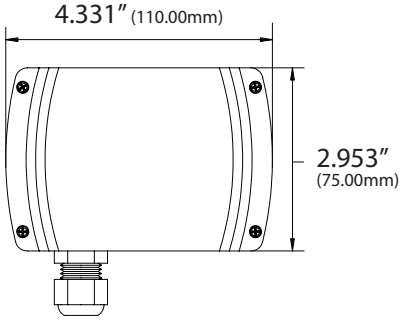


Side View

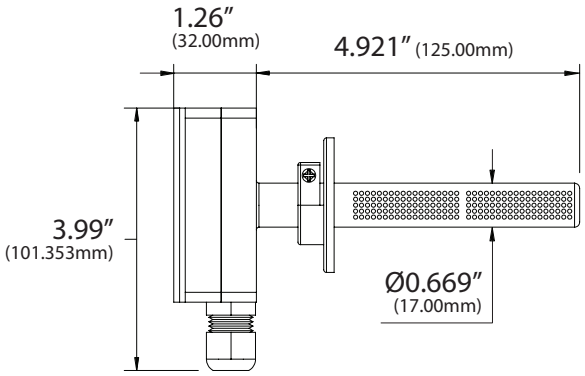


Back View

Duct



Front View



Side View

STANDARD ORDERING

Configuration	Item #	Detected Partical Size	Description
PM-R	147638	0.3 ~ 2.5 µm	Room mount, PM2.5, 4-20mA, 0-10V, Modbus RS-485
PM-R-LCD	147639	0.3 ~ 2.5 µm	Room mount, PM2.5, Relay, LCD, Keypad, 4-20mA, 0-10V, Modbus RS-485
PM-D	147640	0.3 ~ 2.5 µm	Duct mount, PM2.5, 4-20mA, 0-10V, Modbus RS-485
PM10-D	148522	0.3 ~ 10 µm	Duct mount, PM10, 4-20mA, 0-10V, Modbus RS-485

Room

Duct

VOC

Volatile Organic Compound

VOCs are emitted as gases from certain solids or liquids, such as building materials and furnishings, office equipment, cleansers and disinfectants, etc. These types of contaminants directly affect indoor air quality and occupant comfort. Measuring and communicating VOC levels back to the BAS will help users adjust ventilation to maintain proper IAQ levels. These units utilize a high-performance metal oxide sensor and will output TVOC levels in a range from 0-1000 ppb. All units come equipped with both analog and RS485 Modbus RTU outputs easily interface into existing BAS systems.

Applications: VOC Measurements for IAQ (indoor air quality)

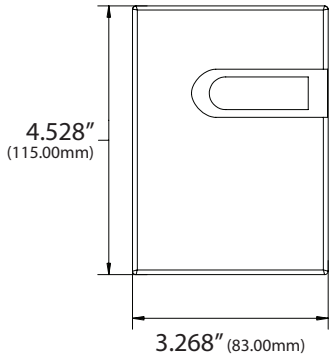
TheVOC Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

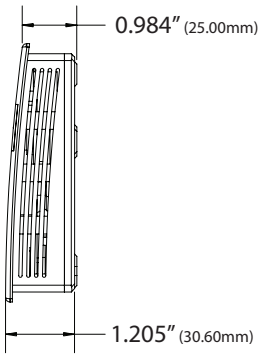
Supply Voltage:	16-28VAC/16-35VDC (Reverse Polarity Protection)
Supply Current:	**LCD:** 50mA **|** **Non-LCD:** 33mA
Sensor Type:	Metal Oxide Semiconductor
Sensing Range:	0-1000 ppb TVOC (Isobutene)
Output/Load Resistance:	4-20 mA: 500 Ohms maximum (Default) **|** 0-10 VDC: 2K Ohms minimum
Communication Protocol:	Modbus RTU; EIA RS-485
Relay:	1 SPDT, N.O. rated 3A @ 30VDC, 3A @ 250VAC
Relay Trip Point:	230 ppb
Response Time:	<5 seconds
Warm Up Time:	15 minutes
Connection/Wire Size:	Screw Terminal Blocks/16 AWG (1.31 mm^2) to 22 AWG (0.33 mm^2)
Terminal Block Torque Rating:	0.45 lb-in (0.5 Nm) nominal
Operating Temperature Range:	32 to 122°F (0 to 50°C)
Storage Temperature Range:	-4 to 140°F (-20 to 60°C)
Operating Humidity Range:	10 to 95% RH, non-condensing
Enclosure Protection:	IP30 (Room) **|** IP65 (Duct) **|** IP30 (Probe)
Enclosure Material/UL Flammability:	ABS Plastic/UL94V-0
Weight:	Room: ~190g **|** Duct: ~270g
Approval:	CE

DIMENSIONAL DRAWING

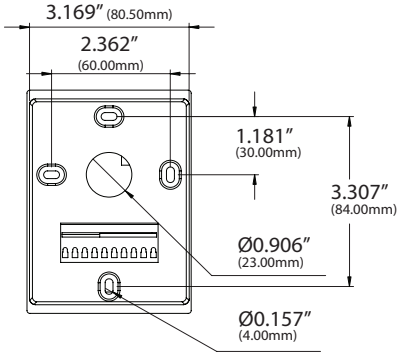
Room



Front View

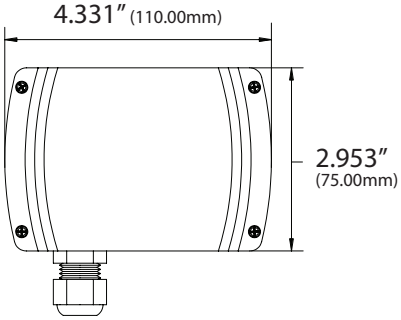


Side View

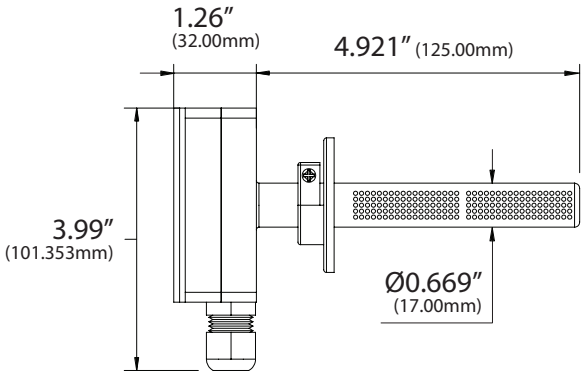


Back View

Duct



Front View



Side View

STANDARD ORDERING

Configuration	Item #	Description
VOC-R	147635	Room Mount, 4-20 mA and 0-10 VDC, Modbus RS-485
VOC-R-LCD	147636	Room Mount, Relay, LCD, 4-20 mA and 0-10 VDC, Modbus RS-485
VOC-D	147637	Duct Mount, 4-20 mA and 0-10 VDC, Modbus RS-485

Q8/B8 SERIES

Combustible Gas Transmitter

The Q8/B8 Series of Explosion Proof Gas Detectors are used in applications that require a rugged enclosure that meets the Class 1 Division 1 requirements. Each unit comes standard with an integral clock, digital display of concentration, relay status, STEL, TWA, and peak daily values of the gas being detected. A three color backlight will flash depending on the level of alarm for operator safety. Setup and calibration is accomplished through non-intrusive magnetic switches that allow for programming of all parameters. A remote sensor option is available for toxic and combustible gases and should be used in applications where the main unit can be mounted at 3 to 6 feet off of the floor with the remote sensor being at the ceiling or floor levels to monitor the gas concentrations depending on the gas being monitored. Sensor types include electrochemical and catalytic bead sensors to meet the demand and performance requirements for particular industries. The Q8 uses Optomux and Modbus RS-485 protocol, 4-20 mA, 1-5 or 2-10 VDC while the B8 uses BACnet™ MSTP(RS485) protocol to communicate directly with a BAS. The Q8/B8 also has three (3) SPDT Form 1C relays that are user adjustable. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. The Q8/B8-GENL can be ordered to monitor specific combustible gases such as Gasoline, Ethanol, Diesel or Jet fuel. Contact ACI for specific gases.

Applications: Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Leak Detection, Parking Garages, Auto/Truck Maintenance Facilities, Oil and Gas Industry

The Q8/B8 Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

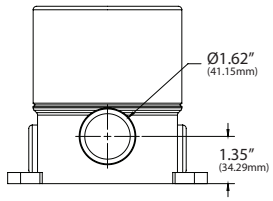
Supply Voltage [Q8]:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal (+15 to 24 VAC, AC Power must not be grounded)
Supply Voltage [B8]:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC (+15 to 24 VAC, AC power can be grounded or non-grounded)
Fuse Protection:	0.750A Polyswitch; (Automatically resets after fault is cleared & power to circuit is removed)
Supply Current | Power Consumption:	0.3A maximum | 8.4 VA
Analog Output Signals (Q8 Only):	4-20 mA, 1-5 VDC or 2-10 VDC (4-Wire Power, Prower Ground, Output Signal, Output Signal Common)
Load Impedance:	**4-20 mA Output:** 600 Ohms maximum | **1-5 VDC or 2-10 VDC:** 3000 Ohms minimum
Communication Protocols:	**Q8 Communication Protocols:** RS-485 Modbus RT/OptoMux (Proprietary QEL Communication) **B8 Communication Protocols:** RS-485 Serial BACnet™ MS/TP (Master and Slave; Default: Master)
Q8 Communication Baud Rates:	1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800)
B8 Communication Baud Rates:	9600, 19200, 38400, 76800 Bits/Second (Default: 38400)
Factory Calibration Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Display:	LCD Graphic Display with backlight (Displays TWA, STEL and PEAK Daily Value)
Keypad:	Three (Non-Intrusive) Magnetic Switches
Relays | Contact Type | Relay Contact Ratings:	Three, SPDT (Form 1C) Dry Contact rated 1.0A max. @ 30 VDC or 0.3A max. @ 125 VAC (Resistive Load)
Status LEDs:	Two Green LED's (Tx/Rx Communication Status), Three Red LED's (Relays 1, 2 & 3 Status)
Factory Calibrated Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Sensor Warm-Up Time:	24 Hours (Allow 24 hours before calibrating sensor after initial installation)
Sensor Type:	See Sensor Technology Type in Table on back of Product Data Sheet
Gas Type:	Combustible and Toxic Gases/Oxygen Sensor
Life Expectancy:	**Electrochemical (Toxic):** 2 to 3 Years, typical **Oxygen/Hydrogen (Toxic):** 18 months, typical **Catalytic (Combustible):** 3 to 5 years, typical
Unit Shelf Life:	**Electrochemical (Toxic):** 6 Months from date of purchase (Must be installed and operational) **Catalytic (Combustible):** 1 Year from date of purchase (Must be installed and operational)
Replacement Sensor:	See User's Manual or Contact ACI
Recommended Maintenance:	**Catalytic (Combustible):** Accuracy & Bump test every 3 months or as required by Code **Electrochemical (Toxic):** Accuracy & Bump test every 6 months or as required by Code **Oxygen/Hydrogen (Toxic):** Calibrate every 3 months
Enclosure Specifications (Type, Material Type, Flammability, NEMA/IP Rating, Explosion Proof):	Industrial Connection Head; Cast Aluminum Epoxy Coated NEMA 4X (IP66), Division 1 Division 2, ANSI/ISA 12.22.01 Class I, Zone 1, AEx d II C, IP66 Zone 1 CSA E60079-1 Ex d II C, Class I, Zone I, IP 66 CSA C22.2 No. 30 Class I, Groups A, B, C, D; Class II Groups E, F, G; Class III

PRODUCT SPECIFICATIONS

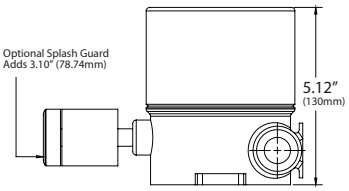
Conduit Connection:	Two 3/4" NPT Threaded Openings
Operating Temperature | Humidity:	See Sensor Selection & Specification Table on back of data sheet | 5 to 95% RH, non-condensing
Operating Atmospheric Pressure[1]:	14.696 psi (1.0132 bar) +/- 10%
Recommended Storage Temperature | Humidity:	32 to 68°F (0 to 20°C) | 5 to 95% RH, non-condensing
Wiring Connections | Wire Size:	Depluggable Screw Terminal Blocks | 16 to 24 AWG (0.51 to 1.30 mm) Shielded Twisted Pair
Communication Cable:	Belden 9841 or Equivalent, 120 Ohms Input Impedance
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Coverage Area | Mounting Height:	See Gas Sensor Selection & Specification Table on back of data sheet
Approvals:	RoHS, CSA-Class 4828-02 inspected to C22.2 No. 30 and No. 142 (CSA File #: 088890_0_000)
Product Weight:	4.35 lbs. (1.973 kg)
Product Dimensions (L x W x H):	7.48" (190 mm) x 5.71" (145 mm) x 5.12" (130 mm)

Note[1]: When installed @ >3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

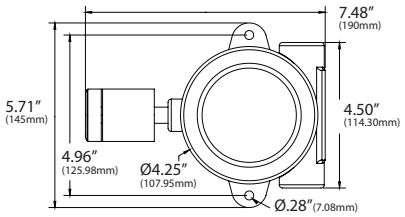
DIMENSIONAL DRAWING



Front View



Side View



Top View

SENSOR SELECTION AND SPECIFICATION

Gas Type	Gas Span Code	Combustible	Toxic	100% LEL[1] in % By Vol.	Measurment Range	Operating Temp °F (°C)	Square Feet ft² (m²)	Radius ft (m)	Mounting Height
Acetone	CH3CO-100L	•		2.6%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Ammonia	NH3-100P		•	N/A	0-100 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Ammonia	NH3-1000P		•	N/A	0-1000 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Arsine	ASH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Benzene	C6H6-100L	•		1.3%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Iso-Butane	C4H10-100L	•		1.8%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Butanol, n-Butane	BUTAN-100L	•		1.9%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Carbon Monoxide	CO-250P		•	N/A	0-250 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Chlorine	CL2-5P		•	N/A	0-5 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Chlorine Dioxide	CLO2-2P		•	N/A	0-2 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Diborane	B2H6-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene	C2H4-100L	•		2.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene Oxide	ETO-20P		•	N/A	0-20 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Germane	GEH4-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen	H2-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-2000P		•	N/A	0-2000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-100L	•		4.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen Bromide	HBR-30P		•	N/A	0-30 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Chloride	HCL-30P		•	N/A	0-30 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Cyanide	HCN-50P		•	N/A	0-50 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Sulphide	H2S-25P		•	N/A	0-25 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Sulphide	H2S-100P		•	N/A	0-100 PPM	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Methane	CH4-100L	•		5.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Methanol	CH3OH-100L	•		6.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Nitric Oxide	NO-100P		•	N/A	0-100 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Nitrogen Dioxide	NO2-10P		•	N/A	0-10 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Oxygen[3]	O2-25V		•	N/A	0-25% by Vol	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Ozone	O3-1P		•	N/A	0-1 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	High[2]
Iso-Pentane	C5H12-100L	•		1.4%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-5P		•	N/A	0-5 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Propane	C3H8-100L	•		2.1%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Silane	SiH4-50P		•	N/A	0-50 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Sulpher Dioxide	SO2-6P		•	N/A	0-6 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Combustibles[1]	GENL-100L	•		Specify Gas	0-100% LEL	-40 to 122 (-40 to 50)	5000 (464.5)	40 (12.2)	Gas Dependent
Acetaldehyde, Benzene, Carbon Disulfide, Dioxane, Ethane, Ethanol, Ethylbenze, Gasoline, Heptane, Hexane, Ipa, Jet Fuel, Kerosene, Naphtha, Styrene, Toluene, Voc's, Xylenes, Acetylene, Diesel, Pentane, Ethyl Acetate, Propylene									

Note 1: Lower Explosive Limit (LEL) | **Note 2:** Low = 0.5 to 1.5' (0.15 to 0.46m) above floor | Mid = 4.0 to 6.0' (1.20 to 1.83m) above floor | High = 0.5 to 1.5' (0.15 to 0.46m) below ceiling | **Note 3:** Oxygen sensors monitor oxygen depletion caused by numerous gases including: Nitrous Oxide, Helium, Nitrogen, Sulfur hexafluoride, Argon, Xenon, Neon.

CUSTOM ORDERING

Model # Example: B8 (A.) | CO-250P (B.) | O (C.) | X (D.) | (E.)

		MODEL #
A. Sensor Series *Select One (1)*	**Q8 =** Toxic/Combustible Gas Transmitter Series with Analog/Relay/Communicating Output Signals and Display **B8 =** Toxic/Combustible MS/TP BACnet™ Gas Detection Transmitter with Relays and LCD Display	
B. Gas Span Code	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table**	
C. Enclosure *Select One (1)*	**O =** Standard Wall Mount Enclosure **| R =** Remote Mount Sensor	
D. Revision *No Selection Required*	**X =** Factory Provided ⟶	**X**
E. For GENL Sensors	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table** (See Combustibles)	

ACCESSORIES ORDERING

Model #	Item #	Description
GAS CAL KIT	148426	Cal Kit includes Carry Case, 0.5lpm regulator, C10 to CGA-600 adapter and tubing
79030-103	126566	Q8 Combustible Calibration Adapter
6395-0003	126254	Q8 Toxic calibration Adapter/Splash Guard
28030-012-000	150947	Q8 Combustible Splash Guard

Note: See GAS CAL KIT Data Sheet if required

ACCESSORIES ORDERING | HORN STROBE

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500C	150028	Streamline Horn and Strobe (Clear)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

QTS-1710 SERIES

Combustible Gas Transmitter

The QTS-1710 Series utilizes a standard pellistor bead technology for the measurement of combustible gases. The sensor is resistant to poisoning substances such as Silicones, Sulphur and Chlorinated compounds. The Sensor is mounted to an explosion-proof housing while the transmitter provides a 3-wire, linear 4 to 20 mA output signal that is proportional to the LEL (Lower Explosive Limit) of the calibrated combustible gas. Test jacks are provided to monitor the transmitter signal without having to interrupt the output signal and Zero and Span adjustments allow for field calibration. Calibration and bump testing should be completed every three months in all combustible or explosive atmospheres. Calibration gases and 0.5 liter/minute gas regulators are not available through ACI. These should be purchased through your local gas supply company or companies such as Portagas® (Praxair®, Inc.) or Mesa Specialty Gases®. See the Q8 Combustible and Toxic Gas transmitter product data sheet for all applications that require a local display, remote sensor and a wider range of gases and output options. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Leak Detection, Parking Garages, Auto/Truck Maintenance Facilities

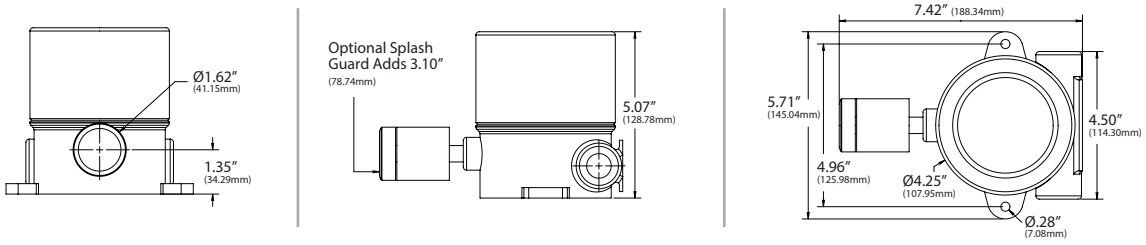
The QTS-1710 Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage | Protection:	12 to 30 VDC | 0.5A Socketed Pico Fuse
Supply Current | Power Consumption:	125 mA maximum (80 mA, typical) | 3.75 Watts maximum
Maximum Load (@ 24 VDC):	700 Ohms (500 Ohms @ 20 VDC and 200 Ohms @ 12 VDC)
Output Signal:	4-20 mA (3-Wire; Power, Gnd/Com, Signal)
Factory Set Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Accuracy | Repeatability:	+/- 1% LEL Methane | +/- 1% LEL Methane
Zero Drift:	< 2% of Range / Month at 68ºF (20ºC)
Response Time (T90):	< 30 Seconds, typical (< 10 seconds for 50% Full Scale Step Change)
Sensor Warm Up Time	24 Hours (Allow 24 hours before calibrating sensor after initial installation)
Sensor Type:	Dual Element Poison Resistant Catalytic Pellistor Bead
Sensor Gas Types:	Hydrocarbon Combustible Gases
Sensor Life Expectancy:	3 to 5 years, typical
Unit Shelf Life:	6 Months from date of purchase (Must be installed and operational)
Replacement Sensor:	Contact ACI
Recommended Maintenance:	Accuracy & Bump test every 3 months or as required by Code (Replace sensor as needed)
Enclosure Specifications (Type, Material Type, Flammability, NEMA/IP Rating, Explosion Proof):	Industrial Connection Head; Cast Aluminum Epoxy Coated; NEMA 4X (IP66) Weatherproof Rating Type 7 & 9 Explosion Proof Class 1 Div. 1, Groups B, C, D also 316 SS Sensor Housing Group A Rated; CSA, FM (Factory Mutual), EX (Explosion Proof), UL listed
Operating Temperature:	-40 to 122ºF (-40 to 50ºC)
Operating Humidity:	0 to 99% RH, non-condensing
Operating Atmospheric Pressure [1]:	14.696 psi (1.0132 bar) +/- 10%
Recommended Storage Temperature/Humidity:	32 to 68ºF (0 to 20ºC) | 15 to 90% RH, Non-Condensing
Wiring Connections | Wire Size:	Screw Terminal Blocks | 16 to 24 AWG (0.51 to 1.30 mm) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Coverage Area | Mounting Height:	See Gas Sensor Selection & Specification Table on back of data sheet
Approvals:	RoHS, CSA-4828-02 inspected to C22.2 No. 30 and C22.2 No. 142 (CSA File #: 088890 0 000)
Product Weight:	5.00 lbs (2.27 kg)
Product Dimensions (L x W x H):	**Wall Mount Version:** 10.70" (271.78 mm) x 5.71" (145.04 mm) x 4.25" (107.95 mm) **Duct Mount Version**: 7.50" (190.50 mm) x 5.71" (145.04 mm) x 7.50" (190.50 mm)

Note[1]: When installed @ > 3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

SENSOR SELECTION AND SPECIFICATION

COVERAGE AREA

Gas Type	Symbol	100% LEL[1] In % By Volume	Measurement Range	Square Footage	Radius	Mounting Height
Acetylene	C2H2	2.5 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Mid **
Benzene	C6H6	1.2 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Cyclohexane	C6H12	1.3 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Ethane	C2H6	3.0 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Ethanol	C2H6O	3.3 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Gasoline	----	1.3 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Hexane	C6H14	1.1 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Hydrogen	H2	4.0 %	0 to 100% LEL	7500 ft² (696.7 m²)	49 ft (14.9 m)	High **
Iso-Octane	C8H18	0.79 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Iso-Propyl Alcohol	C3H8O	2.0 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
n-Butane	C4H10	1.9 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
n-Octane	C8H18	1.0 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
n-Pentane	C5H12	1.5 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Methane	CH4	5.0 %	0 to 100% LEL	7500 ft² (696.7 m²)	49 ft (14.9 m)	High **
Nonane	C9H2O	0.85 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
n-Propyl Alcohol	C3H8O	2.2 %	0 to 100% LEL	5000 ft² (464.5 m²)	40 ft (12.2 m)	Low **
Propane	C3H8	2.1 %	0 to 100% LEL	7500 ft² (696.7 m²)	49 ft (14.9 m)	High **

Note[1]: Lower Explosive Limit (LEL) | **Note**:** Low = 1.0' (0.31m) above floor | Mid = 4.0 to 6.0' (1.20 to 1.83m) above floor | High = 0.5' to 1.5' (0.15 to 0.46m) below ceiling

CUSTOM ORDERING

Model # Example: QTS | 171 | 0 | 1 | X | S | P | 0 | 0 | 0 | 0
A. B. C. D. E. F. G. H. I. J. K.

		MODEL #
A. Sensor Series *No Selection Required*	**QTS** →	QTS
B. Gas Transmitter *No Selection Required*	**171** = Combustible Transmitter Series →	171
C. Configuration *Select One (1)*	**0** = Methane **2** = Ethane **4** = n-Butane **6** = n-Octane **8** = Gasoline **1** = Acetylene **3** = Propane **5** = n-Pentane **7** = Hydrogen **9** = Other (Please Advise)	
D. Factory Supplied *No Selection Required*	**1** = Factory Provided →	1
E. Revision *No Selection Required*	**X** = Default →	X
F. Enclosure *No Selection Required*	**S** = Aluminum, Epoxy Coated Weatherproof Industrial NEMA 4X, 7, 9 Enclosure →	S
G. Sensor Guard *Select One (1)*	**0** = No Sensor Splash Guard | **P** = Sensor Splash Guard	
H. Factory Supplied *No Selection Required*	**0** = Default →	0
I. Factory Supplied *No Selection Required*	**0** = Default →	0
J. Factory Supplied *No Selection Required*	**0** = Default →	0
K. Calibration/Options *Select One (1)*	**0** = Default* | **X** = Non-Standard Calibration (Specify) | **S** = Special Options (Contact ACI)*	

Note*: All transmitters are calibrated using a correlation method with Methane Gas and detection constants as shown. Calibration with actual target gas is available upon special request

ACCESSORIES ORDERING

Model # Example: 79030-103 -OR- 126566

Model #	Item #	Description
79030-103	126566	QTS-1710 Combustible Calibration Adaptor

RoHS COMPLIANT 2002/95/EC

QIRF

Infrared Refrigerant Detector

The QIRF Refrigerant Gas Detectors are the second generation of a proprietary designed gas detector that is easily configured to meet the International Mechanical Code, ASHRAE 15 and B52 requirements. These transmitters are engineered to address the deficiencies inherent with solid-state sensors. Infrared technology facilitates specific gas type refrigerant detection without any cross-sensitive interferences. Standard features include a digital display, three user configurable relays, buzzer, horn/strobe output, NEMA 4X enclosure and non-intrusive calibration. Sensor Housings are thermally controlled at elevated temperatures to eliminate errors due to condensation forming and from temperature fluctuations allowing operations in temperatures from -49 to 149ºF (-45 to 65ºC). Analog outputs of 4-20 mA and or 2-10 VDC are available along with RS-485 Communications that can be used with a Modbus RTU or proprietary OptoMux communication protocol for use with any of the standalone gas controller such as the Q4C, M-Controller or Q-Controller. A Zero gas of 20.9% Oxygen with the balance Nitrogen should be used to perform a Zero calibration while a known concentration of any span gas can be used to perform yearly bump testing and calibration. Never use 100% Nitrogen gas to perform a Zero calibration on the QIRF transmitters. Calibration gases and a 0.4 to 0.6 liter/minute flow limiting gas regulator are not available through ACI and should be purchased through your local gas supply company or on-line companies such as Portagas® (Praxair®, Inc.) or Mesa Specialty Gases®. ACI also offers a full line of horns and strobes that can be used with the Gas detectors or building management system to alert building occupants of an alarm condition in order to meet the B-52 or other code requirements. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Mechanical Equipment Rooms, Propellant Filling Stations, Solvent Cleaning Stations, Cold Storage and Transport Facilities, Meat Packing Plants, Super Markets, Convenience Stores, Refrigerant Storage Locations, Chiller Plants, Manufacturing Plants, Pharmaceutical Labs, Other Specialty Applications using Halocarbons

The QIRF Refrigerant Detectors are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

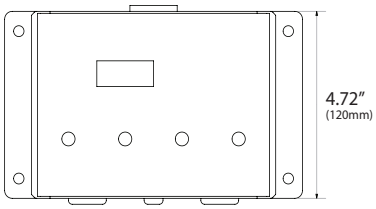
Supply Voltage:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal, 50/60 Hz (+15 to 24 VAC, AC Power must not be grounded)
Resettable Fuse Protection (Polyswitch):	**F1 on Display Board:** 1.6 A **F2 on Display Board:** 50 mA (Resets once fault is cleared & power is removed)
Supply Current | Power Consumption:	1.0 A maximum | 27 VA
Analog Output Signals:	4-20 mA (4-wires) or 2 to 10 VDC (4-wires)
Output Load Impendance:	**4-20 mA Output:** 600 Ohms maximum | **2-10 VDC Output**: 3000 Ohms minimum
RS-485 Communication Protocols:	Modbus RTU / OptoMux (Proprietary Gas Controller Protocol for Q4C, M-Con. & Q-Con. only)
RS-485 Communication Baud Rates:	1200, 2400, 4800,9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800 BPS)
Refrigerant Types:	R11, R12, R22, R23, R32, R114, R116, R123, R134A, R141B, R402A, R404A, R407A, R407B, R407C, R407D, R407E, R407F, R408A, R409A, R410A, R422A, R438A, R448A, R449A, R452A, R453A, R507A, R508B, R513A, R514A, R1233ZD, R1234ZE
Factory Calibration Range:	0 to 1000 ppm for all standard Refrigerants except R123 (0 to 100 ppm); Others avalible
Accuracy | Repeatability:	+/-3% of Reading | +/-1% of Full Scale
Sensor Warm Up Time:	15 minutes @ 25 C using 24VDC power
Sensor Type:	Infrared, Temperature Controlled
Response Time (T90):	<30 seconds for 90% step change
Display:	2 x 8 Character Display with backlight
Keypad:	Four Magnetic Sensors with Magnetic Tool
Relays | Contact Type | Relay Contact Ratings:	Three | SPDT (Form C) Dry Contacts | 1.0 max. @ 30 VDC or 0.3A max. @ 125 VAC (Resistive Loads)
Relay Life Expectancy:	**Mechanical:** 50,000,000 operations minimum @ 36,000 operations/hour **Electrical:** 200,000 operations minimum @ rated load
Status LEDs:	Two Green LED's (Tx/Rx Communication Status); Three Red LED's (Relays 1, 2 & 3)
Buzzer:	80 dB at 3.94" (10 cm), 2700 Hz (3 Programmable Tones)
Coverage Area | Mounting Height:	7500 ft^2 (696.7 m^2) or 49 ft (14.9 m) Radius | 6" (15.3 cm) to 18" (45.8 cm) above floor
Sensor Life Expectancy:	14 Years, typical
Recommended Maintenance:	Accuracy & Bump Test once per year or as required by Code
Enclosure Specifications (Material Type, Flammability, NEMA/IP Rating, Cover Torque Rating:	Plastic Enclosure; Polycarbonate/ABS Blend; UL94 5VA; NEMA 4, 4X 12 & 13(IP66); 2.5 lbs.-in (0.2825 Nm)
Enclosure Knockout:	7/8" Knockout (accepts 1/2" Conduit Fitting); Quantity: 1
Operating Temperature | Humidity:	-49 to 149°F (-45 to 65°C) | 5 to 95% RH, non-condensing

PRODUCT SPECIFICATIONS

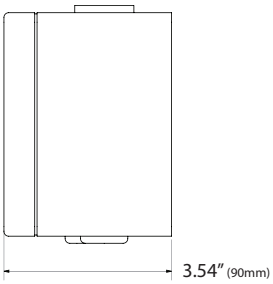
Operating Atmospheric Pressure[1]:	14.696 psi (1.0132 bar) +/-10%
Recommended Storage Temperature/ Humidity:	-49 to 158°F (-45 to 70°C) | 5 to 95% RH, non-condensing
Wiring Connections | Wire Size:	De-pluggable Screw Terminal Blocks | 16 to 24 AWG (0.2047 to 1.301 mm) Shielded Twister Pair
Communications Cable:	Belden 9841 or Equivalent, 120 Ohms Input Impedance
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Approvals:	RoHS
Product Weight:	2.50 lbs (1.134 kg)
Product Dimensions (L x W x H):	7.87" (200 mm) x 4.72" (120 mm) x 3.54" (90 mm)

Note[1]: When installed @ >3000' above sea level, the refrigerant detectors must be verified for accuracy & re-calibrated as needed after installation

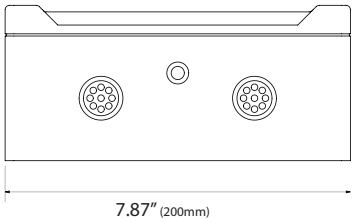
DIMENSIONAL DRAWING



Front View



Side View



Top View

STANDARD ORDERING

		MODEL #
A. Sensor Series *No Selection Required*	**QIRF**	**QIRF**
B. Refrigerant Code *Select One (1)*	**Enter a "Refrigerant Code":** R11, R12, R22, R23, R32, R114, R116, R123, R134A, R141B, R402A, R404A, R407A, R407B, R407C, R407D, R407E, R407F, R408A, R409A, R410A, R422A, R438A, R448A, R449A, R452A, R453A, R507A, R508B, R513A, R514A, R1233ZD, R1234ZE	
C. Revision *No Selection Required*	**X** = Factory Provided	**X**
D. Revision *No Selection Required*	**O** = Factory Provided	**O**

Q8/B8 SERIES

Combustible Gas Transmitter

The Q8/B8 Series of Explosion Proof Gas Detectors are used in applications that require a rugged enclosure that meets the Class 1 Division 1 requirements. Each unit comes standard with an integral clock, digital display of concentration, relay status, STEL, TWA, and peak daily values of the gas being detected. A three color backlight will flash depending on the level of alarm for operator safety. Setup and calibration is accomplished through non-intrusive magnetic switches that allow for programming of all parameters. A remote sensor option is available for toxic and combustible gases and should be used in applications where the main unit can be mounted at 3 to 6 feet off of the floor with the remote sensor being at the ceiling or floor levels to monitor the gas concentrations depending on the gas being monitored. Sensor types include electrochemical and catalytic bead sensors to meet the demand and performance requirements for particular industries. The Q8 uses Optomux and Modbus RS-485 protocol, 4-20 mA, 1-5 or 2-10 VDC while the B8 uses BACnet™ MSTP(RS485) protocol to communicate directly with a BAS. The Q8/B8 also has three (3) SPDT Form 1C relays that are user adjustable. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products. The Q8/B8-GENL can be ordered to monitor specific combustible gases such as Gasoline, Ethanol, Diesel or Jet fuel. Contact ACI for specific gases.

Applications: Mechanical Rooms, Warehouses, Refrigeration Plants, Industrial Plants, Process Monitoring, Leak Detection, Parking Garages, Auto/Truck Maintenance Facilities, Oil and Gas Industry

The Q8/B8 Series Gas Transmitters are covered by ACI's Two (2) Year Limited Warranty against defects in material and workmanship from the date of shipment with the exception of the Sensor Modules (Electrochemical/Toxic: Six Months and Catalytic/Combustible: One Year). The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, workaci.com**.**

PRODUCT SPECIFICATIONS

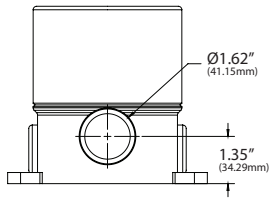
Supply Voltage [Q8]:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC nominal (+15 to 24 VAC, AC Power must not be grounded)
Supply Voltage [B8]:	**VDC Supply Voltage:** 24 VDC nominal (+18 to 30 VDC) **VAC Supply Voltage:** 24 VAC (+15 to 24 VAC, AC power can be grounded or non-grounded)
Fuse Protection:	0.750A Polyswitch; (Automatically resets after fault is cleared & power to circuit is removed)
Supply Current | Power Consumption:	0.3A maximum | 8.4 VA
Analog Output Signals (Q8 Only):	4-20 mA, 1-5 VDC or 2-10 VDC (4-Wire Power, Prower Ground, Output Signal, Output Signal Common)
Load Impedance:	**4-20 mA Output:** 600 Ohms maximum | **1-5 VDC or 2-10 VDC:** 3000 Ohms minimum
Communication Protocols:	**Q8 Communication Protocols:** RS-485 Modbus RT/OptoMux (Proprietary QEL Communication) **B8 Communication Protocols:** RS-485 Serial BACnet™ MS/TP (Master and Slave; Default: Master)
Q8 Communication Baud Rates:	1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, 76800 Bits/Second (Default: 4800)
B8 Communication Baud Rates:	9600, 19200, 38400, 76800 Bits/Second (Default: 38400)
Factory Calibration Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Display:	LCD Graphic Display with backlight (Displays TWA, STEL and PEAK Daily Value)
Keypad:	Three (Non-Intrusive) Magnetic Switches
Relays | Contact Type | Relay Contact Ratings:	Three, SPDT (Form 1C) Dry Contact rated 1.0A max. @ 30 VDC or 0.3A max. @ 125 VAC (Resistive Load)
Status LEDs:	Two Green LED's (Tx/Rx Communication Status), Three Red LED's (Relays 1, 2 & 3 Status)
Factory Calibrated Range:	See Gas Sensor Selection & Specification Table on back of data sheet
Sensor Warm-Up Time:	24 Hours (Allow 24 hours before calibrating sensor after initial installation)
Sensor Type:	See Sensor Technology Type in Table on back of Product Data Sheet
Gas Type:	Combustible and Toxic Gases/Oxygen Sensor
Life Expectancy:	**Electrochemical (Toxic):** 2 to 3 Years, typical **Oxygen/Hydrogen (Toxic):** 18 months, typical **Catalytic (Combustible):** 3 to 5 years, typical
Unit Shelf Life:	**Electrochemical (Toxic):** 6 Months from date of purchase (Must be installed and operational) **Catalytic (Combustible):** 1 Year from date of purchase (Must be installed and operational)
Replacement Sensor:	See User's Manual or Contact ACI
Recommended Maintenance:	**Catalytic (Combustible):** Accuracy & Bump test every 3 months or as required by Code **Electrochemical (Toxic):** Accuracy & Bump test every 6 months or as required by Code **Oxygen/Hydrogen (Toxic):** Calibrate every 3 months
Enclosure Specifications (Type, Material Type, Flammability, NEMA/IP Rating, Explosion Proof):	Industrial Connection Head; Cast Aluminum Epoxy Coated NEMA 4X (IP66), Division 1 Division 2, ANSI/ISA 12.22.01 Class I, Zone 1, AEx d II C, IP66 Zone 1 CSA E60079-1 Ex d II C, Class I, Zone I, IP 66 CSA C22.2 No. 30 Class I, Groups A, B, C, D; Class II Groups E, F, G; Class III

PRODUCT SPECIFICATIONS

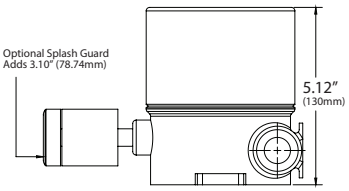
Conduit Connection:	Two 3/4" NPT Threaded Openings
Operating Temperature | Humidity:	See Sensor Selection & Specification Table on back of data sheet | 5 to 95% RH, non-condensing
Operating Atmospheric Pressure[1]:	14.696 psi (1.0132 bar) +/- 10%
Recommended Storage Temperature | Humidity:	32 to 68°F (0 to 20°C) | 5 to 95% RH, non-condensing
Wiring Connections | Wire Size:	Depluggable Screw Terminal Blocks | 16 to 24 AWG (0.51 to 1.30 mm) Shielded Twisted Pair
Communication Cable:	Belden 9841 or Equivalent, 120 Ohms Input Impedance
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Coverage Area | Mounting Height:	See Gas Sensor Selection & Specification Table on back of data sheet
Approvals:	RoHS, CSA-Class 4828-02 inspected to C22.2 No. 30 and No. 142 (CSA File #: 088890_0_000)
Product Weight:	4.35 lbs. (1.973 kg)
Product Dimensions (L x W x H):	7.48" (190 mm) x 5.71" (145 mm) x 5.12" (130 mm)

Note[1]: When installed @ >3000' above sea level, the gas transmitters must be verified for accuracy & re-calibrated as needed after installation

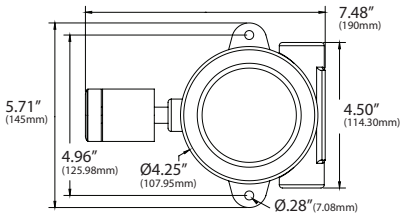
DIMENSIONAL DRAWING



Front View



Side View



Top View

SENSOR SELECTION AND SPECIFICATION

Gas Type	Gas Span Code	Combustible	Toxic	100% LEL[1] in % By Vol.	Measurment Range	Operating Temp °F (°C)	Square Feet ft² (m²)	Radius ft (m)	Mounting Height
Acetone	CH3CO-100L	•		2.6%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Ammonia	NH3-100P		•	N/A	0-100 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Ammonia	NH3-1000P		•	N/A	0-1000 PPM	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	High[2]
Arsine	ASH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Benzene	C6H6-100L	•		1.3%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Iso-Butane	C4H10-100L	•		1.8%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Butanol, n-Butane	BUTAN-100L	•		1.9%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Carbon Monoxide	CO-250P		•	N/A	0-250 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Carbon Monoxide	CO-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Chlorine	CL2-5P		•	N/A	0-5 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Chlorine Dioxide	CLO2-2P		•	N/A	0-2 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Diborane	B2H6-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene	C2H4-100L	•		2.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Ethylene Oxide	ETO-20P		•	N/A	0-20 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Germane	GEH4-2P		•	N/A	0-2 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen	H2-1000P		•	N/A	0-1000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-2000P		•	N/A	0-2000 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen	H2-100L	•		4.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Hydrogen Bromide	HBR-30P		•	N/A	0-30 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Chloride	HCL-30P		•	N/A	0-30 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Cyanide	HCN-50P		•	N/A	0-50 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Mid[2]
Hydrogen Sulphide	H2S-25P		•	N/A	0-25 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Hydrogen Sulphide	H2S-100P		•	N/A	0-100 PPM	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Methane	CH4-100L	•		5.0%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	High[2]
Methanol	CH3OH-100L	•		6.7%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Nitric Oxide	NO-100P		•	N/A	0-100 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Nitrogen Dioxide	NO2-10P		•	N/A	0-10 PPM	-4 to 122 (-20 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Oxygen[3]	O2-25V		•	N/A	0-25% by Vol	-22 to 122 (-30 to 50)	7500 (696.7)	49 (14.9)	Mid[2]
Ozone	O3-1P		•	N/A	0-1 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	High[2]
Iso-Pentane	C5H12-100L	•		1.4%	0-100% LEL	14 to 122 (-10 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-1P		•	N/A	0-1 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Phosphine	PH3-5P		•	N/A	0-5 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Low[2]
Propane	C3H8-100L	•		2.1%	0-100% LEL	14 to 122 (-10 to 50)	7500 (696.7)	49 (14.9)	Low[2]
Silane	SiH4-50P		•	N/A	0-50 PPM	-4 to 104 (-20 to 40)	5000 (464.5)	40 (12.2)	Mid[2]
Sulpher Dioxide	SO2-6P		•	N/A	0-6 PPM	-4 to 122 (-20 to 50)	5000 (464.5)	40 (12.2)	Low[2]
Combustibles[1]	GENL-100L	•		Specify Gas	0-100% LEL	-40 to 122 (-40 to 50)	5000 (464.5)	40 (12.2)	Gas Dependent
Acetaldehyde, Benzene, Carbon Disulfide, Dioxane, Ethane, Ethanol, Ethylbenze, Gasoline, Heptane, Hexane, Ipa, Jet Fuel, Kerosene, Naphtha, Styrene, Toluene, Voc's, Xylenes, Acetylene, Diesel, Pentane, Ethyl Acetate, Propylene									

Note 1: Lower Explosive Limit (LEL) | **Note 2:** Low = 0.5 to 1.5' (0.15 to 0.46m) above floor | Mid = 4.0 to 6.0' (1.20 to 1.83m) above floor | High = 0.5 to 1.5' (0.15 to 0.46m) below ceiling | **Note 3:** Oxygen sensors monitor oxygen depletion caused by numerous gases including: Nitrous Oxide, Helium, Nitrogen, Sulfur hexafluoride, Argon, Xenon, Neon.

CUSTOM ORDERING

Model # Example: B8 (A.) | CO-250P (B.) | O (C.) | X (D.) | (E.)

		MODEL #
A. Sensor Series *Select One (1)*	**Q8 =** Toxic/Combustible Gas Transmitter Series with Analog/Relay/Communicating Output Signals and Display **B8 =** Toxic/Combustible MS/TP BACnet™ Gas Detection Transmitter with Relays and LCD Display	
B. Gas Span Code	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table**	
C. Enclosure *Select One (1)*	**O =** Standard Wall Mount Enclosure **| R =** Remote Mount Sensor	
D. Revision *No Selection Required*	**X =** Factory Provided ⟶	**X**
E. For GENL Sensors	**Enter a "Gas Span Code" from the Sensor Selection & Specification Table** (See Combustibles)	

ACCESSORIES ORDERING

Model #	Item #	Description
GAS CAL KIT	148426	Cal Kit includes Carry Case, 0.5lpm regulator, C10 to CGA-600 adapter and tubing
79030-103	126566	Q8 Combustible Calibration Adapter
6395-0003	126254	Q8 Toxic calibration Adapter/Splash Guard
28030-012-000	150947	Q8 Combustible Splash Guard

Note: See GAS CAL KIT Data Sheet if required

ACCESSORIES ORDERING | HORN STROBE

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500C	150028	Streamline Horn and Strobe (Clear)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

Q4C II

Controller & Alarm Communicator

The Q4C II is a multi-channel controller display and alarm unit that utilizes digital communications to interface with a maximum of four (4) remote digital transmitter/sensors. This series provides reliable measurement of a wide variety of toxic gases such as CO, NO2, NH3, H2S, SO2, Refrigerants, and Combustibles. The RS-485 communication is connected via a 4-wire, multidrop daisy chain configuration to reduce the overall installation cost of the system. Alarm setpoints are set through the front keypad or the M-View software (Included) that is downloaded to the Q4C II from a PC or laptop computer. Common relay configurations include voting, averaging, delay on actuation and de-actuation, normally or not-normally energized and latching. The audible alarm has three buzzer settings; continuous, intermittent and double-tap intermittent. The Q4C II has a dedicated 24 VDC transistor output terminal for horn and strobe. Includes four (4) SPDT relays and an RS-485 Modbus output with BACnet IP option available. The Q4C II comes standard with a 128 X 32 backlit display, key pad, software and interface cable. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Underground Parking Garages, Water Treatment Plants, Municipal Service Garages, Aircraft Hangers, Chiller Monitoring, Warehouses, Automobile Dealerships & Battery Charging / Storage

well as on ACI's website,The Q4C Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website,

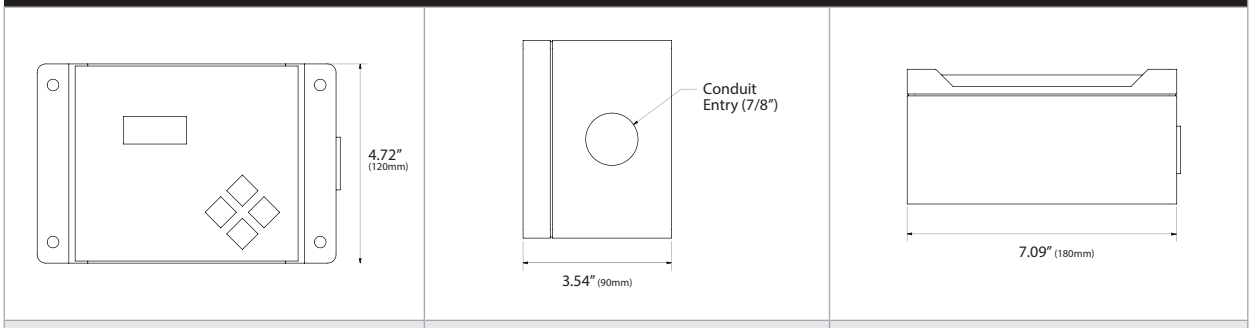
PRODUCT SPECIFICATIONS

Input Power[1]:	18 – 30VDC, 24 VDC Nominal, 12 – 24VAC, 24VAC Nominal | Half-wave or Full wave rectified
Current:	0.75 max (Fuse protected)
Enclosure:	IP66 & NEMA 4, 4X, 12 & 13 ratings | UL listed 508 listed (File # E65324)
Enclosure Material:	ABS Plastic
Operating Temperature Range:	**Industrial:** -20° to +50° C (-4° to 122° F)
Operating Humidity Range:	Continuous 5 to 95% RH, non-condensing up to 31 C, decreasing linearly to 80% @ 40C
Input Types:	RS-485 digital port for up to 4 QEL transmitter/sensors | USB programming port
Output Comm Ports:	Modbus RTU (Slave), BACnet IP (Optional)
LED Status Lights:	Eight (8) Status LEDs: RS-485 port TX/RX Status LED for Sensor Network RS-485 port TX/RX Status LED for Modbus or BAC-Box 4 Relay Status LEDs
Recommended Cable:	**Power:** Twisted shielded pair **Communication:** (RS-485) - Belden 9841 or equivalent
Panel Controls:	4X tactile and audible keypad
Audio/Visual Indicators:	Two (2) 24VDC transistor ports 250mA max (Fuse protected) each
Relay Outputs:	Four (4) SPDT 5A resistive @ 250VAC/30 VDC | 3.7A Inductive @ 250VAC/30 VDC
Relay Assignment:	Independent, individually set to one or all transmitter/sensors
Time Delays:	0 – 60 Minutes On/Off delays
LCD Display:	128 x 32 LCD Display c/w Backlight
Product Dimensions:	7.09" (180.00 mm) x 4.72" (120.00 mm) x 3.54" (90.00 mm)
Product Weight:	1.87 lbs (4.12 kg)

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary

Note[1]: Refer to wiring diagram or contact ACI Technical Support for wiring connections

DIMENSIONAL DRAWING



Front View	Side View	Top View

STANDARD ORDERING

Model #	Item #	Description
Q4C-II-X	150796	Controller with M-View Software and Programming Cable

ACCESSORIES ORDERING

Model #	Item #	Description
85530-010-000	150896	M-View USB Software
M-SWITCH	127160	M-Switch for M-Controller / Q4C Controller
5610-0101	150897	USB A to USB B M/M Programming Cable
BAC-BOX-0	127160	BACnet IP Output Module

ACCESSORIES ORDERING | HORM STROBE

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500C	150028	Streamline Horn and Strobe (Clear)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

M-CONTROLLER

Multi-Channel Analog / Digital Controller

The M-Controller is a multi-channel controller and alarm unit that utilizes both digital and analog communications to interface with a maximum of 32 remote digital transmitter/sensors, and 8 analog transmitter/sensors. Common relay configurations include voting, averaging, delay on actuation and deactuation, normally/not-normally energized and latching. An additional feature includes 24 VDC transistor outputs for a horn and strobe. An RS-422 output responds as a RTU Slave using MODBUS protocol which allows the controller to provide read status information only. The M-Controller can be programmed with the onboard key pad or the M-View Software which is downloaded using the RS-232 interface. Also available is an analog output card that includes eight 4-20 mA analog outputs. Each analog output can be defined in complex fashions allowing the averaging of several input signals and outputs a linear 4-20 mA signal.

M-Relay modules are designed to allow expandability for control to the M-Controller over an RS-485 communication link, which allows flexibility during installation and wiring. M-Relays operate on 24 VAC/VDC and may be powered via the port power of the M-Controller or directly from a local power source. Each relay module is addressed from 0 to 11 and is defined by a four position dipswitch. The M-Controller has three relays (1, 2 ,3) after which the M-Relay can be added and will correspond with 4 through 99. The M-Relay module is available with 2, 4, 6, or 8 relays per module. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Underground Parking Garages, Water Treatment Plants, Municipal Service Garages, Aircraft Hangers, Chiller Monitoring, Warehouses, Automobile Dealerships & Battery Charging / Storage

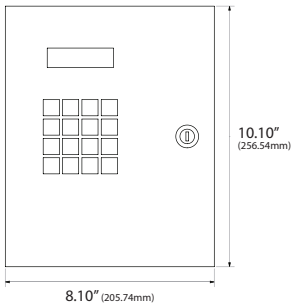
The M-Controller is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

PRODUCT SPECIFICATIONS

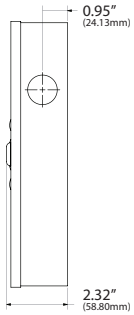
Supply Voltage:	24 VAC +/- 4V Floating; **AC must not be grounded** | 24 VDC +/- 4V
Amps:	**Controller:** 1.0 A **| Horn & Strobe:** 0.6 A **| Maximum Load per Channel:** 2.0 A **| Maximum Allowed through Controller:** 10.0 A
Operating Temperature:	-4ºF to 122ºF (-20ºC to 50ºC)
Operating Humidity:	5% to 95% RH Continuous non-condensing
Programming:	On-board keypad or M-View software (software and RJ-11 to serial cable included)
Communication Protocol:	Modbus Slave using Modbus RTU RS-422 port to host computer
RJ-11 Telephone Jack:	RS232 interface for uploading or downloading large configuration data bases using M-View Software can be used for Modbus RTU communication with BAS
Inputs:	**Digital:** 4 Parallel RS-485 ports allow up to 32 QEL gas sensors, and up to 99 relays | **Analog:** 8 channels of 4-20 mA inputs with one common
Outputs:	Optional 8 analog channels of 4-20 mA signals with one common
Indicators:	5 Red LEDs: 3 Relay status, Hush and Fault
Display:	2 x 16 character display with backlight
Keypad:	4 x 4 tactile & audible keypad
On-Board Relays:	Three DPDT Form C, Dry Contact **|** 5.0A resistive 240 VAC, 30 VDC **|** 3.7A inductive 240 VAC, 30 VDC
Relay Life Expectancy:	**Mechanical:** Minimum 5,000,000
Time Delays:	**Actuation / De-Actuation:** 0 to 60 minutes
On-Board Buzzer:	90 db @ 12" (30 cm), 2700 Hz; 3 Buzzer tones
Horn & Strobe:	Two 24 VDC terminals provided | 6 Watts each
Storage:	32ºF to 68ºF (0ºC to 20ºC) 0 to 99% RH Non-Condensing
Enclosure:	Steel, epoxy painted black, NEMA 1
Dimensions:	(H) 10.00" (254 mm) x (W) 8.00" (203 mm) x (D) 2.00" (51 mm)
Terminal Blocks:	Fixed, Power Wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lbs (0.5n-3m) Nominal
Communication Wiring:	Beldon 9841 or equal
Shipping Weight:	5.00 lbs (2268 g)
Options:	**'P':** Professional version of software for real time monitoring and data logging | **Horn & Strobe:** See workaci.com/accessories/strobe and alarm | **Analog Output Card:** 8 channel analog output with one common, 4-20 mA | NEMA 4X Enclosure: Polycarbonate, flammability rating UL94V-O
Agency Approvals:	CSA NRTL/C, C22-205

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary

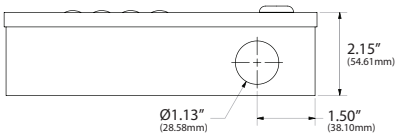
DIMENSIONAL DRAWING



Front View



Side View



Back View

STANDARD ORDERING

Model # Example: M-CONTROLLERX-000 -OR- 125945

Model #	Item #	Description
M-CONTROLLERX-000	125945	M-Controller with M-View Software
M-CONTROLLERX-00P	142957	M-Controller with M-View Software & Real Time Monitoring
M-CONTROLLERX-T00	128896	M-Controller with M-View Software, Analog Output Card (Eight (8) 4-20 mA Output Channels)

ACCESSORIES ORDERING

Model # Example: M-SWITCH -OR- 127160

Model #	Item #	Description
84330-013-000	126147	M-Controller Programming Cable (Included with M-Controller)
84330-014-000	132781	M-View CD for M-Controller / Q4C Controller
84330-101-00	137163	8 Channel Analog Output Card
84330-621-000	149993	NEMA 4X Enclosure for M-Controller
M-ANNUCIATOR	135212	Annunciator Panel for M-Controller
M-RELAY-5X-2	125946	Relay, 2DPDT, 5 Amps for M-Controller
M-RELAY-5X-4	125947	Relay, 4DPDT, 5 Amps for M-Controller
M-RELAY-5X-6	138717	Relay, 6DPDT, 5 Amps for M-Controller
M-RELAY-5X-8	125948	Relay, 8DPDT, 5 Amps for M-Controller
M-SWITCH	127160	Manual Input Switch for M-Controller / Q4C Controller
M-TRANSFORMER	127162	Industrial Transformer, closed type, single phase, 120V to 24V, 250VA for M-Controller

ACCESSORIES ORDERING | HORN STROBE

Model # Example: FSIG-SLM500A -OR- 136476

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model # Example: FSIG-SLMBW-012-024GY -OR- 136477

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

Q-CONTROLLER

256 Sensor Analog / Digital Controller

The Q-Controller system uses an RS-485 communication protocol that accommodates 128 channels through four digital ports. In addition, there are 128 analog inputs from any 4-20mA device and 128 4-20mA outputs as well. There are also up to 128 binary inputs and 128 binary outputs. The system communicates wirelessly for programming and downloading of data through your smartphone or tablet device. Input/output boxes can be installed anywhere in the RS-485 network for ease of installation of additional sensors. A touch screen graphic display is used for programming. All relevant gas detection data, such as relay status, historical data, location, and addresses of sensors are displayed by scrolling through the display menu. The controller has a scheduler that can programmed to activate relays and deactivate relays (4, 10 Amp SPDT relays on main board) several times a day based on a frequency of day, weekday or weekend only. It also has an auto configure program that searches for connected devices. The Q-Controller can accept any 4-20 mA signal, making it ideal for monitoring temperature, humidity and other parameters. Several Q-Controllers can be connected to a centralized system that will display gas detection concentrations of an entire facility. Optional remote monitors can be used to observe the concentration of gases prior to entering the space. Refer to all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

Applications: Underground Parking Garages, Water Treatment Plants, Municipal Service Garages, Aircraft Hangers, Chiller Monitoring, Warehouses, Automobile Dealerships & Battery Charging / Storage.

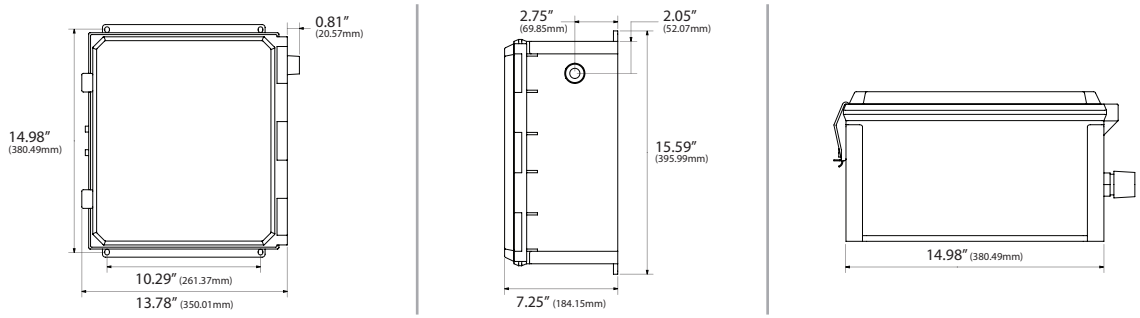
The Q-CONTROLLER covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage [1]:	24 VAC Nominal, 15 to 24 VAC 50/60 Hz | 24 VDC Nominal, 18 to 30 VDC
Current [2]:	**Q-Controller:** 0.75A maximum (fuse protected) | **Horn & Strobe:** 0.75A maximum (fuse protected)
Fuses:	F1, F2 on main board: Polyswitch 750 mA | Fuses reset after removing power
Operating Temperature:	32ºF to 120ºF (-0ºC to 49ºC)
Operating Humidity:	85% +/-5% for temperatures up to 86ºF (30ºC), decreasing Linearly to 50% RH at 104ºF (40ºC)
Altitude:	Up to 6,561 ft (2,000m)
Communication Protocol:	Modbus Slave using Modbus RTU RS-485, BACnet IP (using BAC-box) ports to host computer
Inputs:	**Digital:** 4 RS-485 ports for up to 128 QEL sensors **Analog:** 128 4-20 mA inputs using AI-Box; 8 channels/box, up to 16 boxes **Relays:** 128 relay inputs using BI-Box, 4 relays/box, up to 31 boxes
Outputs:	**Analog:** 128 4-20 mA outputs using AO-Box; 8 channels/box, up to 16 boxes **Relay:** 128 outputs using BO-Box; 4 relays/box, up to 31 boxes
Indicators:	15 Status LED's: Power, USB TX/RX status 4 RS-485 port TX/RX status for sensor network 1 RS-485 port TX/RX status for Modbus 1 RS-485 port TX/RX status for BACnet Module BAC-box
Display & Keypad:	7" LCD touchscreen with 800 X 480 resolution
On-Board Relays:	4 pluggable SPDT Form C, Dry Contact, 10A @ 250 VAC, 30 VDC Resistive 7.5A @ 250 VAC, 5A @ 30 VDC Inductive
Relay Life Expectancy:	**Mechanical:** VAC 10,000,000, VDC 20,000,000 @ 300 times/minute
Time Delays:	**Actuation / De-Actuation:** 0 to 9999 seconds | Default is 10 seconds
On-Board Buzzer:	100 db @ 4" (10 cm), 3700 Hz continuous
Horn & Strobe:	Two (2) 24 VDC Terminals (750 mA maximum)
Switch Inputs:	4 Inputs | Can be Q-Switch or any ON-OFF switch
Storage:	32ºF to 68ºF (0ºC to 20ºC) 0 to 99% RH Non-Condensing
Enclosure:	NEMA 4X, Polycarbonate, Flammability Rating UL94V-V-0
Dimensions:	(H) 16.00" (406 mm) x (W) 12.00" (305 mm) x (D) 6.00" (152 mm)
Terminal Blocks:	Removable, Power wiring: 16 to 26 AWG (0.2 to 1.00 nm^2) Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lb (0.5n-3m) Nominal
Communication Wiring:	Beldon 9841 or equal
Shipping Weight:	12.0 lbs (5443g)
Agency Approvals:	UL2017

Note: Sensors and system should be scheduled to be tested for accuracy and functionality every 6 months for toxic, and every 3 months for combustible | Recalibrate or replace sensor boards if necessary | **Note [1]:** A switch or circuit breaker must be provided during installation to remove power from the Q-Controller in case of emergency, since the Q-Controller enclosure can be locked to prevent tampering, and the internal power switch is not accessible | **Note [2]:** Total actual power depends on the system size and design | The power may be supplied to sensors and modules, or each may have separate power supplies | Each sensor type varies in power requirements

DIMENSIONAL DRAWING



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: Q-CONTROLLERA-OOO -OR- 138070

Model #	Item #	Description
Q-CONTROLLERA-000	138070	Q-Controller (256 Sensor Analog / Digital Controller)

ACCESSORIES ORDERING

Model # Example: Q-SWITCHA-0 -OR- 138897

Model #	Item #	Description
AI-BOX-0	138071	8 channel Analog Input Module
BI-BOX-0	138899	4 channel Relay Input Module
AO-BOX-0	138900	8 channel Analog Output Module
BO-BOX-0	138072	4 channel Relay Output Module
IO-BOX-0	138898	DIN Rail Mounting Box for Modules
Q-SWITCHA-0	138897	Manual Input Switch
BAC-BOX-0	127160	BACnet IP Output Module

ACCESSORIES ORDERING | HORN STROBE

Model # Example: FSIG-SLM500A -OR- 136476

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)

ACCESSORIES ORDERING | MOUNTING BASE

Model # Example: FSIG-SLMBW-012-024GY -OR- 136477

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

Note: See Strobe & Alarm Data Sheet if required

M-SWITCH, R-SWITCH

Microcontroller Based Switch

The M-Switch is a microcontroller based digital transmitter, which can provide a switch input for M-Controller System and Q4 Controller System to actuate or reset any assigned outputs, such as Relays, Buzzers and Strobe. M-Switch converts Switch Status to gas concentration and communicates with Controller System. It occupies one digital sensor address in the Controller System and works as a manual override switch to turn on a relay at the M-Controller or Q4C. The M-Switch has one switch onboard and contains two terminal blocks for connecting Remote Switches. An R-Switch connected to the Remote Switch Terminal Block, will have the same function as the M-Switch. If an R-Switch is connected to the Reset Switch Terminal Block, the R-Switch will be used as a reset switch to reset latched switch. the M-Switch and R-Switch not only can provide multi-switch inputs and parallel switch inputs, it also provides a way to bring other devices switch outputs to M-Controller System or Q4 Controller System, such as actuating an M-Relay by customer's emergency switch, a timer/clock status, or actuating a fan by a temperature sensor status, etc. For instance, the M-Switch can be configured as Latched outside a machinery room to be capable of starting, but not stopping ventilation.

Applications: Testing System Outputs, such as Relays, Strobe, Horn & Fans, or Manual Actuation of the System for M-Controller & Q4 Controllers

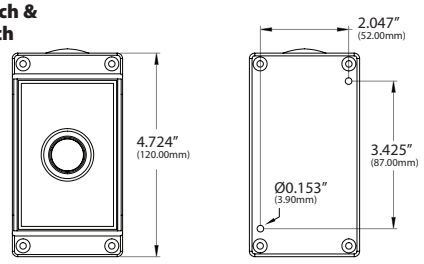
The M-Switch and R-Switch are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

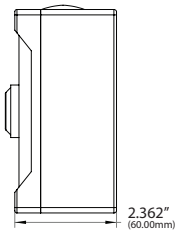
Input Voltage:	24 VDC nominal, range 18 to 30 VDC; 24 VAC nominal, range 15 to 24 VAC 50/60 HZ **AC must not be grounded**
Wiring Connections:	De-Pluggable Screw Terminal Blocks
Wire Size:	16 to 24 AWG (0.2047 to 1.301 mm) Shielded Twisted Pair
Terminal Block Torque Rating:	0.37 ft-lb (0.502 Nm) Nominal
Communication Wire:	Belden 9841 or comparable wire
Fuse:	F1 Very Fast-Acting Fuse
Communication Protocol:	RS-485 with OptoMux protocol for use with M-Controller or Q4 controller systems Output 0 when switch is OFF | Output 9999 when switch is ON Fixed Baud rate: 4800 bps
End-Of-Line Termination:	Jumper selectable 120Ω (Default OFF)
Addressing:	0 to 31 Dip Switch selectable for M-Controller, 0 to 3 for Q4C
Indicators:	Red LED = Switch ON, TX/RX
Onboard Switch Style:	Momentary Pushbutton with Splash Cover, Meets IP 65 of IEC60529 Specification
Switch Input:	Configurable: Momentary or ON/OFF; Latching or Non-Latching
Operating Temperature:	-49 to 149ºF (-45 to 65ºC)
Operating RH:	5% to 95% non-condensing
Storage Temperature:	-49 to 158ºF (-45 to 70ºC)
Storage Humidity:	5% to 95% non-condensing
Enclosure:	IP 66 & NEMA 4, 4X,12 & 13 Polycarbonate | Flammability UL94-5 VA
Enclosure Dimmensions:	(L) 4.724" (120 mm) x (W) 2.559" (65 mm) x (D) 2.362" (60 mm)
Product Weight:	0.7 lbs (0.318 kg)

DIMENSIONAL DRAWING

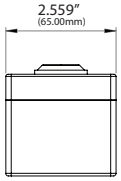
M-Switch & R-Switch



Front & Back Views



Right View



Top View

STANDARD ORDERING

Model # Example: M-SWITCH -OR- 127160

Model #	Item #	Description
M-SWITCH	127160	Microcontroller Based Switch
R-SWITCH	140640	Extension of an M-Switch, or used to reset a Latched M-Switch in a M-Controller or Q4C Gas System

STROBE AND ALARMS

Multifunctional LED Beacon/Sounder

The FSIG-SLM500 Series is a multifunctional LED beacon and sounder combination developed with a multiple input technology that allows three separate levels of alarm (alert, pre-alarm, alarm) controllable via independent electric contacts. Channel 1 includes a simulated strobe (triple flash) visual signal only. Channel 2 adds an audible tone, selectable from 32 tones via dip switch, to the simulated strobe effect. Channel 3 includes a steady light and a second, unique tone selectable from 32 different tones, for a total of 64 unique tones. The volume of a selected tone is adjustable (65 dBa to 105 dBa for the highest performing tone). Its enclosure is made from a self-extinguishing polycarbonate material with high impact and UV resistance. The mounting base and strobe/sounder are sold separately. An optional protective wire dome is available for use in applications to protect the horn and strobe from being damaged once installed in your building. Other options may be available upon request. Contact ACI to discuss your application in greater detail or for more information regarding the strobes and audible alarm series.

Applications: Audible/Visual Alarms for Gas Detection and Alarm Systems, Visual Alarms, Audible Alarms, Equipment Status

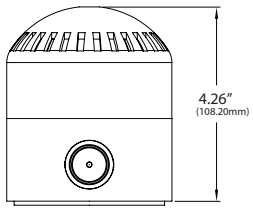
The LED Strobe and Alarm Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

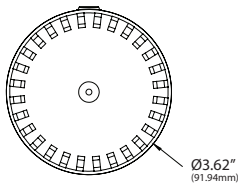
PRODUCT SPECIFICATIONS

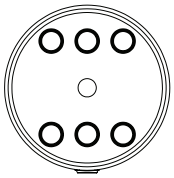
Supply Voltage:	12 to 24 VAC/VDC
Maximum Operating Current | VA Rating:	**12 VAC/VDC:** 380 mA | 6 VA | **24 VAC/VDC:** 460 mA | 13 VA
Input Types Accepted:	Relay
Number of Channels:	Three (3) | **1:** Visual only | **2:** Visual and Tone 1 | **3:** Visual and Tone 2
Light Source:	LED Array
Strobe Colors:	Amber, Blue, Clear, Green and Red
LED Lamp Life:	50,000 Hours
Luminous Intensity: Candelas | Lumens	**Amber**: 65 | 817, **Blue**: 60 | 754, **Clear**: 300 | 3771, **Green**: 100 | 1257, **Red**: 80 | 1006
LED Strobe Flash Rate / Minute:	85 +/- 10 Flashes (Flash Mode Only)
Flash Patterns:	Three (3) | Strobe (Default), Fade, and Steady
Tones:	64 options (Dip Switch selectable), three adjustable levels
Horn Decibels @ 1 meter (3.28'):	Adjustable from 65 to 105 dB
Operating Temperature:	-22 to 131°F (-30 to 55°C)
Mounting Base Material:	High Impact and UV Resistant, Self-Extinguishing Polycarbonate
Base Color:	**Deep Base and Wall Mount:** Gray
NEMA/IP Rating:	Type 3R (IP65)
Product Dimensions:	**Strobe (Diameter x H):** 3.9" (92 mm) x 2.44" (62 mm) **Deep Base (Diameter x H):** 3.62" (92 mm) x 1.81" (46 mm) **Wall Mount Base (L x W x H):** 4.52" (115 mm) x 3.93" (100 mm) x 2.04" (61 mm) **Protective Dome (Diameter x H):** 5.015" (127 mm) x 4.359" (111 mm)
Product Weights:	**FSIG-SLM500 Series:** 0.485 lbs. (0.22 kg) | **FSIG-SLMDB-012-024GY:** 0.264 lbs. (0.12 kg) **FSIG-SLMBW-012-024GY:** 0.419 lbs. (0.19 kg)
Agency Approvals:	UL/cUL US (File# E162485), Audible and Visual Appliance Type 3P for Indoor/Outdoor, CE (2014/30/EU (EMC) and 2014/35/EU (Low Voltage), RoHS2

DIMENSIONAL DRAWING

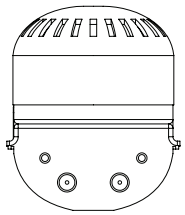
Horn/Strobe Deep Base

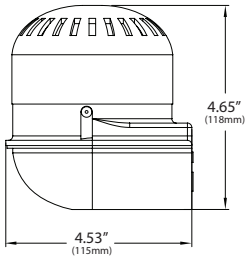


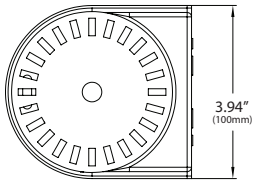




Horn/Strobe Wall Mount







Front View	Side View	Top View

STANDARD ORDERING | HORN STROBE

Model # Example: FSIG-SLM500A -OR- 136476

Model #	Item #	Description
FSIG-SLM500A	136476	Streamline Horn and Strobe (Amber)
FSIG-SLM500B	142976	Streamline Horn and Strobe (Blue)
FSIG-SLM500G	143013	Streamline Horn and Strobe (Green)
FSIG-SLM500R	143132	Streamline Horn and Strobe (Red)
FSIG-SLM500C	150028	Streamline Horn and Strobe (Clear)

STANDARD ORDERING | MOUNTING BASE

Model # Example: FSIG-SLMBW-012-024GY -OR- 136477

Model #	Item #	Description
FSIG-SLMBD-012-024GY	142977	Deep Base for FSIG-SLM500 Series; Gray
FSIG-SLMBW-012-024GY	136477	Wall Mount Base for FSIG-SLM500 Series; Gray

ACCESSORIES | DOME

Model # Example: FSIG-SLMDG2 -OR- 143149

Model #	Item #	Description
FSIG-SLMDG2	143149	Optional Protective Dome for Deep Mounting Base and SLM500x Series Horn and Strobe

LITESTAK

Indoor Stackable Status Indicator

The Litestak® status indicator is an indoor stackable 24VDC lighting option that provides a 360° visual signal. There can be up to five light modules or up to four light modules plus an optional sound module to create a dual purpose audible/visual status indicator. The light modules are available in five lens colors: Amber, Blue, Clear, Green and Red. The clear module or the sound module is always mounted at the top position of a Litestak® unit if used.

Individual light modules may be set to either steady or flash using the optional flasher. The light modules consist of two impact-resistant polycarbonate lens halves that snap apart to provide easy maintenance and interchangeability of colors. The flasher and sound module are sold separately.

The LSB base can be installed on a 3/4-inch NPT pipe mount or surface mounted and the LSBS for low profile surface mounting. The Litestak® stack should be mounted with the base at the bottom.

The Litestak is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com**.**

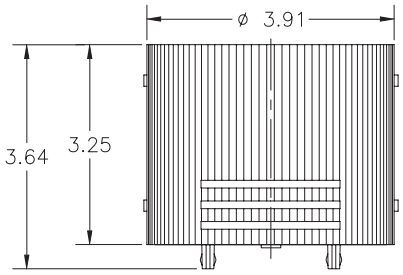
PRODUCT SPECIFICATIONS

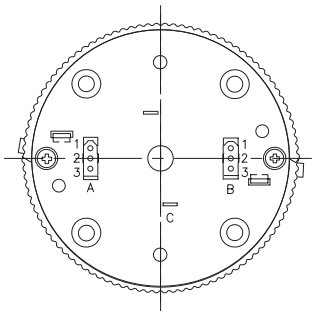
Supply Voltage:	24 VDC
Operating Current*:	**LSL Light Modules:** 0.76 amps **| LHS Piezoelectric Horn:** 70mA
Input Types:	Relay
Lamp Life:	2,500 Hours
Light Source:	Incandescent
Light Module Colors:	Amber, Blue, Clear, Green and Red
Horn Decibels:	Adjustable, up to 75-77 dBa @ 10' (85-87 dBa @ 1m)
Operating Temperature:	32-120°F (0-49°C)
Mounting Base Material:	Polycarbonate
Base Color:	Black
NEMA | IP Rating:	NEMA 1 **|** IP 10
Product Dimensions:	**LSB Base, LSL Module, and LSH Piezoelectric Horn (D x H):** 3.93" (99.8mm) x 3.25" (82.6mm) **LSBS Base (D x H):** 3.93" (33.8mm) x 3.25" (82.6mm)
Product Shipping Weight:	**LSL Light Module:** 0.8 lbs (0.4 kg) **LBS Base:** 1.0 lbs (0.4 kg) **LSH Piezoelectric Horn:** 0.65 lbs (0.3 kg)
Agency Approvals:	UL Listed, CSA Certified

Note*: Operating current listed is for one module. For multiple modules, the current will have to be added together throughout the configuration to get the total operating current.

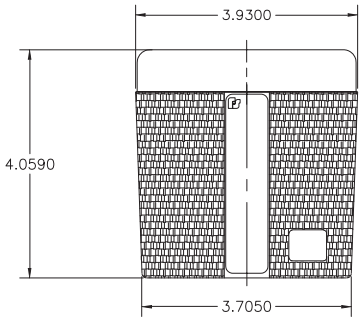
DIMENSIONS

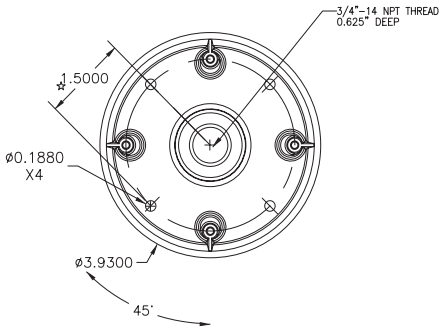
LSL Light Module and LSH Piezoelectric Horn



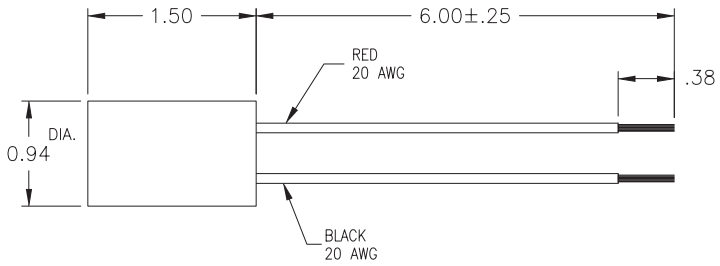


LSB Base





K8285237A Flasher module



STANDARD ORDERING | LIGHT MODULE

Model #	Item #	Description
FSIG-LSL-024A	148902	Light Module, Amber
FSIG-LSL-024B	148903	Light Module, Blue
FSIG-LSL-024C	148904	Light Module, Clear
FSIG-LSL-024G	148905	Light Module, Green
FSIG-LSL-024R	148906	Light Module, Red

STANDARD ORDERING | MOUNTING BASE

Model #	Item #	Description
FSIG-LSB-024-240	148898	Surface mount or 3/4" conduit mount
FSIG-LSBS	148899	Surface mount base

ACCESSORIES

Model #	Item #	Description
FSIG-K8285237A	149007	Flasher Module
FSIG-LSH-024	149008	Piezoelectric Horn

*The calibration adapter, zero and span gases are not included and must be ordered separately

GAS CAL KIT

Gas Calibration Kit

This kit is used for calibration or bump testing of Q5/B5, Q6/B6 series sensors, Q8/B8 series explosion-proof sensors, and the QTS-1700 series explosion proof combustible sensors. The GAS CAL KIT consists of one C10 0.5lpm regulator, one C10 to CGA-600 adapter, ten feet of ¼" tubing and a carry case. The calibration adapter for series sensors needed is ordered separately. The carry case has spaces for three 17L or 34L cylinder of Zero and Span gas for easy transportation and storage of gas and calibration equipment. The Zero and Span calibration gases are not included with the Gas Cal Kit but can be ordered through ACI and drop shipped to the jobsite.

-A "bump test" (function check) is the application of target gas to a sensor to verify alarms, functionality and alarm response. Bump testing is performed upon system start-up or commissioning of the gas detection system or as routine maintenance throughout the year.

-A "calibration check" is challenging a sensor using a traceable source of known concentration test gas to verify that the response of the sensors is within the manufacturer's acceptable limits. If the calibration check results are not within the acceptable range of ±10% of the value of the gas applied, a full calibration should be performed. Calibration checks should be performed between full calibration.

-A "full calibration" is defined as the adjustment of an instrument's response to match a desired value compared to a known traceable concentration of test gas. Full calibration should be performed on a yearly basis or by building owner. The instructions for calibration can be found in the Q5/B5 user manual.

Gas tips:

Always use fresh calibration gas for calibration, bump testing, and for calibration verification. Do not use gas that is past its expiration date.

Note: Reactive gases such as Nitrogen Dioxide, Ammonia, Hydrogen Sulphide, etc. have a shorter shelf life, normally less than a year, than non-reactive gases. Reactive calibration gases with higher concentration could have longer shelf life than lower concentrations.

Zero gas can be 20.9% Oxygen or 100% Nitrogen.

Span gas is a specific concentration of the target gas that is at least half of the span of the sensor.

Install and remove the regulator and adapter as one unit. Installing the gas cylinder adapter alone will cause the gas in the cylinder to escape.

Bump Testing and Calibration Checks should be on a maintenance schedule to verify functionality.

Full calibration should be scheduled and performed at least once every year.

Recommended calibration of Oxygen/Hydrogen (Toxic) sensors is every three (3) months due to the short life span of the sensing element.

If sensor gives "Cal Error" message after attempted calibration, replace the Smart Sensor board. See Replacement Smart Sensor sheet for replacement part number.

Note: Further information (bump testing/calibration demo videos and a list of replacement sensors) can be found at: www.workaci.com.

STANDARD ORDERING

Model #	Item #	Description
GAS CAL KIT	148426	Carry Case, 0.5lpm Regulator, C10 to CGA-600 Adapter and Tubing

CAL ADAPTER ORDERING

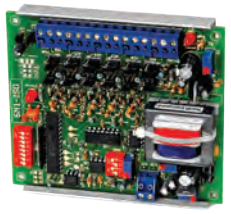
Model #	Item #	Description
85930-006-000	128901	Q5/B5, Q6/B6 Calibration Adapter
79030-103	126566	Q8/B8, QTS-1710 Combustible Calibration Adapter
6395-0003	126254	Q8/B8 Toxic Calibration Adapter
83830-020-000	127649	CO-R, NO2-R, M5 Calibration Adapter

Note: The above adapters are required to connect to the corresponding ACI Gas Sensors.

CALIBRATION GASES

Model #	Item #	Description	Balance	Valve	Shelf Life
H107220.9VN	148988	20.9% Oxygen, 34L, Certified	Nitrogen	CGA 600	3 years
H1066	148989	100% Nitrogen, 34L, Certified	Air	CGA 600	3 years
F10675PA	148986	5 ppm Nitrogen Dioxide, A34L, Certified	Air	C-10	1 year
F106710PA	148987	10 ppm Nitrogen Dioxide, A34L, Certified	Air	C-10	1 year
H101650PN	148990	50 ppm Carbon Monoxide, 34L, Certified	Nitrogen	CGA 600	3 years
H1016100PN	148991	100 ppm Carbon Monoxide, 34L, Certified	Nitrogen	CGA 600	3 years
H104950LA	148999	50% LEL Hydrogen, (2.00%) 34L, Certified	Air	CGA 600	3 years
H197150LA	149000	50% LEL Methane, (2.50%), 34L, Certified	Air	CGA 600	3 years
H1971125LA	149001	25% LEL Methane, (1.25%), 34L, Certified	Air	CGA 600	3 years
H10131000PN	149003	1000 ppm Carbon Dioxide, 34L, Certified	Nitrogen	CGA 600	3 years
F10795PN	149087	5 ppm Sulfur Dioxide, A34L, Certified	Nitrogen	C-10	2 Years
34LS-78A-1000	150759	1000 ppm R11 Refrigerant, 34L, Certified	Air Balance	CGA 600	4 Years
34LS-70A-1000	150760	1000 ppm, R134a Refrigerant, 34L, Certified	Air Balance	CGA 600	4 years
H1013750PN	149140	750 ppm Carbon Dioxide, 34L, Certified	Nitrogen	CGA 600	3 Years
F166050PN	150168	50 ppm Nitric Oxide, 34L, Certified	Nitrogen	C-10	1 Year
Z10175PN	150169	5 ppm Chlorine, 58L, Certified	Nitrogen	C-10	6 Months
H197120LA	150853	20% LEL Methane, (1.00%) 34L, Certified	Air	CGA 600	3 Years
H10491000PA	150888	1000 ppm Hydrogen, 34L, Certified	Air	CGA 600	3 Years

Note: Calibration gases are not covered by the ACI warranty



6N1-ISO

6 Analog / Digital Inputs to 1 Analog Output

The 6N1-ISO series is a microprocessor controlled interface designed to provide maximum flexibility with a minimum of cost.

With a variety of standard inputs, the 6N1-ISO provides the user with the ability to interface several devices to a single analog output. The 6N1-ISO can average two to six inputs, output the highest of two to six inputs, output the lowest of two to six inputs, output the sum of 2 inputs, or output the difference of two inputs. The 6N1-ISO also accepts up to 6 digital inputs(binary sequence) and outputs a proportional analog signal.

The 6N1-ISO-STG is a true staging device. It can be used in retrofit applications of interfacing a two or three stage thermostat to an SCR heater. It will convert 24VAC staged signals to a proportional analog output. The 6N1-ISO-STG offers two different modes. The first mode will check inputs sequentially high(#6) to low(#1), to set output percentage. The output percentage is based on highest input pressed, and ignores others. The other mode will check the total number of inputs, to set an output percentage. The output percentage is based on total number of active inputs.

Input ranges are jumper selectable and all modes and analog outputs are DIP switch selectable. The output signal is optically isolated from the input signals. The power output terminal can be used for power if the inputs are only contact closures.

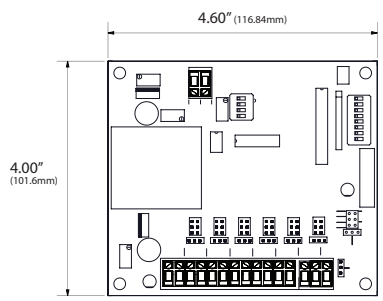
Applications: Coldest Zone Hot Deck Reset, Signal Selector, 3 Stage SCR, Staging

The 6N1-ISO is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

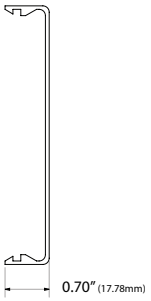
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz
Supply Current:	255 mA maximum (6.12VA with a 24 volt power supply)
Power Output:	24 VDC or 15 VDC (Jumper Selectable)
Power Output (Supply Current):	100 mA maximum
Input Voltage Signal Range/Input Impedance (6N1-ISO):	0 to 5 VDC @ 1MΩ, 0 to 10 VDC @ 20,000Ω, 0 to 20 VDC @ 10,000Ω
Input Current Signal Range/Input Impedance (6N1-ISO)	0-20 mA @ 249Ω
Input Mode (Digital/Binary) (6N1-ISO & 6N1-ISO-STG):	15 VDC, 24 VDC or 24 VAC +/-10% @ 100,000Ω
One Analog Signal Output (@ Impedance):	0-5 VDC @ 1000Ω | 0-10 VDC @ 1000Ω | 0-20 VDC @ 1000Ω | 0-20 mA @ 500Ω maximum
Output Signal Accuracy:	+/- 2% of full scale
Resolution (Analog/Binary):	64 steps of resolution
Product Functions(6N1-ISO):	Average, Highest, Lowest, Sum, Difference
Product Functions(6N1-ISO-STG):	Stage Control
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 90% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 4.00" (W) 4.60" (H) 1.00" (101.6 x 116.84 x 25.4 mm)
Product Weight:	

DIMENSIONAL DRAWING



Board Only



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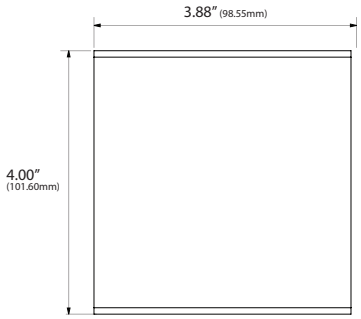


Snap Track

STANDARD ORDERING

Model # Example: 6N1-ISO -OR- 111750

Model #	Item #	Description
6N1-ISO	111750	6 Analog / Digital Inputs to 1 Analog Output (Average, Highest, Lowest, Sum, Difference)
6N1-ISO-STG	148420	6 Digital Inputs to 1 Analog Output, Stage Control (Stage Control)

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 3.88 X 4.0	142622	DIN Rail Adapter Kit

AAR

Analog to 2 Relay Outputs

The AAR is controlled by a single analog input signal with two potentiometers controlling each output relay. The two 10 amp output relays can be independently set to fixed or adjustable deadband. "Fixed", the relay will turn "ON" at the level set by the Low pot and will turn "OFF" at a fixed 3% of the input signal below the turn-on level. "Adjustable" allows a flexible range of deadband adjustment using both the High and Low potentiometer. The edge-connector feature allows signal and power connections to be extended to the next board. This allows the installer to wire the first unit, then slide additional units together by plugging into a power, and signal bus without the need to strip and terminate additional wires. The AAR is field calibratable, however, factory calibration is available upon request for an additional charge. Relay trip points can be factory calibrated, saving installation time and expense.

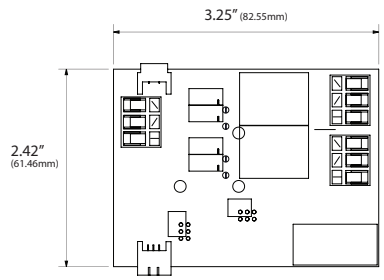
Applications: Level Indication, Digital Output Expansion, Alarms, Staging and Sequencing

The AAR is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

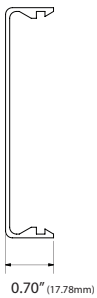
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24VDC, (+/- 10%), 50/60 Hz
Supply Current:	45 mA maximum
Input Voltage Signal Range (@ Impedance):	0 to 12 VDC @ 1MΩ, 0 to 24 VDC @ 20,000Ω
Input Current Signal Range (@ Impedance):	0-20 mA @ 499Ω
Deadband:	Fixed or Adjustable – Jumper Selectable
Digital Output Type:	Two SPDT Form "C" Relays
Relay Contact Rating:	10A @ 120 VAC / 24VAC, 5A @ 240VAC
Relay Electrical Life:	100,000 operations minimum
Relay Mechanical Life:	10,000,000 operations
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Edge Connector:	Connect six AARs together using one connection, more if power is jumpered to every sixth AAR
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.25" (W) 2.42" (H) 1.00" (82.55 x 61.47 x 25.4 mm)
Product Weight:	0.25 lbs. (0.113 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only



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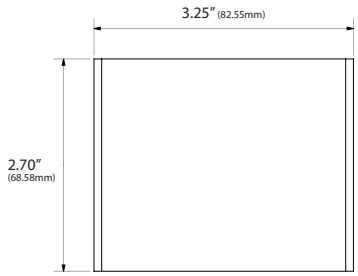


Snap Track

STANDARD ORDERING

Model # Example: AAR -OR- 101785

Model #	Item #	Description
AAR	101785	Analog to 2 Relay Outputs

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 2.7 X 3.25	142624	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

AFP

Analog to Floating Point

The AFP allows an analog (voltage or current) signal to control a floating point actuator. It converts an analog signal into two relay contact outputs (one increase/one decrease). The isolated floating point output can be controlled by any one of nine analog input signal ranges (using an offset jumper). Upon power-up, the decrease relay will drive 100% of the chosen timing range to ensure that the output is at its minimum position. On a loss of power, the output relays will be open and no signal will be generated. The actuator will remain at the last commanded position unless it has "spring return". The AFP output rate of change (sixteen ranges, in eight versions) is DIP switch selectable. In **Version 2**, upon power-up, the decrease relay will drive 200% of the chosen timing range to ensure that the output is at its minimum position. At 2 to 5% or below and 95 to 98% or higher of the input signal, the up or down contact will drive for an additional 100% of the chosen timing range. This assures that the control signal and actuator are in synchronization. In **Version 4**, the relays stay on at minimum and maximum voltage. In **Version 5**, the AFP relays stays on with 5% of maximum or minimum input voltage. There is no overshoot on maximum or minimum input voltage. In **Version 7**, upon power-up, the increase relay will drive 105% of the chosen timing range to ensure that the output is at its maximum.

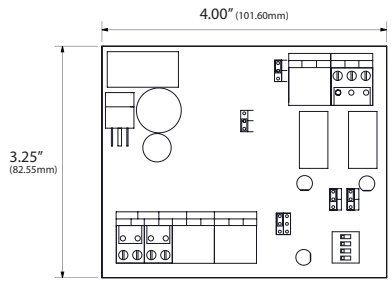
Applications: Electric Actuator Control

The AFP is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24 VDC, (+/- 10%), 50/60 Hz
Supply Current:	105 mA maximum without 24 VDC auxiliary output 190 mA maximum with 24 VDC auxiliary output
Input Voltage Signal Range:	0-5 VDC, 0-10 VDC, 0-15 VDC
Input Current Signal Range:	0-20 mA
Analog Voltage Signal Input Range with Offset Jumper:	1-5 VDC, 2-10 VDC, 3-15 VDC
Analog Current Signal Input Range with Offset Jumper:	4-20 mA
Input Impedances (Nominal):	Voltage @ 10,000Ω Nominal / Current @ 250Ω nominal
Output (Floating Point):	Two relay contact outputs (Increase / Decrease)
Relay Contact Rating:	Dry Contact, Form C, 2A maximum @ 24 VDC
Relay Electrical Life:	100,000 operations minimum
Relay Mechanical Life:	1,000,000 operation
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 4.00" (W) 3.25" (H) 1.15" (101.6 x 82.55 x 29.21 mm)
Product Weight:	0.325 lbs. (0.147 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



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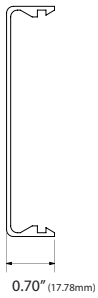
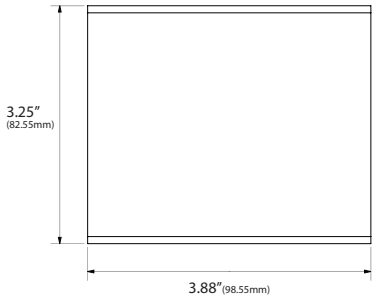


Snap Track



Snap Track

STANDARD ORDERING

Model # Example: AFP -OR- 106317

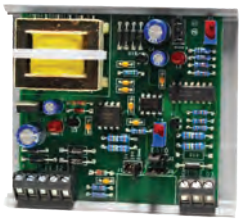
Model #	Item #	Firmware Version #	Rate of Change*	Additional Information
AFP	106317	AFP_0101.hex	30, 60, 90s	----
AFP VERSION #2	105626	AFP_0201.hex	120, 150, or 180s	Drives actuator down 200% of range (power reapplied) At 2-5% or below & 95-98% or higher (input signal), the up or down contact will drive an additional 100% of chosen timing range
AFP VERSION #3	129865	AFP_0301.hex	14, 16.5, or 19s	----
AFP VERSION #4	112382	AFP_0401.hex	30, 60 or 90s	Relay stays on at Min. & Max. voltage
AFP VERSION #5	128283	AFP_0501.hex	90, 135 or 180s	Relay stays on with 5% of Max. or Min. input voltage. No overshoot on Max. or Min. input voltage
AFP VERSION #6	130469	AFP_0601.hex	18, 75 or 360s	----
AFP VERSION #7	144859	AFP_0701.hex	30, 60 or 90s	Drives actuator up 105% of range (power reapplied)
AFP VERSION #8	144604	AFP_0801.hex	46, 240 or 600s	----

Note*: Rates of Change unit of measurement = seconds

ACCESSORIES

A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 3.88 X 3.25	142621	DIN Rail Adapter Kit



AIM1.1

Analog Input to Optically Isolated Analog Output

The AIM1.1 optically isolates an analog (voltage or current) input signal from its corresponding output signal. The factory calibrated output is linear and proportional (1:1 ratio) to the input signal. The AIM1.1 will accept a 0 to 5 VDC, 0 to 10 VDC, or 0 to 20 mA input span and output any one of those same ranges. It requires one external 24 VAC isolation transformer with floating secondary for power and has an onboard 24 VAC isolation transformer to supply the isolated output.

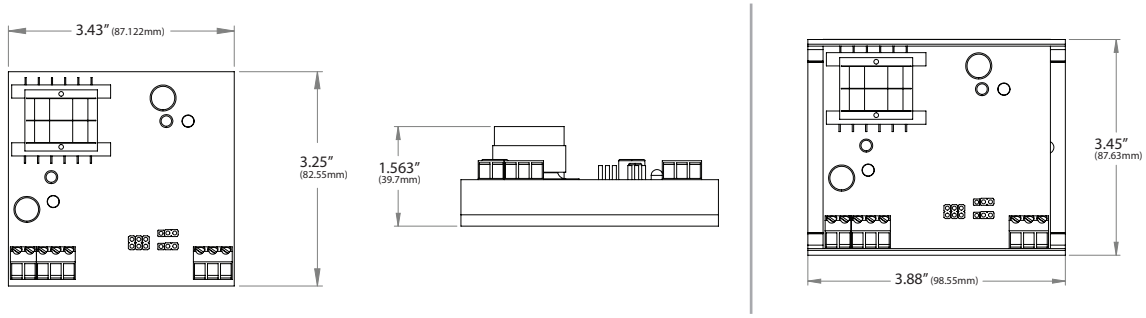
Applications: Grounded Electrical Actuator Isolation, Florescent Light Dimmer Isolation, Ground Loop Isolation, Variable Frequency Motor Drive Isolation, General Analog Signal Input and Output Isolation

The AIM1.1 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz
Supply Current:	250 mA Maximum
Input Voltage Signal Range (@ Impedance):	0 to 5 VDC @ 20,000Ω, 0 to 10 VDC @ 20,000Ω
Input Current Signal Range (@ Impedance):	0-20 mA @ 249Ω
Output Voltage Signal Range (@ Impedance):	0 to 5 VDC @ 5,000, 0 to 10 VDC @ 5,000
Output Current Signal Range (@ Impedance):	0-20 mA (Source or Sink) @ 500Ω (Maximum Load Resistance)
Voltage Mode Accuracy:	+/- 1%
Current Sink Mode Accuracy:	+/- 2%
Current Source Mode Accuracy:	+/- 1%
Linearity:	+/- 1%
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm^2) to 22 AWG (0.33 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	15 to 90% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.25" (W) 3.42" (H) 1.50" (82.55 x 86.87 x 38.1 mm)
Product Weight:	0.425 lbs (0.193 kg)
Agency Approvals:	RoHS 3 Directive 2015/863/EU, WEEE

DIMENSIONAL DRAWING



Standard View **With Snap Track**

STANDARD ORDERING

Model # Example: AIM1.1 -OR- 145185

Model #	Item #	Description
AIM1.1	145185	Analog Input to Optically Isolated Analog Output

Note*: An external 24 VAC isolation transformer is required (see below)

ACCESSORIES

Model # Example: LE105 -OR- 102553

Model #	Item #	Description
LE105	102553	Primary Voltage: 24 VAC, 50/60 Hz | Secondary Voltage: 24 VAC (VA: 40) (Hubs: 1) (Manual Reset: TC)
A/DRC 3.88 X 3.25	142621	DIN Rail Adapter Kit

AIM2

Analog Input to Optically Isolated Analog Output

The AIM2 optically isolates an analog (voltage or current) input signal from its corresponding output signal. It will accept any input signal between 0 and 20 VDC, or 0 and 20 mA, and output any signal within those ranges. The AIM2 has preset or adjustable inputs and preset or adjustable outputs that can be either voltage or current. The current signals on the input or output can be either sink or source. The AIM2 requires one external 24 VAC isolation transformer with floating secondary for power. It has an onboard 24 VAC isolation transformer to supply power to the isolated output. The AIM2 is field calibratable, however, factory calibration is available upon request for an additional charge. This will speed up installation time for the end user.

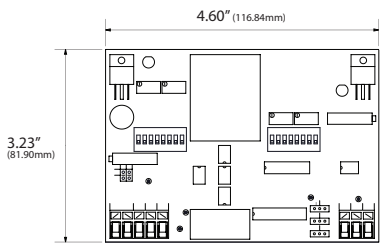
Applications: Grounded Electrical Actuator Isolation, Florescent Light Dimmer Isolation, Ground Loop Isolation, Variable Frequency Motor Drive Isolation, General Analog Signal Input and Output Isolation

The AIM2 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz
Supply Current:	200 mA maximum
Input Voltage Signal Preset Ranges:	0-5V, 0-10V, 0-15V, 0-20V, 1-5V, 2-10V, 3-15V, 4-20V, 0-1V
Input Current Signal Preset Ranges:	0-20 mA, 4-20 mA, 0-1 mA
Input Signal Adjustable Voltage Span:	1 VDC (Minimum) to 20 VDC (Maximum)
Input Signal Adjustable Voltage Offset:	From 0 to 20 VDC
Input Signal Adjustable Current Span:	4 mA (Minimum) to 20 mA (Maximum)
Current Offset:	From 0 to 20 mA
Input Voltage Impedance:	9,500Ω
Input Current Impedance:	250Ω +/-1%
Output Voltage Signal Preset Ranges:	0-5 VDC, 1-5 VDC, 0-10 VDC, 2-10 VDC
Output Current Signal Preset Ranges:	0-20 mA, 4-20 mA
Output Signal Adjustable Voltage Span:	1 VDC (Minimum) to 20 VDC +/- 1 VDC (Maximum)
Output Signal Adjustable Voltage Offset:	From 0 to 10 VDC
Output Signal Adjustable Current Span:	0 mA (Minimum) to 20 mA (Maximum)
Output Signal Adjustable Current Offset:	From 0 to 20 mA
Output Voltage Impedance:	5,000Ω
Output Current Impedance:	500Ω
Accuracy:	+/- 3%
Linearity:	+/- 1%
Analog Optical Isolation:	600VAC / 1500 VDC Maximum
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 4.60" (W) 3.23" (H) 1.20" (116.84 x 81.90 x 30.48 mm)
Product Weight:	0.525 lbs. (0.238 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



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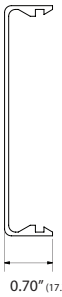
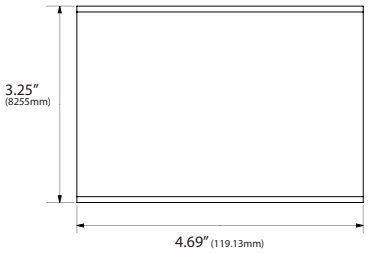


Snap Track



Snap Track

STANDARD ORDERING

Model # Example: AIM2 -OR- 101794

Model #	Item #	Description
AIM2	101794	Analog Input to Optically Isolated Analog Output

Note*: An enternal 24 VAC isolation transform is required (see below)

ACCESSORIES

Model # Example: LE105 -OR- 102553

Model #	Item #	Description
LE105	102553	Primary Voltage: 24 VAC, 50/60 Hz | Secondary Voltage: 24 VAC (VA: 40) (Hubs: 1) (Manual Reset: TC)
A/DRC 4.69 X 3.25	142620	DIN Rail Adapter Kit

AIM3

Analog Input to Optically Isolated Analog Output

The AIM3 will accept a current or voltage input and deliver a single voltage or sourcing current output. It is designed to accept a feedback signal from a variable speed drive and direct it back to the controller (BAS) for monitoring motor speed. It can be modified for signal isolation between the output of the BAS system and the VFD drive controller as well. Isolation is provided between the power supply, signal input, and signal output circuits. The AIM3 must be powered by 120 VAC.

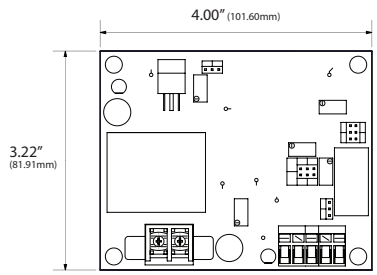
Applications: Grounded Electrical Actuator Isolation, Florescent Light Dimmer Isolation, Ground Loop Isolation, Variable Frequency Motor Drive Isolation, General Analog Signal Input and Output Isolation

The AIM3 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

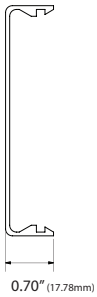
PRODUCT SPECIFICATIONS

Supply Voltage:	120 VAC (+/- 10%)
Supply Current:	50 mA maximum
Input Voltage Signal Preset Ranges (@ Impedance):	0-5 VDC, 1-5V @ > 5,000,000Ω
InputVoltage Signal Preset Ranges (@ Impedance):	0-10 VDC, 2-10 VDC @ 20,000Ω
Input Current Signal Preset Ranges (@ Impedance):	0-20 mA DC, 4-20 mA DC @ 249Ω
Output Voltage Signal Preset Ranges (@ Impedance):	0-5 VDC, 1-5 VDC @ 500Ω
Output Voltage Signal Preset Ranges (@ Impedance):	0-10 VDC, 2-10 VDC @ 1,000Ω
Output Current Signal Preset Ranges (@ Impedance):	0-20 mA DC, 4-20 mA DC @ 750Ω
Output Signal Accuracy (Except 2-10 VDC):	Less than or equal to 1% of output span
Output Signal Accuracy (2-10 VDC):	Less than or equal to 1.5% of output span
Output Signal (Full Scale Resolution):	256 steps without offset, 205 steps with offset isolation
Isolation:	Capable of withstanding 500 VAC (rms) for a min. of 1 minute from power to input, input to output, and output to power
Power Connection:	45° Tri-Barrier with Rising Clamp Washer Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Output Signal Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.22" (W) 4.00" (H) 1.25" (81.92 x 101.6 x 31.75 mm)
Product Weight:	0.525 lbs. (0.238 Kg)
Agency Approvals:	RoHS2, WEEE

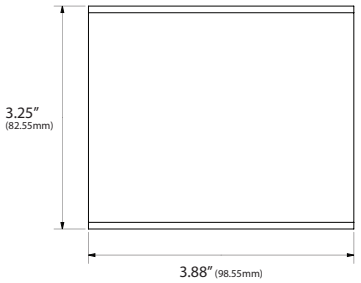
DIMENSIONAL DRAWING



Board Only



Snap Track



Snap Track

STANDARD ORDERING

Model # Example: AIM3 -OR- 101795

Model #	Item #	Description
AIM3	101795	Analog Input to Optically Isolated Analog Output

ACCESSORIES

Model # Example: A/DRC 3.88 X 3.25 -OR- 142621

Model #	Item #	Description
A/DRC 3.88 X 3.25	142621	DIN Rail Adapter Kit

ARM

Analog Current/Voltage Rescaling Module

The ARM is an analog rescaling module which accepts an analog (voltage or current) input signal and rescales it to another voltage or current output signal. The top-adjust trimmer potentiometers can be used to make fine adjustments to output ranges for maximum flexibility. This device can attenuate an input signal to 100%. The ARM also has an adjustable gain and offset. The output gain can be adjusted from 1 to 25 times the input (gain will vary depending on input). The offset of the output can be adjusted anywhere from 0 to +/- 20 VDC. The ARM also has the ability to reverse an input signal. The ARM has a regulated 20 VDC power supply output to power sensors. The ARM can also accept a resistance input by using voltage divider applications. The ARM is field calibratable, however, factory calibration is available upon request for an additional charge. This will speed up installation time for the end user.

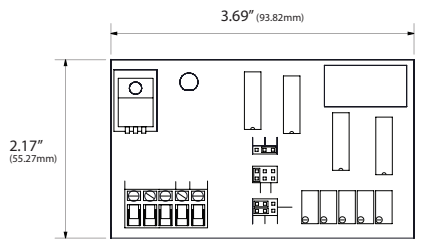
Applications: Resistance to Current or Voltage Conversion, Voltage to Current or Voltage Conversion, Current to Current or Voltage Conversion, Shrink or Expand Sensor Ranges, Increase Analog Input Resolution, Reverse a Signal, Adapt Non-compatible Signals

The ARM is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

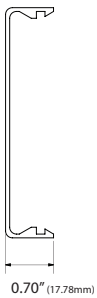
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24 VDC, (+/- 10%), 50/60 Hz
Supply Current:	200 mA maximum
Input Voltage Signal Range (@ Impedance):	0-35 VDC @ 1,000,000Ω
Input Current Signal Range (@ Impedance):	0 to 44 mA @ 250Ω
Input Resistance Signal Range:	0 to 500,000Ω
Field Adjustable Ranges:	Multi-turn potentiometers
Output Voltage Signal Range:	0.25 VDC minimum to 20 VDC maximum
Output Current Signal Range:	44 mA maximum, Signal Gain 1 to 25 times (nominal) depending on input value
Output Accuracy:	+/- 1%
Output Signal Attenuation:	0 to 100%
Output Signal Offset:	0.25 to 20 VDC
Output Signal Inversion (RA):	20 to 0.25 VDC (nominal)
Output Current Load Impedance:	750Ω @ 20 mA
Output Voltage Load Impedance:	3300Ω @ 20 VDC +/- 10% / 400Ω @ 10 VDC +/- 10%
Regulated Power Output:	20 VDC +/- 10%, 30 mA maximum
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.69" (W) 2.17" (H) 1.00" (93.73 x 55.12 x 25.54 mm)
Product Weight:	0.200 lbs. (0.0907 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only



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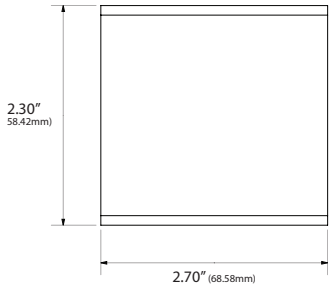


Snap Track

STANDARD ORDERING

Model # Example: ARM -OR- 102028

Model #	Item #	Description
ARM	102028	Analog Current/Voltage Rescaling Module

SPECIAL CALIBRATION ORDERING

Model # Example: C/ARM -OR- 137061

Model #	Item #	Description
C/ARM	137061	Specify Input and Output

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 2.7 X 2.18	142626	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

ARM2

Analog Current/Voltage Rescaling Signal Splitter

The ARM2 will accept a single analog (voltage or current) signal and split that signal into two DC non-isolated current sourcing outputs that can be re-scaled. Its primary application is as a signal splitter. The outputs are always scaled identically and will always track each other. The top-adjust trimmer potentiometers can be used to make fine adjustments to output ranges for maximum flexibility. This device can attenuate an input signal to 100%. The ARM2 also has an adjustable gain and offset. The output gain can be adjusted from 1 to 20 times the input (gain will vary depending on input). The ARM2 also has the ability to reverse an input signal. The ARM2 has a regulated 23 VDC power supply output to power sensors. The ARM2 can also accept a resistance input by using voltage divider applications. The ARM2 is field calibratable, however, factory calibration is available upon request for an additional charge. This will speed up installation time for the end user.

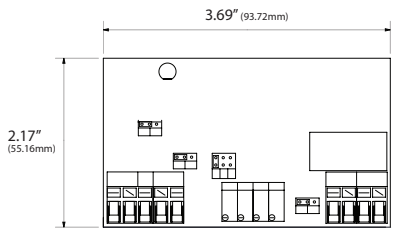
Applications: Signal Loop Monitoring, Resistance to Current Conversion, Voltage to Current Conversion, Current to Current Conversion, Shrink or Expand Sensor Ranges, Increase Analog Input Resolution, Reverse a Signal, Adapt Non-compatible Signals

The ARM2 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

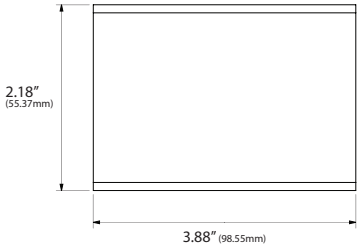
Supply Voltage:	22.8 to 30 VDC, 21.6 to 26.4 VAC
Supply Current:	100 mA maximum
Input Voltage Signal Range (@ Impedance):	0-35 VDC @ 1,000,000Ω
Input Current Signal Range (@ Impedance):	0 to 44 mA @ 250Ω
Input Resistance Signal Range:	0 to 500,000Ω
Field Adjustable Ranges:	Multi-turn potentiometers
Output Current Signal Range:	Signal Gain 1 to 20 times (nominal) depending on input value
Signal Output Accuracy:	Less than or equal to 1% of output span over full temperature range when using 1:1 input to output | Accuracy is calibration dependent over full temperature range
Output Signal Attenuation:	0 to 100%
Output Signal Offset:	0.25 to 20 VDC
Output Signal Inversion (RA):	20 to 0 mA (nominal)
Output Current Load Impedance:	750Ω @ 20 mA
Regulated Power Output:	23 VDC nominal @ 24 VAC Power Supply, 30 mA maximum
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.69" (W) 2.17" (H) 1.00" (93.73 x 55.12 x 25.54 mm)
Product Weight:	0.231 lbs. (0.104 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only

Snap Track



Snap Track

STANDARD ORDERING

Model # Example: ARM2 -OR- 102029

Model #	Item #	Description
ARM2	102029	Analog Current/Voltage Rescaling Signal Splitter

SPECIAL CALIBRATION ORDERING

Model # Example: C/ARM2 -OR- 137062

Model #	Item #	Description
C/ARM2	137062	Specify Input and Output

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 3.88 X 2.18	142623	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

ASA

Analog Signal Amplifier

The ASA is an analog signal amplifier which accepts an analog (voltage or current) signal and outputs a voltage signal. Several preset input ranges are jumper selectable. It is designed to give a Building Automation System signal output the power (wattage) to control Maxitrol™ Gas Valves normally installed in rooftop units. The top-adjust trimmer potentiometers can be used to make fine adjustments of gain and offset. The output gain can be adjusted anywhere from 1 to 20 times the input on the ASA (gain will vary depending on type of input). By using voltage divider applications, the ASA can also accept a resistance input. The offset of the output can be +/- 0 to 20 VDC. If above 30 watts, derate load current and calculate again (P out = [(V out/Load) (V out)] and/or (P out = (Load Current)(V out)). The ASA is field calibratable, however, factory calibration is available upon request for an additional charge. This will speed up installation time for the end user.

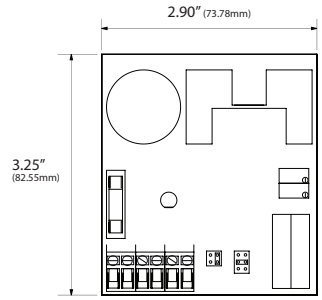
Applications: Provides Sufficient Power to Control Maxitrol™ Gas Valves, Increases Analog Signal Current Rating, Dimming Ballast Control (Sinking Drivers Only), Adapts Non-Compatible Signals, Resistance to Voltage Conversion, Current to Voltage Conversion

The ASA is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

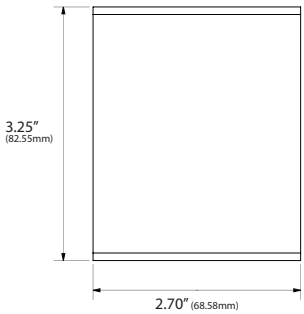
Supply Voltage:	24 VAC +10%/-5% (0-20 VDC out), 24 VDC +/- 10% (0-18 VDC out) 25-30 VDC (0-20 VDC out)
Supply Current:	50A nominal with no load, 2.05A maximum (Dependent on Load Impedance)
Input Voltage Signal Range (@ Impedance):	0 to 20 VDC @ 200,000Ω
Input Current Signal Range (@ Impedance):	0 to 44 mA @ 250Ω
Input Resistance Signal Range:	0 to 500,000Ω
Output Voltage Signal Range:	0 to 20 VDC
Output Voltage Signal Offset:	+/- 0 to 20 VDC
Output Voltage Signal Gain:	1-20 times (output can't exceed 20 VDC)
Output Load Impedance:	10Ω minimum
Output Signal Offset (Jumper Selectable):	Zero Offset, Positive Offset, Negative Offset
Input-Output Tracking Accuracy:	+/- 2% Full Scale Output
Power Range:	2A or 30 Watts maximum
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	-40 to 150°F (-40 to 65°C)
Operating Humidity Range:	5 to 95% non-condensing
Storage Temperature:	-40 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.25" (W) 2.90" (H) 1.57" (82.55 x 73.66 x 39.88 mm)
Product Weight:	0.34 lbs. (0.156 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only

Snap Track



Snap Track

STANDARD ORDERING

Model # Example: ASA -OR- 102030

Model #	Item #	Description
ASA	102030	Analog Signal Amplifier

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 2.70 X 3.25	142624	DIN Rail Adapter Kit

ATL

Analog Current/Voltage to 4 Adjustable SPDT Relays

The ATL accepts an analog (voltage or current) input signal and controls four relays. Each relay has an adjustable trip point which is set by a multi-turn potentiometer. Each relay is activated when the input signal is equal to, or greater than, the trip point setting. Relays deactivate at trip point less the deadband (3% standard, 10% optional). Common (C), Normally Open (NO), and Normally Closed (NC) terminals are available at each relay. The ATL is field calibratable, however, factory calibration is available upon request for an additional charge. This will speed up installation time for the end user.

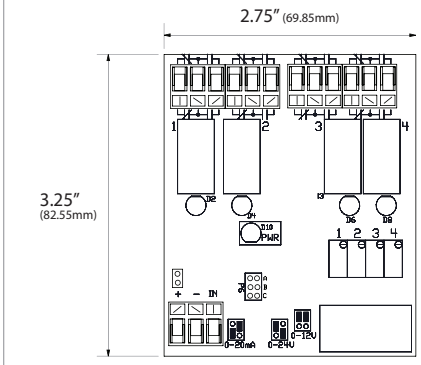
Applications: Level Indication, Digital Output Expansion, Alarms, Staging and Sequencing

The ATL is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

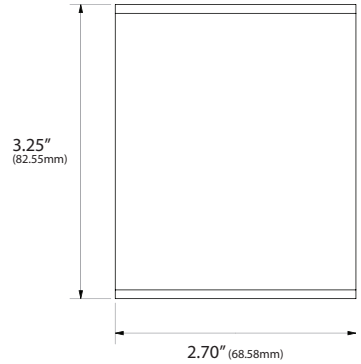
Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz or 22-28 VDC
Supply Current:	180 mA maximum
Input Voltage Signal Range (@ Impedance):	0 to 12 VDC @ 10MΩ, 0 to 24 VDC @ 20,000Ω
Input Current Signal Range (@ Impedance):	0-20 mA @ 500Ω
Deadband (0-12 VDC Signal):	3% Version (Standard): 0.33 VDC | 10% Version: 1.0 VDC
Deadband (0-24 VDC Signal):	3% Version (Standard): 0.66 VDC | 10% Version: 2.0 VDC
Deadband (0-20 mA Signal):	3% Version (Standard): 0.66 mA | 10% Version: 2.0 mA
Digital Output Type:	Four SPDT Form "C" Relays
Relay Contact Rating:	2A @ 24 VDC, 0.5A @ 240 VAC
Relay Electrical Life:	100,000 operations @ 1A
Relay Mechanical Life:	10,000,000 operations
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm^2) to 22 AWG (0.33 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature Range:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 2.75" (69.85 mm) x (W) 3.25" (82.55 mm) x (H) 1.00" (25.4 mm)
Product Weight:	0.25 lbs. (0.113 kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only

Snap Track Side View



Snap Track Front View

STANDARD ORDERING

Model # Example: ATL -OR- 105978

Model #	Item #	Description	Deadband
ATL	105978	Analog Current/Voltage to 4 Adjustable SPDT Relays	3%
ATL-DB-10%	129663	Analog Current/Voltage to 4 Adjustable SPDT Relays	10%

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 2.7 X 3.25	142624	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interface Products

DRC

DIN Rail Adapter Kit

The DRC DIN rail adapter kit consists of two flexible plastic DIN rail clips, an adhesive backed foam "stop", and a snaptrack with punched holes. The snaptrack has pre-punched holes to accommodate the DRC clips. The stems on the clips fit into the pre-punched holes in the snaptrack and have flexible locking "wings" to prevent them from backing out once installed. The supplied adhesive backed foam stop is used to prevent movement of the board in the snaptrack. Snap into pre-punched holes in back of snaptrack. It can be installed either direction for vertical or horizontal mounting. DRC and snap track assembly removes easily from DIN rail with screwdriver or pry tool. DRC can be removed if snap track mounting method changes. Place foam stop on snaptrack under terminal block leads to keep board from moving.

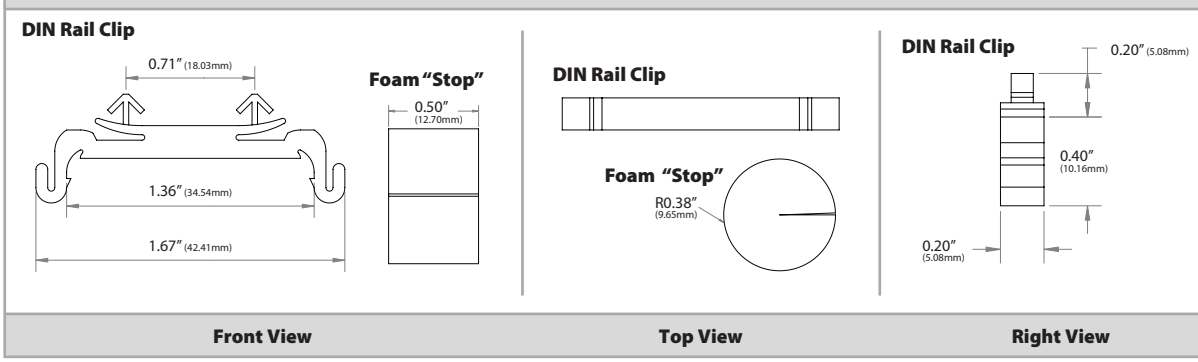
Applications: Allows any Interface product that mounts in snap track to be mounted on DIN rail where required.

The DRC is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

DIN Rail Size:	35 mm (U.S. Patent No. 7,416,421)
Foam Stop Material:	Neoprene/EPDM/SBR Blend
Foam Stop Dimensions:	0.75" Diameter, 0.50" Thickness
Agency Approvals:	RoHS2, WEEE
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Storage Temperature	35 to 120°F (1.7 to 48.9°C)/10 to 95% non-condensing
Snaptrack Material:	-20 to 150°F (-40 to 65.5°C)

DIMENSIONAL DRAWING



Front View | **Top View** | **Right View**

STANDARD ORDERING

Model # Example: DRC 4.69 X 3.25 -OR- 142620

Model #	Item #	Product Family	Snap Track Dimensions
A/DRC 4.69 X 3.25	142620	AIM2, DMUX, DRN3.1, RIM-5	4.69"x 3.25" (119.13 x 82.55mm)
A/DRC 3.88 X 3.25	142621	AFP, AIM1, AIM3	3.88" x 3.25" (98.55 x 82.55mm)
A/DRC 3.88 X 4.0	142622	6N1-ISO, PHOTON4.1	3.88" x 4.00" (98.55 x 101.6mm)
A/DRC 3.88 X 2.18	142623	ARM2, AUD, LPR, PTA, PTP	3.88" x 2.18" (98.55 x 55.37mm)
A/DRC 2.7 X 3.25	142624	AAR, ASA, ATL, EFP, EPC, EPW, MAO, MDO	2.70" x 3.25" (68.58 x 82.55mm)
A/DRC 2.7 X 2.3	142625	6DI-1AO, LLS-T, PS1.5	2.70" x 2.30" (68.58 x 58.42mm)
A/DRC 2.7 X 2.18	142626	ATP, ARM, PTA2, PTS, PXP, RTI, TOB	2.70" x 2.18" (68.58 x 55.37mm)
A/DRC 1.8 X 3.25	142627	LONDUP, SW1	1.80" x 3.25" (45.72 x 82.55mm)

DRN4

PWM/Analog/Floating Point to Resistance Output

The DRN4 is a resistive output motor actuator interface that accepts several types of DDC system signals. The DRN4 output is 0 to 135 ohms. The input signal types are field selectable by an 8-position DIP switch. The floating point input accepts two digital signals, one for increase and the other for decrease. The floating point full scale rate of change is 55 seconds. Some triac input signals require an accessory. The DRN4 is supplied in an enclosure that can be directly mounted to a 1/2 inch knockout on the motor actuator. Color coded wire leads with spade connectors are provided for electrical connections. Some triac inputs require a Triac adapter kit. Johnson Control triac input signal requires a 1,000 ohm 1/2 watt resistor and is included with all DRN4s.

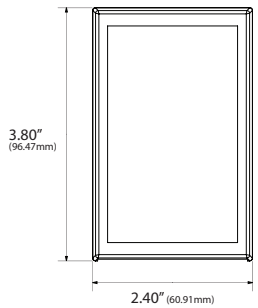
Applications: Electronic potentiometer, Electric Actuator control, Resistive Sensor Simulation, Motor Pot Replacement

The DRN4 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

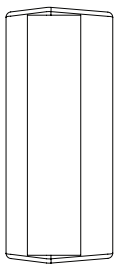
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24 VDC, +/-10%
Supply Current:	130 mA maximum
Input Voltage Signal Range (@ Impedance):	0 to 5 VDC | 1 to 5 VDC | 0 to 10 VDC | 2 to 10 VDC @ 100,000Ω
Input Current Signal Range (@ Impedance):	0-20 mA, 4 to 20 mA @ 250Ω
Input Pulse Signal Source:	Relay Contact Closure, Transistor, Triac (Adapter Required)
Input Pulse Signal Trigger Level:	5-24 VDC/VAC
Off Time Between Pulses:	80 milliseconds
Pulse Ranges:	See Ordering Grid
Floating Point / Tri-State Input Signal Source:	Relay, Contact Closure, Transistor, or Triac (Adapter Required)
Floating Point / Tri-State Rates of Change:	55 seconds for full output span
Floating Point / Tri-State Input Signal Trigger Level:	5-24 VDC/VAC
Resistive Output:	0 to 135Ω (3 watts)
Resolution:	32 steps
Digital Output Type:	Form "C" Relays
Relay Contact Rating:	1A @ 30 VDC / 125 VAC
Relay Electrical Life:	100,000 operation @ 1A
Relay Mechanical Life:	10,000,000 operations
Connections / Wire Size:	Color coded 18 AWG wire leads with spade connectors
Mounting:	Mounts directly to ½" knockout on actuator housing
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 2.40" (W) 3.80" (H) 1.00" (60.96 x 96.52 x 25.4 mm)
Product Weight:	0.43 lbs. (0.196 Kg)
Agency Approvals:	RoHS2, WEEE

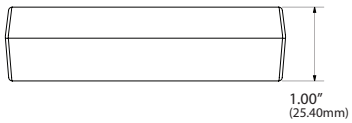
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: DRN4 -OR- 127200

Model #	Item #	Firmware Version #	Pulse Range (Seconds)
DRN4	127200	08000002.OBJ	0.59 - 2.93s | 0.02 - 5.0s | 0.1 - 25.5s
DRN4 VERSION #2	127200	08000101.OBJ	0.023-6.0s (Solidyne)

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
TRIAC	130899	Triac Adapter

DRN3.1

PWM/Analog/Floating Point to Resistance Output

The DRN3.1 is an interface device that allows microprocessor control of a variable resistance. The DRN3.1's isolated resistor network can be controlled by several different DDC signal types. It directly replaces a variable resistance controller and simulates the action of a slide wire or rotary potentiometer. All connections of the simulated potentiometer, the wiper, and both ends of the resistance range are available on the terminal strip. The DRN3.1 must be ordered with a Resistance Network. The DRN3.1 accepts Analog, Pulse, or Floating Point input signals (including triac) and converts them into a proportional resistive output. The output resistance does not wrap around if the input signal exceeds the highest or lowest selected input value. Custom resistance ranges are available upon request. The DRN3.1 has on-board fail-back relays that lock out the original resistive signal during operation. However, if the supply power is lost, control of the circuit will revert back to the original controller signal. An easy local override can be made by placing a fixed (or variable) resistor between W and R Fail-safe terminals. Jumper inputs can be specified to have the factory set them. This will speed up installation time for the end user.

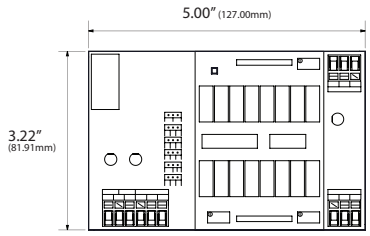
Applications: Electronic Potentiometer, Electric Actuator Control, Resistive Sensor Simulation

The DRN3.1 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

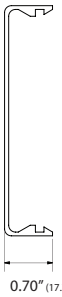
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/- 10%, 24 VDC +25% / -8%
Supply Current:	250 mA maximum
Input Voltage Signal Range (@ Impedance):	0 to 5 VDC, 1 to 5 VDC, 0 to 10 VDC, 2 to 10 VDC, 0 to 15 VDC, 3 to 15 VDC @ 10,000Ω
Input Current Signal Range (@ Impedance):	0-20 mA, 4 to 20 mA @ 250Ω
Input Pulse Signal Source:	Relay Contact Closure, Transistor, Triac
Input Pulse Signal Level (@ Impedance):	7-30 VDC, 10-26.4 VAC @ 750Ω
Pulse Ranges:	See Ordering Grid
Floating Point / Tri-State Input Rates of Change:	See Ordering Grid
Floating Point / Tri-State Input Signal Trigger Level:	5-24 VDC/VAC
Floating Point / Tri-State Impedance:	750Ω nominal
Resistance Output:	See Resistance Network Ordering Grid
Digital Output Type:	Form "C" Relays
Output Resolution:	256 Steps (No wrap around)
Relay Contact Rating:	2A @ 24 VDC, 0.5A @ 240 VAC
Relay Electrical Life:	100,000 operation @ 1A
Relay Mechanical Life:	10,000,000 operations
Connections:	45° Captive screw Terminal Blocks
Wire Size:	12 (3.31 mm²) to 22 AWG (0.33 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 5.00" (W) 3.23" (H) 1.00" (127.00 x 81.99 x 25.40 mm)
Product Weight:	0.45 lbs. (0.2041 Kg)
Agency Approvals:	RoHS2, WEEE

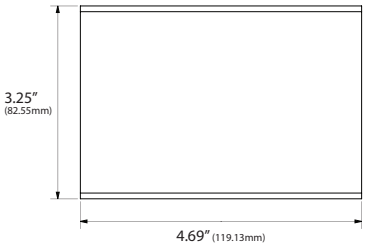
DIMENSIONAL DRAWING



Board Only



Snap Track



Snap Track

STANDARD ORDERING

Model # Example: DRN3.1 -OR- 102469

Model #	Item #	Firmware Version #	Pulse Range (Per Increment)	Rates of Change*
DRN3.1	102469	0052Y0H.HEX	0.02-5.0 (0.02s) | 0.1-25.5 (0.1s) | 0.59-2.93 (0.01s*)	30, 60, and 90s
DRN3.1 VERSION #2	129823	0054Y0B.HEX	0.1 to 10.0s or 0.023 to 6.0s*	45, 120, and 240s

Note*: Rates of Change unit of measurement = seconds

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 4.69 X 3.25	142620	DIN Rail Adapter Kit

RESISTOR NETWORKS

Model # Example: RN (0-135) -OR- 102895

Model #	Item #	Resistance Range (Ω)	Wattage	Tolerance
RN (0-135)	102895	0 to 135	3W	5%
RN (0-270)	102896	0 to 270	3W	5%
RN (0-500)	102897	0 to 500	3W	5%
RN (0-1000)	102894	0 to 1K	0.25W	5%
RN (0-10K)	105507	0 to 10K	0.25W	5%
RN (0-15K)	129847	0 to 15K	0.25W	5%
RN (0-20K)	105330	0 to 20K	0.25W	5%

Note*: If you need another resistance range that is not in the table, please call ACI for ranges, inputs, and wattages

EPC

Analog to Pneumatic Output

The EPC Series are electric to pneumatic transducers which convert an analog input signal to a proportional pneumatic output, modulating its control valve(s) to regulate the branch line pressure to the set point determined by the input signal. The EPC series offers four selectable input ranges. Output pressure ranges are jumper shunt selectable and adjustable in all ranges. A feedback signal indicating the resultant branch line pressure is also provided. EPC Series is designed with electrical terminals on one end and pneumatic connections on the other, allowing for maximum convenience in wiring and tubing installation when panel mounted. The EPC is a constant bleed interface with branch exhaust response time determined by the bleed orifice size and pressure differentials. If power fails to the EPC, it will continue to bleed through the bleed orifice until branch pressure is zero psig. The EPC2 incorporates two valves (one controls exhaust), does not bleed air at set point, and has a 2300 scim supply and exhaust. Its branch exhaust flow and response time are not limited by an internal restrictor and are similar to its load rate. EPC2LG operates as the EPC2, but has an external 5 micron filter, and includes a 0-30 psi gauge. If power fails to the EPC2 or EPC2LG, branch line pressure remains constant if the branch line does not leak air. The EPC2FS shares the same specifications as the EPC2 except its 3-way branch valve will exhaust branch line air upon power failure. Custom calibration is available upon request for an additional charge. This will speed up installation time for the end user.

Applications: 3 Way Mixing Valve Control, Chiller Loading, Pilot Positioner Control, Pneumatic Valve & Damper Actuator Control, Fan Vane Control, DDC Control, Above Ceiling Applications (Mixing & VAV Boxes)

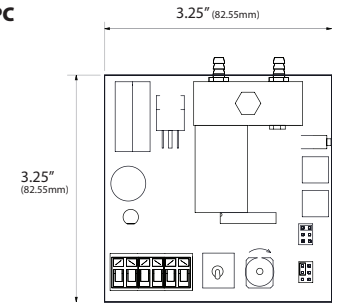
The EPC is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz, 24 VDC (+10% / -5%)
Supply Current:	500 mAAC, 200 mADC Maximum
Input Signal Source (@ Impedance):	0-5 VDC @ infinite Ω | 0-10 VDC @ infinite Ω | 0-15 VDC @ infinite Ω | 0-20 mA / 250Ω
Feedback Signal Output Range:	0-5 VDC = Output Span
Output Pressure Range:	Field Calibration Possible: 0 to 20 psig (0-138 kPa) maximum
Output Pressure Range - Jumper Selectable:	0-10 psig (0-68.95 kPa), 0-15 psig (0-103.43 kPa) or 0-20 psig (137.9 kPa)
Air Supply Pressure:	Maximum 25 psig (172.369 kPa), minimum 22 psig (151.69 kPa)
Air Consumption:	See Ordering Grid
Output Pressure Accuracy:	1% room temperature | 2% full scale across operating temperature range
Manual / Auto Override Switch:	MAN funciton = output can be varied | AUTO function = output is controlled from input signal
Manual / Auto Override Feedback Output:	Dry Contacts: 24 VDC/VAC @ 1A maximum, N.O. in AUTO operation (Optional: N.O. in MAN operation)
Air Flow:	Supply valves @ 25 psig (172.38 kPa) main/20 psig (137.9 kPa) out, 2300 scim Branch Line requires 2 in^3 / 33.78 cm^3 (min.) | Min. 25 ft of 1/4" O.D. poly branch tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part #PN004) except for EPC2LG which is furnished with external 5 micron in-line filter (PN021)
Connections | Wire Size:	90° Pluggable Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removable brass fittings for Main & Branchc in machined manifold, Plugged 1/8-27-FNPT gauge port
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	±2.5% Midscale (±3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature Range:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Enclosure Options (Box Options):	Painted steel housing has mounting flange with four holes for sheet metal screws
Product Dimensions:	See table on back of product data sheet
Product Weight:	**EPCG:** 0.46 lbs. (0.2069 Kg) | **EPC2G:** 0.70 lbs. (0.3175 Kg) | **EPC2GFS:** 0.68 lbs. (0.309 Kg) **EPC2GB:** 1 lbs 1 oz. (0.482 Kg) | **EPC2GFSB:** 0.96 lbs. (0.436 Kg)
Agency Approvals:	RoHS2, WEEE

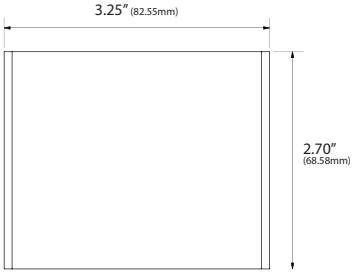
DIMENSIONAL DRAWING

EPC



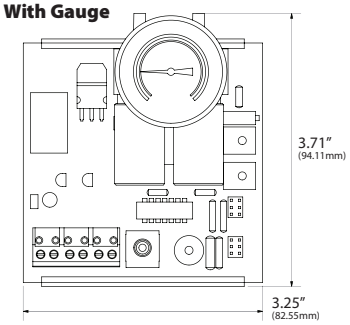
Board Only

Snap Track

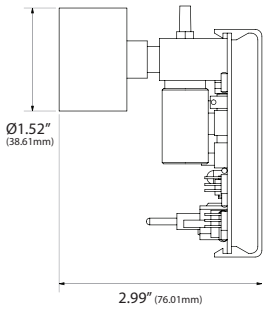


Snap Track

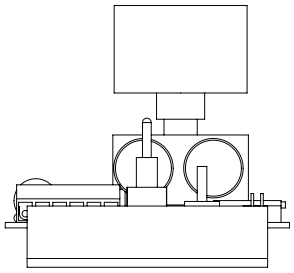
EPC With Gauge



Board with Snap Track (Front View)



Board with Snap Track (Side View)



Board with Snap Track (Top View)

STANDARD ORDERING

Model # Example: EPC -OR- 102475

Model #	Item #	Supply (Main)	Exhaust (Branch)	Gauge	Additional Information
EPC	102475	2300 SCIM (37.69 Liters)	41 SCIM (0.6719 Liters)		0.007" Bleed Orifice
EPCG	102480	2300 SCIM (37.69 Liters)	41 SCIM (0.6719 Liters)	•	0.007" Bleed Orifice
EPC2	102476	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)		Maintains Branch Pressure
EPC2G	102478	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Maintains Branch Pressure
EPC2FS	102477	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)		Exhausts on Power Failure (1600 SCIM)
EPC2GFS	102479	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Exhausts on Power Failure (1600 SCIM)
EPC2LG	106325	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Maintains Branch Pressure, High Flow
EPC2GB	106326	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Enclosed in Steel Housing, Maintains Branch Pressure
EPC2GFSB	106327	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Enclosed in Steel Housing, Exhausts on Power Failure (1600 SCIM)

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/VDC, 1500W
A/DRC 2.7 X 3.25	142624	DIN Rail Adapter Kit
A/PN002	136499	10-32 X 1/8" ID, Barb Fitting
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
A/PN021	112219	In Line 10 Micron Filter, Installs in-between air supply and main barb connection
A/PN028	128307	Replacement Gauge

MAO

Manual Analog Override Switch, Alarm

The MAO installs between a controller and an actuator to provide adjustable analog manual override when needed. In normal operation, two (2) analog signals route from the controller through the MAO to each actuator. Flip the override switch from automatic to manual on either MAO output and vary the analog signal independently. Each output can have a different span and can be analog current or voltage. When a switch is in manual position, an alarm output contact is made or broken (optional) to indicate override is in effect.

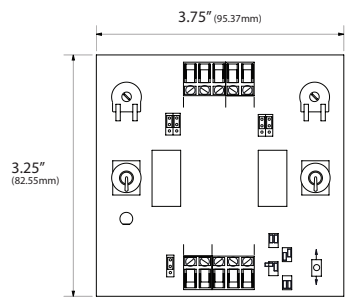
Applications: Temporary Override if Controller Malfunctions, Checkout of Actuator & Linkage Operation, Alarm Feedback During Override

The MAO is covered by ACI's Two (2) Year Limited Warranty, which is located in the front of ACI's Sensors & Transmitters catalog or can be found on ACI's website, which is: www.workaci.com.

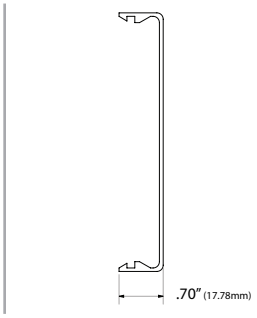
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24 VDC, +/- 10%
Supply Current:	100 mA maximum
Alarm Output (Feedback):	N.O. in auto, N.C. in manual (optional: N.C. in auto, N.O. in manual)
Optional Resistive Alarm Output:	3 Watts or 2A maximum (state resistance value when ordering)
Alarm Output Current Rating:	2A maximum
Override Analog Input Voltage Range:	0-24 VDC (Manual Mode)
Override Analog Input Current:	2A maximum (Manual Mode)
Override Analog Input (Selectable) Range (@ Impedance):	0-5 VDC @ 250Ω minimum 0-10 VDC @ 500Ω minimum 0-15 VDC @ 750Ω minimum 0-20 mA @ 750Ω maximum
Accuracy:	+/- 4% of maximum output
Override Analog Output Voltage Range:	0-24 VDC
Override Analog Output Current:	2A maximum or same as override input (Auto Mode)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non condensing
Connections:	45° Captive Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Storage Temperature:	0 to 150°F (-17.8 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.75" (W) 3.25" (H) 1.25" (95.25 x 82.55 x 31.75 mm)
Product Weight:	0.29 lbs. (0.131 Kg)
Agency Approvals:	RoHS2, WEEE

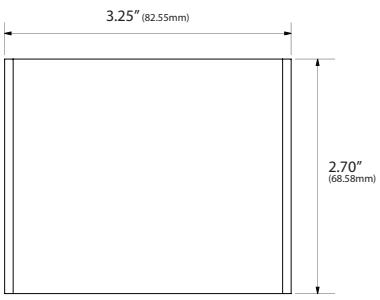
DIMENSIONAL DRAWING



Board Only



Snap Track



Snap Track

STANDARD ORDERING

Model # Example: MAO -OR- 102588

Model #	Item #	Description
MAO	102588	Manual Analog Override Switch, Alarm

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 2.7 X 3.25	142624	DIN Rail Adapter Kit

PXP

Analog to Pneumatic Output

The PXP*.3 is an electric to pneumatic transducer which converts an analog electrical input signal to a proportional pneumatic output. The PXP*.3 will automatically modulate its control valve(s) to regulate the branch line pressure to the selected set point as determined by the input signal. The PXP*.3 offers four selectable input ranges which convert to a 0 to 15 psig modulating output (See EPC product for 0 to 20 psig outputs). A 0-5 VDC feedback signal indicating the resultant branch line pressure is also provided. This signal varies linearly with branch pressure (0 volts= 0 psig, 5 volts = 15 psig). The PXP0.3 is a single valve version that does not bleed or exhaust air. Its operation depends on the pneumatic circuit where it is installed to consume between 14 and 73 scim. The PXP1.3, 5.3, and 7.3 are constant bleed controllers with branch exhaust response time determined by the bleed orifice size and pressure differentials (see ordering grid on the next page). If power fails, the PXP1.3, 5.3, or 7.3 will continue to bleed through the bleed orifice until branch pressure is zero psig. A three-way solenoid valve assembly may be used with the bleed type PXP1.3, 5.3, or 7.3 to allow control to fall back to the original local controller if power fails. The PXP2.3 incorporates two valves and does not use air at set point. It's branch exhaust flow and response time are not limited by an internal restrictor and are similar to its load rate. If power fails to the PXP2.3, branch line pressure remains constant if the branch line does not leak air. The PXP2.3FS is equipped with a N.O. branch exhaust valve which allows exhaust of branch air on power failure. A manual override (jumper selectable), which controls the output pressure, is provided for setup and troubleshooting. Custom calibration is available upon request for an additional charge. This will speed up installation time for the end user.

Applications: Three-Way Mixing Valve Control, Pilot Positioner Control, Pneumatic Valve & Damper Actuator Control, Fan Vane Control, DDC Control, Above Ceiling Applications (mixing and VAV boxes)

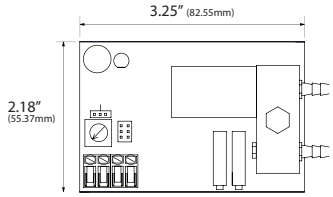
The PXP is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50 or 60Hz, 24 VDC (+10% /-5%)
Supply Current:	300 mAAC, 200mADC Maximum | 400mAAC, 200mADC on fail safe models
Input Signal Source (@ Impedance):	0-5 VDC @ 10,000 Ω | 0-10 VDC @ 10,000Ω | 0-15 VDC @ 10,000Ω | 0-20 mA @ 250Ω
Feedback Signal Output Range:	0-5 VDC = Output Span
Output Pressure Range:	Field Calibration Possible: 0 to 15 psig (0-103.421 kPa) maximum
Air Supple Pressure:	**Maximum:** 25 psig (172.369 kPa) | **Minimum:** 18 psig (124.106 kPa)
Air Consumption:	See Ordering Grid
Output Pressure Accuracy:	1% full scale @ room temperature | 2% full scale across operating temperature range
Manual / Auto Override:	MAN function = output can be varied | AUTO function = output is controlled from input signal
Air Flow:	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 scim Branch Line requires 2 in3 or 33.78 cm3 (min.). Branch line min. of 25 feet of 1/4" O.D. poly tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004) except for PXP2LG which is furnished with external 5 micron in-line filter (PN021)
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass barbed fittings for Main and Branch in machined aluminum manifold Plugged 1/8-27-FNPT gauge port | Gauge installed at additional cost
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	± 2.5% Midscale (± 3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	**No Gauge:** (L) 3.25" (W) 2.18" (H) 1.87" (82.55 x 55.37 x 47.49 mm) **With Gauge:** (L) 3.25" (W) 2.18" (H) 2.95" (82.55 x 55.37 x 74.9 mm)
Product Weight:	**PXP1.3:** 0.40 lbs. (0.1814 Kg) | **PXP2.3:** 0.47 lbs. (0.2126 Kg) | **PXP1.3G:** 0.49 lbs. (0.2211 Kg) **PXP2.3G & PXP2.3GFS:** 0.59 lbs. (0.2693 Kg)
Agency Approvals:	RoHS2, WEEE

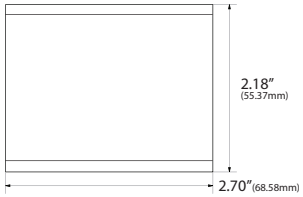
DIMENSIONAL DRAWING

PXP



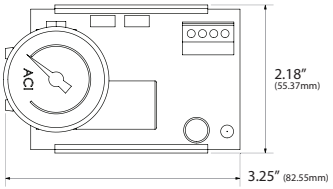
Board Only

Snap Track Side View

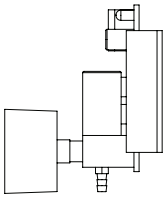


Snap Track Front View

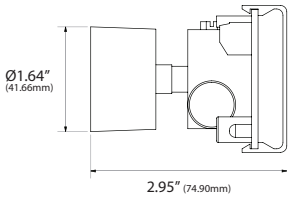
PXP With Gauge



Board with Snap Track



Board with Snap Track (Side)



Board with Snap Track (Top)

STANDARD ORDERING

Model # Example: PXP2.3 -OR- 127209

Model #	Item #	Supply	Exhaust	Gauge	Additional Information
PXP0.3	127205	No Air Consumption	----		No Bleed Orifice, Requires Downstream Bleed
PXP0.3G	127206	No Air Consumption	----	•	No Bleed Orifice, Requires Downstream Bleed
PXP1.3	127207	2300 SCIM (37.69 Liters)	73 SCIM (1.196 Liters)		0.010" Bleed Orifice
PXP1.3G	127208	2300 SCIM (37.69 Liters)	73 SCIM (1.196 Liters)	•	0.010" Bleed Orifice
PXP2.3	127209	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)		Maintains Branch Pressure
PXP2.3G	127213	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Maintains Branch Pressure
PXP5.3	127215	2300 SCIM (37.69 Liters)	14 SCIM (0.229 Liters)		0.005" Bleed Orifice
PXP5.3G	127216	2300 SCIM (37.69 Liters)	14 SCIM (0.229 Liters)	•	0.005" Bleed Orifice
PXP7.3	127217	2300 SCIM (37.69 Liters)	41 SCIM (0.671 Liters)		0.007" Bleed Orifice
PXP7.3G	133044	2300 SCIM (37.69 Liters)	41 SCIM (0.671 Liters)	•	0.007" Bleed Orifice
PXP2.3FS	127210	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)		Exhausts on Power Failure
PXP2.3GFS	127211	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Exhausts on Power Failure
PXP2.3LG	127214	2300 SCIM (37.69 Liters)	2300 SCIM (37.69 Liters)	•	Maintains Branch Pressure, High Flow

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 2.7 X 2.18	142626	DIN Rail Adapter
A/PN002	136499	10-32 X 1/8" ID, Barb Fitting
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
A/PN021	112219	In Line 10 Micron Filter, Installs in-between air supply and main barb conneciton
A/PN023	129675	0.005" Replacement Copper Orifice
A/PN024	128100	0.007" Replacement Brass Orifice
A/PN025	128102	0.010" Replacement Silver Orifice
A/PN028	128307	Replacement Gauge
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

PTP

Pressure to Analog / Current Output

Two models of the PTP accept either a 3 to 15 or 3 to 30 psig pneumatic pressure input and convert it to one of four proportional analog output ranges of 1-5, 2-10, 3-15 VDC or 4-20 mA which are jumper shunt selectable. A plugged gauge port is provided in the aluminum manifold for local mechanical indication via an optional 0 to 30 psi gauge. Custom calibration is available upon request for an additional charge. This will speed up installation time for the end user.

Applications: Building Automation, Process Control, Pneumatic System Monitoring, Pneumatic to Proportional Analog Output

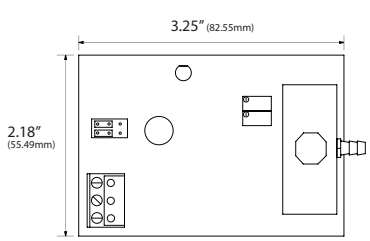
The PTP is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

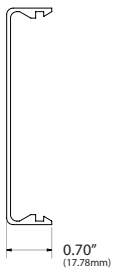
Supply Voltage:	24 VDC or 24 VAC, -6%/+10%
Supply Current:	50 mA maximum @ 24 VDC
Output Signal Range (@ Impedance):	1-5 VDC @ 250Ω | 2-10 VDC @ 500Ω | 3-15 VDC @ 750Ω | 4-20 mA @ 500Ω
Input Pressure Range:	**PTP 3-15:** 3 to 15 psig | **PTP 3-30:** 3 to 30 psig
Output Analog Accuracy:	2% full scale at room temperature | 3% full scale across operating temperature range
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004)
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass barbed fitting in machined aluminum manifold Plugged 1/8-27-FNPT gauge port | Gauge installed at additional cost
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	± 2.5% Midscale (± 3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	**No Gauge:** (L) 3.25" (W) 2.18" (H) 1.87" (82.55 x 55.37 x 47.49 mm) **With Gauge:** (L) 3.25" (W) 2.18" (H) 2.95" (82.55 x 55.37 x 74.93 mm)
Product Weight:	**No Gauge:** 0.28 lbs. (0.1276 Kg) | **With Gauge:** 0.37 lbs. (0.170 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING

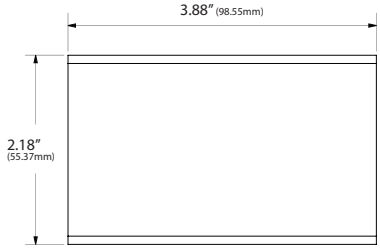
PTP



Board Only

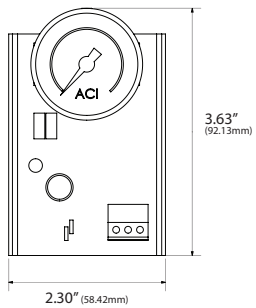


Snap Track

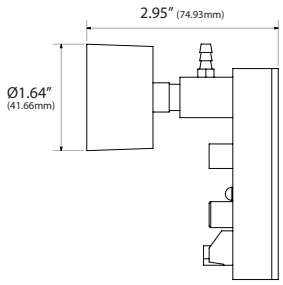


Snap Track

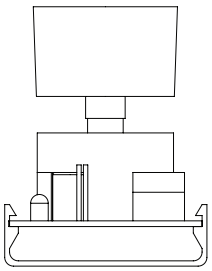
PTP With Gauge



Board with Snap Track



Board with Snap Track



Board with Snap Track

STANDARD ORDERING

Model # Example: PTP3-15 -OR- 127201

Model #	Item #	Input Range	Gauge
PTP3-15	127201	3 to 15PSI (20.68 to 103.42 kPa)	
PTP3-15G	127202	3 to 15PSI (20.68 to 103.42 kPa)	•
PTP3-30	127203	3 to 30PSI (20.68 to 206.843kPa)	
PTP3-30G	127204	3 to 30PSI (20.68 to 206.843kPa)	•

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 3.88 X 2.18	142623	DIN Rail Adapter Kit
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
A/PN028	128307	Replacement Gauge
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

EPW

PWM to Pneumatic Output

The EPW converts a pulse or digital PWM signal into a proportional pneumatic signal ranging from 0 to 20 psig. The pneumatic output is proportional to the signal input, either direct or reverse acting, and features a manual override potentiometer to vary the pneumatic output. The EPW offers four jumper selectable input timing ranges (see ordering grid below). Output pressure ranges are jumper shunt selectable for 0-10, 0-15 and 0-20 psig, and adjustable in all ranges. A 0-5 VDC feedback signal indicating the resultant branch line pressure is also provided. This signal varies linearly with the branch pressure range selected. The EPW is designed with electrical terminals on one end and pneumatic connections on the other, allowing for maximum convenience in wiring and tubing installation when panel mounted. Three basic configurations are available: The EPW is a constant bleed interface with branch exhaust response time determined by the bleed orifice size and pressure differentials. If power fails to the EPW, it will continue to bleed through the bleed orifice until branch pressure is zero psig. The EPW2 incorporates two valves (one controls exhaust) and does not bleed air at set point. Its branch exhaust flow and response time are not limited by an internal restrictor and are similar to its load rate. If power fails to the EPW2, branch line pressure remains constant if the branch line does not leak air. The EPW2FS is a two valve fail safe model. Its 3-way branch exhaust valve allows exhaust of branch line air on a power failure. Custom calibration is available upon request for an additional charge. This will speed up installation time for the end user.

Applications: 3 Way Mixing Valve Control, Chiller Loading, Pilot Positioner Control, Pneumatic Valve and Damper Actuator Control, Fan Vane Control, DDC Control, Above ceiling applications(mixing and VAV boxes).

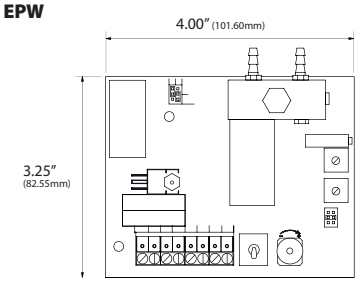
The EPW is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC (+/- 10%), 50/60 Hz, 24 VDC (+10% / -5%)
Supply Current	**EPW:** 300mAAC, 200mADC Maximum | **EPW2:** 350mAAC, 200mADC | **EPW2FS:** 500mAAC, 200mADC
Input Pulse Source:	Relay Contact Closure, Transistor (solid state relay) or Triac
Input Pulse Trigger Level (@ Impedance):	9-24 VAC or VDC @ 750Ω nominal
Off Time Between Pulses:	10 milliseconds minimum
Input Pusle Timing | Resolution:	Selectable Ranges-See Ordering Grid | 255 Steps
Manual/Auto Override Switch:	MAN function = output can be varied | AUTO function = output is controlled from input signal
Manual/Auto Override Feedback Output:	N.O. in AUTO operation (Optional: N.O. in MAN operation)
Feedback Output Signal Range:	0-5 VDC = Output Span
Output Pressure Range:	**Field Calibration Possible:** 0 to 20 psig (0-138 kPa) maximum
Output Pressure Range-Jumper Selectable:	0-10 psig (0-68.95 kPa), 0-15 psig (0-103.43 kPa) or 0-20 psig (137.9 kPa)
Air Supply Pressure:	Maximum 25 psig (172.38 kPa), minimum 20 psig (137.9 kPa)
Air Consumption:	2300 SCIM (37.69 Liters)
Output Pressure Accuracy:	2% full scale at room temperature (above 1 psig or 6.895 kPa) 3% full scale across operating temperature range (above 1 psig or 6.895 kPa)
Air Flow:	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 scim Branch Line requires 2 in3 or 33.78 cm3 (min.). Branch line min. of 25 ft of 1/4" O.D. poly tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004) Optional standard barb (PN002) with external 5 micron in-line filter (PN021)
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass fittings for Main & Branch in machined manifold, Plugged 1/8-27-FNPT gauge port
Gauge Pressure Range (Gauge Models):	0-30psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	± 2.5% Midscale (± 3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	See table on back of product data sheet
Product Weight:	**EPWG:** 0.63 lbs. (0.2835 Kg) | **EPW2G & EPW2GFS:** 0.76 lbs. (0.343 Kg)
Agency Approvals:	RoHS2, WEEE

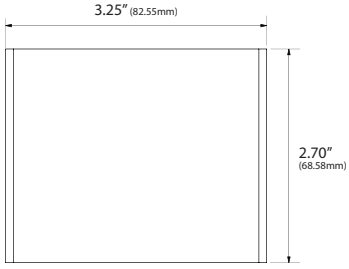
DIMENSIONAL DRAWING

EPW



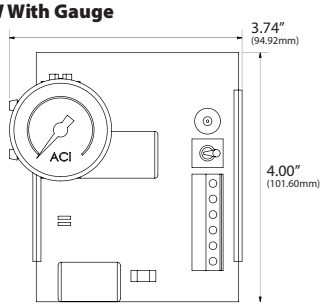
Board Only

Snap Track

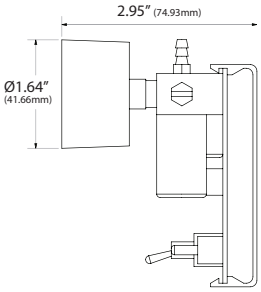


Snap Track

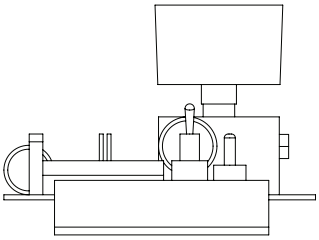
EPW With Gauge



Board with Snap Track (Front View)



Board with Snap Track (Side View)



Board with Snap Track (Top View)

STANDARD ORDERING

Model # Example: EPW -OR- 106328

Model #	Item #	Firmware #	Exhause	Input Pulse Range (Seconds)	Gauge	Additional Information
EPW	106328	0011Y0F.HEX	41 SCIM (0.6719 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s		0.007" Bleed Orifice
EPWG	106329	0011Y0F.HEX	41 SCIM (0.6719 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s	•	0.007" Bleed Orifice
EPW Version #2	130713	0302Y0B.HEX	41 SCIM (0.6719 Liters)	0.023-6s or 0-10s Duty Cycle		0.007" Bleed Orifice
EPWG Version #2	130025	0302Y0B.HEX	41 SCIM (0.6719 Liters)	0.023-6s or 0-10s Duty Cycle	•	0.007" Bleed Orifice
EPW Version #4	130952	0443Y0A.HEX	41 SCIM (0.6719 Liters)	Same as Version #1, reverse acting		0.007" Bleed Orifice
EPWG Version #4	138513	0443Y0A.HEX	41 SCIM (0.6719 Liters)	Same as Version #1, reverse acting	•	0.007" Bleed Orifice
EPW2	106330	0011Y0F.HEX	2300 SCIM (37.69 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s		Maintains Branch Pressure
EPW2G	106331	0011Y0F.HEX	2300 SCIM (37.69 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s	•	Maintains Branch Pressure
EPW2G Version #2	130117	0302Y0B.HEX	2300 SCIM (37.69 Liters)	0.023-6s or 0-10s Duty Cycle	•	Maintains Branch Pressure
EPW2G Version #4	130000	0443Y0A.HEX	2300 SCIM (37.69 Liters)	Same as Version #1, reverse acting	•	Maintains Branch Pressure
EPW2FS	106332	0011Y0F.HEX	2300 SCIM (37.69 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s		Exhaust on Power Failure
EPW2GFS	106333	0011Y0F.HEX	2300 SCIM (37.69 Liters)	0.1-10s, 0.02-5s, 0.1-25s, 0.59-2.93s	•	Exhaust on Power Failure

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/VDC, 1500W
A/DRC 2.7 X 3.25	142624	DIN Rail Adapter Kit
A/PN002	136499	10-32 X 1/8" ID, Barb Fitting
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
A/PN021	112219	In Line 10 Micron Filter, Installs in-between air supply and main barb connection
A/PN028	128307	Replacement Gauge

PTA

PWM to Analog Current / Voltage Output

The PTA converts a single pulse-width modulated input to an analog (voltage or current) output. A timed contact or solid state closure is converted to a linear analog output signal with 255 steps of resolution. The last output signal is held until the PTA receives the end of the next pulsed input signal. The PTA's output will not wrap around if an excessively long input pulse is received. Ten preset analog output signal spans are DIP switch selectable. In addition, the span and offset potentiometer offer maximum user adjustment of the output signal. The input signal is optically isolated and can accept either positive or negative polarity. If the voltage output is limited to 18 Volts on the high end of the output span, the DC supply limit can be 24 VDC -10% and the PTA will still maintain the output accuracy. If the maximum load is 700 ohms, the DC supply can be 24 VDC-10% and the PTA will still maintain the output accuracy.

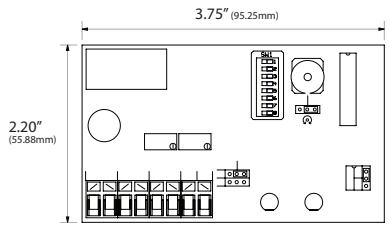
Applications: Pulse to Analog Transducer, Interface to Variable Speed Pump Drive Control, Interface to Variable, Frequency Fan Drive Control, Interface to Electric Actuator, Duty Cycle to Analog Control, Digital to Analog Conversion

The PTA is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website.

PRODUCT SPECIFICATIONS

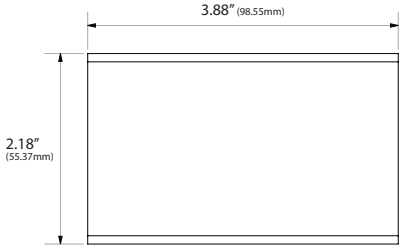
Supply Voltage:	24 VDC (24-35 VDC) or 24 VAC (21.6-26.4 VAC), 50/60 Hz.
Supply Current:	240 mA maximum using Voltage Output Terminal 125 mA maximum if not using Voltage Output Terminal
Input Pulse Source:	Relay Contact Closure, Transistor or Triac
Input Pulse Trigger Level:	Normal Mode = 5 to 26.4 VAC/DC | Triac Mode = 9 to 26.4VAC
Input Pulse Timing:	Selectable Ranges-See Ordering Grid
Output Voltage Signal Selectable Range:	0-1 VDC | 0-4 VDC | 0-10 VDC | 0-13 VDC | 1-2 VDC | 1-5 VDC | 1-11 VDC | 1-14 VDC
Output Voltage Signal Adjustable Range:	0-20 VDC (with adjustable offset)
Output Voltage Load Impedance:	3300Ω minimum at 20 VDC +/- 10% | 400Ω minimum at 10 VDC +/- 10%
Output Current Signal Selectable Range:	0-16 mA, 4-20 mA
Output Current Signal Adjustable Range:	0-20 mA (with adjustable offset)
Output Current Load Impedance:	0 to 750Ω maximum
Output Resolution:	256 steps of resolution
Accuracy (60 Hz):	+/- 2% of span for adjustable ranges, 5% for preset
Accuracy (50 Hz):	+/- 3% of span for adjustable ranges, 5% for preset
Regulated Power Output:	24 VDC, 48 mA maximum
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.75" (W) 2.20" (H) 1.15" (95.25 x 55.88 x 29.21 mm)
Product Weight:	0.24 lbs. (0.1077 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only

Snap Track



Snap Track

STANDARD ORDERING

Model # Example: PTA -OR- 102632

Model #	Item #	Firmware #	Input Pulse Range (Seconds)	Additional Information
PTA	102632	0218Y0B.HEX	0.02 to 5.0s, 0.1 to 10.0s, 0.59 to 2.93s, 0.1 to 25.5s	----
PTA VERSION #2	109493	0303Y0B.HEX	0 to 10s Duty Cycle Pulse (10 second window) 0.023 to 6.0s	----
PTA-PPM	129569	0344Y0A.HEX	60 Pulses/Min., 100 Pulses/Min., 1500 Pulses/Min., 3000 Pulses/Min.	Water Flow Meter Pulse - Analog Output
PTA-PRO TEMP	129804	0031Y001.HEX	5 to 55 ms	Fluidmaster™ PPM to Analog

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 3.88 X 2.18	142623	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

PTA2

PWM to Voltage Output

The PTA2 accepts a timed contact, or solid state closure, from a microprocessor controller and converts it to a linear analog output with 255 steps of resolution. The PTA2 will not wrap around if an excessively long pulse is received. Seven input pulse rates are jumper selectable (between Version 1 and 2). The input signal is optically isolated and can accept either positive or negative polarity. The PTA2 includes triac adapter circuitry (jumper selectable) for a triac input. The PTA2 has a jumper selectable manual override which will allow modulation of the output between 0-10 VDC to verify proper operation of the controlled device. On Version 1, the last output signal is held until the PTA2 receives the end of the next pulsed input signal.

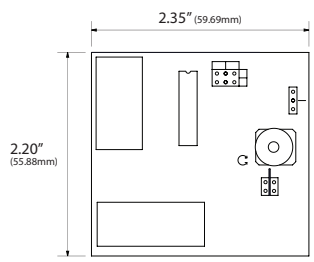
Applications: Pulse to Analog Transducer, Interface to Variable Speed Pump Drive Control, Interface to Variable, Frequency Fan Drive Control, Interface to Electric Actuator, Duty Cycle to Analog Control, Digital to Analog Conversion

The PTA2 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website.

PRODUCT SPECIFICATIONS

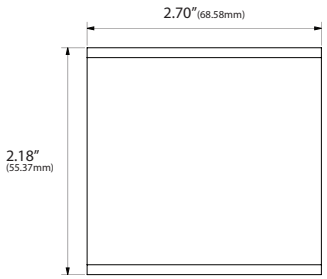
Supply Voltage:	24 VAC or 24 VDC +/-10%, 50/60 Hz
Supply Current:	135 mA maximum
Input Pulse Source:	Relay Contact Closure, Transistor, Triac, or Dry Contact to Common
Input Pulse Trigger Level:	Normal Mode = 5 to 26.4 VAC/DC | Triac Mode = 9 to 26.4VAC Using Rectified DC Power Output: 21-37 VDC
Input Pulse Timing:	Selectable Ranges-See Ordering Grid
Input Pulse Impedance:	VAC = 900Ω nominal | VDC = 1500Ω nominal
Voltage Output Signal (@ Impedance):	0-10 VDC @ 400Ω minimum
Output Resolution:	255 steps of resolution
Accuracy:	+/- 5%
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operature Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 2.20" (W) 2.35" (H) 1.00" (55.88 x 59.69 x 25.4 mm)
Product Weight:	0.18 lbs. (0.082 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING



Board Only

Snap Track



Snap Track

STANDARD ORDERING

Model # Example: PTA2 -OR- 102633

Model #	Item #	Firmware #	Input Pulse Range (Seconds)
PTA2	102633	0114Y0E.HEX	0.02 to 5.0s, 0.1 to 10.0s, 0.59 to 2.93s, 0.1 to 25.5s
PTA2 VERSION #2	102634	03.01.001.90.HEX	0 to 10.0s Duty Cycle Pulse (10s window) | 0-25.5s Duty Cycle Pulse (25.5 sec. window) 0-100s Duty Cycle Pulse (100s window) | 0.023 to 6.0s

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 2.7 X 2.18	142626	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

AUD

Floating Point to Analog Output

The AUD converts a floating point signal into a linear analog output. There are two inputs on the AUD, one to increase the analog output and one to decrease the analog output. The output of the AUD is stable when the inputs are both off. A contact closure or voltage signal to either input will cause the output of the AUD to begin to ramp either up or down depending on which input was activated. The output stops ramping once the up or down input is deactivated, and will remain at that value until another up or down signal is received. If both inputs are "ON," the output will reset to the lowest value of the selected range. On all products except Version 3 and the AUD2, when power is first applied or restored after power interruption, the AUD automatically resets to the minimum output signal as defined by the output DIP switch settings or the adjusted minimum. On Version 3, when power is first applied or restored after power interruption, or if both inputs (up/down) pulse 3.5 seconds, it resets to maximum output signal. On the AUD2, when power is first applied or restored after power interruption, the AUD2 automatically resets to the midpoint output signal as defined by the output DIP switch settings or the adjusted minimum. The output of the AUD is in the form of an analog, steady state voltage or current. This signal can be scaled to fit the needs of the application by selecting one of several preset ranges by dip switch or by adjusting the offset and the gain of the output with two potentiometers. The output of the AUD is also protected against wrap around. In the event the output reaches either its maximum or minimum level, the ramping will stop and the output will be held at that value. The output signal rate of change is field selectable by dip switch.

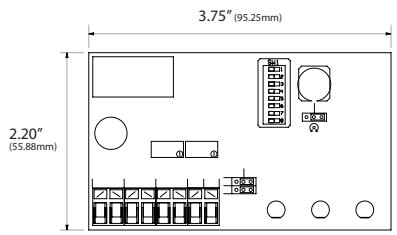
Applications: Variable Speed Drive Control, Motor Speed Control, Contact Integration, Floating Point to Analog Conversion, Positioner and Actuator Control

The AUD is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

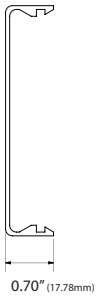
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VDC (24 VDC to 35 VDC) or 24 VAC (21.6 VAC to 28 VAC), 50/60 Hz.
Supply Current:	208 mA maximum
Input Signal Source:	Relay contact closure, transistor, or triac (24 VAC, 50/60 Hz)
Input Signal Trigger Level:	**Normal Mode:** 5 to 26.4 VDC, 24 to 26.4 VAC | **Triac Mode:** 24 to 26.4 VAC
Input Full Range Rates of Change:	See Ordering Grid Below
Output Voltage Fixed Signal Ranges:	0 to 1 VDC, 0 to 4 VDC, 0 to 10 VDC, 0 to 13 VDC, 1 to 2 VDC, 1 to 5 VDC, 1 to 11 VDC, 1 to 14 VDC
Output Voltage Adjustable Signal Ranges:	0 to 20 VDC (with adjustable offset and span)
Output Voltage Signal Load:	3300Ω minimum at 20 VDC ± 10% , 400 ohms minimum at 10 VDC ± 10% (If the voltage output is limited to 18 VDC on the high end of the output span, the DC supply limit can be 24 VDC –10% and maintain stated accuracy
Output Current Fixed Signal Ranges:	0 to 16 mA, 4 to 20 mA
Output Current Adjustable Signal Ranges:	0 to 20 mA (with adjustable offset and span)
Output Current Signal Load:	0 to 750Ω maximum (If the load is lowered to 700Ω, the DC supply can be 24 VDC –10% and maintain stated accuracy
Output Signal Accuracy (24 VAC, 60 Hz):	Absolute +/- 2% of span for adjustable ranges, 5% for preset
Output Signal Accuracy (24 VAC, 50 Hz):	Absolute +/- 3% of span for adjustable ranges, 5% for preset
Output Signal Resolution:	256 steps (all ranges)
Regulated Power Output (User):	24 VDC (+/- 10%), 48 mA maximum
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 3.75" (W) 2.20" (H) 1.15" (95.25 x 55.88 x 29.21 mm)
Product Weight:	0.24 lbs. (0.1077 Kg)
Agency Approvals:	RoHS2, WEEE

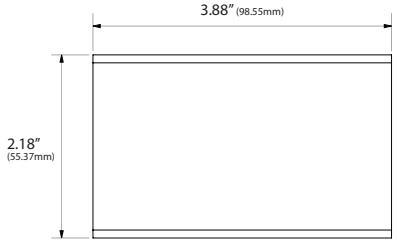
DIMENSIONAL DRAWING



Board Only



Snap Track



Snap Track

STANDARD ORDERING

Model # Example: AUD -OR- 138535

Model #	Item #	Firmware Version #	Rates of Change*	Additional Information
AUD	138535	0008Y0A.HEX	5, 15, 30, 90s	----
AUD Version #2	102094	0244Y0A.HEX	45, 60, 120, 240s	----
AUD Version #3	130414	0256Y0A.HEX	45, 60, 120, 240s	Resets to output (on start-up/both inputs (up/down) pulse 3.5s
AUD Version #4	129820	0537Y0A.HEX	5, 360s	----
AUD Version #5	138535	S-AUD V5	60, 75, 120, 150s	----
AUD2	135403	S-AUD_020000190.HEX	5, 15, 30, 90s	Resets to midpoint output signal on start-up

Note*: Rates of Change unit of measurement = seconds

ACCESSORIES

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56VAC/DC, 1500W
A/DRC 3.88 X 2.18	142623	DIN Rail Adapter Kit
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

EFP

Floating Point to Pneumatic Output

The EFP converts a floating point signal into a proportional pneumatic signal ranging from 0-20 psig. The pneumatic output is proportional to the signal input. The EFP* has a manual override switch with terminal strip contacts to indicate its status and a potentiometer to vary the pneumatic output. Two LEDs indicate UP or DOWN excursions, with an additional one for power indication. The EFP offers four jumper selectable rates of change in the output pressure. Output pressure ranges are jumper shunt selectable for 0 to 10, 0 to 15 and 0 to 20 psig, and adjustable in all ranges. A 0-5 VDC feedback signal, indicating the resultant branch line pressure, is also provided. This signal varies linearly with the branch pressure range selected. It is designed with electrical terminals on one end and pneumatic connections on the other, allowing for maximum convenience in wiring and tubing installation when panel mounted. The EFP is a constant bleed interface with branch exhaust response time determined by the bleed orifice size and pressure differentials. If power fails to the EFP, it will continue to bleed through the bleed orifice until branch pressure is zero psig. The EFP2 incorporates two valves (one controls exhaust) and does not bleed air at set point. Its branch exhaust flow and response time are not limited by an internal restrictor and are similar to its load rate. If power fails to the EFP2, branch line pressure remains constant if the branch line does not leak air. The EFP2FS is a two valve fail safe model. Its three-way branch exhaust valve allows exhaust of branch line air on a power failure. Custom calibration is available upon request for an additional charge.

Applications: 3 Way Mixing Valve Control, Chiller Loading, Pilot Positioner Control, Pneumatic Valve and Damper Actuator Control, Fan Vane Control, Compressor Staging

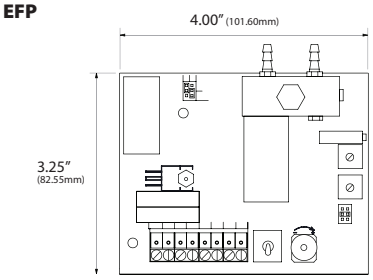
The EFP is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

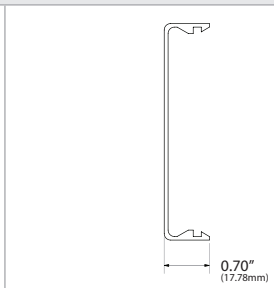
Supply Voltage:	24 VAC (+/-10%), 50 or 60Hz, 24 VDC (+10%/- 5%)
Supply Current:	**EFP:** 300mAAC, 200mADC Maximum | **EFP2:** 350mAAC, 200mADC | **EFP2FS:** 500mAAC, 200mADC
Digital Input Signal Source:	Relay Contact Closure, Transistor or Triac
Digital Input Signal Level (@ Impendance):	9-24 VAC/VDC @ 750Ω
Digital Input Rates of Change:	See Ordering Grid
Manual / Auto Override Switch:	MAN function = output can be varied | AUTO function = output is controlled from input signal
Manual / Auto Override Feedback Output:	24 VDC/VAC @ 1A maximum, N.O. in AUTO operation (Optional: N.O. in MAN operation)
Feedback Output Signal Range:	0-5 VDC = Output Span
Air Supply Pressure:	Maximum 25 psig (172.369 kPa), minimum 22 psig (151.69 kPa)
Air Supply Consumption:	2300 SCIM (37.69 liters)
Output Pressure Range (Jumper Selectable):	0-10 psig (0-68.95 kPa), 0-15 psig (0-103.43 kPa) or 0-20 psig (137.9 kPa)
Output Pressure Accuracy:	2% full scale at room temperature (above 1 psig or 6.895 kPa) 3% full scale across operating temperature range (above 1 psig)
Air Flow:	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 scim. Branch Line requires 2 in3 or 33.78 cm3 (minimum) | Min. 25 ft of 1/4" O.D. poly branch tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004) Optional standard barb (PN002) with external 5 micron in-line filter (PN021)
Connections | Wire Size:	90° Pluggable Screw Terminal Blocks | 16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass fittings for Main & Branch in machined manifold, Plugged 1/8-27-FNPT gauge port
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	± 2.5% Midscale (± 3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	**No Gauge:** (L) 4.00" (W) 3.25" (H) 1.87" (101.60 x 82.55 x 47.50 mm) **WIth Gauge:** (L) 4.00" (W) 3.25" (H) 2.95" (101.60 x 82.55 x 74.97 mm)
Product Weight:	**EFPG:** 0.596 lbs. (0.2703 Kg) | **EFP2G:** 0.76 lbs. (0.3459 Kg) | **EFP2GF:** 0.70 lbs. (0.3175 Kg)
Agency Approvals:	RoHS2, WEEE

DIMENSIONAL DRAWING

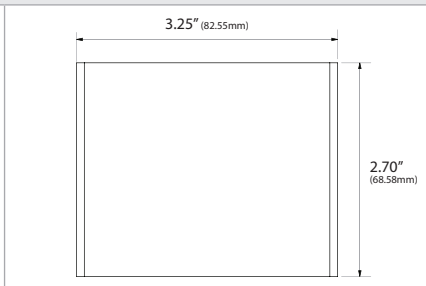
EFP



Board Only

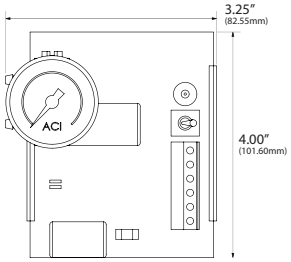


Snap Track Side View

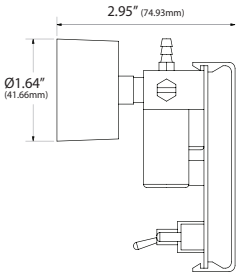


Snap Track Front View

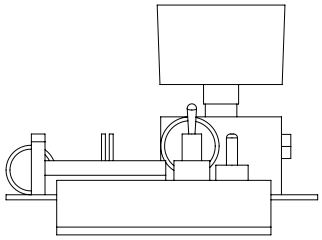
EFP With Gauge



Board with Snap Track



Board with Snap Track (Side)



Board with Snap Track (Top)

STANDARD ORDERING

Model # Example: EFP -OR- 106319

Model #	Item #	Firmware Version #	Exhaust	Input Pulse Range	Gauge	Additional Information
EFP	106319	0186Y1A.HEX	41 SCIM (0.6719 Liters)	45s, 90s, 1 min, 2 min		0.007" Bleed Orifice
EFPG	106320	0186Y1A.HEX	2300 SCIM (37.69 Liters)	45s, 90s, 1 min, 2 min	•	0.007" Bleed Orifice
EFP2	106321	0186Y1A.HEX	2300 SCIM (37.69 Liters)	45s, 90s, 1 min, 2 min		Maintains Branch Pressure
EFP2G	106322	0186Y1A.HEX	2300 SCIM (37.69 Liters)	45s, 90s, 1 min, 2 min	•	Maintains Branch Pressure
EFP2G Version #2	129480	0206Y0B.HEX	2300 SCIM (37.69 Liters)	30s, 3 min, 6 min, 8 min	•	Maintains Branch Pressure
EFP2FS	106324	0186Y1A.HEX	2300 SCIM (37.69 Liters)	45s, 90s, 1 min, 2 min		Exhausts on Power Failure
EFP2GFS	106323	0186Y1A.HEX	2300 SCIM (37.69 Liters)	45s, 90s, 1 min, 2 min	•	Exhausts on Power Failure

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 2.7 X 3.25	142626	DIN Rail Adapter
A/PN002	136499	10-32 X 1/8" ID, Barb Fitting
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
A/PN021	112219	In Line 10 Micron Filter, Installs in-between air supply and main barb connection
A/PN028	128307	Replacement Gauge

PTS4.1

Floating Point to Pneumatic Output

The PTS4.1 converts two digital (increase or decrease) signals from relay contact closures, transistors, or triac inputs into a proportional pneumatic signal of 0-10, 5-15 or 0-15 psig (jumper selectable). The pneumatic output increases when the UP input is on, or decreases when the DOWN input is on. The pneumatic output changes full scale (from minimum to maximum) in 90 seconds with 255 steps of resolution. The PTS4.1's closed loop electronic design will maintain the last commanded pneumatic pressure. An on-board microprocessor measures the signal input and a solid-state pressure transducer measures branch line pressure. The PTS4.1 uses these two values to automatically increase or decrease branch line air pressure. In the event of a power failure, both PTS4.1 valves close, shutting off main air and branch line bleed. If a power brown-out occurs, the PTS4.1 automatically reboots its on-board processor. During a power brown-out, power to the processor on the PTS4.1 is shut down, while the pressure output remains the same. When proper power level is restored, processor automatically powers up and branch pressure output defaults to 0 psig.

Applications: Pneumatic Damper Motor Control, Pneumatic Valve Actuator Control, Compressor Staging, Electric Control of any Pneumatic Actuato

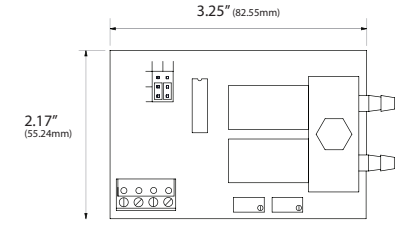
The PTS4.1 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC +/-10% at terminals | 50 or 60 Hz
Supply Current:	**PTS4.1:** 350mAAC, 200mADC Maximum
Digital Input Signal Source:	Two (2) Relay Contact Closures, Transistors or TRIACs (no accessories required)
Digital Input Signal Trigger Level (@ Impednce):	9-24 VAC @ 750Ω
Rate of Change:	90 Seconds
Air Supply Pressure:	25 psig (172 kPa) maximum, 20 psig (138 kPa) minimum
Output Pressure Range:	0-10 psig (0-68.95 kPa), 5-15 psig (34.47-103.43 kPa), or 0-15 psig (0-103.43 kPa)
Accuracy:	2% @ room temperature, 3% @ full range of operating temperature
Air Flow:	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 scim, Branch Line requires 2 in3 or 33.78 cm3 (min) | Unit requires min. of 25 ft of 1/4" O.D. poly tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004)
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm^2) to 26 AWG (0.129 mm^2)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections | Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass barbed fittings for Main and Branch in machined aluminum manifold Plugged 1/8-27-FNPT gauge port | Gauge installed at additional cost
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Gauge Pressure Accuracy (Gauge Models):	± 2.5% Midscale (± 3.5% Full Scale)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-10 to 150°F (-23.3 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	**No Gauge:** (L) 3.25" (W) 2.18" (H) 1.87" (82.55 x 55.24 x 47.49 mm) **With Gauge:** (L) 3.69" (W) 2.30" (H) 2.95" (93.60 x 58.42 x 74.9 mm)
Product Weight:	0.61 lbs. (0.276 Kg)
Agency Approvals:	RoHS2, WEEE

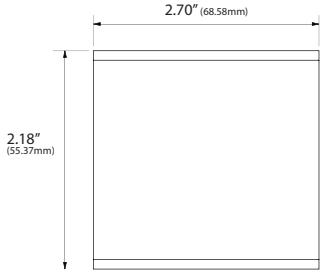
DIMENSIONAL DRAWING

PTS4.1



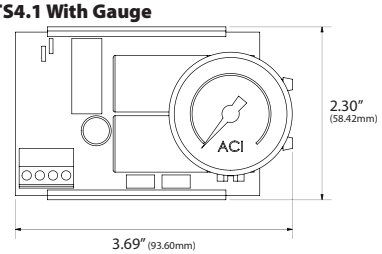
Board Only

Snap Track Side View

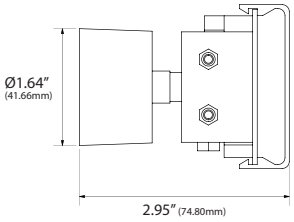


Snap Track Front View

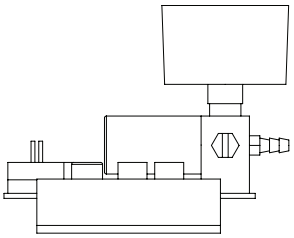
PTS4.1 With Gauge



Board with Snap Track



Board with Snap Track (Side)



Board with Snap Track (Top)

STANDARD ORDERING

Model # Example: PTS4.1 -OR- 127749

Model #	Item #	Description	Gauge
PTS4.1	127749	Floating Point to Pneumatic Output	
PTS4.1G	127750	Floating Point to Pneumatic Output, with Gauge	•

ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 2.7 X 2.18	142626	DIN Rail Adapter
A/PN004	110831	80-100 Micron Filter Media in Barb Fitting
ENC1	102472	20 Gauge Metal Enclosure, Designed to Hold Interfaces Products

RIM-5

Mechanical Relay Isolation Interface

The RIM-5 was designed for use in any application where you would like to replace a stand-alone thermostat with your building management system as well as any other similar application in which multiple isolation relays are needed. While some building management systems or controllers are equipped with relay contacts, many others have a Universal or TRIAC (Solid State) digital output. In the case where your building management system has a Universal or TRIAC output, the RIM-5 should be used to replace your thermostat contacts with up to five SPST pilot or isolation relays rated to a maximum contact rating of 10A in order to control your end devices tied to the thermostat contacts.The RIM-5 will accept either a 12 VDC or 24 VAC power source by adjusting the field selectable jumpers in the field and also includes a "Status" LED indicator for each of the relays that can be used to aid in the trouble shooting of your mechanical equipment by displaying the current operating state of your mechanical equipment.

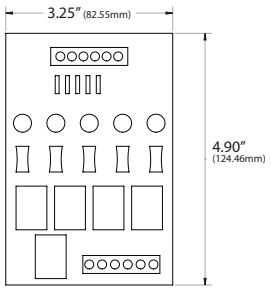
Applications: Digital Output Expansion, Alarms, Staging and Sequencing

The RIM-5 is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

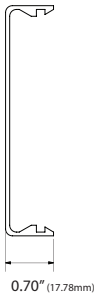
PRODUCT SPECIFICATIONS

Coil Voltage:	12 VDC(+/- 30%), or 24 VAC, (+/- 10%), 50/60 Hz
Supply Current:	170 mA maximum
Coil Voltage Selection:	Jumper Selectable
Digital Output Type:	Five SPST Form "A" Relays
Relay Contact Rating:	Total current of all relay outputs used must be no greater than 2.44A
Relay Electrical Life:	100,000 operations minimum
Relay Mechanical Life:	10,000,000 operations
Connections:	Screw Terminal Blocks
Wire Size:	16 AWG (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm nominal | 0.6 Nm (maximum)
Operating Temperature Range:	35 to 113°F (1.6 to 45°C)
Operating Humidity Range:	0 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-40 to 65.5°C)
Snaptrack Material:	Polyvinyl Chloride (PVC)
Snaptrack Flammability Rating:	UL94 V-0
Product Dimensions:	(L) 4.90" (W) 3.25" (H) 1.18" (81.92 x 82.55 x 29.97 mm)
Product Weight:	0.30 lbs. (0.136 Kg)
Agency Approvals:	RoHS2, WEEE

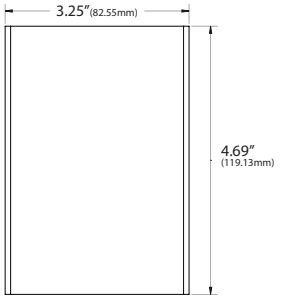
DIMENSIONAL DRAWING



Board Only



Snap Track



Snap Track

STANDARD ORDERING

Model # Example: RIM-5 -OR- 138058

Model #	Item #	Description
RIM-5	138058	Mechanical Relay Isolation Interface

ACCESSORIES

Model # Example: A/DRC 4.69 X 3.25 -OR- 142620

Model #	Item #	Description
A/DRC 4.69 X 3.25	142620	DIN Rail Adapter Kit

ENC1

20 Gauge Metal Enclosure

The ENC1 is a 20 gauge metal enclosure designed to hold ACI control interfaces or any small HVAC or Building Automation Control component. ENC1 has a 2" diameter opening to view a potential gauge, and two 7/8" diameter openings in the ends to accept 1/2" EMT fittings for control and power wiring. Snap in covers on all openings. ENC1 features a light gray powder coat finish cured under high temperatures to seal all enclosure surfaces.

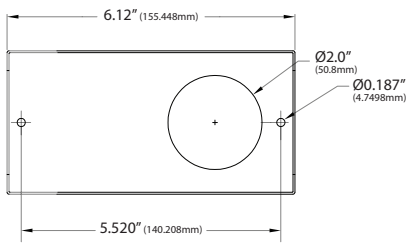
Applications: Interface Protective Housing, Protection for Small Building Automation System

The ENC1 Series is covered by ACI's two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

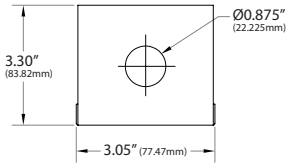
PRODUCT SPECIFICATIONS

Electrical Connections:	Base has two 7/8" holes in the ends to accept ½" EMPT conduit fitting for control and power wiring
Mounting Provisions (Base):	Base has two 3/16" hole for mounting with screws or bolts
Mounting Provisions (Interface Product):	Double faced tape for securing interface snap track in enclosure(There is an Adhesive foam Stop provided for holding interface in snaptrack)
Material:	20GA Metal
Finish:	Light Gray Powder Coat
Compatible With:	AAR, ARM, ARM2, ATL, ATP, AUD, LPR, PTA, PTA2, PTP, PXP, PTS4, RTI & TOB
Not Compatible With:	6N1-ISO, AFP, AIM1, AIM2, AIM3, ASA, DMUX, DRN3.1, DRN4, EFP, EPC, EPW, MAO, MDO, Photon 4.1
Operating Temperature:	35 to 120°F (1.7 to 48.9°C)
Operating RH:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-40 to 65.5°C)
Product Weight:	1.125 lbs. (0.51 Kg)
Product Dimensions:	(L) 6.12" (155.45 mm) x (W) 3.05" (77.47 mm) x (H) 3.3" (83.82 mm)
Agency Approvals:	RoHS2, WEEE

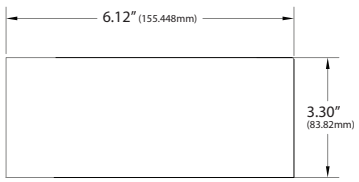
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: ENC1 -OR- 102472

Model #	Item #	Description
ENC1	102472	20 Gauge Metal Enclosure

COPPER AVERAGING

Bendable Copper BACnet™ MS/TP | Modbus RTU

The BN Series Copper Averaging networked temperature sensors are a cost effective, single point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. Each sensor features a copper sensing element that is manufactured with 4 or 9 sensing points determined by the length of the sensing element. The averaging sensors provide a better average temperature of the air inside the duct when compared to a single point duct sensor. Each of the elements is sealed to prevent moisture intrusion and includes a foam pad to seal the duct and dampen vibrations. The sensor length should be determined by the dimensional size of your duct. These sensors incorporate a conformally coated printed circuit board for long-term reliability. The ABS enclosure features an easy open latch for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series.

Applications: Supply / Return / Discharge / Mixed Duct Air Temperature Sensing, Chilled Water / Hot Water / Hydronic Heating Systems, Air / Gas Temperatures, Chillers, Boilers, Hot Water Heaters & Refrigeration Systems

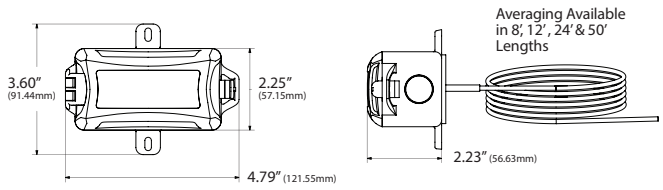
The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 302ºF (-40 to 150ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensor Material | Sensor Diameter:	Copper | 0.210" (5.34 mm) nominal
Fitting Material | Flammability Rating:	Polyamide 66 (High Performance Nylon) | UL94-HB
Enclosure Color | Material | UL Flammability Rating:	Black | ABS Plastic | UL94-HB
Enclosure Temperature Rating | Plenum Rating:	-22 to 194ºF (-30 to 90ºC) | Plenum Rated
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions (L x W x D):	See Dimensional Drawings on Back
Product Weights:	See Dimensional Drawings on Back
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



Standard Views

yy = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
BN2110-A-yy-PB	0.72 lbs. (0.327 kg)	0.96 lbs. (0.435 kg)

ACI Model #	24' (Probe Length)	50' (Probe Length)
BN2110-A-yy-PB	1.70 lbs. (0.771 kg)	3.28 lbs. (1.488 kg)

Product Weights

STANDARD ORDERING

Model # Example: BN2110-A-8-PB -OR- 146609

Model #	Item #	Description
BN2110-A-8-PB	146609	BACnet™ MS/TP, Modbus RTU, Temperature, Copper Averaging, 8', Plastic Enclosure
BN2110-A-12-PB	146613	BACnet™ MS/TP, Modbus RTU, Temperature, Copper Averaging, 12', Plastic Enclosure
BN2110-A-24-PB	146614	BACnet™ MS/TP, Modbus RTU, Temperature, Copper Averaging, 24', Plastic Enclosure
BN2110-A-50-PB	146615	BACnet™ MS/TP, Modbus RTU, Temperature, Copper Averaging, 50', Plastic Enclosure

DUCT

RH-Temperature BACnet™ MS/TP | Modbus RTU

The BN Series Temperature and Humidity Duct networked sensors are a cost effective, single or dual point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. These sensors incorporate a conformally coated printed circuit board mounted inside a waterproof enclosure for long-term reliability. The enclosure features a twist off cover for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

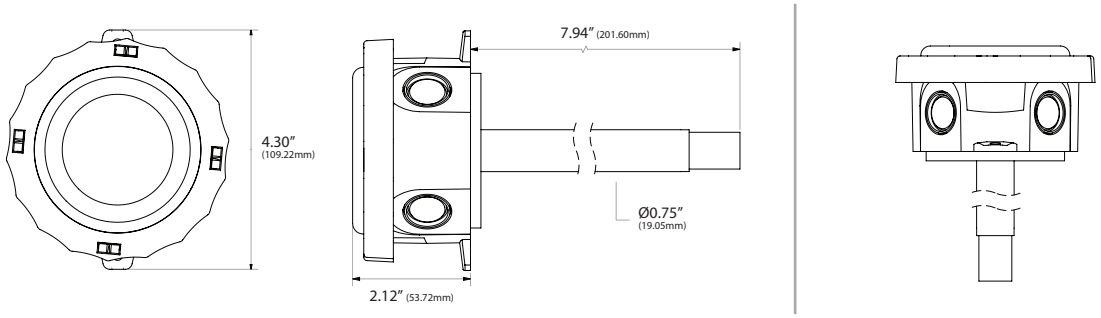
Applications: Monitoring Supply / Discharge / Return Temperature and humidity, Dehumidification and Humidification Processes, Clean Rooms, Data Centers, Return Air in Pool Environments, Economizer Control, Air Handlers, Roof Top Units, Process Control Applications

The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 176ºF (-40 to 80ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
RH Measurement Range:	0 to 100%
RH Measurement Accuracy @ 77ºF (25ºC):	+/- 2% from 10 to 90% RH
RH Calibration Offset:	+/- 10% RH (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature / RH Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensing Probe and Filter Material | Probe Diameter:	304 Stainless Steel | 0.750" (19.05 mm)
Enclosure Material | UL Flammability Rating:	ABS Plastic | UL94-HB
Enclosure Temperature Rating:	-40 to 140ºF (-40 to 60ºC)
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions (Length x Diameter):	10.06" (255.53 mm) x 4.30" (109.22 mm)
Product Weights:	1.30 lbs. (0.59 kg)
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

DIMENSIONAL DRAWING



Front & Right Views | **Top View**

STANDARD ORDERING

Model # Example: BN2120-D -OR- 146541

Model #	Item #	Description
BN2120-D	146541	BACnet™ MS/TP, Modbus RTU, Relative Humidity, Duct, Euro Enclosure
BN2130-D	146531	BACnet™ MS/TP, Modbus RTU, Relative Humidity and Temperature, Duct, Euro Enclosure

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FLEXIBLE AVERAGING

Multipoint BACnet™ MS/TP | Modbus RTU

The BN Series Flexible Averaging networked temperature sensors are a cost effective, single point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. Each sensor features a 18 AWG Plenum rated cable that is manufactured with 4 or 9 sensing points determined by the length of the sensing element. The averaging sensors provide a better average temperature of the air inside the duct when compared to a single point duct sensor. The flexible averaging sensors are limited to applications where operating temperatures are limited and where high humidity, chemical resistance and UV Light Air Treatment Systems aren't required. Each of the sensing elements is protected by a dual wall adhesive lined heat shrink tubing to provide a level of moisture protection to the sensing elements. The sensor length should be determined by the dimensional size of your duct. These sensors incorporate a conformally coated printed circuit board for long-term reliability. The ABS enclosure features an easy open latch for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

Applications: Supply / Return / Discharge / Mixed Duct Air Temperature Sensing, Chilled Water / Hot Water / Hydronic Heating Systems, Air / Gas Temperatures, Chillers, Boilers, Hot Water Heaters & Refrigeration Systems

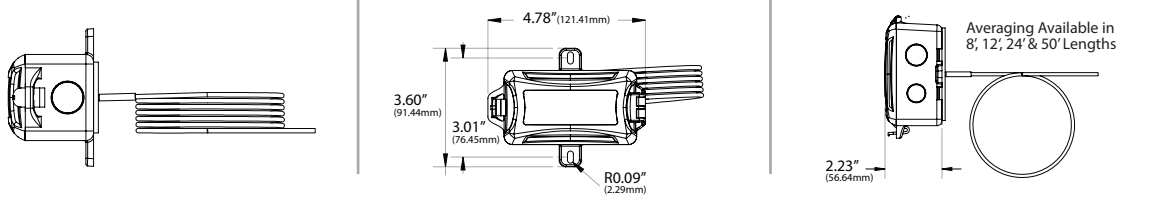
The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	0 to 75ºC (32 to 167ºF)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	0 to 75ºF (32 to 167ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Sensor Jacket Material | Cable Ratings:	Low Smoke PVC | CL2P | CMP Plenum Rated Cable
Sensor Cable Diameter:	0.170" (4.32mm) nominal
Enclosure Color | Material | UL Flammability Rating:	Black | ABS Plastic | UL94-HB
Enclosure Temperature Rating | Plenum Rating:	-22 to 194ºF (-30 to 90ºC) | Plenum Rated
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions (L x W x D):	See Dimensional Drawings on Back
Product Weights:	See Dimensional Drawings on Back
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

DIMENSIONAL DRAWING

Plastic Box Enclosure [PB]



Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: BN2110-FA-50-PB -OR- 146619

Model #	Item #	Description
BN2110-FA-8-PB	146618	BACnet™ MS/TP, Modbus RTU, Temperature, Flexible Cable Averaging, 8', Plastic Enclosure
BN2110-FA-12-PB	146616	BACnet™ MS/TP, Modbus RTU, Temperature, Flexible Cable Averaging, 12', Plastic Enclosure
BN2110-FA-24-PB	146617	BACnet™ MS/TP, Modbus RTU, Temperature Flexible Cable Averaging, 24', Plastic Enclosure
BN2110-FA-50-PB	146619	BACnet™ MS/TP, Modbus RTU, Temperature, Flexible Cable Averaging, 50', Plastic Enclosure

OUTSIDE AIR

RH-Temperature BACnet™ MS/TP | Modbus RTU

The BN Series Outdoor Temperature and Humidity networked sensors are a cost effective, single or dual point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. These sensors incorporate a conformally coated printed circuit board mounted inside a waterproof enclosure for long-term reliability. The enclosure features a twist off cover for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

Applications: Outdoor Air Temperature and RH Sensing, Economizers, Warehouse Facilities, Cold Storage Buildings, Manufacturing Plants, Wash Down Environments

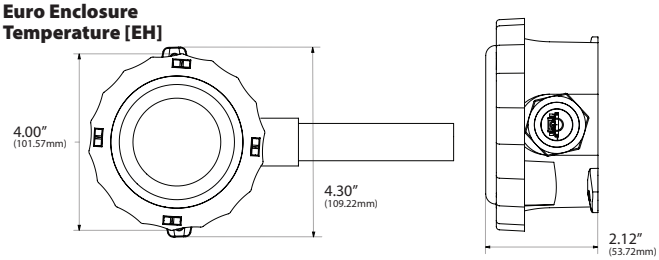
The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

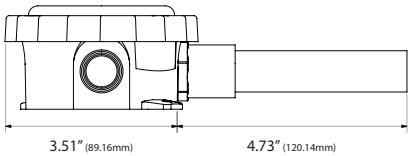
PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 176ºF (-40 to 80ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0 ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
RH Measurement Range:	0 to 100%
RH Measurement Accuracy @ 77ºF (25ºC):	+/- 2% from 10 to 90% RH
RH Calibration Offset:	+/- 10% RH (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature / RH Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
RH Sensing Tube | Diameter:	Aluminum | 1.125" (28.58 mm)
Temperature Sensing Tube Diameter:	Polycarbonate / ASA with UV Protectant | 0.86" (21.85 mm)
Enclosure Material | UL Flammability Rating:	Polycarbonate / ASA with UV Protectant | UL94-V0
Enclosure Temperature Rating:	-40 to 190ºF (-40 to 88ºC)
Product Dimensions (L x W x D):	7.00" (177.8 mm) x 5.00" (127 mm) x 3.00" (76.2 mm)
Product Weights:	0.72 lbs. (0.33 kg)
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

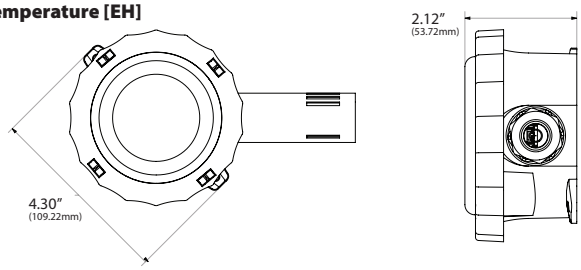
DIMENSIONAL DRAWING

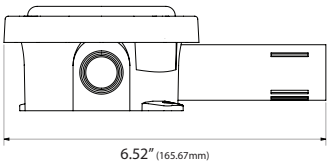
Euro Enclosure Temperature [EH]





Euro Enclosure RH & Temperature [EH]





Front & Right Views | **Top View**

STANDARD ORDERING

Model # Example: BN2130-O -OR- 146528

Model #	Item #	Description
BN2110-O	146540	BACnet™ MS/TP, Modbus RTU, Temperature, Outside, Euro Enclosure
BN2120-O	146543	BACnet™ MS/TP, Modbus RTU, Relative Humidity Sensor, Outside, Euro Enclosure
BN2130-O	146528	BACnet™ MS/TP, Modbus RTU, Relative Humidity and Temperature, Outside, Euro Enclosure

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IMMERSION-NO WELL, DUCT

BACnet™ MS/TP | Modbus RTU Immersion, Duct

The BN Series Duct and Immersion networked temperature sensors are a cost effective, single point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. These sensors incorporate a conformally coated printed circuit board for long-term reliability. The ABS enclosure features an easy open latch for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

Applications: Supply / Return / Discharge / Mixed Duct Air Temperature Sensing, Chilled Water / Hot Water / Hydronic Heating Systems, Air / Gas Temperatures, Chillers, Boilers, Hot Water Heaters & Refrigeration Systems

The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 302ºF (-40 to 150ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material | Probe Diameter:	304 Stainless Steel | 0.250" (6.35mm)
Immersion Thermowell Thread Size:	½" NPS Male Thread
Enclosure Color | Material | UL Flammability Rating:	Black | ABS Plastic | UL94-HB
Enclosure Temperature Rating | Plenum Rating:	-22 to 194ºF (-30 to 90ºC) | Plenum Rated
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions (L x W x D):	See Dimensional Drawings on Back
Product Weights:	See Dimensional Drawings on Back
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

MAXIMUM VELOCITY VS THERMOWELL INSERTION LENGTH Machined Thermowell

Straight Shank Insertion Length "U"					Stepped Shank Insertion Length "U"	
Material:	**Media Type:**	**1.0"** (25.4 mm)	**2.5"** (63.5 mm)	**8.0"** (203.2 mm)	**4.0"** (101.6 mm)	**6.0"** (152.4 mm)
304/316 SS	Air/Gas/Steam [1]	349 ft/s (106.3 m/s)	349 ft/s (106.3 m/s)	71.9 ft/s (21.9 m/s)	109 ft/s (33.2 m/s)	39.5 ft/s (12.0 m/s)
304/316 SS	Water	360 ft/s (109.7 m/s)	360 ft/s (109.7 m/s)	71.9 ft/s (21.9 m/s)	82.2 ft/s (25.1 m/s)	39.5 ft/s (12.0 m/s)

Note 1: Values are for Air/Gas/Steam and similar density media | All velocity ratings are based upon an operating temperature of 1000ºF (537.8ºC)

MAXIMUM PRESSURE VS TEMPERATURE RATINGS Two-Part Fabricated / Welded Thermowell

Material:	70ºF (21.1ºC)	200ºF (93.3ºC)	400ºF (204.4ºC)	600ºF (315.6ºC)	800ºF (426.7ºC)	1000ºF (537.8ºC)	1200ºF (648.9ºC)
304/316 SS	982 PSI (67.7 Bar)	820 PSI (56.5 Bar)	675 PSI (46.5 Bar)	604 PSI (41.6 Bar)	550 PSI (37.9 Bar)	510 PSI (35.1 Bar)	290 PSI (20.0 Bar)

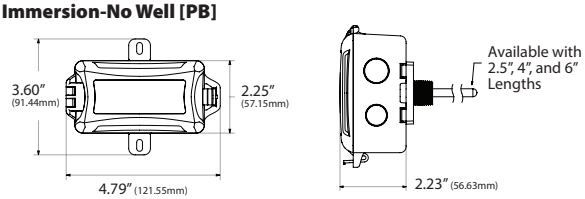
MAXIMUM FLUID VELOCITY RATINGS Two-Part Fabricated / Welded Thermowell

Straight Shank Insertion Length "U"				
Material:	**Media Type:**	**2.5"** (63.5 mm)	**4.0"** (101.6 mm)	**6.0"** (152.4 mm)
304/316 SS	Air/Gas/Steam [2]	169 ft/s (51.5 m/s)	61 ft/s (18.6 m/s)	20 ft/s (6.1 m/s)
304/316 SS	Water	88 ft/s (26.8 m/s)	20 ft/s (6.1 m/s)	10 ft/s (3.05 m/s)

Note 2: Values are for Air/Gas/Steam and similar density media

DIMENSIONAL DRAWING, WEIGHTS

Immersion-No Well [PB]

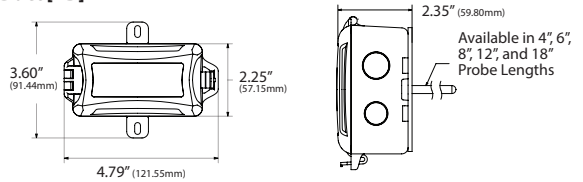


yy = Insertion Length

Immersion [PB] Weights

ACI Model #	2.5" (Insertion Length)	4" (Insertion Length)	6" (Insertion Length)
A/BN21110-INW-yy-PB	0.31 lbs. (0.141 kg)	0.35 lbs. (0.159 kg)	0.39 lbs. (0.178 kg)

Duct [PB]



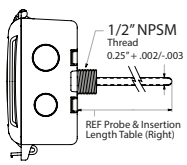
Duct [PB] Weights

ACI Model #	4" (Probe Length)	6" (Probe Length)	8" (Insertion Length)
A/BN21110-D-yy-PB	0.31 lbs. (0.141 kg)	0.32 lbs. (0.145 kg)	0.33 lbs. (0.150 kg)

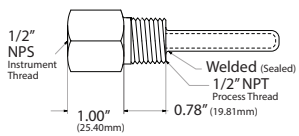
ACI Model #	12" (Probe Length)	18" (Probe Length)
A/BN21110-D-yy-PB	0.35 lbs. (0.159 kg)	0.37 lbs. (0.168 kg)

Front & Right Views | **Product Weights**

PROBE AND INSERTION LENGTH IMMERSION NO WELL



Pictured Below: welded two piece thermowell to show connection and depth reference. Thermowell not included with immersion no well (INW).



Probe & Insertion Length

Probe Length	Insertion Length	ACI Part #	Thermowell Part #
4.5" (114.3 mm)	4.31" (109.5 mm) +/- 0.13" (±3.3 mm)	A/BN1110-INW-2.5-PB	A/2.5" or A/M2.5"
6" (152.4 mm)	5.81" (147.6 mm) +/- 0.13" (±3.3 mm)	A/BN1110-INW-4-PB	A/4" or A/M4"
8" (203.2 mm)	7.81" (198.38 mm) +/- 0.13" (±3.3 mm)	A/BN1110-INW-6-PB	A/6" or A/M6"

STANDARD ORDERING

Model # Example: BN2110-D-8-PB -OR- 146534

Model #	Item #	Description
BN2110-D-4-PB	146516	BACnet™ MS/TP, Modbus RTU, Temperature, Duct, SS, 4", Plastic Enclosure
BN2110-D-6-PB	146519	BACnet™ MS/TP, Modbus RTU, Temperature, Duct, SS, 6", Plastic Enclosure
BN2110-D-8-PB	146534	BACnet™ MS/TP, Modbus RTU, Temperature, Duct, SS, 8", Plastic Enclosure
BN2110-D-12-PB	146538	BACnet™ MS/TP, Modbus RTU, Temperature, Duct, SS, 12", Plastic Enclosure
BN2110-D-18-PB	146539	BACnet™ MS/TP, Modbus RTU, Temperature, Duct, SS, 18", Plastic Enclosure
BN2110-INW-2.5-PB	146544	BACnet™ MS/TP, Modbus RTU, Temperature, Immersion No Well, 2.5", Plastic Enclosure
BN2110-INW-4-PB	146545	BACnet™ MS/TP, Modbus RTU, Temperature, Immersion No Well, 4", Plastic Enclosure
BN2110-INW-6-PB	146546	BACnet™ MS/TP, Modbus RTU, Temperature, Immersion No Well, 6", Plastic Enclosure

ACCESSORIES ORDERING

Model # Example: NSG HEAT TRANSFER PASTE 2OZ -OR- 102595

Model #	Item #	Description
NSG HEAT TRANSFER PASTE 2OZ	102595	Thermal Grease, 2 oz. Tube, Silicone Free, -40 to 320ºF (-40 to 160ºC)
NSG HEAT TRANSFER PASTE 16OZ	140574	Thermal Grease, 16 oz. Jar, Silicone Free, -40 to 390ºF (-40 to 198ºC)
A/2.5"	128349	2.5" (63.5mm) Insertion, 304 Stainless, Welded, ½" NPT Thermowell
A/4"	128350	4" (101.6mm) Insertion, 304 Stainless, Welded, ½" NPT Thermowell
A/6"	128351	6" (152.4mm) Insertion, 304 Stainless, Welded, ½"NPT Thermowell
A/M1"	128337	1" (25.4mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M2.5"	128338	2.5" (63.5mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M4"	128343	4" (101.6mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M6"	128344	6" (152.4mm) Insertion, 304 Stainless, Machined, ½"NPT Thermowell
A/M8"	138725	8" (203.2mm) Insertion, 304 Stainless, Machined, ½" NPT Thermowell
A/M2.5"-316SS	128352	2.5" (63.5mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell
A/M4"-316SS	128353	4" (101.6mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell
A/M6"-316SS	128354	6" (152.4mm) Insertion, 316 Stainless, Machined, ½" NPT Thermowell

RIGID AVERAGING

Four Point BACnet™ MS/TP | Modbus RTU

The BN Series Rigid Averaging networked temperature sensors are a cost effective, single point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. Each sensor features a ¼" diameter stainless steel probe that is manufactured with 4 sensing points. The rigid averaging sensors provide a better average temperature of the air inside the duct when compared to a single point duct sensor. Each of the elements is hermetically sealed to prevent any moisture intrusion and includes an integrated foam pad to properly seal the duct and dampen vibrations when installed. The benefits of using the rigid averaging sensor is that it mounts like a standard single point duct sensor but includes three additional sensing points for better control. The sensor length should be determined by the size of your duct. These sensors incorporate a conformally coated printed circuit board for long-term reliability. The ABS enclosure features an easy open latch for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

Applications: Supply / Return / Discharge / Mixed Duct Air Temperature Sensing, Chilled Water / Hot Water / Hydronic Heating Systems, Air / Gas Temperatures, Chillers, Boilers, Hot Water Heaters & Refrigeration Systems

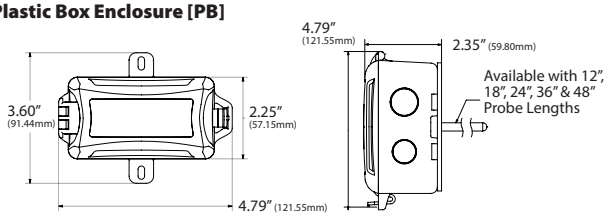
The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 302ºF (-40 to 150ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Probe Material:	304 Stainless Steel
Probe Diameter:	0.250" (6.35mm)
Enclosure Color | Material | UL Flammability Rating:	Black | ABS Plastic | UL94-HB
Enclosure Temperature Rating | Plenum Rating:	-22 to 194ºF (-30 to 90ºC) | Plenum Rated
Foam Pad Material | Flammability Rating:	Neoprene/EPDM/SBR Polymer | UL94-HBF; FMVSS-302; MIL-R-6130C
Product Dimensions (L x W x D):	See Dimensional Drawings on Back
Product Weights:	See Dimensional Drawings on Back
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

DIMENSIONAL DRAWING, WEIGHTS

Plastic Box Enclosure [PB]



Standard Views

yy = Insertion Length

Plastic Box Enclosure [PB] Weights

ACI Model #	12″ (Probe Length)	18″ (Probe Length)
BN2110-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24″ (Probe Length)	36″ (Probe Length)	48″ (Probe Length)
BN2110-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.18 kg)

Product Weights

STANDARD ORDERING

Model # Example: BN2110-RA-12-PB -OR- 146620

Model #	Item #	Description
BN2110-RA-12-PB	146620	BACnet™ MS/TP, Modbus RTU, Temeperature, Rigid Probe Averaging, SS, 12", Plastic Enclosure
BN2110-RA-18-PB	146621	BACnet™ MS/TP, Modbus RTU, Temeperature, Rigid Probe Averaging, SS, 18", Plastic Enclosure
BN2110-RA-24-PB	146622	BACnet™ MS/TP, Modbus RTU, Temeperature, Rigid Probe Averaging, SS, 24", Plastic Enclosure
BN2110-RA-36-PB	146623	BACnet™ MS/TP, Modbus RTU, Temeperature, Rigid Probe Averaging, SS, 36", Plastic Enclosure
BN2110-RA-48-PB	146624	BACnet™ MS/TP, Modbus RTU, Temeperature, Rigid Probe Averaging, SS, 48", Plastic Enclosure

ROOM

BACnet™ MS/TP | Modbus RTU Communicating

The BN Series Room Temperature and Humidity networked sensors are a cost effective, single or dual point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. Please contact ACI for more information regarding the BN Series communicating sensors.

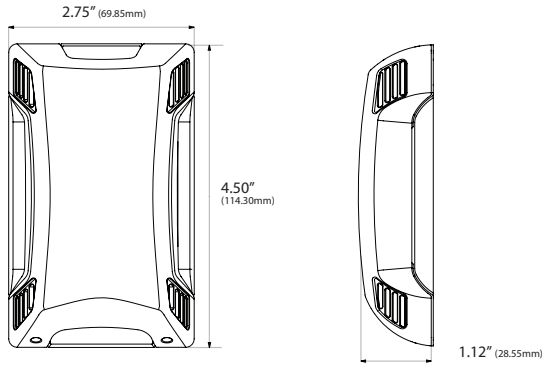
Applications: Ambient Air Temperature/Humidity Sensing, Office Buildings, Schools, Clean Rooms, Pharmaceutical Labs, Hospitals, Data Centers & Retail Stores

The ACI BN Series BACnet™ sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

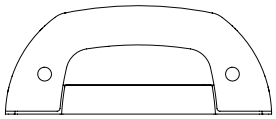
PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC | 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	35 to 122ºF (1.5 to 50ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
RH Measurement Range:	0 to 100%
RH Measurement Accuracy 77ºF (25ºC):	+/- 2% from 10 to 90% RH
RH Calibration Offset:	+/- 10% RH (Field Configurable)
Resolution:	+/- 0.1º | +/- 0.1%
Temperature / RH Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	35 to 122ºF (1.5 to 50ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Enclosure Color:	White
Enclosure Material | UL Flammability Rating:	ABS Plastic | UL94-HB
Product Dimensions (L x W x D):	4.50" (114.3 mm) x 2.78" (70.6 mm) x 1.40" (35.6 mm)
Product Weight:	0.21 lbs. (0.095 kg)
Recommended Mounting Height:	4 to 5 ft (1.2 to 1.5 m) above floor
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

DIMENSIONAL DRAWING



Front & Right Views



Bottom View

STANDARD ORDERING

Model # Example: BN2110-R2 -OR- 146511

Model #	Item #	Description
BN2110-R2	146511	BACnet™ MS/TP, Modbus RTU, Temperature, Room (R2)
BN2120-R2	146604	BACnet™ MS/TP, Modbus RTU, Relative Humidity, Room (R2)
BN2130-R2	146522	BACnet™ MS/TP, Modbus RTU, Relative Humidity and Temperature, Room (R2)

ACCESSORIES ORDERING

Model # Example: A/LOCKING COVER -OR- 107370

Model #	Item #	Description
A/MOUNTING PLATE WHITE R2	143369	Plastic Wall Plate, White (R2)
A/LOCKING COVER	107370	Clear Thermostat Guard Locking Cover (Low Profile)
A/ROOM-FOAM-PAD	125690	1/8" Foam Insulation Pad with Adhesive, 3" x 2", Black

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STRAP ON

Non-Intrusive, BACnet™ MS/TP | Modbus RTU

The BN Series Strap On networked temperature sensors are a cost effective, single point native BACnet™ or Modbus sensing solution designed to reduce the need for additional input modules or building management controllers when a limited number of input points are available. The BN series offers both BACnet™ and Modbus protocols in one device, providing great flexibility with various systems. The BTL Certification provides confidence that these sensors may be used in any new or retrofit installation using a BACnet™ MS/TP controller with third party BACnet™ devices. The sensor is encapsulated to the back side of a 1.5" square copper plate providing thermal conductivity between the pipe and the sensor. These sensors incorporate a conformally coated printed circuit board for long-term reliability. The ABS enclosure features an easy open latch for easy access to the wiring and internal dip switches for quick setup and installation. Please contact ACI for more information regarding the BN Series communicating sensors.

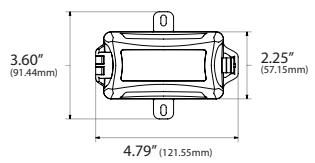
Applications: Cold Water Systems, Hot Water Systems, Hydronic Heating Systems, Chillers

The BACnet™ Strap On sensors are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

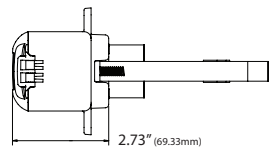
PRODUCT SPECIFICATIONS

Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-22 to 185ºF (-30 to 85ºC)
Temperature Measurement Accuracy @ 77ºF (25ºC):	+/- 1.0ºF (+/- 0.5ºC)
Temperature Calibration Offset:	+/- 9ºF (+/- 5ºC) (Field Configurable)
Temperature Units:	ºF (Factory Default), ºC, ºK (Field Configurable)
Resolution:	+/- 0.1º
Temperature / RH Update Rate:	4 seconds
Communication Protocol:	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
Sensor Addresses:	0 = Factory Default | 1-127 = Field Selectable
Supported Baud Rates:	Auto Baud (Factory Default) | 9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
Parity (Modbus RTU):	None/Even/Odd = Field Selectable
Stop Bits (Modbus RTU):	1 or 2= Field Selectable
Databits (Modbus RTU):	8
Maximum Distance:	4000 ft (1219 m)
End Of Line Termination Resistance:	120 Ohms Termination Resistance (Field Selectable)
Tri-Color Status LED:	Connection Status
Connections | Wire Size:	Screw Terminal Blocks | 16 AWG (1.31 mm²) to 22 AWG (0.33 mm²)
Transmitter Operating Temperature Range:	-40 to 176ºF (-40 to 80ºC)
Storage Temperature Range:	-40 to 185ºF (-40 to 85ºC)
Operating Humidity Range:	10 to 95% RH, non-condensing
Pipe Mount Sensor Plate Material:	Copper
Acceptable Pipe Size:	S: 1 1/4" (32 mm) to 4" (100 mm) | S10: 2" (50 mm) to 10" (250 mm)
Enclosure Material | UL Flammability Rating:	ABS Plastic | UL94-HB
Enclosure Temperature Rating:	-22 to 194ºF (-30 to 90ºC)
Product Weights:	0.43 lbs. (0.20 kg)
Agency Approvals:	BTL Certified, CE, RoHS2, WEEE, China RoHS

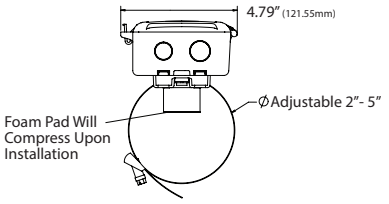
DIMENSIONAL DRAWING



Front View



Right View



Top View

STANDARD ORDERING

Model # Example: BN2110-S-PB -OR- 146549

Model #	Item #	Description
BN2110-S-PB	146549	BACnet™ MS/TP, Modbus RTU, Temperature, Strap On, Plastic Enclosure
BN2110-S10-PB	146550	BACnet™ MS/TP, Modbus RTU, Temperature, Strap On, 2-10" Pipe, Plastic Enclosure

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LIGHT LEVELS

Sensors & Transmitters

The A/LLS and A/LLS-T light level sensors and transmitters are used for applications such as turning on or off indoor or outdoor lighting based upon the amount of available light. The sensor can be mounted in a NEMA 3R rated enclosure. In darkness, the sensor has a resistance in excess of 1M ohms, versus a resistance of less than 1.5K ohms in bright light. The A/LLS-T incorporates a transmitter with the sensor to produce a non-linear 4-20 mA output signal. The A/LLS-T is calibrated for 4 mA in darkness and 20 mA in bright Light. Typically the 0-500 is used for outdoor parking lot lighting/signage applications and the 0-100 is used for indoor lighting.

Applications: Indoor/Outdoor Lighting Control Systems & Building Automation Systems

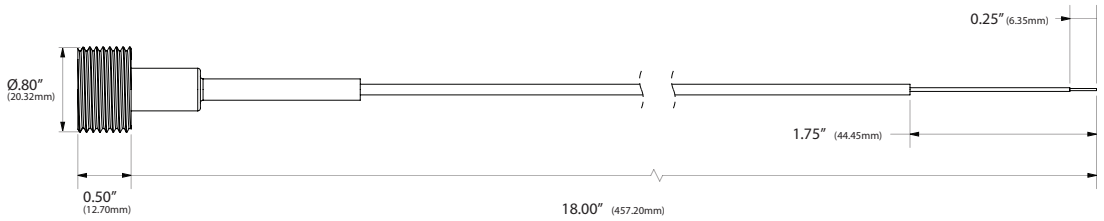
The A/LLS & A/LLS-T are covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com

PRODUCT SPECIFICATIONS

Sensor Process Thread:	1/2" NPT
Sensor Housing Material:	Acrylic / Polycarbonate
Sensor Operating Temperature Range:	-40 to 70ºC (-40 to 158ºF)
Sensor Operating Humidity Range:	0-95% Relative Humidity, non-condensing
Sensor Lead Length | Cable Diameter | Conductor Size:	18" (45.7cm) | 0.16" nominal (2.69 mm) | 22 AWG (0.65mm)
Sensor Lead Wire Insulation | Wire Rating:	Polyvinylchloride Unshielded Cable | UL 2464 80C 300V; CSA AWM II A/B FT4
Sensor Conductor Material:	Tin Plated Copper
Sensor Continuous Power Dissipation:	80 mW
Sensor Maximum Voltage:	100V pk
Sensor Response Time @ 1 Foot-Candles:	Rise (1-1/e): 78mS | Fall (1/e): 8mS
Sensor Response Time @ Dark:	5 Seconds
Sensor Resistance @ 10 Lux (@25ºC):	Typical: 24K Ohms | Minimum: 12K Ohms | Maximum: 36K Ohms
Sensor Resistance @ 2 Foot-Candles (@25ºC):	Typical: 12K
Sensor Resistance @ Dark:	Minimum: 500K
Transmitter Supply Voltage:	24 to 35 VDC
Transmitter Input Impedance:	150K Ohms
Transmitter Output Current Signal Range:	4-20 mA (3 Wire)
Transmitter Maximum Load Resistance:	500 Ohms
Transmitter Light Level Measurement Range:	Model Dependent: 100 foot-candles (0-100) / 500 foot-candles (0-500)
Transmitter Operating Temperature Range:	35 to 131ºF (1.5 to 55ºC)
Transmitter Storage Temperature Range:	-0 to 160ºF (-40 to 71ºC)
Transmitter Operating Relative Humidity Range:	5 to 95% non-condensing
Transmitter Enclosure Specifications (Material, Flammability, NEMA/IP Ratings):	Aluminum, IP32 (NEMA 3R)
Transmitter Snaptrack Material:	Polyvinyl Chloride (PVC)
Transmitter Snaptrack Flammability Rating:	UL94 V-0
Transmitter Connections | Wire Size:	Screw Terminal Blocks | 16 (1.31 mm²) to 26 AWG (0.129 mm²)
Transmitter Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Transmitter Product Dimensions:	(L) 4.58" (116.3 mm) x (W) 2.82" (71.63 mm) x (H) 2.25" (57.15 mm)
Transmitter Product Weight:	"LLS": 0.054 lbs (0.025 kg) | "LLS-T": 0.85 lbs (0.386 kg)
Transmitter Agency Approvals:	RoHS2, WEEE

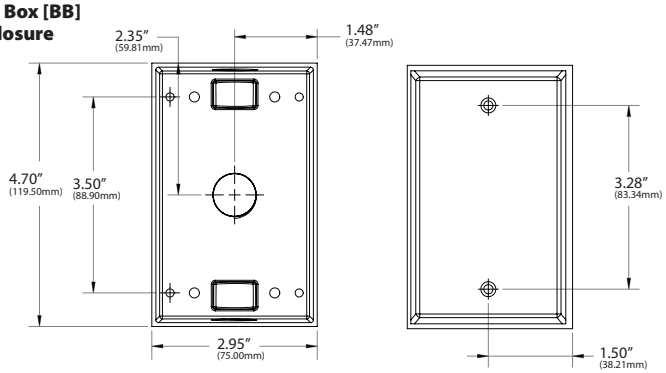
DIMENSIONAL DRAWING

Light Level

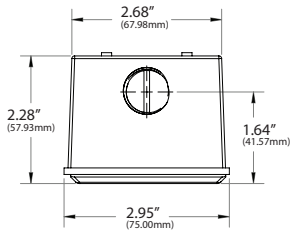


Standard View

Bell Box [BB] Enclosure



Front & Back Views



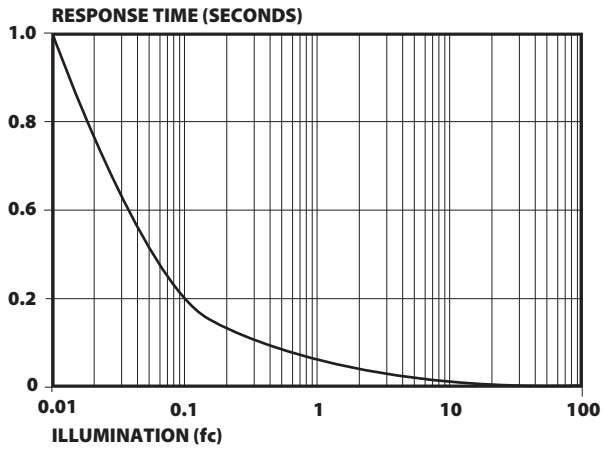
Top View

STANDARD ORDERING

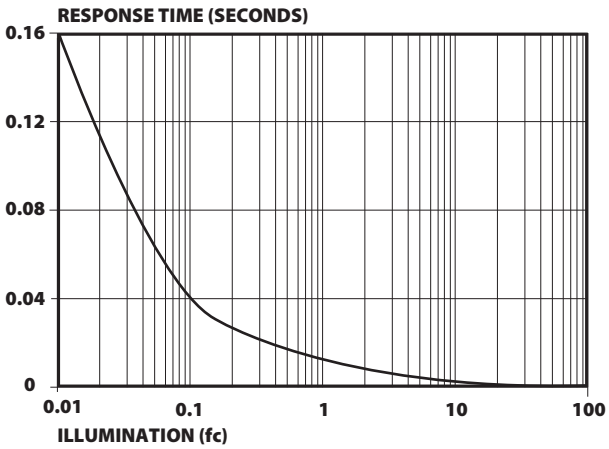
Model # Example: A/LLS -OR- 122465

Model #	Item #	Description
A/LLS	122465	Light Level Sensor
A/LLS-BB	122466	Light Level Sensor, with Bell Box
A/LLS-T(0-100)	122467	LLS-Transmitter, 0-100 foot-candles (fc), with Bell Box
A/LLS-T(0-500)	122468	LLS-Transmitter, 0-500 foot-candles (fc), with Bell Box

RESPONSE TIME VS. ILLUMINATION (RISE)



RESPONSE TIME VS. ILLUMINATION (DECAY)



PS24

Adjustable External Power Supply

The PS24 Series low voltage power supplies will accept a 24 VAC input voltage from a Class 2 transformer and convert it into an adjustable 1.5 to 26 VDC regulated output voltage. The PS24 is able to be configured in either Half or Full Wave mode by using the integral jumper shunt selection switches. An onboard potentiometer is available to allow for field adjustment of the 24 VDC factory set voltage to any voltage from 1.5 to 26 VDC. The standard unit is shipped in a standard snap track mounting configuration to allow for easy mounting inside of your electrical panel or piece of equipment.

In applications where a Pilot Duty or remote relay is required, the A/DO008 transorb can be placed across the coil of the relay to snub electrical spikes when the relays are de-energized. An external transorb may not be required if the relay and PS24 power supply is mounted within the same control panel.

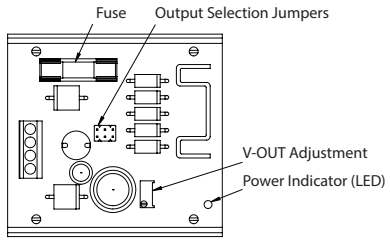
Applications: DC Power Supply, Transducer Supply, Test Bench Supply, Analog Signal Simulator, DC Power Regulation from Control Transformer

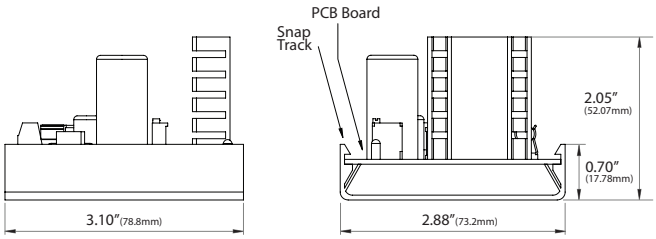
The ACI PS24 is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

Input Voltage:	22 to 26 VAC, 50/60 Hz (Class 2 Transformer w/ 24 VAC Secondary) or 30 to 36 VDC
VA Requirements:	1.5 VA minimum (No Load); Additional VA required must be determined by load size
Rectification:	Half-Wave (Default) or Full Wave (Jumper Selectable)
Output Voltage:	Factory set at 24 VDC; Adjustable from +1.5 to 26 VDC
Output Current:	See Figure #1 graphs for Output Current vs Ambient Operating Temperature
Overload Protection:	Internal Current Limiting Thermal Protection
Ground Loop Protection:	Fused, 3.15A/250 VAC, 5 x 20 mm, fast acting (Littelfuse 02173.15 MXP or equivalent)
Status Indication:	Red LED Indicates power on status
Operating Temperature Range:	32 to 158°F (0 to 70°C)
Operating Humidity Range:	5 to 95%, non-condensing
Storage Temperature Range:	50 to 95°F (10 to 35°C)
Storage Humidity Range:	30 to 60%
Connections | Wire Size:	Screw Terminal Blocks | 14 (1.31 mm²) to 22 AWG (0.129 mm²)
Terminal Block Torque Rating:	4 lb-in (0.5 Nm) maximum
Snap Track Material | Flammability Rating:	Polyvinyl Chloride (PVC) | UL94 V-0
Product Dimensions (L x W x H):	3.10" (78.8 mm) x 2.88" (73.2 mm) x 2.05" (52.1 mm)
Product Weight:	0.14 lbs. (0.064 kg)
Agency Approvals:	CE, RoHS2, WEEE

DIMENSIONAL DRAWING





Front View **Side Views**

STANDARD ORDERING

Model # Example: A/PS24-24V-S -OR- 144322

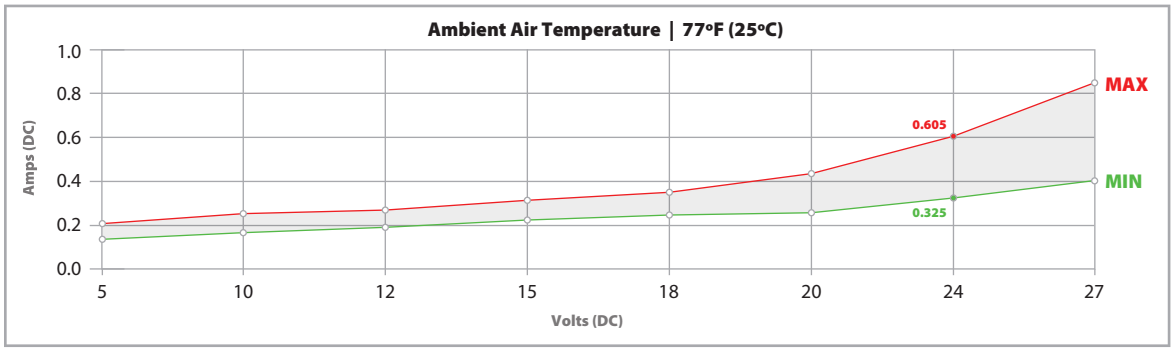
Model #	Item #	Description
A/PS24-24V-S	144322	24VDC Power Supply_Snap Track

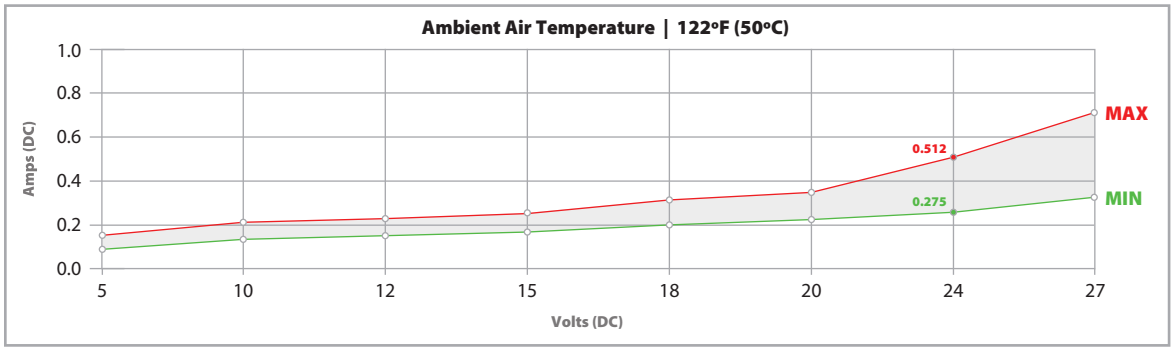
ACCESSORIES ORDERING

Model # Example: A/DO008 -OR- 142583

Model #	Item #	Description
A/DO008	142583	Transient Voltage Suppressor, Bi-directional, 56 VAC/DC, 1500W
A/DRC 3.1 X 2.88	145395	Snap Track to DIN Rail Adapter

FIGURE 1





Note: The output current was tested at the ambient temperature and voltages provided in Figure 1

FREEZE STATS

Manual & Automatic with Relay(s)

The A-FLS Series Low Temperature Cutout Thermostat, otherwise known as a "Freeze Stats" are designed with a vapor charged capillary sensing element for use in equipment that requires low-temperature cutout protection. The purpose of the A-FLS Series freeze stats are to protect heating and cooling coils from freezing or to be used in any other equipment where temperature stratification may occur. All A-FLS series devices are 4 Wire, two circuit devices that can be used to shut down your system upon the air temperature reaching the low temperature limit as well as to simultaneously switch on a local indicator or remote alarm when used with your building management system or controller. The A-FLS Freeze Stats or low limit switches are available in four standard lengths with either Automatic or Manual Resets based upon the system design requirements. A NEMA 1 rated metal enclosure comes standard with a ½" conduit knockout included for all line voltage connections. An optional mounting bracket and plenum rated nylon capillary mounting clips are available and must be ordered separately as listed on the back of this data sheet.

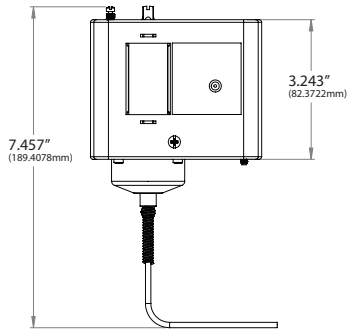
Applications: Protect Heating and Cooling Coils, Low Temperature Limit Switch in applications where temperature stratification may occur

The A-FLS Series Freeze Stats are covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

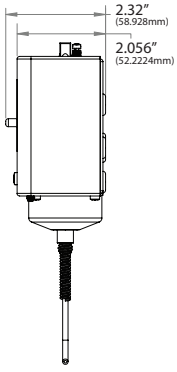
PRODUCT SPECIFICATIONS

Thermostat Type:	Self-contained, electromechanical
Sensing Element:	Vapor Pressure
Sensing Media:	Temperature in air
Adjustable Trip Point Range:	15°F to 55°F (-9°C to 13°C); Factory set with Stop at 35°F(1.7°C)
Trip Point Screw Location:	Slotted adjustment screw top of unit
Reset Options:	Manual and Automatic Resets available (See Ordering Grid back of data sheet)
Switching Differential (Auto Reset Only):	Approximately 5°F (2.8°C), Non-adjustable
Contact Style:	4 Wires, 2 Circuits (Two simultaneously switching contacts (Circuits))
Contact Action:	**Line to M2 (Main):** Open on Temperature Drop **Line to M1 (Auxiliary/Alarm):** Close on Temperature Drop
Contact Ratings:	See Electrical Ratings Table on back of data sheet
Wire Connections:	Screw Terminals; Copper wire only rated to 90ºC (194ºF) minimum
Sensing Response:	To lowest temperature sensed along any 14 to 16" (35.6 to 40.6 cm) length of sensing element
Sensing Capillary Material:	Copper
Sensing Capillary Length:	See Ordering Grid on Back of Data Sheet
Sensing Capillary Diameter:	0.125" (3.18 mm)
Enclosure NEMA Rating:	NEMA 1 (IP10)
Enclosure Material:	Steel, galvanized
Enclosure Color | Finish:	Black | Baked Enamel
Conduit Entry:	½" conduit knockout
Operating Temperature Range:	0 to 140°F (-18 to 60°C)
Storage Temperature Range:	-40 to 158°F (-40 to 70°C)
Sensing Capillary Overrun Temperature:	400°F (204.4°C) maximum
Operating / Storage Humidity Range:	0 to 95% RH, non-condensing
Product Weight:	**A-FLS-06-x:** **A-FLS-10-x:** **A-FLS-20-x:** 2.31 lbs. (1.046 kg) | **A-FLS-50-x:**
Product Dimensions (L x W x H):	**A-FLS06-x, A-FLS-10-x, A-FLS-20-x:** 8.125" (20.64 cm) x 6.375" (16.19 cm) x 2.625" (6.67 cm) **A-FLS-50-x:** 10.125" (25.72 cm) x 3.375" (16.19 cm) x 5.500" (13.97 cm)
Agency Approvals:	UL File # SA516 UL 873 | CSA File # LR948 C22.2 No. 24-199 | C-Tick # ACN 002 968 103 RoHS Compliant

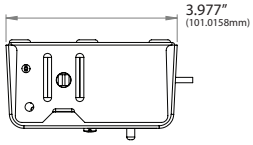
DIMENSIONAL DRAWING



Front View



Right View



Top View

ELECTRICAL RATINGS

POLE NUMBER	LINE-M2 (MAIN)				LINE-M1 (AUXILIARY)			
Motor Ratings (VAC)	120V	208V	240V	277V	120V	208V	240V	277V
AC Full Load Amp	16.0	9.2	8.0	----	6.0	3.3	3.0	----
AC Locked Rotor Amp	96.0	55.2	48.0	----	36.0	19.8	18.0	----
AC Non-Inductive Amp	16.0	9.2	8.0	7.2	6.0	6.0	6.0	6.0
Pilot Duty - Both Poles	125 VA, 120 to 600 VAC and 57.5 VA, 120 to 300 VDC				125 VA, 120 to 600 VAC and 57.5 VA, 120 to 300 VDC			

STANDARD ORDERING

Model # Example: A/FLS-06-A -OR- 145354

Model #	Item #	Description	Capillary Length Feet (m)	Reset Style
A-FLS-06-A	146808	Freeze Stat_4 wires 2 circuits_Auto_6ft	6' (1.83m)	Automatic
A-FLS-06-M	146809	Freeze Stat_4 wires 2 circuits_Man_6ft	6' (1.83m)	Manual
A-FLS-10-A	146810	Freeze Stat_4 wires 2 circuits_Auto_10ft	10' (3.05m)	Automatic
A-FLS-10-M	146811	Freeze Stat_4 wires 2 circuits_Man_10ft	10' (3.05m)	Manual
A-FLS-20-A	146812	Freeze Stat_4 wires 2 circuits_Auto_20ft	20' (6.10m)	Automatic
A-FLS-20-M	146813	Freeze Stat_4 wires 2 circuits_Man_20ft	20' (6.10m)	Manual
A-FLS-50-A	146814	Freeze Stat_4 wires 2 circuits_Auto_50ft	50' (15.24m)	Automatic
A-FLS-50-M	146815	Freeze Stat_4 wires 2 circuits_Man_50ft	50' (15.24m)	Manual

ACCESSORIES ORDERING

Model # Example: UNIVERSAL CLIP 50 -OR- 145430

Model #	Item #	Description
FLS MTG BKT	145434	FLS Series Mounting Bracket
UNIVERSAL CLIP 6	145421	Universal Mounting Clip (Quantity 6)
UNIVERSAL CLIP 50	145430	Universal Mounting Clip (Quantity: 50)

FREEZE STATS

Manual & Automatic with Relay(s)

The FS Series are low limit controllers, also known as "Freeze Stats". These devices were designed for use on HVAC equipment that require low-temperature cutout protection to prevent cooling coils from freezing. They should be mounted between the heating and cooling coils on the supply side of the fan unit and respond to the lowest temperature sensed along any one foot section of the sensing element. The FS Series has manual and automatic reset versions, as well as, models that feature one or two sets of SPDT contacts. Numerous capillary lengths are also available.

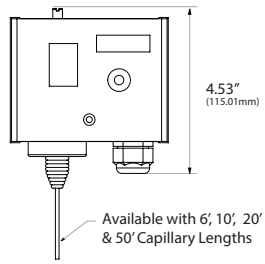
The ACI Freeze Stat is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

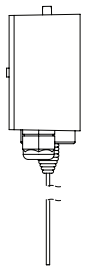
PRODUCT SPECIFICATIONS

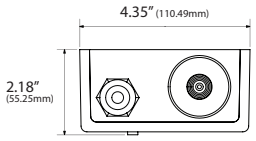
Thermostat Type:	Self-contained, electromechanical
Sensing Element:	Vapor-filled capillary
Sensing Media:	Temperature in air
Sensing Temperature Operating Range:	14°F to 54°F (-10°C to 12°C)
Sensing Capillary Overload Temperature:	392°F (200°C), maximum 60 minutes
Sensing Response:	To lowest temperature sensed by any 1 ft section of the capillary element
Sensing Capillary Material:	Copper
Sensing Capillary Installation:	Duct and across coil mounted
Sensing Capillary Length:	See Ordering Grid on Back of Data Sheet
Sensing Capillary Diameter:	Ø0.08 in. (2 mm) (6' Length models have a larger bulb at the end)
Type of Control:	ON/OFF, low-level single-stage or cut-out control, with One (1) microswitch output
Low-Level Setpoint (Factory Set):	At 39°F (4°C), and safety-lock secured
Low-Level Setpoint Visual Range:	14°F to 54°F
Low-Level Setpoint Adjustment:	Over full operating range, via screwdriver slot
Contact Form:	Form 1C (SPDT Contact)
# of Relays:	See Ordering Grid on Back of Data Sheet
Maximum Contact Switching Voltage:	250 VAC
Maximum Contact Switching Current:	15 (8) A
Switching Differential:	1.8°F (1°K), auto- or manual reset
Enclosure Operating Temperature Range:	14°F to 131°F (-10°C to 55°C)
Operating Humidity Range:	0 to 95% RH, non-condensing
Storage Temperature Range:	14°F to 158°F (-10°C to 70°C)
Enclosure Base Material:	Steel, galvanized
Enclosure Cover Material:	ABS, fire retardant
Enclosure Color:	Silver / Light Gray
Enclosure NEMA Rating:	NEMA 1 (IP40)
Cable Entry:	One (1) M20 compression fitting, removable, hole fits 1/2 in. conduit connector
Wire Connections:	Terminal with wire-retaining screws
Maximum Wire Size:	14 AWG (2.5 mm^2)
Agency Approvals:	CE
Product Weight:	1.6 lbs (0.7 kg)
Enclosure Product Dimensions (L x W x H):	4.1" (105 mm) x 3.3" (83 mm) x 2.1" (53 mm)

DIMENSIONAL DRAWING

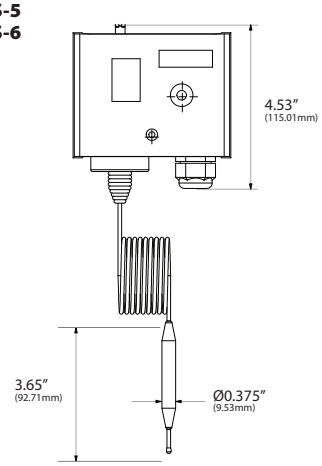
FS-1
FS-2
FS-3
FS-4
FS-50

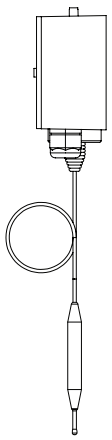


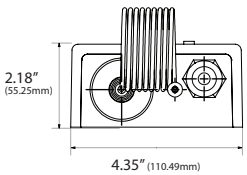




FS-5
FS-6







Front View | **Right View** | **Top View**

STANDARD ORDERING

Model # Example: FS-50A -OR- 142962

Model #	Item #	Capillary Length	# of Relays	Contact Form	Reset
FS-1	102482	20′ (6m)	1	Form 1C (SPDT Contact)	Manual
FS-1A	102483	20′ (6m)	1	Form 1C (SPDT Contact)	Auto
FS-2	102484	20′ (6m)	2	Form 1C (SPDT Contact)	Manual
FS-2A	105904	20′ (6m)	2	Form 1C (SPDT Contact)	Auto
FS-3	106291	10′ (3m)	1	Form 1C (SPDT Contact)	Manual
FS-3A	106292	10′ (3m)	1	Form 1C (SPDT Contact)	Auto
FS-4	106293	10′ (3m)	2	Form 1C (SPDT Contact)	Manual
FS-4A	106294	10′ (3m)	2	Form 1C (SPDT Contact)	Auto
FS-5	106295	6′ (1.8m)	1	Form 1C (SPDT Contact)	Manual
FS-5A	106296	6′ (1.8m)	1	Form 1C (SPDT Contact)	Auto
FS-6	106297	6′ (1.8m)	2	Form 1C (SPDT Contact)	Manual
FS-6A	106298	6′ (1.8m)	2	Form 1C (SPDT Contact)	Auto
FS-50	142963	50′ (16m)	2	Form 1C (SPDT Contact)	Manual
FS-50A	142962	50′ (16m)	2	Form 1C (SPDT Contact)	Auto

ACCESSORIES ORDERING

Model # Example: UNIVERSAL CLIP 50 -OR- 145430

Model #	Item #	Description
UNIVERSAL CLIP 6	145421	Universal Mounting Clip (Quantity 6)
UNIVERSAL CLIP 50	145430	Universal Mounting Clip (Quantity: 50)

SMOKE DETECTOR

SL-2000

The SL-2000 series duct smoke detectors will provide early detection of smoke and products of combustion present in the air moving through HVAC ducts in any commercial, industrial, or residential application. These devices are designed for the prevention of smoke re-circulation by the air handling systems, fans, and blowers. The SL-2000 is designed and built to meet all local requirements, as well as the NFPA regulations, regarding duct smoke detectors. Output terminals are provided for remote accessories such as horns, strobes, remote status indicators, and test/reset key switches or pushbuttons. Air sampling is accomplished via two tubes that protrude into the duct. An exhaust tube with a standard length of 7" is supplied in the installation kit with the unit. Once the duct size is determined, a sampling tube should be ordered. Three standard sizes including a 1', 2.5', 5', and 10' lengths can be ordered and cut to the correct size of the duct. The SL-2000 provides two sets of 10A form "C" and one set of a 2A form "A" alarm contacts, along with one set of 10A form "C" trouble contacts for monitoring head removal and supply voltage failure.

The ACI remote accessories are designed to be used with the ACI Duct Smoke detectors to provide audible and visual indication as well as remote test/rest functions. These devices mount to a standard single or double gang electrical backbox. Remote accessories are usually required by the AHJ (Inspector) for installation. If a duct smoke detector is not wired to a fire system or a remote test station, when the unit goes into alarm, the end user would have to climb up to the duct to manually reset the unit. ACI offers two series of remote accessories, The MS Series and the MSR-50R Series.

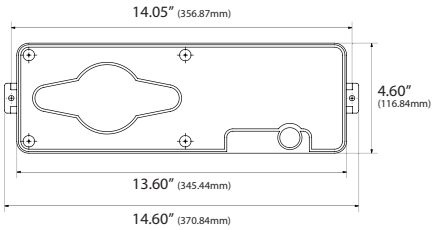
Applications: Smoke Detection in HVAC Ducts in Commercial, Industrial & Residential Applications

The SL-2000 Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

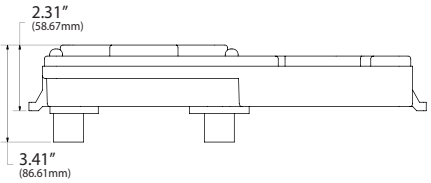
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC/VDC, 115 VAC , 230 VAC
Maximum Operating Current (Standby):	**24 VDC:** 14 mA | **24 VAC:** 55 mA | **115 VAC:** 22 mA | **230 VAC:** 12 mA
Maximum Operating Current (Alarm):	**24 VDC:** 68 mA | **24 VAC:** 190 mA | **115 VAC:** 32 mA | **230 VAC:** 18 mA
Alarm Relay Contacts:	**Resistive Load:** 2 sets form "C" rated at 10 Amps @ 115 VAC **Resistive Load:** 1 set form "A" rated at 2 Amps
Trouble Relay Contacts:	**Resistive Load:** 1 set form "C" rated at 10 Amps @ 115 VAC
Detection Head Type:	Photoelectric
Air Velocity:	100 to 4,000 ft / minute
Wiring Connections:	Screw Terminal Blocks
Conductor Size:	**Solid or Stranded:** #12 to #22 AWG
Operating Temperature (SL-2000-N):	32ºF to 158ºF (0ºC to 70ºC)
Operating Temperature (SL-2000-P):	32ºF to 140ºF (0ºC to 60ºC)
Maximum Operating Humidity Range:	85 ±5 % RH (@32 ±2°C; 86 ±3.6°F) Non-Condensing / Non-Freezing
Enclosure Material:	Grey plastic backbox, clear plastic cover (Makrolon 94V-0)
NEMA Rating:	NEMA 1
Hardware Included:	7" exhaust tube, sampling tube end cap, mounting template, test magnet, & mounting hardware
Enclosure Product Dimensions:	(L) 13.5" (342.9 mm) x (W) 4.5" (114.3 mm) x (H) 2.25" (57.15 mm)
Product Weight:	2.5 lbs (1.13 kg)
Agency Approvals:	UL & CUL Listed (UL268A, UROX, UROX7) File # S2829 CSFM Listed (3240-1004:105) MEA Accepted (73-92-E; VOL. 27)

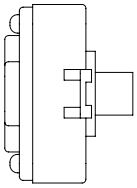
DIMENSIONAL DRAWING



Front View



Top View



Right View

STANDARD ORDERING

Model #	Item #	Description
SL-2000-P	105792	Smoke Detector, Multi-Application, Photoelectric

SAMPLING TUBE ORDERING

Model #	Item #	Description
FAST TUBE	131201	Package of (3) 24" Sections | Sectional sampling tube, quickly assembled to length & UL
STN-1.0	111653	Sampling Tube for 12" or less duct width
STN-2.5	105793	Sampling Tube for 6" to 2.5' duct width
STN-5.0	105794	Sampling Tube for 2.5' to 5.0' duct width
STN-10.0	105795	Sampling Tube for 5.0' to 10.0' duct width

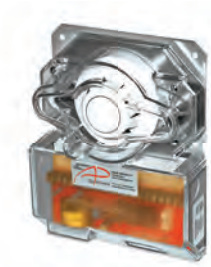
Note: Sampling Tubes are required and should cover 80% of duct width.

ACCESSORIES ORDERING

Model #	Item #	Description
WP-2000 ENCLOSURE	106505	Weatherproof Enclosure, NEMA type 3R
55000-328APO	131873	Replacement Photoelectric Detector Head
TG-2000	128407	Aerosol Test Gas

ACCESSORIES ORDERING

Model #	Item #	Description
MSR-50RKA/W	146753	Remote with Key, Sounder, White Double Gang Plate
MSR-50RKAV/W/C	146754	Remote with Key, Strobe, Sounder, White Double Gang Plate
MS-KA/R	111733	Remote with Key, LED for Alarm, Single Gang Plate



SMOKE DETECTOR

SM-501

The SM-501 series duct smoke detectors will provide early detection of smoke and products of combustion present in the air moving through a duct in any commercial, industrial, or residential application. These devices are designed for the prevention of smoke re-circulation by the air handling systems, fans, and blowers. The SM-501 is designed and built to meet all local requirements, as well as the NFPA regulations regarding duct smoke detectors. Output terminals are provided for remote accessories such as horns, strobes, remote status indicators, and test/reset key switches or pushbuttons. Air sampling is accomplished via two tubes that protrude into the duct. An exhaust tube with a standard length of 7" is supplied in the installation kit with the unit. Once the duct size is determined, a sampling tube must be ordered. Four standard sizes including a 1', 2.5', 5', and 10' lengths can be ordered and cut to the correct size of the duct. The SM-501 provides (2) sets of 10A Form "C" alarm contacts, along with (1) set of 10A Form "C" trouble contacts for monitoring head removal and supply voltage failure. The green pilot and red alarm indicators provided on the front of the SM-501 signal the operating status of the device. A manual test/reset switch is located next to the LED indicators.

The ACI remote accessories are designed to be used with the ACI Duct Smoke detectors to provide audible and visual indication as well as remote test/rest functions. These devices mount to a standard single or double gang electrical backbox. Remote accessories are usually required by the AHJ (Inspector) for installation. If a duct smoke detector is not wired to a fire system or a remote test station, when the unit goes into alarm, the end user would have to climb up to the duct to manually reset the unit. ACI offers two series of remote accessories, The MS Series and the MSR-50R Series.

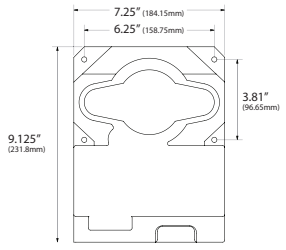
Applications: Smoke Detection in HVAC Ducts in Commercial, Industrial & Residential Applications

The SM-501 Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

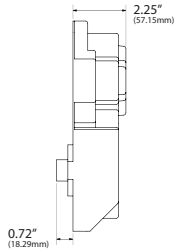
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC/VDC, 115 VAC , 230 VAC
Maximum Operating Current (Standby):	**24 VDC:** 15 mA | **24 VAC:** 35 mA | **115 VAC:** 25 mA | **230 VAC:** 12 mA
Maximum Operating Current (Alarm):	**24 VDC:** 56 mA | **24 VAC:** 74 mA | **115 VAC:** 32 mA | **230 VAC:** 16 mA
Contact Form:	Form 1C (SPDT Contact)
Maximum Contact Switching Voltage:	115 VAC
Maximum Contact Switching Current:	10 Amps (Resistive)
Alarm Relays:	Two (2)
Trouble Relays:	One (1)
Detection Head Type:	Photoelectric
Air Velocity:	500 to 4,000 ft/minute
Wiring Connections:	Screw Terminal Blocks
Conductor Size:	Solid or Stranded: #12 to #22 AWG
Operating Temperature (SM-501-P):	32ºF to 140ºF (0ºC to 60ºC)
Maximum Operating Humidity Range:	85 ±5 % RH (@32 ±2°C; 86 ±3.6°F) Non-Condensing / Non-Freezing
Enclosure Material:	18 ga. Steel backbox, clear plastic cover (Makrolon 94V-0)
Enclosure Base Finish:	Grey
NEMA Rating:	NEMA 1
Hardware Included:	7" exhaust tube, sampling tube end cap, mounting template & mounting hardware
Enclosure Product Dimensions:	(L) 9.125" (231.8 mm) x (W) 7.25" (184.15 mm) x (H) 2.25" (57.15 mm)
Product Weight:	3.5 lbs (1.59 kg)
Agency Approvals:	UL & CUL Listed (UL268A, UROX, UROX7), File # S2829 CSFM Listed (3240-1004:108) MEA Accepted (73-92-E; VOL. 26)

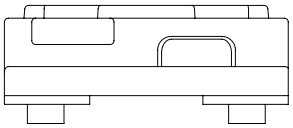
DIMENSIONAL DRAWING



Front View



Top View



Right View

STANDARD ORDERING

Model #	Item #	Description
SM-501-P	102955	Smoke Detector, Square Ducts, Photoelectric

SAMPLING TUBE ORDERING

Model #	Item #	Description
FAST TUBE	131201	Package of (3) 24" Sections | Sectional sampling tube, quickly assembled to length & UL
STS-2.5	102961	Sampling Tube for 6" to 2.5' duct width
STS-5.0	102962	Sampling Tube for 2.5' to 5.0' duct width
STS-10.0	102960	Sampling Tube for 5.0' to 10.0' duct width

Note: Sampling Tubes are required and should cover 80% of duct width.

ACCESSORIES ORDERING

Model #	Item #	Description
55000-328APO	131873	Replacement Photoelectric Detector Head
TG-1000	144246	Aerosol Test Gas

ACCESSORIES ORDERING

Model #	Item #	Description
MSR-50RKA/W	146753	Remote with Key, Sounder, White Double Gang Plate
MSR-50RKAV/W/C	146754	Remote with Key, Strobe, Sounder, White Double Gang Plate
MS-KA/R	111733	Remote with Key, LED for Alarm, Single Gang Plate

SMOKE DETECTOR

RT-3000

The RT-3000 is designed to be an installer and servicer friendly product line. It significantly reduces the total cost of ownership versus other comparable products. It offers a host of "No-Tools Required" features, as well as a multi-application performance level unmatched in the industry. Duct smoke detectors are designed to prevent the recirculation of smoke in areas by air handling system's fans and blowers. The RT-3000 is designed and built to meet all local requirements, as well as the NFPA regulations, regarding duct smoke detectors. Output terminals are provided for remote accessories such as horns, strobes, remote status indicators, and test/reset key switches or pushbuttons. Air sampling is accomplished via two tubes that protrude into the duct. An exhaust tube with a standard length of 7" is supplied in the installation kit with the unit. Once the duct size is determined, a sampling tube should be ordered. Three standard sizes including a 2.5', 5', and 10' lengths can be ordered and cut to the correct size of the duct. The weathertight NEMA 4X rated corrosion resistant enclosure coupled with extended temperature listings allow installation in the widest possible range of indoor/outdoor environments. The RT-3000 can be installed in both horizontal or vertical configurations to match installation preferences.

The ACI remote accessories are designed to be used with the ACI Duct Smoke detectors to provide audible and visual indication as well as remote test/rest functions. These devices mount to a standard single or double gang electrical backbox. Remote accessories are usually required by the AHJ (Inspector) for installation. If a duct smoke detector is not wired to a fire system or a remote test station, when the unit goes into alarm, the end user would have to climb up to the duct to manually reset the unit. ACI offers two series of remote accessories, The MS Series and the MSR-50R Series.

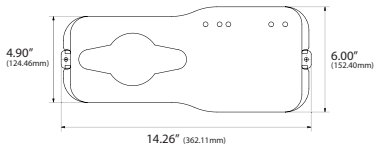
Applications: Smoke Detection in HVAC Ducts in Commercial, Industrial & Residential Applications

The RT-3000 Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

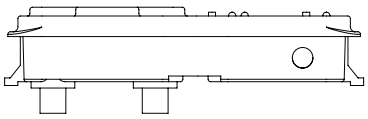
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC/VDC, 115 VAC , 230 VAC
Maximum Operating Current (Standby):	**24 VDC:** 45 mA | **24 VAC:** 122.6 mA | **115 VAC:** 31 mA | **230 VAC:** 17 mA
Maximum Operating Current (Alarm):	**24 VDC:** 100 mA | **24 VAC:** 251 mA | **115 VAC:** 50 mA | **230 VAC:** 29 mA
Alarm Relay Contacts:	**Resistive Load:** 2 sets form "C" rated at 10 Amps @ 125 VAC **Resistive Load:** 1 set form "A" rated at 1 Amps @ 30 VDC
Trouble Relay Contacts:	**Resistive Load:** 1 set form "C" rated at 10 Amps @ 125 VAC **Resistive Load:** 1 set form "B" rated at 7 Amps
Detection Head Type:	Photoelectric
Air Velocity:	100 to 4,000 ft / minute
Wiring Connections:	Screw Terminal Blocks
Conductor Size:	**Solid or Stranded:** #14 to #24 AWG
Operating Temperature (RT-3000-N):	-4ºF to 158ºF (-20ºC to 70ºC)
Operating Temperature (RT-3000-P):	-4ºF to 140ºF (-20ºC to 60ºC)
Operating Humidity Range:	10% to 93% RH (@32ºC) Non-Condensing / Non-Freezing
Enclosure Material:	Grey plastic backbox, white plastic cover (Makrolon 94V-0)
NEMA Rating:	NEMA 4X
Hardware Included:	7" exhaust tube, FAST Tube sectional sampling tube starter, sampling tube end cap, mounting template, test magnet, and mounting hardware included
Enclosure Product Dimensions:	(L) 13.5" (342.9 mm) x (W) 5.5" (134.8 mm) x (H) 2.25" (57.15 mm)
Product Weight:	3.5 lbs (1.59 kg)
Agency Approvals:	UL Listed (UL268A, UROX) File # S2829, CSFM Listed (3240-1004:121)

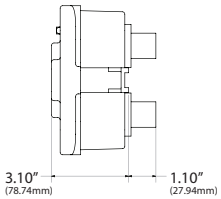
DIMENSIONAL DRAWING



Front View



Top View



Right View

STANDARD ORDERING

Model #	Item #	Description
RT-3000-P	128328	Smoke Detector, Multi-Application, NEMA 4X Enclosure, Photoelectric

SAMPLING TUBE ORDERING

Model #	Item #	Description
FAST TUBE	131201	Package of (3) 24" Sections | Sectional sampling tube, quickly assembled to length & UL
STN-1.0	111653	Sampling Tube for 12" or less duct width
STN-2.5	105793	Sampling Tube for 6" to 2.5' duct width
STN-5.0	105794	Sampling Tube for 2.5' to 5.0' duct width
STN-10.0	105795	Sampling Tube for 5.0' to 10.0' duct width

Note: Sampling Tubes are required and should cover 80% of duct width.

ACCESSORIES ORDERING

Model #	Item #	Description
55000-328APO	131873	Replacement Photoelectric Detector Head
TG-2000	128407	Aerosol Test Gas

ACCESSORIES ORDERING

Model #	Item #	Description
MSR-50RK/R	146751	Remote with Key Test/Reset, Red Single Gang Plate
MSR-50RKA/R	146752	Remote with Key, Sounder, Red Double Gang Plate
MSR-50RKA/W	146753	Remote with Key, Sounder, White Double Gang Plate
MSR-50RKAV/W/C	146754	Remote with Key, Strobe, Sounder, White Double Gang Plate
MS-RH/KA/P/R	109256	Remote with Horn, Key, LEDs for Alarm and Pilot, Double Gang Plate
MS-KA/R	111733	Remote with Key, LED for Alarm, Single Gang Plate
MS-RH/P/A	128336	Remote with Horn, LEDs for Alarm & Pilot, Single Gang Plate

Single Gang

MS SERIES

Remote Accessories For Duct Smoke Detectors

The MS Series remote accessories are designed to be used with Duct Smoke Detectors and other monitoring devices to provide audible and visual indication as well as remote test/reset functions. These devices are constructed of attractive, yet durable brushed stainless steel and mount on a standard single electrical backbox. Remote accessories are usually required by the AHJ (Inspector) for installation. If a duct smoke detector is not wired to a fire system or a remote test station, when the unit goes into alarm, the end user would have to climb up to the duct to manually reset the unit.

Applications: For use with ACI Duct Smoke Detection Systems

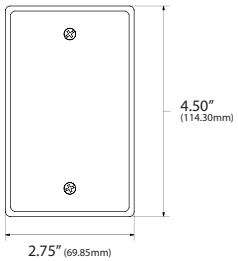
The MS Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Power Requirements:	**Alarm LED:** 15 mA @ 24 VDC **Trouble LED:** 15 mA @ 24 VDC **Pilot LED:** 15 mA @ 24 VDC
Wiring	**LEDs:** 6" / 24 AWG pigtails **Switches:** 6" / 22 AWG pigtails
Product Dimensions:	**Single Gang Plate:** (H) 4.50" (114.3 mm) x (W) 2.75" (69.85 mm)
Agency Approvals:	UL Listed for use with ACI Products and Controls duct smoke detectors including all RW-Series, SM-Series, HS-Series and SL-Series duct smoke detectors UL URRQ, URRQ7.S7425 CSFM 7300-1004:107 MEA 73-92-E VOL25

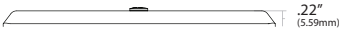
DIMENSIONAL DRAWING

Single Gang



Front View

Right View



Top View

STANDARD ORDERING | HORN STROBE

Model #	Item #	Pilot LED (Green)	Alarm LED (Red)	Push Button Test/Reset	Key Operated Test/Reset	Single Gang
MS-RA	146791		•			•
MS-RA/P/R	128330	•	•	•		•
MS-KA/R	111733		•		•	•

MSR-50 SERIES

Remote Accessories For Duct Smoke Detectors

The MSR-50R Series remote accessories are designed for use with ACI duct smoke detectors and other monitoring devices to provide the range of functionality required by your local commercial application. Remote accessories are usually required by the AHJ (Inspector) for installation. If a duct smoke detector is not wired to a fire system or a remote test station, when the unit goes into alarm, the end user would have to climb up to the duct to manually reset the unit. The MSR-50R Series comes in two models of the controller: the MSR-50RM which provides a hidden magnet test switch and a pushbutton reset; the MSR-50RK provides a key-operated detector test and reset function. Both versions of the MSR-50R accessory are available as either a single gang remote indicator/control, or with the addition of a single gang strobe only or enhanced sounder / LED strobe assembly. As controller only or with the added strobe only or sounder / strobe, all configurations are compatible with standard Decora style cover plates (choice of white, red or stainless steel).

The strobe assembly provides visual only indication; the sounder strobe assembly provides audible indication as well as visual indication of alarm conditions. Either option is connected to the indicator/control assembly via a provided polarized connector. For convenience, blue "SMOKE" and red "FIRE" strobe lens decals are included for both horizontal and vertical mounting. The strobe and audible buzzer features are not ADA compliant, and not intended for life safety notification or evacuation purposes (public mode). These functions are for duct smoke detector status indication only (private mode).

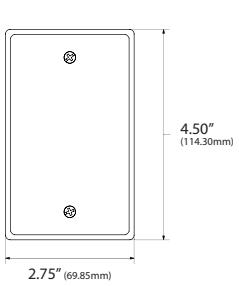
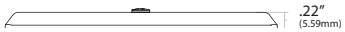
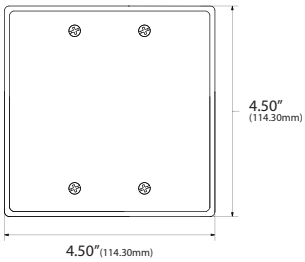
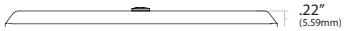
Applications: For use with ACI Duct Smoke Detection Systems

The MSR-50 Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, workaci.com.

PRODUCT SPECIFICATIONS

Power Requirements:	**Alarm LED:** 15 mA @ 24 VDC **Trouble LED:** 15 mA @ 24 VDC **Pilot LED:** 15 mA @ 24 VDC **Alarm Horn:** 20 mA @ 24 VDC
Sound Pressure:	**Alarm Horn:** 78 db @ 10ft
Wiring	**LEDs/Horn:** 6" / 24 AWG pigtails **Switches:** 6" / 22 AWG pigtails
Product Dimensions:	**Single Gang Plate:** (H) 4.50" (114.3 mm) x (W) 2.75" (69.85 mm) **Double Gang Plate:** (H) 4.50" (114.3 mm) x (W) 4.50" (114.3 mm)
Agency Approvals:	UL Listed for use with ACI Products and Controls duct smoke detectors including all RW-Series, SM-Series, HS-Series and SL-Series duct smoke detectors UL URRQ, URRQ7.S7425 CSFM 7300-1004:107 MEA 73-92-E VOL25

DIMENSIONAL DRAWING

Single Gang 		
Double Gang 		
Front View	**Right View**	**Top View**

STANDARD ORDERING | HORN STROBE

Model #	Item #	Description
MSR-50RK/W	144981	Remote with Key, Test/Reset, White Single Gang Plate
MSR-50RM/W	----	Remote with Magnet Test, White Single Gange Plate
MSR-50RKA/W	146753	Remote with Key, Sounder, White Double Gang Plate
MSR-50RKAV/W/C	146754	Remote with Key, Strobe, Sounder, White Double Gang Plate

LD310

Single Zone Leak Detection Controller

Applications

- Ideal for smaller contained areas like air conditioner condensate pans.
- Frequently used in facilities with pumps, chillers, boilers, and water control valves.

Key Features

- Monitor up to 300 feet of sensing cable and spot detectors
- Lightweight, compact design
- Plug and play installation
- Adjustable leak alarm sensitivity
- Local audible and visible alarm annunciation
- Integrate into a larger system via leak and fault relay outputs

Reliable Leak Detection In A Compact Package

ACI's most cost effective controller, the LD310 is easy to install and provides reliable leak detection as either a stand-alone device or integrated into a larger BMS platform.

What Sets ACI's LD310 Apart?

- **Zone leak detection** system alarms when water comes into contact with the attached sensing cable or spot detector. It is the right fit for spaces where sensing cables and spot detectors are visible so leaks can easily be located.
- **A supervised system,** the controller continuously monitors the cable for leaks, breaks, and disconnects and sends an alarm notification when one is detected.
- **Local alarm annunciation.** Onboard audible and visible alarms notify users of leaks and faults in real time.
- **Patented leak detection technology.** Our cables dry and reset quickly so they're ready to detect the next issue.

Automation Components, Inc. | **Address:** 2305 N Pleasant View Rd, Middleton, WI 53562 | **Phone:** 1-888-967-5224 | **Website:** workaci.com

LD310 • Compatible with all ACI sensing cables and the SD-Z and SD-Z1 spot detectors

Product Codes	
LD310	Single zone leak detection controller with audible alarm. Includes LC-KIT for use with SC, SC-ZH, SD-Z. Requires A/PS24-5V-S.
LD310-M	Single zone leak detection controller with audible alarm. Includes LC-KIT-M for use with SC-C. Requires A/PS24-5V-S.

Technical Specifications	
Power	Requires an isolated power supply. 5VDC (±10%) Isolated @ 100mA max.; requires ACI's power supply A/PS24-5V-S.
Included Accessories	Leader cable and EOL terminator
Sensing Cable Cable Input Maximum Length Detection Response Time	One zone leak detection; Compatible with all ACI sensing cables and SD-Z and SD-Z1 spot detectors Requires 15ft (4.57m) leader cable and EOL (included) 300ft (91m) of sensing cable <20sec; 10sec typical
Relay Output	2 Form C alarm relays (leak and fault); 1A @ 24VDC, 0.5A resistive @ 120VAC; configurable as supervised or non-supervised
Panel Alarm Notification Audible Alarm Visible Alarm	 85dB @ 10cm (min) Indicates cable break or leak detected Bi-color LED Normal Operation - Green Cable Fault - Flashing Orange Leak Detected - Flashing Red
Push Button Switch Push Once Push and Hold for 5 Seconds	 Silence audible alarm Initiates system test, resets system, clears all active alarms
Operating Environment Temperature Humidity Altitude Storage Environment	 32° to 122°F (0° to 50°C) 5% to 95% RH, non-condensing 15,000ft (4,572m) max. -4° to 158°F (-20° to 70°C)
Dimensions	4.4"L x 2.5"W x 1.5"H (11.2cmL x 6.4cmW x 3.8cmH)
Weight	0.2lb (0.1kg)
Mounting	Free standing, zip ties, screw and keyhole – spaced 2.5" (6.4cm), junction box – 2 screws spaced 3.28" (8.3cm)
Certifications	CE; ETL listed: conforms to UL 61010-1, EN 61010-1; RoHS compliant

LD1000

Single Zone Leak Detection Controller

Applications

- Facilities where the sensing cable or spot detector is exposed or leaks can easily be located
- Areas that require a more durable, robust, industrial single zone leak detection controller

Key Features

- Monitor up to 1,000 feet of sensing cable and spot detectors
- Quickly returns to normal status after sensing cable is wiped dry
- Durable NEMA 1 enclosure
- Adjustable leak alarm sensitivity
- Two relay outputs, configurable as supervised or non-supervised and as leak & fault or summary alarms

1,000 Feet of Durable, Patented Leak Detection

ACI's most rugged single zone controller, the LD1000 provides reliable leak detection, preventing facility and equipment damage, costly business outages, and downtime.

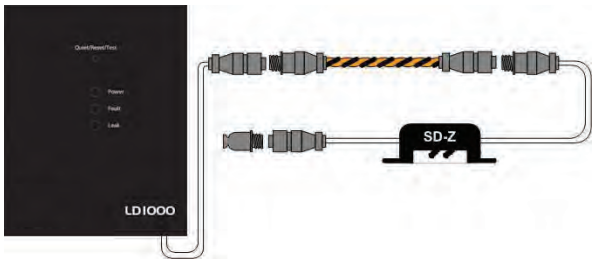
What Sets ACI's LD1000 Apart?

- **Zone leak detection** system alarms when water comes into contact with the attached sensing cable or spot detector. It is the right fit for spaces where sensing cables and spot detectors are visible so leaks can easily be located.
- **A supervised system,** the controller continuously monitors the cable for leaks, breaks, and disconnects and sends an alarm notification when one is detected.
- **Local alarm annunciation and Modbus integration.** Onboard audible and visible alarms and a Modbus output allow the LD1000 to notify users of leaks and faults in real time and deliver that information directly to a LD5200, LD2100, or a larger BMS system.

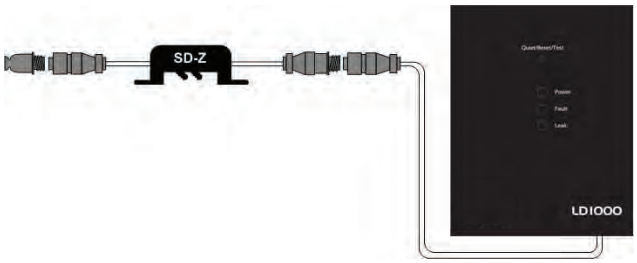
Automation Components, Inc. | **Address:** 2305 N Pleasant View Rd, Middleton, WI 53562 | **Phone:** 1-888-967-5224 | **Website:** workaci.com

LD1000 · Compatible with all ACI sensing cables and the SD-Z and SD-Z1 spot detectors

Product Codes	
LD1000	Single zone leak detection controller; selectable audible. Includes LC-KIT for use with SC, SC-ZH, SD-Z, SD-Z1. AC/DC
LD1000-M	Single zone leak detection controller; selectable audible. Includes LC-KIT-M for use with SC-C. AC/DC



LD1000 connected to an SD-Z and sensing cable



Connect an SD-Z1 to an LD1000

Technical Specifications	
Power	Requires an isolated power supply for DC operation. 24VDC (±10%) Isolated @ 300mA max.; requires ACI power supply A/PS24-24V-S. 24VAC (±10%) @ 300mA max.; requires ACI power supply LE117 or LE120.
Included Accessories	Leader cable and EOL terminator
Sensing Cable Cable Input Maximum Length Detection Response Time	Compatible with all ACI sensing cables and the SD-Z and SD-Z1 spot detectors Requires ACI LC-Kit: 15ft (4.57m) leader cable and EOL terminator (included) Up to 1,000ft (305m) of sensing cable Configurable for 10sec or 2min, ±10%, when used with conductive fluid or chemical sensing cables
Relay Outputs	1 Form C Leak Relay, 1 Form C Cable Fault Relay, configurable to 2 Summary Alarm Relays; 1A @ 24VDC, 0.5A resistive @ 120VAC; configurable for supervised or non-supervised, latched or non-latched
Communication Port EIA-485 Protocols Modbus (EIA-485)	 9600 or 19,200 baud; Parity none; 8 data bits, 1 stop bit Slave; RTU Mode; Supports function codes 03, 04, and 06
Alarm Notification Audible Alarm Front Panel Interface LED Indicators Push Buttons	 85DBA @ 2ft (0.6m); Selectable Power: 1 green (on/off); Cable Fault: 1 amber; Leak Detected: 1 red 1: Quiet, Reset, Test
Operating Environment Temperature Humidity Altitude	 32° to 122°F (0° to 50°C) 5% to 95% RH, non-condensing 15,000ft (4,572m) max.
Storage Environment	-4° to 158°F (-20° to 70°C)
Dimensions	4.125”W x 5.5”H x 2.25”D (105mmW x 140mmH x 58mmD)
Weight Mounting	27 oz (765g)
Certifications	CE; ETL listed: conforms to UL 61010-1, EN 61010-1; RoHS compliant

SLD
Spot Leak Detector

ACI's spot leak detectors recognize the presence of conductive fluids at a single point and are ideal for drip pans, floor drains, and contained spaces. ACI's leak detectors connect quickly to any controller that accepts a dry contact. The detectors can be screwed, or ram set to a floor or baseboard. Potted electronics ensure nothing within the sensor will rust or corrode, and the unit will continue to function when submerged in water. Other key features include no exposed metal sensing posts, and small footprint/enclosure. The sensor probe height can be adjusted from 0" to 0.19"(0mm – 4.8mm). Spacers can be added under the spot detector's mounting holes if additional height is required to prevent false alarms.

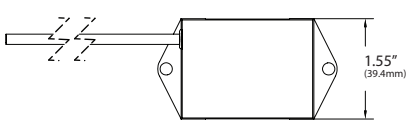
Applications: AHU Drip Pans, Floor drains, Contained Spaces

The A/SLD is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, www.workaci.com.

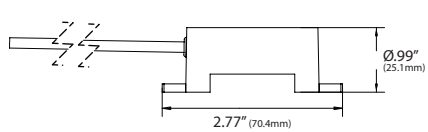
PRODUCT SPECIFICATIONS

Supply Voltage:	24 VAC or 24VDC (+/- 10%) Note: If a DC power supply is used, the A/SLD will be a latching device (once an alarm is detected, the spot detector will remain in an alarm state until power is cycled to the A/SLD)
Supply Current:	0.1 Amp Maximum
Relay Output Type:	SPDT (Form C) Dry Contacts
Relay Contact Rating:	1A @ 24VDC, 0.5A resistive @ 120VAC
Wire Lead Length (Non-sensing):	14' (4.27m)
Operating Temperature Range:	32 to 122F (0 to 50C)
Operating Relative Humidity Range:	5% to 95% non-condensing
Operating Altitude:	15,000ft (4,752m) Maximum
Storage Temperature:	-4 to 158F (-20 to 70C)
Product Dimensions(L x W x D):	2.0"(50.8mm) x 1.55"(39.4mm) x 1.0"(25.4mm)
Product Weight:	0.438 lbs (0.199 kg)
Agency Approvals:	CE; ETL listed: conforms to UL 61010-1, EN 61010-1; RoHS compliant

DIMENSIONAL DRAWING



Top View



Right View

STANDARD ORDERING

Model # Example: A/SLD -OR- 147216

Model #	Item #	Description
A/SLD	147216	Spot Leak Detector, Conductive Fluids, Relay Output, 24VAC/VDC

ACCESSORIES ORDERING

Model # Example: A/PS24-24V-S -OR- 144322

Model #*	Item #	Description
A/PS24-24V-S *	144322	24VDC Adjustable Power Supply, Snap Track
LE117	102555	Transformer, LE Series, PV:120 VAC, SV:24 VAC, VA:50, HUB: 1TF
LE120	102559	Transformer, LE Series, PV:120 VAC, SV:24 VAC, VA:96, HUB: 2TF, Manual Reset

Note*: If a DC power supply is used, the A/SLD will be a latching device (once an alarm is detected, the spot detector will remain in an alarm state until power is cycled to the A/SLD)

SC
Leak Detection Sensing Cable

Applications

- Place around the perimeter of rooms
- Serpentine under raised floors
- Install inside drop ceilings
- Affix to the bottom of pipes
- Secure around floor drains and under plumbing fixtures
- Encapsulate storage tanks and cooling equipment

Key Features

- Detects any conductive fluid
- Designed to eliminate false alarms
- Fast drying; quickly resets to detect the next leak
- Plenum (CL2P) rated
- Durable yet flexible design
- Patented since 2000
- Available in standard and custom lengths with pre-installed twist-lock connectors

SC Series sensing cables are manufactured and assembled in the USA.

Patented Protection From Even The Smallest Leaks

ACI's sensing cable (SC) reliably detects water and other conductive fluid leaks, protecting facilities from damage and downtime.

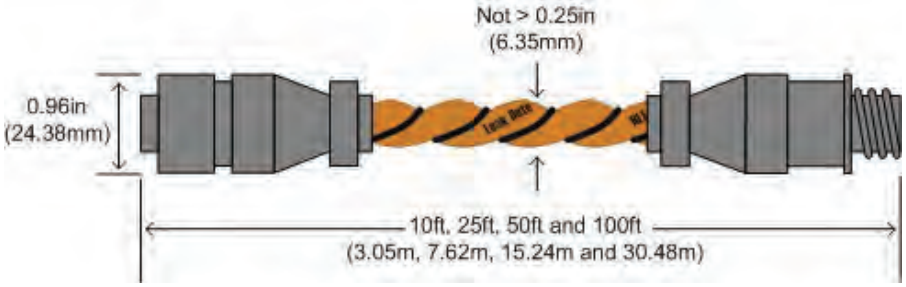
What Sets the SC Series Sensing Cable Apart?

- **Encapsulate at-risk areas and sources of leaks.** Conductive fluid contact at any point along the length of the cable triggers an alarm condition.
- **Engineered for reliability.** Sensing wires are covered with a non-conductive polymer mesh; dirt, dust, and contact with metal will not generate false alarms.
- **Constant oversight.** Four wire construction allows the system to continually monitor the cable and identify damaged or disconnected cables.

Automation Components, Inc. | **Address:** 2305 N Pleasant View Rd, Middleton, WI 53562 | **Phone:** 1-888-967-5224 | **Website:** workaci.com

Sensing Cable · Compatible with all ACI leak detection controllers and the WiNG-LD

Product Codes	
SC-3	3ft (0.91m) sensing cable; conductive fluids, pre-installed male/female connectors
SC-10	10ft (3.05m) sensing cable; conductive fluids, pre-installed male/female connectors
SC-17	17ft (5.18m) sensing cable; conductive fluids, pre-installed male/female connectors
SC-25	25ft (7.62m) sensing cable; conductive fluids, pre-installed male/female connectors
SC-50	50ft / 15.24m sensing cable; conductive fluids, pre-installed male/female connectors
SC-100	100ft / 30.48m sensing cable; conductive fluids, pre-installed male/female connectors
SC-CL	Custom length sensing cables are available. Contact ACI for more information.
SC-CL-EOL	Sensing cable; conductive fluids, custom length, pre-installed EOL. Contact ACI for more information.
SC-CL-L-EOL	Sensing cable; conductive fluids, custom length, pre-installed leader cable and EOL. Contact ACI for more information.
SC-Bulk	Bulk cable is available. Contact ACI for more information.
JC-10, JC-25, JC-50, JC-200	J-clips; cable securing clips; use to secure cable every 3-4ft (1m). Available in qty of 10, 25, 50, and 200.
SC-T	Cable caution tags; qty 10; use to identify cable every 10ft (3m)



Sensing Cable Detail

Technical Specifications	
Plenum Rating	CL2P (UL)
Sheer Strength	>180 lbs. (>81.65kg)
Cut Through Resistance	>40 lbs. (>18.14kg) with.005in (0.127mm) blade
Abrasion Resistance	60 cycles per UL 719
Connector	4 pin, 0.96in (24.38mm) diameter
Diameter of Cable	Not to exceed 0.25in (6.35mm)
Operating Environment Temperature Humidity Altitude	 32° to 167°F (0° to 75°C) 5% to 95% RH, non-condensing 15,000ft (4,572m) max.
Storage Environment	-22° to 185°F (-30° to 85°C)
Weight	.02lbs./ft (29.74g/m)
Certifications	CE; UL CL2P; RoHS Compliant; Plenum Rated; Patent No. 6,144,209

F200

Facility Monitoring and Single Zone Leak Detection

Miscellaneous Devices

Applications

- Server racks
- Data cabinets and closets
- Telecommunications shelters

Key Features

- Monitors:
  - Four 1-wire sensors
  - Eight digital inputs
  - One zone of leak detection
- Plug-and-Play installation and setup
- USB powered
- Web-accessible with a clean, easy to use, mobile-friendly web interface
- Timekeeping via RTC or NTP
- Modbus output enables simple integration to a Building Management System (BMS)

Designed To Be Simple, Effective, And Efficient

This innovative, affordable product couples leak detection and facility monitoring in one plug-and-play package.

What Sets The F200 Apart?

- **1-wire and digital inputs** let you tailor the F200 to monitor your environmental needs; connect four 1-wire sensors (temp or temp/humidity) and eight digital inputs
- **Use one zone of leak detection** to supervise an SD-Z1 spot detector or up to 200 feet of our patented leak detection sensing cable and inline SD-Z spot detectors
- **A relay output** can control an external device in the event of an alarm condition
- **Multiple alarm notification configurations** including audible and visible indicators, integrated web interface, email messaging, and SNMP traps
- **Integrated Logging and Customizable Trending** – Trending data is available as a downloadable CSV file

F200 · Compatible with RJ11-T and RJ11-TH sensors and RLE leak detection products

Product Codes	
F200	Monitoring Appliance; 8DI, 4 RJ-11 inputs, Single Zone leak detection input. 12V boost converter for dry contacts, includes standard USB-A to mini-B cable, 5VDC USB wall adapter w/ type A, C G & I adapter blades
F200-RMB	F200 rack mount bracket; 19in/482mm; one F200-RMB can accommodate two F200 units
RJ11-TS	F200 temperature sensor; 25ft leader cable with RJ-11 connector
RJ11-THS	F200 temperature and humidity sensor; 25ft leader cable with RJ-11 connector

Technical Specifications	
Power	(US) 5VDC @ 500mA max.; 110/240VAC 50/60Hz; Wall adapter (Type A blade) to USB connector, with Type C, G, and I blades for international use(included)
Included Accessories	USB (Type A) power adapter with Type C, G, and I blades included; and USB mini B to USB A cable
Wired Inputs Temperature/Humidity Digital (Dry Contact) Sensing Cable Cable Input Maximum Length	 4 1-wire digital temperature or 1-wire digital temperature/humidity sensor inputs; plug-and-play; configurable alarm points 8 digital alarm points; configurable One zone leak detection, compatible with all SeaHawk sensing cables and SD-Z and SD-Z1 spot detectors 15ft (4.57m) leader cable and EOL (LC-KIT; not included), or wire one SD-Z1 directly to the F200 200ft (61m) of sensing cable
Relay Output	1 Form C summary relay; 2A @ 30VDC, 0.5A @125VAC. Configurable as summary alarm output or manual operation.
Alarm Notification Panel Integrated Web Interface Email SNMP Traps Relay	 Audible alarm, visible LED Dashboard overview with alarm indicators Up to 8 email recipients; email sent on alarm to all recipients, distribution list, or email-to-SMS Multiple community strings 1 Form C summary relay output
Web Interface Login Security	8 password read only users; 8 password read/write users
Communication Port Ethernet	 10/100 BaseT, RJ45 connector; 500VAC RMS isolation; DHCP capable; Static IP-addressable
Protocols TCP/IP HTML SMTP (email) Modbus TCP/IP SNMP	 ARP; DNS; UDP; DHCP Supports multiple simultaneous connections SMTP authentication; supports SSLv3 RSA:RC4-128:MD5; up to 8 recipients Modbus slave; TCP/IP transmission protocol V1; V2C MIB-2 compliant; NMS manageable with Get and Traps: V2C Get, V2C and V1 Traps
Timekeeping	Onboard configurable real-time clock (RTC); Network Time Protocol (NTP) capable (internet access required for NTP).
Logging	Logs 50 most recent alarm and return to normal events with date/time stamp.
Trending	Records up to 86,400 points of sensor data. Sample interval set from 10 seconds to 1 day. CSV downloadable.
Operating Environment Temperature Humidity Altitude	 -13°F to 158°F (-25°C to 70°C) 5% to 95% RH, non-condensing 15,000ft (4,572m) max.
Storage Environment	-40°F to 185°F (-40°C to 85°C)
Dimensions	5.63"W x 1.00"H x 2.63"D (143mmW x 25mmH x 67mmD)
Weight	10.1 oz. (287g)
Mounting	Stand alone; keyholes included for wall mount; rack mount bracket available
Certifications	CE; ETL listed: conforms to UL 61010-1, EN 61010-1; certified to CSA C22.2 NO. 61010-1; RoHS compliant

F200 Front Connections

F200 Back Connections

Optional Rack Mount Bracket

Call: 1-888-967-5224
Automation Components, Inc.
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53562