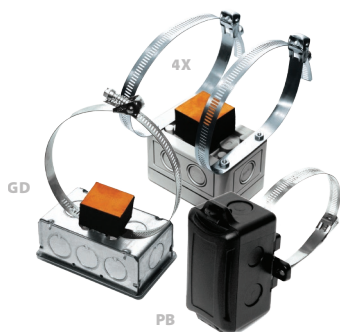




## STRAP ON Non-Intrusive Pipe Mount, Transmitter

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 immersion style 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 website, [www.workaci.com](http://www.workaci.com).**

### PRODUCT SPECIFICATIONS

|                                                       |                                                                                                                                                                |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Transmitter Supply Voltage   Supply Current:</b>   | +8.5 to 32 VDC (Reverse Polarity Protected)   25 mA minimum                                                                                                    |
|                                                       | <b>250 Ohm Load:</b> +13.5 to 32 VDC   <b>500 Ohm Load:</b> +18.5 to 32 VDC                                                                                    |
| <b>Maximum Load Resistance:</b>                       | (Terminal Voltage - 8.5 V)   0.020 A                                                                                                                           |
| <b>Transmitter Output Signals:</b>                    | <b>Current:</b> 4-20 mA (2-Wire, Loop Powered)   <b>Voltage:</b> 1-5 VDC or 2-10 VDC (3-Wires)                                                                 |
| <b>Calibrated Accuracy   Linearity<sup>1</sup>:</b>   | <b>Temp. Spans &lt; 500°F (260°C):</b> +/- 0.2%   <b>Temp. Spans &gt; 500°F (260°C):</b> +/- 0.5%                                                              |
| <b>Temperature Drift<sup>2</sup>:</b>                 | <b>Temp. Spans &lt; 100°F (38°C):</b> +/- 0.04%/°F   <b>Temp. Spans &gt; 100°F (38°C):</b> +/- 0.02%                                                           |
| <b>TTM100/TTM1K NIST Certification Points:</b>        | <b>3 Point NIST:</b> 20%, 50% & 80% of span   <b>5 Point NIST:</b> 20%, 35%, 50%, 65%, 80% of span                                                             |
| <b>Calibrated Temperature Spans:</b>                  | <b>Minimum Temp. Span:</b> 50°F (28°C)   <b>Maximum Temp. Span:</b> 300°F (148°C)                                                                              |
| <b>Transmitter Warm Up Time   Warm Up Drift:</b>      | 10 Minutes   +/- 0.1%                                                                                                                                          |
| <b>Transmitter Operating Temperature Range:</b>       | -40°F to 185°F (-40 to 85°C)                                                                                                                                   |
| <b>Transmitter Operating Humidity Range:</b>          | 0 to 90%, non condensing                                                                                                                                       |
| <b>Connections   Wire Size:</b>                       | Screw Terminal Blocks (Polarity Sensitive)   16 AWG (1.31 mm <sup>2</sup> ) to 26 AWG (0.129 mm <sup>2</sup> )                                                 |
| <b>Terminal Block Torque Rating:</b>                  | 0.37 ft-lb (0.5 Nm ) nominal                                                                                                                                   |
| <b>Sensor Type   Sensor Curve:</b>                    | Platinum RTD   PTC (Positive Temperature Coefficient)                                                                                                          |
| <b>Nominal Sensor Resistance @ 32°F (0°C):</b>        | <b>A/TT/TTM100 Series:</b> 100 Ohms   <b>A/TT/TTM1K Series:</b> 1000 Ohms                                                                                      |
| <b>RTD Tolerance Class   Accuracy:</b>                | +/- 0.06% Class A   ( <b>Tolerance Formula:</b> +/- °C = (0.15°C + (0.002 *  t )))<br>where  t  is the absolute value of Temperature above or below 0°C in °C) |
| <b>Sensor Din Standard   Temperature Coefficient:</b> | DIN EN 60751 (IEC 751)   3850 ppm / °C                                                                                                                         |
| <b>Enclosure Specifications (Operating</b>            | <b>A/XX-S-GD:</b> Galvanized Steel, -40 to 93°C (-40 to 200°F), NEMA 1 (IP 10)                                                                                 |
| <b>Temp. Range, Flammability, NEMA/IP Ratings):</b>   | <b>A/XX-S-PB:</b> ABS Plastic, -30 to 85°C (-22 to 185°F), UL94-HB, Plenum Rated                                                                               |
|                                                       | <b>A/XX-S-4X:</b> Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)                                                                    |
| <b>Storage Temperature Range:</b>                     | -40 to 75°C (-40 to 167°F)                                                                                                                                     |
| <b>Operating Humidity Range:</b>                      | 10 to 90% RH, non-condensing                                                                                                                                   |
| <b>Sensing Plate Material:</b>                        | Copper                                                                                                                                                         |
| <b>Fits Pipe Sizes:</b>                               | 1 1/4" (32 mm) to 4" (100 mm)                                                                                                                                  |
| <b>Foam Material   Flammability Rating:</b>           | Neoprene/EPDM/SBR Polymer   UL94-HF1; MIL-R-6130C; FMVSS-302                                                                                                   |
| <b>Lead Length   Conductor Size:</b>                  | 14" (35.6 cm)   22 AWG (0.65 mm)                                                                                                                               |
| <b>Lead Wire Insulation   Wire Rating:</b>            | Etched Teflon (PTFE) Colored Leads   MIL-W-16878/4 (Type E)                                                                                                    |
| <b>Conductor Material:</b>                            | Silver Plated Copper                                                                                                                                           |
| <b>Product Weight:</b>                                | <b>A/XX-S-GD:</b> 0.83 lbs. (0.38kg)   <b>A/XX-S-PB:</b> 0.43 lbs. (0.20kg)   <b>A/XX-S-4X:</b> 0.58 lbs. (0.27kg)                                             |
| <b>Agency Approvals:</b>                              | RoHS2, WEEE                                                                                                                                                    |

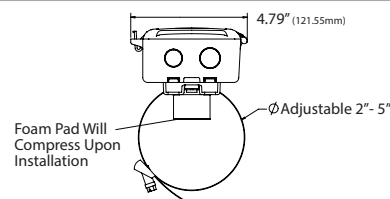
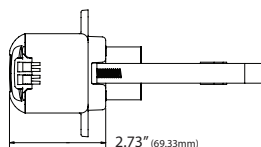
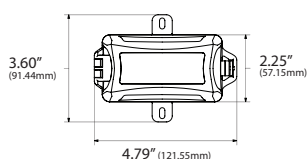
**Note<sup>1</sup>:** Transmitter's calibrated at 71°F (22°C) nominal | **Note<sup>2</sup>:** Temperature Drift is referenced to 71°F nominal calibration temperature



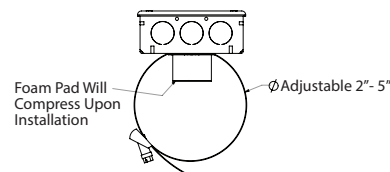
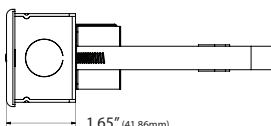
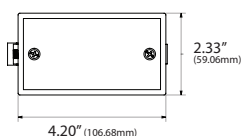


## DIMENSIONAL DRAWING

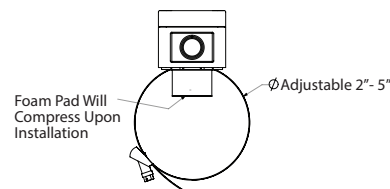
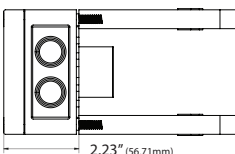
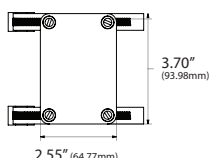
## Plastic Box Enclosure [PB]



## Galvanized Enclosure [GD]



## NEMA 4X Enclosure [4X]



Front View

Right View

Top View

## CUSTOM ORDERING

Model # Example: A/ TT100 S 2 GD 10 to 110°F

## MODEL #

|                                               |                                                                           |
|-----------------------------------------------|---------------------------------------------------------------------------|
| <b>A. Sensor Series</b> No Selection Required | A/                                                                        |
| <b>B. Model Series</b> Select One (1)         | TT100 = 100Ω   TTM100 = Matched 100Ω*   TT1K = 1KΩ   TTM1K = Matched 1KΩ* |
| <b>C. Configuration</b> No Selection Required | S = Strap-On (1.25" to 4" Pipe Size)                                      |
| <b>D. Analog Output</b> Select One (1)        | 1 = 1 to 5 VDC   2 = 2 to 10 VDC   4 = 4 to 20 mA                         |
| <b>E. Enclosure</b> Select One (1)            | GD = Galvanized   PB = Plastic   4X = NEMA 4X Weather Proof               |
| <b>F. Calibrated Span</b>                     | 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 requested by adding the part number listed below (NIST TTM CERT - 5PT.)  
There is a surcharge of \$25 to upgrade to 5 point calibration

## ACCESSORIES ORDERING

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

| Model #                      | Item # | Description                                                                  |
|------------------------------|--------|------------------------------------------------------------------------------|
| NIST TTM CERT-5PT.           | 129743 | 5 Point Calibration & Certificate                                            |
| 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)       |

