



# 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. Please contact ACI for more information regarding this sensor or if you would like to discuss your application in further detail.

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

### PRODUCT SPECIFICATIONS

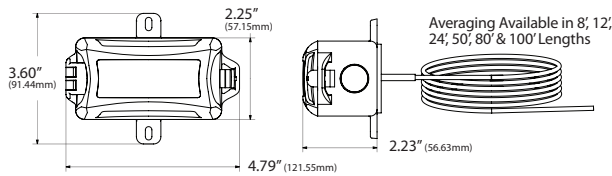
<b>Sensor Type   Sensor Curve:</b>	Platinum RTD   PTC (Positive Temperature Coefficient)
<b>Number Sensing Points:</b>	Continuous
<b>Number Wires:</b>	<b>A/1K-2W-A-xx'-xx Series:</b> Two (Non-Polarity Sensitive) <b>A/1K-3W-A-xx'-xx Series:</b> Three (Polarity Sensitive)
<b>Sensor Output @ 0°C (32°F):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





**DIMENSIONAL DRAWING. WEIGHTS**

**Plastic Box Enclosure [PB]**

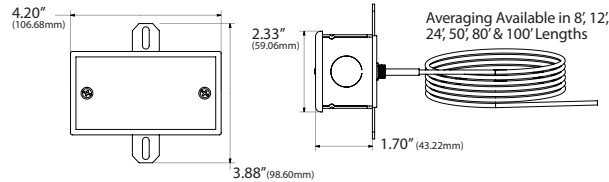


xx = Sensor Type | yy = Insertion Length

**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)

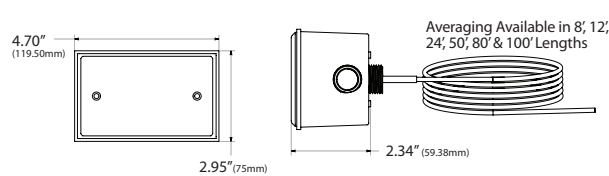
**Galvanized Enclosure [GD]**



**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)

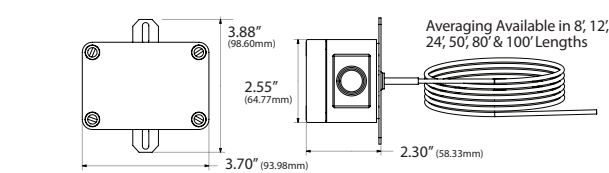
**Bell Box Enclosure [BB]**



**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/ 1K 2W A 80' GD NIST

<b>A. Sensor Series</b> No Selection Required	A/	MODEL #	A/
<b>B. Model Series</b> No Selection Required	1K = 1K Ohm Platinum RTD		1K
<b>C. Number of Wires</b> Select One (1)	2W = Two Wires   3W = Three Wires		
<b>D. Configuration</b> No Selection Required	A = Bendable Copper Averaging Sensors		A
<b>E. Sensor Length</b> 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		
<b>F. Enclosure</b> Select One (1)	GD = Galvanized   PB = Plastic   BB = Aluminum, NEMA 3R   4X = NEMA 4X		
<b>G. NIST</b> Select One (1)	---- = No NIST Certificate   NIST = NIST Certificate (Must Specify 1, 3 or 5 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
A/CAPILLARY CLIP QTY: 50/BAG	142410	Capillary Mounting Clip, Copper, Quantity: 50/Bag
UNIVERSAL CLIP	128248	Universal Mounting Clip, Plastic, Quantity: 50/Bag

