



# 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

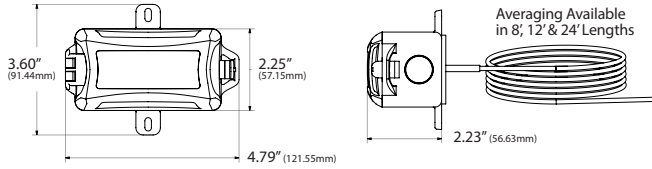
**The ACI Balco Copper Averaging Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, [www.workaci.com](http://www.workaci.com).**

### PRODUCT SPECIFICATIONS

<b>Sensor Type   Sensor Curve:</b>	Balco RTD   PTC (Positive Temperature Coefficient)
<b>Number Sensing Points:</b>	<b>8' &amp; 12' Lengths:</b> Four   <b>24' Length:</b> Nine
<b>Number Wires:</b>	Two (Non-Polarity Sensitive)
<b>Sensor Output @ 70°F (21.1°C)   Lead Wire Colors:</b>	1000 Ohms nominal   Orange/Yellow
<b>Sensor Accuracy:</b>	<b>8' Length:</b> +/- 1.26% @ 70°F (21.1°C) <b>12' Length:</b> +/- 1.37% @ 70°F (21.1°C) <b>24' Length:</b> +/- 1.64% @ 70°F (21.1°C)
<b>Temperature Coefficient (0-100°C)</b>	4618 ppm/°C
<b>Sensor Stability:</b>	+/- 0.05% after 1000 Hours @ 150°C (302°F)
<b>Maximum Operating Current:</b>	5 mA
<b>Response Time (63% Step Change):</b>	8 Seconds nominal
<b>Enclosure Specifications (Operating Temperature, Material, Flammability, NEMA/IP Ratings):</b>	<b>"-GD" Enclosure:</b> Galvanized Steel, -40 to 115°C (-40 to 239°F), NEMA 1 (IP10) <b>"-PB" Enclosure:</b> ABS Plastic, -30 to 90°C (-22 to 194°F), UL94-HB, Plenum Rated <b>"-BB" Enclosure:</b> Aluminum, -40 to 115°C (-40 to 239°F), NEMA 3R (IP 14) <b>"-4X" Enclosure:</b> Polystyrene Plastic, -40 to 70°C (-40 to 158°F), UL94-V2, NEMA 4X (IP 66)
<b>Storage Temperature Range:</b>	-40 to 85°C (-40 to 185°F)
<b>Sensor Operation Temperature Range:</b>	-40 to 239°F (-40 to 115°C)
<b>Operating Humidity Range:</b>	10 to 95% RH, non-condensing
<b>Sensing Element Material   Element 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 Ratings:</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 Ratings:</b>	Etched Teflon (PTFE) Colored Leads   MIL-W-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]

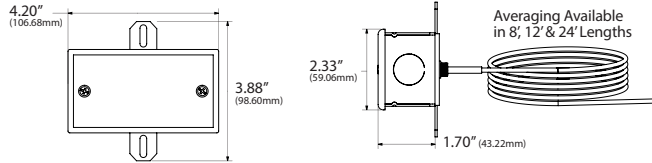


xx = Sensor Type | yy = Insertion Length

### Plastic Box Enclosure [PB] Weights

ACI Model #	8' (Probe Length)	12' (Probe Length)
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)	

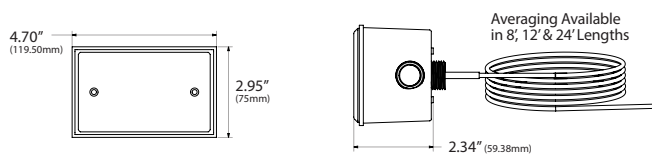
### Galvanized Enclosure [GD]



### 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)	

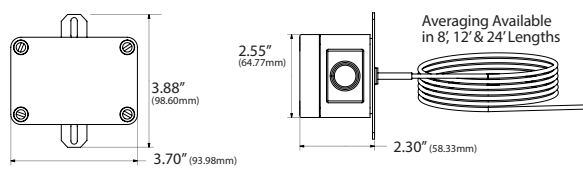
### Bell Box Enclosure [BB]



### 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/ BALCO A 24' GD NIST

## MODEL#

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

## ACCESSORIES ORDERING

Model # Example: A/CAPILLARY CLIP QTY1 -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