



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 website, www.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:	24' Lengths:
	+/- 0.31°C (+/- 0.56°F) @ 21.1°C (70°F)	+/- 0.41°C (+/- 0.74°F) @ 21.1°C (70°F)
	+/- 0.71°C (+/- 1.28°F) @ 54.4°C (130°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 (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 250°F (-40 to 212°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	

TEMPERATURE | NICKEL RTDS | COPPER AVERAGING

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/** **1K-NI** **A** **24'** **GD** **NIST**

A. Sensor Series	No Selection Required	A/	1K-NI	A	24'	GD	NIST	MODEL#
A. Sensor Series	No Selection Required	A/	1K-NI	A = Bendable Copper Averaging	8' = 8' Sensor 12' = 12' Sensor 24' = 24' Sensor	GD = Galvanized PB = Plastic BB = Aluminum, NEMA 3R 4X = NEMA 4X	---- = No NIST Certificate NIST = NIST Certificate (3 Points)	A/
B. Model Series	No Selection Required	1K-NI	A					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	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