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
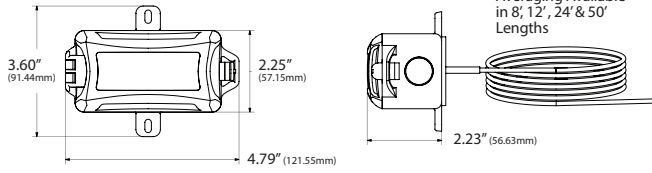
PRODUCT SPECIFICATIONS

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 302°F (-40 to 150°C)
Temperature Measurement Accuracy @ 77°F (25°C):	+/- 1.0°F (+/- 0.5°C)
Temperature Calibration Offset:	+/- 9°F (+/- 5°C) (Field Configurable)
Temperature Units:	°F (Factory Default), °C, °K (Field Configurable)
Resolution:	+/- 0.1° | +/- 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 176°F (-40 to 80°C)
Storage Temperature Range:	-40 to 185°F (-40 to 85°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
Enclosure Color | Material | UL Flammability Rating:	Black | ABS Plastic | UL94-HB
Enclosure Temperature Rating | Plenum Rating:	-22 to 194°F (-30 to 90°C) | 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]

yy = Insertion Length

3.60"
(91.44mm)

2.25"
(57.15mm)

4.79" (121.55mm)

Averaging Available in 8', 12', 24' & 50' Lengths

2.23" (56.63mm)

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)

Standard Views   **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

RoHS COMPLIANT 2002/95/EC