



RIGID AVERAGING

Four Point BACnet™ MS/TP | Modbus RTU

The BN Series Rigid 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 ¼" diameter stainless steel probe that is

manufactured with 4 sensing points. The rigid 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 hermetically sealed to prevent any moisture intrusion and includes an integrated foam pad to properly seal the duct and dampen vibrations when installed. The benefits of using the rigid averaging sensor is that it mounts like a standard single point duct sensor but includes three additional sensing points for better control. The sensor length should be determined by the 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 communicating sensors.

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

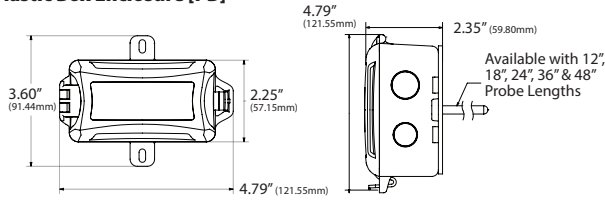
Supply Voltage:	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
Current Consumption:	25 mA maximum (0.67 VA)
Temperature Measurement Range:	-40 to 302°F (-40 to 150°C)
Temperature Measurement Accuracy @ 77°F (25°C):	+/- 1.0°F (+/- 0.5°C)
Temperature Calibration Offset:	+/- 9°F (+/- 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 mm ²) to 22 AWG (0.33 mm ²)
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
Probe Material:	304 Stainless Steel
Probe Diameter:	0.250" (6.35mm)
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

Plastic Box Enclosure [PB] Weights

ACI Model #	12" (Probe Length)	18" (Probe Length)
BN2110-RA-yy-PB	0.28 lbs. (0.127 kg)	0.30 lbs. (0.136 kg)

ACI Model #	24" (Probe Length)	36" (Probe Length)	48" (Probe Length)
BN2110-RA-yy-PB	0.32 lbs. (0.145 kg)	0.36 lbs. (0.163 kg)	0.40 lbs. (0.18 kg)

Standard Views

Product Weights

STANDARD ORDERING

Model # Example: BN2110-RA-12-PB -OR- 146620

Model #	Item #	Description
BN2110-RA-12-PB	146620	BACnet™ MS/TP, Modbus RTU, Temperature, Rigid Probe Averaging, SS, 12", Plastic Enclosure
BN2110-RA-18-PB	146621	BACnet™ MS/TP, Modbus RTU, Temperature, Rigid Probe Averaging, SS, 18", Plastic Enclosure
BN2110-RA-24-PB	146622	BACnet™ MS/TP, Modbus RTU, Temperature, Rigid Probe Averaging, SS, 24", Plastic Enclosure
BN2110-RA-36-PB	146623	BACnet™ MS/TP, Modbus RTU, Temperature, Rigid Probe Averaging, SS, 36", Plastic Enclosure
BN2110-RA-48-PB	146624	BACnet™ MS/TP, Modbus RTU, Temperature, Rigid Probe Averaging, SS, 48", Plastic Enclosure