



# OUTSIDE AIR

## RH-Temperature BACnet™ MS/TP | Modbus RTU

The BN Series Outdoor Temperature and Humidity networked sensors are a cost effective, single or dual 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. These sensors incorporate a conformally

coated printed circuit board mounted inside a waterproof enclosure for long-term reliability. The enclosure features a twist off cover 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:** Outdoor Air Temperature and RH Sensing, Economizers, Warehouse Facilities, Cold Storage Buildings, Manufacturing Plants, Wash Down Environments

**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](http://www.workaci.com)**

### PRODUCT SPECIFICATIONS

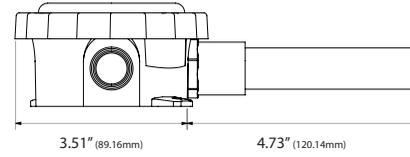
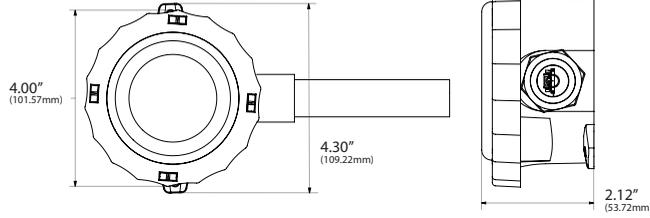
<b>Supply Voltage:</b>	12 to 36 VDC / 24 VAC +/- 10%, 50/60 Hz (Reverse Polarity Protected)
<b>Current Consumption:</b>	25 mA maximum (0.67 VA)
<b>Temperature Measurement Range:</b>	-40 to 176°F (-40 to 80°C)
<b>Temperature Measurement Accuracy @ 77°F (25°C):</b>	+/- 1.0 °F (+/- 0.5°C)
<b>Temperature Calibration Offset:</b>	+/- 9°F (+/- 5°C) (Field Configurable)
<b>Temperature Units:</b>	°F (Factory Default), °C, °K (Field Configurable)
<b>RH Measurement Range:</b>	0 to 100%
<b>RH Measurement Accuracy @ 77°F (25°C):</b>	+/- 2% from 10 to 90% RH
<b>RH Calibration Offset:</b>	+/- 10% RH (Field Configurable)
<b>Resolution:</b>	+/- 0.1°   +/- 0.1%
<b>Temperature / RH Update Rate:</b>	4 seconds
<b>Communication Protocol:</b>	BACnet™ MS/TP or Modbus RTU = Field Selectable; EIA RS-485
<b>Sensor Addresses:</b>	0 = Factory Default   1-127 = Field Selectable
<b>Supported Baud Rates:</b>	Auto Baud (Factory Default)   9600, 19200, 38400, 57600, 76800, 115200 (Field Selectable)
<b>Parity (Modbus RTU):</b>	None/Even/Odd = Field Selectable
<b>Stop Bits (Modbus RTU):</b>	1 or 2 = Field Selectable
<b>Databits (Modbus RTU):</b>	8
<b>Maximum Distance:</b>	4000 ft (1219 m)
<b>End of Line Termination Resistance:</b>	120 Ohms Termination Resistance (Field Selectable)
<b>Tri-Color Status LED:</b>	Connection Status
<b>Connections   Wire Size:</b>	Screw Terminal Blocks   16 AWG (1.31 mm <sup>2</sup> ) to 22 AWG (0.33 mm <sup>2</sup> )
<b>Transmitter Operating Temperature Range:</b>	-40 to 176°F (-40 to 80°C)
<b>Storage Temperature Range:</b>	-40 to 185°F (-40 to 85°C)
<b>Operating Humidity Range:</b>	10 to 95% RH, non-condensing
<b>RH Sensing Tube   Diameter:</b>	Aluminum   1.125" (28.58 mm)
<b>Temperature Sensing Tube Diameter:</b>	Polycarbonate / ASA with UV Protectant   0.86" (21.85 mm)
<b>Enclosure Material   UL Flammability Rating:</b>	Polycarbonate / ASA with UV Protectant   UL94-V0
<b>Enclosure Temperature Rating:</b>	-40 to 190°F (-40 to 88°C)
<b>Product Dimensions (L x W x D):</b>	7.00" (177.8 mm) x 5.00" (127 mm) x 3.00" (76.2 mm)
<b>Product Weights:</b>	0.72 lbs. (0.33 kg)
<b>Agency Approvals:</b>	BTL Certified, CE, RoHS2, WEEE, China RoHS



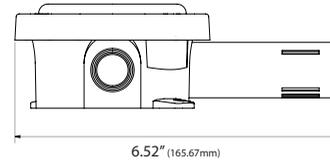
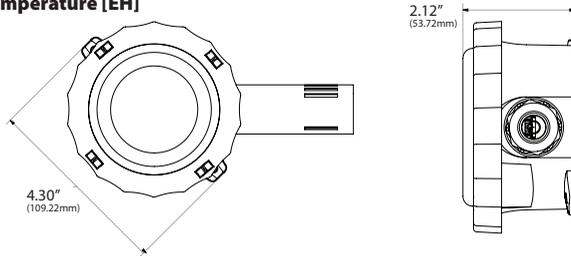


**DIMENSIONAL DRAWING**

**Euro Enclosure  
Temperature [EH]**



**Euro Enclosure RH &  
Temperature [EH]**



Front & Right Views

Top View

**STANDARD ORDERING**

Model # Example: **BN2130-O** -OR- **146528**

Model #	Item #	Description
<b>BN2110-O</b>	146540	BACnet™ MS/TP, Modbus RTU, Temperature, Outside, NEMA 3R Enclosure
<b>BN2120-O</b>	146543	BACnet™ MS/TP, Modbus RTU, Relative Humidity Sensor, Outside, NEMA 3R Enclosure
<b>BN2130-O</b>	146528	BACnet™ MS/TP, Modbus RTU, Relative Humidity and Temperature, Outside, NEMA 3R Enclosure



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