

IAQSens Series - Advanced Indoor Air Quality (IAQ) Sensing Technology




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IAQ-300-N OVERVIEW

EBTRON's IAQ-300-N is an innovative wall mount CO₂/relative humidity (RH)/temperature sensor that provides precision measurement in a single device packaged with BACnet® MS/TP or Modbus® RTU interface for interoperability with all modern building automation systems (BAS). It is ideal for maintenance of IAQ in variable occupancy spaces where direct occupant counting is not well suited. The EBTRON model IAQ-300-N is key in the acquisition of LEED® credits as well as for true demand controlled ventilation in compliance with the Ventilation Rate Procedure (VRP) of ASHRAE® Standard 62.1-2007. A patented continuous CO₂ self-calibration feature eliminates routine maintenance and microprocessor-based electronics, with industrial grade integrated circuits ensuring exceptional accuracy and long term reliability. Simple field configuration is accomplished by DIP switches on the main circuit board, or through the BACnet® and Modbus® RTU interface.

APPLICATIONS

- Combined precision CO₂, relative humidity and temperature sensing elements in a single instrument for integration in modern BAS systems eliminates compatibility and communications issues typical with individual sensors.
- Implement for true demand controlled ventilation compliance with the Ventilation Rate Procedure (VRP) of ASHRAE® 62.1.
- Key in the acquisition of LEED® Energy and Atmosphere and Indoor Environmental Quality Credits.

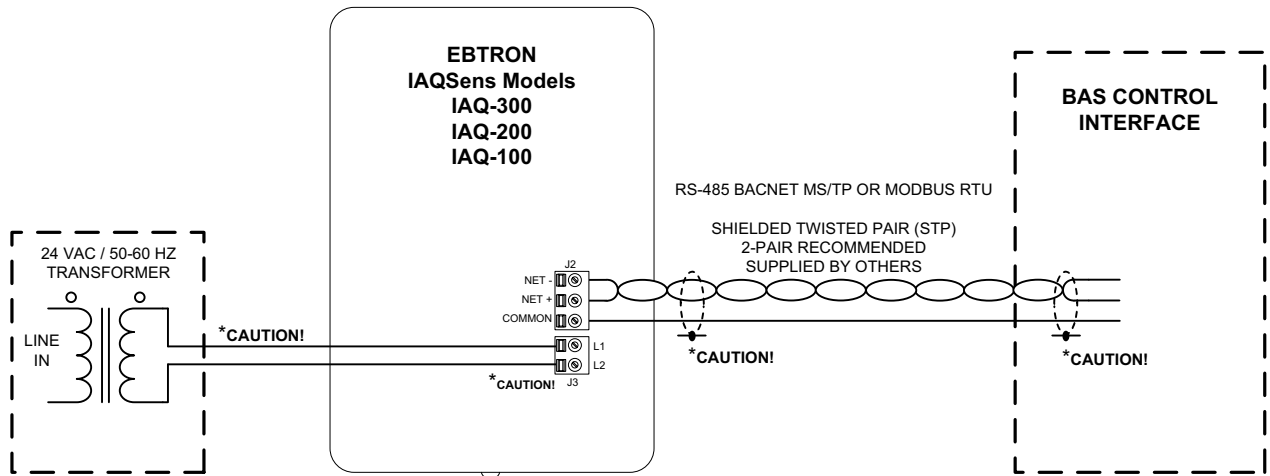
SYSTEM FEATURES

- Integrated BACnet®/Modbus® RTU device with complement of precision sensing elements for CO₂, RH and Temperature measurement.
- Continuous CO₂ self-calibration feature eliminates routine maintenance.
- Integral RS-485 BACnet® MS/TP and Modbus® RTU interface for interoperability with modern BAS devices.
- Microprocessor-based electronics with industrial grade integrated circuits.
- Convenient DIP switch user interface for simple field configuration.

IAQ-300-N SPECIFICATIONS

Sensor Complement:	Advanced precision sensing elements for CO ₂ , relative humidity and temperature measurement via RS-485 BACnet® MS/TP and Modbus® RTU interface	IAQ-300-N Signal Processing:	Microprocessor-based
CO ₂ Sensor Technology:	Non Dispersive Infrared (NDIR), gold plated optics, diffusion sampling with patented self-calibration algorithm)	Power Supply:	Integral power supply powered by external 24 VAC (22.8-26.4VAC), 50/60 Hz source.
CO ₂ Range:	400-2,000 ppm (factory default) Adjustable to 10,000 ppm	Brownout-Protection:	Internal brownout watchdog circuit
CO ₂ Accuracy*:	±35ppm at up to 500ppm ±60ppm at up to 800ppm ±75ppm at up to 1000ppm ±90ppm at up to 1200ppm *77 °F (25 °C)	Electrical Protection:	Overvoltage, overcurrent, surge protection
CO ₂ Stability:	<2% of FS over life of sensor (15 years typical)	Enclosure:	Attractive low profile wall mount enclosure compatible with standard single-gang electrical box, and surface mount applications.
RH Sensor Technology:	Planar Capacitive Polymer	Dimensions:	4.650 x 3.250 x 1.090 in (118.11 x 82.55 x 27.69 mm)
RH Range:	0 to 100% RH, non condensing	User Interface:	Simple DIP switch selection
RH Accuracy:	±2% @ 20% - 80% RH, 77 °F (25 °C) ±3%: <20% ->80% RH, 77 °F (25 °C)	Output to Host Controls:	RS-485 BACnet® MS/TP or Modbus® RTU
RH Resolution:	0.4% RH	Baud rates:	Selectable 76.8K, 38.4K, 19.2K, 9.6K baud
Temperature Sensor Technology: Integral band gap PTAT		System Diagnostics:	On board LED status indicator
Temperature Range:	-58 °F to 302 °F (-50 °C to 150 °C)	Operating Temperature Range: 32 ° F to 122 ° F (0 ° C to 50 ° C)	
Temperature Accuracy:	±1.08 °F at 77 °F (±0.6 °C at 25 °C)	Operating Humidity Range:	0 to 95% RH, noncondensing
Temperature Resolution:	0.36 °F (0.2 °C)	Limited Warranty:	36 months from shipment (1 year for CO ₂ module) - refer to EBTRON Standard Terms and Conditions of Sale [®] for complete warranty information.

IAQ-300-N TYPICAL WIRING DIAGRAM

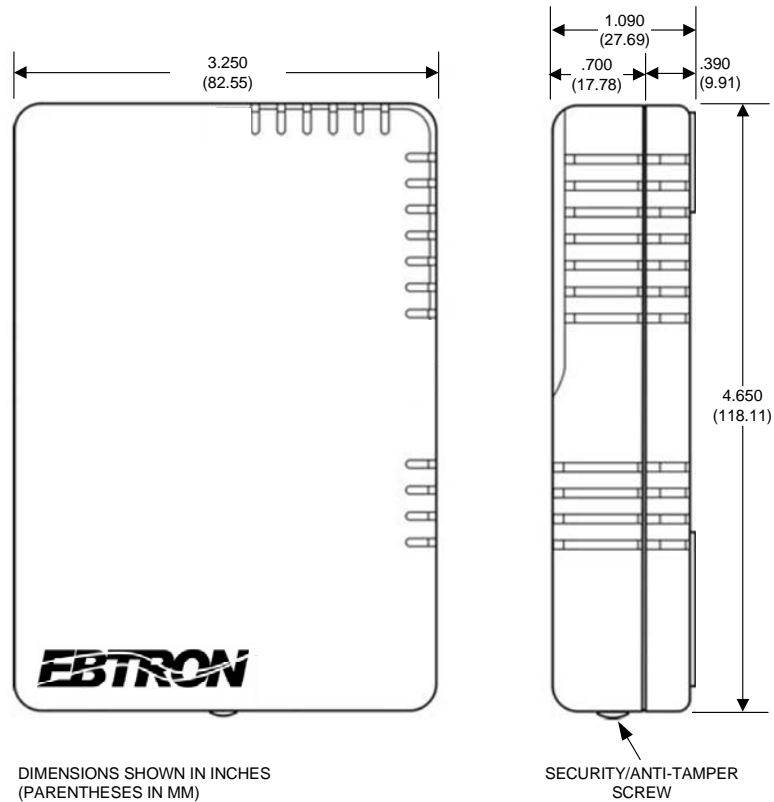


*** CAUTION!**

When multiple devices are powered from a common 24VAC power source, ensure that all devices are wired in phase with 24VAC power at L1, and 24VAC return at L2! Damage will occur to the IAQSens device and/or other devices if this caution is not observed.

On RS-485 networks that are ground referenced to earth, IAQSens terminal L2 may also be connected to a wire ground referenced to earth. However, on RS-485 networks that are not ground referenced to earth, terminal L2 must not be connected to a wire ground referenced to earth. Damage may occur to the IAQSens or other network devices if this caution is not observed.

IAQ-300-N DIMENSIONS



DIMENSIONS SHOWN IN INCHES
(PARENTHESES IN MM)

SECURITY/ANTI-TAMPER
SCREW