GS-N100-W CO$_2$ Sensor

Product Data

RS-485 BACnet/Modbus Wall Mount CO$_2$ Sensor

- ❑ NDIR CO$_2$ sensing technology
- ❑ 0 to 2,000 ppm range
- ❑ ABC logic ensures long-term calibration stability
- ❑ Non-Isolated RS-485 output circuitry
- ❑ Time-tested and reliable BACnet and Modbus firmware
- ❑ Field selectable BACnet MS/TP or Modbus RTU protocols
- ❑ BACnet master
- ❑ DIP switch selectable baud rates
- ❑ Attractive wall-mount package
- ❑ Compatible with all GreenTrol application specific controllers
- ❑ Operates on 24 VAC/DC

√ Use with GreenTrol outdoor airflow controllers to provide advanced CO$_2$-DCV or ASHRAE 62.1 compliant population-based DCV

√ Demonstrate compliance with ASHRAE Standards 62.1, 90.1 and 189.1

√ Satisfy LEED requirements

√ Maintain acceptable indoor air quality

√ Save energy

The GS-N100-W is a high performance CO$_2$ sensor for today's demanding DCV applications. It uses Telaire's NDIR sensing technology and GreenTrol's high performance signal processing circuitry.

The GS-N100-W time-tested and reliable BACnet MS/TP and Modbus RTU firmware is superior to competitive CO$_2$ sensors. Its reliability makes it the only approved network wall mounted CO$_2$ sensor for GreenTrol outdoor air controllers.

When combined with a GreenTrol outdoor air controller, this CO$_2$ sensor can be used to improve traditional CO$_2$ demand control ventilation by using a unique control algorithm that resets the outdoor air setpoint between user defined upper and lower airflow limits (not damper positions) to maintain the space CO$_2$ level. This control method eliminates the under- and over-ventilation that is prevalent with traditional CO$_2$-DCV.

An even more advanced control method uses the measured airflow rate and CO$_2$ level to estimate the population and calculates the required outdoor airflow, thus meeting the actual requirements of ASHRAE Standard 62.1.

Long term stability and high-performance components ensure years of trouble free performance.

GS-N100-W Technical Specifications

Functionality

CO_2 Measurement: Provides the CO_2 level in ppm via the network connection
System Status Alarm: Yes

User Interface

Baud Rate, Protocol and Addressing: DIP switch
End of Line Termination: Jumper
Important: Modification of the factory default settings requires that power is cycled to the device. It is recommended that each device is bench configured prior to installation OR settings are provided at the time of order so that the device can be factory configured prior to shipment.

CO_2 Sensor

Technology: Telaire Non Dispersive Infrared (NDIR)
Range: 0 to 2,000 ppm
Accuracy:
    400 to 1,250 ppm ±30 ppm or 3% of reading, whichever is greater
    1,250 to 2,000 ppm ±5% of reading + 30 ppm
Temperature Dependence: 0.36% FS/°F [0.2% FS/°C]
Pressure Dependence: 0.33% of reading per 0.1 in. [2.54 mm] Hg
Stability: <2% of FS over life of sensor (15 year typical)
Calibration Interval: Not required when ABC logic in enabled
Response Time: <2 minutes for 90% step change typical
Signal Update: Every 4 seconds
Warmup Time: 2 minutes operational, 10 minutes to achieve maximum accuracy

Network Connection

N1

Type: Non-Isolated, field selectable MS/TP BACnet master or Modbus RTU connection (provide separate transformer to each GS-N100-W or an RS-485 network isolator if isolation is required)
B.A.S. Object/Register Read/Write Access: Yes
Device Load: 1/8 load
Supported Baud Rates: 9.6, 19.2, 38.4 and 76.8 kbaud

Environmental Limits, Power Requirements & Dimensions

Environmental Limits
Temperature: 32 to 122 ºF [0 to 50 ºC]
Humidity: 5 to 95%
Power Requirement: 24 VAC (22.8 to 26.4 under load) @1.5V-A
Dimensions: 4.56H x 3.25W x 1.09D in. [115.8 x 82.6 x 27.7 mm]