ROOM CARBON DIOXIDE DETECTOR

CDD3X1 Series

The CDD3 series uses a highly accurate and reliable Non-dispersive Infrared (NDIR) sensor combined with state-of-the-art digital linearization and temperature compensated circuitry in an attractive, low profile enclosure for room applications to monitor room CO2, levels. A BACnet® or Modbus Communications signal is provided for connection to a building automation system. Optional features such as temperature, humidity, setpoint adjustment, manual override and adjustable relay output are available.

PRODUCT HIGHLIGHTS

* Menu driven set-up
* 0-2000 PPM CO2 range
* BACnet® or Modbus communication
* Patented self-calibrations algorithm
* Guaranteed 5 year calibration interval
* Easily field calibrated
* Accepts AC/DC power

SPECIFICATIONS

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| DESCRIPTION | ENGINEERING SPEC |
| GAS TYPE DETECTED | Carbon Dioxide (CO2) |
| SENSOR ACCURACY | ± 30ppm @ 1000ppm @ 22°C (72°F) when compared to certified calibration gas |
| SENSOR TYPE | Dual Wavelength Non-Dispersive Infrared (NDIR) |
| MEASUREMENT RANGE | 0-2000ppm |
| SENSOR COVERAGE AREA | 100 m2 (1000 ft2) typical |
| TEMPERATURE DEPENDENCE | 0.2% FS per °C |
| STABILITY | <2% FS over life of sensor |
| SENSOR LIFE SPAN | 15 years typical |
| PRESSURE DEPENDENCE | 0.13% of reading per mm Hg |
| ALTITUDE CORRECTION | Programmable from 0-5000 ft via BACnet® or Modbus |
| RESPONSE TIME | <2 minutes for 90% step change typical |
| WARM-UP TIME | <2 minutes |
| NETWORK INTERFACE | **Hardware:** 2-wire RS-485  **Software:** BACnet® - MAS/TP protocol  Modbus – MS/P (RTU or ASCII)  **Baud Rate:** BACnet® - Locally set to 9600, 19200, 38400, or 76800  Modbus – Locally set to 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, or  76800  **Address Range:** BACnet® - Locally set to 0-127 (factory default is 3),  (63 devices max on one daisy chain)  Modbus – Locally set to 1-255 (factory default is 1)  (255 devices max on one daisy chain) |
| OPTIONAL TEMPERATURE SIGNAL | See chart below |
| OPTIONAL RH SIGNAL | **Sensing Element:** Thermoset polymer based capacitive  **Accuracy:** ±0.2 %RH  **Resolution:** 1 %RH  **Range:** 0 to 100 %RH, non-condensing  **Hysteresis:** ±3 %RH  **Response Time:** 15 seconds typical  **Stability:** ±1.2 %RH typical @ 50 %RH in 5 years |
| OPTIONAL RELAY OUTPUT | **Contact Ratings:** Form A contact (N.O.), 2 Amps @ 140 Vac/30 Vdc  **Relay Trip Point:** Programmable 500 - 1500ppm via BACnet® or Modbus  **Relay Hysteresis:** Programmable 25-200ppm via BACnet® or Modbus |
| OPTIONAL LCD DISPLAY | **Resolution:** 1ppm CO2 1 %RH, 1°C (1°F)  **Size:** 35mm W x 15mm H (1.4” x 0.6”) alpha-numeric 2 line x 8 character  **Backlight:** Enable or disable via keypad |
| OPTIONAL OVERRIDE SWITCH | Front panel pushbutton available as BACnet® or Modbus register |
| OPTIONAL SETPOINT CONTROL | Front panel push-buttons available as 0 to 100% as BACnet® object or Modbus register |
| POWER SUPPLY | 24 Vdc ±20% or 24 Vac ±10% (non-isolated half-wave rectified) |
| CONSUMPTIONS | 80 mA max @ 24 Vdc, 140 mA max @ 24 Vac with all options |
| OPERATING CONDITIONS | 0 to 50°C (32 to 122°F), 0 to 90 %RH non-condensing |
| WIRING | Screw terminal block (14 to 22 AWG) |
| ENCLOSURE | White ABS, 84mm W x 119mm H x 29mm D (3.3” x 4.7” x 1.15”), IP30 (NEMA 1) |
| APPROVALS | CE |
| COUNTRY OF ORIGIN | Canada |

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| **Sensor Code** | **Temperature Sensor Description** | **Accuracy** |
| 02 | 100Ω Platinum, IEC 751, 385 alpha, 2 wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 05 | 1,801 Ω NTC thermistor | ± 0.5 °C (± 0.9 °F) @ -20 - 50 °C (-4 - 122 °F) |
| 06 | 3,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 07 | 10,000 Ω (type 3) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 08 | 2.252 KΩ NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 12 | 1000Ω Platinum, IEC 751, 385 alpha, 2-wire, Class B | ± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F) |
| 13 | 1000Ω Nickel, DIN 43760, 2-wire, Class B | ± 0.4 °C (± 0.72 °F) @ 0 °C (32 °F) |
| 14 | 10,000 Ω (Type 3) NTC thermistor c/w 11 KΩ shunt | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 20 | 20,000 Ω NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 24 | 10,000 Ω (Type 2) NTC thermistor | ± 0.2 °C (± 0.36 °F) @ 0 - 70 °C (32 - 158 °F) |
| 59 | 10,000 Ω NTC thermistor | ± 1% @ 25°C (77°F), β25/85 = 3435 ± 1% |