GREYSTONE
ENERGY SYSTEMS INC

ROOM CARBON DIOXIDE DETECTOR w/ BACnet® or ModBus Communications CDD3 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 CO_2 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 adjustible relay output are available.

SPECIFICATION:

Power Supply	20-28 Vac/dc (non-isolated half-wave rectified)
Consumption	80 mA max @ 24Vdc, 140 mA max @ 24Vac with all options
Protection Circuitry	Reverse voltage protected, overvoltage protected
Operation Conditions	0˚-50°C (32˚-122°F), 0-95% RH non-condensing.
Sensor Coverage Area	100 m^2 (1000 ft^2) typical
Wiring Connections	Screw terminal block (14 to 22 AWG)
External Dimensions	84mm W x 119mm H x 29mm D (3.3" x 4.7" x 1.15")
Enclosure Ratings	IP30 (NEMA 1)

CO2 Signal:

Measurement Type	Non-Dispersive Infrared (NDIR), diffusion sampling
Range	0 - 2000 ppm
Standard Accuracy	±75 PPM @ 1000 ppm @ 22°C (72°F) when compared to certified calibration gas
Temperature Dependence	0.2% FS per °C
Stability	< 2 % FS over life of sensor (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

BACnet® Interface:

Hardware	2-wire RS-485
Software	Native BACnet® MS/TP protocol
Baud Rate	Locally set to 9600, 19200, 38400 or 76800
MAC Address Range	Locally set to 0-127 (factory default is 3), (63 devices max on one daisy chain)

ModBus Interface:

Hardware	2-wire RS-485
Software	Native ModBus MS/TP protocol (RTU or ASCII)
Baud Rate	Locally set to 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 76800 or 115200
Slave Address Range	Locally set to 0-64 (factory default is 1), (32 devices max on one daisy chain)

Optional Temperature Signal:

Sensing Element	10K thermistor, ±0.2˚C (±0.4˚F)
Resolution	0.1˚C (0.2˚F)
Range	0˚ to 35˚C (32˚ to 95˚F)

Optional RH Signal:

Sensing Element	Thermoset polymer based capacitive
Accuracy	± 2% RH
Range	0 - 100% RH, non-condensing
Resolution	1% RH
Hysteresis	± 3% RH
Response Time	15 seconds typical
Stability	± 1.2% RH typical @ 50% RH in 5 years

PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
CDD3A10	Room Carbon Dioxide Sensor w/ BACnet® Communications
CDD3B10	Room Carbon Dioxide Sensor, w/ Modbus Communications

CODE	Display
0	Concealed
1	Viewable

CODE	Configurations
-	CO_2 Only
RH	CO_2, Humidity & Temperature
T	CO_2 & Temperature

CODE	Options (Multiple selections can be made) (Leave blank if no options required)
P	Setpoint control , 2 button up/down
S	Exposed push button momentary switch - N.O.
R	Relay Output

Optional Relay Output:

Contact Ratings	Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc
Relay Trip Point	Programmable 500-1500 ppm via BACnet® or ModBus
Relay Hysteresis	Programmable 25-200 ppm via BACnet® or ModBus

Optional LCD Display:

Resolution	1 ppm CO2, 1% RH, 1˚C (1˚F)
Size	1.4" w x 0.6" h (35 mm x 15 mm) alpha-numeric 2 line x 8 character
Backlight	Enable or disable via keypad

Optional Override Switch Front panel push-button available as BACnet® object or ModBus register

Optional Setpoint Control Front panel push-buttons available as 0 to 100% as BACnet® object or ModBus register

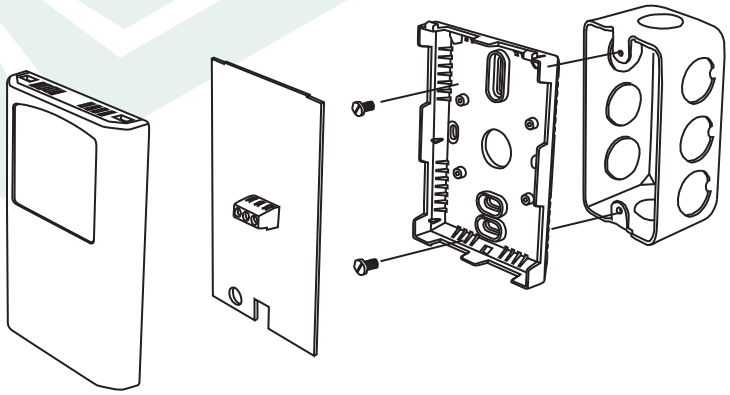
RoHS COMPLIANT

TYPICAL INSTALLATION:

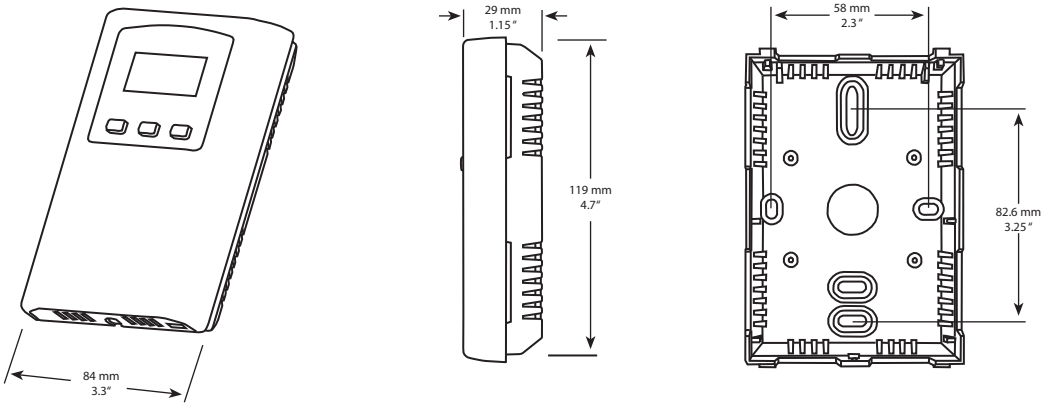
For complete installation and wiring details, please refer to the product installation instructions.

The CDD3 series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.

The basic CDD3 has a screw block terminal provided for connection to the Building Automation System.



DIMENSIONS:



5-YEAR CALIBRATION GUARANTEE

Based on the results of years of testing of ACLP software, Greystone now offers a 5-year calibration guarantee on all its CDD series wall and duct mount sensors used for CO_2 based ventilation control when operated in an environment that can utilize ACLP software. If the sensor is found to be out of calibration more than 150 PPM as compared to a calibration gas or recently calibrated reference, Greystone will provide a free factory calibration of the sensor if returned to Greystone. This guarantee only applies if the sensor is operated in an environment where inside levels periodically drop to outside concentrations (i.e. during evenings or weekends when there is no occupancy) as is required by ACLP software. If a space does not experience a periodic drop to outside levels (i.e. where occupancy is 24 hours, 7 days/week), ACLP software should be deactivated. With ACLP deactivated (via menu buttons), calibration may be required every 2 to 3 years.

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Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems. We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

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