



DUCT CARBON DIOXIDE DETECTOR CDD4 Series

The CDD4A20 series uses a highly accurate and reliable Non-dispersive Infrared (NDIR) sensor combined with state-of-the-art digital linearization and temperature compensated circuitry to monitor duct CO₂ levels. The duct CO₂ transmitter principal of operation is based on the Venturi effect of the probe that extends into the HVAC duct. Air flowing through the duct is forced into the vent holes on one side of the probe, into the enclosure, over the CO₂ sensor and then the air is drawn back out of the enclosure via the vent holes on the opposite side of the probe. Optional temperature sensor and adjustable relay output is also available.



SPECIFICATION:

Range	CDD4A: 0 - 2000 ppm CDD4B: 0 - 20,000 ppm standard, programmable span from 2000 to 20,000 ppm
Accuracy	CDD4A: ±30 PPM + 3% of reading with Auto Cal on. CDD4B: ±75 PPM or 10% of reading (whichever is greater)
Sensor	CDD4A: Non-Dispersive Infrared (NDIR), diffusion sampling CDD4B: Dual Channel Non-Dispersive Infrared (NDIR), diffusion sampling
Sensor Coverage Area	100 m ² (1000 ft ²) typical
Temp. Dependence	0.2% FS per °C
Stability	CDD4A: < 2 % FS over life of sensor CDD4B: < 5 % FS over life of sensor
Sensor Life Span	15 years typical
Press. Dependence	0.13% of reading per mm Hg
Altitude Correction	Programmable from 0-5000 ft via keypad
Response Time	<2 minutes for 90% step change typical
Warm-up Time	<2 minutes
Power Supply	20-28 Vac/dc (non-isolated half-wave rectified)
Output Signals	4-20 mA active (sourcing), 0-5 Vdc or 0-10 Vdc (field selectable)
Consumption	100 mA max @ 24 Vdc, 185 mA max @ 24 Vac (with all options)
Output Drive Capability	Current: 550 ohms max Voltage: 10 Kohm min
Output Resolution	10 bit PWM
Protection Circuitry	Reverse voltage & overvoltage protected
Operation Conditions	0° - 50°C (32° - 122°F), 0-95% RH non-condensing
Wiring Connections	Screw terminal block (14 to 22 AWG)
External Dimensions	145mm W x 100mm H x 63mm D (5.7" x 3.95" x 2.5") Duct Probe: 177mm (7") long x 25.4mm (1") dia IP65 (NEMA 4X)
Enclosure Ratings	
LCD Display:	
Resolution	1 ppm CO ₂
Size	1.4" w x 0.6" h (35 mm x 15 mm)
Backlight	Alpha-numeric 2 line x 8 character Enable or disable via keypad
Optional Temperature Signal:	
Sensing Element	Various RTDs or thermistors as a 2-wire resistance output
Optional Relay Output:	
Contact Ratings	Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc
Relay Trip Point	CDD4A: Programmable 500-2000 ppm CDD4B: Programmable 500-15,000 ppm
Relay Hysteresis	CDD4A: Programmable 25-200 ppm CDD4B: Programmable 25-500 ppm

PART NUMBER SELECTED

PRODUCT SELECTION INFORMATION:

MODEL	Product Description
CDD4A20	Duct Carbon Dioxide Sensor, 0-2000 ppm
CDD4B20	Duct Carbon Dioxide Sensor, 0-20,000 ppm

CODE	Display
0	Concealed
1	Viewable

CODE	Optional Temperature Sensor (Leave blank if not required)
T2	100 Ω Plat. IEC 751, 385 Alpha, thin film
T5	1801 Ω, NTC Thermistor, ±0.2 C
T6	3000 Ω, NTC Thermistor, ±0.2 C
T7	10,000 Ω, type 3, NTC Thermistor, ±0.2 C
T8	2.252K Ω, NTC Thermistor, ±0.2 C
T12	1000 Ω Platinum, IEC 751, 385 Alpha, thin film
T13	1000 Ω Nickel, Class B, DIN 43760
T14	10,000 Ω, type 3, NTC Thermistor, ±0.2 C c/w 11K shunt resistor
T20	20,000 Ω, NTC Thermistor, ±0.2 C
T24	10,000 Ω, type 2, NTC Thermistor, ±0.2 C

CODE	Options (Leave blank if no options required)
R	Relay Output

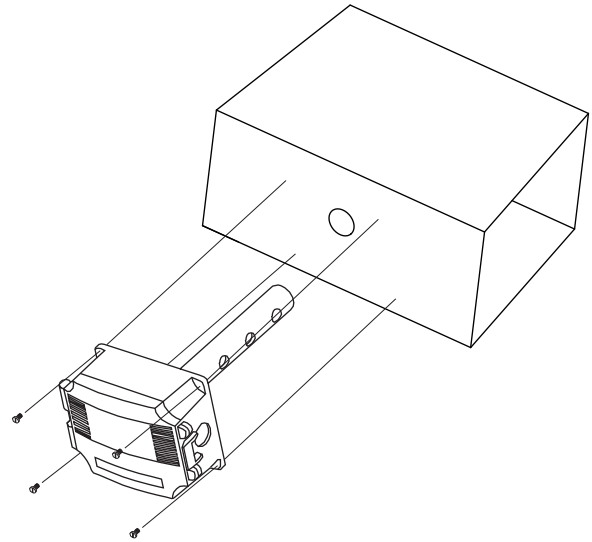
TYPICAL INSTALLATION:

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

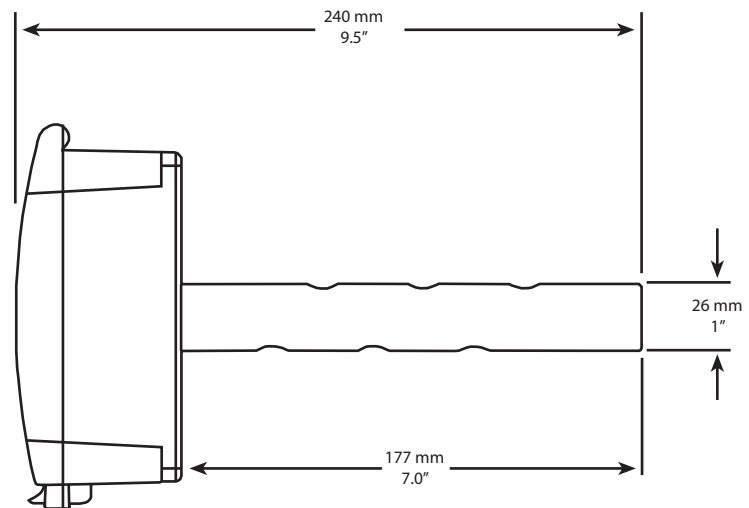
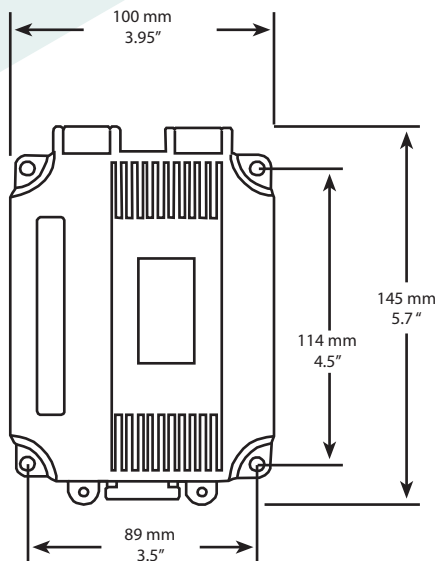
The CDD4 duct type sensor installs on the outside of a return air duct with the sampling tube inserted into the duct.

Mount the sensor in an easily accessible location in a straight section of duct at least five feet from corners and other items that may cause disturbances in the air flow. Avoid areas where the detector is exposed to vibrations or rapid temperature changes. Connect conduit, make proper wiring connections

The CDD has a 3 wire configuration used for connection to the Building Automation System.



DIMENSIONS nts:



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 CO₂ 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