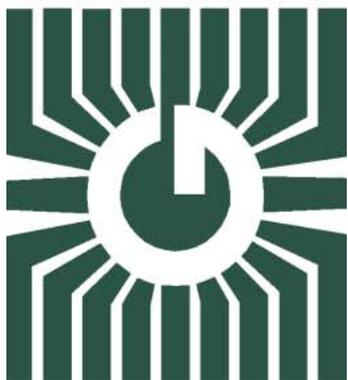


**GREYSTONE**  
ACCURACY BY DESIGN



## CARBON DIOXIDE (CO<sub>2</sub>) DETECTORS



Corporate Space Enclosure

### **Air quality starts with sensing the problem**

Greystone's Carbon Dioxide (CO<sub>2</sub>) detectors provide unsurpassed accuracy, reliability and selection.

*Peace of mind  
through reliable  
gas sensors*

GREYSTONE IS AN ISO 9002 REGISTERED COMPANY

# CO<sub>2</sub> DETECTOR

Environmental, industrial and commercial indoor Carbon Dioxide (CO<sub>2</sub>) gas detector. Available in both a space and duct mount version.



## APPLICATION:

To sense and transmit to any compatible electronic analog control, DDC/PLC controller or automation system for the control of ventilation equipment. Designed to meet ventilation requirements specified in ASHRAE Standard 62-1989.

## FEATURES:

- Setup/calibration fully menu driven (requires LCD option)
- Monitors CO<sub>2</sub> over range 0-2000 PPM (factory default)
- Field adjustable range from 0-1500 PPM up to 10,000 PPM without re-calibration!
- NDIR single beam with patented ACLP self-calibration algorithm
- Guaranteed 5 year calibration interval
- Optional on board relay with field adjustable trip point
- Optional LCD for displaying PPM level and menu options
- Powered by either AC or DC source with no change to circuit required
- Choice of two field adjustable analog output signals, linearized over full range
- Easy to calibrate in the field

## Duct Mount ABS Enclosure with Sampling Tube

SPECIFICATIONS	CO <sub>2</sub> DETECTOR – Product # CDD
Gas Detected	Carbon Dioxide (CO <sub>2</sub> )
Range	0 – 2000 ppm standard, programmable from 1500 up to 10,000 ppm in 500 ppm increments
Standard Accuracy	±75 PPM or 3% of reading (whichever is greater) 15-32 C (59-90 F) for 0-2000 ppm range ±5% of reading for 2000-10,000 ppm
Extended Accuracy	±150 ppm or 5% of reading (whichever is greater) 0-50 C (32-122 F) for 0-2000 ppm range ±7% of reading for 2000-10,000 ppm
Sensing Element	Non-Dispersive Infrared (NDIR)
Operation Conditions	0-50C(32-122F), 0-95% RH non-condensing
Repeatability	±20 PPM
Stability	±20 PPM typical, 5 year calibration interval
Manufacturing Process	ISO 9002 certified
Output Signal	4-20 mA active (sourcing), 0-5Vdc and 0-10Vdc, jumper selectable (Note correct part number)
Output Drive Capability	550 ohm max for current output, 10 Kohm min for voltage output
Output Resolution	10 bit PWM
LCD Display (optional)	LCD for displaying PPM level (required for field programming) 1 ppm resolution, 1.1" w x 0.5" h (28 x 13 mm) alpha-numeric 2 line x 8 characters
Field Calibration	Calibration, applying calibration gas standards (Contact Greystone for Calibration kit)
External Dimensions	Corporate Space – 91mm W x 127mm H x 43 mm D (3.6" x 5" x 1.7") Duct ABS – 124 mm W x 183 mm H x 43 mm D (4.9" x 7.22" x 1.69")



SPECIFICATIONS (Con't)	CO <sub>2</sub> DETECTOR – Product # CDD
Pressure Dependence	0.13% of reading per mm Hg
Altitude Correction	Programmable from 0-5000 ft in 500 ft increments
Response Time	< 60 seconds for 90% step change
Warm-up Time	< two (2) minutes
Power Supply	20-30 Vac/dc (non-isolated half-wave rectified)
Consumption	80 mA max @ 24 Vdc, 36 mA avg @24 Vdc
Input Voltage Effect	Negligible over specified operating range
Protection Circuitry	Reverse voltage protected and output limited
Optional Relay Output	One Form C contact (N.O. and N.C.), status LED, 5 amps @ 250 Vac, 5 amps @ 30Vdc, p.f. = 1 Relay Trip Point – Programmable 500-1500 ppm in 50 ppm increments Relay Hysteresis – Programmable 25-200 ppm in 25 ppm increments
Programming and Selection	Via internal push-buttons and jumper
Wiring Connections	Screw terminal block (14 to 22 AWG)

### CARBON DIOXIDE (CO<sub>2</sub>): PRODUCT ORDERING INFORMATION

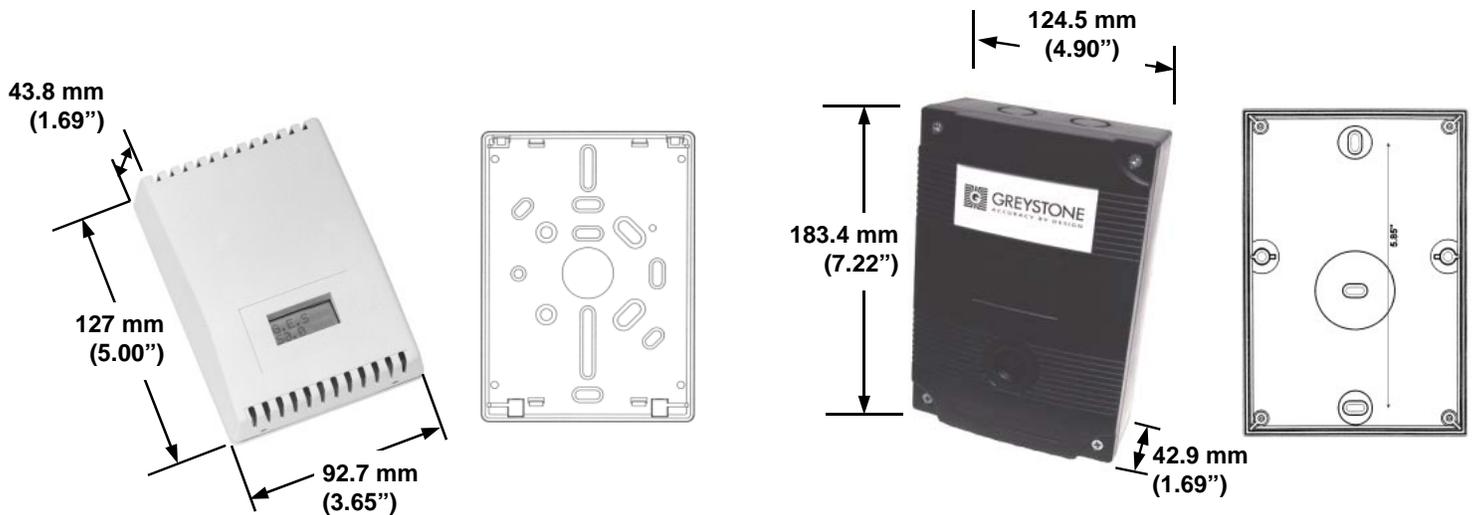
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CDD	1 A 1 00 0 ← Typical Model Number								

**Example:** NDIR CO<sub>2</sub> Corporate No Relay No Options

Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.



## DIMENSIONS nts



## ACLP SOFTWARE AND 5 YEAR CALIBRATION GUARANTEE

### **ACLP SOFTWARE**

**ACLP** (Automatic Calibration Logic Program) software utilizes the computing power in the sensor's on-board micro-processor to remember the lowest CO<sub>2</sub> concentration that takes place every 24 hours. The sensor assumes this low point is at outside levels. The sensor is also smart enough to discount periodic elevated readings that might occur if for example a space was used 24 hours per day over a few days. Once the sensor has collected 14 days worth of low concentration points it performs a statistical analysis to see if there has been any small changes in the sensor reading over background levels that could be attributable to sensor drift. If the analysis concludes there is drift, a small correction factor is made to the sensor calibration to adjust for this change.

### **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<sub>2</sub> 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 (e.g. where occupancy is 24 hours, 7 days/week), **ACLP** software should be deactivated off. With **ACLP** deactivated (via menu buttons) calibration may be required every 2 to 3 years.



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www.greystoneenergy.com

*Greystone Energy Systems Inc., established in 1983, is Canada's largest manufacturer of HVAC sensors and transducers 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 9002 certified, assuring our customers of consistent product reliability.*

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