GREYSTONE ENERGY SYSTEMS INC

ROOM CO2, TEMP & HUMIDITY DETECTOR
CDD5 Series

The CDD5*10 series uses a highly accurate and reliable Non-dispersive Infrared (NDIR) sensor to monitor CO_2, a precision thermistor to monitor temperature and a thermoset polymer based capacitance sensor to measure humidity levels combined with state-of-the-art digital linearization and temperature compensated circuitry in an attractive, low profile enclosure for room applications and provides 3 analog outputs. Optional setpoint slidepot, momentary override and adjustible relay outputs are also available.

SPECIFICATION:

Power Supply ..... 20-28 Vac/dc (non-isolated half-wave rectified)
Output Signals ..... **Current** 4-20mA (Model CDD5A & C)
Voltage 0-5 Vdc or 0-10 Vdc (Model CDD5B & D)
Consumption ..... **Current:** 145 mA max @ 24Vdc, 260 mA max @24 Vac (with all options)
Voltage: 85 mA max @ 24 Vdc, 150 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 protected and output limited
Operation Conditions ... 0˚-50°C (32˚-122°F), 5-95% 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 ..... **CDD5A & B:** Non-Dispersive Infrared (NDIR), diffusion sampling
CDD5C & D: Dual Channel Non-Dispersive Infrared (NDIR), diffusion sampling
Measurement Range ..... **CDD5A & B:** 0 - 2000 ppm
CDD5C & D: 0 - 20,000 ppm standard, programmable span from 2000 to 20,000 ppm
Standard Accuracy ..... **CDD5A & B:** ±30 PPM + 3% of reading with Auto Cal on
CDD5C & D: ±75 PPM or 10% of reading (whichever is greater)
Temp. Dependence ..... 0.2% FS per °C
Stability ..... **CDD5A & B:** < 2 % FS over life of sensor (15 years typical)
CDD5C & D: < 5 % 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 keypad
Response Time ..... <2 minutes for 90% step change typical
Warm-up Time ..... <2 minutes

Temperature Signal:

Sensing Element ..... 10K thermistor, ±0.2˚C (±0.4 °C)
Range ..... 0˚ to 35˚C (32˚ to 95˚F) or 0˚ to 50˚C (32˚ to 122˚F) selectable via keypad

RH Signal:

Sensing Element ..... Thermoset polymer based capacitive
Accuracy ..... ± 2% RH
Range ..... 0 - 100% RH, non-condensing
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
CDD5A10	Room Carbon Dioxide Detector, 0-2000 ppm, Temperature & Humidity, 4-20 mA
CDD5B10	Room Carbon Dioxide Detector, 0-2000 ppm, Temperature & Humidity, 0-5 or 0-10 Vdc
CDD5C10	Room Carbon Dioxide Detector, 0-20,000 ppm, Temperature & Humidity, 4-20 mA
CDD5D10	Room Carbon Dioxide Detector, 0-20,000 ppm, Temperature & Humidity, 0-5 or 0-10 Vdc

CODE	Display
0	Concealed
1	Viewable

CODE	Options (Multiple selections can be made) (Leave blank if no options required)
P	Linear slide pot for set point control
S	Exposed push button momentary switch - N.O.
R	Relay Output

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

Override Switch ..... Front panel push-buttom available as two-wire dry-contact output

Setpoint Control ..... Front panel slidepot available as two-wire resistive output, 0-10 KΩ standard

Optional Relay Output:

Contact Ratings ..... Form A contact (N.O.), 2 Amps @ 140 Vac, 2 Amps @ 30 Vdc
Relay Trip Point ..... **CDD5A & B:** Programmable 500-2000 ppm via keypad
CDD5C & D: Programmable 500-15,000 ppm via keypad
Relay Hysteresis ..... **CDD5A & B:** Programmable 25-200 ppm via keypad
CDD5C & D: Programmable 25-500 ppm via keypad

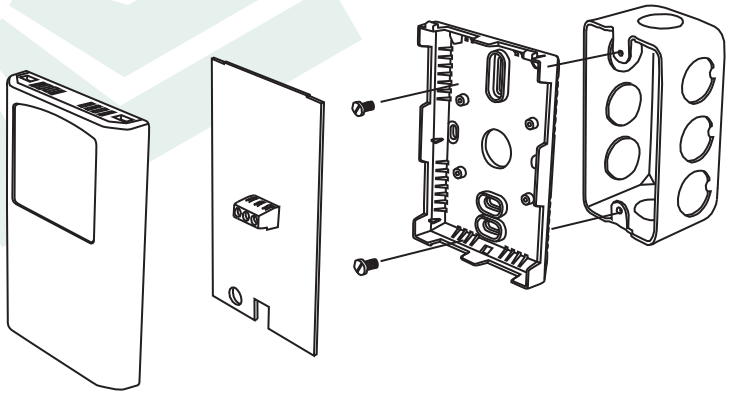
RoHS COMPLIANT

TYPICAL INSTALLATION:

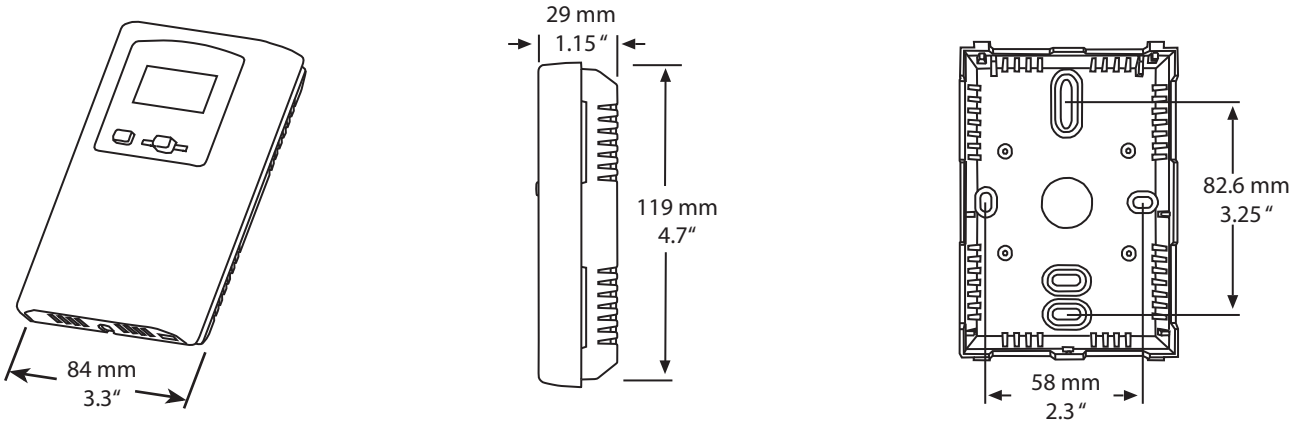
For complete installation and wiring details, please refer to the product installation instructions.

The CDD5 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 CDD5 has a 5 wire configuration with 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 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) a dual sensor channel should be selected.

GREYSTONE
ENERGY SYSTEMS INC

Greystone Energy Systems Inc.
150 English Drive, Moncton,
New Brunswick, Canada E1E 4G7

(506) 853-3057 Fax: (506) 853-6014
North America: 1-800-561-5611
e-mail: mail@greystoneenergy.com
web site: www.greystoneenergy.com

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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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