



# GREYSTONE

ENERGY SYSTEMS INC

## CARBON DIOXIDE TRANSMITTER CDDT Series

The CO<sub>2</sub> transmitter uses Infrared Technology to monitor CO<sub>2</sub> levels and outputs a linear 4-20 mA or 0-5/0-10 Vdc signal. Options include an LCD, a control relay and a resistive temperature sensor. Features include a back-lit LCD and user menu for easy installation.

### SPECIFICATIONS:

Power Supply .....	20 - 28 Vac/dc (non-isolated half-wave rectified)
Consumptions .....	120 mA max @ 24 Vdc, 212 mA max @ 24 Vac (mA models) 79 mA max @ 24 Vdc, 129 mA max @ 24 Vac (voltage models)
Output Signals.....	4-20 mA active (sourcing) or 0-5 Vdc / 0-10 Vdc (field selectable)
Output Drive Capability .....	<b>Current:</b> 550 ohms maximum <b>Voltage:</b> 5 Kohm minimum
Output Resolution .....	10 bit PWM
Input Voltage Effect.....	Negligible over specified operating range
Protection Circuitry.....	Reverse voltage protected, overvoltage protected
Operating Conditions .....	0-50°C (32-122°F), 0-95 %RH non-condensing
LCD Resolution.....	1 ppm CO <sub>2</sub>
LCD Size .....	35 mm W x 15 mm H (1.4" x 0.6") alpha-numeric 2 line x 8 characters
LCD Backlight.....	Enable or disable via keypad
Wiring Connections.....	Screw terminal blocks, 14 to 22 AWG
Enclosure.....	Polycarbonate, UL94-V0 IP65 (NEMA 4X) F style includes thread adapter (1/2" NPT to M16) and cable gland fitting
Probe.....	152 mm L x 22.5 mm D (6" x 0.85")
Country of Origin.....	Canada

### CO<sub>2</sub> SIGNAL

Measurement Type .....	Non-Dispersive Infrared (NDIR), diffusion sampling
Measurement Range.....	0-2000 ppm (Sensor 1) or 0-20,000 ppm (Sensor 2), programmable span
Standard Accuracy.....	+30 ppm +3% or reading (Sensor 1 0-2000 ppm range with Auto Cal), +75 ppm or 10% of reading (whichever is greater) (Sensor 2 0-20,000 ppm range with dual channel

sensor)

Temperature Dependence...	0.2 %FS per °C
Stability .....	<2 %FS over life of sensor (15 years typical) Sensor 1 (0-2000 ppm), <5 %FS over life of sensor (15 year typical) Sensor 2 (0-20,000 ppm)

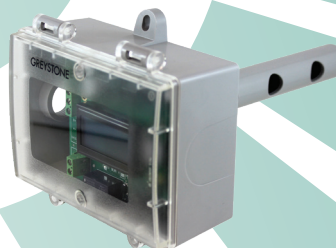
Pressure Dependence.....	0.13% of reading per mm Hg
Altitude Correction .....	Programmable from 0-5000 ft via keypad
Response Time .....	<2 minutes for 90% step change typical
Warm-up Time .....	<2 minutes

### OPTIONAL TEMPERATURE SIGNAL

Sensing Element.....	10K thermistor, +0.2°C (+0.4°F)
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### OPTIONAL RELAY OUTPUT

Contact Ratings.....	Form A contact (N.O.), 2 Amps @ 140 Vac, Amps @ 30 Vdc
Relay Trip Point.....	Programmable via keypad
Relay Hysteresis.....	Programmable via keypad

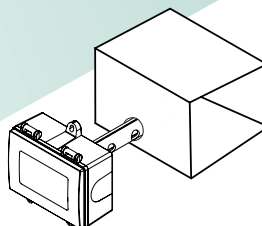


### TYPICAL INSTALLATION:

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

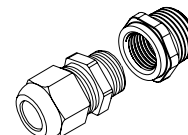
The duct type probes are installed through a hole in the side of the duct to monitor a single point temperature within the duct. Since the probes are tip sensitive, select a probe length that places the sensor well into the duct. Install the probe in a straight section of duct at a suitable distance downstream from any heating, cooling or humidification devices.

The enclosure provides mounting tabs for ease of installation.

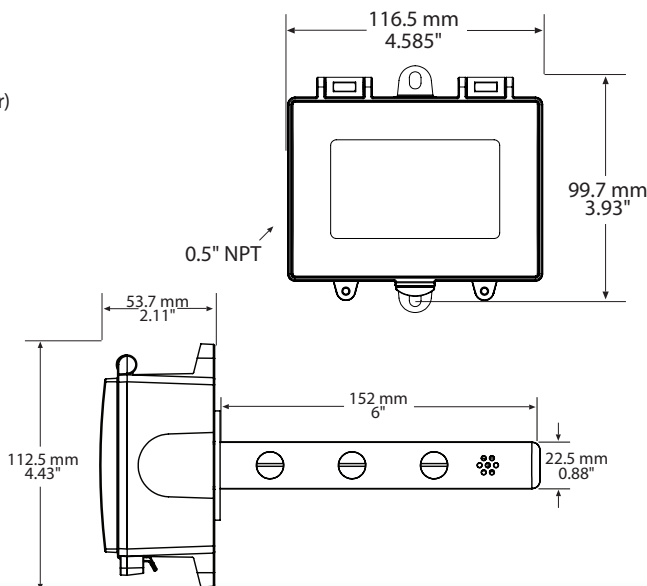


Included with F style enclosure  
Thread Adapter

Cable Gland Fitting



### DIMENSIONS:



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## PART NUMBER SELECTED

## PRODUCT SELECTION INFORMATION:

MODEL	Product Description
CDDT	Duct Carbon Dioxide (CO <sub>2</sub> ) Transmitter
CODE	Enclosure
B	Polycarbonate with hinged and gasketed cover
F	Same as B with thread adapter & cable gland fitting
CODE	CO <sub>2</sub> Sensing & Range
1	Non-Dispersive Infrared (NDIR), diffusion sampling, 0-2000 ppm
2	Non-Dispersive Infrared (NDIR), diffusion sampling, 0-20,000 ppm, adjustable
CODE	Relay Output
X	No relay
R	Relay
CODE	Optional Temperature Sensor
00	No Sensor Option
02	100 Ω, Platinum, IEC 751, 385 Alpha, thin film
05	1801 Ω, NTC Thermistor, ±0.2°C
06	3000 Ω, NTC Thermistor, ±0.2°C
07	10,000 Ω, Type 3, NTC Thermistor, ±0.2°C
08	2.25K Ω, NTC Thermistor, ±0.2°C
12	1000 Ω, Platinum, IEC 751, 385 Alpha, thin film
13	1000 Ω, Nickel, Class B, DIN 43760
14	10,000 Ω, Type 3, NTC Thermistor, ±0.2°C c/w 11K shunt resistor
20	20,000 Ω, NTC Thermistor, ±0.2°C
24	10,000 Ω, Type 2, NTC Thermistor, ±0.2°C

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

## 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 (i.e. where occupancy is 24 hours, 7 days/week).



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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