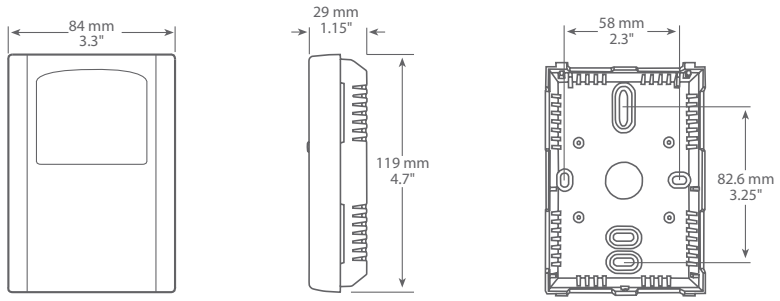
GREYSTONE
ENERGY SYSTEMS INC

ROOM CARBON DIOXIDE DETECTOR



CD2RMC SERIES

PRODUCT DESCRIPTION

The room CO_2 transmitter device uses a highly accurate and reliable nondispersive infrared (NDIR) sensor in an attractive, low profile enclosure for room applications to monitor CO_2 levels. The sensor uses dual wavelength optics and LTA (long term adjustment) signal processing technology to deliver industry leading long-term accuracy and reliability. These technology features ensure optimum measurement stability for both periodic and constant occupancy applications, so the device is equally suitable for a classroom or a hospital room.

Standard features include a field selectable output signal of either 4-20 mA, 0-5 Vdc or 0-10 Vdc for the highest versatility, programmable CO_2 measurement span, a backlit alpha-numeric LCD and easy menu operation for configuration.

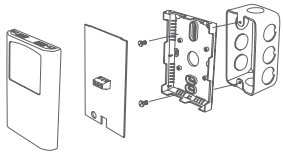
Optional features include a resistive temperature sensor output (with LCD display of temperature in either °C or °F), 2 button setpoint adjustment, a control relay with programmable setpoint, hysteresis and time delay, and a dry-contact override switch.

TYPICAL INSTALLATION

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

The CD2RMC 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 CD2RMC has a 3 wire configuration with a screw block terminal provided for connection to the Building Automation System.



SPECIFICATIONS

GAS TYPE DETECTED	Carbon Dioxide (CO_2)
SENSOR TYPE	Dual channel non-dispersive infrared (NDIR)
SENSOR ACCURACY	± (30ppm + 3% of measured value)
MEASUREMENT RANGE	0-2000ppm, adjustable 1000 - 10000ppm
TEMPERATURE DEPENDENCY	±2.5ppm/°C
RESPONSE TIME	20 seconds (T63)
WARM-UP TIME	1 minute
SENSOR COVERAGE AREA	100 m² (1000ft²) typical
SENSOR LIFE SPAN	>15 years
TRANMSITTER ACCURACY	±0.25% of span (including linearity, hysteresis and repeatability)
POWER SUPPLY	24 Vdc ±20% or 24 Vac ±10% (non-isolated half-wave rectified)
PROTECTION CIRCUITRY	Reverse voltage protected and transient protected
INPUT VOLTAGE EFFECT	Negligible over specified operating range
OUTPUT SIGNAL TYPE	4-20 mA (3-wire), 0-5 or 0-10 Vdc (field selectable)
CURRENT CONSUMPTION	**Current:** 75 mA @ 24 Vdc max, 150 mA @ 24 Vac max **Voltage:** 50 mA @ 24 Vdc max, 100 mA @ 24 Vac max
OUTPUT DRIVE @ 24 VDC	**Current:** 550Ω max **Voltage:** 10,000Ω min
AMBIENT OPERATING RANGE	0 to 50°C (32 to 122°F), 0 to 95 %RH non-condensing
STORAGE TEMPERATURE	-40 to 70°C (-40 to 158°F)
LCD DISPLAY	**Units:** ppm (CO_2), °C/°F (optional temperature/setpoint) **Range:** 0 to 10000ppm, 0 to 50°C (32 to 122°F) **Size:** 35mm W x 15mm H (1.4" x 0.6"), 2 lin x 8 character, alpha-numeric **Digit Height:** 2-line x 8 character
OPTIONAL TEMPERATURE SENSOR	**Type:** Thermistor and RTD (see ordering chart) **Accuracy:** See ordering chart **Output:** 2-wire resistive
OPTIONAL RELAY (2-WIRE OUTPUT)	**Rating:** Form A (N.O.), 2 Amps @ 140 Vac / 30 Vdc
OPTIONAL OVERRIDE SWITCH (2-WIRE OUTPUT)	**Rating:** 50 mA @ 12 Vdc max
OPTIONAL SETPOINT CONTROL	**Type:** Front panel up/down pushbuttons **Range:** ±10 resistive steps, range 16 to 26°C in 0.5°C increments or 60 to 80°F in 1°F increments **Midpoint:** Default 21°C/70°F, programmable 18 to 25°C (64 to 77°F) **Resolution:** Programmable 0.5 / 1°C/°F **Action:** Programmable direct or reverse acting
ENCLOSURE	**Material:** ABS, White **Dimensions:** 84mm W x 119mm H x 29mm D (3.3" x 4.7" x 1.15") **Protection:** IP30 (NEMA 1)
WIRING	Screw terminal block (14 to 22 AWG)
APPROVALS	CE
COUNTRY OF ORIGIN	Canada

NOTE: This CO_2 sensor incorporates a Self Calibration feature to correct CO_2 sensor drift. This feature is recommended for applications where the CO_2 level will be close to normal (400 ppm) at least one hour per day. If the monitored space is occupied 24 hours or consistently maintains higher or lower levels of CO_2, it is recommended that this feature be turned off, but yearly calibration will be required.

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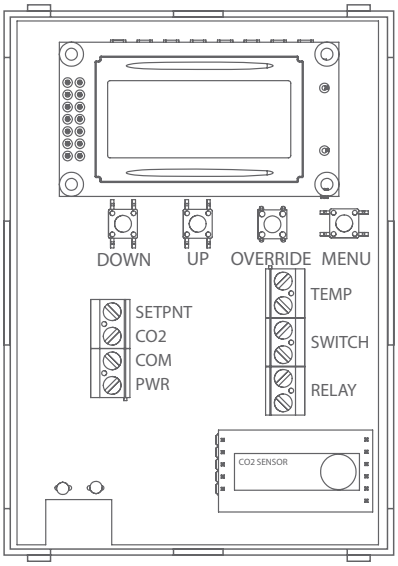
WIRING INFORMATION



TERMINAL	FUNCTION
SETPNT	Resistance Output
CO_2	Analog Output
COM	COMMON
PWR	Supply Voltage
TEMP	Resistance Output
SWITCH	Digital Output
RELAY	Digital Output

ORDERING

			PART NUMBER
PRODUCT	**CD2RMC**	Room Carbon Dioxide Sensor	
DISPLAY	**C** **V**	Concealed LCD (Not available if setpoint selected) Viewable LCD	
OPTIONAL TEMPERATURE SENSOR	**XX** **02** **05** **06** **07** **08** **12** **13** **14** **20** **24** **59**	None 100 Ω Platinum, IEC 751, 385 Alpha, thin film, 3-wire 1801 Ω NTC Thermistor, ±0.2°C 3000 Ω NTC Thermistor, ±0.2°C 10,000 Ω Type 3, NTC Thermistor, ±0.2°C 2.252K Ω NTC Thermistor, ±0.2°C 1000 Ω Platinum, IEC 751, 385 Alpha, thin film 1000 Ω Nickel, Class B, DIN 43760 10,000 Ω Type 3, NTC Thermistor, ±0.2°C c/w 11,000 shunt resistor 20,000 Ω NTC Thermistor, ±0.2°C 10,000 Ω Type 2, NTC Thermistor, ±0.2°C 10,000 Ω, 25°C, ±1%, B = 3435 ±1% (25/85)	
OPTIONAL RELAY	**X** **R**	None Adjustable Relay	
OPTIONAL OVERRIDE	**X** **S**	None Override	
OPTIONAL SETPOINT ADJUSTMENT	**XXX** **P00** **P01** **P02**	None 0 to 10,000Ω 20,000 to 30,000Ω 2,000 to 3,000Ω	

NOTE: Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.
NOTE: Additional setpoint values are available. Please contact Greystone.

ACCESSORIES	**CDD1-CALKIT-GS**	Calibration kit (Gas not included) for calibrating CD & CDD series CO_2 Transmitters.	

5-YEAR CALIBRATION GUARANTEE

Greystone offers a 5-year calibration guarantee on all its CD series wall and duct mount sensors used for CO_2 based ventilation control when operated in an environment that can utilize ASC 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 ASC software.

RoHS COMPLIANT

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