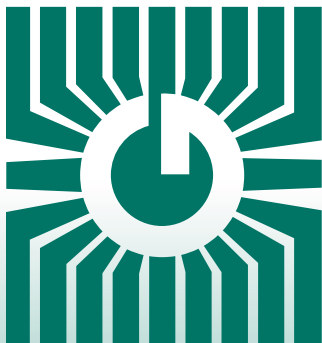


GREYSTONE

ENERGY SYSTEMS INC



CARBON MONOXIDE (CO) DETECTORS CMD Series



Precision gas control/sensing

FEATURES:

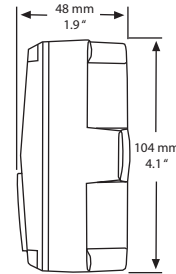
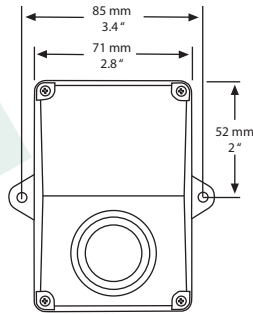
- Space or duct mount models
- Long-life electrochemical sensor
- Various analog outputs
- LCD display
- Optional relay outputs & audible alarm
- BACnet® or Modbus communication

Peace of mind
through reliable
gas monitoring

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM

DESCRIPTION:

The CMD5B1 Series carbon monoxide detector uses a superior electrochemical sensor for reliability and accuracy in even the most critical applications. The standard product features a 2-wire loop-powered output. Optionally, the device may be configured with an alarm relay which operates in 3-wire sourcing mode and/or with Modbus communications.



SPECIFICATION:

Sensor Type	Electrochemical
Sensor Agency Approvals	Sensor is a UL Recognized Component for ANSI/UL-2034, UL-2075, E240671
Measurement Range	Analog: 0-300 PPM Modbus: 0-500 PPM
Accuracy	±5 PPM or 5% of reading for 0-300 PPM (whichever is greater)
Accuracy rated	0° to 50°C (32° to 122°F), 15 to 95%
Life Expectancy	5-7 years in air
Typical Coverage Area	700 m ² (7500 ft ²) or 15m (50ft) radius
Operating Conditions	-20° to 50°C (-4° to 122°F), 15 to 95% RH
Sample Method	Diffusion
Stability	<5% signal loss/year
Response Time	<35 seconds for 90% step change
Power Supply	24 Vdc ±20% or 24 Vac ±10% (non-isolated half-wave rectified) Modbus: 24 Vdc ±20%
Consumption	20 mA max. with Relay option: 50 mA max. Modbus: 35 mA max.
Input Voltage Effect	Negligible over specified operating range
Protection Circuitry	Reverse voltage protected and output limited
Output Signal	4-20 mA loop-powered, 4-20 mA sourcing with relay option
Output Drive at Capability	550 ohms max. @ 24 Vac/Vdc
Optional Relay Output	Form C contact (N.O. and N.C.) - Not available with Modbus Communications
.....	5 amps @ 250 Vac, 5 amps @ 30 Vdc, p.f. = 1
.....	Trip Point - 25, 60 or 150 PPM, jumper selectable
.....	Hysteresis - 3% or 9 ppm
Optional Modbus	Hardware
.....	2-wire RS-485
.....	Software
.....	Native ModBus MS/TP protocol (RTU)
.....	Baud Rate
.....	9600
.....	Slave Address Range
.....	Locally set to 1-255
.....	Parity
.....	None
.....	Stop Bits
.....	1
.....	CRC
.....	A001 (CRC-16 reverse)
Wiring Connections	Screw terminal block (14 to 22 AWG)
External Dimensions	71 x 104 x 48 mm (2.8" w x 4.1" h x 1.9"d)
Enclosure Ratings	ABS - UL94-V - IP65, (NEMA 4X)
Field Calibration	By applying calibration gas standards (Contact Greystone for calibration kit)
Accessories	Calibration kit, model# CMD-CALKIT-GS

PRODUCT ORDERING INFORMATION:

MODEL	Product Description
CMD5B1	Carbon Monoxide Detector (CO), Electrical

CODE	Relay (s)
000	No Relay
100	One Relay (Not available with Modbus Communications)

CODE	Options
MOD	Modbus Communication

CMD5B1	100	-
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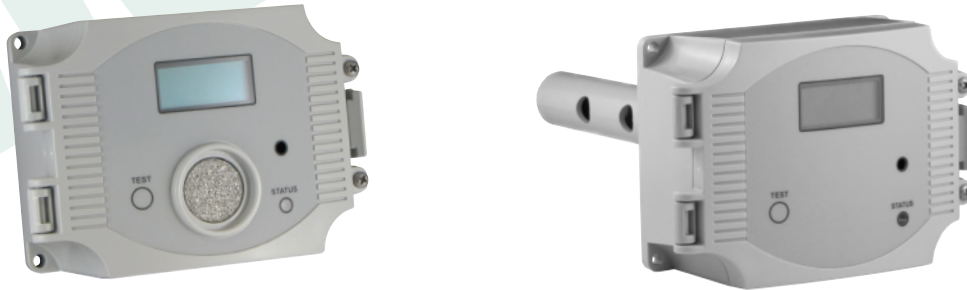
Greystone Energy Systems Inc. reserves the right to make design modifications without prior notice.

DESCRIPTION:

The CMD5B4 & 5 Series carbon monoxide detector uses an electrochemical sensor to monitor the carbon monoxide level and outputs a field-selectable 4-20 mA or voltage signal. The voltage signal may be set to 0-5 or 0-10 Vdc. The sensing range and output may be scaled to either 100, 150, 300, 400 or 500 ppm via the on-board menu. A front panel LCD is standard to ensure easy setup and operation. It is available in either wall/surface or duct mount configurations.

Other standard features include a back light for the LCD, a front panel test switch, status indication and an alarm buzzer. The test function may also be controlled remotely with a digital input signal. The on-board menu allows local configuration of all device parameters.

Optional features include one or two alarm relays and/or RS-485 network communication configured for either ModBus or BACnet® protocol.



SPECIFICATION:

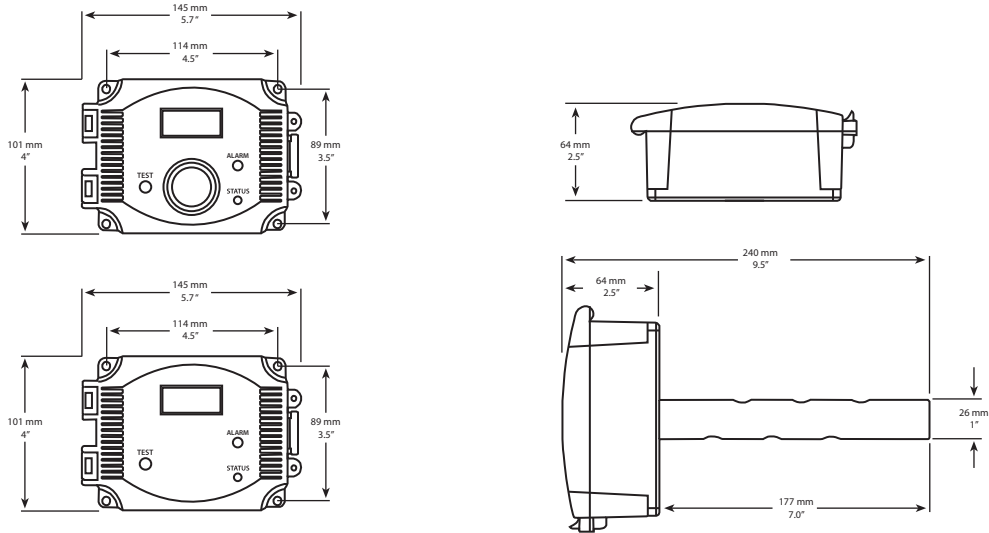
Sensor Type	Electrochemical
Sensor Agency Approvals	Sensor is UL Recognized Component for ANSI/UL-2034, UL-2075, E240671
Measurement Range	0-100, 150, 300, 400, or 500 PPM (Selectable)
Accuracy	±5 PPM or 5% of reading (whichever is greater)
Accuracy rated	0° to 50°C (32° to 122°F), 15 to 95%
Life Expectancy	5-7 years in air
Typical Coverage Area	700 m ² (7500 ft ²) or 15 m (50 ft) radius
Operating Conditions	-20° to 50°C (-4° to 122°F), 15 to 95% RH, 0.9 to 1.1 atm
Sample Method	Diffusion or flow through sample tube for duct mounted models
Stability	<5% signal loss/year
Response Time	<35 seconds for 90% step change
Power Supply	24 Vdc ± 20% or 24 Vac ± 10% (non-isolated half-wave rectified)
Consumption	100 mA max. with all options on
Protection Circuitry	Reverse voltage protected and output limited
Output Signal	4-20 mA active (Active), 0-5 or 0-10 Vdc (Selectable)
Output Drive at Capability	450 ohms max for current output, 10 Kohms min for voltage output
Output Resolution	10 bit PWM (±0.4 ppm)
LCD Display	Displays PPM and menu parameters 1 PPM resolution, 35 mmW x 15 mm H (1.4" x 0.6") Alpha-numeric 2 line X 8 character with backlight
Status LED	Two color (red/green) on front panel
Test Switch	Performs I/O tests, front panel and remote connection
Buzzer Alarm	85 db @ 10 cm
Buzzer trip Point	Programmable 20-500 ppm in 10 ppm increments
Buzzer Delay	Programmable 0-10 minutes in 1 minute increments
Optional Relay Output	One or two Form C contact (N.O. and N.C.) 5 amps @ 250 Vac, 5 amps @ 30 Vdc, p.f. = 1 Relay 1 Trip Point - Programmable 20-500 PPM in 10 PPM increments Relay 2 Trip Point - Programmable 20-500 PPM in 10 PPM increments Relay Hysteresis - Programmable 10-100 PPM in 5 PPM increments Relay Delay - Programmable 0-10 minutes in 1 minute increments
Optional Communications	BACNet® or Modbus (Refer to installation instructions for full details)
Wiring Connections	Screw terminal block (14 to 22 AWG)
External Dimensions	Space, 145 x 101 x 64mm (5.7" w x 4" h x 2.5" d) Duct, 145 x 101 x 240mm, (5.7" w x 4" h x 9.5" d) includes probe
Enclosure Ratings	Space (4) - ABS - UL94-V - IP65, NEMA 4X Duct (5) - ABS - UL94-V - IP65, NEMA 4X
Field Calibration	By applying calibration gas standards (Contact Greystone for calibration kit)
Accessories	Calibration kit, model# CMD-CALKIT-GS

PRODUCT ORDERING INFORMATION:

MODEL	Product Description
CMD	Carbon Monoxide Detector (CO), Electrical
CODE	Enclosure
4	Space
5	Duct
CODE	Relay (s)
000	No Relay
100	One Relay
110	Two Relay
CODE	Options
BAC	BACnet® Communications
MOD	Modbus Communications
CMD5B	4 000 -

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DIMENSIONS:



BACnet® COMMUNICATION



BACnet® is a data communication protocol for building automation and control networks. The detector communicates on a standard 2-wire RS-485 MS/TP (master-slave/token-passing) network designed to run at speeds from 9600 to 76800 baud over twisted pair wiring.

BACnet is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to the requirements of ASHRAE Standard 135 is the responsibility of BACnet International (BI). BTL is a registered trademark of BI.

MODBUS COMMUNICATION

Modbus is a network protocol for industrial manufacturing environments. The detector communicates on a standard Modbus network using either of two transmission modes: RTU (Remote Terminal Unit) or ASCII (American Standard Code for Information Interchange). The hardware interface is RS-485. Select the desired mode along with the other parameters using the Configuration Menu.



GREYSTONE

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RoHS
COMPLIANT



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.

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