

Deluxe Duct and Wall CO₂ Sensors

Individual or 3-in-1 CO₂, RH, and Temperature



DESCRIPTION

CDL/CWL carbon dioxide sensors maximize energy savings, while ensuring optimal ventilation. These sensors allow ventilation systems to be controlled by the amount of CO₂ present in a space. The CWL/CDL Series detect fluctuations in CO₂ levels and signal ventilation systems to provide an inlet of fresh air optimal for the space at a given time saving energy and ensuring tenant comfort.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1 standard for air quality
- Office buildings, conference rooms, schools, retail stores, etc.

FEATURES

- Microprocessor-based design increases accuracy and reduces installation time
- Non-dispersive infrared technology (NDIR) repeatable to ± 20 ppm $\pm 1\%$ of measured value...high accuracy measurement
- Innovative self-calibration algorithm...easy to maintain
- 5-year calibration interval (recommended)
- Field-selectable outputs for operation flexibility
- Integrated transducer and probe...eliminates the need to install a separate pick-up tube
- Snap-on faceplate...no screws required, making installation and service easy
- Adjustable duct probe...simplifies installation and airflow monitoring
- CO₂, humidity, and temperature sensing all in one compact device...fewer units to buy and install

SPECIFICATIONS



Input Power	20 to 30VDC/24VAC; 100mA max.
Analog Output	4-20mA (clipped & capped)/0-5VDC/0-10VDC (selectable)
Operating Temperature Range	CDL: 0° to 50°C (32° to 122°F) CWL: No humidity option: 0° to 50°C (32° to 122°F); With humidity option: 10° to 35°C (50° to 95°F)
Operating Humidity Range	0 to 95% RH noncondensing
Housing Material	High impact ABS plastic

CO₂ Transmitter:

Sensor Type	Non-dispersive infrared (NDIR), diffusion sampling
Output Range	0-2000/5000 ppm (programmable)
Accuracy	± 30 ppm $\pm 2\%$ of measured value*
Repeatability	± 20 ppm $\pm 1\%$ of measured value
Response Time	<60 seconds for 90% step change

RH Transmitter:

HS Sensor	Fully replaceable, digitally profiled thin-film capacitive (32-bit mathematics) U.S. Patent 5,844,138
Accuracy	$\pm 2\%$ from 10 to 80% RH @ 25°C; NIST traceable multi-point calibration
Hysteresis	1.5% typical
Stability	$\pm 1\%$ @ 20°C (68°F) annually for two years
Output Range	0-100% RH
Temperature Coefficient	$\pm 0.1\%$ RH/°C above or below 25°C (typical)

Temperature Transmitter:

Sensor Type	Solid-state, integrated circuit
Accuracy	$\pm 0.5^\circ\text{C}$ ($\pm 1^\circ\text{F}$) typical
Resolution	0.1°C (0.2°F)
Output Range	10° to 35°C (50° to 95°F)

Relay Contacts:

1 Form C (SPDT) (on models without setpoint slider option)	1A@30VDC, resistive; 30W max.
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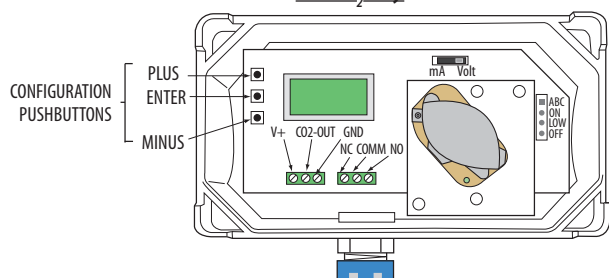
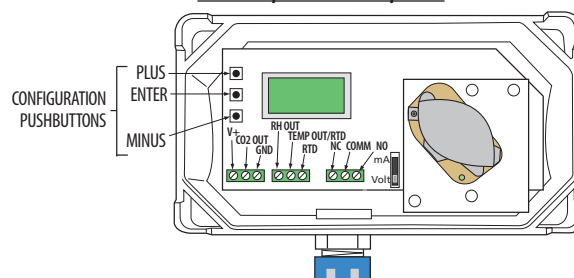
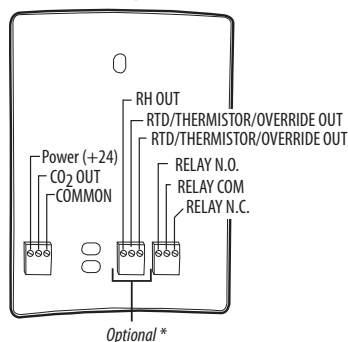
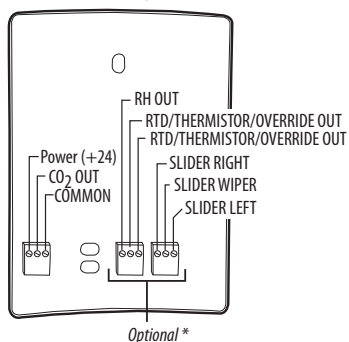
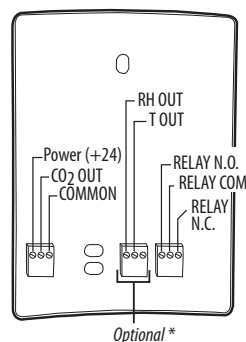
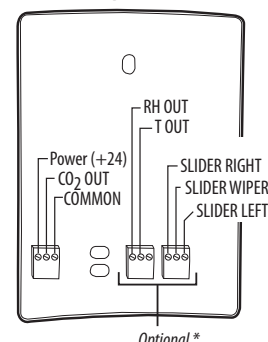
RTD/Thermistors in wall packages are not compensated for internal heating of product.

EMC Conformance: Low voltage directive 2006/95/EC and EMC directive 2004/108/EC.

EMC Special Note: Connect this product to a DC distribution network or an AC/DC power adaptor with proper surge protection (EN 61000-6-1:2007 specification requirements).

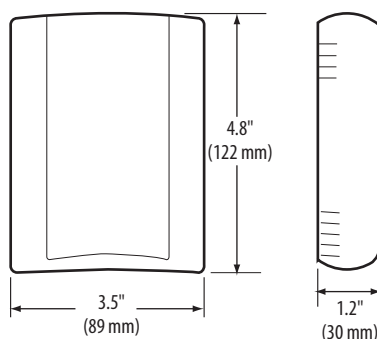
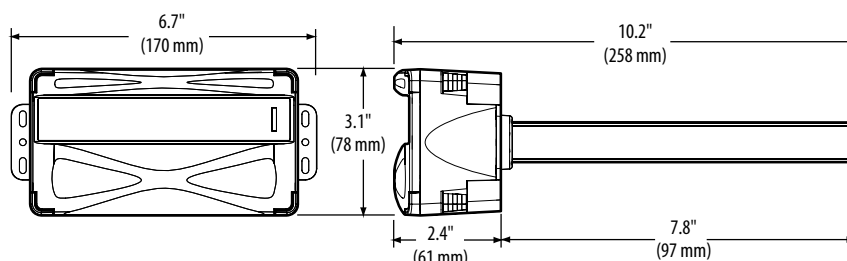
Note: Rough handling and transportation may cause a temporary reduction of CO₂ sensor accuracy. With time, the ABC function will tune the readings back to the correct accuracy range. The default tuning speed is limited to 30 ppm per week.

APPLICATION/WIRING DIAGRAMS

CDL: CO₂ only

CDL: Temp and/or RH Options

CWL: CO₂, RH, Thermistor, Pushbutton Override, and Relay Options

CWL: CO₂, RH, Thermistor, Pushbutton Override, and Setpoint Slider Options

CWL: CO₂, RH, Temperature Transmitter Options

CWL: CO₂, RH, Temperature Transmitter, and Setpoint Slider Options


* Note: Connector blocks and headers for optional features are not included with non-option models.

DIMENSIONAL DRAWINGS

CWL Wall Mount

CDL Duct Mount


ORDERING INFORMATION


Duct Mount

RH Option	Temp	Sensor Type	Optional Cal Cert
CDLS ☐	☐	☐	☐
H = RH 2% X = No RH	T = Temp X = No Temp (Stop here)	A = Transmitter B = 100R Platinum, RTD C = 1k Platinum, RTD D = 10k T2, Thermistor E = 2.2k, Thermistor F = 3k, Thermistor G = 10k CPC, Thermistor H = 10k T3, Thermistor J = 10k Dale, Thermistor K = 10k w/11k shunt, Thermistor M = 20k NTC, Thermistor N = 1800 ohm, Thermistor R = 10k US, Thermistor S = 10k 3A221, Thermistor T = 100k, Thermistor U = 20k "D", Thermistor W = 10k T2 high accuracy, Thermistor Y = 10k T3 high accuracy, Thermistor Z = 10k E1, Thermistor	Blank = None 1 = 1 pt Temp Cert 2 = 2 pt Temp Cert

Example:

CDLS ☐ H ☐ T ☐ B ☐ 2

Wall Mount

RH Option	Temp	Sensor Type	Temp Cal Cert	Option	Setpoint Slider Value	Housing
CWLS ☐	☐	☐	☐	☐	☐	☐
H = RH 2% X = No RH	T = Temp X = No (stop here)	A = Transmitter B = 100R Platinum, RTD C = 1k Platinum, RTD D = 10k T2, Thermistor E = 2.2k, Thermistor F = 3k, Thermistor G = 10k CPC, Thermistor H = 10k T3, Thermistor J = 10k Dale, Thermistor K = 10k w/11k shunt, Thermistor M = 20k NTC, Thermistor N = 1800 ohm, Thermistor R = 10k US, Thermistor S = 10k 3A221, Thermistor T = 100k, Thermistor U = 20k "D", Thermistor W = 10k T2 high accuracy, Thermistor Y = 10k T3 high accuracy, Thermistor Z = 10k E1, Thermistor	X = No 1 = 1pt Temp Cert 2 = 2pt Temp Cert	1 = Push Button Override * 2 = Set Point Slider 3 = Push Button Override*+Set Point Slider	A = 1k F = 10k G = 20k K = 50k M = 100k	Blank = Cloud white B = Black

ACCESSORIES

Calibration kits and gases

(AA01, AA26, AA27, AA28, AA29)

Handheld air quality testers

(1010, 1008, 770)

Replacement covers and housing for wall units (AA52, AA52B, AA55)

Available Options
Example:

CWLS ☐ H ☐ T ☐ C ☐ 2 ☐ 2 ☐ A

* The Push Button Override feature is not available with temperature transmitter models. Only resistive temperature models qualify for this feature