

C SERIES

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



CDL/CWL carbon dioxide (CO₂) sensors maximize energy savings, while helping optimize 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 increasing tenant comfort.

SPECIFICATIONS

Input Power	Class 2; 20 to 30 Vdc/24 Vac 50/60 Hz; 100 mA max.
Analog Output	4 to 20 mA (clipped and capped)/0 to 5 Vdc/0 to 10 Vdc (selectable)
Operating Temp Range: CDL CWL	0 to 50 °C (32 to 122 °F) 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 non-condensing
Housing Material	High impact ABS plastic
Terminal Block Torque: CDL CWL	0.2 N-m (2.0 in-lbf) max. 0.22 N-m (2.0 in-lbf) max.
Terminal Block Wire Size: CDL CWL	28 to 14 AWG (0.5 to 1.5mm ²) 30 to 18 AWG (0.08 to 0.5mm ²)

CO₂ TRANSMITTER

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

RH TRANSMITTER OPTION

HS Sensor	Fully replaceable, digitally profiled thin-film capacitive (32-bit mathematics) U.S. Patent 5,844,138
Accuracy	±2% from 10 to 80% RH @ 25 °C; NIST traceable multi-point calibration

Microprocessor based

Microprocessor-based design increases accuracy and reduces installation time

Self-calibrating

Innovative self-calibration algorithm...easy to maintain

NDIR

Non-dispersive infrared technology (NDIR) repeatable to ±20 ppm ±1% of measured value...high accuracy measurement

APPLICATIONS

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

Snap-on faceplate

Snap-on faceplate...no screws required, making installation and service easy

Field-selectable

Field-selectable outputs for operation flexibility

Integrated probe

Integrated transducer and probe...eliminates the need to install a separate pick-up tube

Hysteresis	1.5% typical
Stability	±1% @ 20 °C (68 °F) annually for two years
Output Range	0 to 100% RH
Temperature Coefficient	±0.1% RH/°C above or below 25 °C (typical)

TEMPERATURE TRANSMITTER OPTION

Sensor Type	Solid-state, integrated circuit
Accuracy	±0.5 °C (±1 °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 wall models, relay is only available in units without the setpoint slider option)	1 A@30 Vdc, resistive; 30 W max.
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WARRANTY

Limited Warranty	5 years
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AGENCY APPROVALS



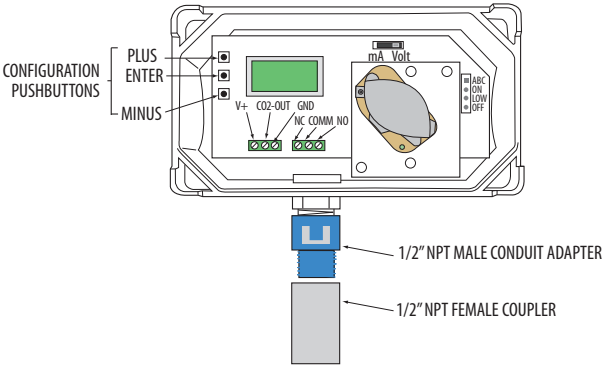
RTD/Thermistors in wall packages are not compensated for internal heating of product. EMC Conformance: Low voltage directive 2014/35/EU and EMC directive 2014/30/EU. EMC Special Note: Connect this product to a DC distribution network or an AC DC power adaptor with proper surge protection (EN 61000-6-1 specification requirements). * Measured at NTP.

**The CE mark indicates RoHS2 compliance. Please refer to the CE Declaration of Conformity for additional details.

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.

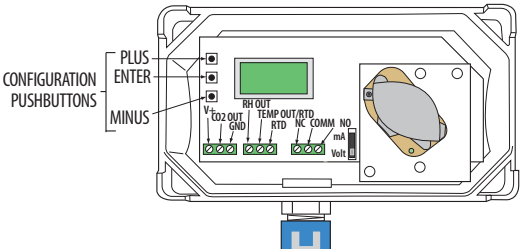
CDL (CO₂ ONLY)

Wiring Diagram



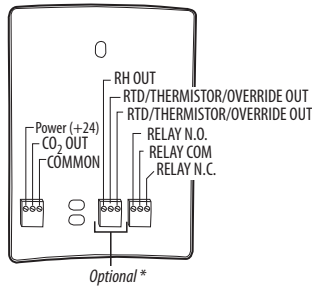
CDL (TEMP AND/OR RH OPTIONS)

Wiring Diagram



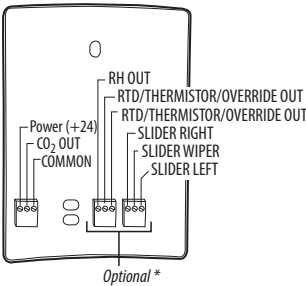
CWL

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



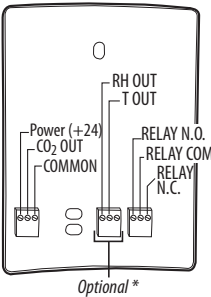
CWL

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



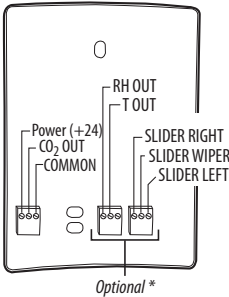
CWL

CO₂, RH, Temperature Transmitter
Options, and Relay Options



CWL

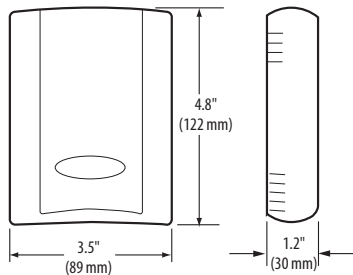
CO₂, RH, Temperature
Transmitter, and Setpoint Slider Options



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

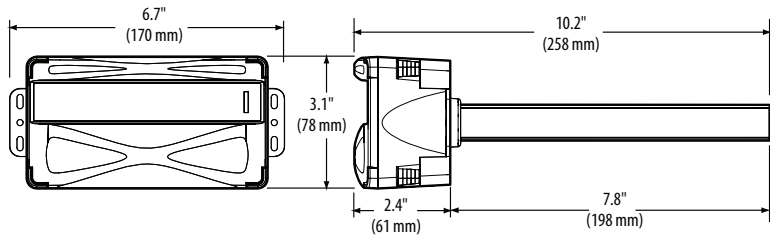
CWL WALL MOUNT

Dimensional Drawing



CDL DUCT MOUNT

Dimensional Drawing



ORDERING INFORMATION

Duct Mount

RH Option	Temp	Sensor Type	Optional Cal Cert
CDLS			
H = RH2%	T = Temp	A = Transmitter	Blank = None
X = No RH	X = No Temp (Stop here)	B = 100R Platinum, RTD	1 = 1 pt Temp Cert**
		C = 1k Platinum, RTD	2 = 2 pt Temp Cert**
		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	

Wall Mount

RH Option	Temp.	Sensor Type	Temp Cal Cert	Option	Setpoint Slider Value	Housing
CWLS						
H = RH 2%	T = Temp	A = Transmitter	X = No	1 = Push Button	-	Blank = Cloud white
X = No RH	X = No (stop here)	B = 100R Platinum, RTD	1 = 1pt Temp Cert**	Override*		B = Black
		C = 1k Platinum, RTD	2 = 2pt Temp Cert**	2 = Set Point	A = 1k	
		D = 10k T2, Thermistor		Slider	F = 10k	
		E = 2.2k, Thermistor		3 = Push Button	G = 20k	
		F = 3k, Thermistor		Override*+Set	K = 50k	
		G = 10k CPC, Thermistor		Point Slider	M = 100k	
		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				

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

**Not available with W and Y high accuracy thermistors.