Deluxe Duct and Wall CO_2 Sensors

C Series

5 Year Warranty

CWL

CDL

SPECIFICATIONS

Input Power	20 to 30VDC/24VAC; 100mA max.
Analog Output	4-20mA (clipped & capped)/0-5VDC/0-10VDC (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 noncondensing
Housing Material	High impact ABS plastic
CO_2 TRANSMITTER	
Sensor Type	Non-dispersive infrared (NDIR), diffusion sampling
Output Range	0-2000/5000 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	
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
Hysteresis	1.5% typical
Stability	±1% @ 20°C (68°F) annually for two years
Output Range	0-100% RH
Temperature Coefficient	±0.1% RH/°C above or below 25°C (typical)
TEMPERATURE TRANSMITTER	
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 models without setpoint slider option)	1A@30VDC, resistive; 30W max.

RTD/Thermistors in wall packages are not compensated for internal heating of product.
EMC Conformance: Low voltage directive 2006/95/EC & 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).
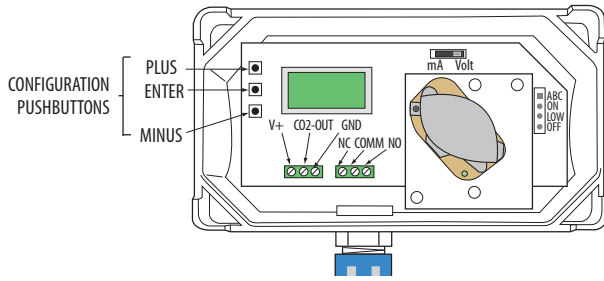*Note: Rough handling and transportation may cause a temporary reduction of CO_2 sensor accuracy. With time, the ABC function will tune the readings back to the correct accuracy range. The default tuning speed is limited to 30 ppm per week.*

Individual or 3-in-1 CO_2, RH, and Temperature

FEATURES

- *Microprocessor-based design increases accuracy and reduces installation time*
- *Non-dispersive infrared technology (NDIR) repeatable to ±20 ppm ±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*
- *CO_2, humidity, and temperature sensing all in one compact device...fewer units to buy and install*

DESCRIPTION

CDL/CWL carbon dioxide sensors maximize energy savings, while helping optimize ventilation. These sensors allow ventilation systems to be controlled by the amount of CO_2 present in a space. The CWL/CDL Series detect fluctuations in CO_2 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.
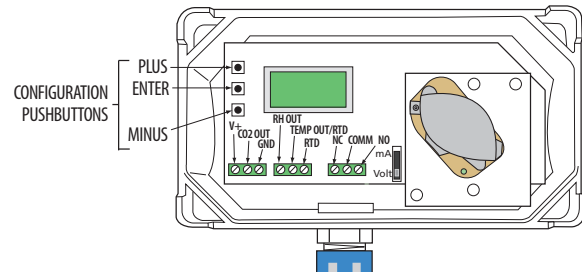
APPLICATIONS

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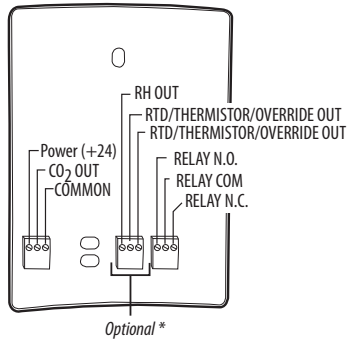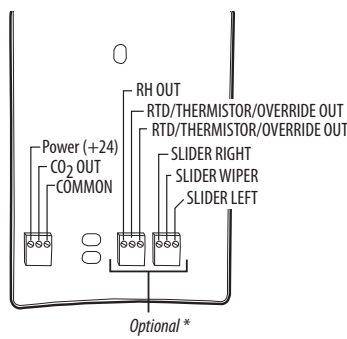
WIRING DIAGRAMS

CDL: CO₂ only

CONFIGURATION PUSHBUTTONS
- PLUS
- ENTER
- MINUS

mA Volt

ABC
ON
LOW
OFF

V+ CO2-OUT GND   NC COMM NO

CDL: Temp and/or RH Options

CONFIGURATION PUSHBUTTONS
- PLUS
- ENTER
- MINUS

V+ CO2 OUT TEMP OUT/RTD   NC COMM NO
GND RTD   mA Volt

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

RH OUT
RTD/THERMISTOR/OVERRIDE OUT
RTD/THERMISTOR/OVERRIDE OUT
Power (+24)
CO₂ OUT
COMMON
RELAY N.O.
RELAY COM
RELAY N.C.

*Optional ***

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

RH OUT
RTD/THERMISTOR/OVERRIDE OUT
RTD/THERMISTOR/OVERRIDE OUT
Power (+24)
CO₂ OUT
COMMON
SLIDER RIGHT
SLIDER WIPER
SLIDER LEFT

*Optional ***

CWL: CO₂, RH, Temperature Transmitter Options, and Relay Options

RH OUT
T OUT
Power (+24)
CO₂ OUT
COMMON
RELAY N.O.
RELAY COM
RELAY N.C.
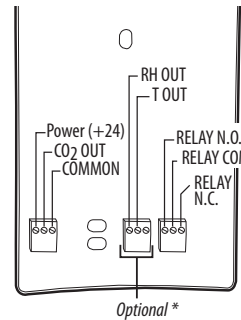
*Optional ***

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

RH OUT
T OUT
Power (+24)
CO₂ OUT
COMMON
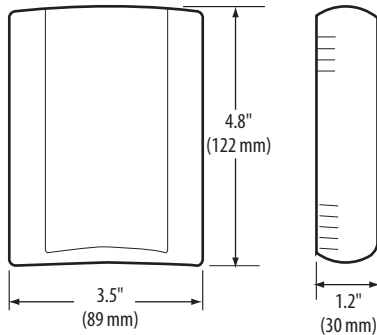SLIDER RIGHT
SLIDER WIPER
SLIDER LEFT
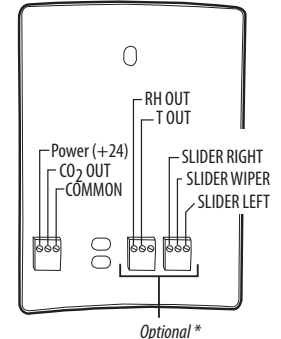
*Optional ***

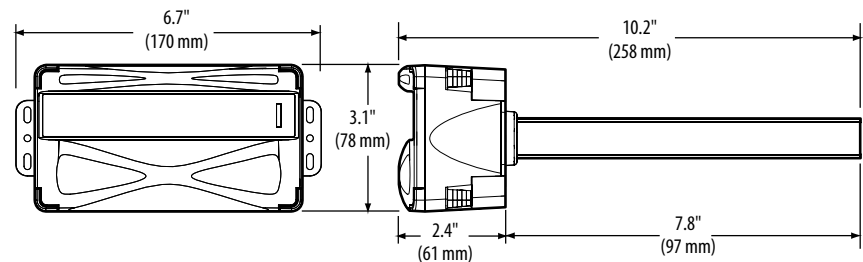** Note: Connector blocks & headers for optional features are not included with non-option models.*

DIMENSIONAL DRAWINGS

CWL Wall Mount

4.8" (122 mm)
3.5" (89 mm)
1.2" (30 mm)

CDL Duct Mount

6.7" (170 mm)
10.2" (258 mm)
3.1" (78 mm)
2.4" (61 mm)
7.8" (97 mm)

CE

ORDERING INFORMATION

Duct Mount

CDLS [ ] [ ] [ ] [ ]

RH Option
- **H** = RH2%
- **X** = No RH

Temp
- **T** = Temp
- **X** = No Temp (Stop here)

Sensor Type
- **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

Optional Cal Cert
- **Blank** = None
- **1** = 1 pt Temp Cert
- **2** = 2 pt Temp Cert

Wall Mount

CWLS [ ] [ ] [ ] [ ] [ ] [ ]

RH Option
- **H** = RH 2%
- **X** = No RH

Temp.
- **T** = Temp
- **X** = No (stop here)

Sensor Type
- **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

Available Options

Temp Cal Cert
- **X** = No
- **1** = 1pt Temp Cert
- **2** = 2pt Temp Cert

Option
- **1** = Push Button Override *
- **2** = Set Point Slider
- **3** = Push Button Override*+Set Point Slider

Setpoint Slider Value -
- **A** = 1k
- **F** = 10k
- **G** = 20k
- **K** = 50k
- **M** = 100k

Housing
- **Blank** = Cloud white
- **B** = Black

Example:

CWLS [H] [T] [C] [2] [2] [A]

Options

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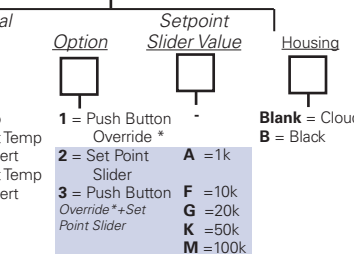
ACCESSORIES

Calibration kits & gases (AA01, AA26, AA27, AA28, AA29)
Handheld air quality testers (1010, 1008, 770)
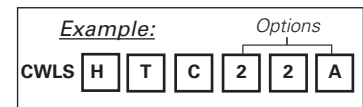*Replacement covers and housing for wall units (AA52, AA52B, AA55)*

Example:

CDLS [H] [T] [B] [2]