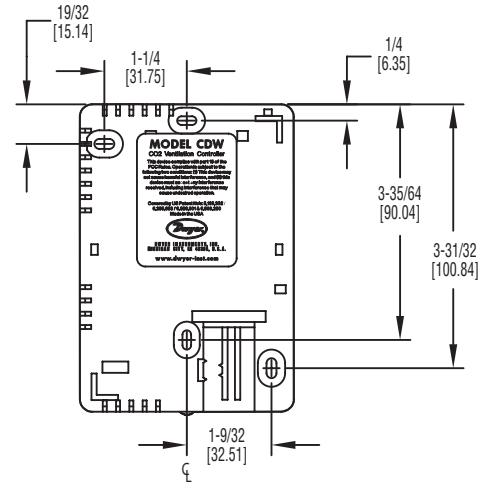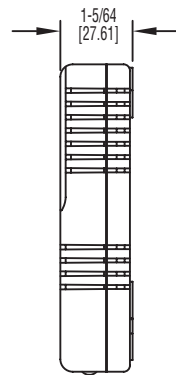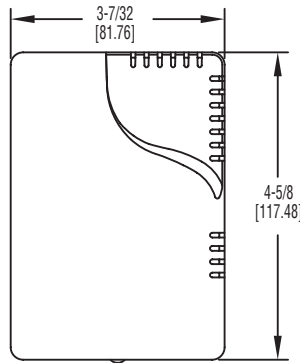# Series CDW Wall Mount Carbon Dioxide/Temperature Transmitter

Specifications - Installation and Operating Instructions

The Series CDW Wall Mount Carbon Dioxide/Temperature Transmitter combines accurate CO_2 measurements with a passive temperature output. The Non-Dispersive Infrared (NDIR) sensor continuously updates the calibration through a proprietary logic feature which limits the amount of error due to drift. The CDW series is ideal for building automation systems to help control the fresh air intake in a room.

Installation:

Warning: Disconnect power supply before installation to prevent electrical shock and equipment damage.
Make sure all connections are in accordance with the job wiring diagram and in accordance with national and local electrical codes. Use copper conductors only.

Caution: Use electrostatic discharge precautions (e.g. use of wrist straps) during installation and wiring to prevent equipment damage.

Do not exceed the ratings of this device, permanent damage not covered by warranty may result.

Mounting:

1. Press the release button on the bottom of the unit in order to remove the cover as shown in Figure A.
2. Use the appropriate mounting holes and screws to secure the base unit to the mounting surface.
3. Slide the wires through the wiring slot and make proper wiring connections per the wiring diagram in Figure B.

SPECIFICATIONS

Range: 0 to 2000 PPM CO_2.
Accuracy: ±100 PPM @ 22C.
Temperature Dependence: 0.2% FS per C Stability < 2% of FS mover life of sensor.
Non-linearity: < 1% of FS.
Pressure Dependence: 0.13% of reading per mm of Hg.
Response Time: 3 to 5 minutes for 90% step change.
Ambient Operating Temperature: 32 to 122°F (0 to 50°C).
Storage Temperature: -4 to 158°F (-20 to 70°C).
Power Requirements: 18 - 30 VAC RMS 50/60 Hz, 18 to 42 VDC polarity protected.
Power Consumption: 1.75 VA average 3.25 VA peak.
Sensor: Non-Dispersive Infrared Sensor.
Output: 0 to 10 VDC for CO_2; 20K Ohm NTC Thermistor for temperature.
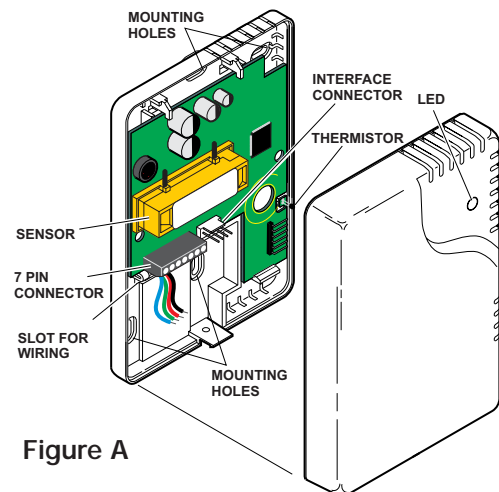**Weight:** 0.5 lb (227 g).
Agency Approval: CE.

Figure A

Wiring:
Use Maximum 18 AWG wire for wiring terminals. Refer to Figure B for wiring information.

Pin Assignments
  1 - Ground
  2 - CO_2 Output (0 to 10 VDC)
  3 - 24 Volt Input
  4 - Thermistor Output
  5 - Not Used
  6 - Not Used
  7 - Not Used

Drawing of 7 pin terminal block wired to a power supply and receiver.
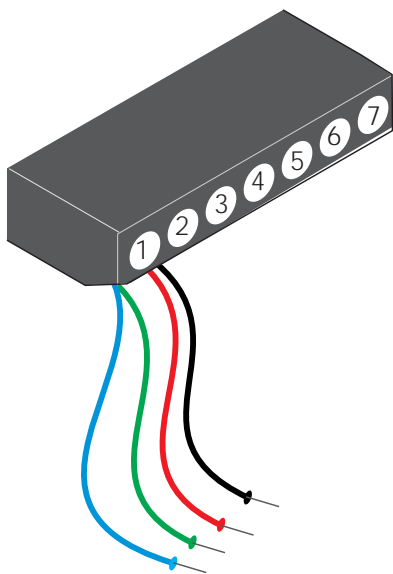

Figure B Wiring Terminal Layout

LED Indicators (LED Version Only)
The LED on the front of the transmitter is a 3 color LED. The three colors represent three different PPM levels. Below is a description of the PPM Levels for each color.

Colors and the PPM levels represent:
Green- CO_2 levels are less than 1000 ppm, indicating CO_2 concentration is within acceptable limits.

Yellow- CO_2 levels beween 1000 and 1500 ppm, with 100 ppm hysteresis. As CO_2 levels decrease to within limits, the yellow light will remain on until 100 ppm past the threshold, and turn back to green at 900 ppm.

Red- CO_2 levels are above 1500 ppm, indicating CO_2 concentration is beyond acceptable limits. As CO_2 levels decrease to within limits, the red light will remain on until 100 ppm past the threshold, and turn back to yellow at 1400 ppm.

Calibration
The Series CDW is factory set with the proprietary logic function activated. The logic function allows the sensor to continuously re-calibrate itself when the indoor concentrations drop to levels similar to outside air conditions when the building is unoccupied. The building must be unoccupied for a minimum of 4 hours or more for this self-calibration to be effective. The logic allows the sensor to maintain its calibration over the life of the sensor. If a building is occupied 24 hours a day or there is significant sources of CO_2 while the builiding is unoccupied, the logic function should be turned off.

MAINTENANCE
Upon final installation of the Series CDW Wall Mount Carbon Dioxide/Temperature Transmitter, no routine maintenance is required. A periodic check of system calibration is recommended. The Series CDW is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.