

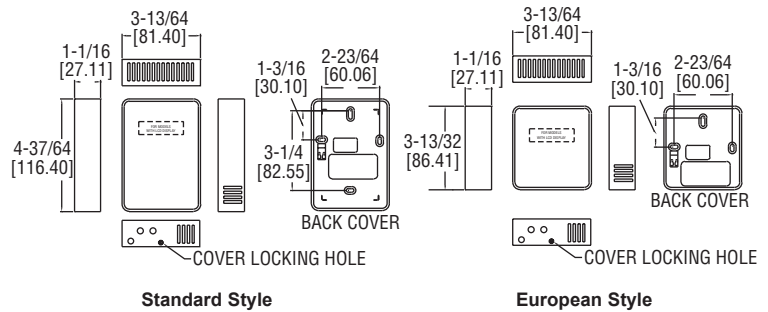


Series CDW2 Wall Mount Carbon Dioxide Transmitter

Installation and Operating Instructions



Shown with Optional LCD Display



Standard Style

European Style

The Series CDW2 Wall Mount Carbon Dioxide Transmitters monitor ambient carbon dioxide conditions for variable air volume (VAV) on demand ventilation systems. Universal current/voltage temperature and humidity outputs are also available to reduce the number of instruments mounted on the wall. The Non-Dispersive Infrared (NDIR) sensor continuously updates the calibration through a proprietary logic feature which limits the amount of error due to drift. A duct mount and a heated outside air enclosure are available enabling the CDW2 to be used in different environments.

WARNING Before performing service or maintenance on the systems, turn OFF the main power switches to the unit. Electric shock can cause personal injury. Please read and follow the wiring instructions precisely; incorrect wiring may cause permanent damage to the product.

WARNING The Series CDW2 products have two terminal pins that are connected inside the sensor to a common/ground pin: pins 2 and 7 on the I/O terminal block and pin 2 on the power block. Do NOT connect positive 24 VAC power line to pin 2 of the power block.

CAUTION The Series CDW2 are 3-wire or 4-wire type configurations only. Wiring the CDW2 as a 2-wire device will irreparably damage the sensors and void the warranty.

NOTICE The Series CDW2 contains a passive thermistor which is electrically isolated from the other circuitry and should be wired independently from the active inputs (Temperature, RH, CO₂). The active inputs all share a common ground.

MOUNTING

Push the tabs on the case to separate the case into its front and rear sections. Mount the rear section of the case to the wall or junction box with the supplied screws. Mount controller on the base by aligning the top clips and securing the bottom clips. Secure the CDW2 with the supplied set screw.

POWER SUPPLY REQUIREMENTS

The transmitter can be powered with either 18 to 42 VDC or 18 to 30 VAC. DC power is polarity protected. AC power must be at a frequency between 50 and 60 Hz.

Selection of Current and Voltage Outputs

Prior to wiring, verify that the current/voltage selections jumpers are set to the desired output type. For voltage output selection, the output can be 0 to 5 or 0 to 10 VDC.

SPECIFICATIONS

Range: CO₂: 0 to 2000 PPM;

Relative Humidity: 0 to 99%;

Active Temperature: 32 to 122°F (0 to 50°C).

Accuracy: CO₂: ±30 PPM or 3% of reading, whichever is greater;

RH: ± 2.5% (20 to 80% RH) / 3.5% (<20% and >80%);

Active Temperature: ± 1.5°F @ 72°F (0.8°C @ 22°C);

Thermistor: ± 1.9°F @ 60 to 95°F (1°C @ 15 to 35°C).

Temperature Dependence: ±0.11% FS per °F (0.2% per °C).

Pressure Dependence: 0.135% of reading per mm Hg.

Response Time: Signal updates every 5 seconds.

Warm Up Time: < 2 min (operational), 10 min (max. accuracy).

Temperature Limits:

Ambient: 32 to 122°F (0 to 50°C);

Storage: -40 to 158°F (-40 to 70°C).

Power Requirements: 18 to 30 VAC RMS 50/60 Hz, 18 to 42 VDC, polarity protected.

Sensor: CO₂: Non-dispersive infrared sensor (NDIR) with ABC logic

RH: Capacitive polymer sensor

Temperature: 10 kΩ Type II thermistor, 10 kΩ type III Thermistor, 3 kΩ

Thermistor, 20 kΩ Thermistor, PT100RTD, PT1000 RTD.

Weight: 7.2 oz (204 g).

Agency Approvals: CE, RoHS.

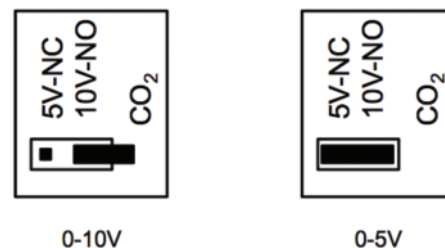


Figure 1: Jumper settings for CO₂ output on non-display units (J3)

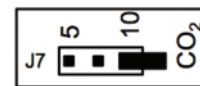


Figure 2: Jumper settings for display units. CO₂ is set for a 4 to 20 mA and to 10V output, humidity is set for a 4 to 20 mA output, temperature is set to 0 to 5V output. (NOTE: Jumper names)

WIRING

The CDW2 series has two basic configurations. The first provides three active outputs (relative humidity, temperature, CO₂) and an independent thermistor. The other configuration provides only the CO₂ outputs and an independent thermistor. The power requirements and wiring for the two configurations are identical. The recommended wire gauge is 18 to 22 AWG (1.0 to 0.75 metric).

ACCESSORIES

Model 1508 Duct Mount Enclosure – The CDW2 series can be installed in a model 1508 duct mount enclosure.

Model 1552 Outside Air Enclosure – This NEMA-3R weatherproof enclosure includes thermostat and allows installation of the sensor in environments with temperatures down to -40°F (-40°C).

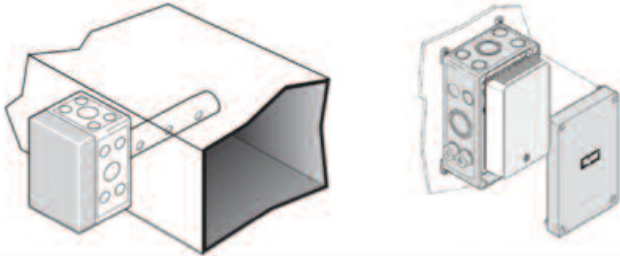


Figure 8: Duct mount enclosure (left), outside air enclosure (right)

Calibration

The Series CDW2 is factory set with the proprietary logic function activated. The logic function allows the sensor to continuously recalibrate 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 the building is occupied 24 hours a day or there is significant sources of CO₂ while the building is unoccupied, the logic function should be turned off.

MAINTENANCE/REPAIR

Upon final installation of the Series CDW2, no routine maintenance is required. The Series CDW2 is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.

WIRING DIAGRAMS

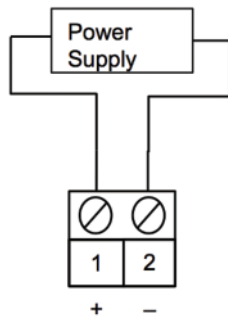


Figure 3: Power block terminal connection. For use on all models. (See Power Supply Requirements)

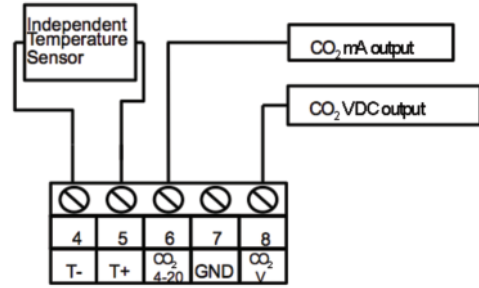


Figure 4: 3-wire configuration for use with models CDW2-2W4XX

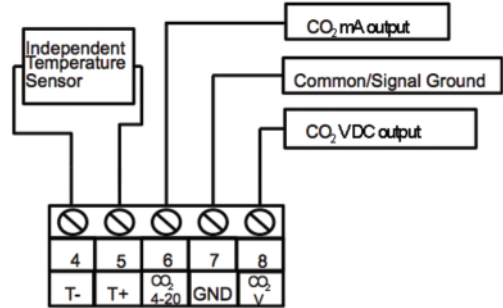


Figure 5: 4-wire configuration for use with models CDW2-2W4XX

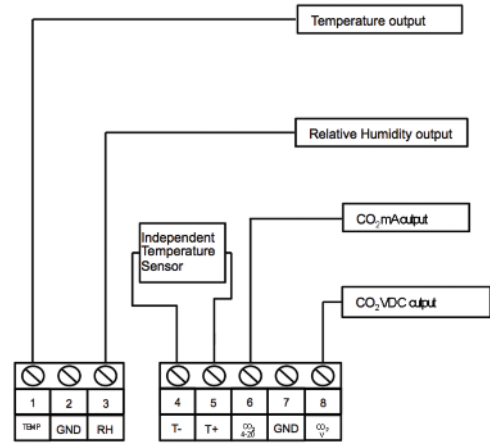


Figure 6: 3-wire configuration for use with models CDW2-2W4XX-LCD

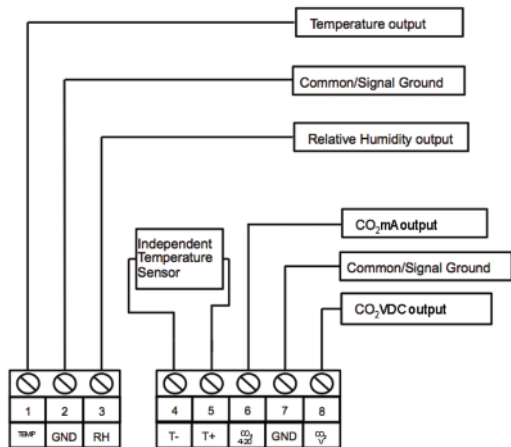


Figure 7: 4-wire configuration for use with models CDW2-2W4XX-LCD