

CWV SERIES

Environmental CO₂ Sensors



NOTICE

- This product is not intended for life or safety applications.
- Do not install this product in hazardous or classified locations.
- Read and understand the instructions before installing this product.
- Turn off all power supplying equipment before working on it.
- The installer is responsible for conformance to all applicable codes.

No responsibility is assumed by Veris Industries for any consequences arising out of the use of this material.

SPECIFICATIONS

Input Voltage	20 to 30VDC, 24VAC
Analog Output #1	4-20mA (clipped & capped) or 0-3VDC/0-5VDC/0-10VDC (jumper selectable)
Analog Output #2	4-20mA (clipped & capped) or 0-3VDC/0-5VDC/0-10VDC (jumper selectable)
Sensor Current Draw	200mA Maximum
Operating Humidity Range	0-95% RH (noncondensing)
Operating Temperature Range	0° to 50°C (32° to 122°F)
Housing Material	High impact ABS plastic
Relay Contacts (optional)	Form C (SPDT) 1A@30VDC, resistive; 30W max.
CO₂ Transmitter:	
Sensor Type	Non-dispersive infrared (NDIR), diffusion sampling
Measurement Range	0-2000 ppm
Accuracy	±40 ppm ±8.5% of measured value
Repeatability	±30 ppm ±4.5% of measured value
Response Time	<60 seconds for 90% step change

EMC Conformance: EN 61000-6-3:2007+A1:2011 Class B, EN 61000-6-1:2007

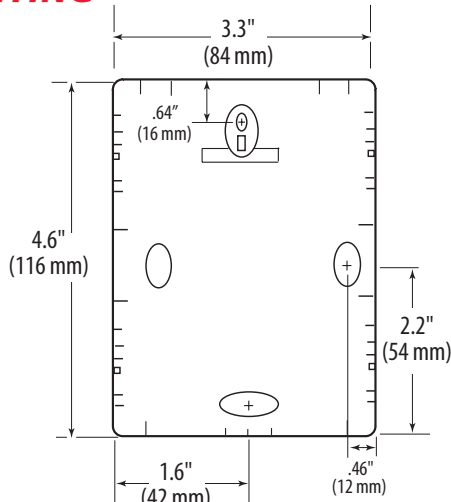
EMC Special Note: Connect this product to a DC distribution network or an AC/DC power adaptor with proper surge protection (EN 61000-6-1:2007 specification requirements).

RTD/Thermistors are not compensated for internal heating of product.

PRODUCT IDENTIFICATION

	Output	Relay option	Relay option	Temp/2nd	Warranty	Housing
CWVS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1 = 0-3/5/10VDC and 4-20mA 2 = 4-20mA and 4-20mA 3 = 0-3/5/10VDC and 0-3/5/10VDC	X = No relay 1 = Relay	X = No temp. 1 = Relay B = 100R Pt C = 1k Pt D = 10k T2 E = 2.2k F = 3k H = 10k T3 J = 10k Dale K = 10k with 11kS M = 20k NTC N = 1800 ohm R = 10K US S = 10K 3A1B		1 = 1 year 3 = 3 years 5 = 5 years	Blank = White/ gray B = Black

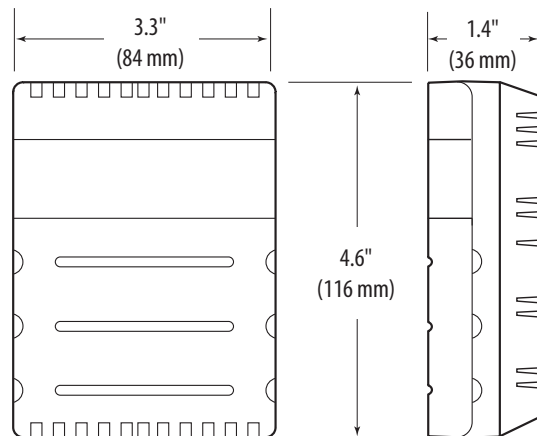
MOUNTING



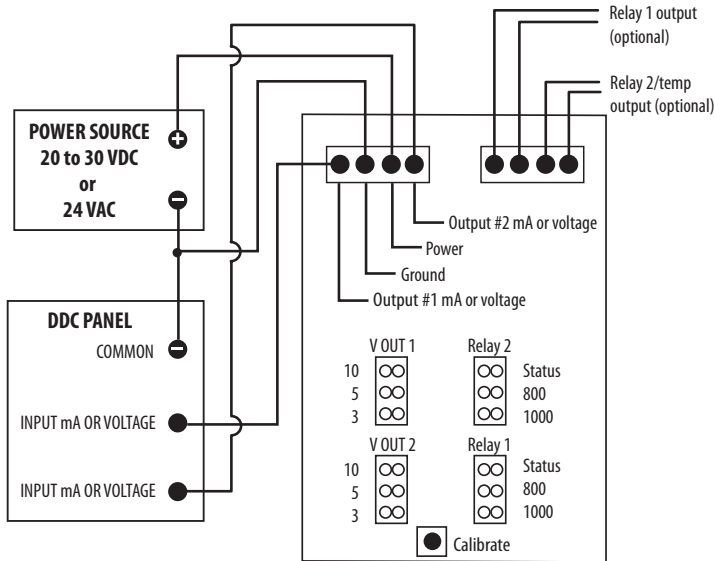
INSTALLATION

1. Select a mounting location with good air circulation. For room installations, mount the sensor 4 ½ feet (1.4 m) above the floor.
2. Remove the cover. Flush mount the CWV on a wall or on a standard US or European single gang junction box.
3. Wire the device. Refer to the wiring diagram.
4. Install the cover.

DIMENSIONS



WIRING



CONFIGURATION

1. If so equipped, select the voltage outputs by jumpering the V Out 1 and/or V Out 2, as indicated at left (10=0-10VDC, 5=0-5VDC, 3=0-3VDC).
2. If so equipped, select the relay mode by jumpering the Relay 1 and/or Relay 2 function blocks, as indicated at left (Status=sensor condition, 800=800ppm CO₂ setpoint, 1000=1000ppm CO₂ setpoint).

LED INDICATION

Green - Power applied to device

Red - Error condition for false reading, CO₂ concentration > 10,000 ppm, insufficient power, or improperly calibrated sensor.

The red LED briefly illuminates for approximately two seconds when the CWV device is initially powered. It then deluminates, indicating normal sensor operation.

OUTPUT SCALING

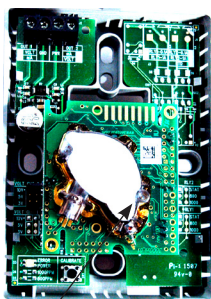
	CO ₂ PPM	0-3 Volt Output	0-5 Volt Output	0-10 Volt Output	mA Output
Outside	300-500	0.45 to 0.75	0.75 to 1.25	1.5 to 2.5	6.4 to 8
Over Ventilated	Under 600	Under 0.9	Under 1.5	Under 3	Under 8.8
Ideal Ventilation	600-900	0.9 to 1.35	1.5 to 2.25	3 to 4.5	8.8 to 11.2
Under Ventilated	Over 900	Over 1.35	Over 2.25	Over 4.5	Over 11.2

CALIBRATION PROCESS

1. Remove the cover and connect a hose to the plastic port located on the sensing module.
2. Begin nitrogen gas flow (0 ppm CO₂). Use a flow rate of 0.3 to 0.5 liter/minute, using the Veris AA01 Calibration Kit or equivalent.
3. Push and hold down the calibration button for 8 seconds.
4. Release the calibration button and verify that the analog outputs are at either 4 mA or 0 V. If the outputs are not showing these values, repeat steps 3 and 4.

STEP 1

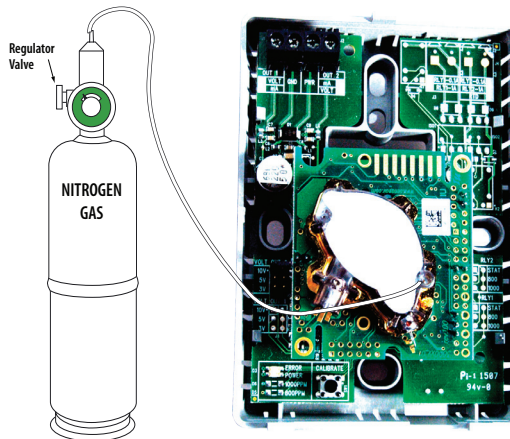
Calibration Port



Connect hose here

STEP 2

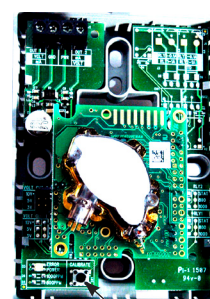
Flow Nitrogen



Veris AA01 Calibration Kit (or equivalent)

STEP 3

Push and hold calibration button for 8 seconds



Calibration button

Note: Do not breathe on the CO₂ sensor during the calibration process.