VENTACITYSYSTEMS
Making Buildings Healthy – Efficient – Smarter

VSCM CO_2 SENSOR

Specification & Installation

BASIC FEATURES

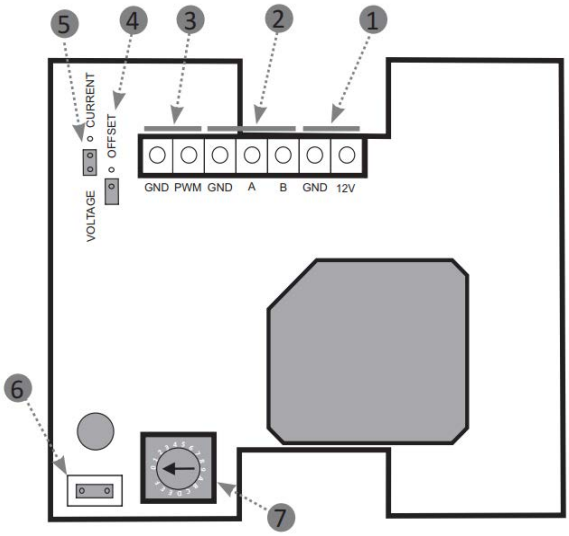
VS-CO2-INT is a room carbon dioxide concentration sensor. CO_2 measuring works on the principle of attenuation of infrared radiation, depending on the concentration of CO_2 in the air. Compared with other similar sensors, which do not employ an optical dual channel sensor principle, this sensor has excellent long-term stability.

SENSOR CONNECTION	
1	12 - 40V DC Input
2	Modbus RTU Communication (Output)*
3	Output (0 - 10V / 4 - 20mA)
4	Output Offset (+2V / +4mA)
5	Output Selection - Voltage / Current
6	LED Signal (Enable / Disable)
7	Modbus Address (0=120... F = 135)

PRIMARY PARAMETERS	
Input Voltage	12 - 40V DC
Output Voltage	0 - 10V DC
Output Current	0 - 20mA
Operating Range	370 - 2,000 ppm
Operational Temperature	0 to +104° F

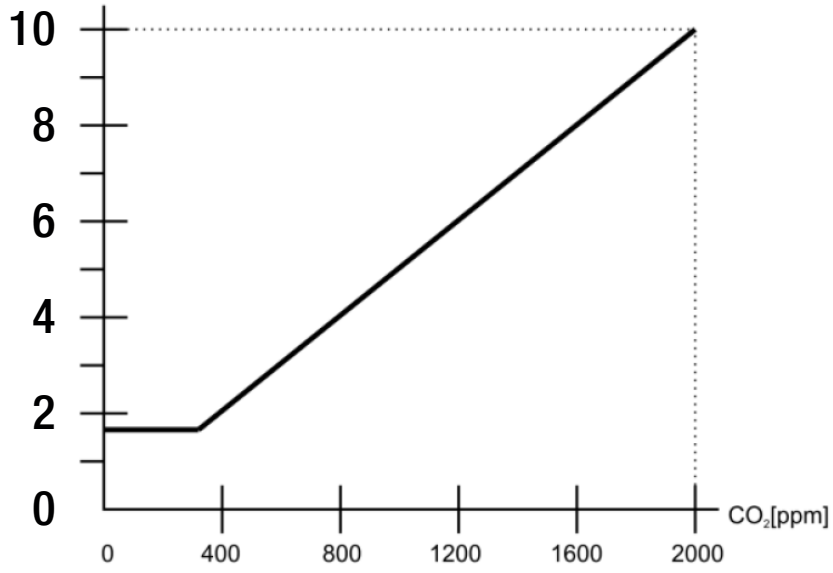
* INPUT REGISTER:
Address 100 = average value PPM
Address 101 = actual value PPM

Wiring Diagram



NOTE: Sensor comes with cat5e pre-wired to ports 1 and 3.
Port 3 PWM (Brown), Port 3 GND (White/Brown),
Port 1 12V (Orange), Port 1 GND (Blue)

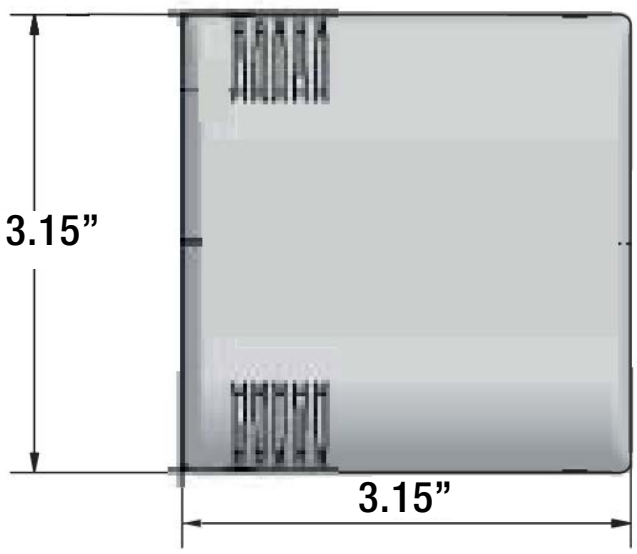
Voltage Output [V] vs. CO_2 Concentration [ppm]

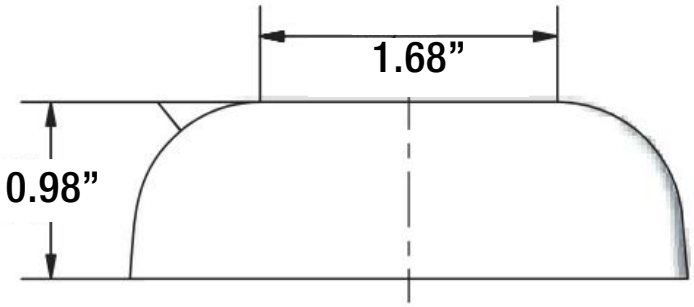


Rev 01.01

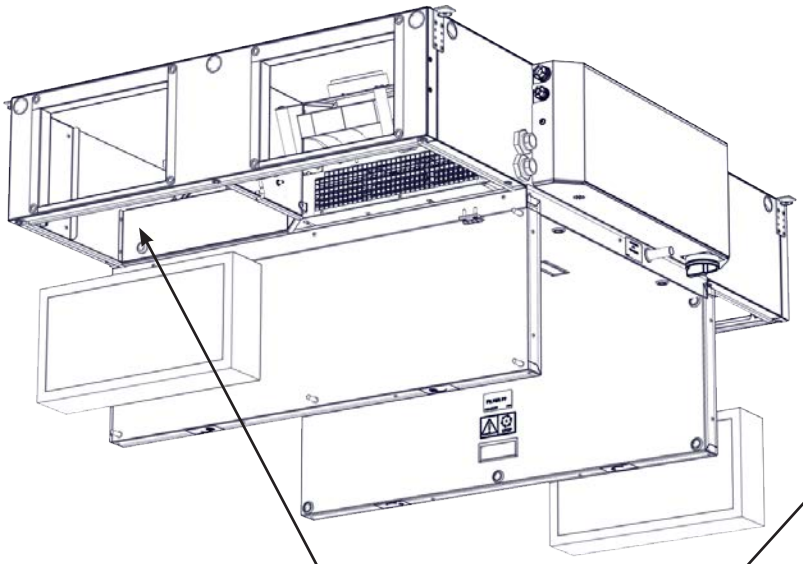
VSCM CO_2 SENSOR
Specification & Installation

DIMENSIONS

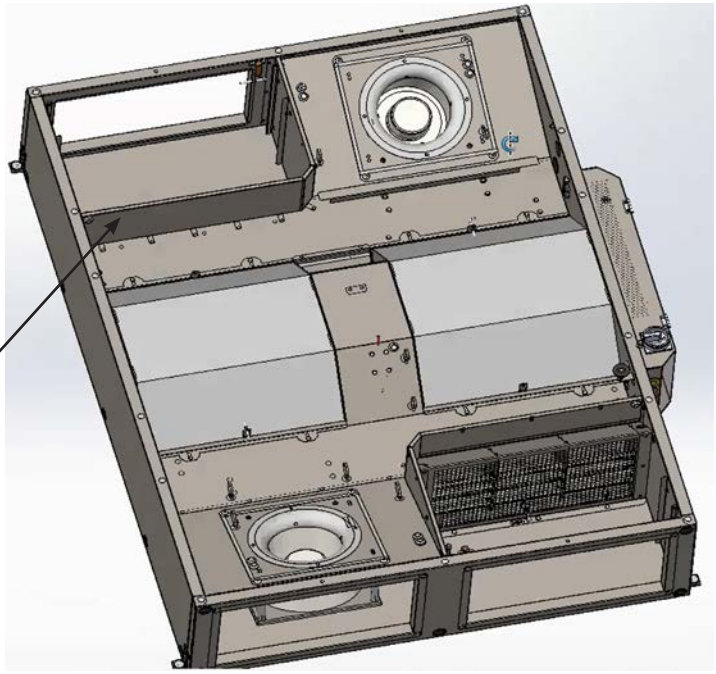




MOUNTING LOCATION

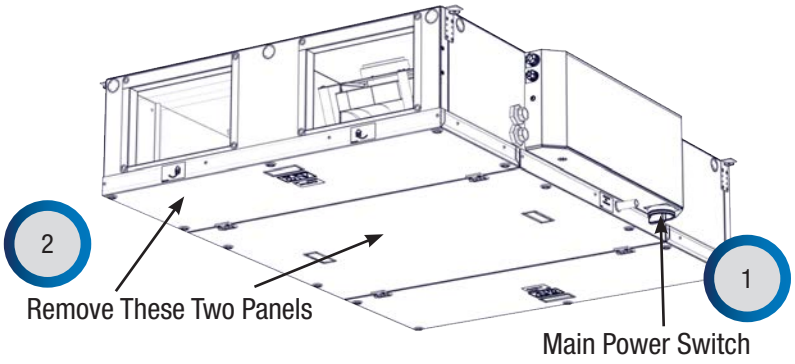


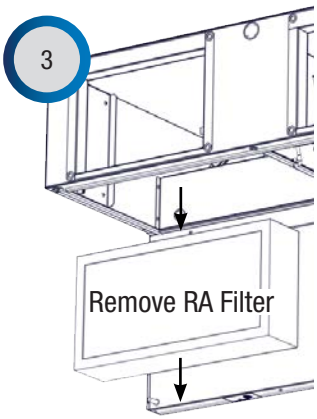
CO2 Sensor Placement

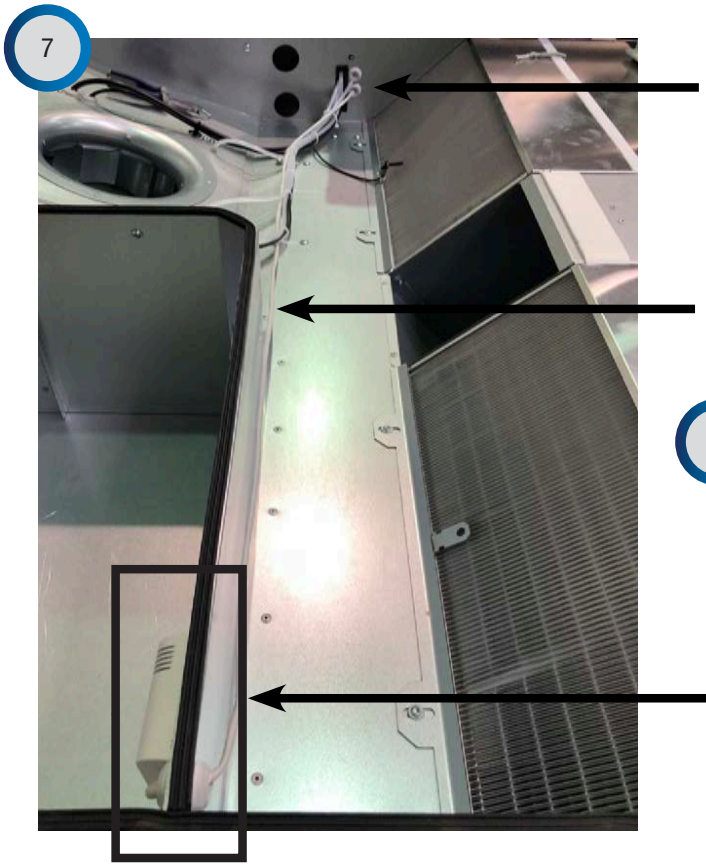


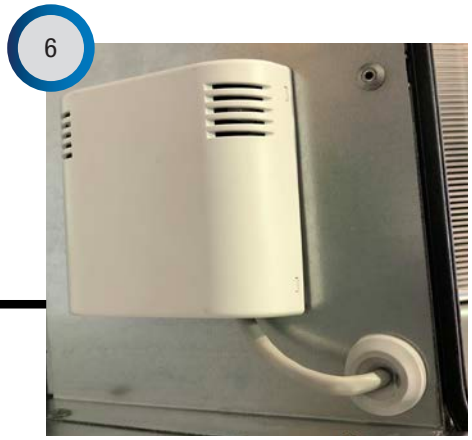
INSTALLATION PROCEDURE

1. Switch off the power to the unit.
2. Remove the center panel and remove the panel covering the return filter. Store the panels in a clean, secure location.
3. Remove the return air filter and store in a clean, secure location.
4. Locate the two holes for mounting the CO2 sensor and fasten the back plate to the mounting location using the two screws provided in the kit.
5. Punch out tab on the sensor housing to open a slot for the cable.
6. Mount the sensor to the back plate and route the cable through the grommet.
7. Route the cable from the grommet to the regulator entry point.

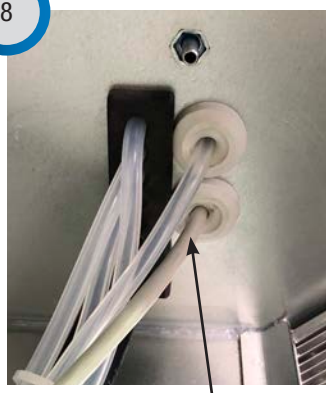


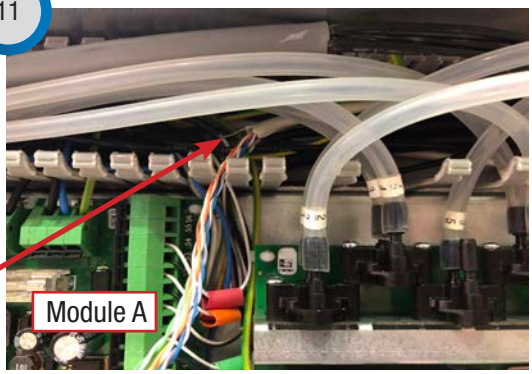


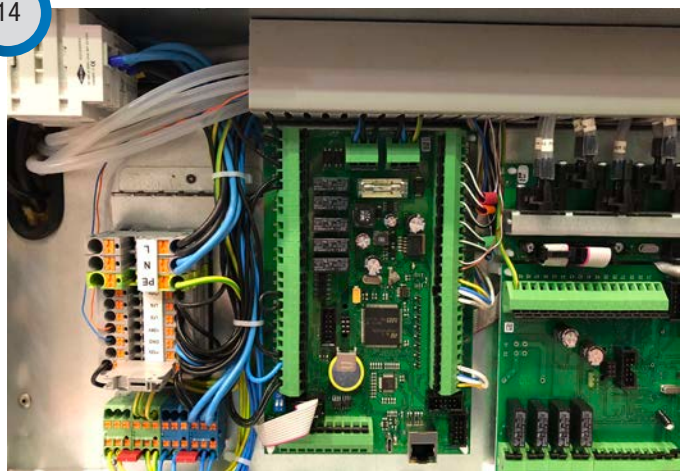




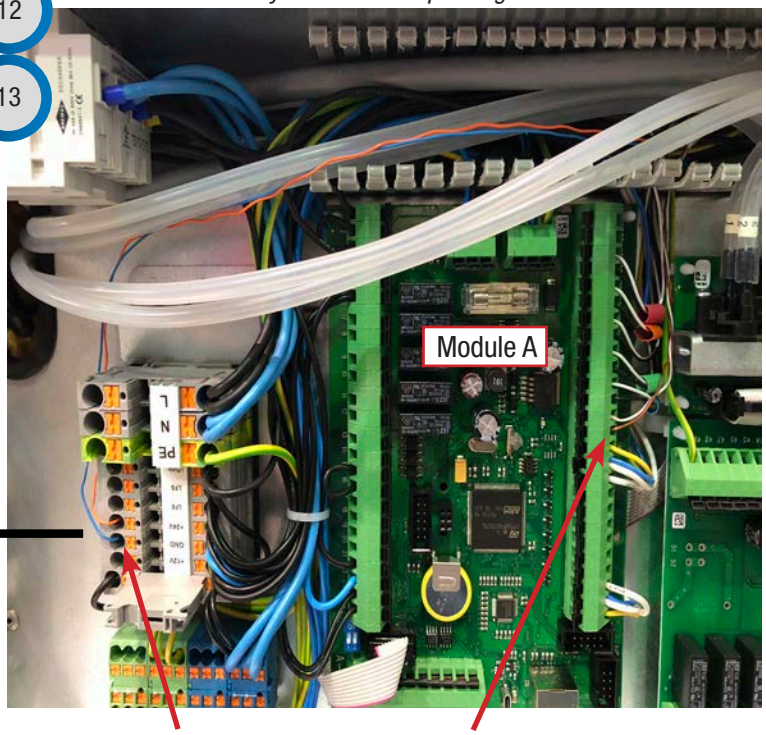
8. Route the CO2 cable through the grommet leading to the regulator box.
9. Pull the CO2 cable through the entry point into the regulator box.
10. Remove the wire duct cover and store in a clean, secure location.
11. Route the CO2 cable through the wire duct and strip the cable sheathing to expose the wires such that the sheathing ends at the edge of Module A.
12. At the end of the sheathing, cut all wires *except* Brown, White/Brown, Orange, and Blue.
13. Strip and terminate the brown wire to Module A terminal 43. Strip and terminate the white/brown wire to Module A terminal 44. Strip and terminate the orange wire to terminal block "+24V." Strip and terminate the blue wire to terminal block "GND."
14. Reinstall the wire duct, return filter, and panels. Power the unit back on.

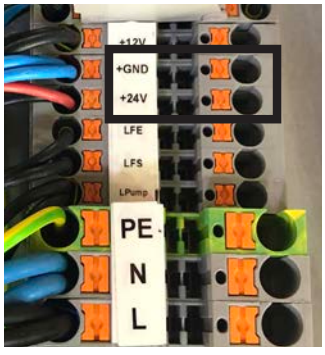


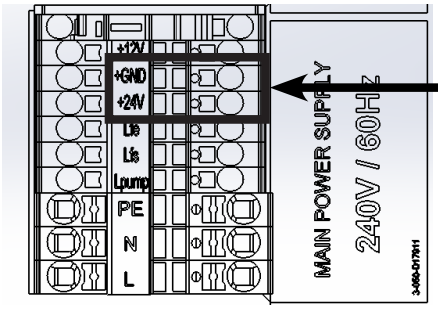




NOTE: Views may be inverted depending if unit has been mounted







Close-ups of +24V and GND Connections

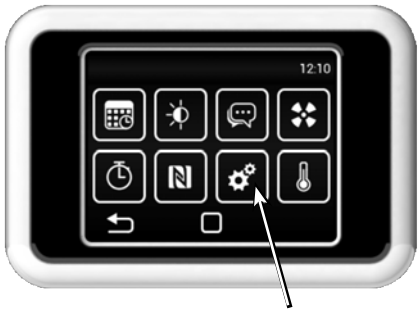
CONFIGURE SENSOR

1

On the control panel, navigate to the Main Menu by clicking the ***Settings*** icon, illustrated below.

2

Navigate to the Service Menu by clicking the ***Settings*** icon, illustrated below.



3

Enter code 1616 to access the service menu.

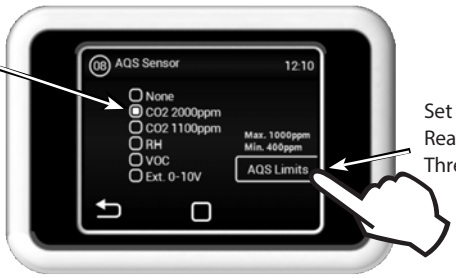
4

Navigate to the Menu **08 - AQS SENSOR**

5

Select Air Quality Sensor Type to ***CO2 2000ppm***

Set Sensor Reading Thresholds



6

Select the minimum and maximum threshold values for Air Quality Sensor.

The HRV will run at the minimum flow rate when the sensor reading is at or below the minimum threshold. Airflow is increased in a linear fashion as the reading increases until maximum system flow rate is reached at the max threshold.

Breathing in DCV

When enabled, the flow rate is set to 0 CFM until the sensor reading is above the minimum threshold. To obtain an accurate reading of air quality, the unit will periodically run at an increased flow rate for a short period of time to circulate air through the system.