Indoor Air Quality (IAQ) Sensor Connection & Setup

(Applicable to units with SE Boards rev 3.3 and greater)

An indoor air quality (IAQ) sensor monitors carbon dioxide (CO2) levels in the space and can put the unit into demand ventilation to lower the CO2 levels back to acceptable limits.

Demand Ventilation operates as follows:

The control must be in occupied status with the indoor fan operating. If the **demand ventilation mode (DVent-Mode)** of operation is set to enabled and the operational indoor CO2 level (**OprIAQ**) is greater than the demand ventilation setpoint (**DVentIAQ-SP**) +100 ppm, the current operating minimum position increases as follows.

• With a CO2 level **between** the demand ventilation setpoint +101 ppm and +200 ppm, the operating minimum position increases 1% per minute.

• With a CO2 level **greater** than the demand ventilation setpoint +200 ppm, the operating minimum position increases 2% per minute.

When the CO2 levels drop to equivalent values below the demand ventilation setpoint, the current operating minimum position decreases at the same rates. While in a demand ventilation mode, if the supply air temperature drops below 49°F, the economizer outside air dampers close until the supply air temperature rises above 49°F but does not go below the current economizer operating minimum position. The economizer then modulates to control the supply air temperature at 50°F.

Wiring the IAQ sensor

The IAQ sensor lands on the units economizer module. Under analog inputs at the bottom of the board you will find 24V, IAQ and COM. These connect to terminals 1,2 and 8 on the IAQ sensor subbase.

24V on the economizer control connects to 1 on the IAQ sensor

IAQ on the economizer control connects to 8 on the IAQ sensor

COM on the economizer control connects to 2 on the IAQ sensor and a jumper needs to be installed between 2 and 7 on the sensor subbase.
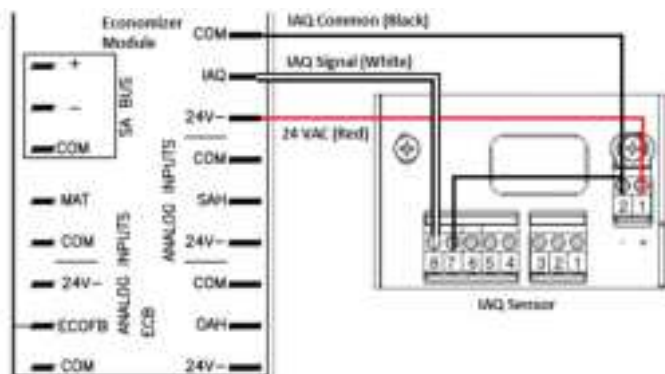
Confirming the Sensor Setup

The economizer board accepts a 0-10 VDC signal. The J7 (CO2)pin selection on the back of the sensor must be set for 0-10 VDC.
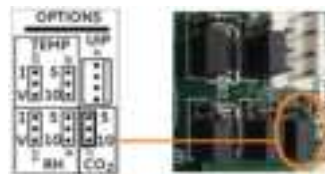
Enable Demand Ventilation

In order for Demand Ventilation to be operational, it must be enabled. From the home screen, scroll down using the joystick until the **"Status"** menu directory is visible at the the top of the screen and **"Alarms"** is visible at the bottom. The arrow or **"Cursor"** on the left of the screen will be pointing at one of the two selections. The cursor, is used to select the menu directory you will enter when you press the enter button. The position of the cursor in changed by moving the joystick up or down.

• Scroll down until the **"Cursor"** points to to **Details** and press enter.

• Then scroll down to "**DVent**" and press enter.

• Then scroll down to **DVent-Mode** and press enter.

• Then push joystick to the right until **Controlled by IAQ** is displayed and press enter.

• Then scroll down to **DVentMaxEconPos**. This is the maximum amount the damper position will open during demand ventilation. The factory default setting is 50%. This setting can be changed to meet specific demands.

• Scroll down to **DVentIAQ-Sp** the default setpoint is 1000 Parts Per Million (ppm). Press enter to see the value. If a change is necessary, the revision of the board will determine how it is changed. On boards with rev 3.3 thru 4.1, you will push the joystick left or right to raise or lower the value and press enter. On boards that are rev 4.2 & higher, you will press enter, then move left or right with the joystick to select the specific digit(s) that need to change. You will then increase or decrease the setting by moving the joystick up or down. Once the desired value is entered, press enter, then press enter a second time to confirm. DVent Mode is now operational.