Before Getting Started

ECON-ZIP-EM and CO_2 sensor can be added during or after initial set up.

1. A CO_2 sensor is needed with the following characteristics:
   a. Output that is DC 0...10 V
   b. Range of 0-2000 ppm
2. Attach the Energy Module ECON-ZIP-EM to the ZIP Economizer ECON-ZIP-BASE.

3. Setting PPM range (only required if sensor is configurable for other ranges).

Type of Output	Ventilation Rate (cfm/Person)	Analog Output	CO_2 Control Range (ppm)
Proportional	Any	0...10 V	0...2000

4. Power RTU and enter Settings Menu.

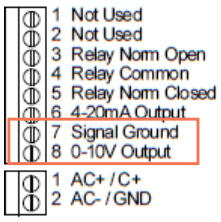
   Note: When the CO_2 sensor is powered and DC 0...10 V is available at CO_2+ and CO_2, the ZIP Economizer will recognize the CO_2 presence and the prompt to set up CO_2 settings.

5. Setting DCV settings.
   a. With single speed indoor fan, only 2 DCV settings are required.
      i. DCV Min Pos – This is the minimum occupied or zero occupancy ventilation rate expressed in damper percent open (Title 24 2013 section 120.1(b)2; ASHRAE 62.1 Section 6.2.7).

      ii. CO_2 PPM Set Pnt – This is the CO_2 concentration that is desired in the space (Title 24 2013 section 120.1(c)4. prescribed as 600 ppm plus outdoor air CO_2 concentration assumed to be 400 ppm = a set point of 1000ppm).

Wiring CO_2 Sensor to ZIP Economizer

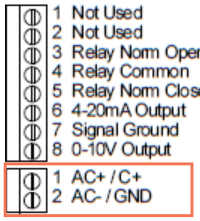
1. Wire CO_2 sensor DC 0...10 V output to ECON-ZIP-EM CO_2 sensor input.

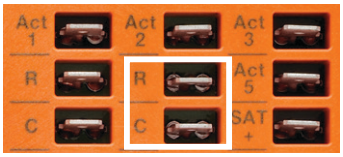


Example CO_2 Sensor Diagram

2. Wire CO_2 sensor power.

   Note: If RTU transformer VA is sufficient R/C terminals may be used on ZIP Economizer.





Example CO_2 Sensor Diagram

Operation

The ZIP Economizer logic will control the outside air damper position based on space CO_2 dilution needs. If the CO_2 value is low, the damper shall remain at DCV Min Pos when not in free cooling. When the CO_2 concentration rises above the CO_2 PPM Set Pnt (as the space becomes more populated), then the damper will start to modulate towards Vent Min Pos to maintain level at CO_2 PPM set Pnt. When the CO_2 concentration drops in the space (the space population decreases) the damper will start to modulate back towards DCV Min Pos.

***WARNING** Live Electrical Components!*

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

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