

CO₂ MONITOR-CONTROLLER WITH FOUR RELAY OUTPUTS LEVELS AND OPTIONAL DIGITAL DISPLAY



Features:

- Suitable for both new and existing HVAC installations.
- Infrared CO₂ detection technology for calibration stability and long sensor life.
- 4 on-off SPST outputs with visual status indicators.
- Corrosion-proof Nema 3 PVC enclosure with a gasketed cover and vandal proof screws for components protection.

Applications:

- To maintain indoor air quality in spaces where there are significant variations of occupancy over time.
- Takes direct control of intake fan or outside air inlet damper positioning, saving energy on heating or cooling make-up air.
- Delays supply of outside air until actually required indoors.

The CO2-EN Carbon Dioxide Monitor-Controller is designed to provide HVAC systems with economical means of controlling outdoor makeup air to maintain indoor air quality and reduce the cost of heating or cooling the building environment.

The CO2-EN is used for ambient monitoring in commercial and light industrial environments. Air samples originate at the remote sampling head, which contains a high efficiency particulate filter.

It can also be provided with a duct mounted sampling head to sample return air from offices or other locations where the control unit should be concealed from view.

The standard CO2-EN unit is supplied with ACME's high capacity sampling filter assembly for remote mounting from the control unit. The standard unit has four contact levels at 600, 800, 1000 and 1200 PPM CO₂, allowing maximum flexibility in selecting operating levels.

The four output SPST contact levels can be also be factory set to whatever CO₂ levels are required by the customer.

An optional 4-20mA analog output signal over the detection range of the sensor is available for variable drive units or remote supervision.

An integral or remote alarm for warning at selected CO₂ levels is also available. Please see the reverse of this bulletin for complete specifications.

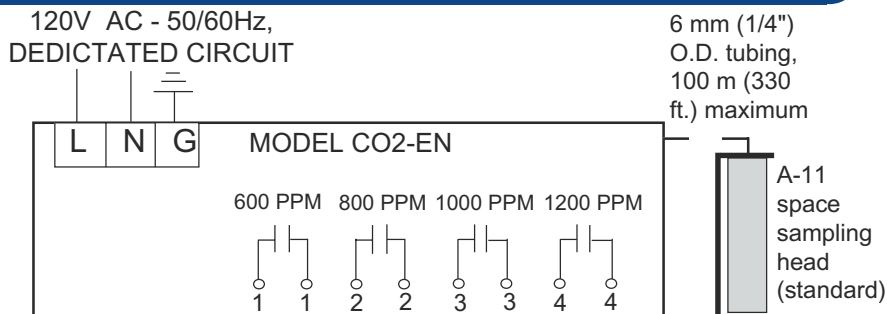
CO2-EN Carbon Dioxide Monitor-Controller

Gas detected:	Carbon Dioxide (CO ₂)
Detection range:	0-2000 PPM - HVAC 0-5000 PPM - Industrial
Ambient temperature:	0-50° C (32-120° F)
Sensor:	Non-dispersive Infrared solid-state Analyzer
Accuracy:	3% of range
Mounting:	Wall or column with brackets (supplied)
Unit dimensions (mm):	225mmHx225mmWx125mmD (9"H x 9"W x 5"D)
Weight:	2.25 kg (5 lbs)
Supply voltage:	120V AC (also available 24 or 220VAC)
Relay Outputs:	4
Contact rating:	0.6A@125V AC
Relay Output Settings:	600, 800, 1000, 1200 PPM (standard HVAC)
LED indicators:	Power On, Relay Output Status (4)

How to order

- Unit with 4-20 mA output, no contacts, no display
Cat. No.: CO2-EN-120-01
- Unit with 4-20 mA output, no contacts, digital display
Cat. No.: CO2-EN-120-02
- Unit with 4 contact outputs, no display
Cat. No.: CO2-EN-120-03
- Unit with 4 contact outputs, digital display
Cat. No.: CO2-EN-120-04
- Unit with 4 contact outputs, 4-20mA output, digital display
Cat. No.: CO2-EN-120-05

Typical wiring diagram



Typical specifications:

- Supply and install where shown on drawings ACME model CO2-EN Carbon Dioxide Monitor Controller.
 - Unit shall have corrosion proof gasketed enclosure for wall mounting and include infrared analyzer, remote sampling head with replaceable filter, flow meter with flow adjustment and cartridge filter upstream of analyzer.
 - Unit shall provide four levels of control: 600, 800, 1000, and 1200 PPM.
 - Green, amber and red LED lights shall display operation of relays at above levels.
- NOTE: Specification should now add optional features on equipment, and control functions.

Technical Data:

Principle of operation:

The CO2-EN detection and control unit employs a solid state infrared CO₂ analyzer for gas detection. When protected from dust and other contaminants by filters, these analyzers have a life expectancy of ten years.

The analyzer provides a 4-20 mA output signal over its calibrated range, which is 0-2000 PPM on standard units and 0-5000 PPM on industrial grade units. The analyzer's output is fed to a controller card with a series of four dry contact outputs. Each output can be set to trigger at any point over the 4-20 mA output range to correspond to a desired CO₂ concentration set point. The typical calibration levels for these output contacts are 600, 800, 1000 and 1200 PPM CO₂ on the standard unit.

For installations in buildings equipped with a BAS (Building Automation System) a version of the CO2-EN may be ordered with a simple 4-20 mA signal output. A digital display providing a PPM readout of current CO₂ concentrations is optional.

The CO2-EN comes with a two stage filtration system. The first filtration point occurs at the sampling head, where either a high capacity space type sampling head (model A-11) or a duct-type sampling assembly (model D-11) is installed. The air sample is continuously drawn back to the control unit by a sampling pump where it is passed through a second line filter before reaching the analyzer. This filtration system ensures that the analyzer stays clean and thus maintains better calibration over its lifetime.

Sampling heads are connected to the unit using 6mm (1/4") OD pneumatic tubing (not supplied by Acme). Maximum distance between the sampling head and the unit is 100 meters (330 feet). For longer distances, a stronger pump is available through custom order.

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