

NO₂ - MONITOR-CONTROLLER WITH FOUR RELAY OUTPUTS LEVELS AND OPTIONAL DIGITAL DISPLAY



Features:

- Suitable for both existing and new systems.
- Combines electrochemical sensor with latest technology.
- Visual indication of sampling flow conditions and operation.
- Corrosion proof enclosure with gasketed cover and vandal proof screws protects components and prevents settings from being tampered.

Applications:

- Assures maintenance of indoor air quality.
- Cuts energy costs spent unnecessarily on heating and/or cooling of fresh air.
- Improves efficiency and reduces building operating costs.
- Delays supply of fresh air until actually required indoors.

NO₂ detection is mostly used to detect Diesel exhaust fumes in commercial and light industrial facilities using direct fired heating, making CO₂ based ventilation control inappropriate.

The unit is designed to provide HVAC systems with an economical means of controlling indoor air quality.

Air samples originate at the remote sampling head, which contains of a high efficiency particulate filter.

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

The standard NO₂-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 1, 2, 3 and 5 PPM NO₂, allowing maximum flexibility in selecting operating levels.

The four output SPDT contact levels can be also be factory set to whatever NO₂ 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.

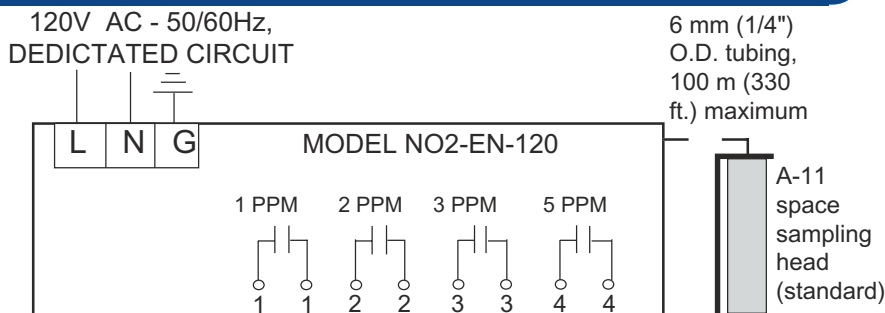
An integral or remote alarm for warning at selected NO₂ levels is also available. Please see the reverse of this bulletin for complete specifications.

Gas detected:	Nitrogen Dioxide (NO ₂)
Detection range:	0-5 PPM
Ambient temperature:	0-50° C (32-120° F)
Sensor:	Electrochemical Cell
Accuracy:	3% of range
Mounting:	Wall or column with brackets (supplied)
Unit dimensions (mm):	225mmH x 225mmW x 125mmD (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:	1, 2, 3 & 5 PPM
LED indicators:	Power On, Relay Output Status (4)

How to order

- Unit with 4-20 mA output, no contacts, no display
Cat. No.: NO2-EN-120-01
- Unit with 4-20 mA output, no contacts, digital display
Cat. No.: NO2-EN-120-02
- Unit with 4 contact outputs, no display
Cat. No.: NO2-EN-120-03
- Unit with 4 contact outputs, digital display
Cat. No.: NO2-EN-120-04
- Unit with 4 contact outputs, 4-20mA output, digital display
Cat. No.: NO2-EN-120-05

Typical wiring diagram



Typical specification:

- 1.0 Supply and install where shown on drawings ACME model NO2-EN Nitrogen Dioxide Monitor Controller.
 - 2.0 Unit shall have corrosion proof gasketed enclosure for wall mounting and include electrochemical sensor, remote sampling head with replaceable filter, flow meter with flow adjustment and cartridge filter upstream of the sensor.
 - 3.0 Unit shall provide four levels of control: 1, 2, 3 & 5 PPM.
 - 4.0 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.

Principle of operation:

The NO₂-EN detection and control unit employs a solid state electrochemical cell for NO₂ gas detection. When protected from dust and other contaminants by filters, these sensors have a life expectancy of two years.

The sensor provides a 4-20 mA output signal over its calibrated range, which is 0-5 PPM on standard units. The sensor'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 NO₂ concentration set point. The typical calibration levels for these output contacts are 1, 2, 3 and 5 PPM NO₂ on the standard unit. Other set points are available through custom order.

For installations in buildings equipped with a BAS (Building Automation System) a version of the NO₂-EN may be ordered with a simple 4-20 mA signal output. A digital display providing a PPM readout of current NO₂ concentrations is optional.

The NO₂-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 sensor. This filtration system ensures that the sensor 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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