

DESCRIPTION

Microprocessor-based analog gas transmitter for the detection of nitrogen dioxide (NO₂)/diesel fumes in the ambient air.

APPLICATION

To sense nitrogen dioxide (NO₂) in a wide variety of commercial and industrial applications such as vehicle diesel exhaust in parking structures, engine repair shops, tunnels, equipment rooms and ventilation systems, etc. and transmit to any compatible electronic analog control, DDC/PLC control or automation system.

FEATURES

- Continuous monitoring
- (0)4-20 mA, (0)2-10 VDC output, selectable
- Polarity protected
- Two-stage relay output control, optional
- Electrochemical gas sensor, gas specific
- Temperature compensated
- Easy plug-in sensor
- Modular plug-in technology
- High-impact polycarbonate enclosure, NEMA 4X
- Easy maintenance

PolyGard®



NRTL Certification to STD
UL 61010-1



SPECIFICATIONS

Electrical

Power supply	24 VAC ± 15%, 50/60 Hz, or 17-28 VDC, polarity protected
Power consumption	22 mA (0.6 VA), max.
- w/relay package	35 mA (1.0 VA), max.
- w/heater	235 mA (6 VA), max.
RFI/EMI protection	5.0 W @ 1 ft. (0.31 m) radiated

Sensor Performance

Gas detected	Nitrogen dioxide (NO ₂)
Sensor element	Electrochemical, diffusion
Range	Span 0-10 or 0-20 ppm factory calibrated, 0-10 standard
Stability & resolution	± 0.1 ppm of reading
Repeatability	± 2% of reading
Long term output drift	< 2% signal loss/month
Response time	t ₉₀ < 60 sec.
Sensor life expectancy	2 years, normal operating environment
Sensor coverage	4,000 sq.ft., max. 7,500 sq.ft. (372 m ² , max. 697 m ²), under "ideal conditions"

Installation Location

Mounting height	1 to 3 ft. (0.3 to 1.0 m) above floor for standard garage applications, consult with factory for other applications
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Type of Control

General	Continuous proportional analog sensor signal output
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Analog output

(0)4-20 mA, load < 500 Ω;
(0)2-10 VDC, load > 50K Ω;
jumper selectable, polarity protected
(2) relays, potential free

Optional contact outputs

Environmental

Permissible ambient

- working temperature 14°F to 104°F (-10°C to 40°C)
- storage temperature -4°F to 104°F (-20°C to 40°C)
- humidity 15 to 95% RH, non condensing
- working pressure Atmospheric ± 10%

Physical

Enclosure, standard

- material Polycarbonate,
UL 94-HB, fire-retardant
- conformity UL 50
- color Light gray
- protection NEMA 4X (IP65)
- installation Wall (surface) mounted, or
single gang electrical box

enclosure approval

Dimensions (H x W x D)

UL Listed, E208470
CSA Certified, E208470
5.12 x 3.70 x 2.25 in.
(130 x 94 x 57 mm)

Cable entry

1 hole for 1/2 in. conduit for wall
(surface) mounting, and 1 hole on
back side of base plate for single
gang electrical box mounting

Wire connection

Terminal blocks,
screw type for lead wire

NES Series 200 NO₂

SPECIFICATIONS

Physical (cont...)

Wire size	Min. 24 AWG (0.25 mm ²), Max. 14 AWG (2.5 mm ²)
Wire distance	Max. loop resistance 450 Ω (= wire resistance plus controller input resistance)
Weight	0.7 lbs. (0.3 kg)

Calibration

Adjustment via onboard zero and gain potentiometers

Approvals/Listings

- unit rating	NRTL Certification to STD ANSI/UL 61010-1 CE EMV-Compliance 2004/108/EWG, low voltage directives 73/23/EWG
Warranty	Two years material and workmanship, 12 months normal exposure for sensor element

OPTIONS

Enclosures

Wall mounted "0"

- material	NEMA 1 (IP42), general purpose Galvanized steel w/zinc coating, corrosion resistant
- color	Light gray
- installation	Wall (surface) mounted, or single gang electrical box
- dimensions (H x W x D)	5.59 x 5.59 x 2.48 in. (142 x 142 x 63 mm)
- cable entry	1 hole for 1/2 in. conduit for wall (surface) mounting, and 1 hole on back side of base plate for single gang electrical box mounting

Duct mounted "1"

- w/probe	NEMA 3 (IP45) 7/8 in. (22 mm) diameter and 7.16 in. (182 mm) length
- cable entry	1 hole for 1/2 in. conduit

Wall mounted "4"

- material	NEMA 4X, w/splash guard ABS UL94V0
- color	Light gray
- installation	Wall (surface) mount
- dimensions (H x W x D)	4.80 x 4.72 x 3.42 in. (122 x 120 x 87mm)
- cable entry	(1) PG 13.5 compression fitting, removable, hole fits 1/2 in. conduit conductor

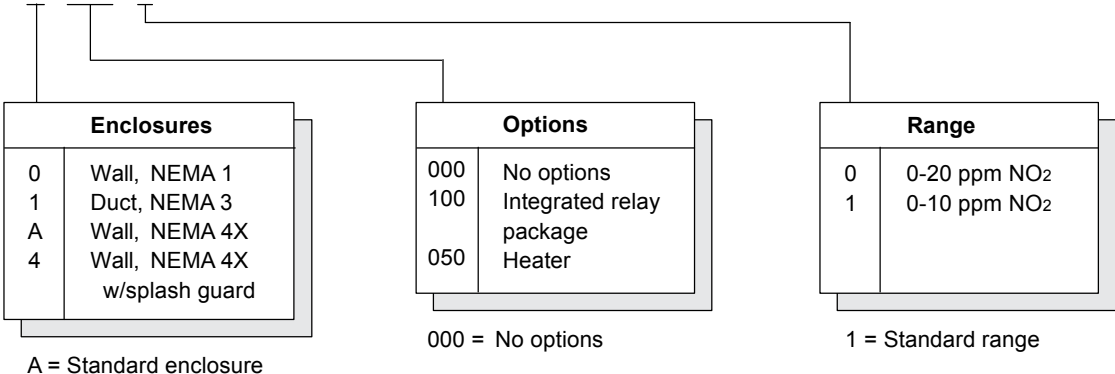
Relay Package

Type	(1) SPDT (R1), and (1) SPST-NC or SPST-NO (R2), jumper selectable
Contact rating	30 VAC/VDC, 0.5 A, max.
Setpoint (factory set)	Lo/SPDT = 2 ppm* Hi/SPST = 5 ppm*
Switching differential (factory set)	0.5 ppm* * other values on special request at time of ordering
Relay mode (factory set)	De-energized for each relay, energized (fail-safe) mode on special request
Status indicator	(2) LEDs, one for each relay
Relay approval	UL Recognized, E41515 CSA, C22.2 No. 0, No. 14 (File No. LR31928)
Heater, built-in	For low temperature environment
Ambient temperature	-40°F (-40°C)
Power consumption	0.2 A (5 VA), max.
Thermostatic control	32°F (0°C) ± 5°F (3°C)

NES Series 200 NO₂

ORDERING INFORMATION

AT-1130 - A - 000 - 1 (Product label "AT-1130-x-xxx-x V3")

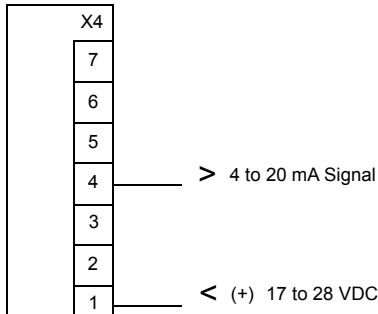


NES Series 200 NO₂

WIRING CONFIGURATION

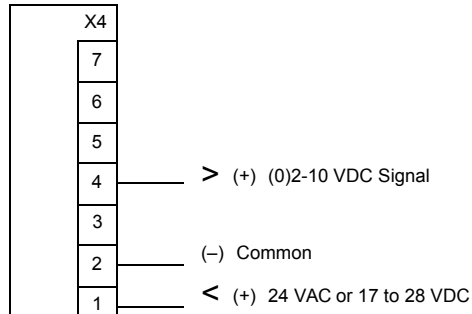
AT-1130

4-20 mA signal, 2-wire, loop-powered, 24 VDC



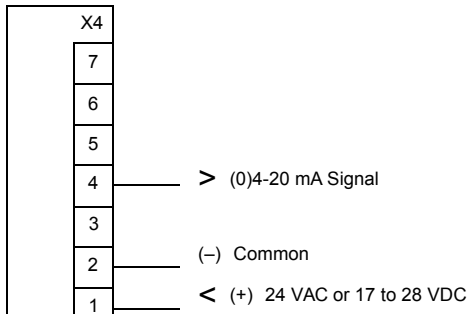
AT-1130

(0)2-10 VDC signal, 3-wire, 24 VAC or 24 VDC



AT-1130

(0)4-20 mA signal, 3-wire, 24 VAC or 24 VDC**



Jumper output signal range selectors:

- V-A Over both pins = VDC
Pins not covered = mA
- 0-20% Over both pins = 4-20 mA / 2-10 VDC
Pins not covered = 0-20 mA / 0-10 VDC

Notes:

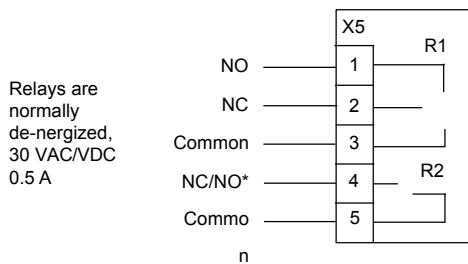
2-wire loop-powered wire configuration allow only 4-20 mA signal.

Signal range jumper selection:

- V-A Pins not covered
- 0-20% Pins both covered

Optional relay package

(0)4-20 mA signal, 3-wire, 24 VAC or 24 VDC**



** For (0)4-20 mA signal with optional relay package and/or heater, the 3-wire configuration must be applied.

Twisted, shielded wire is recommended for 2- or 3-wire configurations.

Shield should be grounded only at the controller. DO NOT ground shield at both ends!

With optional heater:

The wiring must be sized appropriately for a power of 0.3 A, 24 VDC.

*Jumper SPST relay NC/NO selector:

- NC Covers top two pins = SPST-NC
- NO Covers bottom two pins = SPST-NO

Note: When using AT-1130 transmitter w/relay package as a stand-alone unit (no connection to a controller), pins on jumpers "V-A" and "0-20%" must be covered.

See Jumper output signal range selectors.