

# Nitrogen Dioxide (NO<sub>2</sub>) Digital RS-485 Gas Transmitter



ITS-M5150-NET



## DESCRIPTION

Digital RS-485 communicating gas transmitter, for the detection of nitrogen dioxide (NO<sub>2</sub>) in the ambient air for direct daisy-chain/multi-drop link to the IM digital controller.

## APPLICATION

To sense nitrogen dioxide (NO<sub>2</sub>) in a wide variety of commercial and industrial applications such as vehicle exhaust in parking structures, engine repair shops, tunnels, equipment rooms and ventilation systems, etc. and transmit to the IM digital controller.

## FEATURES

- RS-485 serial communication
- Continuous monitoring
- Electrochemical gas sensor, gas specific
- Liquid Crystal Display (LCD)
- Push button programming
- Easy maintenance

## SPECIFICATIONS

### Electric

Power supply 24 VAC (12-28 VAC), floating, 50/60 Hz, 24 VDC (15-40 VDC)

Protection Two (2) 2.0 A socketed pico fuses

Power consumption < 2 VA (100 mA) 250 mA turn-on surge

### Sensor Performance

Gas detected Nitrogen dioxide (NO<sub>2</sub>)

Sensor element Electrochemical, diffusion

Range Span field adjustable from 0-10 ppm via calibration, 0-6 ppm factory set

Accuracy ± 2.5% of reading

Repeatability ± 1% of reading

Output drift Max. 5% of full scale/year

Response time < 60 seconds to 90% of step change

Sensor life expectancy 2-3 years, normal operating environment

Sensor coverage Up to 5,000 sq.ft. (465 m<sup>2</sup>) "under ideal conditions"

### Installation Location

Mounting height 1 to 2 ft. (0.3 to 0.6m) above floor

### Type of Control

General Continuous proportional sensor signal

Output signal for serial communication Digital, RS-485, proprietary protocol

### Digital Display

LCD, two lines x 8 characters, 1-digit resolution, displays NO<sub>2</sub> ppm value

### Programming

Range selectable, network address number assignment, etc. via three-push-buttons and LCD

### Environmental

Permissible ambient

- working temperature -4°F to 104°F (-20°C to 40°C)
- storage temperature 32°F to 68°F (0°C to 20°C)
- humidity, continuous 15 to 90% RH, non-condensing
- humidity, intermitted 0 to 99% RH, non-condensing
- working pressure Atmospheric ± 10%

### Physical

Enclosure

- material Polycarbonate, ABS blend, fire-retardant, UL-V0
- color Cool gray, 2U pantone
- cover Snap-on, secured by (2) screws
- protection NEMA 1, general purpose
- installation Wall (surface) mounted, or single gang electrical box

Dimensions (H x W x D) 6.0 x 3.5 x 1.09 in. (152 x 89 x 28 mm)

Cable entry 1 hole on back side of base plate for single gang box mounting

Wire connection Terminal blocks, screw type for lead wire

Wire size Min. 26 AWG (0.4 mm<sup>2</sup>), Max. 16 AWG (1.3 mm<sup>2</sup>)

Weight 0.5 lbs. (0.3 kg)

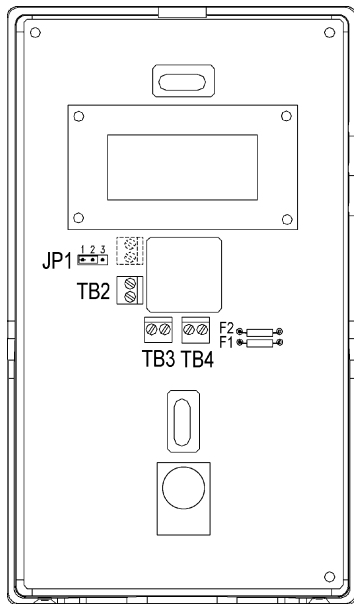
Warranty 12 months material and workmanship

## ORDERING INFORMATION

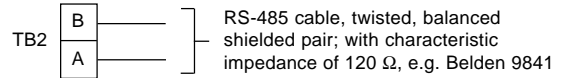
ITS-M5150-NET NO<sub>2</sub> Transmitter, 0-6 ppm, RS-485, LCD, wall-mount

FIELD WIRING CONFIGURATION

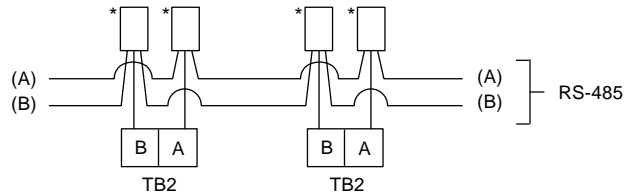
ITS-M5150-NET



TB2 RS-485 Digital Communication Link

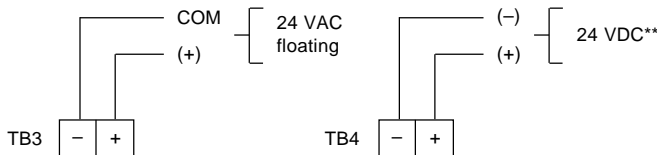


Suggested daisy-chain (multi-drop) communication between transmitters and controller w/wire nuts\*

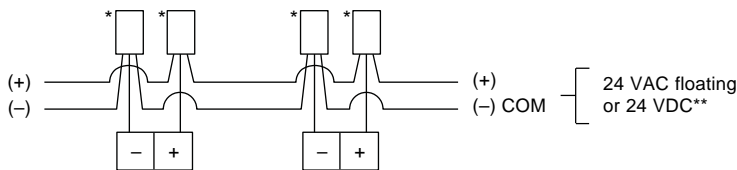


- Note:
- Do not connect power to **A** and **B**, this will damage all transmitters and controller linked on the same daisy-chain trunk.
  - Daisy-chain between transmitters and controller **A** to **A**, **B** to **B**. Do not cross **A** to **B**, this creates malfunction of communication.
  - Maximum daisy-chain trunk length is 3,200 ft. (1,000 m).
  - Do not use high voltage lines in the same RS-485 communication cable conduit.

TB3 and TB4 Power Supply 24 VAC or 24 VDC

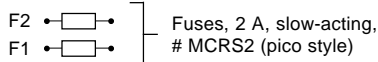


Suggested daisy-chain powering w/wire nuts\*

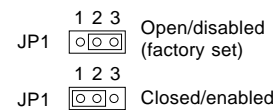


\*\* Do not use VDC power supply from the IM controller, use separate VDC power.

F1 and F2 Fuses



JP1 Jumper Selector, RS-485 End-of-Line Terminator



Only the last transmitter, away from the IM controller, of the communication trunk should enable the End-of-Line Terminator

