

# Carbon Monoxide (CO) Digital RS-485 Gas Transmitter



ITS-M5160-NET



## DESCRIPTION

Digital RS-485 communicating gas transmitter, for the detection of carbon monoxide (CO) in the ambient air for direct daisy-chain/multi-drop link to the IM digital controller.

## APPLICATION

To sense carbon monoxide (CO) 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

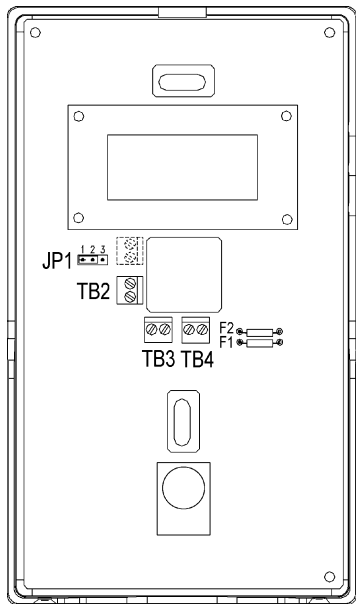
- RS-485 serial communication
- Continuous monitoring
- Electrochemical gas sensor, gas specific
- Liquid Crystal Display (LCD)
- Push button programming
- Easy maintenance

## SPECIFICATIONS

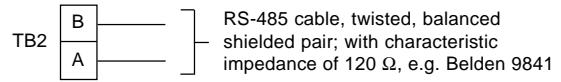
<b>Electric</b>		<b>Programming</b>	
Power supply	24 VAC (12-28 VAC), floating, 50/60 Hz, 24 VDC (15-40 VDC)		Range selectable, network address number assignment, etc. via three-push-buttons and LCD
Protection	Two (2) 2.0 A, socketed pico fuses	<b>Environmental</b>	
Power consumption	< 2 VA (100 mA) 250 mA turn-on surge	Permissible ambient	
<b>Sensor Performance</b>		- working temperature	-4°F to 104°F (-20°C to 40°C)
Gas detected	Carbon monoxide (CO)	- storage temperature	32°F to 68°F (0°C to 20°C)
Sensor element	Electrochemical, diffusion	- humidity, continuous	15 to 95% RH, non-condensing
Range	Span field adjustable from 0-250 ppm via calibration, 0-125 ppm factory set	- humidity, intermitted	0 to 99% RH, non-condensing
Resolution	1 ppm CO	- working pressure	Atmospheric ± 10%
Accuracy	2% of reading	<b>Physical</b>	
Repeatability	± 2%	Enclosure	
Output drift	Max. 5% of full scale/year	- material	Polycarbonate, ABS blend, fire-retardant, UL-V0
Response time	< 30 seconds to 90% of step change	- color	Cool gray, 2U pantone
Sensor life expectancy	5 years, normal operating environment	- cover	Snap-on, secured by (2) screws
Sensor coverage	5,000 sq.ft., max. 7,500 sq.ft. (465 m <sup>2</sup> , max. 697 m <sup>2</sup> ), "under ideal conditions"	- protection	NEMA 1, general purpose
<b>Installation Location</b>		- installation	Wall (surface) mounted, or single gang electrical box
Mounting height	5 to 6 ft. (1.5 to 1.8 m) above floor	Dimensions (H x W x D)	6.0 x 3.5 x 1.09 in. (152 x 89 x 28 mm)
<b>Type of Control</b>		Cable entry	1 hole on back side of base plate for single gang electrical box mounting
General	Continuous proportional sensor signal	Wire connection	Terminal blocks, screw type for lead wire
Output signal for serial communication	Digital, RS-485, proprietary protocol	Wire size	Min. 26 AWG (0.4 mm <sup>2</sup> ), Max. 16 AWG (1.3 mm <sup>2</sup> )
<b>Digital Display</b>	LCD, two lines x 8 characters, 1-digit resolution, displays CO ppm value	Weight	0.5 lbs. (0.3 kg)
		<b>Warranty</b>	12 months material and workmanship
		<b>ORDERING INFORMATION</b>	
		<b>ITS-M5160-NET</b>	CO Transmitter, 0-125 ppm, RS-485, LCD, wall-mount

FIELD WIRING CONFIGURATION

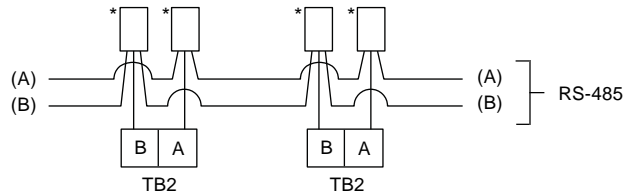
ITS-M5160-NET



TB2 RS-485 Digital Communication Link



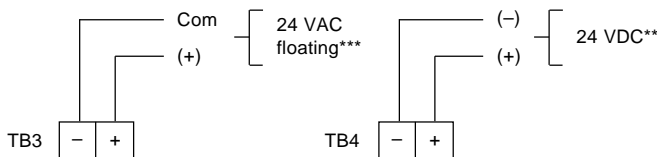
Suggested daisy-chain (multi-drop) communication between transmitters and controller w/ wire nuts\*



\* Max allowable distance between wire nut and RS-485 terminal connections is 9 inches (22.9 cm)

"Maximum of (32) transmitters can be linked to an IM controller"

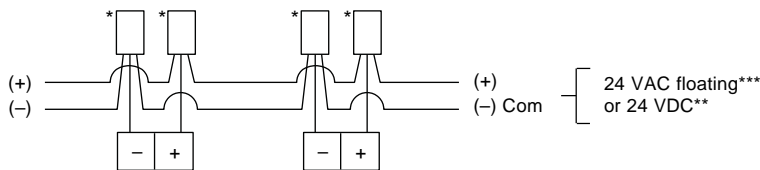
TB3 and TB4 Power Supply 24 VAC or 24 VDC



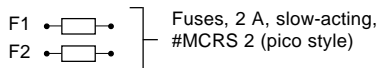
\*\*\* Do not connect 24 VAC to earth ground

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

Suggested daisy-chain powering w/ wire nuts\*

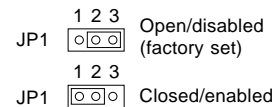


F1 and F2 Fuses



- 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.

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

