

# Combustible Digital RS-485 Gas Transmitters



ITS-M1700-NET

## DESCRIPTION

Digital RS-485 communicating gas transmitters, for the detection of combustible methane or propane gas in the ambient air for direct daisy-chain/multi-drop link to the IM digital controller.

## APPLICATION

To sense a wide variety of combustible gases and vapors in commercial applications such as buildings built on landfill sites, boiler rooms (i.e. Methane), warehouses and garages (i.e. Propane), and transmit to any compatible electronic analog control, DDC/PLC control or automation systems.



## FEATURES

- RS-485 serial communication
- Continuous monitoring
- Catalytic bead (pellistor) gas sensor
- Liquid Crystal Display (LCD)
- Push button programming
- Easy maintenance

## SPECIFICATIONS

### Electric

Power supply 24 VAC (18-30 VAC), floating, 50/60 Hz, 24 VDC (18-30 VDC)  
 Protection One (1) 1 A, socketed pico fuse  
 Power consumption < 2 VA (100 mA) 250 mA turn-on surge

### Sensor Performance

Gas detected Combustible gases  
 - part # -M1710- Methane (CH<sub>4</sub>)  
 - part # -M1730- Propane (C<sub>3</sub>H<sub>8</sub>)  
 Sensor element Catalytic bead (pellistor), diffusion  
 Range 0-100% LEL  
 Methane 5% v/v = 100% LEL  
 Propane 2.1%v/v = 100% LEL  
 Accuracy ± 2% LEL  
 Repeatability ± 2% LEL  
 Zero drift 2% of full scale/month at 68°F (20°C)  
 Long term sensitivity drift 2% of LEL methane/month  
 Response time < 10 sec. to 50% of step change < 30 sec. to 90% of step change  
 Sensor life expectancy 3 years, normal operating environment  
 Sensor coverage 2,000 sq.ft., max. 3,000 sq.ft. (185 m<sup>2</sup>, max. 278 m<sup>2</sup>), "under ideal conditions"

### Installation Location

Mounting height  
 - part # -M1710/methane 1 ft (0.3m) below ceiling  
 - part # -M1730/propane 1 ft (0.3m) above floor

### Type of Control

General Continuous proportional sensor signal

Output signal for serial communication Digital, RS-485,

### Digital Display

proprietary protocol LCD, two lines x 8 characters, 1-digit resolution, displays % LEL value  
 Range selectable, network address number assignment, etc. via three-push-buttons and LCD

### Programming

### Environmental

Permissible ambient  
 - working temperature 14°F to 104°F (-10°C to 40°C)  
 - storage temperature 41°F to 68°F (5°C to 20°C)  
 - humidity, continuous 0 to 95% RH, non-condensing  
 - humidity, intermittent 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)

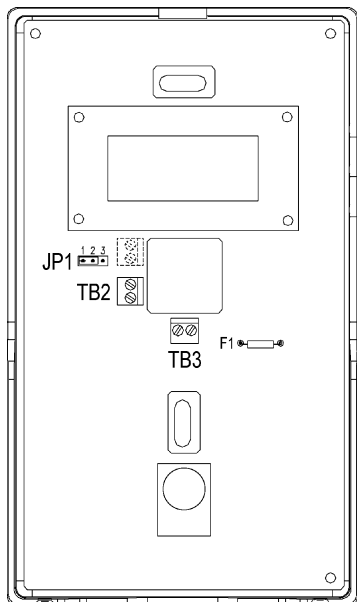
6.0 x 3.5 x 1.09 in. (152 x 89 x 28 mm)  
 Cable entry 1 hole on back side of base plate for single gang box mounting  
 Wire connection Terminal blocks, screw type for lead wire  
 Wire size Min. 26 AWG (0.4 mm<sup>2</sup>), Max. 16 AWG (1.3 mm<sup>2</sup>)  
 Weight 0.5 lbs. (0.3 kg)  
 Warranty 12 months material and workmanship

## ORDERING INFORMATION

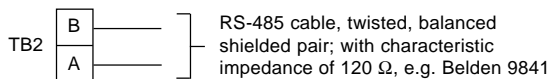
ITS-M1710-NET	Methane (CH <sub>4</sub> )
ITS-M1730-NET	Propane (C <sub>4</sub> H <sub>8</sub> )
	Combustible Transmitter, 0-100% LEL, RS-485, LCD, wall-mount

## FIELD WIRING CONFIGURATION

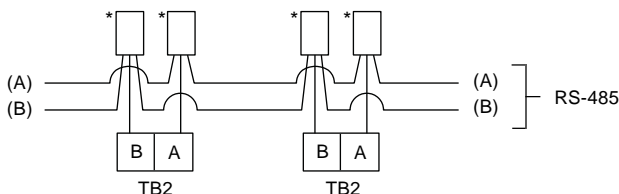
### ITS-M1700-NET



### TB2 RS-485 Digital Communication Link



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

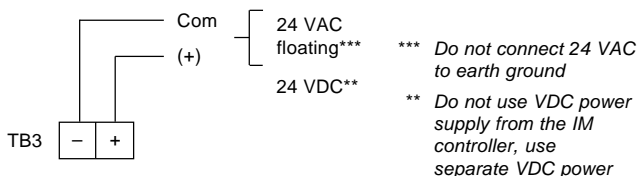


\* Max allowable distance between wire nut and RS-485 terminal connections is 9 inches (22.9 cm)

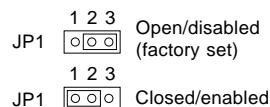
"Maximum of (32) transmitters can be linked to an IM controller"

- 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 Power Supply 24 VAC or 24 VDC

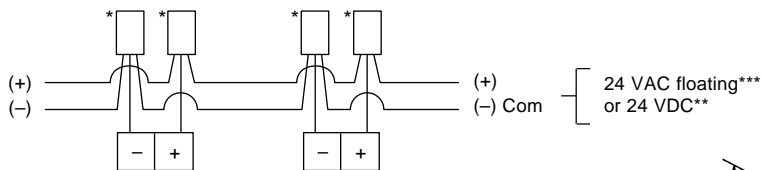


### JP1 Jumper Selector, RS-485 End-of-Line Terminator



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

Suggested daisy-chain powering w/wire nuts\*



### F1 Fuse

