



The LPT-M is a full featured, three channel, digital transmitter for use in non-hazardous, non-explosion rated, commercial and light industrial applications. It is available with a wide range of internal and/or remote sensors and sensor types including electrochemical, catalytic and PID TVOC. The LPT-M may be configured to operate as a standalone fixed system or be part of a digital network. It offers a Modbus® RTU RS-485 output signal for communicating with a Controller and/or a Building Automation System, an audible internal alarm, one SPDT dry contact relay, LCD display with user selectable functions, temperature compensation and thermal resetting fuses all in a RoHS compliant package.

The LPT-M comes in a standard water / dust tight, corrosion resistant ABS / polycarbonate enclosure with a hinged, secured door. With the optional, factory installed splash guard the enclosure is IP54 rated and provides protection in water spray or wash down applications. An optional heater is available for continued operation in cold environment applications.

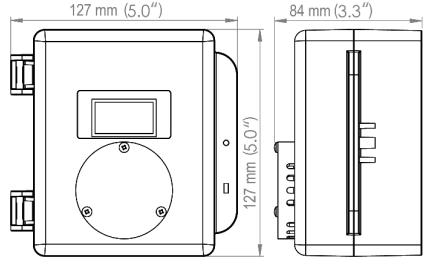
### KEY FEATURES

- » 1, 2 or 3 channel operation
- » Modbus® RTU RS-485 digital output signal
- » Many internal and/or remote sensor configurations
- » One SPDT dry contact relay
- » LCD display (with user selectable function)
- » Internal audible alarm
- » Optional display heater for cold environment applications
- » Standard water / dust tight, corrosion resistant enclosure (drip proof); IP54 rated with optional splash guard installed.
- » RoHS compliant circuit board
- » Thermal resetting fuses

### APPLICATIONS

- » Parking Garages/Car Parks
- » Vehicle Repair Shops
- » Ice Arenas
- » Ice Cleaning Machine Rooms
- » Commercial Indoor Swimming Pools
- » Manufacturing Plants
- » Maintenance Facilities
- » ... and many more

### TECHNICAL DRAWING



Note: Drawings above are shown with the optional splash guard. Without the splash guard, the thickness of the unit is 71 mm (2.8").

### TECHNICAL SPECIFICATIONS

#### MECHANICAL

Enclosure	ABS / Polycarbonate, IP54 rated with splash guard installed. Copper coated interior to reduce RF interference.
Weight	400 g (14 oz)
Size	127 x 127 x 71 mm / 5.0 x 5.0 x 2.8 inches

#### USER INTERFACE

Display	Graphic LCD, green border
Magnetic Sensors	Using a magnetic wand, initiate calibration and menu options without opening the enclosure

#### INPUT / OUTPUT

Input	4 - 20 mA analog, for ESH-A Remote Sensor
Output	Modbus® RTU RS-485
Relay	One SPDT dry contact, rated 30 volts, 2 amps max
Audible Alarm	Standard internal buzzer; enable/disable

#### ELECTRICAL

Power Requirement	12-27 VAC, 50-60 Hz, 3 VA, Class 2 16-30 VDC, 3W, Class 2
Current Draw	30 mA (buzzer & relay energized), 2 sensors
Wiring	Modbus® RTU (version 1.1b3) RS-485, 16 gauge, 4-wire VAC/VDC
Fuses	Thermal, resetting

#### ENVIRONMENTAL

Operating Temperature	-20°C to 40°C (-4°F to 104°F), lower temperature option available
Humidity	15 - 90% RH non-condensing

### PRODUCT CODES

*Type A: Single Channel (One Internal Electrochemical Sensor)*

Part Number		Lifespan
<b>LPT-M-NH3</b>	Ammonia (NH <sub>3</sub> ) sensor (0 - 500 ppm)	~2 yrs
<b>LPT-M-TCO</b>	Carbon Monoxide (CO) sensor (0 - 200 ppm)	~6 yrs
<b>LPT-M-CL2</b>	Chlorine (Cl <sub>2</sub> ) sensor (0 - 5 ppm)	~3 yrs
<b>LPT-M-ClO2</b>	Chlorine Dioxide (ClO <sub>2</sub> ) sensor (0 - 10 ppm)	~3 yrs
<b>LPT-M-C2H4</b>	Ethylene (C <sub>2</sub> H <sub>4</sub> ) sensor (0 - 200 ppm)	~2 yrs
<b>LPT-M-EETO</b>	Ethylene Oxide (C <sub>2</sub> H <sub>4</sub> O) sensor (0 - 20 ppm)	~2 yrs
<b>LPT-M-F2</b>	Fluorine (F <sub>2</sub> ) sensor (0 - 1 ppm)	~2 yrs
<b>LPT-M-CH2O</b>	Formaldehyde (CH <sub>2</sub> O) sensor (0 - 5 ppm)	~2 yrs
<b>LPT-M-EH2</b>	Hydrogen (H <sub>2</sub> ) sensor (0 - 2,000 ppm)	~2 yrs
<b>LPT-M-H2S</b>	Hydrogen Sulphide (H <sub>2</sub> S) sensor (0 - 50 ppm)	~5 yrs
<b>LPT-M-HCL</b>	Hydrogen Chloride (HCl) sensor (0 - 30 ppm)	~2 yrs
<b>LPT-M-HCN</b>	Hydrogen Cyanide (HCN) sensor (0 - 100 ppm)	~2 yrs
<b>LPT-M-HF</b>	Hydrogen Fluoride (HF) sensor (0 - 10 ppm)	~2 yrs
<b>LPT-M-NO</b>	Nitric Oxide (NO) sensor (0 - 100 ppm)	~2 yrs
<b>LPT-M-NO2A</b>	Nitrogen Dioxide (NO <sub>2</sub> ) sensor (0 - 10 ppm)	~3 yrs
<b>LPT-M-NO2B</b>	Nitrogen Dioxide (NO <sub>2</sub> ) sensor (0 - 10 ppm)	~6 yrs
<b>LPT-M-O2</b>	Oxygen (O <sub>2</sub> ) sensor (0 - 25% volume)	~3 yrs
<b>LPT-M-O3</b>	Ozone (O <sub>3</sub> ) sensor (0 - 1 ppm)	~2 yrs
<b>LPT-M-PH3</b>	Phosphine (PH <sub>3</sub> ) sensor (0 - 5 ppm)	~2 yrs
<b>LPT-M-SiH4</b>	Silane (SiH <sub>4</sub> ) sensor (0 - 20 ppm)	~2 yrs
<b>LPT-M-SO2</b>	Sulphur Dioxide (SO <sub>2</sub> ) sensor (0 - 20 ppm)	~2 yrs

*Type B1: Single Channel (No Internal Sensor, ESH-A Remote Sensor only)*

Use Part Number **LPT-M-R** and add the Part Number of the ESH-A Remote Sensor from [GROUP 2] below. (example: LPT-M-R + ESH-A-CH2-100)

[GROUP 2]	Catalytic Combustibles	Lifespan
<b>ESH-A-CH2-100</b>	Hydrogen (H <sub>2</sub> ) sensor (0 - 100% LEL)	~5 yrs
<b>ESH-A-CCH4-100</b>	Methane (CH <sub>4</sub> ) sensor (0 - 100% LEL)	~5 yrs
<b>ESH-A-CC3H8-100</b>	Propane (C <sub>3</sub> H <sub>8</sub> ) sensor (0 - 100% LEL)	~5 yrs
	<i>TVOC PIDs      ** usage and application dependent</i>	
<b>ESH-A-SPL</b>	TVOC PID sensor (0 - 50 ppm)	**
<b>ESH-A-SPH</b>	TVOC PID sensor (0 - 300 ppm)	**
	<i>Infrared</i>	
<b>ESH-A-JET</b>	Propane (C <sub>3</sub> H <sub>8</sub> ) sensor (0 - 100% LEL)	~8 yrs

*Type B2: Single Channel (No Internal Sensor + One Remote CO<sub>2</sub> Transmitter)*

Use Part Number **LPT-M-RT** and add the Part Number of the CGAS-A or CGAS-AP or AST-IS CO<sub>2</sub> transmitter of choice. NOTE: Analog models only

### PRODUCT CODES... continued

*Type D1: Dual Channel (One Internal Sensor + One ESH-A Remote Sensor)*

<b>LPT-M-TCO-R</b>	Plus choose one ESH-A Remote Sensor from
<b>LPT-M-NO2B-R</b>	[GROUP 2]

*Type D2: Dual Channel (One Internal Sensor + One Remote CO<sub>2</sub> Transmitter)*

Use Part Number **LPT-M-TCO-RT** or **LPT-M-NO2B-RT** and add the Part Number of the CGAS-A or CGAS-AP or AST-IS CO<sub>2</sub> transmitter of choice.

NOTE: Analog models only

*Type E: Dual Channel (Two Internal Electrochemical Sensors)*

<b>LPT-M-TCO-NO2B</b>	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Nitrogen Dioxide (NO <sub>2</sub> ) sensor (0 - 10 ppm)	~6 yrs
<b>LPT-M-TCO-O2</b>	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Oxygen (O <sub>2</sub> ) sensor (0 - 25% volume)	~6 yrs ~3 yrs

*Type F1: Three Channel (Internal CO and NO<sub>2</sub> Sensors + One ESH-A Remote Sensor)*

<b>LPT-M-TCO-NO2B-R</b>	Plus choose one ESH-A Remote Sensor from [GROUP 2]
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*Type F2: Three Channel (Internal CO and NO<sub>2</sub> Sensors + One Remote CO<sub>2</sub> Transmitter)*

<b>LPT-M-TCO-NO2B-RT</b>	Add the Part Number of the CGAS-A or CGAS-AP or AST-IS CO <sub>2</sub> transmitter of choice. NOTE: Analog models only
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**OPTIONS** (Factory installed) Add at the end of the "Part Number" above.

<b>H</b>	Internal heater for cold environment applications down to -40°C / 40°F
<b>L2</b>	Enclosure hood (on side), strobe with audible, 40 mm / 2 in dia, 80 flashes per min, siren volume 85 dB, drip proof
<b>S</b>	Splash Guard for non sticky gases
<b>SN</b>	Splash Guard for sticky gases (Cl <sub>2</sub> , ClO <sub>2</sub> , HCl, HCN, O <sub>3</sub> , PH <sub>3</sub> )

### ACCESSORIES

<b>CET-5GC</b>	Calibration clip for splash guard
<b>CET-715A-CK1</b>	Calibration Kit for 17, 34, 58, 74, 100 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder
<b>CET-MW</b>	Magnetic wand for non-intrusive calibration
<b>PID-KITA</b>	Maintenance Kit for cleaning PID sensor bulb
<b>SCS-8000-RSG</b>	Small galvanized metal, 16 gauge protective guard for transmitters and/or ESH-A Remote Transmitter, as required.
<b>SCS-8000-WSG</b>	Small galvanized metal, 16 gauge protective guard with splash cover for transmitters with sticky gas sensors

### CERTIFICATION

Conforms to: CSA-C22.2 No. 205-12 / UL508 (Edition 17):2007

Conforms to: EMC Directive 2004/108/EC, EN 50270:2006, Type 1, EN61010

Conforms to: FCC. This device complies with Part 15 of the FCC Rules.

