

# OMNIPOINT™ Technical Specifications

GENERAL SPECIFICATIONS	
<b>Description</b>	The OmniPoint™ transmitter is a comprehensive gas detection solution designed to operate in hazardous locations and support multiple sensors in the detection of toxic, oxygen, and flammable gas hazards.
<b>Material</b>	Enclosure: Five-coat marine finish painted aluminum alloy or 316 stainless steel
<b>Weight</b>	Transmitter (enclosure only): Aluminum alloy: 2.48 kg (5.47 lb), 316 stainless steel: 5.37 kg (11.84 lb) Transmitter with display module: Aluminum alloy: 2.78 kg (6.12 lb), 316 stainless steel: 5.70 kg (12.50 lb) XPIS sensor module with cartridge: 0.80 kg (1.76 lb) XP sensor module with cartridge: 0.69 kg (1.52 lb)
<b>Mounting</b>	Can be mounted to flat wall surfaces of various types or to pipes using the optional pipe mount kit. The pipe mount kit allows the transmitter to be mounted to pipes from 2 inches to 6 inches (50 mm to 140 mm) in diameter and includes the pipe mount bracket, carriage bolts, nuts, and lock washers. The transmitter is configured with five cable/conduit ports built into the housing for wiring and mounting sensors.
<b>Cable Entries</b>	Four conduit/cable entries (two right, two left, one bottom). Entry size M25 or 3/4 inch NPT One top entry (M22) for optional Bluetooth antenna.
ENVIRONMENTAL	
<b>IP Rating</b>	IP66/IP67 in accordance with IEC/EN 60529. NEMA 4X
<b>Operating Temperature</b>	-55°C to 75°C (-67°F to 167°F)
<b>Operating Humidity</b>	0% to 99%RH (non condensing)
<b>Operating Pressure</b>	90 kPa to 110 kPa
<b>Storage Conditions</b>	-55°C to 75°C (-67°F to 167°F), 0% to 99%RH (non-condensing)
ELECTRICAL	
<b>Input Voltage Range</b>	12 Vdc to 32 Vdc (24 Vdc Nominal) (Catalytic or IR) and XPIS (EC CELL) sensors and 18 Vdc to 32 Vdc (24 Vdc Nominal) Optima
<b>Power Consumption</b>	Transmitter : Normal 4.5 watts, Max 8.5 watts XPIS sensor (EC cell) : Max 0.3 watts XP sensor (Catalytic or IR cell) : Max 1.7 watts Max consumption is 17W for Optima + 2 XP (CB) sensors
<b>Visual</b>	3 inch (76 mm) circular high resolution, full color, TFT display Four capacitive touch keys that provide navigation and other functions. LED ring indicator surrounding the 3 in (76 mm) circular display indicates the device status. (Normal operation: Green, Alarm: Red, Fault/Warning: Yellow, Wireless communication: Blue)
<b>Current Output</b>	3 channels of fully configurable 4 mA to 20 mA providing current sink, current source and isolated modes of operation to support up to 3 sensors simultaneously. Note : OmniPoint will automatically detect whether it should operate in current sink or current source mode  <b>Default current output settings:</b> 1.0 mA for fault 2.0 mA for warm-up and inhibit 3.0 mA for warning 4.0 to 20.0 mA for normal gas measurement 21.0 mA for maximum over range  4 mA to 20 mA signal accuracy : ±1 % full scale
<b>HART® Communication</b>	Provides HART® communication over 1st channel of 4 mA to 20 mA output compliant with HART® 7 Configurable HART® communication mode: P to P mode or Multi-drop mode (up to 8 multi-drops)  <b>Functions Supported by HART®</b> Gas reading with gas name and units of measurement 4 mA to 20 mA signal level General/device information Configuration Forcing of 4 mA to 20 mA output Detailed transmitter information (calibration and configuration status, detailed fault and warning information, fault and alarm history and etc) Detailed sensor information (supply voltage, temperature and etc)
<b>Relays</b>	Provides three fully user configurable relay outputs that are activated based on current alarm state and one fault relay that is normally energized. Provides 3 x SPDT alarm and 1 x SPDT fault relay Maximum : 240 Vac, 5A (non inductive load) Minimum 5V, 10 mA (non inductive load)
CERTIFICATION	
<b>Hazardous Area Approvals</b>	UL cUL classified: UL 1203, UL 913, UL 61010-1, CSA C22.2 No. 25, CSA 22.2 No. 30, CSA C22.2 No. 60097-11, CSA 22.2 No. 60079-0, CAN/CSA-C22.2 No. 61010-1-12 Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups F & G ATEX UL 23 ATEX 2903 Rev. 0 (Pending) IEC 60079-0, 7th Ed; IEC 60079-1, 7th Ed; IEC 60079-11 6th Ed.; IEC 60079-31, 3rd Ed.; IECEx UL 23.0011 Issue 0 (Pending)
<b>Performance Approvals Flammable Gas</b>	(Pending)

**WIRELESS COMMUNICATION - BLE MODULE (OPTIONAL)**

<b>Description</b>	The BLE connection enables wireless communication of the OmniPoint transmitter to a smartphone or tablet.
<b>Installation</b>	Optional BLE module is independent of the main (display) module. The external antenna must be installed with the BLE module.
<b>Mode and Version</b>	Bluetooth point to point mode BLE 5.0
<b>Distance</b>	Up to 66 ft (20 m) (mobile device dependant)
<b>Approval</b>	Certified and registered Bluetooth SIG. FCC, RED, IC
<b>Function Supported</b>	Gas reading with gas name and units of measurement General/device information Remote zero and span calibration Configuration Forcing of 4 mA to 20 mA output Detailed transmitter information (Instrument status, detailed fault and warning information, fault and alarm history and etc) Detailed sensor information (optical signal level, supply voltage, temperature, calibration & configuration status and etc)

**MODBUS RTU MODULE (OPTIONAL)**

<b>Description</b>	The Modbus output module provides an isolated RS485 output to enable the connection of the OmniPoint transmitter to a multi-drop Modbus network.
<b>Installation</b>	As an optional module independent of the main (display) module, it can be installed in the factory or in the field.
<b>Connections</b>	RS485+, RS485-, Drain
<b>Physical Layer</b>	Isolated RS485, 2400 to 57,6000 baud; 9,600 default
<b>Address</b>	Address range is 1 to 247
<b>Maximum # of Nodes</b>	247; up to 32 RTUs per loop
<b>Protocol</b>	Modbus RTU
<b>Function Supported</b>	Gas reading with gas name and units of measurement General/device information Detailed transmitter information (Instrument status, detailed fault and warning information, fault and alarm history and etc) Detailed sensor information (supply voltage, temperature, calibration & configuration status and etc)

**WIRING REQUIREMENTS**

<b>Sensor</b>	Two-wire, for XPIS Sensor module up to (984 ft) 300 m Two-wire, for XP Sensor module up to (984 ft) 300 m Refer to manual for mounting distances and wire gauge
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**GAS CONCENTRATION DISPLAY & INTERFACE**

<b>Instrument</b>	3 inch TFT display with ring indicator, five-digit alphanumeric characters with separate units, touch key interface, alarm snapshot with gas trend
<b>Remote</b>	Local UI or BLE 5.0 enabled device via OmniPoint app

**WARRANTY**

<b>Transmitter Unit</b>	5 years
<b>Sensor Cartridge</b>	

PART NUMBER	DESCRIPTION	WARRANTY PERIOD
<b>OPT-R1X-FL1</b>	Sensor Cart, Cat CH4 0-100%LEL, 5%	3 years
<b>OPT-R1X-FL2</b>	Sensor Cart, Cat CH4 0-100%LEL, 4.4%	3 years
<b>OPT-R1S-HS1</b>	Sensor Cart, H2S 0-15.0ppm, 5ppm	3 years
<b>OPT-R1S-HS2</b>	Sensor Cart, H2S 0-100ppm, 20ppm	3 years
<b>OPT-R1S-OX1</b>	Sensor Cart, O2 0-25% v/v, 23.5%	3 years
<b>OPT-R1S-CO1</b>	Sensor Cart, CO 0-300ppm, 100ppm	3 years
<b>OPT-R1X-ME1</b>	Sensor Cart, IR CH4 0-100%LEL, 5%	3 years
<b>OPT-R1X-ME2</b>	Sensor Cart, IR CH4 0-100%LEL, 4.4%	3 years
<b>OPT-R1X-PR1</b>	Sensor Cart, IR C3H8 0-100%LEL, 2.1%	3 years
<b>OPT-R1X-PR2</b>	Sensor Cart, IR C3H8 0-100%LEL, 1.7%	3 years
<b>OPT-R1S-AM1</b>	Sensor Cart, NH3 0-200ppm, 50ppm	1 year
<b>OPT-R1S-AM2</b>	Sensor Cart, NH3 0-1000ppm, 200ppm	1 year
<b>OPT-R1S-CL1</b>	Sensor Cart, CL2 0-5.0ppm, 1ppm	1 year

**TABLE 1. OMNIPOINT SENSOR SPECS**

Sensor Type	Gas	Cartridge P/N	Selectable Full Scale Range	Default Range	Steps	Resolution	Lower Detectable Limit (LDL)	Lowest Alarm Level (LAL)	Default Alarm 1 Level	Alarm 1 Type	Default Alarm 2 Level	Alarm 2 Type	Operating Temperature
<b>XPIS SENSOR</b>													
<b>NH<sub>3</sub></b>	Ammonia	OPT-R1S-AM1	50 ppm to 200 ppm	200 ppm	50 ppm	1 ppm	6 ppm	20 ppm	50 ppm	Rising	100 ppm	Rising	-20°C to 40°C -4°F to 104°F
<b>NH<sub>3</sub> (High)</b>	Ammonia	OPT-R1S-AM2	200 ppm to 1000 ppm	1000 ppm	50 ppm	1 ppm	30 ppm	100 ppm	200 ppm	Rising	500 ppm	Rising	-20°C to 40°C -4°F to 104°F
<b>CO</b>	Carbon Monoxide	OPT-R1S-CO1	100 ppm to 500 ppm	300 ppm	100 ppm	1 ppm	5 ppm	15 ppm	100 ppm	Rising	200 ppm	Rising	-40°C to 55°C -40°F to 131°F
<b>Cl<sub>2</sub></b>	Chlorine	OPT-R1S-CL1	5.00 ppm (Fixed)	5.00 ppm	N / A	0.01 ppm	0.15 ppm	0.50 ppm	1.00 ppm	Rising	2.00 ppm	Rising	-20°C to 55°C -4°F to 131°F
<b>H<sub>2</sub>S</b>	Hydrogen Sulphide	OPT-R1S-HS1	10 ppm to 50 ppm	15.0 ppm	0.1 ppm	0.1 ppm	1.0 ppm	3.0 ppm	5.0 ppm	Rising	10.0 ppm	Rising	-40°C to 65°C -40°F to 149°F
<b>H<sub>2</sub>S (High)</b>	Hydrogen Sulphide	OPT-R1S-HS2	50 ppm to 500 ppm	100 ppm	10 ppm	1 ppm	1 ppm	5 ppm	20 ppm	Rising	50 ppm	Rising	-40°C to 65°C -40°F to 149°F
<b>O<sub>2</sub></b>	Oxygen	OPT-R1S-OX1	25 %vol (Fixed)	25.0 %vol	N / A	0.1 %vol	0.2 %vol	5.0 %vol	23.5 %vol	Rising	19.5 %vol	Falling	-40°C to 60°C -40°F to 140°F
<b>SO<sub>2</sub></b>	Sulphur Dioxide	OPT-R1S-SO1	5 ppm to 20 ppm	15.0 ppm	5.0 ppm	0.1 ppm	0.6 ppm	2.0 ppm	5.0 ppm	Rising	10.0 ppm	Rising	-40°C to 65°C -40°F to 149°F
<b>XP SENSOR</b>													
<b>FL CAT</b>	Flammables	OPT-R1X-FL1 (UL) OPT-R1X-FL2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F
<b>CH<sub>4</sub> IR - LEL</b>	Methane	OPT-R1X-ME1 (UL) OPT-R1X-ME2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F
<b>C<sub>3</sub>H<sub>8</sub> IR - LEL</b>	Propane	OPT-R1X-PR1 (UL) OPT-R1X-PR2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F



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Tollfree in Western Canada: 1-888-388-1592  
microwatt.com • mwsales@microwatt.com

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2101 CityWest Blvd  
Houston, TX 77042  
www.honeywell.com

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