GENERAL MONITORS

Protection for life.

MODEL IR2100

Infrared Point Detector for Hydrocarbon Gas Detection

Features

- No Routine Calibration Required
- True Fail-to-Safe Operation – does not employ a sintered flame arrestor which can become clogged
- 4-20 mA Output
- MODBUS Communications Link
- Heated Optics
- Dirty Optics Indication
- Wireless Capability

Benefits

- Low maintenance
- True gas detection performance
- Industry standard output for remote alarm and fault indication
- Two-way addressable communications for status and alarm information
- Eliminates condensation
- Discriminates between true fault and cleaning requirements
- Compatible with ELPRO Technologies wireless devices

Description

The General Monitors Model IR2100 Infrared Point Detector is a microprocessor-based hydrocarbon gas detector that continuously monitors combustible gases and vapors within the lower explosive limit (LEL) and provides alarm indication.

The Model IR2100 detection principle is based on measuring the absorption of infrared radiation passing through a volume of gas using a dual beam, single detector method. The IR detector measures the intensity of two specific wavelengths, one at an absorption wavelength and another outside of the absorption wavelength. The gas concentration is determined by a comparison of these two values.

All of the IR2100's electronics are contained within an explosion-proof housing so that detector information can be processed at the detector site. The IR2100 provides a 4-20mA signal that is proportional to 0 to 100% LEL gas concentration at the detector. The IR2100 also provides a MODBUS addressable communications interface. Up to 128 IR2100's can be connected on a MODBUS network without the need for repeaters. The MODBUS output provides status, alarm, fault and other information regarding operation, troubleshooting or programming of the unit.

The IR2100 Infrared Point Detector is available in either an aluminum or stainless steel housing and is rated for use in Class I, Div 1, Groups B, C & D areas and CENELEC Zone 1 & 2.

Applications

- Refineries
- Drilling and Production Platforms
- Fuel Loading Facilities
- Compressor Stations
- Oil Well Logging
- LNG/LPG Processing and Storage Facilities
- Wastewater Treatment Facilities
- Gas Turbines
- Solvent Vapors
- Chemical Plants

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System Specifications

Sensor Type:	Infrared Absorption Type
Measuring Range:	0 to 100% LEL 0 to 100% by Volume *(methane only)*
Gases:	Methane, propane, ethane, butane, hexane, pentane & benzene (For other gases contact factory)
Sensor Life:	Greater than 5 years
Accuracy:	± 3% LEL at < 50% LEL reading ± 5% LEL at > 50% LEL reading
Zero Drift:	< 2% per year
Response Time:	(with 100% LEL Methane applied) T50 < 7 sec. & T90 <10 sec. without splash guard
Modes:	Power-on self-test, normal operation, calibration (zero only or complete calibration)
Accessories:	Flow block, junction box with optional zero switch, duct mount junction box, rain guard, remote gassing guard, field mounted display, multi-channel controller, remote calibrator
Classification:	Class I, Division 1, Groups B, C & D EExd, IIB+H_2T5, IP66, Type 4X
Warranty:	Two years
Approvals:	ATEX, CE Marking and CSA 22.2 No. 152-M1984 Performance Approved SIL 2 Suitable

Environmental Specifications

Operating Temperature Range:	-40°F to +167°F (-40°C to + 75°C)
Pentane, Hexane, Benzene only*:	-40°F to +140°F (-40°C to + 60°C)
Storage Temperature Range:	-58°F to +167°F (-50°C to + 75°C)
Pentane, Hexane, Benzene only:	-40°F to +140°F (-40°C to + 60°C)

*for higher temperature range, consult factory

Humidity:	5% to 100% RH, non-condensing

Electrical Specifications

Input Power:	20-36 VDC 24 VDC @ 0.4 Amp (nominal)
Analog Signal:	4-20 mA (600 Ohms max.) Fault 0 mA Cal & Zero 1.5 mA Dirty Optics 2.0 mA Zero Reading 4 mA±0.2 mA 0 to 100% LEL 4 to 20 mA (proportional) Over-range 20 to 22 mA
MODBUS Output:	Link up to 128 units, 247 with repeaters
RFI/EMI Protection:	Complies with EN50081-2, EN50082-2
Cable Requirements:	Max. distance between IR2100 and power source @ 24 VDC nominal (10 Ohm loop): 14 AWG (2.0 mm^2) - 1830 ft (555 m)
Wireless Communication:	Available with ELPRO wireless devices
Faults Monitored:	Calibration errors, EPROM and EEPROM checksum errors, optics failure/blockage, low supply voltage

Mechanical Specifications

Diameter:	2.87 inches (73 mm)
Length:	10.6 inches (269 mm)
Weight:	3 lbs (1.4 kg) - aluminum 6 lbs (2.7 kg) - stainless steel
Mounting:	3/4" NPT
Housing:	Aluminum (stainless steel optional)
Standard Configuration:	IR2100-0-01-1-2-1 Methane, Aluminum housing, Remote gas/screen, Splash guard

Specifications subject to change without notice

Represented by: