

General Monitors® Model IR5500 Open Path Infrared Gas Detector



Applications

- Compressor Stations
- Drilling and Production Platforms
- Fence Line Monitoring
- Fuel Loading Facilities
- Gas Turbines
- LNG/LPG Processing and Storage Facilities
- Petrochemical Tanks
- Tank Farms
- Wastewater Treatment

The General Monitors IR5500 is an open path IR gas detector that provides continuous monitoring of hydrocarbon gas concentrations. The system consists of an IR source and receiver which continuously monitors for light hydrocarbons in both the 0 to 5000 ppm meter and 0 to 5 LEL meter range. A 0 to 2000 ppm meter and 0 to 1 LEL meter range is also available for monitoring heavy hydrocarbons. The IR5500 provides two 4 to 20 mA analog signals proportional to each of the above ranges, in addition to a digital display and relay contacts.

The IR5500 is easily aligned using the digital display and adjustable mounting arms, therefore it does not require any bulky setup equipment (e.g. digital volt meters, handheld alignment aids). The IR5500's sensitivity can be checked by placing a test gas film in front of the receiver.

The IR5500 is calibrated at the factory and needs no further calibration. It also requires little maintenance save for a periodic visual inspection, test gas film check, and cleaning of the windows to assure dependable performance.

Sensor data and status information from the IR5500 can be transmitted up to 9,000 feet (2,743 m) to any industrial analog to digital (A/D) converter for use in multipoint computerbased monitoring.

Features & Benefits

- Dual detection ranges are sensitive to both small (ppm•meter) and large (LEL•meter) gas leaks
- Performance approved for use in harsh environments
- Single detection beam improves accuracy and reduces drift
- Continuous self-check provides fail to safe operation
- Multiple communication outputs provides complete status and control capability in the control room
- Unitized display allows ease of operation
- Automatic gain control compensates for dirty optics, rain, and fog

SAFEGUARDING PEOPLE, PLACES & THE PLANET.



System Specifications	
SENSOR TYPE	Infrared Absorption
DUAL RANGES	
METHANE	0 to 5000 ppm• meter 0 to 5 LEL• meter
PROPANE	0 to 2000 ppm• meter 0 to 1 LEL• meter
	Consult factory for other hydrocarbon gases available
PATH LENGTHS	5-30 m, 20-100 m, 80-150 m
RESPONSE TIME	T90 ≤ 3 s
REPEATABILITY	≤ ±5%
LINEARITY	≤ ±5% of full scale for each scale or ±10% of applied gas, whichever is greater
CLASSIFICATION	CSA/FM: Class I, Div 1 & 2, Groups B, C, & D; Class II, Div 1 & 2, Groups E, F, & G Class III; Type 4X
HAZ LOC	T3C (Tamb=-60°C to +75°C)
PERFORMANCE	T4 (Tamb=-50°C to +65°C)
VERIFIED	ATEX/IECEX: II 2 G D, Ex d IIB+H2 T4 Gb Ex tb IIIC T135°C Db, IP66/67 (Tamb=-55°C to +65°C)
CALIBRATION	No calibration required. Field background zero adjustment provided
MODES	Setup, alignment, test mode
ACCESSORIES	Test gas films, mounting arm, mounting base, scope, attenuation plate
WARRANTY	Two years
APPROVALS	CSA, FM, ATEX, IECEX, DNV-GL, INMETRO, EAC, CE. SIL 3 suitable. HART registered.

Mechanical Specifications	
HOUSING	316 stainless steel
SOURCE	5.3" dia. x 12.4" length (135 mm dia. x 315 mm length)
RECEIVER	5.3" dia. x 12.4" length (135 mm dia. x 315 mm length)
WEIGHT	Source: 12.20 lb. (5.53 kg) Receiver: 12.34 lb. (5.60 kg)
CONDUIT ENTRIES (2)	¾" NPT (standard), M25 (optional)

Environmental Specifications	
OPERATING TEMPERATURE RANGE	-67°F to +149°F (-55°C to +65°C)
OPERATING HUMIDITY RANGE	10-95% RH, non-condensing

Electrical Specifications	
INPUT POWER	20 to 36 VDC range, 24 VDC nominal 24 VDC @ 12 W (max.) – source 24 VDC @ 10 W (max.) – receiver (w/relays) <i>Consult factory for lower power consumption options for other configurations</i>
DUAL ANALOG SIGNALS	700 ohm load max. 0-5000 ppm• meter 0-5 LEL• meter
0 MA*	Startup/Fault Startup/Fault
1.5 MA*	Test Gas/Setup Test Gas/Setup
2 MA*	Beam Block Beam Block
4-20 MA**	0-5000 ppm• m 0-5 LEL• m
4-12 MA***	0-5000 ppm• m —
12-20 MA***	— 0-5 LEL• m
21.7 MA	Over-range Over-range
RELAY RATINGS	8 A @ 250 VAC/8 A @ 30 VDC res. max. Four (4) SPDT - Fault; ppm Warning, LEL Warning; and Alarm
RS-485 OUTPUT	Modbus RTU with block and single data transfer modes
BAUD RATE	2400, 4800, 9600, 19200, or 38400 BPS
HART	Fully HART compliant
EMC PROTECTION	Complies with EN 61000-6-4 and EN 50270
SAMPLE CABLE DISTANCES	For cable resistance of 3 ohms/1,000 ft., maximum distance between IR5500 and power source @ 24 VDC: 14 AWG - 1,330 ft. (405 m) - receiver, 14 AWG - 1,040 ft. (317 m) - source.
DIGITAL DISPLAY	LED indication of scale displayed; Two digit, seven segment (auto range change)
STANDARD CONFIGURATION	IR5500-1-1-1-1-2-2-1-1-2-1 Methane, Dual 0-20 mA, HART, relays, mounting arm, 20-100 m path length

* HART units can be configured to never output current less than 3.5 mA if the host equipment is incapable of working below this level.

** 0 to 2000 ppm• meter and 0 to 1 LEL• meter on propane unit.

*** Using optional split range.

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit <https://us.msasafety.com/Trademarks>.

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