Model **IR5500**

Open Path Gas Detector

General Monitors

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

Features

- Dual detection ranges
- Performance approved
- Single detection beam
- Continuous self-check
- Multiple communication outputs (HART, Modbus, AMS Support)
- Unitized display
- Automatic gain control

Benefits

- Sensitive to both small (ppm•meter) and large (LEL•meter) gas leaks
- Ideal for use in harsh environments
- Improves accuracy and reduces drift
- Fail to safe operation
- Provides complete status and control capability in the control room
- Ease of operation, reduced cost
- Compensates for dirty optics, rain, and fog

Description

The Model IR5500 is an open path IR gas detector that provides continuous monitoring of methane and propane gas concentrations. The system consists of an IR source and receiver which continuously monitors for methane 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 propane. 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 to any industrial analog to digital (A/D) converter for use in multipoint computer-based monitoring.

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General Monitors by MSA

System Specifications	
SENSOR TYPE	Infrared Absorption
DUAL RANGES METHANE PROPANE	 0 to 5000 ppm• meter 0 to 5 LEL• meter 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
RESPONSE TIME	T90 < 3 s
REPEATABILITY	≤ ±5%
LINEARITY	≤ ±5% of full scale for each scale or ±10% of applied gas, whichever is greater
CLASSIFICATION HAZ LOC PERFORMANCE VERIFIED	Class I, Div 1 & 2, Groups B, C, & D; Class II, Div 1 & 2, Groups E, F, & G Class III; Type 4X Class I, Zone 1, IIB+H2 II 2 G D, Ex d IIB+H2 T4 Gb Ex tb IIIC T135°C Db, IP66/67 (Tamb=-55°C to +65°C) T3C (Tamb=-60°C to +75°C) T4 (Tamb=-55°C to +65°C)
CALIBRATION	No calibration required. Field background zero adjustment provided
MODES	Setup, alignment, test gas, run
ACCESSORIES	Test gas films, mounting arm, mounting base, scope, attenuation plate
WARRANTY	Two years
APPROVALS	CSA, FM, ATEX, IECEx, DNV-GL, 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) Reveiver: 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	0-95% RH, non-condensing

Electrical Specifications		
INPUT POWER	20 to 36 VDC range 24 VDC @ 12 W (max.) – source 24 VDC @ 10 W (max.) – receiver (w/relays) *Consult factory for lower power consumption options for other configurations*	
DUAL ANALOG SIGNALS		
	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	HART 6, Device Description available. AMS Device Manager support	
RFI/EMI 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 (317 m) - source. For 16 AWG cable with cable resistance of 5 ohms/1,000 ft, maximum distance for analog output (100 ohms max.): 10,000 ft (3,048 m).	
WIRELESS COMMUNICATION	Available with ELPRO Technologies wireless devices	
DIGITAL DISPLAY	LED indication of scale displayed; Two digit, seven segment (auto range change)	
STANDARD CONFIGURATION	**IR5500-1-1-1-1-1-2-1-1-1-1** Methane, Dual 0-20 mA, Dual Modbus, relays, mounting arm, 20-100 m path length	

Specifications subject to change without notice.

** 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.*

ID 1465-07-MC / Aug 2016

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