



**GENERAL MONITORS**  
Protection for life.

# MODEL IR5500

## Open Path Gas Detector



### 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.

### 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



# MODEL IR5500

## System Specifications

<b>Sensor Type:</b>	Infrared Absorption
<b>Dual Ranges</b>	
<i>Methane:</i>	0 to 5000 ppm•meter 0 to 5 LEL•meter
<i>Propane:</i>	0 to 2000 ppm•meter 0 to 1 LEL•meter
<i>Consult factory for other hydrocarbon gases available.</i>	
<b>Path Lengths:</b>	
<i>LEL•m:</i>	5-30 m, 20-100 m, 50-150 m
<i>ppm•m:</i>	5-30 m, 20-100 m, 80-150 m
<b>Response Time:</b>	T90 < 5 s
<b>Repeatability:</b>	≤ ±5%
<b>Linearity:</b>	≤ ±5% of full scale for each scale or ±10% of applied gas, whichever is greater
<b>Classification:</b>	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+H <sub>2</sub> II 2 G D, Ex d IIB+H <sub>2</sub> T4 Gb Ex tb IIIC T135°C Db, IP66/67 (T <sub>amb</sub> =-55°C to +65°C) T3C (T <sub>amb</sub> =-60°C to +75°C)
<i>Haz Loc:</i>	
<i>Performance</i>	
<i>Verified:</i>	T4 (T <sub>amb</sub> =-55°C to +65°C)
<b>Calibration:</b>	No calibration required. Field background zero adjustment provided
<b>Modes:</b>	Setup, alignment, test gas, run
<b>Accessories:</b>	Test gas films, mounting arm, mounting base, scope, attenuation plate
<b>Warranty:</b>	Two years
<b>Approvals:</b>	CSA, FM, ATEX, IEC Ex, CE Marking SIL 3 suitable. HART registered

## Mechanical Specifications

<b>Housing:</b>	316 stainless steel
<b>Source:</b>	5.3" dia. x 12.4" length (135 mm dia. x 315 mm length)
<b>Receiver:</b>	5.3" dia. x 12.4" length (135 mm dia. x 315 mm length)
<b>Weight:</b>	Source: 12.20 lb (5.53 kg) Receiver: 12.34 lb (5.60 kg)
<b>Conduit</b>	
<b>Entries (2):</b>	¾" NPT (standard) M25 (optional)

## Environmental Specifications

<b>Operating Temperature</b>	
<b>Range:</b>	-67°F to +149°F (-55°C to +65°C)
<b>Operating Humidity</b>	
<b>Range:</b>	0-95% RH, non-condensing

## Electrical Specifications

<b>Input Power:</b>	20 to 36 VDC range 24 VDC @ 12 W (max.) – source 24 VDC @ 10 W (max.) – receiver (w/relays) 24 VDC @ 5 W (max.) – receiver (no relays, no heater) <i>Consult factory for lower power consumption options for other configurations</i>	
<b>Dual Analog</b>		
<b>Signals:</b>	600 ohm load max.	
	<b>0-5000 ppm•meter</b>	<b>0-5 LEL•meter</b>
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
* 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.		
<b>Relay Ratings:</b>	8 A @ 250 VAC/8 A @ 30 VDC res. max. Four (4) SPDT - Fault; ppm Warning, LEL Warning; and Alarm	
<b>RS-485 Output:</b>	Modbus RTU with block and single data transfer modes	
<b>Baud Rate:</b>	2400, 4800, 9600, 19200, or 38400 BPS	
<b>HART:</b>	HART 6, HART Device Description Language available. AMSaware	
<b>RFI/EMI</b>		
<b>Protection:</b>	Complies with EN 61000-6-4 and EN 50270	
<b>Cable</b>		
<b>Requirements:</b>	Three-wire shielded cable. Max. distance between IR5500 and power source @ 24 VDC nominal: 14 AWG - 930 ft (280 m) - Receiver  Max. distance for analog output (250 ohms max.): 14 AWG - 9000 ft (2740 m)	
<b>Wireless</b>		
<b>Communication:</b>	Available with ELPRO Technologies wireless devices	
<b>Digital Display:</b>	LED indication of scale displayed; Two digit, seven segment (auto range change)	
<b>Standard</b>		
<b>Configuration:</b>	IR5500-1-1-1-1-2-1-1-1-1 Methane, Dual 0-20 mA, Dual Modbus, relays, mounting arm, 20-100 m path length	

*Specifications subject to change without notice.*

Represented by:

## General Monitors Worldwide

[www.generalmonitors.com](http://www.generalmonitors.com)

### Lake Forest, CA

26776 Simpatica Circle  
Lake Forest, California 92630  
Tel: +1-949-581-4464  
Fax: +1-949-581-1151  
email: [info@generalmonitors.com](mailto:info@generalmonitors.com)

### Houston, TX

9776 Whithorn Drive  
Houston, Texas 77095  
Tel: +1-281-855-6000  
Fax: +1-281-855-3290  
email: [gmhou@generalmonitors.com](mailto:gmhou@generalmonitors.com)

### Ireland

Ballybrit Business Park  
Galway  
Republic of Ireland  
Tel: +353-91-751175  
Fax: +353-91-751317  
email: [info@gmil.ie](mailto:info@gmil.ie)

### Singapore

No. 2 Kallang Pudding Road  
#09-16 Mactech Building  
Singapore 349307  
Tel: +65-6748-3488  
Fax: +65-6748-1911  
email: [genmon@gmpacifica.com.sg](mailto:genmon@gmpacifica.com.sg)

### United Arab Emirates

P.O. Box 61209  
Jebel Ali  
Dubai  
United Arab Emirates  
Tel: +971-4-8143814  
Fax: +971-4-8857587  
Email: [gmme@generalmonitors.ae](mailto:gmme@generalmonitors.ae)

### United Kingdom

Heather Close  
Lyme Green Business Park  
Macclesfield, Cheshire  
United Kingdom, SK11 0LR  
Tel: +44-1625-619583  
Fax: +44-1625-619098  
Email: [info@generalmonitors.co.uk](mailto:info@generalmonitors.co.uk)

### Wuxi General Monitors

*A joint venture*  
157 Hubin Road, C-11 1F  
Wuxi, Jiangsu Province 214073  
People's Republic of China  
Tel: +86-510-8512 2222  
Fax: +86-510-8512 8222  
email: [sales@wxglt.com](mailto:sales@wxglt.com)