



**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

**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:**  
*LEL•m:* 5-30 m, 20-100 m, 50-150 m  
*ppm•m:* 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:** 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)  
*Haz Loc:* T3C (T<sub>amb</sub>=-60°C to +75°C)  
*Performance Verified:* T4 (T<sub>amb</sub>=-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, IR4000M monitor

**Warranty:** Two years

**Approvals:** CSA, FM, ATEX, IEC Ex, CE Marking 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:** 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:** 700 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.*

**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:** IR5500-1-1-1-1-2-1-1-1-1-1  
 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)