



## Intrinsically Safe Fixed Gas Detector with Infrared Sensors

For continuous monitoring of flammable (hydrocarbon) gases



### Fast. Reliable. Durable.

- Minimum 5-year sensor life
- Suitable for use in Zones 1 and 2
- Industry standard 4-20mA output
- Local LCD display
- Three-wire connection

### Description

The Model MGT3-IR flammable gas monitors provide reliable performance workplace safety applications. Using infrared sensor technology to detect flammable gas concentrations over various ranges up to 100% volume, these intrinsically safe detectors are designed to be incapable of producing heat or spark sufficient to ignite an explosive atmosphere.

The detectors use the industry standard 4-20mA current loop to power the detector and to convey the gas levels detected to a controller. This means that under zero gas conditions 4mA is drawn from the supply, and under full scale gas conditions 20mA is drawn from the supply. The current varies linearly for gas levels between zero and full scale.

The IR detector heads use a three-wire connection with a current loop pair to power the electronics and a third connection to provide power for the IR sensor. Safety barriers must be used to connect the power and signals between the gas detector and the safe area. This is required to preserve the safety integrity of the installation by limiting the power entering the potentially explosive area to a safe level. The Intrinsically Safe Output Module, type SS359, provides the necessary interface between a non-intrinsically safe mains powered system and the MGT3-IR gas detector.

A marine version of the MGT3 is available. This version is housed in a cast aluminum enclosure to provide higher RFI immunity where high power portable radios are used in the close confines of a vessel. The enclosure is plated and painted to withstand the harsh salt spray environment of the marine industry. The digital display is fitted with a sliding stainless steel front cover designed to remain closed over the display window when not being viewed. This maintains the RFI



### Hazardous Area Certification

Certificate number:	BAS 01ATEX2300 Code II 2G Ex ia IIC T4 Gb (-20°C < Ta < +60°C)
Standard:	EN 60079-0: 2009 EN 60079-1: 2007 EN 60079-11: 2007
Zones:	0, 1, & 2

Partial list of gases detected: **methane, propane, butane, ethane, pentane, hexane, octane, ethanol, IPA, solvents**

\*Note: IR detectors are not suitable for detecting hydrogen

An optional weather guard is available for installations exposed to the atmosphere or contaminants and for use in wash down areas. The weather guard reduces the possibility of water or other contaminants entering into the gas sensor thereby improving the overall reliability of the gas detector in harsh environments.

# MODEL MGT3-IR

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### Specifications

Material	Standard housing: composite (ABS and polycarbonate) Marine version: cast aluminum alloy
Cable entry	1 x M20 or ½" NPT
Dimensions	122 x 122 x 75 mm (4.8 x 4.8 x 3.0 in)
Weights	Standard housing (excluding weather guard) – 660 grams (1.5 lbs.) Marine version (excluding weather guard) – 1 kg (2.2 lbs.) Weather guard – 225 grams (0.5 lbs.)
Display	LCD
Gas types	Hydrocarbons including methane (note: IR sensors have no response to hydrogen)
Operating voltage	8 to 28VDC (for 4 to 20mA signal) 5.8 to 7.5VDC (for sensor supply)
Output signal	0mA – open circuit 2mA – fault 4mA – zero gas 20mA – full scale gas 22mA – over-range
Max. cable loop resistance	Signal – 640 ohms at 24VDC Sensor – 15 ohms at 7.5VDC
Sensor type	NDIR infrared
Measurement range	0—100% LEL (5% vol CH <sub>4</sub> ) or 0—100% vol. CH <sub>4</sub>
Response time	T <sub>90</sub> < 30 seconds (methane)
Measurement resolution	1% LEL or 1% volume
IP rating	Enclosure: IP66 Sensor: IP65
Operating temperature	-20°C to +50°C
Storage temperature	-20°C to +50°C
Humidity range	0 to 95% RH non-condensing
Operating pressure	Atmospheric (± 10%)

Specifications are subject to change without notice.

### Order Information

Part No.	Description	Stock No.
2-06-2003-22-1	MGT3-IR flammable gas detector, range 0-100% LEL methane	SS413-100L
2-06-2003-22-X	MGT3-IR flammable gas detector, range 0-100% volume methane	SS413-100V
2-06-2002-46-1	Protective weather guard	SS475
2-06-2004-10-0	Intrinsically safe output module, DIN rail mounted	SS359



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