



FLAME DETECTORS

FLAMESPEC IR3 H2 FLAME DETECTOR



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DESCRIPTION

The FlameSpec IR3 H2 flame detector provides an unrivalled response, high performance and reliable detection for a number of fires found in Energy Transition applications, such as hydrogen, methane, syngas, ammonia and methanol.

The detector addresses slow-growing fires and fast eruptions of fire using improved IR3 technology in all weather and light conditions. These features and the built-in event logger provide additional means to study the cause and development of fire events.

FEATURES

- High immunity to false alarms – including arc welding.
- Detects hydrogen, ammonia, methane and syngas flames using three infrared wavelengths, with clear separation.
- Each sensor has the same field of view to improve false alarm immunity further.
- Ultra-fast detection mode detection within 40 milliseconds for fireballs or explosions.
- Five selectable sensitivity levels.
- Universal outputs, 3- and 4-wire, 4–20 mA sink/source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU
- Event logger: Alarms and faults are logged to non-volatile memory.
- Built-in Test (BIT) – automatic and manual self-test of window cleanliness and overall detector operation.
- Additional dirty optics warning for preventive maintenance needs.
- Heated window to avoid condensation and icing.
- Stainless steel tilt mount with horizontal and vertical adjustment.
- HART® 7 for configuration and maintenance option available.
- SIL2 option available.
- 5-Year warranty.





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SPECIFICATIONS

FIRE DETECTION	Detection Time & Distance	40ms for fast fire burst or explosion 1.5s for 0.8m hydrogen fire at 0–20m 4s 0.8m hydrogen fire at 20–30m
	Sensitivity Range	Five sensitivity ranges: Extreme, High, Medium, Low, Very Low
	Field of View (IR detection)	90° Horizontal, 75° Vertical
	Time Delay	Configurable 0–30 seconds
	Built-in Test	Automatic and Manual
ELECTRICAL	Operating Voltage	24 VDC nominal (18–32 VDC)
	Current Consumption	Standby: 120mA 180mA all systems in operation (including window heater)
	Electrical Entries	2× cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	12–20AWG (2.5–0.35mm ²)
	OUTPUTS	
	Relays	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0–20mA (stepped) Current Output	3-wire and 4-wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	Indication	Tri-colour LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS485
MECHANICAL	Size	140 × 90 × 90 mm
	Weight	Detector (Stainless Steel 316): 3.0 kg Tilt mount (Stainless Steel 316): 1.5 kg
ENVIRONMENTAL	Temperature Range	Operating & Storage: –55°C to +85°C
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
APPROVALS	ATEX	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db –55°C < Ta < 75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db –55°C < Ta < 85°C
	IECEX, INMETRO & PESO	Ex db IIC T5 Gb -50°C ≤ Ta ≤ 75°C Ex db IIC T4 Gb -50°C ≤ Ta ≤ 85°C
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 –50°C ≤ Ta ≤ 85°C T5 –50°C ≤ Ta ≤ 75°C
	EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db –55°C ≤ Ta ≤ 75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db –55°C ≤ Ta ≤ 85°C
	Performance	ANSI FM 3260
	Functional Safety	Complies to SIL2, per IEC 61508 (option available)

ORDERING INFORMATION

Product Code	Product Description
FG-IR3H2-EXSS	IR3 Flame Detector: Energy Transition Fires incl Hydrogen, SS316
FG-WCSS-SD	Weather Cover: Standard Flame Detector, SS316
FG-AS-SD	Airshield: Standard Flame Detectors only
FG-FSIM-IR3H2-KIT	Flame Simulator Kit: IR3 Hydrogen Flame Detector

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