FLAME DETECTORS
FLAMESPEC IR3 H2 HD FLAME DETECTOR

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DESCRIPTION

The FlameSpec IR3 H2 HD flame detector delivers unrivalled response, high performance and reliable detection for a number of fires found in Energy Transition applications. The detector addresses slow-growing fires and fast eruptions of fire using improved IR3 technology in all weather and light conditions.

The detector provides high-definition (HD) colour video output of the monitored area with clear imaging of fire events and personnel up to 30 metres, allowing responders to know the exact situation before entering the hazardous area.

All fire events are recorded and stored in the detector for local or remote download and analysis. The recordings start one minute before detection and continue for up to four minutes; the event video can be used for post-incident investigation. Continuous HD video can be streamed live to a control room and recorded on a Network Video Recorder (NVR).

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.
- HD, or composite, video output with automatic HD video recording of events.
- Ultra-fast detection mode detection within 40 milliseconds for fireballs or explosions.
- Five selectable sensitivity levels.
- Data/Event logger – alarms, faults and videos as well as other relevant events are logged to non-volatile memory.
- Built-in Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation.
- Universal outputs, 3- and 4-wire, 4-20 mA sink/source, Fire, Auxiliary and Fault Relays. RS485 port using Modbus RTU.
- 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.

SPECIFICATIONS

FIRE DETECTION	Detection Time & Distance	40 ms for fast burst of explosion 1.5 s for 0.8 m hydrogen fire at 0–20 m 4 s for 0.8 m hydrogen fire at 20–30 m
	Sensitivity Range	Five sensitivity ranges: Extreme, High, Medium, Low, Very Low
	Field of view (IR detection)	90° Horizontal, 75° Vertical
	Alarm Delay	0-30 seconds (Adjustable)
	Built-in Test	Automatic and Manual
VIDEO FUNCTIONALITY	HD Video	Near IR filtered HD as standard. Colour HD option (X2 on request)
	Recording of alarm events	1 minute pre-event and 3 minutes post-event
	System integration protocol	ONVIF (Open Network Video Interface Forum) Profile S
ELECTRICAL	Operating Voltage	24 VDC nominal (18–32 VDC)
	Current Consumption	Standby: 180 mA Maximum: 300 mA (including window heater)
	Conduit Entries	2× cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	12-20 AWG (2.5–0.35 mm²)
OUTPUTS	Relays	SPST volt-free contacts rated 2A at 30 VDC 3 relays: Alarm & Auxiliary – normally open; Fault – normally closed
	0-20 mA (stepped) Current Output	3-wire and 4-wire configurations (sink and source) HART rev 7.0 (option available)
	Indication	Tri-colour LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS485
	Digital (for video)	IP network IEEE 802.3 100Base-T
	Composite video	NTSC or PAL
MECHANICAL	Size	200 × 130 × 130 mm
	Weight	Detector (Stainless Steel 316) 4.4 kg Tilt Mount (Stainless Steel 316) 2.4 kg
ENVIRONMENTAL	Temperature Range	Operating & Storage: −55°C to +85°C
	Humidity	Up to 99% (RH), non-condensing
	Ingress Protection	IP66 & 68; 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
	FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 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 – units available upon request

ORDERING INFORMATION

Product Code	Product Description
FG-IR3H2-HD-EXSS	IR3 Flame Detector + HD Camera: Energy Transition Fires incl Hydrogen, SS316
FG-WCSS-HD	Weather Cover: Flame Detector with integral HD camera, SS316
FG-AS-HD	Airshield: Flame Detectors with integral HD camera only
FG-FSIM-IR3H2-KIT	Flame Simulator Kit: IR3 Hydrogen Flame Detector

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Document: DS FG-IR3H2-HD-EXSS FlameSpec 20231121   E & OE