

F-GUARD R3 H₂-HD



Triple IR Hydrogen Flame Detector



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The Gastech F-Guard IR3-H2-HD will detect fires and explosions extremely reliable and fast allowing preventative action to be initiated rapidly and minimize the consequences!

The Gastech F-Guard-IR3-H2-HD flame detector provides ultra-fast response, high performance and reliable detection of hydrogen (H2) fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved IR3 technology. The detector operates in all weather and light conditions.

In addition, the detector provides high-definition (HD) video output of the monitored area with clear imaging of a fire event and of personnel at distances up to 100 ft. (30m). This allows the rescue team to be aware of the exact situation before entering the hazardous area. The detector automatically records video of fire event (1 minute pre- and up to 3 minutes post-alarm initiation). These features, along with the built-in event logger, provide additional means to study the cause and development of fire events.

KEY FEATURES

- · High immunity to false alarm
- Ultra-fast detection mode detection within 40 milliseconds for Hydrogen fireballs or explosions
- · Hydrogen flame detection
- High sensitivity up to 100 ft. (30m)
- HD video output with Automatic HD video recording of fire events
- Data/Event logger alarms, faults and other relevant events are logged to non-volatile memory
- Ethernet communication –
 in addition to the standard
 methods, such as 4-20mA and
 Modbus
- Built-in-Test (BIT) Automatic and manual internal self-test of window cleanliness and the overall operation of the detector
- Window heater to avoid condensation and icing
- Tilt mounting bracket can be connected either above or below the detector.





False Alarm Source	Modulated				Unmodulated		
	Distance		Distance				
	ft.	m	Response	ft.	m	Response	
Sunlight, Direct, Reflected			No Alarm			No Alarm	
Incandescent frosted glass light, 300W	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Fluorescent, 70W (3x23.3W)	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Electric arc	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Arc welding	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Radiation heater, 1850W	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Quartz lamp (1000W) shielded	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Quartz lamp (500W) non-shielded	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Mercury vapor lamp 160Wx3	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Car Exhausts	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Projector led	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Solenoid bell	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Soldering iron	2.0	0.5	No Alarm	2.0	0.5	No Alarm	
Electric Drill	2.0	0.5	No Alarm	2.0	0.5	No Alarm	

RESPONSE CHARACTERISTICS

Fuel	Pan Size	ft.	m	Avg. Response Time (Sec)
H ₂	32-in Plume	98	30	0.7
H ₂	32-in Plume	66	20	0.7
H ₂	32-in Plume	33	10	0.8
Methanol	1 x 1 ft.	59	18	4.3
Methanol	1 x 1 ft.	30	9	0.6

SPECIFICATIONS	Specifications subject to change without notice		
FIRE DETECTION	Detection time and	40ms for fast burst of explosion	
	distance	0.7s for 32 (0.8m) hydrogen fire at 0–100 ft. (0–30m)	
	Field of view (IR detection)	90° Horizontal, 75° Vertical	
	Time Delay	0-30 seconds (Adjustable)	
	Built in Test	Automatic and Manual	
VIDEO	VIDEO HD Video A	Allows clear imaging of fire and people at 100 ft. (30m) distance	
FUNCTIONALITY	Video recording of alarm	1-minute pre-event and 3 minutes post-event	
	events		
	System integration protocol	ONVIF (Open Network Video Interface Forum) Profile S	
ELECTRICAL	Operating Voltage	24 VDC nominal (18-32 VDC)	
SPECIFICATIONS	Current Consumption	Standby: 180mA	
		Maximum: 250mA all systems in operation (including window heater)	
	Electrical Entries	2x conduit entries 3/4" 14NPT or M25x1.5	
	Wiring	12-20AWG (2.5-0.35mm2)	

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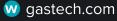
DUTPUTS	Relays	Volt-free contacts rated 2A at 30 VDC Alarm – normally open Fault – normally closed 3 wire and 4 wire configurations (sink and source)		
	0-20mA (stepped) current output			
	Indication	Tri-color LED		
	Modbus	RTU compatible on RS-485 IP network IEEE 802.3 10Base-t		
	Digital (for video)			
	Composite video	NTSC or PAL		
MECHANICAL	Size	7.87 x 5.12 x 5.12" (200x130x130mm)		
SPECIFICATIONS	Weight	Detector (Stainless Steel 316): 9.8 lbs. (4.4 kg) Tilt mount (Stainless Steel 316): 5.4 lbs. (2.4 kg)		
SPECIFICATIONS	Temperature Range	Operating: -67°F to +167°F (-55°C to +75°C) Option: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)		
	Humidity	Up to 99% (RH), non-condensing		
	Ingress Protection	IP66 & 67; NEMA 250 4X & 6P		
	Explosion proof	ATEX: II 2 G D Ex db eb IIC T5 Gb -55°C <ta<75°c &="" (pending)="" -55°c<ta<75°c="" -55°c<ta<85°c="" 1,="" b,="" c="" class="" d;="" db="" div.="" eb="" ex="" fmc="" fmu="" gb="" groups="" i,="" iic="" iii<="" iiic="" or="" t105°c="" t4="" t5="" t95°c="" tb="" td=""></ta<75°c>		
	Performance (pending)	ANSI FM 3260 EN 54-10		
	Functional safety (pending)	SIL2, per IEC 61508		
	DNV GL (pending)	Standard DNVGL-CG-0339 for open deck locations Temperature class D; Vibration Class A, B and C		
	EAC CU TR	(pending)		
ACCESSORIES	Weather shield Adapters	(pending) for connecting different mounts		
WARRANTY		5 years		

^{*}All products designed and tested to relevant approval standards









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