F-GUARD UVIR-HD

UV/IR Flame Detector

gastech

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The Gastech F-Guard UV-IR-HD detector offers extremely reliable and fast detection of fires and explosions, providing the additional, extremely valuable time that, in many cases, can make all the difference!

The Gastech F-Guard-UV-IR flame detector provides ultra-fast esponse, high performance and reliable detection of a large variety of fires including hydrocarbon fires (visible and nonvisible), as well as Hydrogen fires.

The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions. 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) allowing rescuers to know the exact situation before entering the hazardous area. It will automatically record a video of a fire event (1 min pre-alarm / up to 3 min post-alarm).

Add to that, the integral HD quality video, with event recording, on top of the proven superior capabilities of UV-IR flame detection and you have a very powerful safety tool to protect your personnel, plant and process. personnel, plant and process.

KEY FEATURES

- High immunity to false alarm
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- Hydrogen and Hydrocarbons flame detection
- High sensitivity – up to 100 ft. (30m) for a 1 ft2 (0.1m2) n-heptane pan fire
- 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 (for both IR and UV channels)
- Window heater to avoid condensation and icing
- Tilt mounting bracket can be connected either above or below the detector
- Configurable detection mode – allows configuration of UV-IR, UV or IR detection mode

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	7.0	2.0	No Alarm	70	2.0	No Alarm
Radiation heater, 1850W	2.0	0.5	No Alarm	2.0	0.5	No Alarm
Quartz lamp (500W) non-shielded	10.0	3.0	No Alarm	3.0	1.0	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)
N-Heptane	1 x 1 ft.	98	30	3.0
N-Heptane	1 x 1 ft.	49	15	1.5
Gasoline	2 x 2 ft.	164	50	8.1
Gasoline	2 x 1 ft.	98	30	2.9
Methane	32-in Plume	59	18	4.8
LPG	32-in Plume	75	23	3.2
LPG	32-in Plume	33	10	0.6
Diesel	1 x 1 ft.	75	23	3.0

Fuel	Pan Size	ft.	m	Avg. Response Time (Sec)
JP5	1 x 1 ft.	75	23	3.1
JP5	1 x 1 ft.	79	24	2.1
Kerosene	1 x 1 ft.	75	23	2.5
Methanol	1 x 1 ft.	59	18	3.8
Methanol	1 x 1 ft.	26	8	2.2
Ethanol	1 x 1 ft.	72	22	3.8
Isopropanol	1 x 1 ft.	75	23	3.0
Polypropylene	1 x 1 ft.	49	15	3.1
Paper	1 x 1 ft.	33	10	3.9
H2	32-in Plume	66	20	3.6

SPECIFICATIONS   Specifications subject to change without notice

FIRE DETECTION	Detection time and distance	5ms for fast burst of explosion 1.5s for 1 ft2 (0.1m2) pan fire at 0–50 ft. (0–15m) Up to 3s for 1 ft2 (0.1m2) pan fire at 50–100 ft. (15–30m)
	Field of view (IR detection)	90° Horizontal, 75° Vertical
	Time Delay	0-30 seconds
	Built in Test	Automatic and Manual
VIDEO FUNCTIONALITY	HD Video	Allows clear imaging of fire and humans at 100 ft. (30m) distance
	Video recording of alarm event	1-minute pre-event and 3 minutes post-event
	System integration protoco	ONVIF (Open Network Video Interface Forum) Profile S
ELECTRICAL SPECIFICATIONS	Operating Voltage	24 VDC nominal (18-32 VDC)
	Current Consumption	Standby: 180mA Maximum: 250mA all systems in operation (including window heater)
	Conduit Entries	2x conduit entries 3/4" 14NPT or M25x1.5
	Wiring	12-20AWG (2.5–0.35mm2)

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SPECIFICATIONS CONTINUED   Specifications subject to change without notice

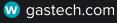|		
OUTPUTS	**Relays**	Volt-free contacts rated 2A at 30 VDC Alarm – normally open a Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire configurations (sink and source)
	Indication	Tri-color LED
	Modbus	RTU compatible on RS-485
	Digital (for video)	IP network IEEE 802.3 10Base-t
	Composite video	NTSC or PAL
MECHANICAL SPECIFICATIONS	**Size**	7.87 x 5.12 x 5.12" (200x130x130mm)
	Weight	Detector (Stainless Steel 316): 9.8 lbs. (4.4 kg) Tilt mount (Stainless Steel 316): 5.4 lbs. (2.4 kg)
ENVIRONMENTAL 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
APPROVALS*	**Explosion proof**	ATEX: II 2 G D Ex db eb IIC T5 Gb -55°C<Ta<75°C or Ex db eb IIC T4 Gb -55°C<Ta<85°C Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex tb IIIC T105°C Db -55°C<Ta<85°C Ex db eb IIC T5 Gb -55°C<Ta<75°C or Ex db eb IIC T4 Gb -55°C<Ta<85°C Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex tb IIIC T105°C Db -55°C<Ta<85°C FM & FMC (pending) Class I, Div. 1, Groups B, C & D; Class II, Div. 1, Groups E, F & G; Class III
	Performance	ANSI FM 3260 EN 54-10
	Functional safety	SIL2, per IEC 61508
	DNV GL	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 for connecting different mounts
WARRANTY		5 years

*All products designed and tested to relevant approval standards