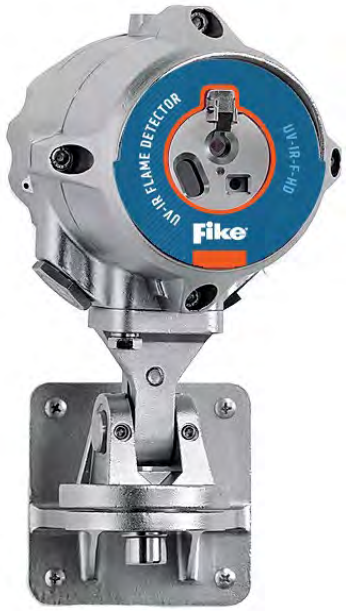
DATA SHEET

UV-IR-F-HD Flame Detector

The UV-IR-F-HD flame detector provides ultra-fast response, high performance, and reliable detection of a large variety of fires, including hydrocarbon fires (visible and non-visible). The detector uses improved UV-IR to address both slow-growing fires and fast eruptions of fire, operating 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 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).

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

*NOTE: The UV-IR-F-HD model is identical to the UV-IR-HD, but it does not detect hydroxyl and hydrogen fires, and the IR sensor operates at a wavelength of 4.0-5-0 µm.

KEY BENEFITS

- High immunity to false alarm
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- Hydrocarbon flame detection. Spectrum response of IR radiation in the 4.0-5.0 micron range
- High sensitivity – up to 100 ft. (30m) for a 1 ft^2 (0.1m^2) 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
- Window heater to avoid condensation and icing
- Stainless steel tilt mount with horizontal and vertical adjustment
- Detects high UV (sparks and arcs) or IR levels via auxiliary relay and 4-20mA
- Meets NFPA 33 response requirement for flame detection within 0.5 second

ORDERING

FIK-UV-IR-F-HD-AS11	UV-IR-F-HD Flame Detector, SS316, 2 x M25 entries, Color VID, standard configuration
FIK-UV-IR-F-HD-AS21	UV-IR-F-HD Flame Detector, SS316, 2 x ¾" NPT entries, Color VID, standard configuration
FIK-UV-IR-F-HD-AS11-H	UV-IR-F-HD Flame Detector, SS316, 2 x M25 entries, Color VID, process industry (SIL 2-HART)
FIK-UV-IR-F-HD-AS21-H	UV-IR-F-HD Flame Detector, SS316, 2 x ¾" NPT entries, Color VID, process industry (SIL 2-HART)
FIK-UV-IR-F-HD-AS12	UV-IR-F-HD Flame Detector, SS316, 2 x M25 entries, Near IR VID (SIL 2-HART)
FIK-UV-IR-F-HD-AS22	UV-IR-F-HD Flame Detector, SS316, 2 x ¾" NPT entries, Near IR VID (SIL 2-HART)
FIK-UV-IR-F-HD-AS15	UV-IR-F-HD Flame Detector, SS316, 2 x M25 entries, Color VID, NFPA 33 (SIL 2-HART)[1]
FIK-UV-IR-F-HD-AS25	UV-IR-F-HD Flame Detector, SS316, 2 x ¾" NPT entries, Color VID, NFPA 33 (SIL 2-HART)[1]
ACCESSORIES	
FIK-TMO-S02	Tilt Mount, SS316, HD Detector (shown above)
FIK-WCO-S02	Weather Cover, SS316, HD Detector
FIK-PMA-S23	Pole Mount Adapter, 2 and 3 inch
FIK-PMA-S06	Pole Mount Adapter, 6 inch
FIK-ASD-S02	AIRSHIELD, HD Detector [2]
FIK-FSIM-UV-IR-KIT	Flame Simulator Kit, UV-IR Detector
FIK-USB/RS485	USB/RS485 Converter Kit [3]

[1] Automotive / Spray booth
[2] Provides protection against dust, snow and other interferences.
[3] For PC/Laptop USB port. Includes FLS Flame Detector Communicator software.

SPECIFICATIONS

FIRE DETECTION	**Detection time and distance**	5ms for fast burst or explosion <4s for 1 ft² (0.1m²) n-heptane pan fire at 0-100 ft. (0-30m)
	Field of view (IR detection)	90° Horizontal, 80° 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 events	1-minute pre-event and up to 3 minutes post-event
	System integration protocol	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 cable and conduit entries 3/4" NPT(F) or M25x1.5
	Wiring	12-20AWG (4.0-0.50mm²)
OUTPUTS	**Relays**	SPST volt-free contacts rated 2A at 30 VDC Alarm – normally open Auxiliary – normally open Fault – normally closed
	0-20mA (stepped) current output	3 wire and 4 wire configurations (sink and source)
	Indication	Tri-color LED (Green, Yellow, Red)
	Modbus	RTU compatible on RS-485
	Digital (for video)	IP network IEEE 802.3 100Base-T
	Composite video	NTSC or PAL
MECHANICAL SPECIFICATIONS	**Size**	7.87 x 5.12 x 5.12" (200 x 130 x 130 mm)
	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 +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 & 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	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 Ta = -50°C≤Ta≤85°C or T5 Ta = -50°C≤Ta≤75°C Class II/III, Div. 1, Groups E, F, G; T4 Ta = -50°C≤Ta≤85°C or T5 Ta = -50°C≤Ta≤75°C Class I, Zone 1, AEx/Ex db IIC T4 Gb or Class I, Zone 1, AEx/Ex db eb IIC T4 Gb T4 Ta = -50°C≤Ta≤85°C or T5 Ta = -50°C≤Ta≤75°C and Zone 21, AEx/Ex tb IIIC T95°C Db -50°C≤Ta≤75°C or Zone 21, AEx/Ex tb IIIC T105°C Db -50°C≤Ta≤85°C
	Performance	ANSI FM 3260 EN 54-10
	Functional Safety	Complies with SIL2, per IEC 61508 (option available)
	CSFM	Listed: 7210-2010:0525
WARRANTY	**5 Years**	

IMMUNITY TO FALSE ALARMS AT EXTREME SENSITIVITY (modulated/unmodulated)

False Alarm Source	Maximum Distance in ft. (m)
Sunlight, Direct, Reflected	No response at any distance
Incandescent frosted glass light, 300W	2.0 (0.5)
Fluorescent, 70W (3x23.3W)	2.0 (0.5)
Electric arc	2.0 (0.5)
Arc welding	10.0 (3.0)
Radiation heater, 1850W	2.0 (0.5)
Quartz lamp (1000W) shielded	2.0 (0.5)
Quartz lamp (500W) non-shielded	7.0 (2.0)
Mercury vapor lamp 160Wx3	2.0 (0.5)
Car Exhausts	2.0 (0.5)
Projector LED	2.0 (0.5)
Solenoid bell	2.0 (0.5)
Soldering iron	2.0 (0.5)
Electric Drill	2.0 (0.5)

UV-IR-F-HD RESPONSE CHARACTERISTICS (Standard model X1 and X2)

Fuel	Size	Sensitivity	Distance ft. (m)	Average Response Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	3.8
N-Heptane	1 x 1 ft.	High	75 (23)	1.5
N-Heptane	1 x 1 ft.	Medium	49 (15)	2.1
N-Heptane	1 x 1 ft.	Low	16 (5)	1.4
Gasoline	2 x 2 ft.	Extreme	197 (60)	4.6
Gasoline	1 x 1 ft.	Extreme	98 (30)	3.7
Gasoline	1 x 1 ft.	Medium	49 (15)	4.2
Methane	32-in Plume	Extreme	59 (18)	1.6
Methane	32-in Plume	Medium	30 (9)	0.9
LPG	32-in Plume	Extreme	75 (23)	1.2
LPG	32-in Plume	High	56 (17)	1.6
LPG	32-in Plume	Medium	33 (10)	1.3
LPG	32-in Plume	Low	13 (4)	1.3
Diesel	1 x 1 ft.	Extreme	75 (23)	3.8
Diesel	1 x 1 ft.	Medium	36 (11)	1.4
JP5	1 x 1 ft.	Extreme	75 (23)	3.5
JP5	1 x 1 ft.	High	56 (17)	3.4
JP5	1 x 1 ft.	Medium	36 (11)	2.1
JP5	1 x 1 ft.	Low	16 (5)	4.9
Kerosene	1 x 1 ft.	Extreme	75 (23)	3.4
Kerosene	1 x 1 ft.	Medium	36 (11)	1.6
Methanol	1 x 1 ft.	Extreme	59 (18)	3.7
Methanol	1 x 1 ft.	High	43 (13)	1.8
Methanol	1 x 1 ft.	Medium	30 (9)	2.3
Methanol	1 x 1 ft.	Low	10 (3)	2.9
Ethanol	1 x 1 ft.	Extreme	72 (22)	5.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	1.4
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.8
Isopropanol	1 x 1 ft.	Medium	36 (11)	1.6
Polypropylene	1 x 1 ft.	Extreme	49 (15)	2.7
Polypropylene	1 x 1 ft.	Medium	23 (7)	3.0
Paper	1 x 1 ft.	Extreme	33 (10)	3.8
Paper	1 x 1 ft.	Medium	23 (7)	3.7
Syngas (30%CH_4:70%H_2)	32-in Plume	Extreme	66 (20)	3.8
Syngas (30%CH_4:70%H_2)	32-in Plume	Medium	33 (10)	1.8

PRODUCTS:

Gaseous Suppression

- Inert Gas (IG-01, IG-55, IG-100, IG-541)
- Novec 1230™ Fluid (FK-5-1-12)
- FM-200® (HFC-227ea.)
- Carbon Dioxide (CO_2)
- Hybrid Systems (N_2 / Water)
- Pressure Relief Vents
- Enclosure Integrity Testing Equipment
- Pipe & Fittings

Water Suppression

- Water Mist - High Pressure
- Water Mist - Intermediate Pressure
- Water Mist - Low Pressure
- Hybrid Systems (Water / N_2)
- Monitors & Delivery Systems
- High Speed Deluge

Foam Suppression

- Foam Concentrates
- Foam Proportioning
- Foam Delivery Systems
- Compressed Air Foam
- Foam Concentrate Testing

Explosion Protection

- Explosion Suppression
- Explosion Isolation
- Explosion Vents & Pressure Relief
- Spark Suppression
- Explosibility Testing

Fire Detection

- Linear Heat Detection - Digital
- Linear Heat Detection - Fibre Optic
- Linear Heat Detection - Micro Chip
- Flame Detection
- Video Imaging Detection
- Spark Detection
- Control & Indicating Equipment
- Thermal Imaging Detection
- Aspirating Smoke Detection

Military & Defence

- Military Vehicles
- Naval Vessels

Special Applications

- Micro Environment
- Oxygen Reduction
- Kitchen Protection Systems
- Dry Chemical
- Vehicle Systems
- Marine & Offshore
- Vapour Mitigation
- Li-Ion Fire Systems

Support Services

- Design / Engineering
- Technical Support
- Services & Testing

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