

## UV-IR Flame Detector

The UV-IR flame detector provides ultra-fast response, high performance, and reliable detection of a large variety of fires, including hydrocarbon fires (visible and non-visible), as well as hydrogen and methane/hydrogen mixed fires. The detector addresses both slow-growing fires and fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions.

### KEY BENEFITS

- High immunity to false alarm
- High sensitivity – up to 100 ft. (30m) for a 1 ft<sup>2</sup> (0.1m<sup>2</sup>) n-heptane pan fire
- Hydrocarbon and non-hydrocarbon flame detection
- Ultra-fast detection mode detection within 5 milliseconds for fireballs or explosions
- High speed (<0.5s) model [X5] available for compliance with NFPA 33
- Event logger – alarms, faults, and other relevant events are logged into memory
- Built-in-Test (BIT) – Automatic and manual self-test of window cleanliness and overall detector operation
- HART<sup>®</sup> 7, for configuration & maintenance - option available.
- 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
- SIL 2 compliant - option is available.



## ORDERING

<b>FIK-UV-IR-AS11</b>	UV-IR Flame Detector, SS316, 2 x M25 entries, standard configuration
<b>FIK-UV-IR-AS11-H</b>	UV-IR Flame Detector, SS316, 2 x M25 entries, process industry (SIL 2-HART)
<b>FIK-UV-IR-AS21</b>	UV-IR Flame Detector, SS316, 2 x ¾" NPT entries, standard configuration
<b>FIK-UV-IR-AS21-H</b>	UV-IR Flame Detector, SS316, 2 x ¾" NPT entries, process industry (SIL 2-HART)
<b>FIK-UV-IR-AS15</b>	UV-IR Flame Detector, SS316, 2 x M25 entries, NFPA 33 (SIL 2-HART) <sup>1</sup>
<b>FIK-UV-IR-AS25</b>	UV-IR Flame Detector, SS316, 2 x ¾" NPT entries, NFPA 33 (SIL 2-HART) <sup>1</sup>
<b>ACCESSORIES</b>	
<b>FIK-TMO-S01</b>	Tilt Mount, SS316, Standard Detector (shown above)
<b>FIK-WCO-S01</b>	Weather Cover, SS316, Standard Detector
<b>FIK-PMA-S23</b>	Pole Mount Adapter, 2 and 3 inch
<b>FIK-PMA-S06</b>	Pole Mount Adapter, 6 inch
<b>FIK-ASD-S01</b>	AIRSHIELD, Standard Detector <sup>2</sup>
<b>FIK-DMX-S01</b>	Duct Mount Assembly without Window, Standard Detector <sup>3</sup>
<b>FIK-DMW-S01</b>	Duct Mount Assembly with Sapphire Window, Standard Detector <sup>4</sup>
<b>FIK-FSIM-UV-IR-KIT</b>	Flame Simulator Kit, UV-IR Detector
<b>FIK-USB/RS485</b>	USB/RS485 Converter Kit <sup>5</sup>

<sup>[1]</sup> Automotive / Spray booth

<sup>[2]</sup> Provides protection against dust, snow and other interferences.

<sup>[3]</sup> Use with FIK-ASD-S01 (sold separately), tilt mount NOT needed.

<sup>[4]</sup> Tilt mount NOT needed.

<sup>[5]</sup> For PC/Laptop USB port. Includes FLS Flame Detector Communicator software.

## SPECIFICATIONS

<b>FIRE DETECTION</b>	<b>Detection time and distance</b>	5ms for fast burst or explosion 1s for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire at 0-50 ft. (0-15m) <2s for 1 ft <sup>2</sup> (0.1m <sup>2</sup> ) n-heptane pan fire at 50-100 ft. (15-30m)
	<b>Sensitivity Range</b>	4 sensitivity ranges: Extreme, High, Medium, Low
	<b>Field of view (IR detection)</b>	90° Horizontal, 80° Vertical
	<b>Time Delay</b>	0-30 seconds
	<b>Built in Test</b>	Automatic and Manual
<b>ELECTRICAL SPECIFICATIONS</b>	<b>Operating Voltage</b>	24 VDC nominal (18-32 VDC)
	<b>Current Consumption</b>	Standby: 120mA 180mA all systems in operation (including window heater)
	<b>Conduit Entries</b>	2x cable and conduit entries 3/4" NPT(F) or M25x1.5
	<b>Wiring</b>	12-20AWG (4.0-0.50mm <sup>2</sup> )
<b>OUTPUTS</b>	<b>Relays</b>	SPST volt-free contacts rated 2A at 30 VDC Alarm – normally open Auxiliary – normally open Fault – normally closed
	<b>0-20mA (stepped) current output</b>	3 wire and 4 wire (isolated) configurations (sink and source) HART® rev 7.0 (option available)
	<b>Indication</b>	Tri-color LED (Green, Yellow, Red)
	<b>Modbus</b>	RTU compatible on RS-485
<b>MECHANICAL SPECIFICATIONS</b>	<b>Size</b>	5.51 x 3.54 x 3.54" (140 x 90 x 90 mm)
	<b>Weight</b>	Detector (stainless steel 316): 6.6 lbs. (3.0 kg) Tilt mount (stainless steel 316): 3.3 lbs. (1.5 kg)
<b>ENVIRONMENTAL SPECIFICATIONS</b>	<b>Temperature Range</b>	Operating: -67°F to +185°F (-55°C to +85°C) Storage: -67°F to +185°F (-55°C to +85°C)
	<b>Humidity</b>	Up to 99% (RH), non-condensing
	<b>Ingress Protection</b>	IP66 & 68 (2m, 24hr); NEMA 4X & 6P
<b>APPROVALS*</b>	<b>ATEX</b>	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
	<b>IECEX, INMETRO</b>	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
	<b>FMus &amp; FMc</b>	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
	<b>Performance</b>	ANSI FM 3260 EN 54-10
	<b>Functional Safety</b>	Complies with SIL2, per IEC 61508 (option available)
	<b>CSFM</b>	Listing 7210-2010:0525
<b>WARRANTY</b>	<b>5 Years</b>	

\*All products designed and tested to relevant approval standards.

## 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)

FIK-UV-IR RESPONSE CHARACTERISTICS (Standard Model X1)

Fuel	Size	Sensitivity	Distance ft. (m)	Average Response Time (s)
N-Heptane	1 x 1 ft.	Extreme	98 (30)	2.0
N-Heptane	1 x 1 ft.	High	75 (23)	1.7
N-Heptane	1 x 1 ft.	Medium	49 (15)	1.0
N-Heptane	1 x 1 ft.	Low	16 (5)	1.0
Gasoline	2 x 2 ft.	Extreme	197 (60)	3.3
Gasoline	1 x 1 ft.	Extreme	98 (30)	1.8
Gasoline	1 x 1 ft.	Medium	49 (15)	1.3
Methane	32-in Plume	Extreme	59 (18)	1.4
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)	1.2
LPG	32-in Plume	Low	13 (4)	1.2
Diesel	1 x 1 ft.	Extreme	75 (23)	2.6
Diesel	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Extreme	75 (23)	3.3
JP5	1 x 1 ft.	High	56 (17)	1.8
JP5	1 x 1 ft.	Medium	36 (11)	1.2
JP5	1 x 1 ft.	Low	16 (5)	1.2
Kerosene	1 x 1 ft.	Extreme	75 (23)	1.8
Kerosene	1 x 1 ft.	Medium	36 (11)	0.9
Methanol	1 x 1 ft.	Extreme	52 (16)	0.8
Methanol	1 x 1 ft.	High	43 (13)	3.2
Methanol	1 x 1 ft.	Medium	30 (9)	1.3
Methanol	1 x 1 ft.	Low	10 (3)	2.7
Ethanol	1 x 1 ft.	Extreme	62 (19)	4.1
Ethanol	1 x 1 ft.	Medium	31 (9.5)	2.9
Isopropanol	1 x 1 ft.	Extreme	75 (23)	2.2
Isopropanol	1 x 1 ft.	Medium	36 (11)	0.8
Polypropylene	1 x 1 ft.	Extreme	49 (15)	1.4
Polypropylene	1 x 1 ft.	Medium	23 (7)	0.9
Paper	1 x 1 ft.	Extreme	33 (10)	1.2
Paper	1 x 1 ft.	Medium	23 (7)	1.0
Hydrogen	32-in Plume	Extreme	66 (20)	6.4
Hydrogen	32-in Plume	Medium	33 (10)	1.0
Syngas (30%CH <sub>4</sub> :70%H <sub>2</sub> )	32-in Plume	Extreme	59 (18)	3.2
Syngas (30%CH <sub>4</sub> :70%H <sub>2</sub> )	32-in Plume	Medium	33 (10)	1.2