

AUTROFLAME X33AF

Multispectrum IR Flame Detector Product datasheet

Features

- FM 3260 (2000).
- EN 54-10 Certified (VdS).
- ATEX Directive compliant.
- Certified performance to multiple fuel types.
- Extended detection range.
- New standard set for cone of vision.
- HART models available.
- Maximum false alarm rejection.
- Reliable flame detection with modulated IR background.
- Microprocessor controlled heated optics.
- Calibrated automatic optical check for each sensor eliminates need for testing with external test lamp.
- RFI and EMC Directive compliant.
- Event logging with time and date stamp.
- International certifications.
- Integral wiring compartment for ease of installation.
- Solar resistance.

Benefits

- Single detector for multiple fuels.
- Low cost of coverage.
- Ability to detect smaller fires earlier.
- Solid cone of vision to 30 m (100 ft) for methane.
- Better detection zoning capability.
- Best combination of flame detection and false alarm rejection.
- Low maintenance costs.
- Reliable fault diagnostics.
- Suitable for heavy industrial applications.
- Explosion/flame proof (Ex d) or increased safety installations (Ex d e) in hazardous locations.
- Easily retrofitted.

Application/Description

The X33AF Multispectrum IR Flame Detector is the future generation detector for performance and technology. The detector utilizes multipatented signal processing algorithms supported by an embedded 32-bit microprocessor to provide



continuous protection in the presence of false alarm sources and environments with infrared radiation present. It is suitable for indoor and outdoor applications that require the highest level of false alarm rejection and fire detection performance. The detector is available in aluminum or 316 stainless steel for installation in the harshest environments. The X33AF has a detection range to n-Heptane of 64 meters (210 feet), and a solid cone of vision for methane.

The detector features standard fire alarm, fault and auxiliary relays, with an isolated 4 to 20 mA output model with optional HART communication.

The X33AF provides superior performance in applications that are at the extremes, and where background infrared radiation is a normal condition:

- Hangars
- Offshore production platforms
- Offshore production ships
- Refineries
- Production facilities
- Loading racks
- Compressor stations
- Turbine enclosures
- Airport water curtains.

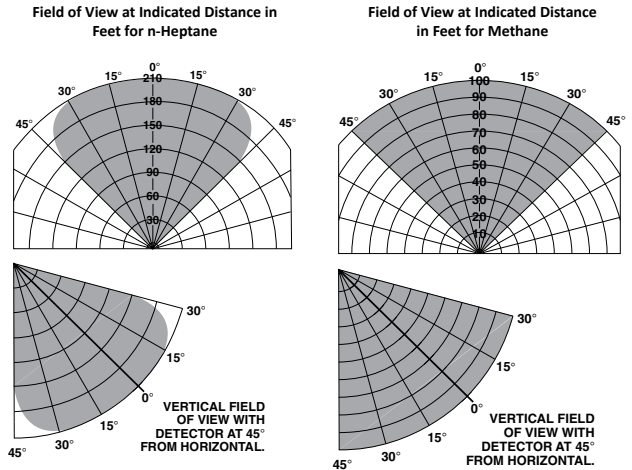
Specifications

Operating Voltage	24 Vdc. Operating range is 18 to 30 Vdc.
Power Consumption	4 watts minimum (without heater), 17 watts at 30 Vdc with EOL resistor installed and heater on maximum.
Relays	Contacts rated 5 amperes at 30 Vdc. Fire Alarm: — Form C (NO and NC contacts) — normally de-energized — latching/non-latching. Fault: — Form A (NO contacts) — normally energized — latching/non-latching. Auxiliary: — Form C (NO and NC contacts) — normally energized — latching/non-latching.
Current Output (opt.)	0–20 mA, with a maximum loop resistance of 500 ohms from 18–19.9 Vdc, 600 ohms from 20–30 Vdc.
Temperature Range	Operating: –40°F to +167°F (–40°C to +75°C). Storage: –67°F to +185°F (–55°C to +85°C). Hazardous location ratings from –55°C to +125°C available on flameproof model.
Humidity Range	0 to 95% relative humidity, can withstand 100% condensing humidity for short periods of time.
Wiring	14 AWG (2.08 mm ²) or 16 AWG (1.31 mm ²) shielded cable is recommended.
Enclosure Material	Copper-free aluminum or 316 stainless steel
Response Characteristics	

	Fuel	Size	Distance Feet (m)	Average Response Time (sec)
Very High Sensitivity	n-Heptane	1 x 1 foot	210 (64)*	11
	n-Heptane**	1 x 1 foot	210 (64)*	6
	n-Heptane	1 x 1 foot	100 (30.5)	3
	n-Heptane	6 in. x 6 in.	80 (24.4)	3
	Isopropanol	6 in. x 6 in.	70 (21.3)	4
	Diesel**	1 x 1 foot	150 (45.7)*	14
	Ethanol	1 x 1 foot	210 (64)	11
	Methanol	6 in. x 6 in.	40 (12.2)	3
	Methanol	1 x 1 foot	150 (45.7)*	18
	Methanol**	1 x 1 foot	150 (45.7)*	7
	Methane	30 in. plume	100 (30.5)	3
	JP-5**	1 x 1 foot	150 (45.7)*	2
	JP-5**	2 x 2 feet	210 (64)	4
Medium Sensitivity	JP-5**	2 x 2 feet	100 (30.5)	2
	Office Paper 0.5 lb. Corrugated Panel	19" x 19" x 8"	100 (30.5)	4
	Office Paper 0.5 lb. Corrugated Panel	18" x 36"	100 (30.5)	8
	n-Heptane	1 x 1 foot	100 (30.5)	12
	n-Heptane	1 x 1 foot	50 (15.2)	2
	Diesel**	1 x 1 foot	70 (21.3)	4
	Ethanol	1 x 1 foot	85 (25.9)	13
	Methanol	1 x 1 foot	70 (21.3)	10
	Methane	30 in. plume	65 (19.8)	3
	Methane	30 in. plume	55 (16.8)	2
	JP-5**	2 x 2 feet	100 (30.5)	3
	Office Paper 0.5 lb. Corrugated Panel	19" x 19" x 8"	50 (15.2)	6
	Office Paper 0.5 lb. Corrugated Panel	18" x 36"	50 (15.2)	2

* Outdoor test condition.
 ** 10 second pre-burn from ignition.

Conduit Entry Size	3/4 inch NPT or 25 mm.
Warranty	5 years.
Shipping Weight (Approximate)	Aluminum: 6 pounds (2.75 kg). Stainless Steel: 10 pounds (4.5 kg).
Part numbers	Please contact the sales department or ref. the product catalogue.
Field of View	90° horizontal by 75° vertical, at a minimum of 70% of the on-axis detection distance.



Certification

FM APPROVED **SA** **UL LISTED 385A**

Class I, Div. 1, Groups B, C & D (T4A);
 Class II, Div. 1, Groups E, F & G (T4A);
 Class I, Div. 2, Groups A, B, C & D (T3C);
 Class II, Div. 2, Groups F & G (T3C);
 Class III.
 Enclosure NEMA/Type 4X.

DNV
 Type Approval Certificate Number A-11022.

Lloyd's Register
 Type Approval Certificate Number 09/00027.



IECEx Certificate of Conformity
 IECEx ULD 06.0017X
 Ex d e IIC T5-T6 Gb
 T6 (Tamb = –50°C to +60°C).
 T5 (Tamb = –50°C to +75°C).
 IP66.
 – or –
 Ex d IIC T4-T6 Gb
 T6 (Tamb = –55°C to +60°C).
 T5 (Tamb = –55°C to +75°C).
 T4 (Tamb = –55°C to +125°C).
 IP66.



Increased Safety Model
CE 0539 Ex II 2 G II 2 D
 Ex d e IIC T5–T6 Gb
 Ex tb IIIC T130°C
 T6 (Tamb –50°C to +60°C)
 T5 (Tamb –50°C to +75°C)
 IP66/IP67.

Flameproof Model
CE 0539 Ex II 2 G II 2 D
 Ex d IIC T4–T6 Gb
 Ex tb IIIC T130°C
 T6 (Tamb –55°C to +60°C)
 T5 (Tamb –55°C to +75°C)
 T4 (Tamb –55°C to +125°C)
 IP66/IP67

UL/INMETRO Brazil
 Type Approval Certificate Number UL-BR 12.0093X



IEC 61508
 Certified SIL 2 Capable.
 Certification DET 070417 C001
 Applies to specific models –
 Contact the sales department for information.