

AUTROFLAME X33AF

Multispectrum IR Flame Detector Product datasheet

Features

- Complies with FM 3260
- EN54 certified
- Certified SIL 2 capable
- ATEX Directive compliant
- Certified performance to multiple fuel types and fire sizes
- PowerLoop models available
- Long detection range to carbonaceous fires
- HART models available
- FDT/DTM capable
- Multiple sensitivity levels
- 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
- Integral wiring compartment for ease of installation
- Operates under adverse weather conditions and in dirty environments

Benefits

- Single detector for multiple hydrocarbon fuels
- Low cost of coverage
- Ability to detect smaller fires earlier
- Solid cone of vision to 125 feet 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 e) in hazardous locations

Application/Description

The AutoFlame X33AF is a multispectrum infrared (MIR) flame detector. It provides unsurpassed detection of fires from light to heavy hydrocarbon



fuels combined with the highest degree of false alarm rejection. The detector has Division and Zone explosion-proof ratings and is suitable for use in indoor and outdoor applications.

The AutoFlame X33AF contains three IR sensors with their associated signal processing circuitry. The standard output configuration includes fire alarm, fault and auxiliary relays, with an isolated 0 to 20 mA output model with optional HART communication.

The detector 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
- Automotive Painting
- LNG/LPG
- Gas Separation Plants
- Warehousing
- Marine

Specifications

Operating Voltage	24 Vdc nominal (18 Vdc minimum, 30 Vdc maximum). Maximum ripple is 2 volts peak-to-peak.
Power Consumption	4 watts minimum (without heater), 17 watts at 30 Vdc with EOL resistor installed and heater on maximum.
Relays	<p>Contacts rated 5 amperes at 30 Vdc.</p> <p>Fire Alarm: — Form C (NO and NC contacts) — normally de-energized — latching/non-latching.</p> <p>Fault: — Form A (NO contacts) — normally energized — latching/non-latching.</p> <p>Auxiliary: — Form C (NO and NC contacts) — normally energized/de-energized — latching/non-latching.</p>
Current Output (opt.)	0–20 mA (± 0.3 mA), with a maximum loop resistance of 500 ohms from 18–19.9 Vdc, 600 ohms from 20–30 Vdc
Temperature Range	<p>Operating: –40°F to +167°F (–40°C to +75°C). Storage: –67°F to +185°F (–55°C to +85°C).</p> <p>Hazardous location ratings from –55°C to +125°C</p>
Humidity Range	0 to 95% relative humidity, can withstand 100% condensing humidity for short periods of time.
Wiring	16 AWG or 2.5 mm ² shielded cable is recommended.
Enclosure Material	Copper-free aluminum (painted) or stainless steel (316/CF8M Cast).

Response Characteristics

	Fuel	Size	Distance Feet (m)	Average Response Time (sec)
Very High Sensitivity	n-Heptane	1 x 1 foot	265 (80.7)*	22
	n-Heptane	1 x 1 foot	250 (76.2)	17
	n-Heptane	1 x 1 foot	100 (30.5)	3
	n-Heptane	6 in. x 6 in.	100 (24.4)	7
	Isopropanol	6 in. x 6 in.	70 (21.3)	6
	Diesel	1 x 1 foot	175 (53.3)	6**
	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)	7
	Methanol	1 x 1 foot	150 (45.7)	5**
	Methane	32 inch plume	125 (38.1)	5
	Propane	32 inch plume	125 (38.1)	5
	Jet A	1 x 1 foot	150 (45.7)	4**
	JP-5	2 x 2 feet	235 (71.6)	3**
Medium Sensitivity	JP-8	1 x 1 foot	150 (45.7)	5**
	Class A	Ø12 in. x 7 in.	150 (45.7)	3**
	n-Heptane	1 x 1 foot	100 (30.5)	7
	n-Heptane	1 x 1 foot	50 (15.24)	<2
	Diesel	1 x 1 foot	70 (21.3)	4**
	Ethanol	1 x 1 foot	85 (25.9)	7
	Methanol	1 x 1 foot	70 (21.3)	6
	Methane	32 inch plume	70 (21.3)	6
	Methane	32 inch plume	55 (16.8)	4
	Propane	32 inch plume	75 (22.8)	<5
JP-5	2 x 2 feet	150 (45.7)	3**	
Class A	Ø12 in. x 7 in.	50 (15.24)	4**	

* Outdoor test condition.

** 10 second pre-burn from ignition.

NOTE: Refer to AutroFlame X33AF instruction manual for additional sensitivity levels.

Conduit Entry Size	3/4 inch NPT or 25 mm.
Warranty	5 years.
Shipping Weight (Approximate)	Aluminum: 7 lbs. (3.2 kg). Stainless Steel: 13.8 lbs. (6.3 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



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. Group F & G (T3C);
Class III
Enclosure NEMA/Type 4X.



IEC 61508

Certified SIL 2 Capable.
Certification AUT 1108054 C002
Applies to specific models –
Contact the sales department for information.

RUSSIA & KAZAKHSTAN



SERCONS
TC RU C-NO. Г508.В.01508
1 Ex d e IIC T5-T6 Gb
1 Ex d IIC T4-T6 Gb

RUSSIA



NORMATEST
CERTIFICATE OF CONFORMITY TO
TECHNICAL REGULATIONS,
GOST R 53325-2012
C-NO.A603.B.00061



Approvals to EN 54-10. See instruction manual for details.



US Coast Guard
Coast Guard Approval No. 161.002/57/0.



DEMKO 01 ATEX 130204X
Increased Safety Model

CE 0539 Ex II 2 G II 2 D

Ex d e IIC T6–T5 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 T6–T4 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



IECEx Certificate of Conformity

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



UL-BR 12.0093X
Ex d e IIC T6-T5 Gb IP66/IP67
Ex tb IIIC T130°C
T6 (Tamb = –50°C to +60°C)
T5 (Tamb = –50°C to +75°C).
– OR –
Ex d IIC T6-T4 Gb IP66/IP67
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).



DNV
Type Approval Certificate
Number A-13995.
DNV Certificate Number MED-B-9427.