AutroFlame X98AF

Infrared Flame Detector
Product datasheet

Features

- FM 3260 (2000).
- EN 54-10 Certified (VdS).
- ATEX Directive compliant.
- TDSA (Time Domain Signal Analysis) for unequaled false alarm rejection.
- Responds to a fire in the presence of modulated blackbody radiation (i.e. heaters, ovens, turbines) without false alarm.
- HART models available.
- High speed capability — 40 milliseconds.
- Microprocessor controlled heated optics for increased resistance to moisture and ice.
- Automatic, manual or magnetic optical integrity (*oi*) testing — no external test lamp required.
- Easily replaceable *oi* plate.
- Fire, fault and auxiliary relays standard.
- MODBUS RS-485 communication.
- 4 to 20 mA isolated output (optional).
- Pulse output for compatibility with controller based systems (optional).
- A tricolor LED on the detector faceplate indicates normal condition and notifies personnel of fire alarm or fault conditions.
- Operates under adverse weather conditions and in dirty environments.
- Mounting swivel allows easy sighting.
- Integral wiring compartment for ease of installation.
- Class A wiring per NFPA-72.
- Meets NFPA-33 response requirement for under 0.5 second (available when model selected).
- RFI and EMC Directive compliant.
- Built-in data logging/event monitoring.

Application/Description

The evolution continues with the new X98AF IR Flame Detector. The X98AF meets the most stringent requirements worldwide with advanced detection capabilities and immunity to extraneous sources, combined with a superior mechanical design. The detector is equipped with automatic, manual and magnetic *oi* test capability. The detector has Division and Zone explosion-proof ratings and is suitable for use in indoor and outdoor applications.

The standard output configuration includes fire, fault and auxiliary relays. An optional 0 to 20 mA output with HART can be provided in addition to the three relays. Auxiliary relay and 4 to 20 mA output are not available with the pulse model. A tricolor LED on the detector faceplate indicates normal condition and notifies personnel of fire alarm or fault conditions.

The X98AF housing is available in aluminum or stainless steel, with NEMA 4X and IP66 rating.

Typical applications include:

- Dirty environments
- Petrochemical applications
- Automotive applications
- Powder coating applications
- Turbines.

Specifications

Input Voltage 24 Vdc nominal. Operating range is 18 to 30 Vdc.

Power Consumption 2.1 watts @ 24 Vdc minimum.
16.5 watts @ 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).

Humidity Range 0 to 95% relative humidity, can withstand 100% condensing humidity for short periods of time.

Field of View The X98AF has a 90 degree cone of vision with the highest sensitivity lying along its central axis.

Warranty 3 years

Enclosure Material Copper-free aluminum or 316 stainless steel

Conduit Entry Size 3/4 inch NPT or 25 mm.

Shipping Weight Aluminum: 6 pounds (2.75 kg).
Stainless Steel: 10 pounds (4.5 kg).

Part Numbers Aluminium: 116-5861-011.3981
Stainless Steel: 116-5861-011.3980

Response Characteristics

Very High Sensitivity, TDSA On

Fuel	Size	Distance Feet (m)	Typical Response Time (seconds)	Quick Fire
n-Heptane	1 x 1 foot	85 (25.9)	15	Off
Methane	32 inch plume	60 (18.3)	5	Off
Propane	Torch	2 (0.6)	0.04	On

NOTE: Refer to the X52AF instruction manual x98af_igb for details regarding detector response.

Certification

Class I, Div. 1, Groups B, C & D (T5);
Class II, Div. 1, Groups E, F, & G (T5);
Class I, Div. 2, Groups A, B, C & D (T3);
Class II, Div. 2, Groups F & G (T3);
Class III.
Enclosure NEMA/Type 4X.

IECEx Certificate of Conformity
IECEx ULD 06.0018X
Ex d e IIC T5-T6 Gb
T6 (Tamb = –50°C to +60°C).
T5 (Tamb = –50°C to +75°C).
IP66

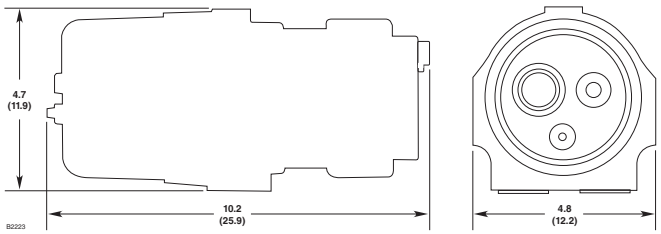
– or –

Ex d IIC T5-T6 Gb
T6 (Tamb = –55°C to +60°C).
T5 (Tamb = –55°C to +75°C).
IP66.

Increased Safety Model
CE 0539 Ex II 2 G
Ex d e IIC T5–T6 Gb
DEMKO 02 ATEX 132195X
T6 (Tamb = –50°C to +60°C).
T5 (Tamb = –50°C to +75°C).
IP66

Flameproof Model
CE 0539 Ex II 2 G
Ex d IIC T5–T6 Gb
DEMKO 02 ATEX 132195X
T6 (Tamb = –55°C to +60°C).
T5 (Tamb = –55°C to +75°C).
IP66

Dimensions Dimensions shown in inches (centimeters)



Wiring 14 AWG (2.08 mm2) or 16 AWG (1.31 mm2) shielded cable is recommended.

9	4-20 mA +	19	4-20 mA –	SPARE	29
8	4-20 mA + REF	18	4-20 mA – REF	SPARE	28
7	COM FIRE	17	COM FIRE	COM AUX	27
6	N.O. FIRE	16	N.O. FIRE	N.O. AUX	26
5	N.C. FIRE	15	N.C. FIRE	N.C. AUX	25
4	COM FAULT	14	COM FAULT	RS-485 A	24
3	N.O. FAULT	13	N.O. FAULT	RS-485 B	23
2	24 VDC +	12	24 VDC +	MAN O_i	22
1	24 VDC –	11	24 VDC –	24 VDC –	21

B2061

Wiring Terminal Identification for X98AF