



UVIR Flame Detector X5200

DESCRIPTION



The evolution continues with the new X5200 UVIR Flame Detector. The X5200 combines the technologies used in the X2200 and X9800 to provide unparalleled detection capabilities and immunity to extraneous sources, combined with a superior mechanical design. The mounting arrangement allows the UV and IR sensors to monitor the same hazardous location with a 90 degree cone of vision. When both sensors simultaneously detect the presence of a flame, an alarm signal is generated. 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 4 to 20 mA output can be provided in addition to the three relays. A model with pulse output is available for easy retrofitting into existing Det-Tronics controller based systems. Auxiliary relay and 4 to 20 mA output are not available with the pulse model. A tricolor LED on the detector faceplate indicates detector status condition.

The X5200 housing is available in aluminum or stainless steel, with NEMA 4X and IP66 rating.

Typical applications include:

- Munitions
- Petrochemical applications
- Turbines.

*oi is Detector Electronics' Trademark for its patented Optical Integrity Systems, U.S. Patent 3,952,196, United Kingdom Patent 1,534,969, Canada Patent 1,059,598.

FEATURES

- FM 3260 (2000).
- EN 54-10 Certified (VdS).
- ATEX Directive compliant.
- EQP models available.
- New patented signal processing, TDSA, Arc.
- A new level of false alarm rejection.
- Responds to a fire in the presence of modulated blackbody radiation (i.e. heaters, ovens, turbines) without false alarm.
- High speed capability.
- 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).
- Tricolor LED indicates normal operation, fire and fault conditions.
- 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.

SPECIFICATIONS

Operating Voltage 24 vdc. Operating range is 18 to 30 vdc.

Power Consumption 2.8 watts @ 24 vdc minimum.
17.5 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* 4–20 mA, with a maximum loop resistance of 500 ohms from 18–19.9 vdc, 600 ohms from 20–30 vdc. (Optional)

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 X5200 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 (2.7 kg).
(Approximate) Stainless Steel: 10 pounds (4.5 kg).

Response Characteristics

Very High Sensitivity UV & IR, Low Arc, TDSA On, Quick Fire On

| Fuel | Size | Distance Feet (M) | Typical Response Time (Seconds) |
|-----------|---------------|-------------------|---------------------------------|
| n-Heptane | 1 x 1 foot | 85 (25.9) | 14 |
| Methane | 32 inch plume | 65 (19.8) | 5 |

NOTE: Refer to the X5200 instruction manual (form number 95-8546) for details regarding detector response.

*Auxiliary relay and 4 to 20 mA output are not available on pulse output model.

Certification



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

Increased Safety Model
0539 Ex II 2 GD
EEx de IIC T5–T6 T86°C
DEMKO 02 ATEX 132195
T6 (T_{amb} = –55°C to +60°C).
T5 (T_{amb} = –55°C to +75°C).
IP66.

IECEx
Certificate of Conformity
IECEx ULD 06.0018X
Ex d IIC T5–T6 or Ex de IIC T5–T6
T6 (T_{amb} = –55°C to +60°C).
T5 (T_{amb} = –55°C to +75°C).

Flameproof Model
0539 Ex II 2 GD
EEx d IIC T5–T6 T86°C
DEMKO 02 ATEX 132195
T6 (T_{amb} = –55°C to +60°C).
T5 (T_{amb} = –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 AUX | | 27 |
| 6 | N.O. FIRE | 16 | N.O. AUX | | 26 |
| 5 | N.C. FIRE | 15 | N.C. AUX | | 25 |
| 4 | COM FAULT | 14 | RS-485 A | | 24 |
| 3 | N.O. FAULT | 13 | RS-485 B | | 23 |
| 2 | 24 VDC + | 12 | MAN Oi | | 22 |
| 1 | 24 VDC – | 11 | 24 VDC – | | 21 |

Wiring Terminal Identification for Standard X5200



Detector Electronics Corporation

Specifications subject to change without notice.