

Engineering Specifications

TXP-FDE UV/IR FLAME DETECTOR

1.0 General Description:

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 fires. The detector addresses slow growing fires as well as fast eruptions of fire using improved UV-IR technology. The detector operates in all weather and light conditions. The detector is available with optional in-built HD video capability.

2.0 Electrical requirements

- 2.1 Operating Voltage - The detector shall operate between 18VDC and 32VDC (24VDC Nominal).
- 2.2 Current Consumption - The detector shall have a standby current consumption of 120mA and 180mA with all systems in operation including the window heater. The HD model shall have a standby current consumption of 180mA and 250mA with all systems in operation including the window heater.
- 2.3 The detector must provide a stepped 0-20mA (stepped) current output configurable as either 3 or 4 wire sink or source.
- 2.4 The detector shall come standard with 2 x SPDT relays and be capable of Modbus® RTU communication output.
- 2.5 The detector shall have a tricolor LED indicator for Alarm, Fault and Normal operation.

3.0 Mechanical Requirements

- 3.1 The enclosure and tilt mount shall be constructed of 316 Stainless Steel.
- 3.2 The enclosure shall have two ¾" threaded conduit/cable entries.
- 3.3 The enclosure shall include certified stopping plugs to close unused conduit/cable entries.
- 3.4 The detector shall allow access to the terminals and wiring connections, with the use of a hex key to release the locking nut.
- 3.5 The mounting bracket shall be capable of being fitted below the detector.

4.0 Detector Features

- 4.1 The detector must alarm within 5 milliseconds of fireballs or explosions, within only 1.5 seconds from 50 ft. (15m) and less than 3 seconds from 100 ft. (30m) to a standard 1ft² pan fire.
- 4.2 The optional in-built HD Camera must allow clear imaging of fire and people at 100ft (30m) distance. Video recording of 1-minute pre-event and up to 3 minutes post-event.
- 4.3 The detector must include a Data/Event logger. Alarms, faults, and other relevant events must be logged to non-volatile memory and be available for review and download.
- 4.4 The detector must have Built-in-Test (BIT) that initiates automatically or manually a self-test of window cleanliness and the overall operation of the detector.
- 4.5 The detector must have a window heater to prevent condensation and icing.



5.0 Performance

- 5.1 The detector must have a 90° Horizontal, 80° Vertical field of view.
- 5.2 The detector must have an adjustable time delay of between 0 and 30 seconds.

6.0 Environmental

- 6.1 The detector must have an operational temperature range of -55°C to +85°C. The detector must have a storage temperature range of -55°C to +85°C.
- 6.2 The detector must operate in up to 99% (RH), non-condensing humidity.
- 6.2.1 The detector enclosure must provide Ingress Protection to IP66 & 68 (2m, 24hr); NEMA 4X & 6P.

7.0 Approvals

- 7.1 The detector must have explosion proof approvals to:

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

IECEX

Ex db IIC T5 Gb -50°C≤Ta≤75°C

Ex db IIC T4 Gb -50°C≤Ta≤85°C

FM & FMC

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

- 7.2 The detector must have Performance Approvals to:

ANSI FM 3260

EN 54-10

CE

- 7.3 The detector must be designed in accordance with Functional Safety Level SIL2, per IEC 61508.

8.0 Warranty

- 8.1 The detector must be supplied with a 2-year standard warranty.

