FS24X PLUS – FLAME DETECTOR
ENGINEERING SPECIFICATIONS

Triple Infrared (IR) Flame Detector

Engineering contractors and consultants need to generate detailed specifications for any products selected for a given project. These specifications are issued to prospective vendors as part of a tender package. The text below represents a typical product specification for a Triple IR (3IR) Flame Detector, the FS24X Plus.

TYPICAL PRODUCT SPECIFICATION:

The radiant energy flame detector operates from standard 24 Vdc power (18 to 32 Vdc), requiring 1.8 Watts (Nominal), 2.5 Watts (Alarm), and 12 Watts (Max) with heater ON 100% duty cycle and interfaces to fire alarm panels or standard PLCs. Maximum inrush current should be 0.75 amps or less for a maximum of 5 milliseconds. On power up, the flame detector performs a self test. The detector must have a built-in highly visual indication to show the user it is powered and operational. The same highly visual indication is also used to display both fault and alarm statuses. The flame detector must include a mounting bracket and sunshade as standard that is ordered as a single part number. Optional marine rated mounting bracket is also required.

The detector should be certified for use within potentially explosive atmospheres. The detector is to be explosion proof, certified to the following global approvals: ATEX, IECEx; cFMus; INMETRO, CCC.

It is required that the flame detector have performance approvals and specifically FM3260 and EN54-10. Safety certification to EN61508:2010 SIL2 is required. Marine approvals ABS, Lloyds, BV, and DNV are also required.

The detector should be suitable for outdoor use with an ingress protection rating of Type 4X, IP66/67. The detector should be available in Painted Low Copper Aluminium or 316 Stainless Steel. The total assembly should weigh 1.7 kg (3.7 lbs.) maximum (Aluminium) and 3.4 kg (7.4 lbs.) maximum (Stainless Steel). The detector must have both options: either ¾" NPT or M25 cable entries.

The detector must have the following infrared band sensors: Near Band 0.7 to 1.1μm, Wide Band 0.7 to 4.2 μm, and Long Band 3.0 to 5.0 μm. The detector should be rated for hydrocarbon and non-hydrocarbon fires, including but not limited to n-Heptane, Methane and Hydrogen. The detector's field of view is required to be 120° Cone of vision, (50% on-axis range) and 90° Cone of vision. The typical response time to a standard 0.1 m^2 n-Heptane fire at a distance of 60m (200 ft) is required to be 5 to 10 seconds with an adjustable sensitivity range. The verification time for an alarm should be software selectable.

Fault, Auxiliary, and Alarm relays must be available with NO & NC

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contacts and relays should be software selectable as latching or non-latching. The detector should have a 4-20 mA output option (source, sink or isolated). HART® and Modbus outputs are standard.

It is expected that the radiated spectra be analysed to determine and validate fire events and minimise nuisance alarms from noise events. The detector should store up to 5,000 event logs and 10 FirePics™ lasting ~30 sounds in non-volatile memory for retrieval and evaluation to enable post event analysis.

For more information

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