

Flame Detector (UV/IR²)

Operating principles

The sensor responds to Ultra Violet (UV) and Infra Red (IR) flickering radiation emitted from flames during combustion. The narrow spectral response (185 to 260nm) of the UV detector is completely insensitive to visible light, but quickly detects weak UV radiation emitted from flames. The UV detector also responds to high-voltage electrical discharges

The dual IR detectors (IR²), respond to adjacent IR wavelengths (1.0 to 2.7µm), enable it to discriminate between flames and spurious IR sources. The IR detectors also respond to glowing embers but will ignore electrical discharges.

Most other UV/IR flame sensors respond to 4.3µm IR light, emitted by hydrocarbon flames. By responding to 1.0 to 2.7µm IR emissions from fires almost all flickering flames can be detected. Gas fires not visible to the naked eye e.g. hydrogen may also be detected.

The combination of UV and IR² detection, plus signal processing allows the sensor to be used without risk of false alarms in difficult situations characterised by factors such as flickering blackbody radiation or arc welding.

Connections

The sensor is connected to a 2 wire 24Vdc supply via terminals 1 (+IN) and 1 (-IN). Connections are polarity sensitive. Output from the Fire Detect relay RL1 connections are to terminals 5 and 6. The sensor will be reset when power is broken to the detector.

Features

- Class 1 Sensitivity to EN54-10
- Highest Optical Interference Immunity
- Selectable Response Speed
- Remote Control Self Test
- Low Power Consumption
- CE Marked
- Additional features include Selectable Output Options for:
 - Conventional 2 wire
4-20mA
 - Relay Contacts; Fire/Fault, Pre-alarm
 - Latching or Non-latching





Technical Data

Mechanical

Housing Material	Die cast Zinc alloy (ZA12)
Housing Colour	Blue
Dimensions	108W x 142H x 82D excluding bracket (all mm)
Weight	2kg
Cable gland entries	2 x 20mm

Electrical

Supply voltage	14 to 32Vdc
Supply current	20mA + Relay current (1A)
Power up time	2 secs

Performance

Range	0.1m n-heptane at 25m
(See EN54-10)	
Field of View	90° min cone
Spectral response:	
UV	185 – 260nm
IR	1.0 – 2.7m
Sensitivity:	
(See EN54-10)	High = Class 1
	Low = Class 2



Environmental

Operating temperature	-10°C to +55°C Storage
temperature	-20°C to +65°C Relative
humidity	95% non condensing IP
rating	IP65
EMV immunity	EN 50081-1, EN 50081-2
	EN 50082-2, EN 50130-4, EN 55022

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