



TRIPLE IR CONVENTIONAL FLAME DETECTOR

FUNCTION

The Conventional Triple Infra-red (IR³) Flame Detector, part no 55000-019, is designed to protect areas where open fires may be expected.

FEATURES

The 016589 IR³ Flame Detector is sensitive to low frequency, flickering infra-red radiation emitted by flames during combustion. Since it responds to flickering radiation the IR³ Flame Detector can operate even if the lens is contaminated by a layer of oil, dust water-vapour or ice.

The IR³ Flame Detector is set to respond to low-frequency flickering infra-red (0.75 to 2.7µm) radiation at 1 to 15Hz in order to detect almost all flames, including those invisible to the naked eye, e.g. hydrogen fires.

The IR³ Flame Detector has three IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms due to factors as flickering sunlight are avoided by a combination of filters and signal processing techniques.

ELECTRICAL CONSIDERATIONS

The IR³ Flame Detector signals an alarm state by switching an alarm latch on, increasing the current drawn from the supply from 8mA to 28mA and closing the contacts of a Fire relay RL1. These signals from the detector are recognised by the control panel as an alarm signal.



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The alarm current also illuminates the detector integral red LED. A Fault relay RL2 closes its volt free contacts if the detector has no faults and the supply voltage to the detector is the correct value.

To ensure correct operation of the detector the control panel must be arranged to supply a maximum of 30 volts DC and a minimum of 14 volts DC in normal operation.



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To restore the detector to quiescent condition after indicating a fire, it is necessary to extinguish any flames in view and interrupts the electrical supply to the detector for a minimum of one second.

Removing the detector front cover provides accesses the detector terminals and configuration DIL switch.

The detector is normally configured to latch into an alarm state when a flame is in view. The configuration DIL switch within the detector can be set to place the detector into a non-latching mode. The detector can then also produce proportional analogue current alarm signals i.e. 8-28mA or 4-20mA. In non-latching mode the detector only produces an alarm signal when a flame is in view resetting itself to normal a few seconds after the flame has gone.

Terminal functions

1 – 2	+IN and –IN: supply in connections
3 – 4	+R and –R: remote test input connections
5 – 6	Fire Relay RL1 connections
7 – 8	Fault Relay RL2 connections

ACCESSORIES

Stainless Steel Adjustable Mounting Bracket, part number 29600-203.

Stainless Steel Weather Shield, part number 29600-206.

A portable Test Unit is available, part number 29600-226.

Notes: When using the Triple IR Flame Detector, please avoid, directly or reflected sunlight on the optics, prolonged ambient temperatures above 55°C and obstructions to the field of view.

Technical Data

Supply voltage	14-30V DC
Quiescent current	
RL2 energised	8mA
current loop, RL2 off	4mA
RL2 off	3mA
Alarm current	
RL1 & RL2 energised	28mA
current loop, RL1 & 2 off	20mA
RL1 energised	9mA
Remote detector test input	14-30V DC
Alarm indicator	red light emitting diode (LED)
Minimum holding voltage	2V
Min voltage required to illuminate Indicators	12V
Alarm reset voltage	6V
Alarm reset time	1 second
Power-up time	2 seconds
Range of view	0.1m ² n-heptane at 25m
Sensitivity	Class 1 (EN54-10)
Field of view	90° cone
Spectral response	IR ³ 0.75 to 2.7µm
Operating temperature range	-10°C to + 55°C
	(no condensation or icing)
Relative humidity	95%, non-condensing
IP rating	65
Materials	
Housing	die-cast zinc alloy (ZA12), blue
Dimensions	142mm height 108 mm width 82mm depth
Weight	2kg
Approvals	LPCB certificate No: 729a/01 CPD certificate No: 0832-CPD-0595