Intrinsically Safe
& Explosion Proof

Your Safety, Our Technology

IFD-E(EXD)

Explosion-Proof IR³ Infra-Red Flame Detector

Features

- Excellent immunity to false sources
- Tolerant of fumes, vapours, dust and mist
- Suitable for indoor and outdoor areas
- Detects flames through glass
- Unaffected by convection currents, draughts or wind
- Proven response to multiple fuel types
- Multi-spectrum detection
- Selectable output options
- Selectable response speed
- Selectable sensitivity levels
- Built in auto and manual test
- Low current consumption
- Fast response to fire



Description

The IFD-E(EXD) Flame Detector is designed to protect hazardous areas where open fires may be expected and detects almost all flames, including hydrocarbon fires with 4.3 µm emissions through to invisible fires such as hydrogen.

The IFD-E(EXD) Flame Detector is sensitive to flickering, low frequency (1- 15 Hz) infra-red radiation emitted by flames during combustion even if the lens is contaminated by a layer of oil, dust, water, vapour or ice.

This detector has three IR sensors which respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms from flickering sunlight are avoided by a combination of filters and signal processing techniques.

The IFD-E(EXD) Flame Detector has selectable output options of relay contacts or 4-20 mA signal, as standard.

Applications

Aircraft hangars	Nuclear power sites
Biomass storage and handling	Petrochemical offshore / Onshore
Chemical plants	Pharmaceutical production
Coal handling	Printing
Engine rooms	Refineries
Fuel loading racks	Spray booths
LNG/LPG production	Storage tanks
Military and marine	Waste recycling

Accessories

IFD-MB	Adjustable Mounting Bracket
IR-WS	Weather Shield [SS]
1800-101	Talentum Test Torch
12556-00	Air Purge Adapter, (Ex d):12555-00

Approvals

Worldwide approvals include EN54:10, LPCB, ATEX, and IECEx certification.

For further information visit our website.
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IS
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Mechanical Specification

Housing material	Copper free aluminium alloy
Housing colour	Red
Dimensions	158(h) x 149(w) x 134(d) mm
Weight	2.3 kg (5 lbs)
Cable gland entries	3 x 20 mm
Wiring	1.0 to 4.0 mm² (12 - 18 AWG)

Electrical Specification

Supply voltage	14 to 30 VDC
Quiescent current	8 mA, RL2 energised 4 mA, current loop, RL2 off 3 mA, RL2 off
Alarm current	28 mA, RL1 & RL2 energised 20 mA, current loop, RL1 & 2 off 9 mA, RL1 energised
Power-up time	2 seconds max.
Self test voltage	14 to 30 VDC
Relay outputs	Programmable operation including latching or non-latching
Relay maximum ratings	
- Current	0.75 A
- Voltage	48 VDC
- Power	30 W
(Note: resistive loads only)	
Refer to User Manual for further details	

Environmental

Operating temperature	-10°C to +55°C (+14°F to +131°F) FM: -20°C to +60°C (-4°F to +140°F)
Storage temperature	-20°C to +65°C (-4°F to +149°F)
Relative humidity	95% non condensing
IP rating	IP66

Performance

Range	
- Class 1*	0.1 m² n-heptane at 25 m
- Class 3	0.1 m² n-heptane at 12 m
	(see EN54:10 for sensitivity settings)
Field of view	90° min. Cone
Operating wavelength	
- IR	1.0 to 2.7 µm

* Has been tested and approved at Class I

Response characteristics - High Sensitivity

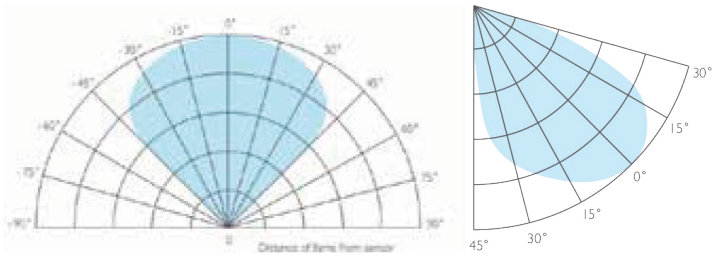
Fuel	Flame size m² (ft²)	Distance m (ft)	Approval
n-Heptane* (Yellow flame)	0.1 (144)	25 (82)	EN54-10
Methylated spirit* (Clear flame)	0.25 (400)	25 (82)	EN54-10

Response time: typically 4 seconds

* Has been tested and approved at Class 1

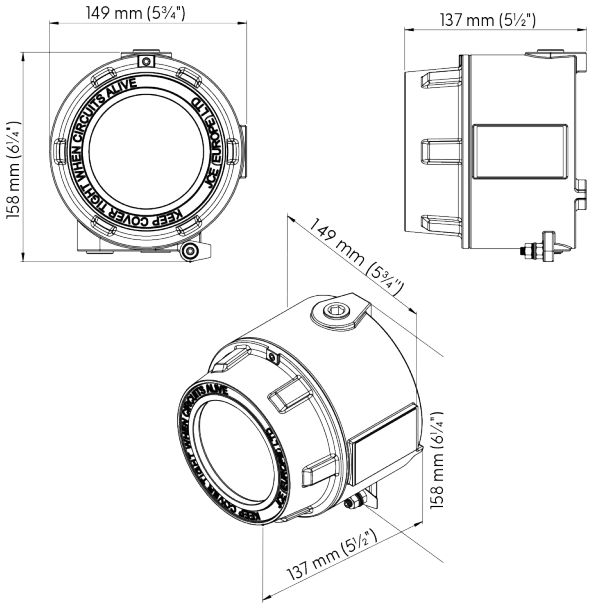
Field of View

Horizontal Vertical



To meet the requirements of EN54-10:2002 clause 5.4 (Directional Dependence), viewing angles must not exceed ±20°.

Dimensions



Installation recommendations

Please refer to our User Manual for mounting and wiring instructions. The installation of flame detectors should be undertaken in accordance with recognised national or international standards and codes of practice.

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