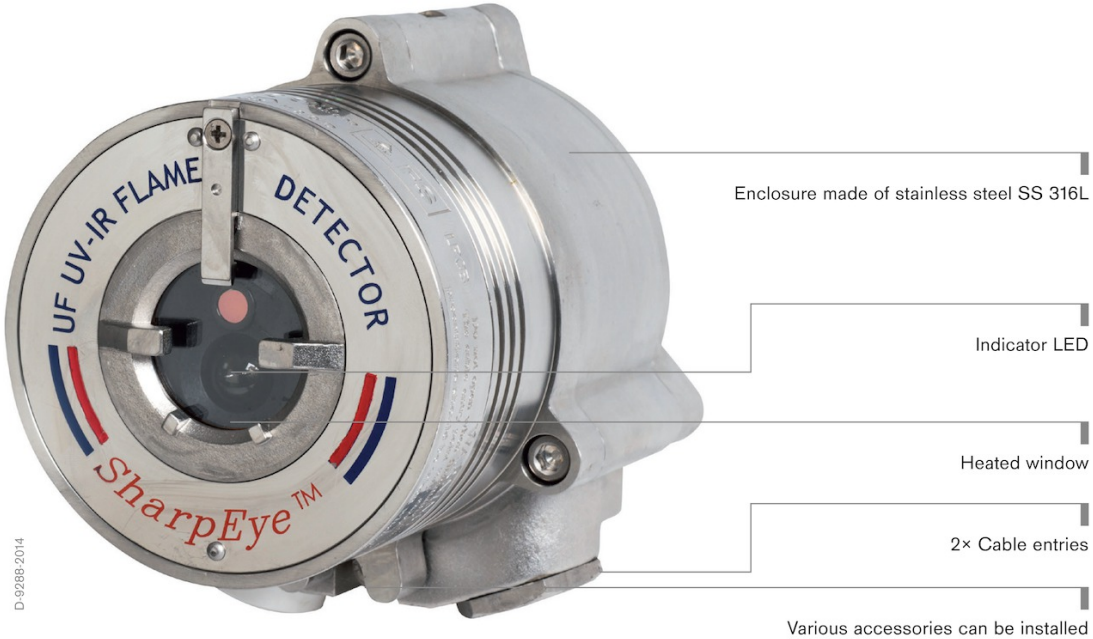
The SharpEye™ 40/40UFL (UV/IR) Flame Detection

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.



D-9288-2014

Dräger. Technology for Life®

Benefits

Combined Explosion and High Sensitivity Flame Detector

The SharpEye™ 40/40UFL is a highspeed UV/IR optical flame detector, which was created to quickly and effectively meet two main requirements: High speed response (20 msec to a flash fire) and high reliability with limited susceptability to false alarms.

Count On An Expert

The UV/IR flame detector senses radiant energy in the short wave section of both the ultraviolet and infrared portions of the electromagnetic spectrum. The signals from both sensors are then analysed for frequency, intensity and duration. The simultaneous detection of radiant energy in both the UV and IR sensors then triggers the alarm.

All-Weather Capable

The 40/40UFL comes with features designed to withstand all kinds of weather and temperature fluctuations. This includes a heated window against snow, ice and condensation, a rugged, compact outer housing and a MTBF minimum of 150,000 hours.

Automatic and manual optics checks (BIT)

Automatic checks of the detector electronics and optics helps ensure that no fault goes undetected. Additionally the test can be triggered manually at any time.

Reliability

Functional safety is a concept applicable across all industry sectors. It is fundamental to enabling complex technology used for safety-related systems. It provides assurance that the safetyrelated systems will offer necessary risk reduction. The SharpEye™ 40/40 flame detector series is highly reliable and complies with the IEC 61508 Safety Integrity Requirements of SIL2.

Easily visible status LED

A tri-colored LED which is visible at the front of the detector provides a simple status indication to personnel in close proximity to the detector. Green indicates normal operation; yellow indicates a fault and red indicates the presence of radiation from a fire.

Simple installation and commissioning

Installation is simple! The detector is easily installed with a stainless steel tilt mount whichenables the detector to be rotated up to 60° in all directions to position the detector in relation to the potential fire source.

Benefits

SharpEye™ 40/40UFL offers:

- Solar blind UV/IR Dual Sensor
- High Speed Response – 20 msec response to saturated signal
- Automatic and Manual Built-In-Test (BIT) – to ensure continued reliable operation
- Heated window – for operation in harsh weather conditions (snow, ice, condensation)
- Multiple output options for maximum flexibility and compatibility
- 3 Relays for Alarm, Fault and Auxiliary
- 0 – 20 mA (stepped)
- HART Protocol for maintenance and asset management
- RS-485, Modbus compatible
- Approved to Safety Integrity Level 2 (SIL2 – TÜV)
- Ex approvals for worldwide application: ATEX, IECEx, FM/FMC, CSA
- 3rd party performance tested: EN54-10 (VdS), FM3260

Accessories

D-2320-2014

Flame Simulator 40/40 – UV/IR

The SharpEye™ Flame Simulator 40/40 – UV/IR is designed specifically for use with SharpEye™ flame detectors. The Fire Simulator emits IR radiation in a unique sequential pattern corresponding to and recognizable by the detector as fire. This allows the detectors to be tested under simulated fire conditions without the associated risks of an open flame.

Accessories

D-2317-2014

Weather cover Flame Detector

The weather cover protects the detector from different weather conditions, such as snow and rain.

D-5526-2014

SharpEye™ 40/40 Air Shield

The special Air Shield, developed for SharpEye™ optical flame detectors, allows their installation under tough environmental conditions where they may be exposed to oil vapors, sand, dust and other particulate matter.

Related Products

D-9289-2014

The SharpEye™ 40/40L-LB (UV/IR)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.

Related Products

D-9306-2014

The SharpEye™ 40/40R (IR)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.

D-9289-2014

The SharpEye™ 40/40L4-L4B (UV/IR)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.

D-9307-2014

The SharpEye™ 40/40U-UB (UV)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.

D-9271-2014

The SharpEye™ 40/40M (Multi IR)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements.

Related Products

D-9272-2014

The SharpEye™ 40/40I (IR3)

Working in areas with combustible gases, vapours or materials requires fire/flame detection as a life-saving necessity. The best solutions must combine state-of-the-art technology with rugged durability and be ready to reliably work in any situation. Dräger offers a wide variety of high-quality flame-detectors that fulfil these requirements and more.

Technical Data

Type	Explosion proof UV/IR flame detector for hydrocarbon-based fuel and gas fires, hydroxyl and hydrogen fires, as well as metal and inorganic fires	
Spectral Response	UV = 0,185 – 0,260 µm IR = 2,5 – 3,0 µm	
Measuring Performance	Field of view	Horizontal 100°; Vertical 95°
	Response Time	Typically 5 seconds. High speed 20 msec response to saturated signal
Detection Range (at highest Sensitivity Setting for 1 ft² (0.1 m²) pan fire)	Fuel	ft / m
	n-Heptane / Gasoline	66 / 20
	Diesel Fuel / JP5 / Kerosene	50 / 15
	Ethanol 95 %	25 / 7.5
	Methanol	25 / 7.5
	IPA (Isopropyl Alcohol)	43 / 13
	Hydrogen*	37 / 11
	Methane*	26 / 8
	LPG*	43 / 13
	Ammonia*	20 / 6
	Silane*	6 / 1.8
	Polypropylene Pellets	43 /13
	Office Paper	16 / 5

* 30" (0.75 m) high, 10" (0.25 m) width plume fire

Electrical Data

Output Signals	0 – 20 mA (stepped), HART
Fault Signal	0 + 1 mA
BIT Fault Signal	2 mA ±10 %
Normal Signal	4 mA ±10 %
Warning Signal	16 mA ±5 %
Alarm Signal	20 mA ±5 %
Relays	Alarm, Fault and Auxiliary SPST volt-free contacts rated 2 A at 30 VDC
RS485	Modbus compatible communication link
Power supply	24 VDC nominal (18 – 32 VDC)
Power Consumption	Standby: Max. 90 mA (110 mA with heated window) Alarm: Max. 130 mA (160 mA with heated window)

Ambient Conditions

Temperature	-55 to +75 °C / -67 to +167 °F (operating) -55 to +85 °C / -67 to +185 °F (option and storage)
Humidity	Up to 95 % non-condensing (withstands up to 100 % RH for short periods)

Enclosure

Material	Stainless steel SS 316
Material Option	Heavy duty copper free aluminum, red epoxy enamel finish
Connecting Thread	2 × 3/4" – 14 NPT or 2 × M25 × 1.5 mm
Weight	Detector SS 316L 2.8 kg / aluminum 1.3 kg Tilt mount 1.0 kg
Dimensions Detector	101.6 × 117 × 157 mm
Ingress Protection	IP66 and IP67, NEMA 250 6P

Technical Data

Approvals		
ATEX and IECEx	Ex II 2 G D	
	Ex d e IIC T5 Gb	Ex d e IIC T4 Gb
	Ex tb IIIC T96 °C Db	Ex tb IIIC T106 °C Db
	(-55 °C ≤ Ta ≤ +75 °C)	(-55 °C ≤ Ta ≤ +85 °C)
FM/FMC/CSA	Class I Div. 1, Groups B, C & D	
	Class II/III Div. 1, Groups E, F & G	
Safety Integrity Level	SIL2 certified by TÜV (EN61508)	
Performance	EN54-10 (VdS)	
	FM3260	
CE mark	EMI/RFI protected to EN61326-3 and EN61000-6-3	

Ordering Information

Order Information SharpEye™ 40/40UFL (UV/IR)	
Flame Detector 40/40UFL-112SF – UV/IR	68 51 380
Flame Detector 40/40UFL-212SF – UV/IR	68 51 381
Flame Detector 40/40UFL-111SC – UV/IR	68 51 382
Flame Detector 40/40UFL-211SC – UV/IR	68 51 383
Flame Detector 40/40UFL-212SC – UV/IR	68 51 384
Flame Detector 40/40UFL-311SC – UV/IR	68 51 385
Flame Detector 40/40UFL-312SC – UV/IR	68 51 386
Flame Detector 40/40UFL-111AC – UV/IR	68 51 387
Flame Detector 40/40UFL-211AC – UV/IR	68 51 388
Flame Detector 40/40UFL-212AC – UV/IR	68 51 389
Other versions are available on request	

Accessories for SharpEye™ 40/40UFL (UV/IR)	
Weather cover Flame Detector (SS)	68 13 189
Weather cover Flame Detector (ABS)	68 13 190
Tilt mount Flame Detector (SS)	68 13 191
Flame Simulator 40/40 – UV/IR	68 13 194
Beam collimator UV – UV/IR	68 51 391
Mini-Laptop Diagnostic Kit	68 13 319
USB / RS485 converter kit, incl. SW	68 13 320
SharpEye™ Laser Pointer	68 13 321
SharpEye™ 40/40 Air Shield	68 51 603
SharpEye™ 0/40 Duct Mount	68 13 459
Pole Mount (U-Bolt) 2" – (SS)	68 13 322
Pole Mount (U-Bolt) 3" – (SS)	68 13 323
SharpEye™ is a registered trademark of Spectrex Inc.	

Notes

Notes

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