

features

- Multi Spectrum Design - for long distance detection of hydrocarbons and hydrogen flames
- High false alarm immunity
- Sensitivity Selection - to ensure no zone crossover detection
- Automatic and Manual Built-In- Test (BIT) - to assure continued reliable operation
- Heated window - for operation in harsh weather conditions (snow, ice, condensation)
- Multiple output options for maximum flexibility and compatibility:
 - Relays (3) for Alarm, Fault and Auxiliary
 - 0-20mA (stepped)
 - HART Protocol for maintenance and asset management
 - RS-485, Modbus Compatible
- High Reliability - MTBF - minimum 150,000 hours
- Approved to Safety Integrity Level 2 (SIL2 – TUV)
- 5-Year Warranty
- User Programmable via HART or RS-485
- Ex approved for Zone 1 hazardous area location
 - ATEX
 - IECEx
 - FM
 - CSA
- 3rd party Performance Tested:
 - EN54-10 (LPCB)
 - FM3260 (FM)

The new 40/40M Multi IR Flame Detector is specifically designed for detection of hydrocarbon and hydrogen flames. It detects hydrocarbon-based fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40M can detect a gasoline pan fire at 65m or a hydrogen flame at 30m in less than 5 seconds. The 40/40 Series is the most durable and weather resistant range of flame detectors currently on the market. Its new features include a heated window, to eliminate condensation and icing; HART capabilities, for digital communications; lower power requirements, and a compact, lighter design. Due to increased reliability, the 40/40 Series warranty period has been extended to 5 years and is approved to IEC 61508 Safety Integrity requirements of SIL2.

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40/40M Multi IR Flame Detector



Data Sheet

applications

Offshore Oil & Gas installations
Onshore Oil & Gas installations and pipelines
Chemical plants
Petrochemicals plants
Storage Tank farms
Aircraft hangars
Power Generation facilities
Pharmaceutical Industry
Printing Industry
Warehouses
Automotive Industry
Explosives & Munitions
Waste Disposal facilities
Hydrogen Fuel Cell Industry
Hydrogen Vehicle Parking & Refueling
Battery Charging areas
Refinery Hydrogenation
Space Industry hydroxyl propellant
Static Fuel Cell systems

specifications

General

Spectral Response:	Multi IR Bands
Detection Range:	(at highest Sensitivity Setting for 0.1m ² pan fire)
Fuel	m
n-Heptane	65
Ethanol 95%	40
LPG *	30
Gasoline	65
Methanol	35
Polypropylene Pellets	5
Diesel Fuel	45
IPA (Isopropyl Alcohol)	40
Office Paper	10
JP5	45
Hydrogen*	30
Kerosene	45
Methane*	30
	* 0.5m high, 0.2m width plume fire
Response Time:	Typically 5 seconds
Adjustable Time Delay:	Up to 30 seconds
Sensitivity Ranges:	4 Sensitive ranges for 0.1m ² n-heptane pan fire from 15m to 65m
Field of View:	Horizontal 90°; Vertical 90°
Built-in-Test (BIT):	Automatic (and Manual)
Temperature Range:	
Operating:	-55°C to +75°C
Option:	-55°C to +85°C
Storage:	-55°C to +85°C
Humidity:	Up to 95% non-condensing - withstands up to 100% RH for short periods
Heated Optics:	To eliminate condensation and icing on the window

Electric

Operating Voltage:	24 VDC nominal (18-32 VDC)
Power Consumption:	
Standby:	Max. 100mA (150mA with heated window)
Alarm:	Max. 150mA (200mA with heated window)
Cable Entries:	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
Wiring:	12 - 22AWG (2.5mm ² - 0.3mm ²)
Electrical Input Protection:	According to MIL-STD-1275B
Electromagnetic Compatibility:	EMI/RFI protected to EN50130-4
Electrical Interface:	The detector includes 12 terminals with 5 wiring options (factory set)

Outputs

Relays:	Alarm, Fault and Auxiliary SPST volt-free contacts rated 5A at 30 VDC or 250 VAC.
0-20mA (stepped):	Sink (source option) configuration
Fault:	0 +1mA
Warning:	10mA ± 5%
BIT Fault:	2mA ± 10%
Alarm:	15mA ± 5%
Normal:	5mA ± 10%
Resistance	
Loop:	100-600 Ω
HART Protocol:	HART communication on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management
RS-485:	RS-485 Modbus compatible communication link that can be used in computer controlled installations

Mechanical

Materials:	- Stainless Steel 316L with electro polish finish
Enclosure options:	- Heavy duty copper free aluminum (less than 1%), red epoxy enamel finish
Mounting:	Stainless Steel 316L with electro polish finish
Dimensions:	Detector 90 x 114 x 156 mm
Weight:	Detector (St.St.) 2.5 kg Detector, aluminum 1.2 kg Tilt mount 1.0 kg

references

Environmental Standards: Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp Water and Dust IP66 and IP67 per EN60529, NEMA 250 6P

40/40M Multi IR Flame Detector
40/40-ADD-ST supplement for stainless steel housing
40/40-ADD-85 supplement for calibration to 85°C

Approvals

Hazardous Area: ATEX and IECEx: Ex II 2 GD, Ex de IIB+H2 T5 (-55°C to + 75°C) Ex de IIB+H2 T4 (-55°C to + 85°C) Ex tD A21 IP66/X7 T 95°C Ex tD A21 IP66/X7 T 105°C
FM / CSA: Class I Div. 1, Groups B, C & D Class II/III Div. 1, Groups E, F & G
Performance: EN54-10 (LPCB) FM-3260 (FM)
Reliability: IEC61508 - SIL2 (TUV)

Accessories

40/40-001 Tilt mount
40/40-777161 Air Shield (Detector area coverage)
40/40-777163 Weather Protector
40/40-777166 Laser Pointer
20/20-310 Fire Simulator
40/40-789260-2 Pole mount (U-BOLT) - 2"
40/40-789260-1 Pole mount (U-BOLT) - 3"
40/40-777820 Handheld Pocket PC diagnostics kit
40/40-794079-5 USB connection cable for PC (includes software)

certification

CPD 0832-CPD-0977

local distributor

Every care has been taken in the preparation of this data sheet but no liability can be accepted for the use of the information therein. Design features may be changed or amended without prior notice.

