Data Sheet

NOTIFIER®
by Honeywell

40/40I
Triple IR (IR3)
Flame Detector

Features

- **Superior performance, reliability and immunity to false alarms**

- **Triple Spectrum Design - for long distance detection and 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)**
    - **- DNV Marine Approval**

General

The new 40/40I Triple IR (IR3) Flame Detector detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a $0.1m^2$ gasoline pan fire at 65m in less than 5 seconds.

The 40/40I is the most durable and weather resistant flame detector 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.

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

Specifications

General

Spectral Response: Three IR Bands

Detection Range: (at highest Sensitivity Settings for 0.1m² pan fire)

Fuel	m
n-Heptane	65
Kerosene	45
Methane*	30
Gasoline	65
Ethanol 95%	40
LPG *	30
Diesel Fuel	45
Methanol	35
Polypropylene Pellets	5
JP5	45
IPA (Isopropyl Alcohol)	40
Office Paper	10

* 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 0.1m² n-heptane pan fire from 15m to 65m

Field of View: Horizontal 100º
Vertical 95º

Built-in-Test (BIT): Automatic (and Manual)

Temperature Range:
Operating: -55ºC to +75ºC
Option: -55ºC to +85ºC
Storage: -55ºC to +85ºC

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 (2.5mm² - 0.3mm²)

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 (enclosure options):
- Stainless Steel 316L with electro polish finish
- 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 k
Detector, aluminum 1.2 kg
Tilt mount 1.0 kg

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

Approvals

Hazardous Area:
ATEX and IECEx: Ex II 2 GD
Ex de IIB+H2 T5 (-55°C to +75°C)
Et x 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)4
DNV Marine Approval

Reliability: IEC61508 - SIL2 (TUV)

Certification

CPD: 0832-CPD-0972

Product references

40/40I	Triple IR (IR3) Flame Detector
40/40-ADD-ST	supplement for stainless steel housing
40/40-ADD-85	supplement for calibration to 85°C

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)

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