



SPECTREX SHARPEYE™ 40/40C-M

MULTISPECTRUM QUAD-SENSE FLAME DETECTOR

The SharpEye 40/40C-M Multispectrum Quad-Sense flame detector is part of the leading, next generation SharpEye 40/40 series.

Featuring enhanced performance, advanced long distance detection of hydrogen and hydrocarbon fires, fast detection in under five seconds and strengthened reliability, the 40/40C-M is based on proven Triple-IR (IR3) technology, ensuring high sensitivity with superior immunity to false alarms and surely keeping a SharpEye on your safety!



Multi-Spectrum Quad-Sense™ flame detector - integrating four IR sensors to further improve differentiation of flame sources from non-flame background radiation.

Features and benefits:

- Advanced long distance detection of hydrogen and hydrocarbon-based fuel and gas fires at up to 215 ft. (65 m)
- Fast detection, under five seconds
- Proven false alarm immunity
- Unparalleled reliability - 150,000 hours MTBF
- Wide temperature range: -40 to +185 °F (-40 to +75 °C)
- Enhanced durability backed up by with five-year warranty
- Five sensitivity levels, adapting to any application
- Smart field of view integrity test, allowing flawless operation
- Innovative IR Built-In-Test - continuously validating the optical integrity and the electronic circuitry
- Multiple output options for maximum compatibility with standard infrastructures
- Plug-and-Play - factory calibrated for immediate use in any fire detection system
- Universal wiring option for fast ordering process
- Two mode heated optics for impeccable performance in challenging environmental conditions
- Worldwide and regionally certified for hazardous areas
- Performance and reliability approved by recognable certification bodies
- SIL3 compatible

SPECTREX SHARPEYE™ 40/40C-M

MULTISPECTRUM QUAD-SENSE FLAME DETECTOR

Applications examples

- Offshore oil and gas installations
- Onshore oil and gas installations and pipelines
- Hydrogenation (Petroleum Refining, Food Processing, Chemical)
- Chemical plants
- Petrochemical plants
- Storage tank farms
- Fuel and gas processing and storage facilities
- Power generation facilities
- Explosives and munitions
- Fertilizer plants
- Automotive industry
- Vehicle battery charging stations
- Hydroxyl production and storage
- Aerospace industry
- Pharmaceutical industry
- Printing industry
- Hazardous materials storage areas
- Food processing
- Light industrial

Table 1

General Specifications	
Spectral response	Four infrared bands: 4 µm, 4.4 µm, 4.5 µm, 5 µm
Detection ranges (at highest sensitivity setting for 1 ft ² [0.1 m ²] pan fire)	See Table 3.
Sensitivity ranges	5 sensitive ranges for 1 ft ² (0.1 m ²) n-heptan pan fire
Field of view	Hydrogen: horizontal 90°, vertical 90° For other fuel: horizontal 80°; vertical 80°
Temperature range(I)	Operating: -40 to +185 °F (-40 to +75 °C) Storage: -40 to +185 °F (-40 to +75 °C)
Humidity	Non-condensing relative humidity up to 100%

Table 2

Detection Response Time	
Standard response time	Typically < 5 seconds

SPECTREX SHARPEYE™ 40/40C-M

MULTISPECTRUM QUAD-SENSE FLAME DETECTOR

Table 3

Fuel	ft/m
Hydrogen(1)	125/38
Gasoline (Petrol)(2)	215/65
N-Heptane(2)	215/65
Diesel fuel(2)	150/45
Methane(3)	150/45
Liquefied petroleum gas (LPG)(3)	150/45
Kerosene(2)	150/45
Jet fuel JP5(2)	150/45
Jet fuel A1(2)	150/45
Ethanol 95%(2)	57/17
Isopropyl alcohol (IPA)(2)	135/40
Methanol(2)	115/35
Ethylene glycol(2)	118/36
Solvents(2)	177/54
Flammable adhesive (flash point 140 °F < 60 °C)(2)	150/45
Butyl acrylate(2)	177/54
Vinyl acetate(2)	177/54
Oil paint(2)	150/45
Gun powder(4)	141/43
Fireworks(5)	23/7
Magnesium alloy(6)	33/10
Polypropylene pellets(2)	115/35
Office paper(2)	82/25
Wood(2)	83/25
Mineral oil (20w50)(2)	150/45
Cooking oil(2)	150/45
Lithium ion battery(7)	200/61

(1) 2.46 ft. (0.75 m) high, 0.82 ft. (0.25 m) width plume fire

(2) 1 ft x 1 ft (0.3 m x 0.3 m) pan

(3) 2.46 ft. (0.75 m) high, 0.82 ft. (0.25 m) width plume fire

(4) 1.5-in. sq.

(5) 10 pcs per test

(6) Only for UV detector

(7) One cell of battery per test

SPECTREX SHARPEYE™ 40/40C-M

MULTISPECTRUM QUAD-SENSE FLAME DETECTOR

Table 4

Electrical Specifications	
Operating voltage	24 Vdc nominal (18-32 Vdc)
Power consumption	Standby: Max. 3 W (8 W with heated window) Alarm: Max. 4.2 W (9.6 W with heated window)
Cable entries	2 x ¾-in.-14 NPT conduits or 2 x M25 x 1.5 mm ISO
Electrical input protection	According to EN50130
Electromagnetic compatibility	EMI/RFI protected to EN61000-6-3 and EN50130
Electrical interface	The detector includes 17 terminals with one wiring option

Table 5

Outputs	
Relays	Alarm, fault, and auxiliary
Analog voltage output	Analog port malfunction: 0 V (< 0.5 V) Normal: 2 V ± 0.3 V Alarm/Explosion: 5 V ± 0.3 V
0-20 mA (stepped)	±0.3 mA for 2 mA and 4 mA, and ±0.5 mA for 16 mA and 20 mA
HART® protocol	HART communications on the 0-20 mA analog current (FSK) - used for maintenance, configuration changes and asset management, available in mA source output wiring options
RS-485	RS-485 Modbus® compatible communication link that can be used in computer controlled installations

Table 6

Mechanical Specifications	
Enclosure options	Electropolished Stainless Steel 316 Heavy duty copper free aluminum (less than 1%), polyurethane paint
Mounting	Tilt mount material-stainless steel 316 with electro polish finish
Dimensions	Detector 4 x 4.6 x 6.18-in. (100.6 x 117 x 155 mm)
Weight	Detector stainless steel: 6.3 lb. (2.9 kg) Detector: 2.8 lb. (1.3 kg) Tilt mount: 2.5 lb. (1.1 kg)
Environmental standards	DNV 2-4
Water and dust	IP66 and IP68 per EN60529, NEMA 250 6P

SPECTREX SHARPEYE™ 40/40C-M

MULTISPECTRUM QUAD-SENSE FLAME DETECTOR

Table 7

Approvals		
Hazardous area	ATEX and IECEx	Ex II 2 G D Ex db eb IIC T4 Gb Ex tb IIIC T110 °C Db (-40 °C ≤ T _a ≤ +75 °C)
	FM/FMC/CSA	Class I Division 1, Groups B, C, and D, T4 Class II/III Division 1, Groups E, F, and G, T4 Class I Division 2, Groups B, C, and D, T4 T _a = -40 °C to +75 °C NEMA Type Rating 6P
	TR CU (EAC)	Ex db eb IIC T4 Gb X Ex tb IIIC T110 °C Db X (-40 °C ≤ T _a ≤ +75 °C)
Marine	MED "Wheelmark" (DNV)	
Performance	EN54-10 (VdS) FM3260	
Reliability	IEC61508 - SIL3 compatible	

Table 8

Accessory	Part number
Flame simulator (Ex proof)	FS-1400
Tilt mount	877090
Duct mount (Ex proof)	877670
U-bolt/pole mount	2-in. (50.8 mm) pole: 789260-2
	3-in. (76.2 mm) pole: 789260-1
USB RS-485 harness kit	794079
Air shield	877650
Protective cover	877263 (conductive ABS plastic)(1)
	877163 (PU painted stainless steel 316)

(1) Supplied free of charge with the detector



VALWO s. r. o.
Hrabinská 498/19,
737 01 Český Těšín, Česká republika

+420 603 933 363
email: office@valwo.eu

website:
www.valwo.eu/en

VALWO s. r. o. informs, that this product sheet does not constitute an offer according to the law, but is only of informative character. All data available in this product sheet have been prepared basing on manufacturer's materials.
The data contained herein may be subject to change.

