SafEye™ Quasar 900

Open Path Combustible Gas Detector

The SafEye Quasar 900 is part of the innovative SafEye Quasar open path gas detector series. The detector provides continuous infrared technology monitoring for combustible hydrocarbon gases at very low concentrations, up to 95 percent obscuration, featuring advanced wide area coverage with long range detection at up to 660 ft. (200 m) and high-speed response in under three seconds. The SafEye Quasar 900 ensures reliable and accurate protection to keep a SafEye on your safety.

SPECTREX

Features and benefits

■ Detects combustible hydrocarbon gases, including alkanes (methane to hexane) and ethylene at up to 660 ft. (200 m)

■ Accurate and reliable high-speed response in under three seconds

■ Uses infrared technology

■ High false alarm immunity

■ Built-in event recorder; record of the last 256 events

■ Strengthened reliability and durability with a massive three-year warranty

■ Easy installation and maintenance

■ Heated window for operation in harsh weather conditions (snow, ice, or condensation)

■ Detection of a cloud of gas at very low concentrations, up to 95 percent obscuration

■ User programmable via HART® 7 or RS-485 Modbus®; compatible with modern user interface for ease of use

■ Certified performance/Hazardous Area approved (FM, ATEX, IECEx, CSA, and more) for location in Zone 1 areas and 3rd party performance approved (FM, DNV)

■ Approved to Safety Integrity Level 2 (SIL2 - TÜV)

■ High reliability-MTBF-minimum 100,000 hours

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Applications

■ Offshore platforms and FPSOs

■ Petrochemical plants

■ Chemical

■ Gas filling and distribution terminals

■ Gas transport and pipelines

■ Large storage areas and buildings

■ Perimeter monitoring

Contents

Specifications

General specifications

Table 1: Detection Range

Detector model: QR	Source model: QT			
	Quasar 901	**Quasar 902**	**Quasar 903**	**Quasar 904**
Feet	23-66	50-132	115-330	265-660
Meters	7-20	15-40	35-100	80-200

Detected gas	C1-C8 selective gases
Response time	< 2 seconds
Immunity to false alarm	Not influenced by solar radiation, hydrocarbon flames, and other external infrared radiation sources
Sensitivity range	0-5 LEL.m methane and propane 0-8 LEL.m ethylene
Displacement/misalignment tolerance	±0.5 degrees
Drift	±7.5 percent of the reading or ±4 percent of the full scale (whichever is greater)
Minimum detectable level	0.15 LEL.m
Temperature range	-67 to +149 °F (-55 to +65 °C)
Humidity	Up to 95 percent non-condensing (withstands up to 100 percent relative humidity for short periods)
Heated optics	To eliminate condensation and icing on the window
Warranty	Safety system - three years

Electrical specifications

Power supply	24 Vdc nominal (18-32 Vdc)
Power consumption (peak includes heated optics)	Detector: 250 mA (300 mA peak) Source: 250 mA (300 mA peak)
Warm-up time	30 seconds for transmitter and receiver
Electrical connection (specify)	Two ¾-in. - 14 national pipe thread (NPT) conduits or 2 x M25 x 1.5 mm ISO
Electrical input protection	Per MIL-STD-1275B
Electromagnetic compatibility	Electromagnetic interference/radio frequency interference (EMI/RFI) protected per EN50270

Outputs-interfaces

0-20 mA current output	Sink (source option) configuration: maximum load of 500 ohm at 18-32 Vdc Gas reading: 4-20 mA Normal, zero reading: 4 mA Maintenance call: 3 mA Obscuration/beam block: 2 mA

	Zero calibration mode: 1 mA
	Fault: 0 mA
RS-485 interface-Modbus® compatible	The RS-485 input/output provides complete data information to a personal computer (PC) and receives control commands from the PC or hand-held unit.
HART® protocol	HART communication on 0-20 mA analog (FSK) - used for maintenance and asset management
Visual status indicator	Three color light-emitting diode (LED)

- Green: power on

- Yellow: fault

- Red: alarm

Mechanical specifications

Enclosure	The source and detector housings are stainless steel 316 with electro polish finish. The circuit boards are conformal coated and protected from mechanical vibrations. The tilt mount is also stainless steel 316.
Dimensions	Detector/source: 10.5 x 5.1 x 5.1 in. (267 x 130 x 130 mm)
	Tilt mount: 4.7 x 4.7 x 5.5 in. (120 x 120 x 158 mm)
Weight	Detector/source: 11 lb. (5 kg)
	Tilt mount: 4.2 lb. (1.9 kg)
Water and dust tight	IP66 and IP68
	NEMA® 250 6P
Environmental	Meets MIL-STD-810C for humidity, salt and fog, vibration, mechanical shock, and high and low temperature

Approvals

Performance	Approved per FM6325 and tested by FM per EN60079-29-4
Reliability	SIL2 per IEC61508 (TÜV)

Approvals

ATEX and IECEx

The SafEye Quasar 900 is approved per:

Ex II 2(2) G D

Ex db eb ib [ib Gb] IIB+H_2 T4 Gb

Ex tb [ib Db] IIIC T135 °C Db

Ta = -55 °C to +65 °C

FM/FMC

Class I Div 1 Groups B, C, and D

Class II, III Div 1 Groups E, F, and G

TR CU (EAC)

1Ex d e ib [ib Gb] IIB + H2 T4 Gb X

Ex tb IIIC T135 °C Db X

Inmetro

Ex db eb ib [ib Gb] IIB + H2 T4 Gb

Ex tb IIIC T135 °C Db

Accessories

Part number	Description
888270	Spare tilt mount
799255	Wall mount
799225	U-bolt/pole mount: 4 to 5 in. (101.6 to 127 mm)
888140	U-bolt/pole mount: 2 to 3 in. (50.8 to 76.2 mm)
888247-1	Methane commissioning kit, spare kit
888247-2	Propane commissioning kit, spare kit
888247-3	Ethylene commissioning kit, spare kit
888931	Air Shield
888810	HART® 7 Field Communicator
888815	HART® 7 hand-held harness kit
794079	USB/RS-485 harness converter kit
888263	Weather cover
888335-1	Duct mount

For more information: **Emerson.com**

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