SafEye™ Quasar 950

The SafEye Quasar 950 is part of the innovative SafEye Quasar open path gas detector series. The detector provides ultraviolet technology continuous monitoring for toxic hydrogen sulfide (H_2S) gas at very low concentrations, up to 95 percentobscuration, featuring advanced wide area coverage with long range detection at up to 200 ft. (60 m) and high speed response in under 10 seconds. The SafEye Quasar 950 is solar blind and immune to industrial environments, ensuring reliable and accurate protection to keep a SafEye on your safety.

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Features and benefits

- Detects toxic hydrogen sulfide (H_2S) at up to 200 ft. (60 m)

- Accurate and reliable high-speed response in under 10 seconds

- Uses ultraviolet technology

- High false alarm immunity

- Solar blind and immune to industrial environments

- 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

- Perimeter monitoring

Contents

Specifications

General specifications

Table 1: Detection Range

Detector model: QRU	Source model: QTU		
	Quasar 951	**Quasar 952**	**Quasar 953**
Feet	17-52	46-132	115-200
Meters	5-16	14-40	35-60

Detected gas	Hydrogen sulfide (H_2S)
Response time	< 3 seconds
Immunity to false alarms	Not influenced by solar radiation, hydrocarbon flames, and other external infrared radiation sources
Sensitivity range	0-500 ppm.m
Spectral response	200-300 nm
Displacement/misalignment tolerance	±1 degree
Drift	Long term ± five percent of full scale
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	60 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	According to MIL-STD-1275B
Electromagnetic compatibility	Electromagnetic interference/radio frequency interference (EMI/RFI) protected to EN50270

Outputs - interfaces

0-20 mA current output	Sink (source option) configuration: maximum load of 500 ohm at 18-32 Vdc Gas reading: 0-20 mA Normal, zero reading: 4 mA Maintenance call: 3 mA Misalignment: 2.5 mA Obscuration/beam block: 2 mA Zero calibration mode: 1 mA Fault: 0 mA

RS-485 interface - Modbus® compatible	RS-485 Modbus compatible communication link that can be used in computer controlled installations
HART® protocol	Optional HART communications on the 0-20 mA analog current (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. (2 kg)
Water and dust tight	IP66 and IP68 per EN60529, NEMA 250 6P
Environmental standards	Meets MIL-STD-810C for humidity, salt and fog, vibration, mechanical shock, high temperature, and low temperature
Reliability	SIL2 per IEC61508 (TUV)

Approvals

ATEX and IECEx

The SafEye Quasar 950 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

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 X

CSA C/US (pending)

Canada

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

Ex tb IIIC T135 °C Db

Ta = -55 °C to +65 °C

USA

Class I, Zone 1, AEx db eb ib [ib Gb] IIB + H2 T4 Gb

Zone 21, AEx tb IIIC T135 °C Db

Ta = -55 °C to +65 °C

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)
8888847-1	Hydrogen sulfide (H_2S) commissioning 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

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