Product Data Sheet
MS-00913-0100-4036, Rev AA
May 2025

Spectrex™ SafEye™ Quasar 950/960

Open Path Toxic Gas Detectors



The SafEye Quasar 950/960 is an advanced open-path UV gas detector designed for fast and reliable detection of toxic gases such as H_2S, NH_3, and SO_2. It features a Xenon UV transmitter and provides a detection range from 17 to 200 ft. (5 to 60 m) with rapid response times under 3 seconds for continuous line-of-sight monitoring.

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Features and benefits

- Accurate and reliable high-speed response in under 3 seconds
- High false alarm immunity
- Easy installation and maintenance
- Heated optics for operation in challenging conditions
- Detection of a cloud of gas at very low concentrations, up to 95 percent obscuration
- Field configurable via HART® or RS-485 Modbus®
- Certified performance/hazardous area and performance approved
- High reliability — Mean Time Between Failures (MTBF) — above 100,000 hours
- Factory-calibrated
- Three-year warranty

Applications

- Offshore platforms and Floating Production Storage and Offloading (FPSOs)
- Petrochemical plants
- Chemical processing plants
- Gas filling and distribution terminals
- Gas transport and pipelines
- Agriculture
- Food and beverages
- Waste management
- Water treatment
- Pharmaceutical
- Large storage areas and buildings

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Ordering information

The Quasar 950/960 is available as three transmitter models, determining the detection distance, with two possible detectors, detecting H_2S/SO_2 or Ammonia. This allows for detection at distances from 17 to 200 ft. (5 to 60 m).

The Quasar 950/960 can be ordered as separate parts:

- Transmitter (P/N QTU-XX1X)
- Receiver (P/N QRU-XX1X)
- Commissioning kit

Source (transmitter)

Model

Code	Description
QTU	Spectrex SafEye Quasar 950/960 Transmitter including one mount, P/N 888270

Approvals

Standard	Description
-C	ATEX and IECEx
-N	CSA C/US
-B	INMETRO (UL)
-R	TR CU (EAC)
-K	EAC Kazakhstan

Transmitter range

Code	Description
1	17 to 52 ft. (5 to 16 m)
2	46 to 132 ft. (14 to 40 m)
3	115 to 200 ft. (35 to 60 m)

Electrical entries

Code	Description
11	M25
12	¾-in. NPT

Detector (receiver)

Model

Code	Description
QRU	Spectrex SafEye Quasar 950/960 Receiver including one mount, P/N 888270

Approvals

Standard	Description
-C	ATEX and IECEx
-N	CSA C/US
-B	INMETRO (UL)
-R	TR CU (EAC)
-K	EAC Kazakhstan

Gas calibration

Code	Description
-1	H_2S/SO_2
-2	Ammonia (NH_3)

Electrical entries

Code	Description
11	M25
12	¾-in. NPT

Accessories

Part Number	Description
888270	Tilt Mount
799255	Wall Mount
799225	Pole Mount (U-Bolt 4 to 5 in.)
888140	Pole Mount (U-Bolt 2 to 3 in.)
888355-2	Duct Mount
888931	Air Shield
888263	Protective Cover
888897-1	Quasar 950 H_2S Commissioning Kit including Auxiliary Harness IS/RS-485 and HART®
888897-2	Quasar 960 NH_3 Commissioning Kit including Auxiliary Harness IS/RS-485 and HART
888280-1	Quasar 950 H_2S Check Filter
888280-2	Quasar 960 NH_3 Check Filter

Part Number	Description
888820	Auxiliary Harness IS/RS-485 and HART
888810	HART Handheld Diagnostic Kit
794079	USB/RS-485 Harness Converter Kit
TREXCHPKL9S3S	AMS Trex™ Device Communicator

Specifications

General specifications

Detected gases

- SafEye Quasar 950 - Hydrogen sulfide (H_2S) and sulfur dioxide (SO_2)
- SafEye Quasar 960 - Ammonia (NH_3)

Model number	Receiver	Transmitter	Minimum installation distance [feet (meters)]	Maximum installation distance [feet (meters)]
H_2S/SO_2				
951	QR-X-11X	QT-X-11X	17 (5)	52 (16)
952	QR-X-11X	QT-X-21X	46 (14)	132 (40)
953	QR-X-11X	QT-X-31X	115 (35)	200 (60)
NH_3				
961	QRU-X-21X	QTU-X-11X	17 (5)	52 (16)
962	QRU-X-21X	QTU-X-21X	46 (14)	132 (40)
963	QRU-X-21X	QTU-X-31X	115 (35)	200 (60)

Response time	< 3 seconds
Spectral response	200 to 300 nm
Sensitivity range	0 to 500 ppm/m ■ Full-scale: 500 ppm/m ■ Warning: 100 ppm/m ■ Alarm: 300 ppm/m
Field of view	Line of sight
Alignment tolerance	±1 degree
Minimum detectable gas volume	35 ppm/m
Temperature range	–67 to 149 °F (–55 to 65 °C)
Drift	Up to 5% of full-scale
Immunity to false alarm	Not influenced by solar radiation, hydrocarbon flames, or other external infrared radiation sources
Humidity	Up to 95% non-condensing (withstands up to 100% relative humidity for short periods)
Heated optics	To eliminate condensation and icing on the window
Warranty	Three years

Electrical specifications

Operating voltage	24 Vdc nominal (18 to 32 Vdc)
Typical power consumption with heated optics	Receiver: 135 mA Transmitter: 150 mA
Warm-up time	60 seconds for the transmitter and receiver
Electrical connection	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 (EMI) or Radio Frequency Interference (RFI) protected to EN50270

Electrical outputs

0 to 20 mA current output	■ Sink (source option) configuration: a maximum load of 500 ohms at 18 to 32 Vdc ■ Gas reading: 0 to 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 to 20 mA analog current (FSK)—used for maintenance and asset management
Visual status indicator	Three-color light-emitting diodes (LED) ■ Green: Power ON ■ Amber: Fault ■ Red: Alarm

Mechanical specifications

Enclosure	The source and detector housings are stainless steel 316L with electropolish finish. The circuit boards are conformal coated and protected from mechanical vibrations. The tilt mount is also stainless steel 316L.
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	SafEye Quasar 950/960 is designed to meet DNVGL-CG-0039, class D
Reliability	SIL2 per IEC61508 (TUV)

Approvals

ATEX, IECEx

The Quasar 950/960 is ATEX approved per Sira 13ATEX1182X and IECEx per SIR 13.0069X:

Ex II 2(2)G D

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

Ex tb [ib Db] IIIC T135 °C Db

$T_{Ambient}$ –55 °C to +65 °C

This product is suitable for use in hazardous zones 1 and 2 with IIB+H2 group vapors present, and zones 21 and 22 with IIIC combustible dust types.

TR CU (EAC)

1Ex db eb ib [ib Gb] IIB + H2 T4 Gb X

Ex tb IIIC T135 °C Db X

INMETRO (UL)

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

Ex tb [ib Db] IIIC T135 °C Db

(–55 °C ≤ T_a ≤ +65 °C)

Certificate number UL-BR 19.0276X (Rosemount) and UL-BR 22.4059X (Spectronix)

SIL-2

TUV is approved for SIL-2 requirements per IEC 61508. According to SIL-2 requirements, the alert condition can be implemented by an alert signal via the 0 to 20 mA current loop.

For more details and guidelines on configuring, installing, operating, and servicing, see SIL-2 features, and TUV report no. 968/FSP 1269.XX/XX.

CSA C/US

Canada

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

Ex tb [ib Db] IIIC T135°C Db

T_a = –55 °C to +65 °C

USA

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

21 AEx tb [ib Db] IIIC T135°C Db

T_a = –55 °C to +65 °C



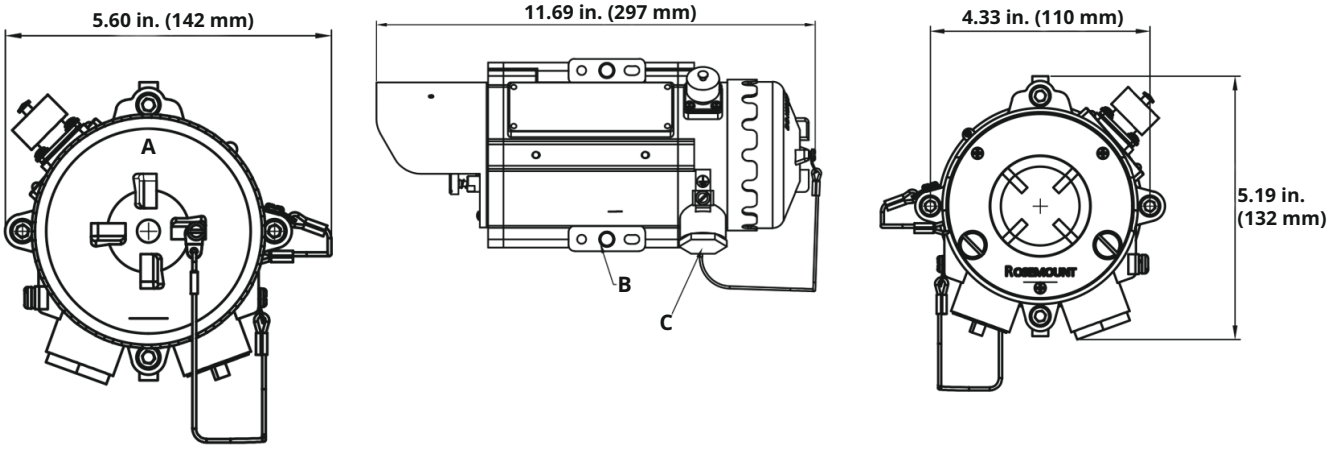
The Spectrex Quasar 950/960 is a "Class 1 Laser Product" per IEC 60825-1: 2014 ed. 05.

Performance approval

- ANSI/ISA-92.00.04-2014
- UL 920004: 2014

Dimensional drawings

Figure 1: Gas Receiver Assembly

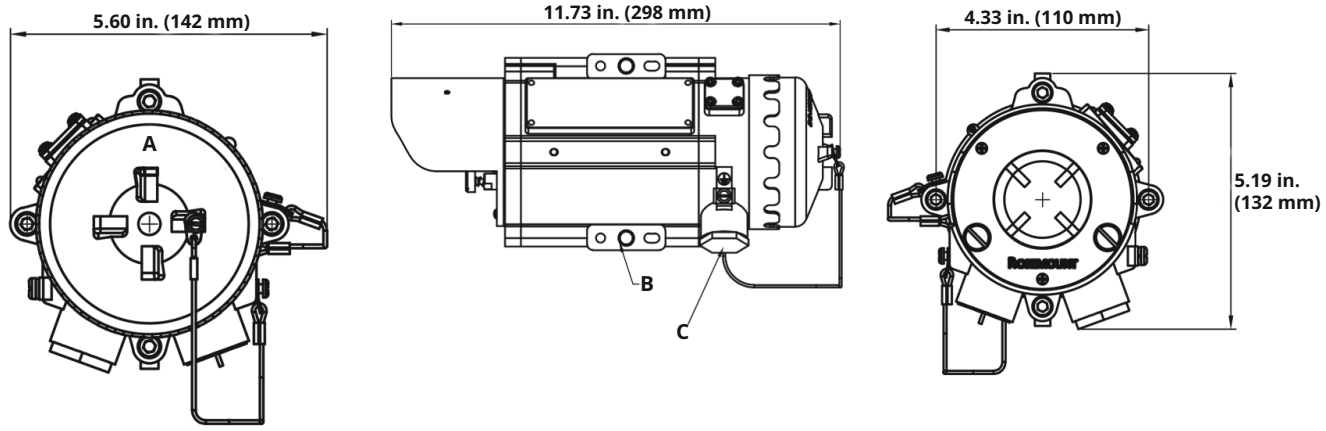


A. Do not open while energized
B. M10 x 1.5
C. Two conduit entry locations, M25 x 1.5 mm ISO or ¾-in. NPT.

Note
Dimensions are in inches (millimeters).

Material	Weight
Stainless steel - 316L	11 lb. (5 kg) approximately

Figure 2: Gas Transmitter Assembly



A. Do not open while energized
B. M10 x 1.5
C. Two conduit entry locations, M25 x 1.5 mm ISO or ¾-in. NPT.

Note
Dimensions are in inches (millimeters).

Material	Weight
Stainless steel - 316L	11 lb. (5 kg) approximately

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For more information: **Spectrex.net**

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