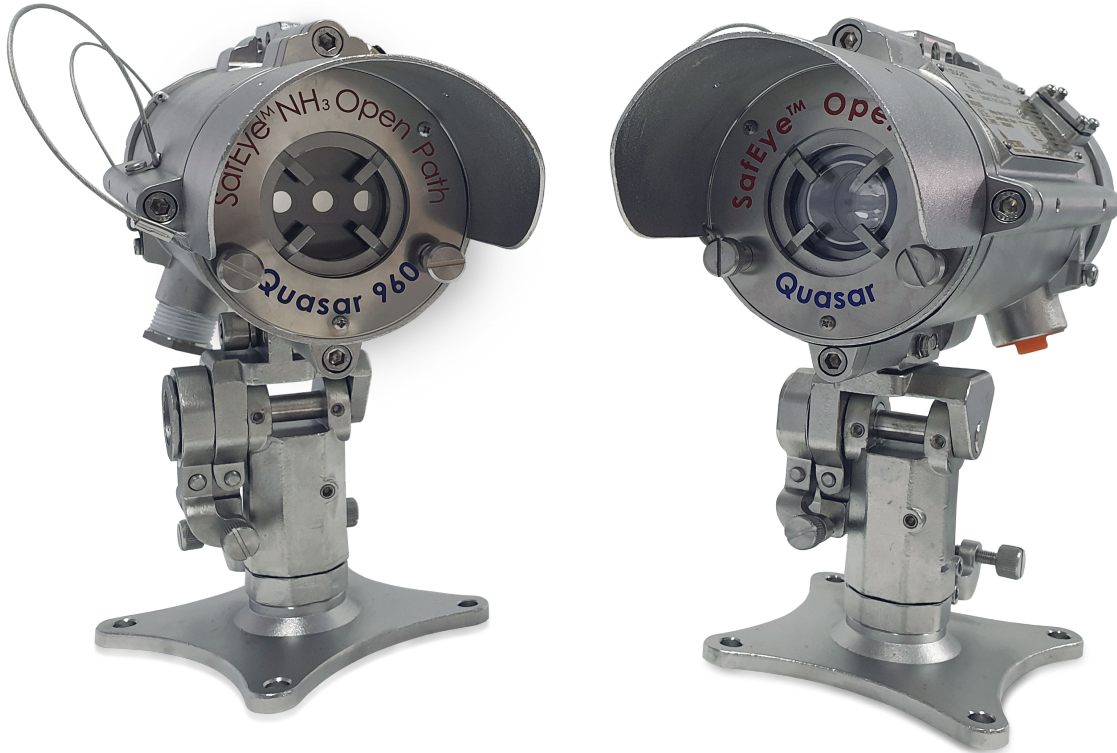


# SafEye™ Quasar 960 Open Path Toxic Gas Detectors



The SafEye Quasar 960 is part of the innovative SafEye Quasar open path gas detector series. The detector provides ultraviolet technology continuous monitoring for toxic ammonia (NH<sub>3</sub>) gas at very low concentrations, up to 95 percent obscuration, featuring advanced wide area coverage with long range detection up to 200 ft. (60 m) and high speed response in under 10 seconds.

The SafEye Quasar 960 is solar blind and immune to industrial environments, ensuring reliable and accurate protection to keep a SafEye on your safety.

## Features and benefits

- Detects toxic ammonia (NH<sub>3</sub>) 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
- Built-in event recorder - real time record of the last 100 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® or RS-485 Modbus®; compatible with modern user interface for ease of use
- Certified performance/Hazardous Area approved (ATEX, IECEx, CSA, and more) for location in Zone 1 areas
- Approved to Safety Integrity Level 2 (SIL2 - TÜV)
- High reliability-MTBF-minimum 100,000 hours

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## Applications

- Agriculture
- Food and beverage
- Chemical
- Waste management
- Water treatment
- Pharmaceutical

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# Specifications

## General specifications

Table 1: Detection Range

Detector model: QRU	Source model: QTU		
	Quasar 961	Quasar 962	Quasar 963
Feet	17-52	46-132	115-200
Meters	5-16	14-40	35-60

<b>Detected gas</b>	Ammonia (NH <sub>3</sub> )
<b>Response time</b>	< 3 seconds (T90 < 10 seconds)
<b>Immunity to false alarm</b>	Not influenced by solar radiation, hydrocarbon flames, or other external infrared radiation sources
<b>Sensitivity range</b>	0-500 ppm.m
<b>Spectral response</b>	200-300 nm
<b>Displacement/misalignment tolerance</b>	±1 degree
<b>Drift</b>	Long term ±5 percent of full scale
<b>Temperature range</b>	-67 to +149 °F (-55 to +65 °C)
<b>Humidity</b>	Up to 95 percent non-condensing (withstands up to 100 percent relative humidity for short periods)
<b>Heated optics</b>	To eliminate condensation and icing on the window
<b>Warranty</b>	Safety system - three years

## Electrical specifications

<b>Power supply</b>	24 Vdc nominal (18-32 Vdc)
<b>Power consumption (peak includes heated optics)</b>	Detector: 250 mA (300 mA peak) Source: 250 mA (300 mA peak)
<b>Warm-up time</b>	60 seconds for transmitter and receiver
<b>Electrical connection (specify)</b>	Two ¾-in. - 14 national pipe thread (NPT) conduits or 2 x M25 x 1.5 mm ISO
<b>Electrical input protection</b>	According to MIL-STD-1275B
<b>Electromagnetic compatibility</b>	Electromagnetic interference (EMI)/radio frequency interference (RFI) protected to EN50270

## Outputs - interfaces

<b>0-20 mA current output</b>	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
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	Fault: 0 mA
<b>RS-485 interface - Modbus® compatible</b>	RS-485 Modbus compatible communication link that can be used in computer controlled installations
<b>HART® protocol</b>	Optional HART communications on the 0-20 mA analog current (FSK) - used for maintenance and asset management
<b>Visual status indicator</b>	Three color light-emitting diode (LED) <ul style="list-style-type: none"> <li>■ Green: power on</li> <li>■ Yellow: fault</li> <li>■ Red: alarm</li> </ul>

**Mechanical specifications**

<b>Enclosure</b>	The source and detector housings are stainless steel 316L with electro polish finish. The circuit boards are conformal coated and protected from mechanical vibrations. The tilt mount is also stainless steel 316L.
<b>Dimensions</b>	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)
<b>Weight</b>	Detector/source: 11 lb. (5 kg) Tilt mount: 4.2 lb. (2 kg)
<b>Water and dust tight</b>	IP66 and IP68 per EN60529, NEMA 250 6P
<b>Environmental standards</b>	Meets MIL-STD-810C for humidity, salt and fog, vibration, mechanical shock, high temperature, and low temperature

**Approvals**

Table 2: Hazardous Area Approvals

Certification type	Markings	
ATEX and IECEx	Ex II 2 (2) G D Ex db eb ib [ib Gb] IIB+H2 T4 Gb Ex tb 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

<b>Reliability</b>	SIL2 per IEC61508 (TUV)
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## Accessories

Part number	Description
888270	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)
8888847-2	SafEye Quasar 960 NH <sub>3</sub> commissioning kit
888810	HART <sup>®</sup> handheld diagnostic unit
888815	HART harness kit
794079	USB/RS485 harness converter kit
888263	Weather cover
888335-2	Duct mount






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