

# SafEye Quasar 960

## Ammonia Open Path Gas Detectors



The latest SafEye Quasar open path UV detection technology includes the 960 series.

The Quasar 960 models detect toxic Ammonia gas, with path lengths of up to 200ft (60m). The Quasar 960 model can be tailored to protect your personnel and high-risk installation. Reliability is key and is assured with SIL2.

All Quasar 960 detectors incorporate heated windows to minimize any effects from condensation, icing, snow and are totally immune to interference from sunlight or any other sources of radiation such as flare stacks, arc welding or lightning. A range of outputs are available including 0-20mA, HART, Modbus RS485 to suit all control systems.

### FEATURES & BENEFITS

- Long Range Toxic Gas Detection up to 200ft (60m)\*
- Detection of toxic NH<sub>3</sub> gas
- High Sensitivity and fast response
- Heated optics to improve performance in ice, condensation and snow conditions
- Continuous operation in extreme and harsh environmental conditions
- Solar blind and immune to industrial environments
- Withstands extreme vibration conditions
- Multiple output options for maximum flexibility and compatibility
  - 0-20mA
  - HART Protocol for maintenance and asset management
  - RS-485, Modbus Compatible
- Simple, one person installation, alignment, and calibration
- Programmable configuration via the handheld unit
- Fast connection to I.S. approved handheld diagnostic/calibration unit
- 3mA “maintenance call”
- 3 Year Warranty
- ATEX & IECEx
  - Ex II 2 (2) G D
  - Ex db eb ib [ib Gb] IIB+H2 T4 Gb
  - Ex tb IIIC T135°C Db
- TR CU/EAC
- Inmetro (UL)
- Safety Integrity Level SIL2 (TUV)

### APPLICATIONS

Agriculture  
Food and beverage  
Chemical  
Waste Management  
Water Treatment  
Pharmaceutical

\*An 80% reduction in the maximum distance is recommended in adverse conditions.

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# SafEye Quasar 960

Ammonia Open Path Gas Detector

## GENERAL SPECIFICATIONS

<b>Detected Gases</b>	Detection of toxic Ammonia gas		
<b>Model</b>	<b>961</b>	<b>962</b>	<b>963</b>
<b>Detection Range</b>	17-66ft	50-132ft	115-200ft
	5-16m	14-40m	35-60m
<b>Detected Gas</b>	Ammonia	Ammonia	Ammonia
<b>Response Time</b>	T90≤10 sec		
<b>Immunity to False Alarm</b>	Not influenced by solar radiation, hydrocarbon flames and other external IR radiation sources		
<b>Spectral Response</b>	200-300nm		
<b>Sensitivity Range</b>	0-500 ppm.m		
<b>Displacement/Misalignment Tolerance</b>	±1°		
<b>Drift</b>	Long term ±5% of full scale		
<b>Temperature Range</b>	-67°F to 149 °F (-55 °C to 65 °C)		
<b>Humidity</b>	Up to 95% non-condensing (withstands up to 100% RH for short periods)		

## ELECTRICAL SPECIFICATIONS

<b>Operating Voltage</b>	24 VDC nominal (18-32 VDC)		
<b>Power Consumption</b>	Detector: 250mA (300mA peak) Source: 250mA (300mA Peak)		
<b>Warm up Time</b>	60 sec for transmitter and receiver		
<b>Electrical Connection (specify)</b>	2 x 3/4" – 14NPT conduits or 2 x M25 x 1.5mm ISO		
<b>Electrical Input Protection</b>	According to MIL-STD -1275B		
<b>Electromagnetic Compatibility</b>	EMI/RFI protected to EN50270		

## OUTPUTS

<b>0-20mA Current Output</b>	Sink (source option) configuration - maximum load of 500Ω at 18-32VDC			
	Gas reading	0-20mA	Obscuration/beam block	2mA
	Normal, zero reading	4mA	Zero calibration mode	1mA
	Maintenance call	3mA	Fault	0mA
	Misalignment	2.5mA		
<b>HART Protocol</b>	Optional HART communications on the 0 -20mA analog current (FSK) - used for maintenance and asset management			
<b>RS-485</b>	RS-485 Modbus compatible communication link that can be used in computer controlled installations			
<b>Visual Status Indicator</b>	3 color LED: Green – Power on, Yellow – Fault, Red – Alarm			

## MECHANICAL SPECIFICATIONS

<b>Materials</b>	- Source and detector housings are Stainless Steel 316L with electro polish finish - Circuit boards are conformal coated and protected from mechanical vibrations			
<b>Mounting</b>	Stainless Steel 316L with electro polish finish			
<b>Dimensions</b>	Detector / Source	10.5" x 5.1" x 5.1" (267 x 130 x 130mm)		
	Tilt Mount	4.7" x 4.7" x 5.5" (120 x 120 x 158mm)		
<b>Weight</b>	Detector / Source	11lb (5kg)		
	Tilt Mount	4.2lb (2kg)		
<b>Environmental Standards</b>	Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp			
<b>Water and Dust</b>	IP66 and IP68 per EN60529, NEMA 250 6P			

## APPROVALS

<b>Hazardous Area</b>	ATEX & 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
<b>Reliability</b>	SIL2 per IEC61508 (TUV)	

## ACCESSORIES

<b>Tilt Mount</b>	P/N 888270	<b>HART Hand-Held Harness Kit</b>	P/N 888815
<b>Wall Mount</b>	P/N 799255	<b>USB/RS485 Harness Converter Kit</b>	P/N 794079
<b>Commissioning Kit</b>	P/N 888847	<b>U-Bolt/Pole Mount (4-5 inch)</b>	P/N 799225
<b>Weather Cover</b>	P/N 888263	<b>U-Bolt/Pole Mount (2-3 inch)</b>	P/N 888140
<b>HART Hand-Held Diagnostic Kit</b>	P/N 888810		