

# SafEye Quasar 900

*The New SafEye Quasar 900 is an open path detection system which provides continuous monitoring for combustible hydrocarbon gases. It employs “spectral fingerprint” analysis of the atmosphere using the Differential Optical Absorption Spectroscopy (DOAS) technique.*



*The Quasar 900 consists of a Xenon Flash infrared transmitter and infrared receiver, separated over a line of sight from 23 ft (7m) up to 650 ft (200m) in extremely harsh environments where dust, fog, rain, snow or vibration can cause a high reduction of signal.*

*The Quasar 900 transmitter and receiver are both housed in a rugged, stainless steel, ATEX and IECEx approved enclosure. The main enclosure is EExd flameproof with an integral, segregated, EExe increased safety terminal section.*

*The hand-held communication unit can be connected in-situ via the intrinsically safe approved data port for prognostic and diagnostic maintenance.*

*The Quasar 900 is approved to FM/FMC per Class I Div 1 Group B, C and D and Class I, II Div 1 Group E, F and G, and pending per ATEX/IECEx per Ex d e [ia] ia IIB + H2 T4 Gb, Ex tb IIIC T135°C Db IP66.*

*The Quasar 900 includes heated windows to eliminate condensation and icing, HART capability for digital communication and is designed to meet SIL2 per IEC61508 and FM performance approved per FM6325 and tested per EN60079-29-4.*

## FEATURES & BENEFITS

- Detects Hydrocarbon gases including methane, ethylene, Propane, Ethane, Butane etc.
- Detection range: 7-200m in three different models (same detector different sources)
- Built in event recorder – real time record of the last 100 events
- Fast connection to Hand-Held for prognostic and diagnostic maintenance
- Heated optics
- Design to meet SIL2, per IEC61508
- Outputs:
  - 0-20mA
  - HART protocol for maintenance and asset managements
  - RS-485, Modbus Compatible
- High reliability – MTBF minimum 100,000 hours
- User programmable via HART or RS-485
- 3 years warranty (10 years for the flash source)
- Ex approval:
  - FM/FMC approved per Class I Div 1 Group B, C and D Class I, II Div 1 Group E, F and G
  - ATEX & IECEx pending per Ex d e [ia] ia IIB + H2 T4 Gb Ex tb IIIC T135°C Db IP66
  - Performance test: Approved to FM6325 and tested per EN60079-29-4 by FM

## APPLICATIONS

Offshore oil and gas  
Onshore oil and gas pipelines  
Gas turbines  
Petrochemicals plants  
Storage tanks  
Fuel loading facilities

## GENERAL SPECIFICATIONS

Detection Range	Model	901	902	903	904
	Feet	23-66	50-132	115-330	265-660
	Meters	7-20	15-40	35-100	80-200
	Detected Gas	C1-C8	Flammable		
Response Time	3 sec.				
Immunity to False Alarm	Not influenced by solar radiation, hydrocarbon flames and other external IR radiation sources.				
Spectral Response	2.0 - 3.0µm				
Sensitivity Range	0 - 5LEL.m				
Displacement/Misalignment Tolerance	±0.5°				
Drift	±7.5% of the reading or ±4% of the full scale (whichever is greater).				
Minimum Detectable Level	0.15 LEL.m				
Temperature Range	-67°F (-55°C) to 149°F (65°C)				
Humidity	Up to 95% non-condensing (withstands up to 100% RH for short periods)				
Heated Optics	To eliminate condensation and icing on the window				
Warranty	Safety system – 3 years Flash source bulb – 10 years				

## ELECTRICAL SPECIFICATIONS

<b>Power Supply</b>	24VDC nominal (18-32 VDC)
<b>Power Consumption (peak includes heated optics)</b>	Detector: 250mA (300mA Peak) Source: 250mA (300mA Peak)
<b>Warm up Time</b>	30 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 EN50270
<b>Electromagnetic Compatibility</b>	EMI/RFI protected per EN50270

## OUTPUTS – INTERFACES

<b>0-20mA Current Output</b>	Sink (source option) configuration Maximum load 600 at 18-32 VDC Gas reading 4-20mA Normal, zero reading 4mA Maintenance call 3mA Obscuration/misalignment/beam block 2mA Zero calibration mode 1mA Fault 0mA
<b>RS-485 Interface – Modbus Compatible</b>	The RS-485 input/output provides complete data information to a PC and receives control commands from the PC or handheld unit
<b>HART</b>	HART communications on 0-20mA analog current (FSK) – used for maintenance and asset management
<b>Visual Status Indicator</b>	3 color led: Green – Power on, Yellow – Fault, Red - Alarm

## MECHANICAL SPECIFICATIONS

<b>Hazardous Area Approval</b>	ATEX/IECEX	pending per Ex d e [ia] ia IIB + H2 T4 Gb Ex tb IIIC T135 °C Db IP66 The detector or source units have a combination of approvals. Each is a single enclosure (Exd) with integral, segregated rear terminal section (Exe) and intrinsically safe (Exia) data-port for external in-situ connection to Hand-Held Diagnostic unit. FM/FMC Approved per Class I Div 1 Groups B, C and D, Class II,III Div 1 Groups E, F and G
<b>Performance</b>	Approved per FM6325 and tested by FM per EN60079-29-4	
<b>Reliability</b>	Pending per IEC61503 (TUV) per SIL2 requirements	
<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 inch (267 x 130 x 130mm) Tilt Mount 4.7 x 4.7 x 5.5 inch (120 x 120 x 158mm)	
<b>Weight</b>	Detector/Source 11lb (5kg) Tilt Mount 4.2lb (1.9kg)	
<b>Water and Dust Tight</b>	IP66 and IP68 NEMA 250 6P	
<b>Environmental</b>	Meets MIL-STD-810C for Humidity, Salt and Fog, Vibration, Mechanical Shock, High and Low Temperature	

## ACCESSORIES

<b>Tilt Mount</b>	P/N 888270	<b>HART Hand-Held Harness Kit</b>	P/N 888815
<b>Pole Mount (U-bolt 5 inch)</b>	P/N 799225	<b>USB/RS485 Harness Converter Kit</b>	P/N 794079-8
<b>Commissioning Kit</b>	P/N 888247	<b>Mini Laptop Kit</b>	P/N 777820-1
<b>HART Hand-Held Diagnostic Unit</b>	P/N 888810	<b>Sunshade</b>	P/N 888263