

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

Power Supply	24VDC nominal (18-32 VDC)
Power Consumption (peak includes heated optics)	Detector: 250mA (300mA Peak) Source: 250mA (300mA Peak)
Warm up Time	30 sec for transmitter and receiver
Electrical Connection (specify)	2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5mm ISO
Electrical Input Protection	According to EN50270
Electromagnetic Compatibility	EMI/RFI protected per EN50270

OUTPUTS – INTERFACES

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

MECHANICAL SPECIFICATIONS

Hazardous Area Approval	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 (EExd) with integral, segregated rear terminal section (EExe) and intrinsically safe (EExia) 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
Performance	Approved per FM6325 and tested by FM per EN60079-29-4	
Reliability	Pending per IEC61503 (TUV) per SIL2 requirements	
Enclosure	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.	
Dimensions	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)
Weight	Detector/Source	11lb (5kg)
	Tilt Mount	4.2lb (1.9kg)
Water and Dust Tight	IP66 and IP68 NEMA 250 6P	
Environmental	Meets MIL-STD-810C for Humidity, Salt and Fog, Vibration, Mechanical Shock, High and Low Temperature	

ACCESSORIES

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