

# Quasar 900 Series Open Path Gas Detector for Hydrocarbons

## Reliable Open Path Gas Detection in All Weather Conditions

- \* Detects gaseous hydrocarbons such as methane & ethylene
- \* Detection range from 7 to 200 meters (23 feet to 660 feet)
- \* Built-in event recorder stores last 100 events and alarms
- \* 3 year warranty, SIL-2 approved per IEC61508 standard
- \* Outputs include 4-20mA, HART, RS-485 serial MODBUS
- \* High reliability; MTBF minimum over 100,000 hours of operation
- \* Heated windows to eliminate condensation in wet conditions
- \* User programmable via dedicated IS programming port
- \* Ten year warranty on flash source in infrared transmitter
- \* Easy single person alignment and commissioning process
- \* Totally immune to interference from sunlight, flares or lightning
- \* Rated for operation from -67°F to +149°F (-55°C to +65°C)
- \* 316 Stainless Steel housing with tilt mount for easy adjustment
- \* Approved per FM6325 and performance tested to EN60079-29-4

### Quasar 900 Series

The Spectrex 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 660 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 ATEX/IECEx per Ex d e ib [ib Gb] IIB + H2 T4 Gb, Ex tb IIIC T135°C Db.

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



### Setup in Hazardous or Safe Areas

The unique, intrinsically safe approved connection port on the Quasar 900 receiver allows simple connection of various types of handheld unit that will communicate with Quasar 900 in the hazardous area. These handheld devices allow user to check alignment, zero, perform configuration changes, view event log, perform diagnostic functions, in conjunction with Spectrex software. The handheld units are robust weather-proof devices, certified intrinsically safe for use in a hazardous, classified area.

### Failsafe Operation

In normal operation, the output signal is 4 to 20 mA, depending on the measured gas concentration. Sub-4mA signals includes indications for beam blockage (2mA), a fault (1mA). In addition, a continuous self-test of the Quasar 900 will issue a pre-warning signal (3mA) where the detector is still operational but requires some attention – for example when the transmitter or receiver is misaligned or if there is a deposit build-up on the optics.

### Applications

- Offshore Platforms & FSPOs
- Petrochemical plants
- Chemical processing facilities
- Gas filling and distribution centers
- Gas transport and pipelines
- Perimeter monitoring

**GDS Corp**

Gas and Flame Detection

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Toxic & Combustible Gas Detection • Controllers • Process Monitors • Calibration Supplies

900 Series SPECIFICATIONS	
<b>Detectable Gas</b>	C1 - C8 (Alkanes, methane to hexane) and ethylene
<b>Response</b>	3 seconds
<b>Sensitivity</b>	0-5 LEL-meter for methane and propane 0-8 LEL-meter for ethylene
<b>Range</b>	Specified from 7 meters to 200 meters in four models For maximum reliability, specified range should be derated by 25% to compensate for misalignment, vibration, physical drift and other variables that change over time
<b>Power Input</b>	Input voltage: 24VDC nominal (18-32 VDC) Transmitter current: 250 mA (300 mA peak) Receiver current: 250 mA (300 mA peak)
<b>Warm-Up</b>	30 seconds for transmitter and receiver
<b>Display</b>	Visual status indicator: Green - Power On; Yellow - Fault; Red - Alarm
<b>Standard Output</b>	0-20mA Current Source with multiple fault indication HART communications over 4-20mA RS-485 serial MODBUS
<b>Output Alarm Conditions</b>	Discrete 4-20mA output levels indicate general fault, reference & optics fault, warm-up, zero drift fault, calibration fault, zero and span set and overrange conditions.
<b>Alignment</b>	+/- 0.5 degree for full specifications
<b>Temp</b>	-55°C to +65°C at 0 to 95% RH non-condensing
<b>Housing</b>	#316 Stainless Steel
<b>Dimensions</b>	Detector / Source: 10.5" x 5.1" x 5.1" (267x130x130 mm) Tilt Mount: 4.7" x 4.7" x 5.5" (120x120x158 mm)
<b>Weight</b>	Detector / Source: 11lbs (5 kg) Tilt Mount: 4.2 lbs (1.9 kg)
<b>Approvals</b>	FM Approved for Class I Div 1 Groups B, C, D ATEX / IECEx Approved per Ex d e ib [ib Gb] IIB + H2 T4 Gb Ex tb IIIC T135°C Db
<b>Warranty</b>	3 years from date of purchase 10 years on flash bulb



Hand Held Diagnostic Unit p/n 12-0450  
Certified I.S. (EExia) for use in hazardous areas.



HART Diagnostic Unit p/n 12-0451  
Certified I.S. (EExia) for use in hazardous areas.



MiniLaptop Kit p/n 12-0452  
Small form factor laptop pre-loaded with Spectrex software. For use in safe areas only.



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## 900 Series ORDER GUIDE

### Open Path Gas Detector

#### Model 901 Open Path Gas Detector

Includes transmitter, receiver and two tilt mounts  
Range 7 to 20 meters (21 - 63 ft)  
p/n 12-0439

#### Model 902 Open Path Gas Detector

Includes transmitter, receiver and two tilt mounts  
Range 15 to 40 meters (50 - 132 ft)  
p/n 12-0440

#### Model 903 Open Path Gas Detector

Includes transmitter, receiver and two tilt mounts  
Range 35 to 100 meters (115 - 330 ft)  
p/n 12-0441

#### Model 904 Open Path Gas Detector

Includes transmitter, receiver and two tilt mounts  
Range 80 to 200 meters (264 - 660 ft)  
p/n 12-0447

### Installation Accessories

**Commissioning Kit** - includes fast alignment telescope, filters, hand tools, carrying case and instructions  
p/n 12-0442

**Stainless steel weather shield** for Model 900 series. Order two weather shields for each installation  
p/n 12-0443

**Pole mount for Model 900 series.** For poles up to 5" in diameter.  
p/n 12-0448

### Setup Communications Options (Choose one)

#### Hand Held Diagnostics Unit

ATEX (EExia) Certified  
p/n 12-0450

#### HART Hand Held Diagnostics Unit

ATEX (EExia) Certified  
p/n 12-0451

#### MiniLaptop Kit

For use in non-hazardous areas only  
p/n 12-0452

#### Cable Harness for HART Unit

p/n 12-0444

#### USB/RS485 Cable & Software

p/n 12-0449