

Surveyor

Ultrasonic Gas Leak Detector



General Monitors



Applications

- Offshore and Onshore Oil and Gas Installations Floating Production Storage and Offloading Vessels (FPSOs)
- Gas Compressor and Metering Stations
- Underground Gas Storage Facilities
- Petrochemical Processing Plants
- Hydrogen Storage Facilities
- LNG/GTL Trains
- LNG Re-gasification Plants
- Gas Turbine Power Plants
- Refineries

Features & Benefits

- Advanced stainless steel microphone permits instant detection of high-pressure gas leaks with coverage up to 20 meters in radius
- Interface outputs include 4–20 mA analogue and alarm/fault relays according to industry standards
- Full AISI 316L stainless steel intrinsically safe housing enclosure provides corrosion resistance in harsh environments
- Minimal maintenance and calibration requirements with portable test unit
- Local LED indicator displays detector status
- Wide dynamic range (44–104 dB)

Description

The Surveyor is a non-concentration based gas detector used to detect leaks from high pressure systems. Like other ultrasonic gas monitors, the Surveyor responds to the airborne ultrasound generated from gas releases in open, well ventilated areas, where traditional methods of detection may be unsuitable or dependent on ventilation. Because the Surveyor responds to the source of a gas release rather than the dispersed gas, it is unaffected by changing wind directions, gas dilution, and the direction of the gas leak. Further, with its maximum coverage radius of 20 meters, it can supervise a relatively large area with a single device.

The Surveyor is immune to many false signals and can be configured to filter short timescale ultrasonic noise that can produce nuisance alarms. Frequencies below 25 kHz are removed by a high pass filter, effectively eliminating interference from audible and low frequency ultrasonic noise. At the same time, setting the alarm trigger level above the ultrasonic background noise ensures immunity to other noise sources. The result is a reliable method of detection, able to monitor environments with high levels of ultrasound such as turbine rooms and compressor stations.

Besides high-pressure gas applications, the Surveyor is suited for installations restricted to low power ($< 1\text{ W}$).

*Because every life has a **purpose...***

System Specifications	
Detector Type	Ultrasonic (acoustic) gas leak detector
Detector Frequency Range	25 kHz – 70 kHz
Dynamic Range	44 –104 dB SPL
Detector Coverage*	Very low noise areas (< 64 dB) 20 m radius at leak rate = 0.1 kg/s 12 m radius at leak rate = 0.03 kg/s Low noise areas (< 74 dB) 12 m radius at leak rate = 0.1 kg/s 8 m radius at leak rate = 0.03 kg/s High noise areas (< 84 dB) 8 m radius at leak rate = 0.1 kg/s 4 m radius at leak rate = 0.03 kg/s
Typical Response Time	Instant
Classification	ATEX: II 2G Ex ia IIC T4 IECEX: Ex ia IIC T4
Warranty	Two years
Approvals	ATEX, IECEX, IEC 61508 certified to SIL 1 and 2**

* Reference gas is methane: All dB levels are in the ultrasonic frequency range.

** It has a SIL 1 rating in simplex applications and SIL 2 in voted applications with b*m+1" redundancy.

Environmental Specifications	
Operating Temperature Range	–40 °C to +75 °C
Operating Humidity Range	0% to 100% RH
Ingress Protection	IP66
Mechanical Specifications	
Housing	Stainless steel AISI 316L
Dimensions	182 x 145 mm
Weight	2.24 kg
Mounting	Stainless steel mounting bracket
Conduct Entries	M20 x 1.5
Electrical Specifications	
Input Power Supply	13–28 VDC
Min. Power Consumption	744 mW
Analog Signal	0 mA: No power/Low supply voltage 3 mA: Unit inhibit 4 –20 mA: 44 dB –104 dB
Relays (option 1 or 2 operator selectable)	Option 1: Alarm relay Option 2: Error relay
Cable Requirements	Max. cable lenght between Surveyor and power source @ 24 VDC (40 Ohm) 14 AWG –2,408 m

Ordering Information

Surveyor	
Surveyor-1-1	4 –20 mA, ATEX/IECEX, 2 x M20

Accessories	
80510-1	Portable test and calibration unit 1701
80614-1	Screw and sealing washer kit
80613-1	Mounting bracket, 45°



Equipamientos Analíticos S.A

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