

► Searchline EXCEL

Open-path infrared gas detector for hydrocarbons



Technical specifications

Available gases: Methane, Ethane, Propane, Butane, Pentane, Ethylene, Propylene, butadiene

Measuring range: 0 to 5 LELm* (Lower explosion limit over a distance in meters).

Recommended alarm setting: 1.0 LELm and 3.0 LELm

Path length:

- Short range: 5 to 40 m
- Medium range: 40 to 120 m
- Long range: 120 to 200 m

Response time: T90 less than 3 seconds (under normal operating conditions)

Power supply: 18 to 32 Vcc

Power consumption:

- Short range: Transmitter: 5 W - Receiver: 8 W
- Medium and long range: Transmitter: 13 W - Receiver: 8 W

Output signal:

- 4-20 mA source or sink (maximum loop resistance: 600 Ω)
- Modbus RS485 multipoint digital output

Case material: 316 stainless steel

IP rating: IP66 and IP67

Operating temperature: -40 °C to +65 °C

Operating humidity: 0 to 99 % HR (non-compensated)

Warm-up time: Less than 5 minutes (operational) or less than 1 hour (complete stabilization)

Weight (including mounting bracket):

- Short range: transmitter and receiver: 3.5 kg
- Medium and long range: Transmitter: 7 kg - Receiver: 3.5 kg

Safety certifications: ATEX, IECEx, UL, CSA, FM, GOST independent assessment for CEI61508

* To find out the LELm, simply multiply the size of a gas cloud by its concentration, so 1 LELm corresponds to 100% LEL over 1 meter or 50% LEL over 2 meters.

Product description

The **Searchline Excel** open-path infrared gas detector is an innovative and relevant solution for hydrocarbons detection over long distances. It is a device that incorporates the latest technology innovations, able to replace several point detectors over a distance between the transmitter and the receiver that can reach up to 200 meters.

The **Searchline Excel** system includes a transmitter that produces infrared radiation and a receiver with optical sensors that electronically processes signals. They are both incorporated in a resistant stainless steel frame for use in the most demanding applications and harshest environments. The analog output of the receiver provides a linear 4-20 mA signal corresponding to a 0 to 5 LELm scale (Lower Explosive Limit over a distance in meters).

► Insensitivity to solar radiation

The **Searchline Excel** open-path gas detector is completely insensitive to interference caused by sunlight or other sources of radiation, such as flares, arc welding or lighting. The transmitter lens is heated to minimize condensation, frost and snow build-up. When it is very cold, SMART heating increases significantly.

► Why a barrier gas detection system?

- Very fast response time (T90 < 3 seconds)
- High sensitivity which allows earlier alarms with lower thresholds
- Less strategic detector location
- Simple installation and commissioning, a single system replaces several point devices

► The advantages of the Searchline Excel open-path

- Semiconductor detectors with full temperature compensation
- Dual bandpass filters that compensate the interference from all types of fog, rain and mist.
- Symmetrical heating elements integrated into the windows offering excellent performance at low temperatures
- Insensitivity to solar radiation

► Examples of applications

Examples of gas leaks not detected by conventional point detectors but identified by an open-path infrared gas detector:

- Offshore platforms and ships (storage and unloading)
- Chemical and petrochemical plants
- Gas and oil pipelines