

Rosemount™ 935

Open Path Combustible Gas Detectors



The 935 Open Path Gas Detector provides continuous monitoring for combustible hydrocarbon gases utilizing infrared flash technology at up to 660 ft. (200 m).

Features and benefits

- One person installation and low maintenance
- Factory-calibrated
- Accurate and reliable high-speed response in under 2 seconds
- RTC event recorder; record of the last 375 events
- Automatic gain control ensures accurate detection in challenging conditions with up to 95 percent signal obscuration
- Three-year warranty
- High false alarm immunity
- Heated optics for operation in challenging conditions
- Easy to use, field configurable via HART® or RS-485 Modbus®
- High reliability — mean time between failures (MTBF) — above 100,000 hours

Applications

- Petrochemical, pharmaceutical, and other chemical storage and production areas
- Flammable chemical storage sites and hazardous waste disposal areas
- Refineries, oil platforms, pipelines, refueling stations, and fuel storage facilities
- Hazardous loading docks, transportation depots, and shipping warehouses
- Engine rooms
- Compressor and pumping stations
- Test cells
- Liquefied natural gas (LNG) - liquefied petroleum gas (LPG) systems
- Offshore floating production storage and offloading (FPSO) and fixed oil rigs

Ordering information

You can order the 935 as separate parts: source (PN 935TXFXXXX), detector (PN 935R1F00XXXX), and accessories.



- Accurate and reliable high-speed response in under three seconds
- Utilizes infrared technology
- High immunity to false alarms
- Easy installation and maintenance

Online product configurator

Many products are configurable online using our product configurator.

See [Emerson.com](https://www.emerson.com) to start. With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

Model codes

Model codes contain the details related to each product.

Exact model codes will vary; examples of typical model codes are shown in [Source \(transmitter\)](#) and [Detector \(receiver\)](#).

Source (transmitter)

935T1F002SA1

Detector (receiver)

935R1F012SA1

Specifications and options

The purchaser of the equipment must specify and select:

- Product materials
- Options
- Components

Source (transmitter)

Model

Code	Description
935	Rosemount 935 Combustible Open Path Gas Detector Source (Transmitter)

Transmitter range

Code	Description
T1	23 to 66 ft. (7 to 20 m)
T2	50 to 132 ft. (15 to 40 m) 3.3 to 23 ft. (1 to 7 m) are supported using the range adapter accessory.
T3	115 to 330 ft. (35 to 100 m)
T4	265 to 660 ft. (80 to 200 m)

Gas calibration

Code	Description
F00	Transmitter

Housing style/conduit

Code	Material	Measurement
2S	Stainless steel	¾-in. NPT
4S	Stainless steel	M25

Approvals

Code	Description
A1	ATEX and IECEx
A2	FM/FMC
E2	INMETRO
EM	TR CU (EAC)

Detector (receiver)

Model

Code	Description
935	Combustible Open Path Gas Detector (Receiver)

Receiver selection

Code	Description
R1	Receiver

Gas calibration

Code	Description
F01	Receiver for combustible gases Methane full scale 5 LEL.m (default)

Housing style/conduit

Code	Material	Measurement
2S	Stainless steel	¾-in. NPT
4S	Stainless steel	M25

Approvals

Code	Description
A1	ATEX and IECEx
A2	FM/FMC
E2	INMETRO
EM	TR CU (EAC)

Accessories

Model	Description
888270	Tilt mount
799255	Wall mount
799225	Pole mount (U-bolt 4 to 5 in.)
888140	Pole mount (U-bolt 2 to 3 in.)
888355-1	Duct mount
888920	Duct converter kit (300 to 900)
888931	Air shield
888263	Protective cover
888820	Auxiliary harness IS/RS 485 and HART®
888810	HART handheld diagnostic kit
794079	USB/RS-485 harness converter kit
888635-1 ⁽¹⁾	Range adapter 3.3 to 8.2 ft. (1 to 2.5 m) Compatible with T2 transmitter model only
888635-2	Range adapter 7.5 to 16.4 ft. (2.3 to 5 m) Compatible with T2 transmitter model only
888635-3	Range adapter 14.7 to 23 ft. (4.5 to 7 m) Compatible with T2 transmitter model only

⁽¹⁾ This option is suitable for ducted installations only.

Specifications

General specifications

Table 1: Model numbers and installation distances

Model number	Detector	Source	Range adapter	Minimum installation distance	Maximum installation distance
935	R1F01XXXX	T2F00XXXX	888635-1	3.3 ft. (1 m)	8.2 ft. (2.5 m)
935	R1F01XXXX	T2F00XXXX	888635-2	7.5 ft. (2.3 m)	16.4 ft. (5 m)
935	R1F01XXXX	T2F00XXXX	888635-3	14.7 ft. (4.5 m)	23 ft. (7 m)
935	R1F01XXXX	T1F00XXXX	N/A	23 ft. (7 m)	66 ft. (20 m)
935	R1F01XXXX	T2F00XXXX	N/A	50 ft. (15 m)	132 ft. (40 m)
935	R1F01XXXX	T3F00XXXX	N/A	115 ft. (35 m)	330 ft. (100 m)

Model number	Detector	Source	Range adapter	Minimum installation distance	Maximum installation distance
935	R1F01XXXX	T4F00XXXX	N/A	265 ft. (80 m)	660 ft. (200 m)

Detected gas	C1-C8 selective gases
Response time	< 2 seconds
Immunity to false alarm	Not influenced by solar radiation, hydrocarbon flames, and other external infrared radiation sources
Sensitivity range	0 to 5 LEL.m methane and propane 0 to 8 LEL.m ethylene
Displacement/misalignment tolerance	±0.5 degrees
Accuracy	±7.5 % of the reading or ±4 % of the full scale (whichever is greater)
Minimum detectable level	0.15 LEL.m
Temperature range	-67 to +149 °F (-55 to +65 °C)
Humidity	Up to 95 % non-condensing (withstands up to 100 % relative humidity for short periods)
Heated optics	To eliminate condensation and icing on the window
Warranty	Three years for detector and source

Electrical specifications

Power supply	24 Vdc nominal (18 to 32 Vdc)
Typical power consumption	- Detector: 220 mA - Source: 240 mA
Warm-up time	30 seconds for transmitter and receiver
Electrical connection (specify)	Two ¾-in.—14 NPT conduits or 2 x M25 x 1.5 mm ISO
Electrical input protection	Per EN50270
Electromagnetic compatibility	Electromagnetic interference/radio frequency interference (EMI/RFI) protected per EN50270

Electrical outputs

0–20 mA current output	• Sink (source option) configuration: maximum load of 500 ohm at 18 to 32 Vdc • Gas reading: 4–20 mA • Normal, zero reading: 4 mA • Maintenance call: 3 mA • Obscuration/beam block: 2 mA • Zero calibration mode: 1 mA • Fault: 0 mA
RS-485 interface-Modbus® compatible	The RS-485 input/output provides complete data information to a personal computer (PC) and receives control commands from the PC or handheld unit.
HART® protocol	HART communication on 0–20 mA analog (FSK)—used for maintenance and asset management.
Visual status indicator	• Front and back visual status indicator⁽¹⁾ • Three color light-emitting diodes (LEDs) Green: Power on Amber: Fault Red: Alarm 

(1) Receiver unit only

Mechanical specifications

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 in. (267 x 130 x 130 mm) • Tilt mount: 4.7 x 4.7 x 5.5 in. (120 x 120 x 158 mm)
Weight	• Detector/source: 11 lb. (5 kg) • Tilt mount: 4.2 lb. (1.9 kg)
Water and dust tight	• IP66 and IP68 • NEMA® 250 6P
Environmental	Per DNVGL-CG-0339
Reliability	SIL2 per IEC61508 (TÜV)

Product certifications

For product certifications, see the *Rosemount 935 Quick Start Guide* on [Rosemount 935 Open Path Combustible Gas Detector](#).

For more information: [Emerson.com](https://www.emerson.com)

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