

Flammable Gas Sensor P/N: 31-R-GAS-FLAMMABLE

Effective: April 2026
K-31-502 Revision AE

Description

The 31-R-GAS-FLAMMABLE sensor is a calibration-free sensor that is designed to detect the presence and measure the concentration of specific gases in nonhazardous critical facilities. The sensor's RS485 address may be set by the user (with 254 addresses available).

Note: Use of all the available features of the 31-R-GAS-FLAMMABLE sensor requires the firmware version 4.33 or later on the sensor itself. To connect the sensor to a base unit, the base unit requires firmware version 9.3.1 or greater.

The following certifications and calibrations are available for the 31-R-GAS-FLAMMABLE sensor:

Certifications
CSFM Listing Number 5275-1076:0517, Intertek ETL Listed to UL-2075

Environmental Specifications

Calibration-free Gas Sensing Component:

Operating Temperature Range	-40°C to 75°C (-40°F to 167°F)
Humidity (Operating and Storage)	0 to 100% RH (non-condensating) ¹
Life Span	Up to +10 yrs
<small>1: See K-31-501 for additional information regarding relative humidity environments..</small>	

Methane (CH₄) Gas Sensing Component:

Operating Temperature Range	-40°C to +70°C (-40°F to +158°F)
Humidity (Operating and Storage)	< 90% RH (non-condensating)
Life Span	Up to 5 yrs

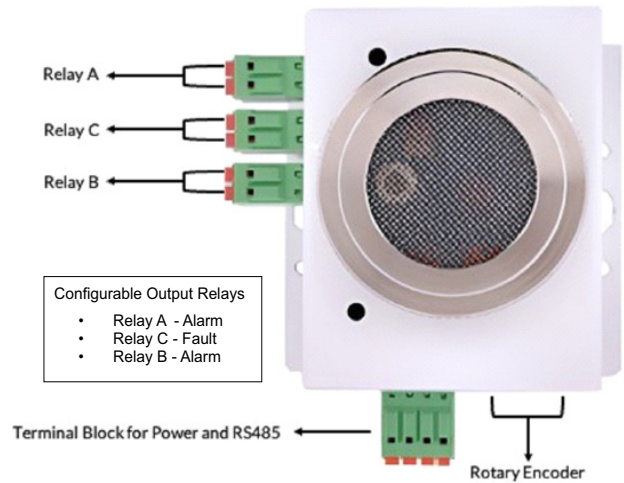


Sensor Metrics

Internal temperature measurement range	-40°C to 125°C
Internal temperature accuracy	±0.48°C (0.86 °F)
Internal relative humidity measurement range	0 to 100% RH
Internal relative humidity accuracy	2% RH
VOC measurement output range	0-500 VOC Index
VOC repeatability	<±5 VOC index points or % mass volume (m.v.)
Butane (C₄H₁₀) accuracy	±5 %LEL
Ethane (C₂H₆) accuracy	±5 %LEL
Hydrogen (H₂) accuracy	±5% LEL
Isobutane (CH₃) accuracy	±5 %LEL
Methane (CH₄) accuracy	±5 %LEL
Octane (C₈H₁₈) accuracy	±12 %LEL
Pentane (C₅H₁₂) accuracy	±5 %LEL
Propane (C₃H₈) accuracy	±6 %LEL
Propylene (C₃H₆) accuracy	±5 %LEL
Toluene (C₇H₈) accuracy	±12 %LEL
Xylene (C₈H₁₀) accuracy	±12 %LEL
Response time (T₉₀)	<30s
Detection Range	0-100 %LEL
Detection method	Spectrometer

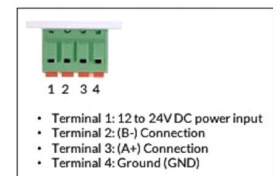
Technical Specifications

Relay outputs	3 (Normally Open)
Relay switching current	up to 0.5A
Input Voltage	12-24v DC ¹
Power usage	672mW
Protocol	Modbus RTU over RS485
	Integration with BASE-XX over RJ45 (serial data)
¹CAUTION:	
The sensor is designed with a dedicated safety zone between 15-20V. If the input voltage falls within this range, use a Zener diode to bring the voltage below 14V to ensure proper operation and protect internal components. If the power source exceeds the rated voltage (24V ±10%) install a Zener diode on the input terminal block to bring the voltage down to 24V. Exceeding the rated voltage may damage the methane gas detection component.	

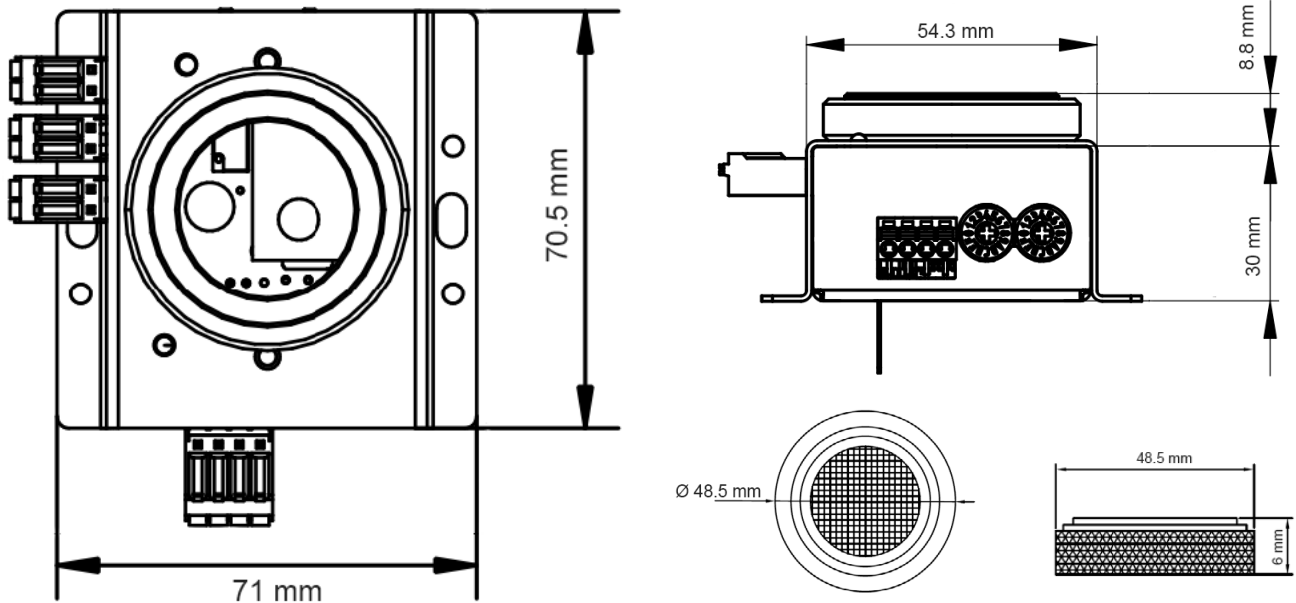


Physical Specifications

Sensor Enclosure	Steel enclosure, industrial grade
Mounting Option	0U rack, DIN rail or wall mountable
Dimensions	71mm (2.79") x 70.5mm (2.77") x 30 mm (1.18")
Weight	193g (0.43lb)



Dimensions



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