

# LABWAN Smart Sense Gas Detector



## Product Description

LABWAN Advanced fixed gas detection transmitter designed for continuous monitoring of hazardous gases in industrial environments. Engineered for reliable performance, high accuracy, and robust field operation.

## Features

- Bright OLED Display
- Explosion Proof Flameproof Housing
- Smart Digital Gas Transmitter
- Non-Intrusive Calibration
- MODBUS RS-485 Communication
- 4-20mA Analog Output
- Two User Settable Alarms
- Tri-color LED Status Indication
- Industrial Grade Design
- Continuous Gas Monitoring
- IP66 Protection
- Wall Mountable Design
- Microcontroller Based System
- Easy Configuration via Magnetic Wand
- High Accuracy and Stability
- Field Replaceable Smart Sensor
- Suitable for Hazardous Industrial Areas



## Application Areas

- Oil & Gas Industries
- Chemical Plants
- Refineries
- Pharmaceutical Industries
- Fertilizer Plants
- Petrochemical Industries
- Boiler Rooms
- Industrial Safety Systems
- Hazardous Area Monitoring

## Certifications & Quality Compliance

ISO 9001:2015 Certified Firm

CE Complied – LVD 2014/35/EU

CCOE / PESO / CMRI Approved Product

## Technical Specifications

Code	Gas Name	Range	Resolution	Type
L010A	Oxygen	0 - 25% V/V	0.1% V/V	EC
L015A	Ozone	0 - 1 PPM	0.01 PPM	EC
L020A	Carbon Monoxide	0 - 1000 PPM	1 PPM	EC
L021A	Carbon Disulfide	0 - 100 PPM	1 PPM	EC
L022A	Vinyl Chloro Monomer*	0 - 100 PPM	1 PPM	EC
L023A	Styrene*	0 - 100 PPM	1 PPM	EC
L024A	Acrylonitrile*	0 - 100 PPM	1 PPM	EC
L025A	Carbon Dioxide	0 - 5% V/V	0.01% V/V	NDIR
L025B	Carbon Dioxide	0 - 100% V/V	1% V/V	NDIR
L030A	Hydrogen Sulfide	0 - 100 PPM	1 PPM	EC
L035A	Mercaptan	0 - 20 PPM	0.1 PPM	EC
L040A	Sulphur Dioxide	0 - 20 PPM	0.1 PPM	EC
L050A	Phosphine	0 - 10 PPM	0.01 PPM	EC
L055A	Phosgene	0 - 1 PPM	0.01 PPM	EC
L060A	Chlorine	0 - 20 PPM	0.1 PPM	EC
L061A	Bromine	0 - 20 PPM	0.1 PPM	EC
L070A	Hydrogen Chloride	0 - 20 PPM	0.1 PPM	EC
L071A	PCl <sub>3</sub> *	0 - 10 PPM	1 PPM	EC
L072A	Hydrogen Fluoride	0 - 10 PPM	0.1 PPM	EC
L073A	POCl <sub>3</sub> *	0 - 20 PPM	1 PPM	EC
L075A	Hydrogen Cyanide	0 - 100 PPM	1 PPM	EC
L081A	Nitrogen Dioxide	0 - 20 PPM	0.1 PPM	EC
L082A	Ammonia	0 - 100 PPM	1 PPM	EC
L082B	Ammonia	0 - 1000 PPM	1 PPM	EC
L090A	Hydrogen	0 - 1000 PPM	1 PPM	EC
L090B	Hydrogen	0 - 100% LEL	1% LEL	EC
L090C	Hydrogen	0 - 100% LEL	1% LEL	Catalytic
L098A	Formaldehyde*	0 - 10 PPM	1 PPM	EC
L099A	HC (Methane)	0 - 100% LEL	1% LEL	Catalytic
L099B	LPG	0 - 100% LEL	1% LEL	Catalytic
L099C	Acetylene	0 - 100% LEL	1% LEL	Catalytic
L099D	Butanol	0 - 100% LEL	1% LEL	Catalytic
L099E	Methane	0 - 100% LEL	1% LEL	NDIR
L099F	Methane	0 - 100% V/V	1% V/V	NDIR
L099G	HC (Methane)*	500 - 10000 PPM	10 PPM	Solid State
L099H	Hydrocarbon*	50 - 1000 PPM	1 PPM	Solid State
L100A	VOC (Isobutylene)	0 - 1000 PPM	1 PPM	PID
L100B	VOC (Isobutylene)	0 - 4000 PPM	1 PPM	PID

## SENSOR MODULE

### Catalytic Gas Sensor

The LABWAN Gas Leak Detector is equipped with a high-performance catalytic gas sensor designed for reliable detection of flammable and toxic gases in industrial environments.

The sensor offers high accuracy, excellent durability, long-term stability, fast response time, and linear output performance, ensuring dependable gas monitoring and safety protection.

The sensor cap contains a built-in adsorbent material, which helps minimize cross-sensitivity to organic vapours. It also provides strong resistance against silicone compounds, making it suitable for use in harsh and demanding industrial conditions.

### Features

- Linear Output
- Long Operational Life
- Small Sensitivity to Organic Vapors
- High Accuracy and Stability
- Quick Response and Recovery
- Suitable for Continuous Monitoring

### Applications

- Hydrogen Leak Detection
- Combustible Gas Monitoring
- Fuel Cell Systems
- Industrial Gas Safety
- Hazardous Area Monitoring

### Sensor Characteristics

- Excellent Stability
- Fast Response Time
- Low Cross Sensitivity
- Durable Against Silicone Compounds
- Reliable Performance in Harsh Environments

### Sensitivity Characteristics

- High sensitivity towards Hydrogen, Methane, Propane, Iso-butane, LNG, PNG and CNG.
- Linear output response across gas concentration range.
- Stable sensing performance under standard operating conditions.

## Temperature Dependency

- Stable sensor output across varying ambient temperatures.
- Reliable operation at 65% RH conditions.
- Maintains accurate response in industrial environments.

## Basic Measuring Circuit

The sensor is comprised of two elements:

Sensitive element (D) which is sensitive to combustible gases  
Reference element (C) which is not sensitive to combustible gases

These elements are installed into a “Wheatstone Bridge”. A variable resistor should be adjusted so that the bridge produces a stable baseline signal when operating in an environment free of combustible gases.

When combustible gases are present, they are combusted on the detecting element, causing its temperature to rise. Accordingly, the resistance of this element increases. This results in an “out-of-balance” signal across the bridge and a corresponding change in output voltage which can be measured.



## Technical Specifications

Parameter	Specification
Sensing Element Type	Catalytic
Target Gases	Hydrogen, Methane, Propane, Iso-butane, LNG, PNG and CNG
Detection Range	0-100% LEL
Operating Voltage	3.0 ±0.1V AC/DC
Heater Current	175mA Typical
Heater Power Consumption	525mW Typical
Operating Temperature	-10°C to +70°C
Storage Temperature	-10°C to +80°C
Operating Humidity	≤95% RH



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