

LW-300 LABWAN SMART SENSE GAS DETECTOR

PRODUCT DESCRIPTION

- **LABWAN Smart Sense Gas Detector** is an advanced fixed gas detection transmitter designed for continuous and reliable monitoring of hazardous gases in industrial and safety-critical environments. It is engineered to provide high accuracy, stable performance, and fast gas detection for effective workplace safety and environmental monitoring. The robust industrial-grade construction, explosion-proof flameproof housing, IP66 protection, and wall-mountable design make it suitable for demanding field conditions.
- The detector features a bright OLED display, smart digital gas transmitter, non-intrusive calibration, tri-color LED status indication, two user-settable alarms, 4–20 mA analog output, and MODBUS RS-485 communication for easy integration with industrial monitoring and control systems. Its microcontroller-based system and magnetic-wand configuration enable convenient operation and parameter adjustment without intrusive access.
- With a field-replaceable smart sensor, high accuracy, and continuous monitoring capability, LABWAN Smart Sense Gas Detector is suitable for applications across oil & gas, chemical plants, refineries, pharmaceutical industries, fertilizer plants, petrochemical facilities, boiler rooms, industrial safety systems, and hazardous-area monitoring.



FEATURES

- **Bright OLED Display:** Clear and easy-to-read gas readings.
- **Flameproof Housing:** Safe for hazardous industrial environments.
- **Smart Digital Transmitter:** Accurate and reliable gas monitoring.
- **Non-Intrusive Calibration:** Easy calibration without opening the enclosure.
- **MODBUS RS-485:** Easy integration with PLC/SCADA systems.
- **4–20 mA Output:** Standard industrial analog signal.
- **Dual User Alarms:** Configurable alarm limits for safety.
- **Tri-Color LED:** Quick visual status indication.
- **Industrial Grade Design:** Durable construction for continuous operation.
- **Continuous Monitoring:** Real-time gas detection.
- **IP66 Protection:** Resistant to dust and water ingress.
- **Wall Mountable:** Easy and secure installation.
- **Microcontroller Based:** Reliable digital processing.
- **Magnetic Wand Configuration:** Safe, non-contact setup.
- **High Accuracy & Stability:** Consistent and dependable measurements.
- **Replaceable Smart Sensor:** Easy field replacement and maintenance.
- **Hazardous Area Suitable:** Designed for demanding industrial applications.

APPLICATION/USES

- | | |
|---------------------------------|---|
| • Oil & Gas Industries | • Gas Storage & Distribution Facilities |
| • Chemical Plants | • LPG / CNG Stations |
| • Refineries | • Power Plants |
| • Pharmaceutical Industries | • Steel & Metal Industries |
| • Fertilizer Plants | • Food & Beverage Processing Plants |
| • Petrochemical Industries | • Wastewater Treatment Plants |
| • Boiler Rooms | • Mining & Underground Facilities |
| • Industrial Safety Systems | • Laboratories & Research Facilities |
| • Hazardous Area Monitoring | • Cold Storage & Refrigeration Plants |
| • Industrial Process Monitoring | • Fire & Gas Detection Systems |

**ISO 9001:2015
Certified Firm**

**CE Complied –
LVD 2014/35/EU**

**CCOE / PESO /
CMRI Approved
Enclosure**

**ISO 9001:2015
Certified**

**ISO 13485:2016
Certified**

CE/UL Compliant

US FDA Compliant

**EC 60601-1-
2:2014 Compliant**

Technical Specification

GENERAL

Parameter	Specification
Sensor Technology	Electrochemical / Catalytic / Pellistor / NDIR / PID / Solid State
Detection Method	Diffusion
Gas Detected	(Please select gas as specified in the table)
Range & Resolution	(Please select Range & Resolution as specified in the table)
Display	OLED Display 4 LED to indicate status of instrument
Control Action	Two independent Alarm set points .
Setting	Magnetic and without opening enclosure coer

ELECTRICAL

Parameter	Specification
Supply Voltage	18 to 36 VDC Typically 24 VDC
Power Consumption	Less than 1.5 Watts
Connector Cross-section	1.5 mm for Flexible or Armoured Shielded Cable

PERFORMANCE

Response Time : Less than 15 seconds (Depending on type of gas)

ENVIRONMENTAL

Parameter	Specification
Operating Temperature	-15 to +55 C
Storage Temperature	-10 to 60 C
Humidity	Less than 95% Non-Condensing

Technical Specification

ACCURACY

SR. NO	Sensor Technology	Range	Calibration Accuracy
1	Electrochemical	–	±2% F.S
2	Catalytic / Pellistor	–	±2% F.S

OUTPUT SIGNAL

Parameter	Specification
Standard Current / Voltage	4–20 mA output with configurable range selection
Current Output Capacity	±0.1% Full Scale
Optional Relay	Two SPDT Relay (one for Fail Safe and Two for Alarm indication) of rating: NO: 10A 250VAC / 5A 30VDC & NC: 3A 125VAC / 3A 30VDC
Display	OLED Display & 4 L.E.D.s to indicate status of instrument
Optional Communication	Isolated RS-485 Communication port with MODBUS RTU protocol

GAS WITH RANGE & RESOLUTION

ELECTROCHEMICAL SENSOR TECHNOLOGY

SR.NO	GAS	RANGE	UNIT	RES
O1	Oxygen (O ₂)	25	%V/V	0.01
O2	Oxygen (O ₂)	0–100	%V/V	0.1
NT1	Nitrogen (N ₂)	0–100	%V/V	0.01

NDIR SENSOR TECHNOLOGY

SR.NO	Gas	Range	Unit	Resolution
N1	Carbon Dioxide (CO ₂)	5000	PPM	1
N2	Carbon Dioxide (CO ₂)	5	%V/V	0.01
N3	Carbon Dioxide (CO ₂)	100	%V/V	0.1

NDIR SENSOR TECHNOLOGY

SR.NO	GAS	RANGE	UNIT	RES
T1	Ammonia (NH ₃)	1000	PPM	1
T2	Ammonia (NH ₃)	100	PPM	1
T3	Bromine (Br ₂)	20	PPM	0.001
T4	Carbon Monoxide (CO)	500	PPM	1
T5	Carbon Monoxide (CO)	1000	PPM	1
T6	Chlorine (Cl ₂)	10	PPM	0.1
T7	Ethylene Oxide (ETO)	100	PPM	1
T8	Hydrogen (H ₂)	100	PPM	1
T9	Hydrogen Bromide (HBr)	20	PPM	1
T10	Hydrogen Chloride (HCl)	20	PPM	1
T11	Hydrogen Cyanide (HCN)	100	PPM	1
T12	Hydrogen Fluoride (HF)	10	PPM	0.001
T13	Hydrogen Sulfide (H ₂ S)	100	PPM	1
T14	Hydrogen Sulfide (H ₂ S)	200	PPM	1
T15	Ozone (O ₃)	5	PPM	0.001
T16	Phosphine (PH ₃)	10	PPM	0.1
T17	Nitrogen Dioxide (NO ₂)	20	PPM	0.1
T18	Nitric Oxide (NO)	250	PPM	1
T19	Sulfur Dioxide (SO ₂)	20	PPM	0.1
T20	Sulfur Dioxide (SO ₂)	100	PPM	1

COMBUSTIBLE GASES

SR.NO	Gas	Range	Unit	Resolution
C1	Acetone (CH ₃) ₂ CO	100	%LEL	1
C2	Acetylene (C ₂ H ₂)	100	%LEL	1
C3	Ammonia (NH ₃)	100	%LEL	1
C4	Butane / n-Butane (C ₄ H ₁₀)	100	%LEL	1
C5	Carbon Monoxide (CO)	100	%LEL	1
C6	Ethanol (C ₂ H ₅ OH)	100	%LEL	1
C7	Ethyl Acetate (C ₄ H ₈ O ₂)	100	%LEL	1
C8	Ethylene (C ₂ H ₄)	100	%LEL	1
C9	Hexane / n-Hexane (C ₆ H ₁₄)	100	%LEL	1
C10	Hydrogen (H ₂)	100	%LEL	1
C11	Isopropanol (CH ₃ CHOHCH ₃ / C ₃ H ₈ O)	100	%LEL	1
C12	Methane (CH ₄)	100	%LEL	1
C13	Methyl Ethyl Ketone (CH ₃ COC ₂ H ₅)	100	%LEL	1
C14	Methanol (CH ₃ OH)	100	%LEL	1
C15	n-Heptane (C ₇ H ₁₆)	100	%LEL	1
C16	n-Pentane (C ₅ H ₁₂)	100	%LEL	1
C17	Pentane / n-Pentane (C ₅ H ₁₂)	100	%LEL	1
C18	Propane / n-Propane (C ₃ H ₈)	100	%LEL	1
C19	Toluene (C ₆ H ₅ CH ₃)	100	%LEL	1
C20	Unleaded Petrol	100	%LEL	1
C21	CNG / LNG / LPG / Natural Gas / Flammable Gas	100	%LEL	1

Accessories (Optional)

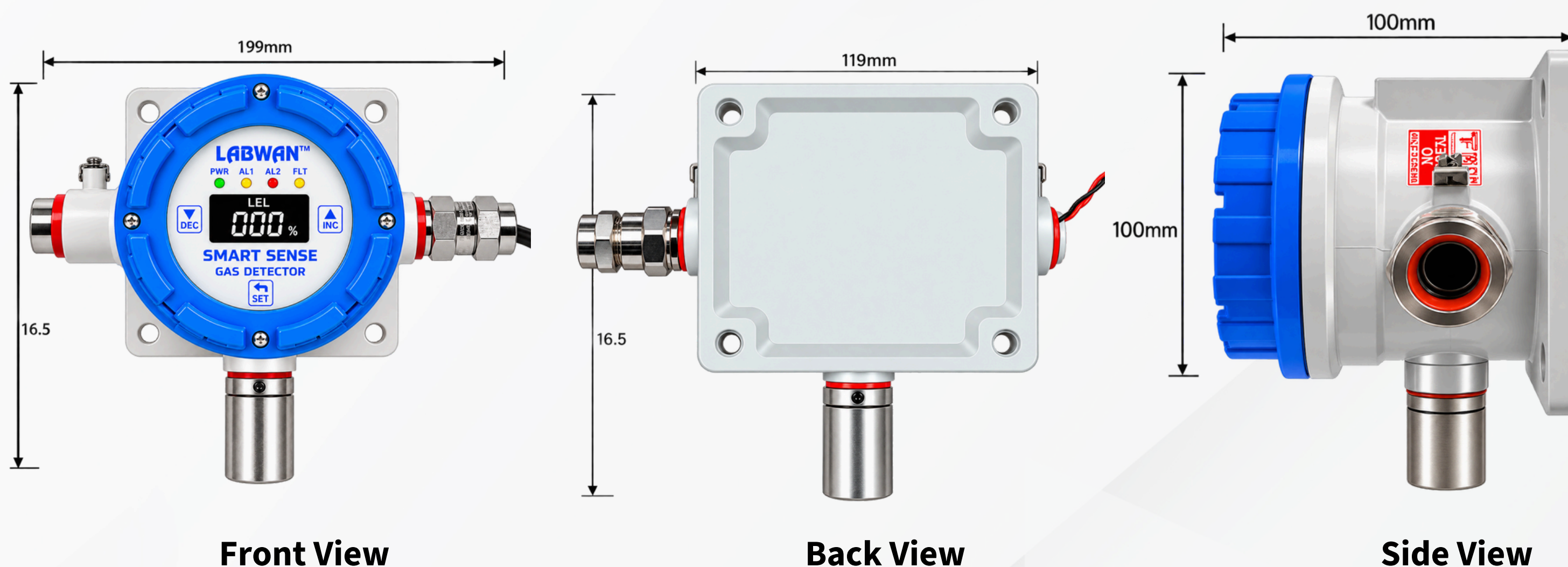
1. CE certified 24VDC Power Supply
2. Canopy & Mounting Stand
3. Gas Calibration Kit (0.5, 1, 3, 10) Liter
4. Hooter Cum Flasher; P.46928/3 Dt: 21/02/2020
5. Gas Sampling & Conditioning System

Common Deliverable

1. Test Calibration Certificate
2. Reference Calibration Gas Certificate
3. 'Operational / Instrument' User Manual
4. Standard Mounting Hardware

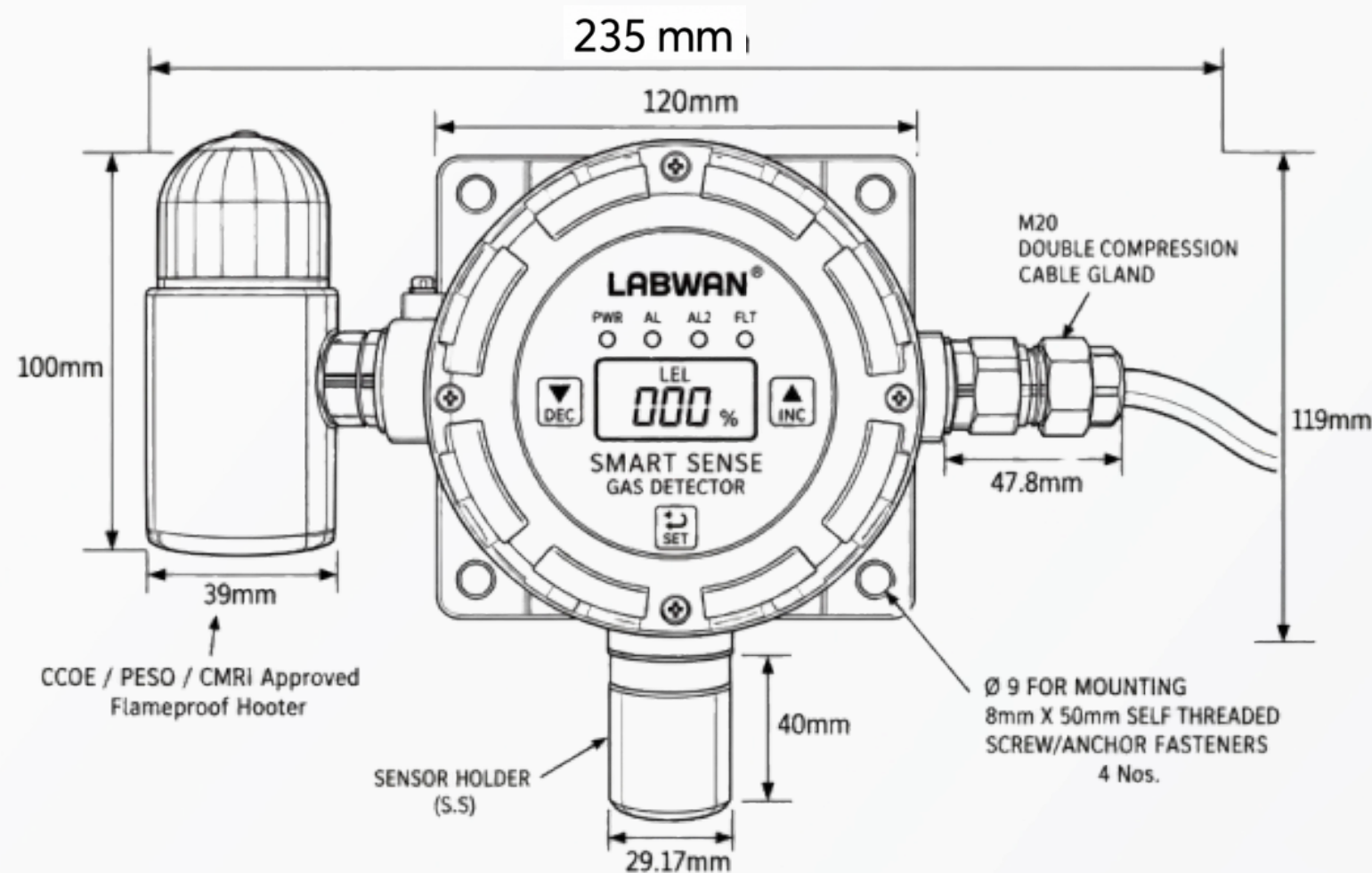
DIMENSION WITHOUT HOOTER

Dimension	100 mm (H) with sensor holder x 185 mm (W) x 170 mm (D)
Weight	Approx. 1.3 kg

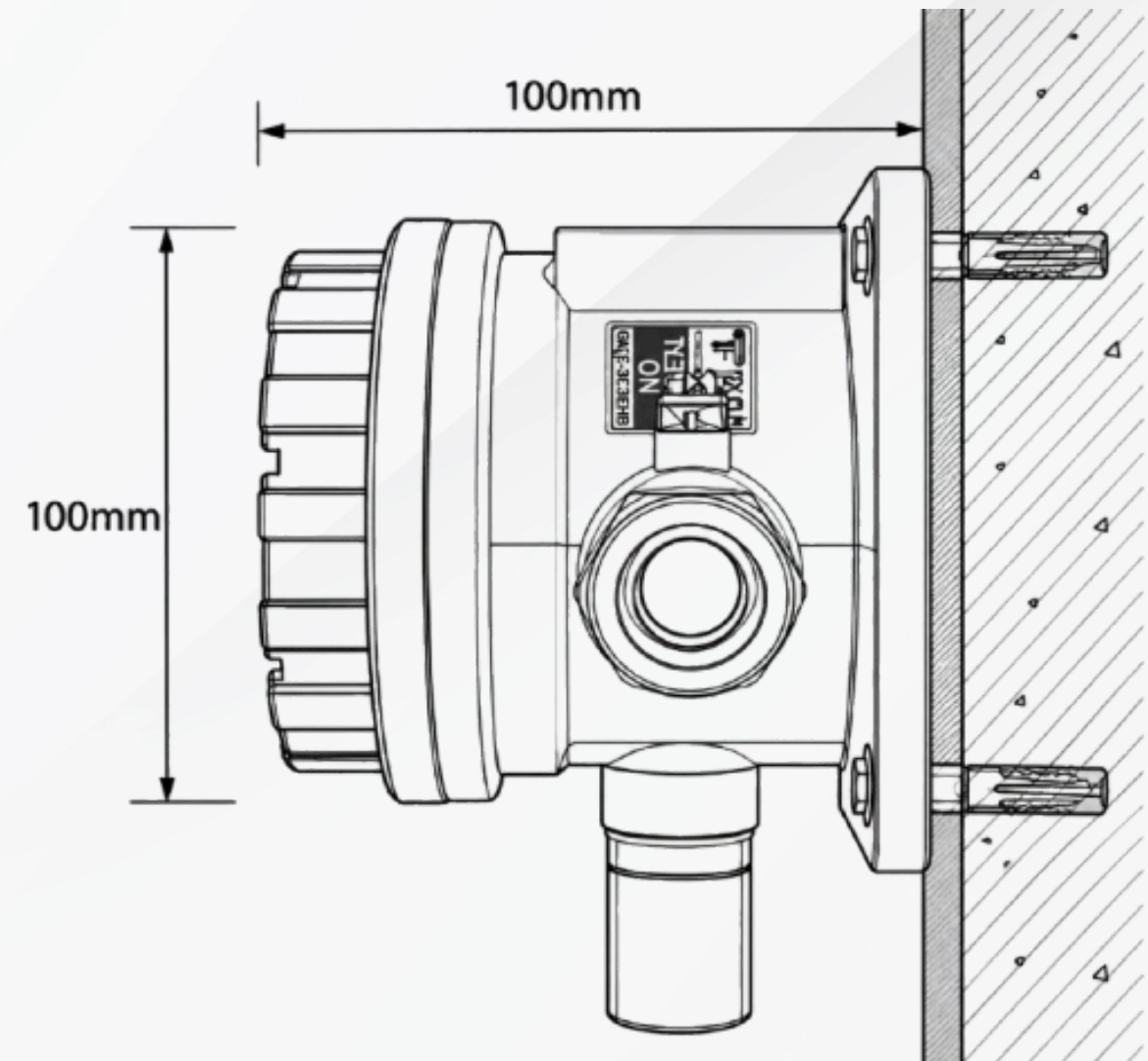


DIMENSION WITH HOOTER

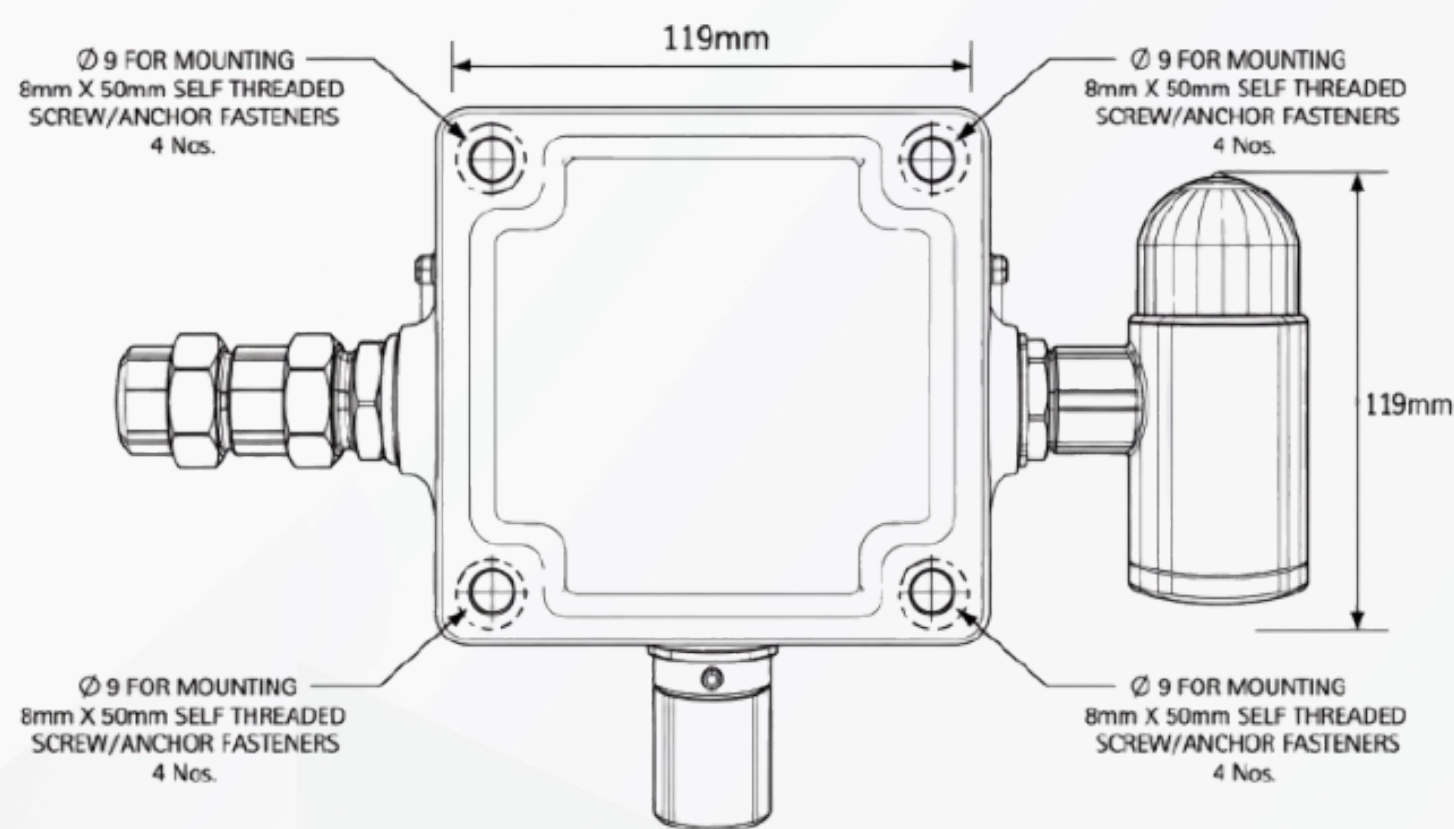
Dimension	100 mm (H) with sensor holder x 240 mm (W) x 170 mm (D)
Weight	Approx. 1.7 kg



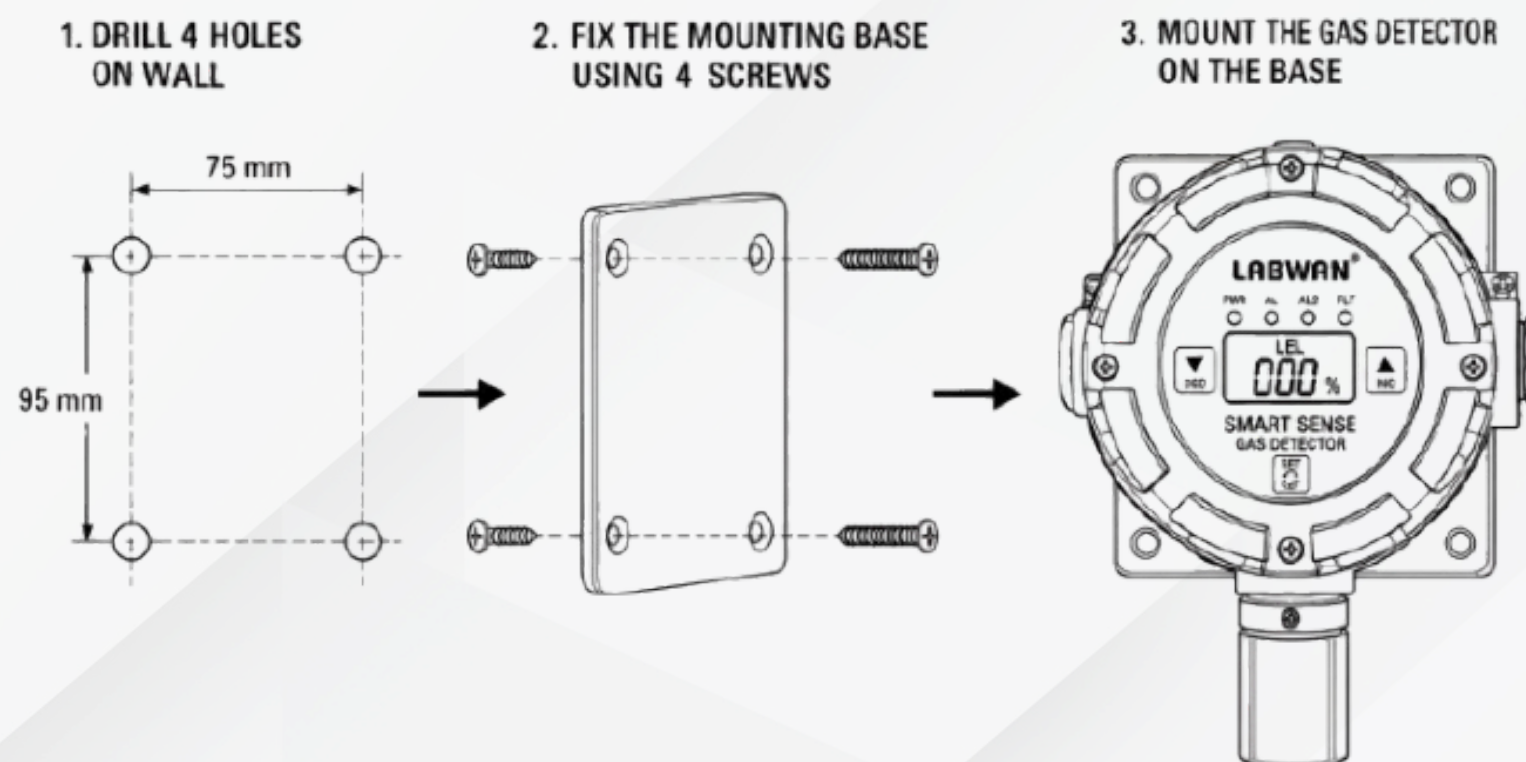
Front View



Side View



WALL MOUNT INSTALLATION DIAGRAM



CERTIFICATIONS & QUALITY COMPLIANCE

1. ISO 9001:2015 Certified Firm
2. ISO 13485:2016 Certified
3. CE Compliant – LVD 2014/35/EU
4. UL Compliant
5. US FDA Compliant
6. IEC 60601-1-2:2014 Compliant
7. CCOE / PESO / CMRI Approved Enclosure