



# Portable Hydrogen Leak Detector

Sensitivity, Selectivity, Accuracy and Responsiveness with Peak Precision and Shortest Response Time

# Incredibly precise and fast response time at close proximity.

## Our Portable Hydrogen Leak Detector is powered by patented Solid State Electrochemical Sensor Technology and Novel Reference Electrode

### Product Features:

**Technology:** Patented Solid State Electrochemical Hydrogen Sensor with Solid Electrolyte and Novel Reference Electrode.

**Extremely Compact Design:** Weighing less than 500 grams.

**Selective and Specific:** Detects hydrogen selectively, even in the presence of multiple background gases.

**Sub-second Response Time:** T20 to T90 in 0.5 seconds to 2.5 seconds.

**Wide Operating Range:** Options starting from ppm level to 10% H2 v/v.

**Damage Resistant:** Withstands over-exposure to hydrogen and high humidity.

**Operating Life:** 4-5 years

**Audio Visual Interaction:** Provides local display, flashing red LED, and buzzer for effective alerts.

**Advanced Performance:** Delivers high sensitivity, resolution, accuracy, and repeatability with fast recovery.

**Long Duration Battery Backup:** Features a fully charged battery that supports 24 hours of continuous operation.

**Probe Extension:** Allows configuration of custom-length probe extensions for versatile usage.

**Enclosure:** IP65 ABS plastic enclosure.

### Product and Service Benefits

**Enhanced Safety:** Allows pinpointing very low-level leaks at early stages for proactive intervention.

**Enhanced Operator Efficiency:** Reduces leak checking time by 10X compared to traditional H2 detectors, thanks to sub-second response and recovery.

**Design Advantage:** Compact and easy to handle, featuring an extended and flexible probe design for insertion into space-constrained locations.

**No Damage on Over-Exposure:** Sensor can be placed close to the leak source without concerns about damage.

**Cost Savings:** Prevents unnecessary downtime with no false alarms, leading to operational cost savings.

**Comprehensive AMC:** Offers periodic calibration and cashless product replacement beyond the warranty period.

**Product Upgrade Plans:** Provides buyback options for upgrading safety systems with the latest and best-in-class offerings.

### Pin-point very low levels of leak at very early stages

### Technical Specification

**Hydrogen Concentration Terminology Conversion Table for Ease of Reference**  
Hydrogen Lower Explosive Limit (‘LEL’) – 4% H2 v/v in Air

250% H2 LEL = 10% H2 v/v in Air = 1,00,000 ppm H2 v/v  
100% H2 LEL = 4% H2 v/v in Air = 40,000 ppm H2 v/v  
25% H2 LEL = 1% H2 v/v in Air = 10,000 ppm H2 v/v  
125% H2 LEL = 5% H2 v/v in Air = 50,000 ppm H2 v/v  
50% H2 LEL = 2% H2 v/v in Air = 20,000 ppm H2 v/v  
1% H2 LEL = 0.04% H2 v/v in Air = 400 ppm H2 v/v

Performance Parameters	Selectable Parameters					
Selectable Range	Range values are defined as H2 v/v in Background Gas					
	Range 1		Range 2		Range 3	
Start	0 ppm		0%		0%	
Span	5000 ppm		5%		10%	
Resolution	1 ppm		0.002% (20 ppm)		0.005%	
MDL	5 ppm		0.002%		(50 ppm) 0.005%	
Accuracy (MV=Measured Value)	± (10 ppm + 2% of MV)		± (20 ppm + 2% of MV)		± (50 ppm + 2% of MV)	
Selectable Output Signal	Air	Helium	Nitrogen	Argon	Combustibles	Vacuum
Selectable Probe	Rigid bent neck probe					
	Rigid probe extension					

Common Features	Specifications
Start-Up Time	5 seconds warm up time.
Response Time	T20 to T90 in 0.5 seconds to 2.5 seconds
Reading Update Time	Readings update in every 1 second
Cross Sensitivity	No cross-sensitivity to other combustible and reducing gases
Over-Exposure Impact	<b>No damage on short term exposure to even 100% pure Hydrogen</b> 1. In-house lab tested for 15 second exposure to 100% pure Hydrogen. 2. In-house lab tested for 5 minutes exposure to 40% Hydrogen in Nitrogen. 3. In-house lab tested for 10 minutes exposure to 20% Hydrogen in Methane.
Operating Temperature	-20° to +65°C
Storage Temperature	-20° to +65°C
Operating Pressure	1 Bar to 1.2 Bar
Operating Humidity	Up to 98% RH at 40°C (Non-condensing) for sensor probe.
Storage Conditions	0°C to +45°C. RH% < 90%. Store in a cool and dry place. Device must be stored in power OFF mode.
Area of Deployment	Safe Area/ Non-Hazardous Area.
Power & Charger	Piano switch to turn the device ON / OFF. Rechargeable battery operating at 3.7V with 1,150mAh capacity. Charger: Switch Mode, I/P 100- 300V AC, 50/60 Hz, O/P 5.5 V DC,750mA, Barrel Type (2 mm).
Sleep Mode	The device has a power saving feature to turn off the backlight upon 10 minutes of inactivity. Wake button can be used to bring the device into operating mode
Battery Support Period	The device can operate for 24 hours continuously, when fully charged. Device must be switched OFF during charging.
Display & Readout	4-line, graphical LCD display: Line 1: Selected FS range indication, over range indication and battery status Line 2: Tare status Line 3: Concentration readout of H2 in XXXX PPM or X.XXX % Line 4: Concurrent bar graph for %FS
Audio Indication	Internal buzzer with beeping frequency proportional to the concentration of Hydrogen sensed.
Visual Indication	Flashing red LED.
Membrane Key Controls	<b>Multi-function membrane keyboard:</b> 1. Arise from Auto-Sleep Mode 2. Highest reading in a cycle 3. Tare On/Off 4. Programmable memory switch 5. Toggling button 6. Selection button
Display Enclosure	Hand held display unit is a rugged and sleek plastic body with membrane keypad.
Dimensions	165 mm x 85 mm x 30 mm
Material of Construction	ABS Plastic
Weight	~ 220 grams
Ingress Protection	IP 65 as per IS/IEC 60529:2001
Sensor Probe	The sensor probe is made of light metallic front end, sturdy metallic neck and a plastic handle for ergonomic usage.
Dimensions	Ø24mm x 250mm (including the bent neck). Probe length can be customized as per requirement.
Probe Connecting Cable	2 feet cable to connect the probe handle with the hand held display unit.
Sensing Surface Position	Sensor is housed at the tip of the probe for ultra-high sensitivity and suction free operation.
Gas Exposure Method	Diffusion. Gas exposure aperture Ø 2mm.
Weight	~ 250 grams
Calibration Interface	In-built calibration routine controlled using the membrane keys. Zero and Span calibration can be performed using ambient air and certified calibration gas mixture (appropriate concentration of Hydrogen in appropriate background gas) respectively.
Calibration Periodicity	Recommended cycle: Once in every 6 months for high accuracy applications. Mandatory cycle: Once in every 12 months.
Calibration Procedure	The sensor can be calibrated within 10 minutes using our Gas Calibration Setup. Detailed procedure shall be shared along with the product.

### Product Ordering Nomenclature

\*User can select from the options given in this catalogue

Product specifications are subject to change without prior notice or approval. The product image displayed in the catalogue may be in minor variance with the actual product.

PORTaHY	H2	LD	XX*
Product Series Name	Target Gas	Leak Detector	Range Full Scale 5K - 5,000 PPM H2 v/v 5% - 5% H2 v/v 10% - 10% H2 v/v



# Exciting developments are on the horizon!



## Use Cases

### Industries:

Oil & Gas, Power Generation & Transmission, Petrochemicals, Fertilizers, Pharmaceuticals, Chemicals, Nuclear Research, and Steel.

### Electrolysers:

PEM, Alkaline, SOEC and other burgeoning technologies

### Fuel Cells: PEM and SOFC

### Hydrogen Supply Chain:

Transport Pipelines, Containers, Storage Sites, Tankers, and Fuelling Pumps

### Battery Rooms:

Flooded or VRLA Lead Acid and Nickel cadmium battery banks in industries and Datacentres, Submarines, Ships, Forklifts and Heavy Equipment.

### Strategic Sectors:

Space Exploration, Nuclear Research, Defence, and R&D

### New Age Applications:

Ships, Aircrafts, Backup Generators, Biomass to H<sub>2</sub>, H<sub>2</sub>-PNG Blending, Other Green Hydrogen Production Techniques



## Find out more:

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## Please Note:

We have made every effort to accurately represent the information about our product. However, please note that some details may be subject to change without prior notice.