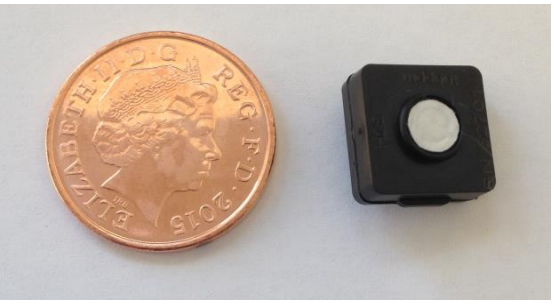
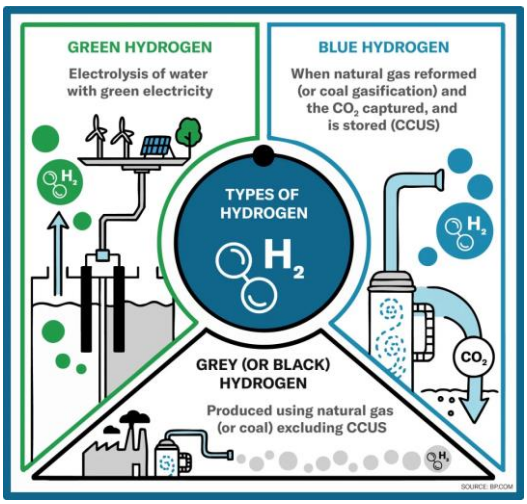
H2 SS SENSOR – MICRO SOLID STATE HYDROGEN 5000PPM





FEATURES

- Micro size ideal for portable, fixed, wireless and digital gas detection applications
- High sensitivity, fast response with low noise
- Solid state long lifetime technology of greater than 5 years without risk of leakage
- Extreme linear response
- Low or no cross-interference with other environmental gases. No poisoning
- Typical warm up time in seconds
- nA power consumption
- No zero line drift
- Wide temperature range with excellent sensitivity at low temperatures
- Low resolution and detection limit

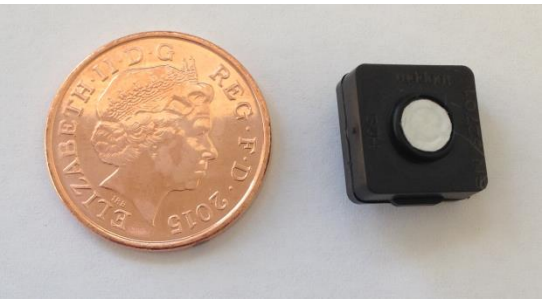
TYPICAL APPLICATIONS

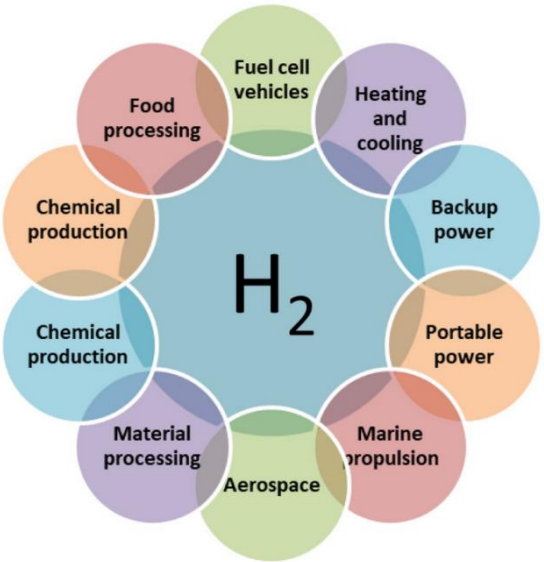
- Industrial health & safety
- Hydrogen leakage & safety monitoring
- Hydrogen energy & engineering
- Hydrogen industrial plants
- Medical, health care & breath monitoring
- Hydrogen monitoring in battery rooms
- Environmental & emissions monitoring
- Gas manufacturing & process monitoring
- Fire safety
- Semiconductor industry
- Power transformers
- Propellent detection

EURO-GAS MANAGEMENT SERVICES LTD, CHURSTON HOUSE, BASCOMBE ROAD, CHURSTON FERRERS, DEVON, TQ5 0JJ, UK
☎: +44 (0)1803 844414
sales@euro-gasman.com www.euro-gasman.com

EURO-GAS
MANAGEMENT SERVICES LTD

H2 SS SENSOR – MICRO SOLID STATE HYDROGEN 5000PPM





SPECIFICATION

Measuring Principle: Amperometric, 3-electrode sensor

Detectable Gases: Hydrogen H2

Standard Range: 0 – 5000ppm H2

Optional Ranges on request: 0-1000ppm, 0-20,000ppm (2% vol), 0-50,000ppm (5% vol) H2

Maximum Over-Range: 20,000ppm H2

Sensitivity: 3 ± 2 nA/ppm

Zero current at normal conditions: ± 5 nA
Measured value for zero current depends on potentiostat electronics.

Response Time (T_{50}): < 10 seconds

Response Time (T_{90}): < 30 seconds

Sensor Warm-Up Time: < 60 seconds

Repeatability: 1 % typically

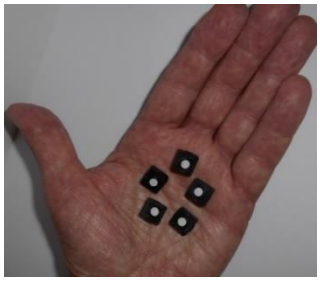
Resolution (16 Bit ADC): 1ppm
Minimum recommended resolution for a 16Bit ADC.

Lower Detectable Limit (LDL): 1ppm

Linearity: Linear

Long-Term Sensitivity Drift: < 5% / year
Long-Term drift may vary depending on storage conditions, application, environment and usage.

Expected Operating Life: > 5 years



EURO-GAS MANAGEMENT SERVICES LTD, CHURSTON HOUSE,
BASCOMBE ROAD, CHURSTON FERRERS, DEVON, TQ5 0JJ, UK
☎: +44 (0)1803 844414
sales@euro-gasman.com www.euro-gasman.com

EURO-GAS
MANAGEMENT SERVICES LTD

H2 SS SENSOR – MICRO SOLID STATE HYDROGEN 5000PPM

SPECIFICATION

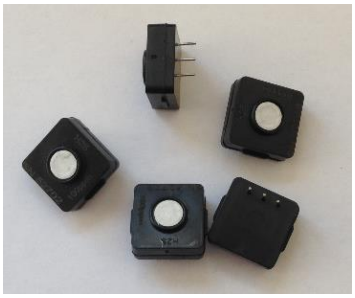
Operating Temperature Range: -40°C to +55°C

Humidity Range (non-condensing): 15 – 95% RH

Pressure Range: 800 to 1200 HPa

Bias Voltage: 0 mV

Recommended Load Resistor: 100 Ω



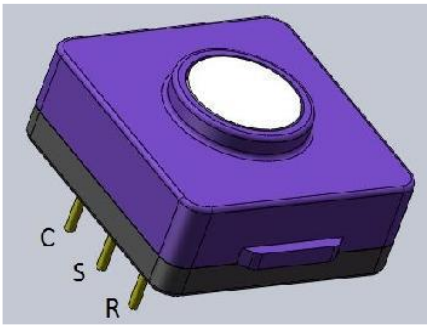
Zero Drift in Clean Air: < 1ppm

Storage Temperature: 0°C to +20°C (optimum 4°C to 6°C)

Storage Conditions: 12 months in original container

Housing Material: PPO

Weight: < 0.7g

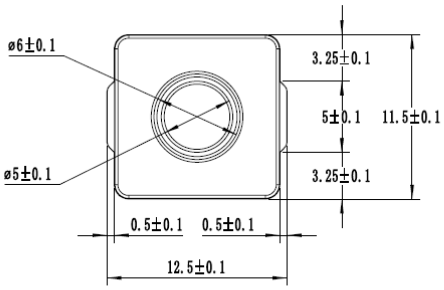


Sensor Dimensions: 12.5mm x 11.5mm x 9mm

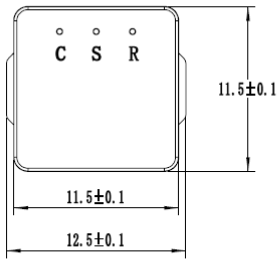
Warranty Period: 12 months from date of manufacture

Part Number: 2112B012710

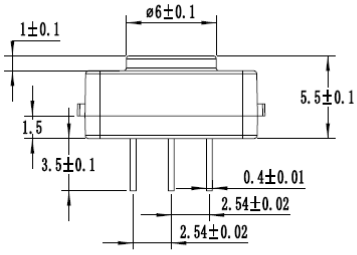
DIMENSIONS



Top



Bottom



Side

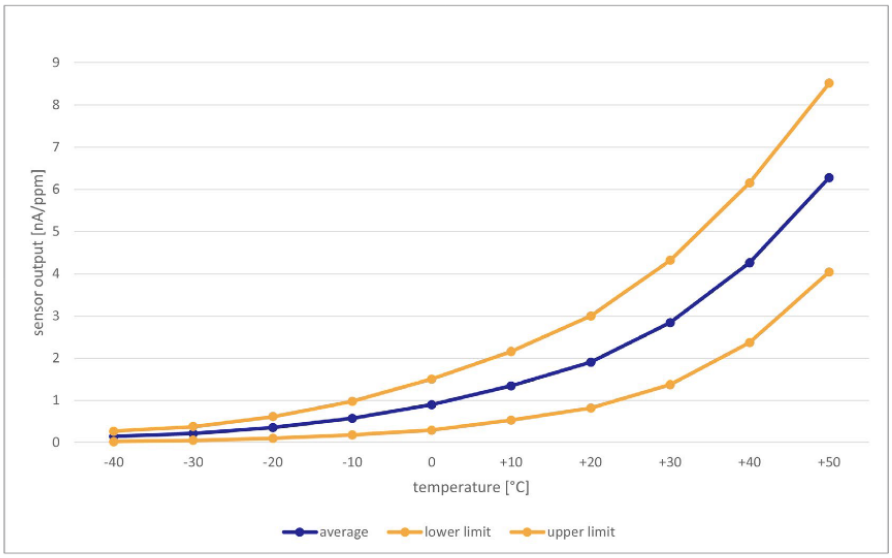
Note: PCB sockets are recommended for the sensor pin connection. Soldering or using glue with the sensor should be avoided and will invalidate warranty.

EURO-GAS MANAGEMENT SERVICES LTD, CHURSTON HOUSE,
BASCOMBE ROAD, CHURSTON FERRERS, DEVON, TQ5 0JJ, UK
☎: +44 (0)1803 844414
sales@euro-gasman.com www.euro-gasman.com

EURO-GAS
MANAGEMENT SERVICES LTD

H2 SS SENSOR – MICRO SOLID STATE HYDROGEN 5000PPM

TEMPERATURE CURVE



ACCESSORIES

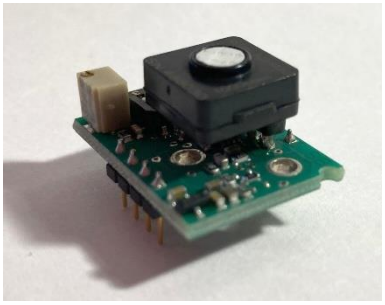
Precision SIP terminals

for sensor pin connection, part no. 2112B4503330

Test and calibration gas flow cap, part no. 2112B013701

SS Micro TX

UART or i2c miniature precalibrated pluggable transmitter, part no. 2112B0127101000



SS PCB

Voltage and i2c miniature precalibrated pluggable transmitter, with onboard temperature measurement and life test capability, part no. 2112B019900

EURO-GAS MANAGEMENT SERVICES LTD, CHURSTON HOUSE, BASCOMBE ROAD, CHURSTON FERRERS, DEVON, TQ5 0JJ, UK
☎: +44 (0)1803 844414
sales@euro-gasman.com www.euro-gasman.com

EURO-GAS MANAGEMENT SERVICES LTD

H2 SS SENSOR – MICRO SOLID STATE HYDROGEN 5000PPM

CROSS SENSITIVITY DATA

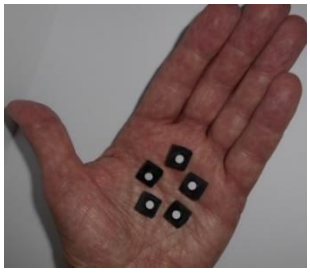
GAS	TEST CONCENTRATION	CALCULATED TEST CONCENTRATION	READING IN PPM
Ammonia NH_3	20ppm	1ppm	0ppm
Benzene C_6H_6	-	1ppm	0ppm
Carbon Dioxide CO_2	-	10% vol	0% vol
Carbon Monoxide CO	100ppm	100ppm	100ppm
Ethanol C_2H_6O (Alcohols)	100ppm	100ppm	0ppm
Ethylene C_2H_4	10ppm	1ppm	0ppm
Ethylene Oxide ETO C_2H_4O	10ppm	1ppm	0ppm
Hydrogen Cyanide HCN	10ppm	1ppm	0ppm
Isobutane C_4H_8	-	1ppm	0ppm
Methane CH_4	-	1% vol	0% vol
Methyl Mercaptan CH_4S	-	1ppm	0ppm
Nitrogen Dioxide NO_2	10ppm	1ppm	0ppm
Ozone O_3	0.755ppm	0.25ppm	0ppm
Sulphur Dioxide SO_2	10ppm	1ppm	0ppm

The 'Test Concentration' is used to test the sensor. The 'Sensor Reading' applies to the amount of the 'Calculated Test Concentration'. Sensor performance is temperature dependent. All performance specifications are based on test conditions with new sensors with the following environment conditions: +25ºC, 50% relative humidity, 1 atm (1013 mBar or ambient pressure), flow rate > 150qcm/min. Cross-sensitivity gases are not target gases. Relationship can change overtime.

Whilst the SS sensor is designed to be highly specific to the gas it is intended to measure, it will still respond to some degree to various gases. The table is not exclusive and other gases not included in the table may still cause a sensor to react.

The cross-sensitivity values quoted are based on tests conducted on a small number of sensors. They are intended to indicate sensor response to gases other than the target gas. Sensors may behave differently with changes in ambient conditions and any batch may show significant variation from the values quoted.

The figures in this table are typical values and should not be used as a basis for cross calibration. Cross sensitivities may not be linear and should not be scaled. For some cross interference, break through might occur if gas is applied for a longer time period.



Notes: PCB sockets are recommended for the sensor pin connection. Soldering or using glue with the sensor should be avoided and will invalidate warranty. Socket connector information available on request. Sensors are designed to operate in a wide range of harsh environments and conditions. However, it is important to avoid exposure to high concentrations of solvent during storage, fitting into instrumentation and operation. When using sensors on PCBs, degreasing agents should be used prior to the sensor being fitted.

By the nature of the technology used, any sensor can potentially fail to meet specification without warning. Euro-Gas makes every effort to ensure reliability of all sensors but where life safety is a performance requirement of the product and, where practical, Euro-Gas recommends that all gas sensors and instruments using sensors are checked for response to gas before use. The data contained in this document is believed to be accurate and reliable. The data given is for guidance only. Euro-Gas Management Services Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this datasheet or the information contained in it. Customers should test the sensors under their own conditions to ensure that the sensors are suitable for their own requirements and in accordance with the plans and circumstances of the specific project and any standards/ regulations pertaining to the country in which the sensors will be utilised. Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time. This datasheet is not intended to form the basis of a contract and in the interest of product improvement, Euro-Gas reserves the right to alter design features and specifications without notice. 2506

EURO-GAS MANAGEMENT SERVICES LTD, CHURSTON HOUSE,
BASCOMBE ROAD, CHURSTON FERRERS, DEVON, TQ5 0JJ, UK
☎: +44 (0)1803 844414
sales@euro-gasman.com www.euro-gasman.com

EURO-GAS
MANAGEMENT SERVICES LTD