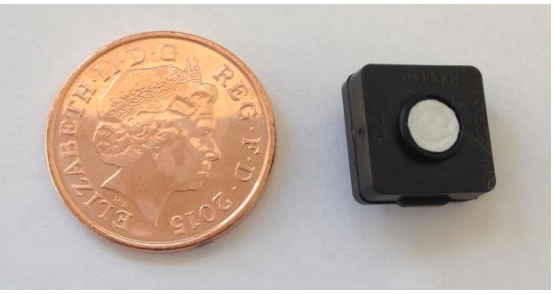
MICRO SS SENSOR 10PPM
SOLID STATE MULTI-GAS / VOC

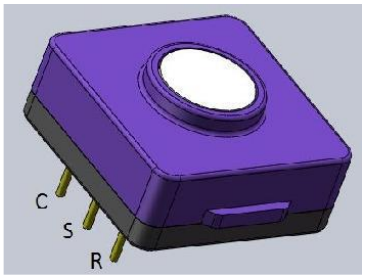


FEATURES

- 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 3 years without risk of leakage
- Low cost alternative to PID detection
- Extreme linear response
- Typical warm up time in seconds
- nA power consumption
- No or low zero line drift
- Better signal to noise ratio
- Wide temperature range with excellent sensitivity at low temperatures
- Low or no cross-interference with other environmental gases
- RoHS compliant

TYPICAL APPLICATIONS

- Industrial safety & leakage detection
- VOC gas detection
- Gas manufacturing process monitoring
- Outdoor & indoor air quality
- Emission monitoring
- Sewage & Water Treatment
- Biogas
- Food Industry
- Medical & Healthcare
- Consumer markets



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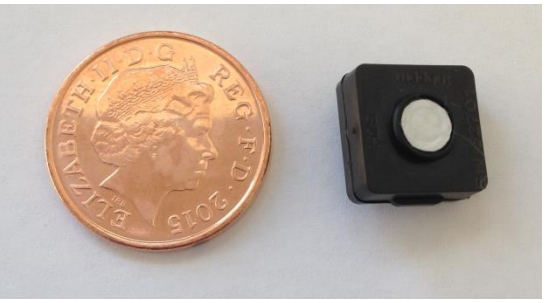

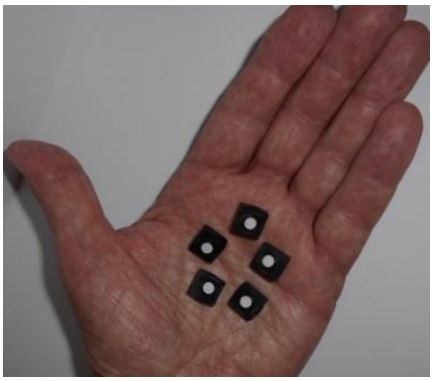

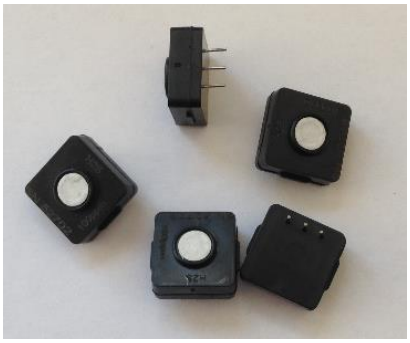

SPECIFICATION

Measuring Principle:	Amperometric, 3-electrode sensor
Detectable Gases:	Multi-gases and Volatile Organic Compounds VOC
Standard Range:	0 – 10 ppm
Optional Ranges on request:	0-200ppm, 0-1000ppm, 0-2000ppm
Maximum Over-Range:	100 ppm
Sensitivity:	40 ± 10 nA/ppm calibrated to CO Carbon Monoxide equivalent
	55 ± 15 nA/ppm calibrated to C4H8 Isobutane equivalent

Zero current at normal conditions: ± 100 nA

Response Time (T_{50}):	< 10 seconds
Response Time (T_{90}):	< 30 seconds
Sensor Warm-Up Time:	< 60 seconds
Repeatability:	1 %
Resolution (16 Bit ADC):	0.01 ppm
Linearity:	Linear
Long Term Sensitivity Drift:	< 5% / year
Expected Operating Life:	> 3 years

Notes: Long-term sensitivity drift may vary subject to storage conditions, environmental conditions and use in the application.

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

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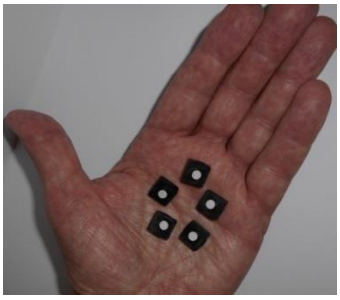
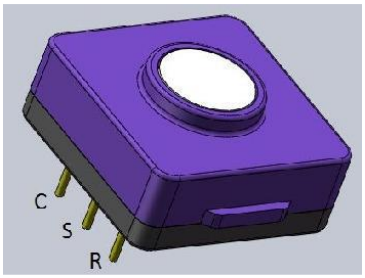
SPECIFICATION





Operating Temperature Range: -40ºC to +55ºC

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: < 1 ppm

Storage temperature: 0ºC to +20ºC (optimum 4ºC to 6ºC)

Storage conditions: 12 months in original container

Housing material: PPO

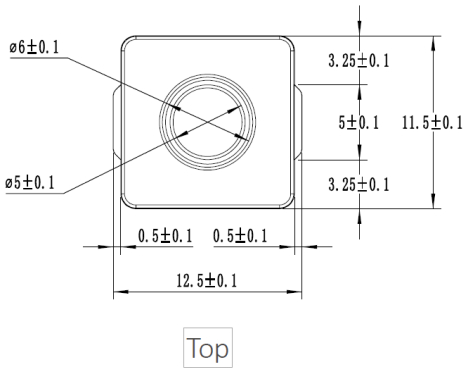
Weight: < 0.7g

Sensor dimensions: 12.5mm x 11.5mm x 9mm

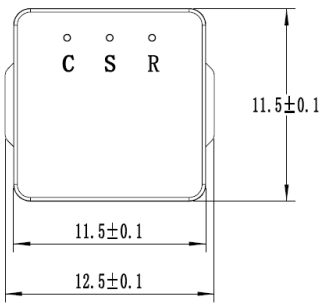
Warranty Period: 12 months from date of manufacture

Part Number: 2112B012780

DIMENSIONS



Top



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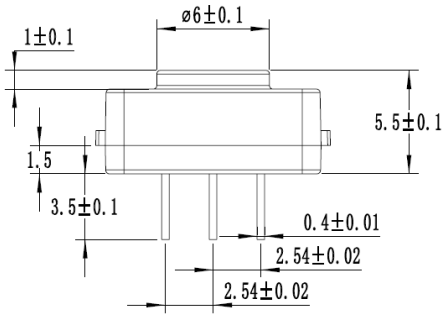

All dimensions are in mm. Tolerances are +/- 0.10mm unless otherwise stated.

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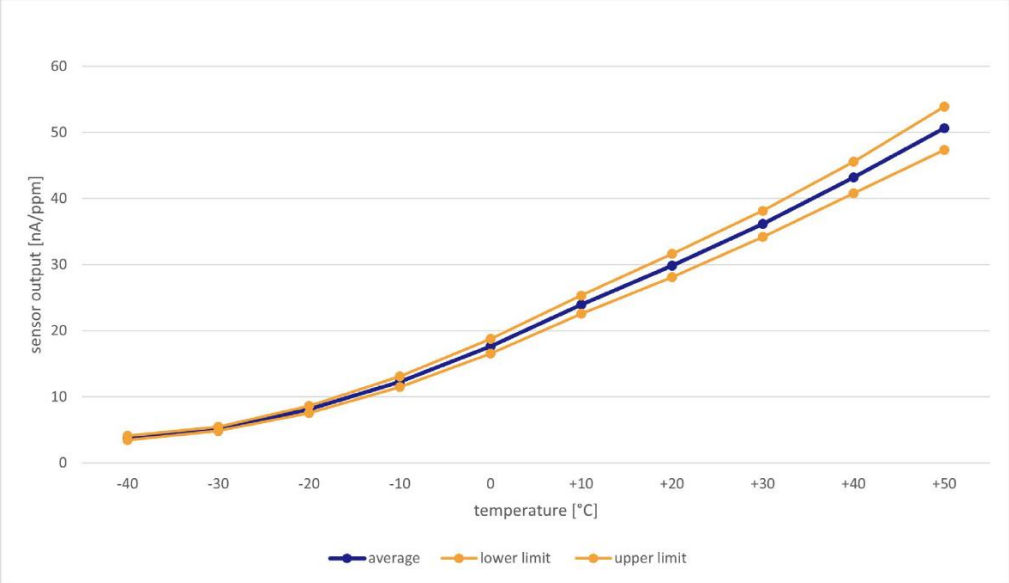
TEMPERATURE CURVE



ACCESSORIES

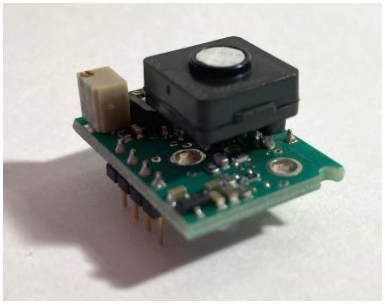
Precision SIP terminals

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. 2112B01278010



SS PCB

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

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CROSS SENSITIVITY DATA

GAS	CALCULATED TEST CONCENTRATION	TEST CONCENTRATION	READING IN PPM
Ammonia NH_3	20ppm	1ppm	0ppm
Arsine ASH_3	10ppm	1ppm	4ppm
Benzene C_6H_6	-	1ppm	Not expected
Bromine Br	-	1ppm	Negative reading expected
Carbon Dioxide CO_2	-	10% vol	0% vol
Carbon Monoxide CO	100ppm	100ppm	105ppm
Chlorine Cl_2	-	1ppm	Negative reading expected
Chlorine Dioxide ClO_2	-	1ppm	Negative reading expected
Dichloromethane CH_2Cl_2	-	1ppm	Negative reading expected
Diborane B_2H_6	-	1ppm	Positive reading expected
Dimethyl Disulfide $C_2H_6S_2$	-	1ppm	Positive reading expected
Ethanol (Alcohols) C_2H_6O	500ppm	1ppm	0ppm
Ethylene C_2H_4	10ppm	1ppm	0ppm
Ethylene Oxide C_2H_4O	10ppm	1ppm	0ppm
Fluorine F_2	-	1ppm	Negative reading expected
Formaldehyde HCHO	-	1ppm	Positive reading expected
Gasoline Volatilisation	-	1ppm	Positive reading expected
Germane GeH_4	-	1ppm	Positive reading expected
Hydrazine N_2H_4	-	1ppm	Positive reading expected
Hydrocarbons unsaturated	-	1ppm	Not expected
Hydrogen H_2	500ppm	2000ppm	625ppm
Hydrogen Bromide HBr	-	1ppm	Negative reading expected
Hydrogen Chloride HCl	-	1ppm	Negative reading expected
Hydrogen Cyanide HCN	10ppm	1ppm	0.8ppm
Hydrogen Fluoride HF	-	1ppm	Negative reading expected
Iodine I	-	1ppm	Negative reading expected
Isopropanol C_3H_8O	-	1ppm	Positive reading expected
Methane CH_4	-	1% vol	0% vol
Methanol CH_3OH	-	1ppm	Positive reading expected

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CROSS SENSITIVITY DATA (continued)

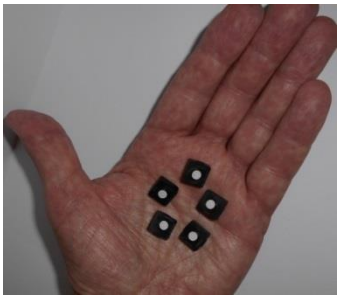
GAS	CALCULATED TEST CONCENTRATION	TEST CONCENTRATION	READING IN PPM
Nitric Oxide NO	-	5ppm	Positive reading expected
Nitrogen Dioxide NO_2	10ppm	1ppm	-1.2ppm
Ozone O_3	0.755ppm	1ppm	-0.5ppm
Phosphine PH_3	5ppm	1ppm	3.9ppm
Silane SiH_4	-	1ppm	Positive reading expected
Sulphur Dioxide SO_2	10ppm	1ppm	0.6ppm
Tetrahydrothiophene THT	-	1ppm	Positive reading expected
Trimethylamine C_3H_9N	-	1ppm	Positive reading expected

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 will 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. 2504

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