ECOSENSE SENSOR MODULES FOR DISSOLVED H2 IN TRANSFORMER OIL

ECOSENSE Dissolved H2 Gas Module
Part Numbers: 2112B6001A
2112B6001B

ECOSENSE Dissolved H2 Gas Module
Part Number: 2112B6001C

The ECOSense dissolved Hydrogen (H2) gas sensor modules are designed for the detection of dissolved H2 in transformer oil.

When there is a fault within a transformer, H2 will be generated, where the concentration of H2 is proportional to the level of fault. H2 is a critical early indicator. It is the first gas released as temperatures rise inside a transformer, sometimes weeks or months before a failure. Real-time hydrogen sensing offers the earliest possible warnings. Hydrogen gas levels rising are a critical first line of defense, so that action can be taken before a situation becomes an emergency, from an outage to a serious fire.

Based on fuel cell patented technology, combined with years of field experience, the sensor detects and monitors dissolved Hydrogen in transformer oil and ensures the safe operation of transformers, shunts, reactors, bushing and further applications. The sensors are integrated at the heart of on-line monitors worldwide.

The modules are available in 3 different versions:

- **Module A** – can be mounted directly on transformer valve, where there is a composite concentration of H2, CO, C2H4, C2H2.
- **Module B** – can be mounted directly on transformer valve, where there is H2 concentration only.
- **Module C** – can be mounted directly in oil phase. This uses sensor module B incorporated within a different housing type. It is suitable for an H2 concentration only. Volume of oil chamber: 1ml.

KEY FEATURES

- Industrial Gas Sensor with multiple patents
- Integrated gas separation and detection
- Designed to withstand vacuum conditions
- Free from poisoning and electrolyte leakage
- Precise control of internal environment and free from environmental influences
- Designed for Hydrogen detection in harsh environments
- Maintenance free
- High stability, fast response and wide detection range
- Long service life of over 10 years

TYPICAL APPLICATIONS

- Energy
- Electric Power
- Petrochemical
- Mining

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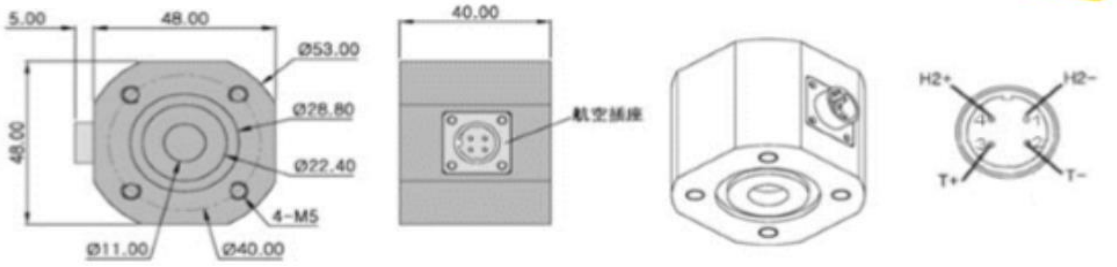
DIMENSIONS

ECOSENSE Dissolved H2 Gas Module
Part Numbers: 2112B6001A / 2112B6001B

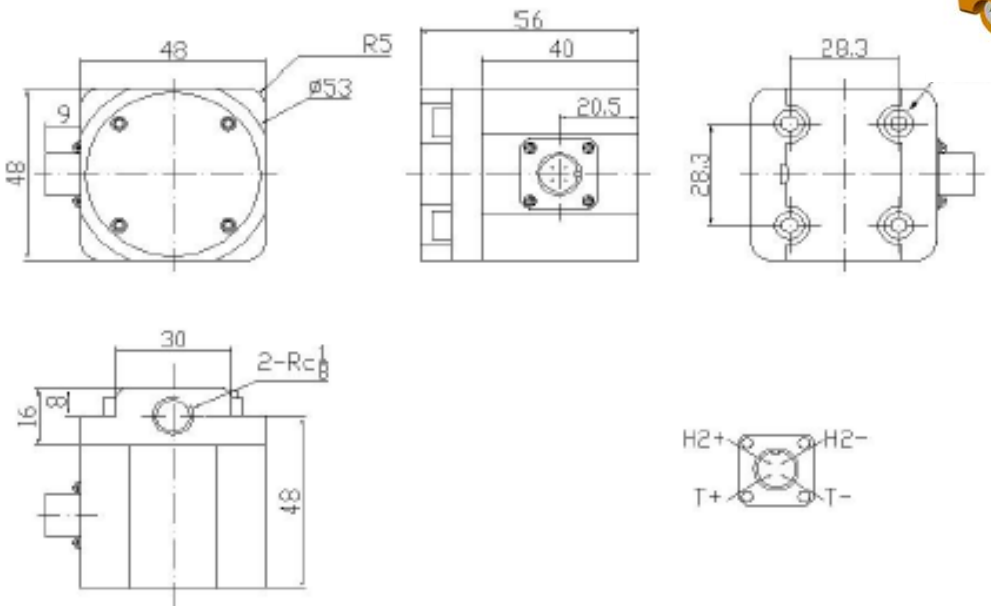
All dimensions in mm
All tolerances ± 0.15mm unless otherwise stated



DIMENSIONS

ECOSENSE Dissolved H2 Gas Module
Part Number: 2112B6001C
Volume of Oil Chamber: 1ml

All dimensions in mm
All tolerances ± 0.15mm unless otherwise stated



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TECHNICAL SPECIFICATIONS

	Module A 2112B6001A	**Module B 2112B6001B**	**Module C 2112B6001C**
Mounting:	Can be mounted directly on transformer valve	Can be mounted directly on transformer valve	Can be mounted directly in oil phase
Principle:	Micro Fuel Cell	Micro Fuel Cell	Micro Fuel Cell
Detection Gas:	Composite Concentration of H2, CO, C2H4 and C2H2	H2	H2
Relative Sensitivity: H_2 CO C_2H_4 C_2H_2	 100% 10-20% 5-10% 2-5%	 100% <1% <1% <1%	 100% <1% <1% <1%
Detection Range:	0-2000 µL/L	0-2000 µL/L	0-5000 µL/L (dissolved in oil)
Maximum Overload:	5000 µL/L	5000 µL/L	10,000 µL/L (dissolved in oil)
Resolution:	1 µL/L	1 µL/L	1 µL/L
Accuracy:	±10% or ±20ppm whichever is greater	±10% or ±20ppm whichever is greater	±10% or ±20ppm whichever is greater
Response Time (T80):	< 10 minutes	< 10 minutes	< 10 minutes
Long-term Sensitivity Drift:	2% / year	2% / year	2% / year
Output Signal:	Linear	Linear	Linear
Repeatability:	1% of signal	1% of signal	1% of signal
Operating Temperature Range:	-40 to +80 ℃	-40 to +80 ℃	-40 to +80 ℃
Storage Temperature Range:	-20 to +60 ℃	-20 to +60 ℃	-20 to +60 ℃
Operating Humidity Range:	5 – 95% (non-condensing)	5 – 95% (non-condensing)	5 – 95% (non-condensing)
Pressure at the Probe:	Absolute Vacuum to 700 kPa	Absolute Vacuum to 700 kPa	Absolute Vacuum to 700 kPa
Service Life:	>10 years	>10 years	>10 years
Storage Life:	5 years in sealed original container	5 years in sealed original container	5 years in sealed original container

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Notes: 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. 2508

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