

MS08 H₂ Amperometry

Portable and laboratory measuring instrument



Multi-parameter system
Adapt to micro-sensors H₂S - H₂ - H₂O₂ - O₂ - O₃

Measure dissolved hydrogen concentrations

The determination of dissolved hydrogen concentrations is one of the most important parameters for the analysis and control of power plant water, waste water and process water, due to its high chemical reactivity and rapid transfer of the concentrations between the liquid samples and the gas phase, the measurement of dissolved H₂ is difficult despite careful sampling.

Accurate and reliable *in situ* determination of concentrations is now possible with the MS08-H₂. The integrated micro H₂ sensor allows rapid measurement with very high resolution even in colored, turbid water and the sediments. The MS08 system collects raw H₂ and temperature information to make compensation calculations and display the dissolved H₂ concentration in mg / l.

Applications

- Monitoring and protection of wastewater networks
- Control at start-up of power plants
- Industrial process management
- Monitoring of the natural environment

Advantages

- Measurement without direct sampling in the medium
- No interference with turbidity
- Automatic temperature compensation
- Versatile - portable / laboratory and stationary measurements
- Direct display of measurement data
- Data extraction to computer by USB

Online / portable measurement

The MS08-H₂ is designed for portable measurements (approx. 12 hrs battery life) and can also be connected to a 220VAC mains socket for continuous measurements.



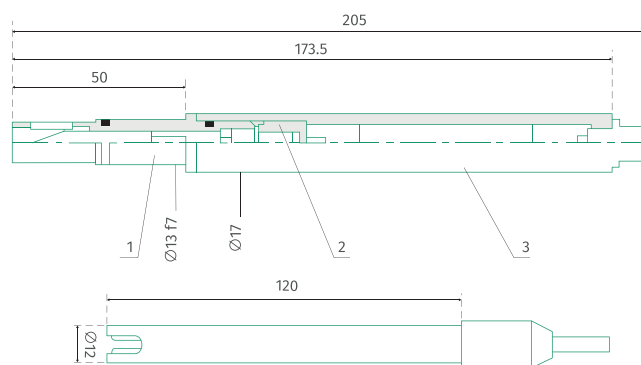
The dissolved hydrogen passes through the gas permeable membrane. It diffuses to the working electrode where an electrochemical oxidation reaction operates. The current generated, proportional to the hydrogen concentration, is measured by the probe.

This current from 0 to 400 pico-amperes is then converted and exploited by the MS08 box, the measurement data are compensated using the temperature measurement.

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Technical specifications

Measuring principle		Amperometric measurement
Technology		Micro membrane sensor with redox catalyst
Temperature compensation		Automatic Pt100, Pt1000
Electrical polarization time		Automatic approx. 20 min wait at start-up
Measuring ranges	Type I	0,0002 ... 0,5 mg/l H ₂
	Type II	0,0004 ... 1 mg/l H ₂
	Type III	0,0008 ... 2 mg/l H ₂
	Type IV	0,001 ... 3 mg/l H ₂
Measurement resolution	Type I	0,1 µg/l H ₂
	Type IV	0,4 µg/l H ₂
Response time		T 90% at 2 seconds
Measurement accuracy		2% of the measured value
H ₂ consumption		Negligible
Probe body materials		H ₂ probe - titanium / temperature probe - plastic
Dimensions (L x d)		H ₂ probe - 17 mm x 205 mm / temperature-pH probe - 12 mm x 120 mm
MS08 power supply		6 Mignon type batteries / 220 VAC with charger supplied
Interface	Digital	Data display on the integrated screen - H ₂ / T ° / residual current / pH (option)
		RS-232 / USB (option)
Data acquisition		On computer, software not supplied, downloadable free of charge type «HYPERTERMINAL»
Transmission / frequency		ASCII string / 2 seconds
Exploitation		Conversion by software for access to Lotus 1-2-3 or Excel type calculation software
Micro H ₂ sensor lifetime		6 months with portable use, 10 in continuous (depends on stress by pH variations)
Interference on measurement		No interference in salt water up to 40 g/l of salt
Sensitivity to H ₂ S		May lead to measurement errors and / or reduced life of the micro-sensor if permanent high concentration
Temperature of the medium / sample		0 ... + 30 ° C (40 ° C possible with a specific calibration on request)
Ambient temperature		0 ... + 40 °C
Storage temperature		0 ... + 40 °C



Temperature sensor