

pHD-S sc Digital Differential Electrode for pH and ORP

Applications

- Drinking water
- Wastewater
- Industrial water
- Power



The smart choice for accurate and reliable online process pH/ORP measurement

Exceptional Process pH Sensor Performance with the Differential Electrode Measurement Technique

This field-proven technique uses three electrodes instead of the two normally used in conventional pH/ORP sensors. Process and reference electrodes measure the pH differentially with respect to a third ground electrode. The end result is unsurpassed measurement accuracy, reduced reference junction potential, and elimination of sensor ground loops. These process pH sensors provide greater reliability, resulting in less downtime and maintenance.

Lower Maintenance Needs with the Double Junction Salt Bridge

The double junction salt bridge creates a barrier to contamination which minimises the dilution of the internal standard cell solution. The result is lower maintenance needs and a longer time period between calibrations.

Extended Working Life with the Replaceable Salt Bridge/Protector

The unique, replaceable salt bridge holds an extraordinary volume of buffer to extend the working life of the sensor by protecting the reference electrode from harsh process conditions. The salt bridge simply threads onto the end of the sensor if replacement is needed.

Reliability with Built-in Encapsulated Preamp

Encapsulated construction protects the sensor's built-in preamp from moisture and humidity, ensuring reliable sensor operation. The preamp in the pHD analogue sensor produces a strong signal, enabling the sensor to be located up to 1000 m from the analyser.

Technical Data*

Model	pHD-S sc pH	pHD-S sc ORP
Measuring range	0 - 14 pH	-1500 mV - 1500 mV
Accuracy	± 0.02 pH	± 5 mV
Sensitivity	± 0.01 pH	± 0.5 mV
Repeatability	± 0.05 pH	± 2 mV
Drift	0.03 pH per 24 hours, non-cumulative	2 mV per 24 hours, non-cumulative
Calibration method	Two point automatic, one point automatic, two point manual, one point manual	One point manual
Operating temperature range	Digital Sensor: -5 - 70 °C Analogue Sensor with Digital Gateway: 5 - 105 °C Immersion Sensor: 0 - 50 °C	Digital Sensor: -5 - 70 °C Analogue Sensor with Digital Gateway: 5 - 105 °C Immersion Sensor: 0 - 50 °C
Temperature accuracy	± 0.5 °C	
Flow rate	3 m per second, maximum	
Sensor pressure / Temperature limit	Max. 2 bar overpressure	
Temperature sensor	NTC 300 Ω thermistor for automatic temperature compensation and analyser temperature readout	
Transmission distance	100 m, maximum	
Cable length	10 m PUR (polyurethane) 4-conductor with one shield, rated to 105 °C	
Wetted materials	Stainless steel, Ryton, glass, titanium, FKM/FPM o-ring	
Storage conditions	4 - 70 °C, 0 - 95% relative humidity (non-condensing)	
Immersion depth	Submersible to 107 m/1050 kPa	
Communication	Modbus	
Weight	0.870 kg	

*Subject to change without notice.

Order Information

pHD-S sc Sensors

- LXV427.99.10001** Hach pHD-S sc Digital differential pH sensor, stainless steel, 10 m cable
LXV427.99.20001 Hach pHD-S sc Digital differential ORP sensor, stainless steel, 10 m cable

Please note: An SC controller is required for operation of the pHD-S sc Sensor.

Accessories and Consumables

- LZX914.99.xx200** Tank rim holder for sensors (1")
SB-R1SV Replacement salt bridge for pH sensor, outer-junction, Ryton Salt Bridge, Kynar
25M1A1025-115 Standard cell solution, concentrated pH 7.0 buffer (equi-transferrant), 500 mL



This instrument connects to Claros, Hach's innovative Water Intelligence System. Claros allows you to seamlessly connect and manage instruments, data, and process – anywhere, anytime. The result is greater confidence in your data and improved efficiencies in your operations. To unlock the full potential of Claros, insist on Claros Enabled instruments.



With Hach Service, you have a global partner who understands your needs and cares about delivering timely, high-quality service you can trust. Our Service Team brings unique expertise to help you maximise instrument uptime, ensure data integrity, maintain operational stability, and reduce compliance risk.