# pHD-S sc Digital Differential Electrode for pH and ORP

**Applications**

- Drinking water
- Wastewater
- Industrial water
- Power



Claros Enabled

Service Protected

## 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.

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## 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<br>Analogue Sensor with Digital Gateway: 5 - 105 °C<br>Immersion Sensor: 0 - 50 °C | Digital Sensor: -5 - 70 °C<br>Analogue Sensor with Digital Gateway: 5 - 105 °C<br>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 pHD sensor, outer-junction, Ryton Salt Bridge, Kynar

**25M1A1025-115** Standard cell solution, concentrated pH 7.0 buffer (equi-transferrant), 500 mL

Claros Enabled

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.

Service Protected

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.

DOC053.52.03255.Jan22

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