Differential pH and ORP Sensors

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

Hach Digital pHD sc sensors are available in convertible (PEEK or PPS), insertion, and sanitary body styles. Three electrodes are used in these sensors to increase measurement accuracy and eliminate sensor ground loops.



Exceptional Process Sensor Performance with the Differential Electrode pHD 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/ORP 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/ORP 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 minimizes 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 analog sensor produces a strong signal, enabling the sensor to be located up to 1000 m (3280 ft.) from the analyzer.

Innovative Technology

The former GLI, now a Hach Company brand, invented the Differential Electrode Technique for pH measurement in 1970. The pHD sensor series takes this field-proven technology to a new level.

Versatile Mounting Styles

Sensors are available in four mounting styles - convertible, insertion, immersion, and sanitary

Differential Sensor Warranty

Hach Company offers the best sensor warranty in the industry on its Differential Sensors. We will replace any Differential Sensor that fails due to defects in materials or workmanship within one year from the date of shipment-and up to 30 months on a prorated basis for any failure.

Learn More





Compliance For app Operating -5 - Temperature PH Range 0 - Bei cal me ser wh the PH rec	r hazardous and maritime plications, CE - 70 °C (23 - 158 °F) D and ORP 50 °C (32 - 122 °F) SS pHD fore initial pH calibration, ibrate the temperature easurement when the	For non-hazardous and non- maritime applications only -5 - 70 °C (23 - 158 °F) pHD and ORP 0 - 50 °C (32 - 122 °F) SS pHD Before initial pH calibration, calibrate the temperature
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	isor is in water or buffer ich is at approximately e same temperature as the buffers (matches current commendation)	measurement when the sensor is in water or buffer which is at approximately the same temperature as the pH buffers (matches current recommendation)
		Please Note: When the sensor is placed into the application sample, if that sample is more than $10 ^{\circ}C (18 ^{\circ}F)$ different than the previous temperature/ pH calibration, then it is recommended to recalibrate the temperature while the sensor is in the sample to maintain the $\pm 0.5 ^{\circ}C$ ($\pm 0.9 ^{\circ}F$) temperature accuracy specification.
Range -2.0	-2.0 to 14.0 pH -1500 to +1500 mV ORP	
Sensitivity ±0	± 0.01 pH ± 0.5 mV	
Flow Rate 3 m	3 m (10 ft.) per second, maximum	
Pressure Range Dig	Digital: 6.9 bar at 70 °C (100 psi at 158 °F)	
Temperature NT Sensor cor	NTC 300 Ω thermistor for automatic temperature compensation and analyzer temperature readout	
Transmission 100 Distance	100 m (328 ft.), maximum	
Temperature Accuracy ± 0	± 0.5 °C (± 0.9 °F)	
Sensor Cable 4 c	onductor cable with one shie ed to 105 °C (221 °F); 10 m (ä	eld and polyurethane jacket; 33 ft.) standard length
Wetted Materials Wetted Content Wetted Materials group corr	EK or PPS, salt bridge of mate action, glass process electrod d FKM/FPM O-ring seals (pH	ching material with PVDF e, titanium ground electrode, sensor with optional HF-

Some industrial applications require accurate measurement and control below 2 or above 12 pH. In these special cases, please contact Hach Technical Support for further details. For best ORP measuring results in solutions containing zinc, cyanide, cadmium or nickel, Hach recommends using the pHD sc ORP sensor equipped with an optional gold electrode.

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Order Information

pHD	SC	Digital	Differ	ential	pH Sensors	

DPD1P1	Digital pH Sensor, PEEK, Convertible, General Purpose
DPD1R1	Digital pH Sensor, PPS, Convertible, General Purpose
DPD2P1	Digital pH Sensor, PEEK, Insertion, General Purpose

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pHD Analog pH Sensors

PD1P1	Analog pH Sensor, PEEK, Convertible, General Purpose
PD1R1	Analog pH Sensor, PPS, Convertible, General Purpose
PD2P1	Analog pH Sensor, PEEK, Insertion, General Purpose

pHD sc Digital Differential ORP Sensors

DRD1P5	Digital ORP Sensor, PEEK, Convertible, Platinum
DRD1R5	Digital ORP Sensor, PPS, Convertible, Platinum

pHD Analog ORP Sensors

RD1R5	Analog ORP Sensor, PPS, Convertible, Platinum
RD1P5	Analog ORP Sensor, PEEK, Convertible, Platinum
RD2P5	Analog ORP Sensor, PEEK, Insertion, Platinum
RD1P5A50	Analog ORP Sensor, PEEK, Convertible, Platinum
RD1P6	Analog ORP Sensor, PEEK, Convertible, Gold

Accessories

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SB-P1SV	PEEK sensor and salt bridge body, PVDF outer junction
SB-R1SV	PPS sensor and salt bridge body, PVDF outer junction
25M2A1001-115	200 mV reference sol. 500 mL (1 pt)

Additional sensors and accessories are available, please visit hach.com or contact Hach. Part numbers may vary by country.

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