

## METERS



### pH-1 SMA HP5



Due to its small outer dimensions pH-1 SMA HP5 can be set up almost anywhere. It is compatible with non-invasive sensors, dipping probes and flow-through cells of type HP5 & HP8 (measurement range pH 5.5 - 8.5). pH-1 SMA HP5 has temperature compensation, so even in environments with changing temperatures precise pH measurements can be performed. The optical pH sensor can directly be integrated in bioreactors and cultivation vessels, and are read out with pH-1 SMA HP5 non-invasively from the outside. It is not necessary to open the vessel or take samples for measurements, so there is no risk of contamination. This USB-powered pH meter is operated with the PreSens Measurement Studio 2 software, which enables simultaneous control of several PreSens pH, O<sub>2</sub> and CO<sub>2</sub> devices, so measurement networks can be set up. With numerous features, the software makes the pH-1 SMA HP5 applicable in almost any application where precise pH measurements are needed.

- Measurement range of pH 5.5 - 8.5
- Compact system with small outer dimensions
- Lightweight (only 128 g)
- USB-powered
- Controlled by PreSens Measurement Studio 2
- For use with non-invasive sensors, dipping probes & flow-through cells
- One calibration for a multitude of sensor spots

## TECHNICAL

Specifications	
pH sensors	HP5 / HP8 (optical SMA connector, 2 mm POF)
Temperature sensor	1 x Pt100 temperature connector (sensor not included)
Temperature performance	0 °C to + 50 °C, resolution $\pm 0.1$ °C, accuracy $\pm 1.0$ °C
Power supply	5 VDC (USB-2.0-Mini-B, cable included)
Temperature: operating/storage	0 °C to + 50 °C / + 5 °C to + 40 °C
Relative humidity	0 % to 80 % (non-condensing)
Dimensions	101 mm (with connectors) x 35 mm x 30 mm
Weight	128 g
Digital interface	USB interface cable to PC (cable included)

## ACCESSORIES

### Polymer Optical Fiber POF



A polymer optical fiber (POF) is needed to transfer excitation light to the sensor and the sensor response back to the meter. We offer different versions for different meters depending on their optical connector type. A POF enables non-invasive and non-destructive measurements to be made from the outside through the wall of a transparent or slightly colored container. The POF with SMA connector is compatible with meters of the Fibox, OXY-1 SMA, OXY-1 WM, OXY mini and pH-1 SMA series, as well as the CO<sub>2</sub>-1 SMA. The POF with ST connector is compatible with meters of the Microx 4 and OXY-1 ST series. Different standard lengths are offered, e. g. 2.5 m, and fibers with connectors on one or both ends are available, depending on your adapter or sensor application.

- Enables contactless measurement
- Versatile light guide
- Different lengths available

## TECHNICAL

Specifications	SMA	ST
Dimensions	Optical diameter: 2 mm Outer diameter (incl. black cladding): approx. 2.7 mm Min. bending radius: 40 mm	Optical diameter: 1 mm Outer diameter (incl. black cladding): 2.2 mm Min. bending radius: 17 mm
Connector type	SMA connectors on one or both ends available for use with SOA or ARC	ST connectors on one or both ends available for use with SOA or ARC-1 ST
Length of fiber	Available standard lengths 1.0, 2.5 and 5.0 m; for lengths of more than 5 m, please contact our service team	
Compatibility	All devices with SMA connector, e.g. Fibox, OXY-1 SMA, pH mini series, pCO <sub>2</sub> mini	All devices with ST connector, e.g. Microx 4 or OXY-1 ST series

## SENSORS

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pH

### Single-Use pH Flow-Through Cell FTC-SU-HP5-US

The FTC-SU-HP5-US consists of a miniaturized optical pH sensor on a color coded stick, which is attached to a single-use T-cell. The sensor stick can be mounted on flow-through cells of different size and shape, according to requirements. The sensor inside the FTC is connected to the pH meter via polymer optical fiber and allows contactless measurements in perfusion systems. The FTC-SU-HP5-US is made of polycarbonate.

- Single-use flow-through cell
- Precise online monitoring of pH in perfusion systems
- Different sizes and shapes for various flow rates
- Easy connection to external tubing
- Customized connectors are available, e. g. CPC




## TECHNICAL

Specifications*	
Measurement range	pH 5.5 - 8.5
Resolution	at pH = 7: $\pm 0.01$ pH
Accuracy**	at pH = 7: $\pm 0.05$ pH sensor spot calibration at pH = 7: $\pm 0.10$ pH sensor batch calibration
Drift	at pH = 7: $< 0.005$ pH per day (sampling interval of 1 min.)
Measurement temperature range	from + 5 to + 50 °C
Response time ( $t_{90}$ )**	$< 120$ sec.
Properties*	
Compatibility	Aqueous solutions, ethanol (max. 10 % v/v), methanol (max. 10 % v/v), pH 2 - 10
Cross sensitivity	Reduced to ionic strength (salinity); a high concentration of small fluorescent molecules in the visible range can interfere
Cleaning procedure***	Irradiation, Ethylene oxide (EtO)
Calibration	FTCs are pre-calibrated; single-point calibration is recommended
T-cell formats	Luer T-cell (delivered), inner diameter 5 mm, cell volume 0.3 mL; 1/4" x 1/4" (Qosina), cell volume 2.1 mL; 3/8" x 3/8" (Qosina), cell volume 4.6 mL; 1/2" x 1/2" (Qosina), cell volume 8.3 mL
<p>* provided pH sensors are used without further handling in physiological solution</p> <p>** calibration and following measurements in the same conditions / system; equilibrated FTC with physiological solution and sufficient flow rate (min. 15 mL/min) at 37 °C</p> <p>*** recalibration may be required</p>	



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## GET IN CONTACT

-  **Request more info**
-  **Request a quote**
-  **Rent-a-meter**

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