

Specifications

pH Sensors

1 PH SENSOR SPECIFICATIONS

Only valid in physiological solutions (ionic strength = 150mM) at 25°C for 2-point calibrated sensors. Specifications are valid for pH sensor spots (item no.: **PHSP5-PKx**), self-adhesive sensor spots (item no.: **PHSP5-PKx-ADH**), sterilized self-adhesive sensor spots (item no.: **PHSP5-PK7-ADH-STER**), pH sensor of pH sensor vials (item no.: **PHTOVIAL20-PKx**), robust screw cap probes (item no.: **PHROBSC-PKx**), including underwater versions (option **-SUB**) and pH cap probes (item no.: **PHCAP-PKx(-AF)-SUB**).

1.1 General Characteristics

Response Time (t_{90}) at 25°C¹ -PK5, -PK8(T), -PK8(T)-AF-SUB -PK6, -PK7, -PK7-ADH-STER -PK7-AF-SUB	<60 sec <100 sec <120 sec
Temperature Range	-1°C (30°F) to 50°C (122°F)
Influence of Salinity²	Specified for measurements between 20-500 mM ionic strength (approx. 1-30 PSU). Exception: PK8T sensors are only specified between 20 and 40 PSU. Response time and accuracy at lower or higher salinities are not specified. Rough compensation is enabled in the software.
Calibration Modes	1-point calibration or 2-point calibration (recommended), pre-calibration mode ³
Calibration Solution	PyroScience buffer capsules or a self-made buffer (details on request) must be used
Background Fluorescence	Minimized due to REDFLASH technology
Optical Isolation	The sensor is equipped with an optical isolation to minimize interference from strong external illumination and light-sensitive / fluorescent samples.
Sensor Dimensions	PHROBSC-PKx

Length without cable (ca.) Shaft diameter (ca.) Sensor tip diameter (ca.) Cable length (ca.)	100 mm 3 -4 mm (tapered) 4 mm 2 m
Application time	For self-adhesive sensor spots (-ADH) limited to max. 1 month
Application Areas	Laboratory, industry, research. NOT for medical or any safety-critical application. NOT for application in humans. NOT for application in food intended for human consumption.

¹ time for 90% of the total sensor signal change in stirred media

² PK8T versions are specified for measurements between PSU 20-40

³ sensors can be used once without manual calibration (reduced accuracy), only in combination with pre-calibration ready **FireSting-PRO** devices (labeled with "precal pH")

Important: Please note that the -AF versions are sensor caps with an anti-(bio)fouling layer containing **zineb**. It is strongly recommended to wear gloves during handling, especially in case of a known contact allergy. If your application involves a closed chamber with living organisms, be aware that exposure to zineb may cause adverse effects such as toxicity, allergic reactions, or respiratory irritation, potentially harming the organisms. **Handle with care.**

1.2 Specifications

PK5 - Version

Specifications	
Item No.	PHSP5-PK5, PHSP5-PK5-ADH, PHROBSC-PK5
Measuring Range Optimum Maximum	4.0 - 6.0 3.5 - 6.5
Accuracy after 2-point calibration pH 4-4.5 pH 4.5-6	±0.1 ±0.05
Accuracy pre-calibration pH 4-4.5 pH 4.5-6	±0.2 ±0.1
Resolution at pH 5.0	0.003
Drift at pH 5.0	< 0.005 / day at 25°C

PK6 - Version

Specifications	
Item No.	PHSP5-PK6, PHSP5-PK6-ADH, PHROBSC-PK6
Measuring Range Optimum Maximum	5.0 - 7.0 4.5 - 7.5
Accuracy after 2-point calibration pH 5-5.5 pH 5.5-7	±0.1 ±0.05
Accuracy pre-calibration pH 5-5.5 pH 5.5-7	±0.2 ±0.1
Resolution at pH 6.0	0.003
Drift at pH 6.0	< 0.005 / day at 25°C

PK7 - Version

Specifications	
Item No.	PHSP5-PK7, PHSP5-PK7-ADH, PHSP5-PK7-ADH-STER, PHROBSC-PK7(-SUB), PHTOVIAL20-PK7, PHCAP-PK7(-AF)-SUB
Measuring Range Optimum Maximum	6.0 - 8.0 5.5 - 8.5
Accuracy after 2-point calibration pH 6-6.5 pH 6.5-8	±0.1 ±0.05
Accuracy pre-calibration pH 6-6.5 pH 6.5-8	±0.2 ±0.1
Resolution at pH 7.0	0.003
Drift at pH 7.0	< 0.005 / day at 25°C

PK8 - Version

Specifications	
Item No.	PHSP5-PK8, PHSP5-PK8-ADH, PHROBSC-PK8(-SUB), PHTOVIAL20-PK8, PHCAP-PK8(-AF)-SUB
Measuring Range Optimum Maximum	7.0 - 9.0 6.5 - 9.5
Accuracy after 2-point calibration pH 7-7.5 pH 7.5-9	±0.1 ±0.05
Accuracy pre-calibration pH 7-7.5 pH 7.5-9	±0.2 ±0.1
Resolution at pH 8.0	0.003
Drift at pH 8.0	< 0.005 / day at 25°C

PK8T - Version

Specifications	
Item No.	PHSP5-PK8T, PHSP5-PK8T-ADH, PHROBSC-PK8T(-SUB), PHCAP-PK8T(-AF)-SUB
pH Scale	"pH total scale" for marine /oceanographic applications
Measuring Range Optimum Maximum	7.0 - 9.0 6.5 - 9.5
Accuracy after 2-point calibration pH 7-7.5 pH 7.5-9	±0.1 ±0.05
Accuracy pre-calibration pH 7-7.5 pH 7.5-9	±0.2 ±0.1
Resolution at pH _T 8.0	0.003
Drift at pH _T 8.0	< 0.005 / day at 25°C
Influence of Salinity	Negligible between PSU 30 and 40

2 APPLICABILITY AND CROSS-SENSITIVITY

	Applicability	Cross-Sensitivity	NO Cross-Sensitivity
Water/Aqueous solutions	X		
Hydrogen peroxide (H ₂ O ₂)		X	
Chlorinated Water		X	
Diluted Ethanol (<5%)	short-term		
Other organic solvents		X	
Charged surfactants (e.g. sodium dodecyl sulfate)		X	
Calibration buffers for pH electrodes		X	
Certified Reference Materials (CRMs) *		X	
Uncharged antifoam agents (e.g. polyethylene glycol, Tween80)			X
Phenol red			X
Ammonium > 25 mM		X	
pH 2-11			X

* except TRIS buffer solution in synthetic seawater (Dr. A. Dickson))

3 CLEANING & STORAGE

Cleaning	Deionized water
Sterilization	<ul style="list-style-type: none">• ethylene oxide (EtO, EO) sterilization (not applicable for PHSP5-PK7-ADH-STER) (details on request)• 2% glutaraldehyde solution• autoclave sterilization is possible for the following types: PHSP5, PHSP5-ADH, PHSC (details on request)• beta or gamma sterilization is <u>not</u> possible (pre-sterilized products are available)
Storage	Original packaging: 12 months at room temperature

Contact

PyroScience GmbH
Kackertstraße 11
52072 Aachen
Deutschland

Tel.: +49 (0)241 5183 2210
Fax: +49 (0)241 5183 2299
info@pyroscience.com
www.pyroscience.com