

# 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.: **PHVIAL20-PKx**, **PHTVIAL20-PKx**, **PHTOVIAL20-PKx**), robust screw cap probes (item no.: **PHROBSC-PKx**), including underwater versions (option **-SUB**) and pH cap probes (item no.: **PHCAP-PKx-SUB**).

#### 1.1 General Characteristics

<b>Response Time (<math>t_{90}</math>) at 25°C*</b>	<60 sec
<b>Temperature Range</b>	-1°C (30°F) to 50°C (122°F)
<b>Influence of Salinity‡</b>	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.
<b>Calibration Modes</b>	1-point calibration or 2-point calibration (recommended)
<b>Calibration Solution</b>	PyroScience buffer capsules or a self-made buffer (details on request) must be used
<b>Background Fluorescence</b>	Minimized due to REDFLASH technology
<b>Optical Isolation</b>	The sensor is equipped with an optical isolation to minimize interference from strong external illumination and light-sensitive / fluorescent samples.
<b>Sensor Dimensions</b> Length without cable (ca.) Shaft diameter (ca.)	<b>PHROBSC-PKx</b> 100 mm 3 -4 mm (tapered)

Sensor tip diameter (ca.) Cable length (ca.)	4 mm 2 m
<b>Application time</b>	For self-adhesive sensor spots (-ADH) limited to max. 1 month
<b>Application Areas</b>	Laboratory, industry, research. <b>NOT</b> for medical or any safety-critical application. <b>NOT</b> for application in humans. <b>NOT</b> for application in food intended for human consumption.

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

‡ PK8T versions are specified for measurements between PSU 30-40

## 1.2 Specifications

### PK5 - Version

Specifications	
<b>Item No.</b>	PHSP5-PK5, PHSP5-PK5-ADH, PHROBSC-PK5
<b>Measuring Range</b>	4.0 - 6.0
<b>Accuracy</b> at pH 5.0	± 0.05 after 2-point calibration
<b>Resolution</b> at pH 5.0	0.003
<b>Drift</b> at pH 5.0	< 0.005 / day at 25°C

### PK6 - Version

Specifications	
<b>Item No.</b>	PHSP5-PK6, PHSP5-PK6-ADH, PHROBSC-PK6
<b>Measuring Range</b>	5.0 - 7.0
<b>Accuracy</b> at pH 6.0	± 0.05 after 2-point calibration
<b>Resolution</b> at pH 6.0	0.003
<b>Drift</b> at pH 6.0	< 0.005 / day at 25°C

**PK7 - Version**

Specifications	
<b>Item No.</b>	PHSP5-PK7, PHSP5-PK7-ADH, PHSP5-PK7-ADH-STER, PHROBSC-PK7(-SUB), PHVIAL-PK7, PHCAP-PK7-SUB
<b>Measuring Range</b>	6.0 - 8.0
<b>Accuracy</b> at pH 7.0	± 0.05 after 2-point calibration
<b>Resolution</b> at pH 7.0	0.003
<b>Drift</b> at pH 7.0	< 0.005 / day at 25°C

**PK8 - Version**

Specifications	
<b>Item No.</b>	PHSP5-PK8, PHSP5-PK8-ADH, PHROBSC-PK8(-SUB), PHVIAL-PK8, PHCAP-PK8-SUB
<b>Measuring Range</b>	7.0 - 9.0
<b>Accuracy</b> at pH 8.0	± 0.05 after 2-point calibration
<b>Resolution</b> at pH 8.0	0.003
<b>Drift</b> at pH 8.0	< 0.005 / day at 25°C

**PK8T - Version**

Specifications	
<b>Item No.</b>	PHSP5-PK8T, PHSP5-PK8T-ADH, PHROBSC-PK8T(-SUB), PHCAP-PK8T-SUB
<b>pH Scale</b>	Factory calibrated on pH total scale
<b>Measuring Range</b>	7.0 - 9.0
<b>Accuracy</b> at pH <sub>T</sub> 8.0	± 0.05 after 2-point calibration
<b>Resolution</b> at pH <sub>T</sub> 8.0	0.003
<b>Drift</b> at pH <sub>T</sub> 8.0	< 0.005 / day at 25°C
<b>Influence of Salinity</b>	Negligible between PSU 30 and 40

## 2 APPLICABILITY AND CROSS-SENSITIVITY

	Applicability	Cross-Sensitivity	NO Cross-Sensitivity
Water/Aqueous solutions	X		
Diluted Ethanol (<5%)	short-term		
Other organic solvents		X	
Charged surfactants (e.g. sodium dodecyl sulfate)		X	
Calibration buffers for pH electrodes		X	
Uncharged antifoam agents (e.g. polyethylene glycol, Tween80)			X
Phenol red			X

## 3 CLEANING & STORAGE

<b>Cleaning</b>	Distilled water
<b>Sterilization</b>	<ul style="list-style-type: none"> <li>• 2% glutaraldehyde solution</li> <li>• autoclave sterilisation is possible for the following types: <b>PHSP5, PHSP5-ADH, PHSC</b> (details on request)</li> <li>• beta or gamma sterilisation is not possible (pre-sterilized products are available)</li> </ul>
<b>Storage</b>	Original packaging: 12 months at room temperature

### Contact

**PyroScience GmbH**  
 Hubertusstraße 35  
 52064 Aachen  
 Deutschland

Tel.: +49 (0)241 5183 2210  
 Fax: +49 (0)241 5183 2299  
[info@pyroscience.com](mailto:info@pyroscience.com)  
[www.pyroscience.com](http://www.pyroscience.com)