

# Instructions for Use for the SE 571 Series pH Sensors



**WARNING – Failure to observe this warning may result in serious injury.**

The warning symbol on the rating plate means:

**Read these instructions for use, observe the Specifications, and follow the Safety Instructions.**

## 1 Safety Instructions

### 1.1 All Applications

Hazards due to pressure, temperature, aggressive media or explosive atmosphere are possible, depending on the location of use. Therefore, the installation, operation, and servicing of the sensor shall only be carried out by suitably trained personnel authorized by the operating company.

### 1.2 Hazardous Areas

Observe the corresponding local requirements and standards for electrical installations in hazardous areas. For orientation, please refer to IEC 60079-14, EU directives 2014/34/EU and 1999/92/EC (ATEX), NFPA 70 (NEC), ANSI/ISA-RP12.06.01.

Memosens Ex sensors are marked by an orange-red ring. The Memosens Ex sensors shall only be connected to a cable of type CA/MS-\*\*\*X\*\* or type CA/MS-\*\*\*X\*\*L or to an intrinsically safe and certified Memosens measuring cable which is identical in hardware and function.

## 2 Intended Use

The sensor is used for continuous measurement of pH in liquid media. The SE 571 is a low-maintenance sensor with dirt-repellent PTFE ring junction. It has an integrated temperature detector for automatic temperature compensation.

The sensor is designed for applications in industrial processes, particularly for:

- media with high ionic strengths
- media with high temperatures and high pressures
- strongly oxidizing media
- salt brines
- media with high content of contaminants

## 3 Installation and Commissioning

- On unpacking, check the sensor for mechanical damage. Report any damage to your Knick service team.
- Remove the watering cap. Briefly rinse the sensor with pure water. After rinsing, the sensor should only be dabbed dry with a tissue. Do not rub the pH-sensitive glass, since this can lead to electrostatic charging and sluggish response times.
- Check the space behind the pH-sensitive glass for the presence of any air bubbles and remove them by gently shaking the sensor up and down.
- Install the sensor in the fitting as described in the user manual of the respective fitting.
- Connect sensor and cable.

## 4 Operation

### 4.1 Calibrating the Sensor

2-point calibration is recommended for the SE 571 sensor. First remove the watering cap. Then dip the sensor successively into two different buffer solutions with given pH values (e.g., CaliMat pH 7.00 and pH 4.00) and calibrate the pH Memosens sensor to these buffer values. Further information on Memosens sensors: [www.knick.de](http://www.knick.de)

### 4.2 Temperature Detector

The integrated temperature detector is intended for automatic compensation of the pH signal and not for any high-precision and safe temperature indication or control of the process temperature.

## 5 Maintenance and Cleaning

Carefully rinse the sensor tip and junction with pure water after each operating cycle. Under no circumstances must measuring solution be allowed to dry on these parts!

When the sensor is not in operation, store it with sensor tip and junction well submerged in electrolyte (3 mol/l KCl). If a sensor is stored dry for a few days by mistake, let it soak in electrolyte for several hours before use.

## 6 Specifications

### Model Code

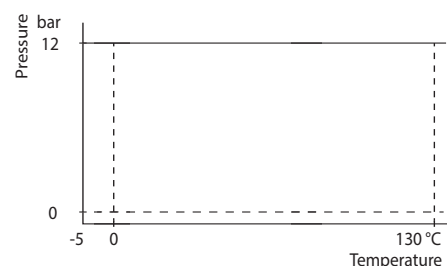
The markings on each sensor or on the packaging label include the following information:

SE 571X/*-NMSN	<b>Model designation</b>
X	<b>Sensor material</b>
N	N: Alpha glass
MS	<b>Sensor connector</b>
MS	MS: MS (Memosens®)
	<b>Solution Ground (N: without)</b>
	<b>Length</b>
1	1: 120 mm
2	2: 225 mm
	<b>Ex Approval</b>
X	X: Yes

### Further Data

pH range	0 ... 14
Temperature	-5 ... 130 °C
Pressure, relative	0 ... 12 bar
Junction	PTFE ring
Electrolyte	Viscous gel with KCl reservoir
Reference system	Ag/AgCl
	incl. silver ion trap
Sensor material	Alpha glass, medium impedance, universal glass, fluoride resistant
Body material	Glass
Mounting	PG 13.5
Temp detector	NTC 30 kΩ
Operation at high pressure and high temperature can reduce the service life.	

### Pressure/Temperature Diagram

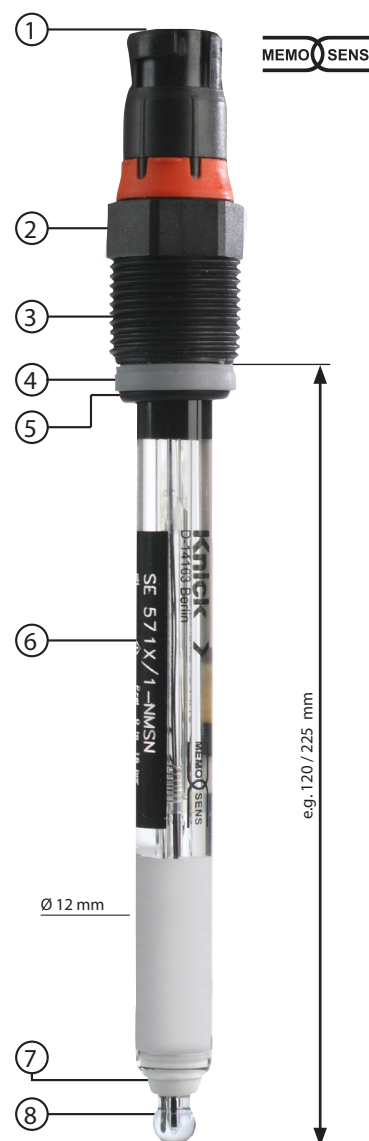


## 7 Disposal

Observe the applicable local or national regulations for disposal.

**Knick** ➤

Manual SE 571X/\*-NMSN



- ① Sensor connector (Memosens®)
- ② 19 mm A/F, serial number
- ③ PG 13.5 thread
- ④ PVDF compression ring
- ⑤ EPDM-FDA O-ring (11.5 x 2.6 mm)
- ⑥ Rating plate
- ⑦ Junction: PTFE ring
- ⑧ pH glass

### Knick Elektronische Messgeräte GmbH & Co. KG

Beuckestraße 22  
14163 Berlin  
Germany  
Phone: +49 30 80191-0  
Fax: +49 30 80191-200  
Email: [knick@knick.de](mailto:knick@knick.de)  
Internet: [www.knick.de](http://www.knick.de)



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## 8 Hazardous Areas: Electrical and Thermal Parameters

**Certificate Number:**

BVS 09 ATEX E088 X

**Marking:**

 II 1G Ex ia IIC T3/T4/T6

**Thermal Parameters:**

**For the pH Sensor Type SE 571X/\*-\*MSN**

Temperature class	Ambient temperature range of connecting head Ta	Permissible process temperature
T6	-20 °C < Ta < +70 °C	70 °C
T4	-20 °C < Ta < +120 °C	100 °C
T3	-20 °C < Ta < +135 °C	100 °C

**Special Conditions**

- The cable and the sensor shall only be used within the ambient temperature range specified for the temperature class.
- The Memosens sensors shall not be operated in electrostatically critical processing conditions. Intense vapor or dust flows directly impacting on the connection system shall be avoided.