

Instructions for Use for the SE 557 pH Sensors

▲ WARNING – Failure to observe this warning may result in serious injury.
The safety alert symbol on the nameplate 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 to an intrinsically safe and certified Memosens measuring cable which is identical in hardware and function.

2 Intended Use

The sensor is designed for operation in a Knick fitting and is used for continuous measurement of pH values in liquid media.

3 Installation and Commissioning

- On unpacking, check the sensor for mechanical damage. Report any damage to your Knick service team.
- Remove the watering cap. Rinse the sensor with clean water. Only dab the sensor to dry it.
Note: Do not rub the pH-sensitive glass, since this can lead to electrostatic charging and sluggish response times.
- Remove any air bubbles behind the pH-sensitive glass by gently swinging the sensor.
- Remove the protective foil from the electrolyte filling hole (3). Fully remove the sealing plug (4) prior to installation in the fitting.
NOTICE! The sensor may break if installed in the fitting with the sealing plug.
Keep the sealing plug (4) for future use.
Note: If the sensor is stored outside the fitting, the sealing plug (4) serves to protect it from leaking electrolyte.
- Insert the sensor into the grounded fitting. Refer to the user manual for the fitting.
Note: Suitable fittings can be found at www.knick-international.com.
- Connect sensor and cable.

4 Operation

4.1 Calibrating the Sensor

2-point pH calibration is recommended for the SE 557 sensor. First remove the watering cap. Then dip the sensor successively into two different buffer solutions with given pH values (e.g., pH 7.00 and pH 4.00) and calibrate the pH transmitter to these buffer values. Memosens sensors can be adjusted using the calibration data. Please refer to the user manual of the pH transmitter for further details.

4.2 Pressurizing the Fitting

When operating the sensor, it is important that the fitting and electrolyte pressure is adjusted to be higher than the effective pressure in the reactor vessel. This reduces the risk of process fluid getting into the sensor. The optimal pressure difference value to keep the junctions clean and obtain acceptable electrolyte re-fill intervals has to be established empirically from case to case, however it should be at least 0.5 bar. Regularly check the applied fitting overpressure during operation, and re-adjust if required.

5 Maintenance

Regularly check the electrolyte level in the sensor. At the latest when reaching the end of the reservoir, refill with electrolyte up to the indication line for max. level.

When the sensor is not in operation, store it with sensor tip and junction well submerged in electrolyte (ZU 0958) and protected from leaking electrolyte by the sealing plug (4). If a sensor is stored dry for a few days by mistake, let it soak in electrolyte for several hours before use.

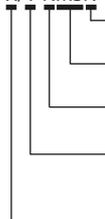
6 Accessories

Memosens Ex cable CA/MS-010XAA
(Example: 10 m)
Electrolyte ZU 0958

7 Specifications

The model designation, which is printed on each sensor and on the packaging label, includes the following information:

SE 557X/1-NMSN **Model designation (example)**



Sensor material

N: Alpha glass

Sensor connector

MS: Memosens

Solution ground

N: without

Length

1: 120 mm

2: 250 mm

Ex approval

X: Yes

pH range 0 ... 14
Temperature -20 ... 100 °C
Temp detector NTC 30 kΩ
Pressure, relative -1 ... 6 bar
Reference system Ag/AgCl
Electrolyte KCl, 3 mol/l,
for low temperature application

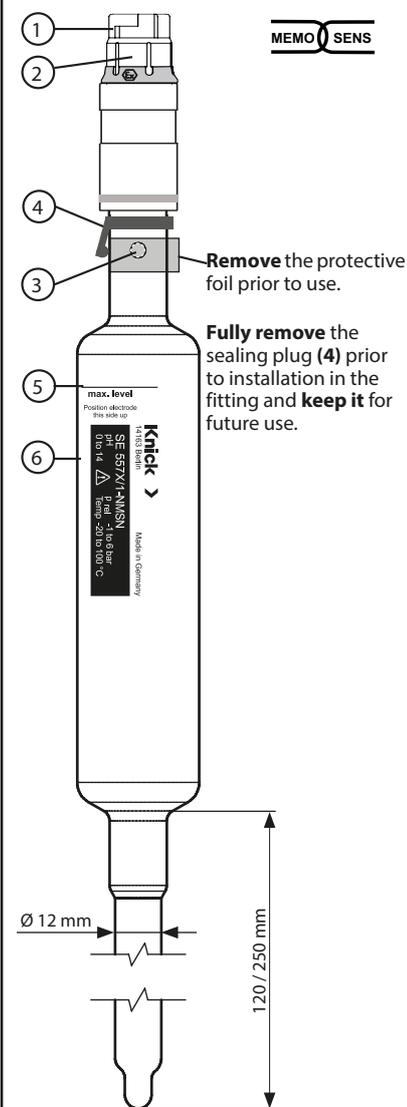
Junction Ceramic (2x)
pH glass Alpha glass, medium impedance, fluoride resistant
Length 120 mm / 250 mm
Installation in Knick fittings for pressurized sensors

8 Disposal

Observe the applicable local or national regulations for disposal.

Knick >

Manual SE 557



- Sensor connector: Memosens
- Serial number
- Filling hole
- Sealing plug
- Maximum filling height
- Nameplate

Knick
Elektronische Messgeräte
GmbH & Co. KG

Beuckestraße 22
14163 Berlin
Germany
Phone: +49 30 80191-0
Fax: +49 30 80191-200
info@knick.de
www.knick-international.com



097671

TA-SE557-TIIS-KNEN07 20200914

Hazardous Areas: Electrical and Thermal Parameters

Certificate number:

BVS 16 ATEX E 037 X
IECEX BVS 16.0030X
JPEX DEK19.0046X

Marking:

 II 1G
Ex ia IIC T4 Ga
Ex ia IIC T4 Ga

Thermal Parameters:

For the pH Sensor Type SE 557X/*.*MSN

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

Special Conditions

- The cable and the sensor shall only be used within the ambient temperature range specified for the temperature class.
- Do not operate the Memosens sensors under electrostatically adverse process conditions. Prevent strong vapor and dust streams from acting directly on the connection system.