

SE547 Series ISFET pH Sensors: Instructions for Use

Read before installation.
Keep for future use.

This document contains important instructions for the use of the product. Always follow these instructions and take care when operating the product.

1 Safety Instructions

Intended Use

The SE547 ISFET digital sensor is used for pH measurements in aqueous media. It is particularly suitable for measuring and monitoring media in hygienic and sterile applications in the food, pharmaceutical, and biotechnology sectors.

The SE547 sensor is break-resistant and requires no maintenance.

The sensor is sterilizable by autoclaving and is CIP/SIP-capable.

Use of the sensor is only permitted in compliance with the operating conditions stated in the Specifications.

Personnel Requirements

The customer must ensure that employees who use or otherwise handle the product are sufficiently trained and have been properly instructed.

The operating company must comply with all applicable laws, regulations, ordinances, and relevant industry qualification standards pertaining to the product and ensure that its employees do so as well. Failure to comply with the aforementioned provisions constitutes a breach of duty by the operating company with respect to the product. Such improper use of the product is not permitted.

Hazardous Substances

In the event of contact with hazardous substances or any other injuries related to the product, seek immediate medical attention and comply with applicable health and safety procedures. Failure to seek prompt medical attention may result in serious injury or death.

In certain situations, e.g., sensor replacement or cleaning, personnel may come into contact with the following hazardous substances:

- Process medium
- Calibration or cleaning medium

See the relevant manufacturers' safety data sheets for hazard and safety instructions on handling hazardous substances.

2 Installation and Commissioning

Note: When using process media with abrasive components, avoid direct incident flow to the ISFET chip.

The sensor may be installed upside down.

Note: An air bubble in the reference system may interrupt electrical contact between the process medium and the junction.

- Unpack the sensor and check it for mechanical damage.
- Remove the watering cap and briefly rinse the sensor in water.
- Align the ISFET chip at approximately a 45° angle from the direction of flow. Use the serial number for guidance.

Note: The serial number and the ISFET chip have the same alignment.

- Connect the sensor and sensor cable.
- As required, install the sensor in a fitting.
- Connect the sensor cable to the measuring device.

Note: See the relevant Instructions for Use.

3 Operation

Calibrating the Operating Point

Connect the sensor to the measuring device. Calibrate the operating point in a buffer solution (e.g., CaliMat pH 7.00).

Note: See the relevant Instructions for Use.

Calibrating the Sensor

Two-point calibration is recommended for the SE547 sensor. Calibration is performed on the measuring device.

Note: See the relevant Instructions for Use.

Sterilization

For use in sterile processes, e.g., fermentation, the sensors can be sterilized with superheated steam prior to starting the operating cycle.

Note: Note the maximum process pressure and temperature values.

Temperature Detector

The integrated temperature detector automatically compensates the pH signal. It is not intended for temperature indication or control of the process temperature.

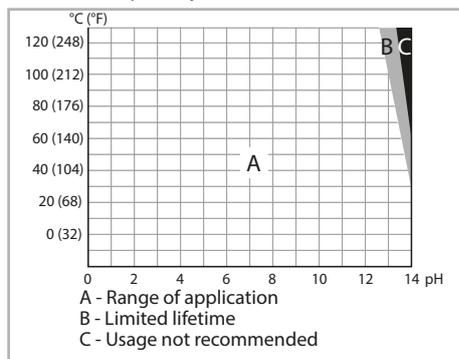
Sensor Lifetime

Alkaline solutions at elevated temperatures, such as are used in CIP procedures, reduce the sensor lifetime. Depending on process conditions and requirements, sensor replacement is recommended after 20 to 40 CIP cycles.

4 Maintenance and Cleaning

Carefully rinse the sensor tip and junction with water after each operating cycle.

Note: Do not allow process media to dry on the sensor tip and junction!



5 Storage

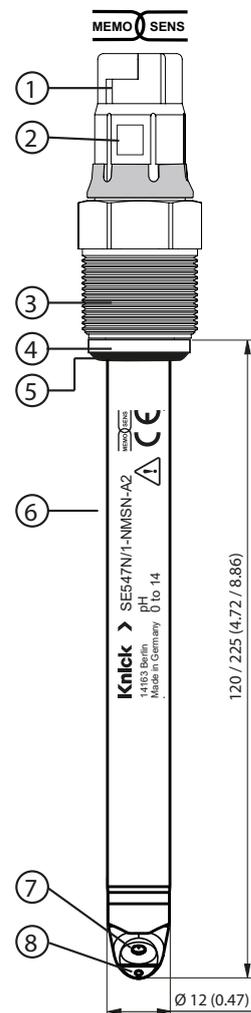
Immerse and store the sensor, with the sensor tip and junction, in a container with electrolyte (3 mol/l KCl).

Note: Do not allow the sensor to dry out.

Knick >

User
Manual

SE547



All dimensions in mm (inches).

- ① Memosens connector
- ② Serial number
- ③ PG 13.5 thread
- ④ PVDF compression ring
- ⑤ EPDM-FDA O-ring (11.5 x 2.6 mm)
- ⑥ Nameplate
- ⑦ ISFET chip
- ⑧ Junction

**Knick Elektronische Messgeräte
GmbH & Co. KG**

Headquarters

Beuckestraße 22 • 14163 Berlin
Germany

Phone: +49 30 80191-0 • Fax: +49 30 80191-200
info@knick.de • www.knick.de

Local Contacts

www.knick-international.com

Copyright 2022 • Subject to change
Version 1 • Published on 05/20/2022

TA-SE547-KNEN01



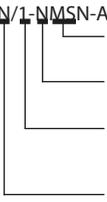
100323

6 Specifications

Product Identification

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

SE547W/1-NMSN-A2

**Product name****Connector**

MS: Memosens®

Solution ground

N: without

Length

1: 120 mm (4.72")

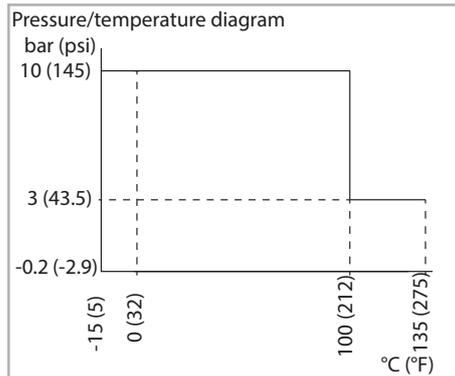
2: 225 mm (8.86")

Ex approval

N: no

Further Data

pH measuring range	0 ... 14
Process temperature	-15 ... 135 °C (5 ... 275 °F)
Relative process pressure	-0.2 ... 10 bar (-2.9 ... 145 psi) (see pressure/temperature diagram)
Junction	Ceramic
Reference system	Ag/AgCl
Sensor material	ISFET chip
O-ring	EPDM-FDA
Body material	PEEK-FDA
Installation	PG 13.5
Temperature detector	Pt1000
Add-on function	CIP counter/SIP counter



7 Disposal

Observe the applicable local or national regulations for disposal.