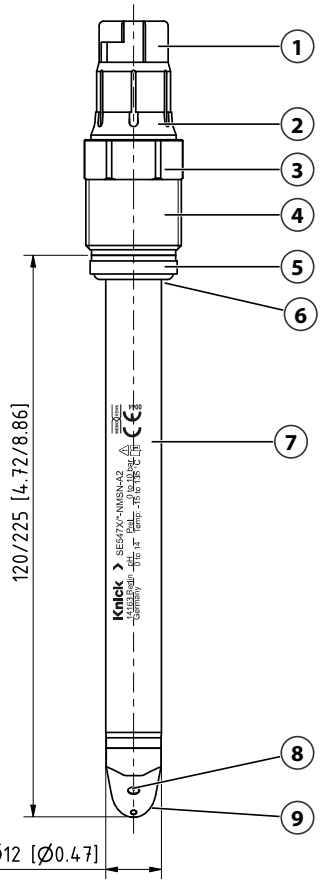
Knick

User Manual

SE547

ISFET pH Sensor



All dimensions in millimeters [inches]

1	Memosens connector
2	Ring for Ex marking
3	A/F 19 with serial number
4	PG 13.5 thread
5	PVDF compression ring
6	O-ring 11.5 x 2.6 mm EPDM-FDA
7	Nameplate
8	ISFET chip
9	Sensor tip

Read before installation.
Keep for future use.

Safety

This document contains important instructions for the use of the product. Always follow all instructions and operate the product with caution. If you have any questions, please contact Knick Elektronische Messgeräte GmbH & Co. KG (hereinafter sometimes referred to as "Knick") using the information provided on the back page of this document.

Hazards due to pressure, temperature, aggressive media, or explosive atmospheres are possible, depending on the location of use.

Intended Use

The SE547 ISFET sensor (hereafter also called "product") is used for continuous pH measurement in aqueous process media.

SE547X/*-NMSN-**	Digital pH measurement

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

The measurement data of the sensor are output via a suitable industrial transmitter.

THE OPERATING COMPANY SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGES RESULTING FROM OR ARISING OUT OF AN UNINTENDED USE OF THE PRODUCT.

Personnel Requirements

The operating company shall ensure that any personnel using or otherwise interacting with the product is adequately trained and has been properly instructed.

The operating company shall comply and cause its personnel to comply with all applicable laws, regulations, codes, ordinances and relevant industry qualification standards related to product.

Hazardous Substances

IN THE EVENT OF ANY CONTACT WITH HAZARDOUS SUBSTANCES OR OTHER INJURY HEREUNDER, SEEK IMMEDIATE MEDICAL ATTENTION OR FOLLOW APPLICABLE PROCEDURES TO ADDRESS HEALTH AND SAFETY OF PERSONNEL. FAILURE TO SEEK IMMEDIATE 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
- Cleaning medium

The operating company is responsible for conducting a job hazard analysis.

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

Operation in Hazardous Locations

The SE547X sensor is certified for operation in hazardous locations.

Memosens Ex sensors are marked by an orange-red ring.

Observe all applicable local and national codes and standards for the installation of equipment in explosive atmospheres. For further guidance, consult the following:

- IEC 60079-14
- EU directives 2014/34/EU and 1999/92/EC (ATEX)
- NFPA 70 (NEC)
- ANSI/ISA-RP12.06.01

The electrical and thermal parameters of the sensors must be adhered to.

Electrical and Thermal Parameters in Hazardous Locations

Certificate Number	Marking
BVS 24 ATEX E 017 X	II 1G
IECEx BVS 24.0013X	Ex ia IIC T3/T4/T6 Ga

Thermal Parameters

The electrical and thermal parameters and special conditions for installation and operation in hazardous locations are indicated on the enclosed Control Drawing 214.005-066.

Product

Package Contents

- SE547 with watering cap
- User Manual
- Control Drawing
- Quality Certificate
- EU Declaration of Conformity

Product Identification

SE547X/1 - NMSN - A2

- **Model designation**
- **Internal marking**
- **Body material**
  N: not defined
- **Connector**
  MS: Memosens connector
- **Pt electrode**
  N: without
- **Length**
  1: 120 mm (4.72")
  2: 225 mm (8.86")
- **Ex approval**
  X: yes

Product Characteristics

- CIP/SIP capable
- Can be sterilized by autoclaving
- PTFE sensor body
- Ceramic junction
- Integrated temperature detector

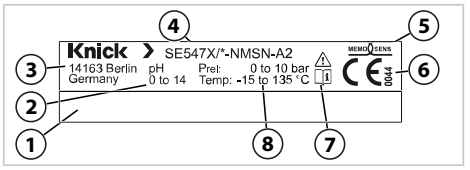
Note: The temperature detector measures the temperature as secondary measured value. This measurement is primarily intended for automatic compensation of the measured value and not for regulating and controlling the process temperature.

The sensor's identification and calibration data is stored in the Memosens connector. The data communication of the Memosens sensors takes place exclusively via a compatible meter.

Nameplate

The SE547 sensor is labeled with a nameplate on the sensor body.

Example:



1	Approval information[1)]	5	Memosens logo
2	Measuring range	6	CE mark with test number
3	Manufacturer and address	7	Special conditions and danger points
4	Product designation	8	Permitted pressure and temperature range

Item number/serial number/product date in form ******/********/YYWW are printed on the packaging.

Refer to the packaging for more information on approvals and disposal.

1) For details, see nameplate

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Translation of the original instructions
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Version 2

This document was published on August 22, 2025.

The latest documents are available for download on our website under the corresponding product description.

TA-300.010-KNEN02

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Installation

01. Check the SE547 sensor for damage.
    Note: Do not use damaged sensors.
02. Remove the watering cap.
03. Briefly rinse the sensor with pure water and pat dry.
04. Install the sensor at the installation location.
    Note: In the case of overhead installation, an underpressure can create air bubbles in the sensor. These lead to faulty measuring results.
05. Align the ISFET chip at an angle of approx. 45° to the direction of process flow. Use the serial number for orientation.
    Note: The serial number and the ISFET chip have the same alignment.
06. Connect the sensor to the sensor cable[2] and connect the sensor cable to a measuring device[3].
07. Before commissioning, calibrate the individual work point. Calibration is done at the transmitter[3].

Operation

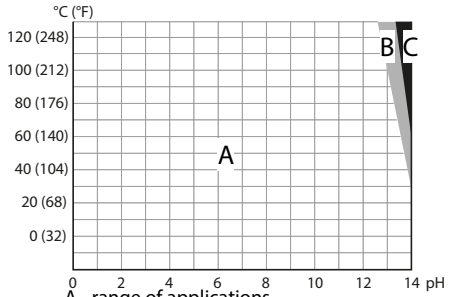
When operating in potentially explosive atmospheres, observe the thermal parameters on the Control Drawing.

Note: After switching on the transmitter or after interrupting the measurement, the measured value stabilizes within 10 minutes.

01. Clean the sensor after every work cycle.
    Note: Adjust the cleaning intervals to the operating conditions.
02. During work breaks or measurement interruptions, store the sensor in the hydration cap filled with electrolyte (3 mol/l KCl).
    Note: Do not allow process media to dry on the sensor tip and junction.

Sensor service life

Alkaline solutions at high temperatures like those used in CIP procedures reduce the service life of the sensor. Depending on the process conditions and requirements, Knick recommends replacing the sensor after 20 to 40 CIP cycles.



A - range of applications
B - limited service life
C - not recommended for use

Cleaning

⚠CAUTION! Injury due to the use of aggressive cleaning agents. Handle aggressive cleaning agents with care; wear protective equipment if necessary. Observe safety instructions.

Clean the sensor in case of soiling and deviations in slope, zero point, and/or response time.

01. Remove soiling with an appropriate cleaning agent.
02. Rinse the sensor with demineralized water.

Recommended Cleaning Agents

Contamination	Cleaning Medium
Water-soluble substances	Water
Greases and oils	Warm water and household dishwashing liquid
Lime and hydroxide deposits	Acetic acid (5 %) or hydrochloric acid (1 %)
Protein	Pepsin/HCl solution
Silver sulfide	Thiourea/HCl solution

Calibration

If necessary, remove the sensor SE547 before calibration. A 2-point calibration is recommended, which is performed on the measuring device[3].

Sterilizing

For application in sterile processes such as fermentation, sterilize the sensor before starting the operating cycle.

Sterilization can be effected in situ with steam or superheated process medium.

Removal

⚠WARNING! For process media that contain hazardous substances: The sensor has direct contact with the process medium. Rinse and clean the SE547 after removing it from the process medium. Follow the information on hazardous substances.

01. Depressurize the process and discharge if necessary.
02. Disconnect the sensor from the sensor cable.
03. Remove the sensor from the fitting.
04. Clean and store the sensor.

Storage

Immerse the sensor tip and junction into the watering cap with electrolyte (3 mol/l KCl) and store. If the sensor is unintentionally stored dry, water the sensor in electrolyte (3 mol/l KCl) for several hours.

Disposal

To dispose of the product properly, follow the local regulations and laws.

Waste devices must be separated from unsorted municipal waste before disposal.

Information on return and recycling can be found in the manufacturer's declaration on our website.

Specifications

Measuring range	
pH	0…14
Process temperature	-15 … 135 °C (5 … 275 °F)
Relative process pressure	-0.2 … 10 bar (-2.9 … 145 psi) at -15 … 100 °C (5 … 212 °F)
	-0.2 … 3 bar (-2.9 … 43.5 psi) at 100 … 135 °C (212 … 275 °F)
Temperature detector	Pt1000
Material	
Body	PEEK-FDA
Junction	Ceramic
Sensor tip	ISFET
Reference system	Ag/AgCl/Cl^- gel electrolyte KCl 3 mol/l
Process connection	PG 13.5
Tightening torque	1…3 Nm
Electrical connection	Memosens connector
Dimensions	See graphic

2) See Control Drawing for information on the certified Memosens cable.
3) Observe the instructions for use relating to the measuring device.