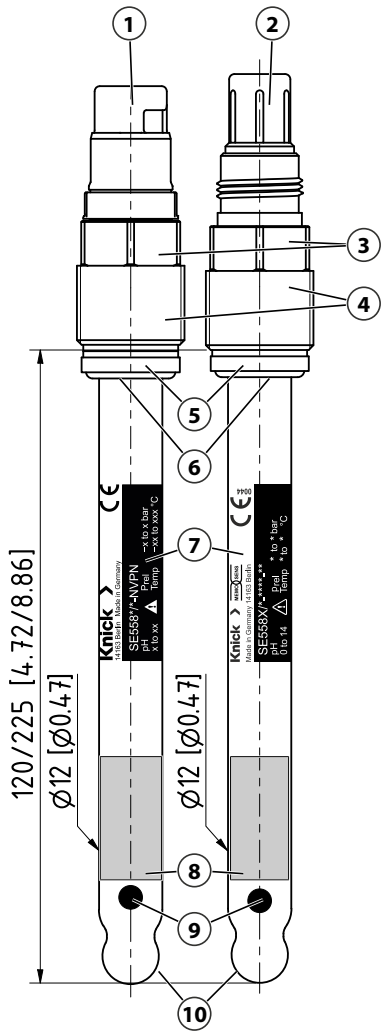
Knick

User Manual

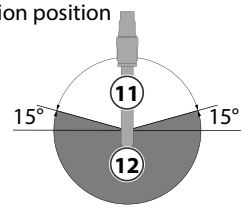
SE558

pH Sensor



All dimensions in millimeters [inches]

Installation position



1	Memosens connector
2	VarioPin connector
3	A/F 19 with printed serial number
4	Connection PG 13.5
5	PVDF compression ring
6	O-ring 11.5 x 2.6 mm EPDM-FDA
7	Nameplate
8	KCl reserve
9	Junction
10	Sensor tip
11	Permitted installation position
12	Prohibited installation position

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 sensor SE558 (the "product") is used for continuous pH measurement in aqueous process media.

SE558X/*-NMSN-**	Digital pH measurement
SE558X/*-NVPN	Analog 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

SE558X is certified for operation in hazardous locations.

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.

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

Electrical and Thermal Parameters

Analog sensors (VP connector)

Certificate Number	Marking
PTB 14 ATEX 2004	Ex II 1/2 G Ex ia IIC T6…T3 Ga/Gb

The electrical and thermal parameters as well as the special conditions for installation and operation in hazardous locations are indicated on the enclosed Control Drawing 214.025-066.

Digital Sensors (Memosens Connector)

Certificate Number	Marking
DEKRA 22ATEX 0034X	Ex II 1G II 1D
IECEx DEK 22.0019X	Ex ia IIC T6…T3 Ga Ex ia IIIC T_{200}135 °C Da

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

The electrical and thermal parameters as well as the special conditions for installation and operation in hazardous locations are indicated on the enclosed Control Drawing 213.215-066.

Product

Package Contents

- SE558
- User Manual
- Control Drawing
- Quality Certificate
- EU Declaration of Conformity

Product Identification

SE558X/1 - NMSN - B1 **Model designation**
Internal marking
Glass material
N: Alpha glass
Connector
MS: Memosens connector
VP: VarioPin connector
Pt electrode
N: without
Length
1: 120 mm (4.72")
2: 225 mm (8.86")
Ex approval
X: yes

Product Characteristics

- Alpha glass, medium impedance, fluoride resistant sensor tip
- 3× ceramic junction
- Gel electrolyte with KCl storage rings
- 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 body of the SE558 sensor is marked with a nameplate. Additional information on product approvals and disposal is printed on the packaging of the SE558 sensor.

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Translation of the original instructions

Version 7

This document was published on February 19, 2025.

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

TA-300.018-KNEN07

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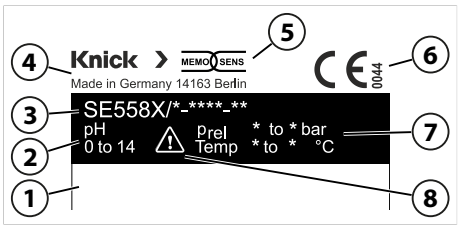
Example:



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

Installation

⚠CAUTION! Risk of cutting injuries from broken sensor glass. Handle the sensor with care.

01. Check sensor SE558 for damage.
    Note: Do not use damaged sensors.
02. Remove the watering cap.
03. Briefly rinse the sensor with pure water and pat dry.
    Note: Strong dry rubbing of the pH sensitive glass increases the response time of the sensor.
04. Remove air bubbles from the sensor tip by flicking the sensor upwards.
    Note: Air bubbles in the sensor tip distort the measurement result.
05. Install the sensor at the installation location.
    Note: Do not install the sensor upside down. See graphic for permitted installation position.
06. Align the junction in the process flow direction.
07. Connect the sensor to the sensor cable and connect the sensor cable to a measuring device[1].

Operation

When operating in a hazardous location, observe the electrical and thermal parameters of the Control Drawing.

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

Calibration

If necessary, remove the sensor SE558 before calibration. A 2-point calibration is recommended, which is performed on the measuring device[1].

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

Removal

⚠WARNING! For process media that contain hazardous substances: The sensor has direct contact with the process medium. After removing from the process medium, rinse and clean SE558. 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 and store the sensor with the sensor tip and junction in a container with electrolyte (3 mol/l KCl). If the sensor is accidentally stored dry, soak it 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	-5 … 100 °C (23 … 212 °F)
Relative process pressure	-1 … 3 bar (-14.5 … 43.5 psi)
Temperature detector	
SE558X/*-NMSN-**	NTC 30 kΩ
SE558X/*-NVPN	Pt1000
Wetted materials	
Body	Glass
Junction	3× ceramic
Sensor tip	Alpha glass
Reference system	Ag/AgCl/Cl gel with KCl storage rings
Process connection	PG 13.5
Tightening torque	1 … 3 Nm
Electrical connection	
SE558X/*-NMSN-**	Memosens connector
SE558X/*-NVPN	VarioPin connector
Dimensions	See graphic

1) Observe the instructions for use relating to the measuring device.