

# Instructions for Use for the Series SE 565 ORP 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 atmospheres 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 all applicable local codes and standards for the installation of electrical equipment in hazardous locations. 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. The electrical and thermal parameters of the sensors must be adhered to. Memosens Ex sensors are marked by an orange-red ring. Combined with a model CA/MS-\*\*\*Y\*\* measuring cable or a certified measuring cable which is identical in hardware and function, the sensor may be connected to a suitable measuring device, as described in the Certificates BVS 15 ATEX E141 X and IECEx BVS 15.0114X.

## 2 Intended Use

SE 565 sensors are designed for simultaneous measurement of ORP and temperature in industrial processes:

- Heavily polluted media
- Media containing sulfides
- Emulsions and suspensions
- Media containing proteins
- Processes with large pressure variations
- Media containing solvents

SE 565 sensors are suitable for sterilization with steam and they provide a reference system that was developed for the use in food and pharmaceutical products.

## 3 Installation and Commissioning

- On unpacking, check the sensor for mechanical damage. Report any damage to your Knick service team.
- Take off the watering cap and use the included knife to remove the silicone sealing from the junction. Briefly rinse the sensor with pure water.
- 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

First remove the watering cap. Then dip the sensor into a redox buffer solution with given ORP value (e.g., 220 mV, pH 7). At the end of the calibration process, the analyzer writes the adjustment values into the Memosens® sensor head. Please refer to the user manual of the analyzer for further details.

### 4.2 Sterilizing

For application in sterile processes, such as fermentation, sterilize the sensor before starting the operating cycle. Sterilization can be effected in situ by means of steam or superheated process medium.

### 4.3 Temperature Detector

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

## 5 Maintenance and Cleaning

Carefully rinse the platinum electrode and the 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 well submerged in a container with electrolyte (3 mol/l KCl). If the sensor is stored dry for a few days by mistake, let it soak in electrolyte (e.g., ZU0958) for several hours before use.

Contaminants can be removed as follows:

Protein:	Solution of pepsin / HCl
Lime:	Dilute acids
Silver sulfide:	Solution of thiourea / HCl
Grease:	Tenside solution / lye

## 6 Specifications

### Model Code

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

SE 565X/ 1 - NMSN	<b>Model designation</b>
	<b>Sensor connector</b> MS: Memosens
	<b>Length</b> 1: 120 mm 2: 225 mm
	<b>Ex approval</b> X: Yes

### Further Data

Measuring range	±1500 mV
Temperature	0 ... 120 °C
Process pressure, relative	-1 ... 6 bar
Pressure resistance	12 bar
Junction	1 x ceramic
Electrolyte	Viscous gel with internal pressure (not refillable)
Reference system	Ag/AgCl
Sensor material	Platinum
Standard potential of reference electrode	207 mV (25 °C) against SHE (standard hydrogen electrode)
Body material	Glass
Installation	PG 13.5
Temperature detector	NTC 30 kΩ

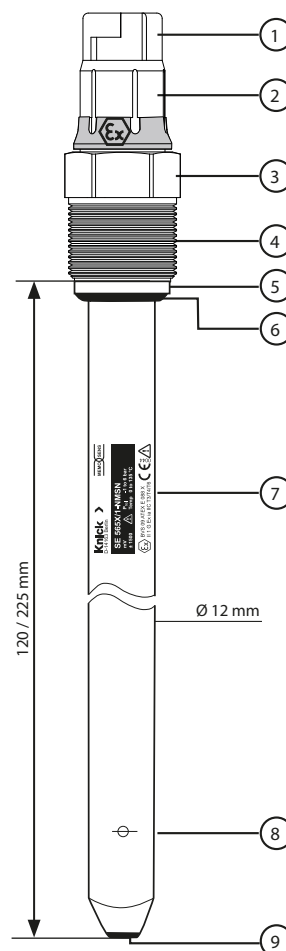
## 7 Disposal

Observe the applicable local or national regulations for disposal.

**Knick** >

**Manual SE 565X/\*-NMSN**

MEMOSENS



- ① Sensor connector: Memosens (MS)
- ② Serial number
- ③ 19 mm A/F
- ④ PG 13.5 thread
- ⑤ PVDF compression ring
- ⑥ EPDM gasket
- ⑦ Nameplate
- ⑧ Junction (ceramic)
- ⑨ Platinum electrode

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
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# 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:

Temperature class	Ambient temperature range Ta	Maximum permissible process temperature
T4	-20 °C < Ta < +120 °C	120 °C

## Special Conditions

- The cable and the sensor shall only be used within the ambient temperature range specified for the temperature class.
- The measuring cable including its connecting head must be protected from electrostatic charging if it passes through areas of Zone 0 (category 1G).
- 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.
- Metallic process connection parts must be mounted at the installation site so that they are electrostatically conductive (< 1 MΩ).