

# Instructions for Use for the Series SE 564 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 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 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-\*\*\*X\*\* 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

The low-maintenance sensors of the SE 564 series are designed for measuring ORP values in industrial processes. Through two hole junctions, the reference system with polymer electrolyte is in direct contact with the measured medium. The standard reference electrode potential is 207 mV (25 °C) against SHE (standard hydrogen electrode). The sensor is made of platinum.

## 3 Installation and Commissioning

- On unpacking, check the sensor for mechanical damage. Report any damage to your Knick service team.
- Remove the watering cap and 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

1-point calibration is recommended for the SE 564 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) to calibrate the ORP transmitter to this buffer value. Please refer to the user manual of the transmitter for further details.

### 4.2 Temperature Detector

SE 564 sensors with Memosens connector are equipped with a temperature detector. Sensors with DIN coax connector have no temperature detector.

## 5 Maintenance and Cleaning

The polymer electrolyte is not refillable. Never keep or store the sensor dry! You should store the sensor with fitted watering cap containing electrolyte (3 mol/l KCl). After each working cycle, be sure to clean the platinum sensor surface (sensor tip) and the open junctions thoroughly with pure water.

## 6 Troubleshooting

If the measured value differs notably from the nominal ORP value of the buffer during calibration or if there is high and long-lasting drift, this is often caused by contaminations. In most cases, these can be removed by cleaning the platinum sensor surface, e.g., using tooth paste or diluted hydrochloric acid. Afterwards, rinse with pure water.

## 7 Specifications

### Model Code

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

SE 564X/1-NMSN

### Model designation

#### Sensor connector

MS: Memosens

#### Length

1: 120 mm

2: 225 mm

3: 325 mm

4: 425 mm

#### Ex approval

X: Yes

### Further Data

ORP range

-1500 mV ... +1500 mV

Operating temp

0 ... 120 °C

Pressure, relative

0 ... 10 bar

Junction

Hole (2x)

Electrolyte

Polymer electrolyte

Reference system

Ag/AgCl

Sensor material

Platinum

Mounting

PG 13.5

Temp detector

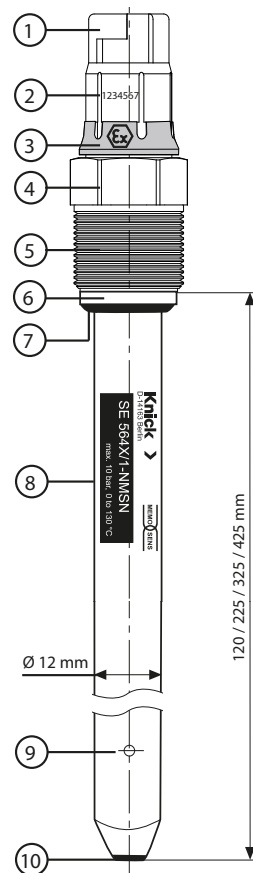
NTC 30 kΩ

## 8 Disposal

Observe the applicable local or national regulations for disposal.

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Manual SE 564X/\*-NMSN



- ① Sensor connector: Memosens®
- ② Serial number
- ③ Orange-red ring (Memosens Ex sensors only)
- ④ 19 mm A/F
- ⑤ PG 13.5 thread
- ⑥ PVDF compression ring
- ⑦ EPDM-FDA O-ring (11.5 x 2.6 mm)
- ⑧ Nameplate
- ⑨ Junction (2x)
- ⑩ Platinum sensor surface

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

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



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
TA-SE564XMS-TIIS-KNEN05 20200708

# 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).