

Sensors for Conductivity Measurement

Chem

Energy



SE 604 Conductivity Sensor

Robust 2-electrode sensor, for precise and reliable measurement of low and very low conductivities, particularly in ultrapure water

Robust, coaxially arranged electrodes made of stainless steel. Large measuring range from ultrapure water to 1000 $\mu\text{S}/\text{cm}$ with only one sensor model (cell constant).

Integrated temperature detector for exact temperature compensation. Easy to clean thanks to replaceable outer electrode.

Reliable and easy checking of the measurement using PortaSim simulators.

Applications

Boiler feed water, feed water, boiler water, cooling water, water vapor cycle, pure water, condenser monitoring

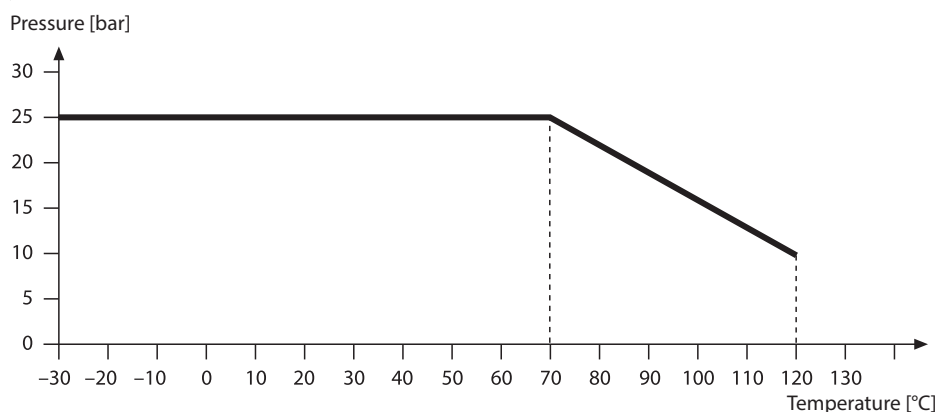
Facts

- Large measuring range from 1 nS/cm to 1,000 $\mu\text{S}/\text{cm}$
- Coaxially arranged electrodes
- Independent of installation conditions
- Integrated temperature detector
- High level of process safety due to durable materials and robust design
- Easy to clean thanks to detachable outer electrode
- Particularly suitable for monitoring ultrapure water in power plants
- Calibration Certificate
- Suitable PortaSim simulators

Specifications

| | |
|-----------------------|--|
| Cell constant: | 0.029/cm |
| Measuring range: | 0.001 ... 1000 $\mu\text{S}/\text{cm}$ |
| Material: | Cell and electrodes: 1.4571 stainless steel; insulator: PVDF; gaskets: FKM (Viton) |
| Temperature detector: | Pt 1000 Class A, $T_{90} < 2 \text{ min}$ |
| Temperature: | Medium: -30 ... +120 °C; Environment: -25 ... +80 °C |
| Pressure: | Max. 25 bar (-30 ... +70 °C) Max. 10 bar (120 °C) |
| Process adaptation: | G 1" thread |
| Sensor cap: | 7-pin |

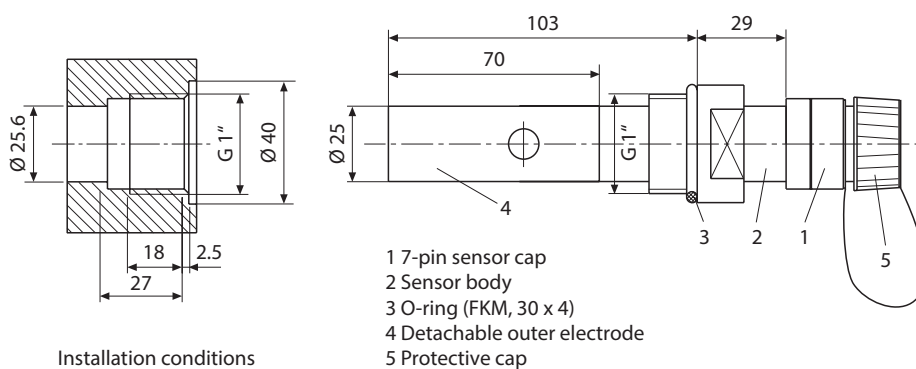
Pressure/Temperature Diagram



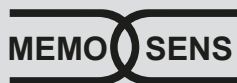
| Product Range | | Order No. | |
|--|-------------------------------------|----------------|----------------|
| SE 604 conductivity sensor | G 1" | SE 604 | |
| Accessories | | Order No. | |
| Measuring cable with plug | Sensor connection: 7-pin socket | 1.5 m | ZU 0743 |
| | Device connection: ferrules | 3 m | ZU 0645 |
| | Temperature: -20 ... +80 °C | 5 m | ZU 0569 |
| | | 10 m | ZU 0570 |
| | | 15 m | ZU 0589 |
| | | 20 m | ZU 0590 |
| 30 m | ZU 0660 | | |
| 6-hole flange | | ZU 0278 | |
| Conductivity standard | KCl 300 ml 15 µS/cm ± 1 % | ZU 0350 | |
| | KCl 500 ml 147 µS/cm ± 1 % | ZU 0702 | |
| Calibration Certificate | | ZU 0320 | |
| Conductivity simulator (cell constant 0.029/cm (Details from page 86)) | PortaSim Cond A*) 0.055 µS/cm 25 °C | ZU 0308 | |
| | PortaSim Cond B*) 5 µS/cm 100 °C | ZU 0309 | |

*) Conductivity simulator; checking the meter and cable by simulating the sensor.
High-precision comparison resistors, traced to NIST standard. Used for measurement to USP <645>.
Check by simply replacing the sensor by the simulator

Dimension drawing



Installation conditions



SE 604 Memosens Conductivity Sensors

Robust 2-electrode sensor, for precise and reliable measurement of low and very low conductivities, particularly in ultrapure water, digital, with Memosens technology.

Robust, coaxially arranged electrodes made of stainless steel. Large measuring range from ultrapure water to 500 $\mu\text{S}/\text{cm}$.

Integrated temperature detector for temperature compensation. Easy to clean thanks to replaceable outer electrode.

Applications

Boiler feed water, feed water, boiler water, cooling water, water vapor cycle, pure water, condenser monitoring

Facts

- Perfect galvanic isolation thanks to Memosens technology
- Digital data transfer
- Integrated sensor diagnostics
- Large measuring range from ultrapure water to 500 $\mu\text{S}/\text{cm}$
- Coaxially arranged electrodes
- Independent of installation conditions
- Integrated temperature detector
- High level of process safety due to durable materials and robust design
- Easy to clean thanks to detachable outer electrode
- Particularly suitable for monitoring ultrapure water in power plants

Specifications

| | |
|-----------------------|--|
| Cell constant: | 0.029/cm |
| Measuring range: | 0.001 ... 500 $\mu\text{S}/\text{cm}$ |
| Accuracy: | 2 % meas. value |
| Material: | Sensor body and electrodes: 1.4571 stainless steel Insulator: PVDF Gaskets: FKM (Viton) |
| Temperature detector: | NTC 30 k Ω |
| Temperature: | Medium: -20 ... +120 °C Environment: -25 ... +80 °C |
| Pressure: | Max. 25 bar (-20 ... +70 °C) Max. 10 bar (120 °C) |
| Process adaptation: | G 1" thread |
| Sensor connector: | Memosens |
| ATEX marking: | II 1 G Ex ia IIC T3/T4/T6 |
| FM marking: | IS for Class I, Division 1, Groups A, B, C, D; Class I, Zone 0, AEx/Ex ia IIC T6 ... T4 NIFW for Class I, Division 2, Groups A, B, C, D; Class I, Zone 2, IIC T6 ... T4 |

SE 604 Memosens Conductivity Sensors

Product Range

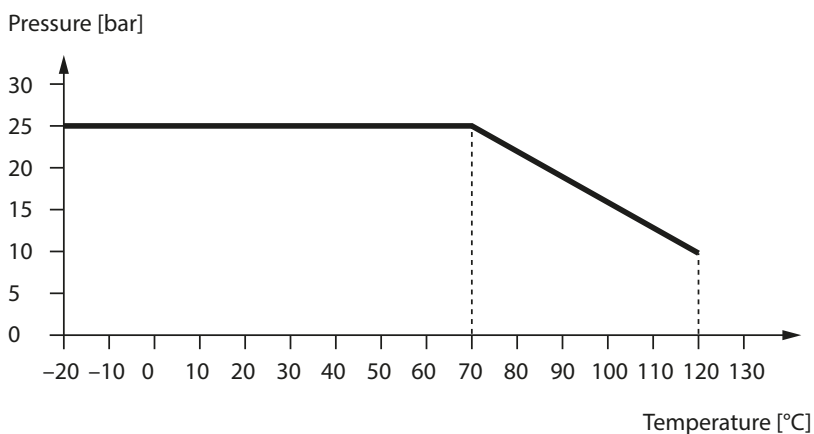
| Sensor | | Order No. |
|------------------------------|---------|-------------------|
| SE 604 conductivity sensor | G 1" | SE 604-MS |
| SE 604 X conductivity sensor | Ex G 1" | SE 604X-MS |

| Accessories | | Order No. |
|-----------------------|---------------------|-----------------------|
| Memosens cable | 3 m | CA/MS-003NAA |
| | 5 m | CA/MS-005NAA |
| | 10 m | CA/MS-010NAA |
| | 20 m ^{*)} | CA/MS-020NAA |
| Memosens cable, Ex | 3 m | CA/MS-003XAA |
| | 5 m | CA/MS-005XAA |
| | 10 m | CA/MS-010XAA |
| | 20 m ^{*)} | CA/MS-020XAA |
| 6-hole flange | | ZU 0278 |
| Conductivity standard | KCl 15 µS/cm ± 1 % | 300 ml ZU 0350 |
| | KCl 147 µS/cm ± 1 % | 500 ml ZU 0702 |

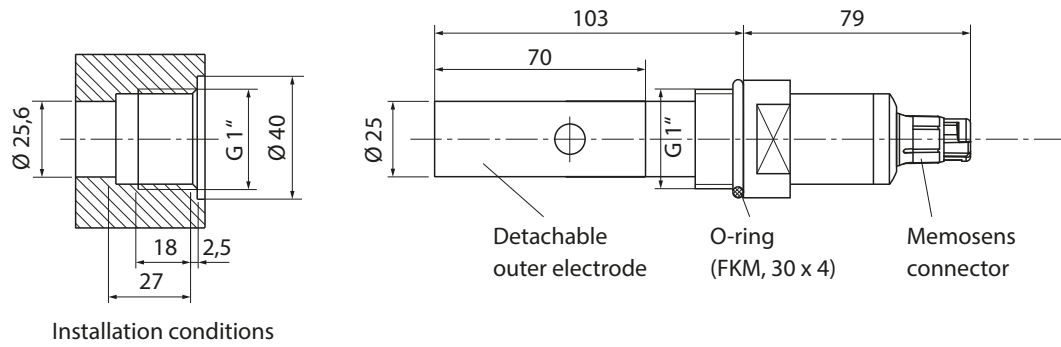
| MemoSuite | | Order No. |
|--|--|--------------------|
| Management software for Memosens sensors | Basic version (calibration) | SW-MS1400-B |
| | Advanced version (calibration, diagnostics, documentation) | SW-MS1400-A |

^{*)} Greater lengths on request

Pressure/Temperature Diagram



Dimension Drawing



All dimensions in mm

SE 604 Memosens Conductivity Sensors

Accessories / Specifications

Flange (6-hole)
ZU 0278



Material: Stainless steel, 1.4571
 Accessories: 6 bolts, washers, nuts, M 12, 1.4571 stainless steel
 Pressure: Max. 10 bar
 Temperature: Max. 120 °C
 Sensor locations: 1 x G 1"
 Sensors: SE 604

Dimension drawing SE 604 Memosens with ZU 0278 flange

