

## 22 | Conductivity Sensors ACF60 / ACS60



- Six-electrode design reduces sensitivity to fouling and polarization
- Wide measuring range:  
0 - 10  $\mu\text{S}/\text{cm}$  up to 0 - 850  $\text{mS}/\text{cm}$
- Integrated Pt1000 temperature sensor
- No O-rings or epoxy - suitable for CIP/SIP

### Six-Electrodes

The ACF60/ACS60 conductivity sensor features a superior six-electrode, four-pole design. The arrangement of the four current electrodes around the two potential electrodes results in a reliable and precise measurement. This unique design also provides greatly reduced sensitivity to sensor fouling and polarization. The combination of optek C82x or C8000 universal converter and ACF60/ACS60 conductivity sensors allow a wide dynamic range from 0 - 10  $\mu\text{S}/\text{cm}$  up to 0 - 850  $\text{mS}/\text{cm}$  with the same sensor.

### Temperature Measurement

The integrated Pt1000 platinum RTD in the tip of the ACF60/ACS60 sensor provides fast-response temperature measurement for compensation, which can be displayed and transmitted from the C8000 converter.

### Sanitary Design

Designed for ultra-sterility, the six electrodes are sealed in the FDA (USP class VI) compliant PEEK sensor tip without the use of O-rings or epoxy. The ACF60/ACS60 sensor is suitable for CIP/SIP applications.

### ACF60

Mounted in an optek inline sensor body, the design ensures smooth and unrestricted flow of all process fluids with minimized hold-up and hydrostatic shear.



ACF60  
Conductivity Sensor



ACS60  
Conductivity Sensor

| Technical Data                  | ACF60                                                                                                                               | ACS60                                                                                                        |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Material (wetted)</b>        | PEEK (FDA, USP Class VI)<br>electrodes: • Stainless Steel 1.4435 (SS 316L), dF < 1%, BN2<br>• Hastelloy 2.4602 Hastelloy C22        |                                                                                                              |
| <b>Port-gaskets</b>             | O-ring: EPDM (FDA, USP Class VI), ... others on request                                                                             |                                                                                                              |
| <b>Line size</b>                | 1/8 in. to 6 in. (DN 6 to DN 150), ... others on request                                                                            |                                                                                                              |
| <b>Port connection</b>          |                                                                                                                                     | OSP25-GS60 (similar Ingold-port)<br>nominal length: 60 mm<br>diameter: 25 mm<br>thread: G1-1/4 in. ISO 228/1 |
| <b>Installation accessories</b> |                                                                                                                                     | weld-in ports, Varivent adapter 50.00), clamp adapter                                                        |
| <b>Process pressure</b>         | 0 - 20 bar (0 - 290 psi) - 50 °C (122 °F)<br>0 - 10 bar (0 - 145 psi) - 100 °C (212 °F)<br>0 - 4 bar (0 - 58 psi) - 135 °C (275 °F) |                                                                                                              |
| <b>Process temperature</b>      | permanent: -10 - 90 °C (14 - 194 °F)<br>peak 30 min/day: -10 - 135 °C (14 - 275 °F)                                                 |                                                                                                              |
| <b>Ambient temperature</b>      | operation: -10 °C - 40 °C (14 °F - 104 °F)<br>transport: -20 °C - 70 °C (-4 °F - 158 °F)                                            |                                                                                                              |
| <b>Temperature sensor</b>       | integrated Pt1000 RTD (IEC Class A)<br>accuracy: $\pm 0.25$ °C at 25 °C (77 °F)                                                     |                                                                                                              |
| <b>Protection</b>               | IP65                                                                                                                                |                                                                                                              |
| <b>Measuring range</b>          | any measuring range between 0 - 10 $\mu\text{S}/\text{cm}$ to 850 $\text{mS}/\text{cm}$                                             |                                                                                                              |

|                                 | Accuracy                                                                                                                                                    | Repeatability |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 0 - 10 $\mu\text{S}/\text{cm}$  | calibrated: $\pm 1\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$<br>uncalibrated: $\pm 3\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$  | $\pm 0.5\%$   |
| 0 - 250 $\text{mS}/\text{cm}$   | calibrated: $\pm 1\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$<br>uncalibrated: $\pm 3\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$  | $\pm 0.5\%$   |
| 250 - 500 $\text{mS}/\text{cm}$ | calibrated: $\pm 2\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$<br>uncalibrated: $\pm 6\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$  | $\pm 1\%$     |
| 500 - 850 $\text{mS}/\text{cm}$ | calibrated: $\pm 5\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$<br>uncalibrated: $\pm 12\%$ of measuring value $\pm 0.2$ $\mu\text{S}/\text{cm}$ | $\pm 3\%$     |

Pressure and temperature ratings specified herein may be subject to limitations - see instruction manual. The appropriate choice of material for all wetted parts is the sole responsibility of the user. Data given are subject to changes without prior notice.