



LFS1K0.1505.6W.B.010-6

Conductivity Sensor

For various conductivity measurement applications

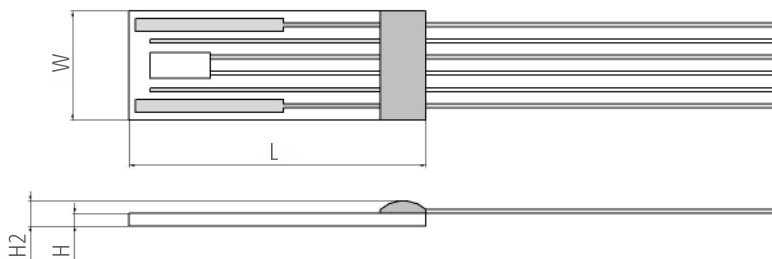
Benefits & Characteristics

- Wide conductivity and temperature range
- Fast response time
- Optimal accuracy
- Resistance to various chemicals¹⁾
- Excellent long-term stability
- Integrated RTD for temperature measurement and / or compensation
- Four-electrode measurement²⁾

1) Aggressive media can influence the long-term stability. Chemical resistance of the sensor in the end application must be tested by the customer.

2) Two-electrode configuration available upon request.

Illustration³⁾



3) For actual size, see dimensions.

Technical Data

| | | |
|---|---|----------------------|
| Conductivity range: | 100 $\mu\text{S}/\text{cm}$ to 200 mS/cm (Extended range from 10 $\mu\text{S}/\text{cm}$ to 200 mS/cm possible with cell constant correction) | |
| Cell constant ⁴⁾ : | typical 0.68 cm^{-1} | |
| Nominal resistance: | 1000 Ω at 0 $^{\circ}\text{C}$ | |
| Measurement frequency range: | 100 Hz to 10 kHz | |
| Maximum excitation voltage (between pin 1 and pin 6): | < 0.7 Vpp (electrolysis of the analyte has to be avoided) | |
| Operating temperature range: | -30 $^{\circ}\text{C}$ to +100 $^{\circ}\text{C}$ | |
| Temperature sensor: | Pt1000 | |
| Temperature coefficient (Pt1000): | 3850 ppm/K | |
| Measuring current (Pt1000) ⁵⁾ : | 0.3 mA | |
| Temperature sensor accuracy (dependent on temperature range): | IEC 60751 F0.3 | B (IST AG reference) |
| Dimensions (L x W x H / H2 in mm) | 14.9 \pm 0.3 x 5.5 \pm 0.3 x 0.65 \pm 0.1 / 1.2 \pm 0.3 | |
| Connection: | Pt/Ni-wires, \varnothing 0.2 mm | |

The LFS1505 supersedes the LFS155 which is no longer in production



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Temperature dependence of resistivity: according to IEC 60751:

-50 °C to 0 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T-100) \times T^3)$
 0 °C to 150 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2)$
 $A = 3.9083 \times 10^{-3} \times \text{°C}^{-1}$
 $B = -5.775 \times 10^{-7} \times \text{°C}^{-2}$
 $C = -4.183 \times 10^{-12} \times \text{°C}^{-4}$
 R_0 = resistance value in Ω at $T = 0 \text{ °C}$
 T = temperature in accordance with ITS90

Storage temperature: -20 °C to +100 °C

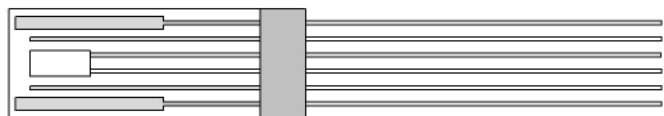
4) Cell constant is strongly affected by external objects coming close to the front surface of the sensor.

5) Selfheating must be considered

Product Photo



Pin Assignment



| | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| I_2 | V_2 | T_2 | T_1 | V_1 | I_1 |

I: applied current V: measured voltage T: temperature sensor

Order Information

| | | |
|------------------------|--------------|------------------------|
| Description: | Item number: | Former main reference: |
| LFS1K0.1505.6W.B.010-6 | 103856 | 090.00078 |



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