



LFS1K0.1505.6W.B.010-6

Conductivity Sensor

For various conductivity measurement applications

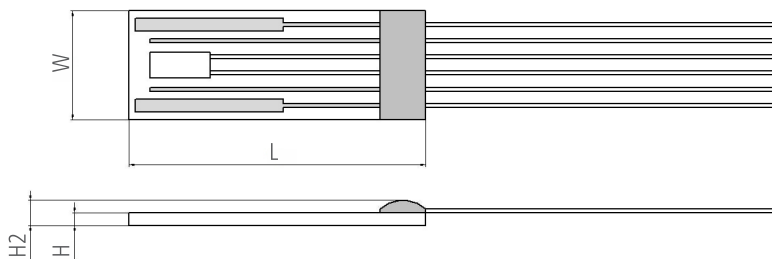
Benefits & Characteristics

- 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 $T = 0 \text{ °C}$

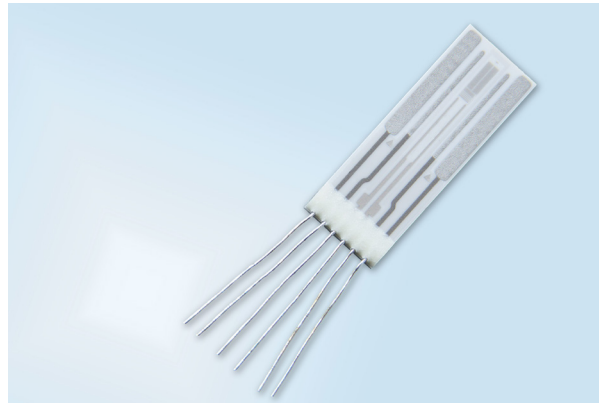
T = temperature in accordance with ITS90

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

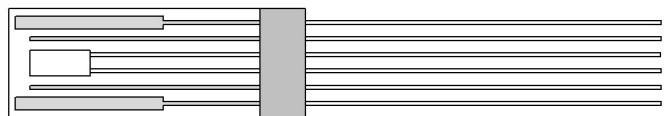
4) Cell constant is strongly affected by external objects coming close to the front surface of the sensor.

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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