



LFS1505

Conductivity Sensor

For various conductivity measurement applications

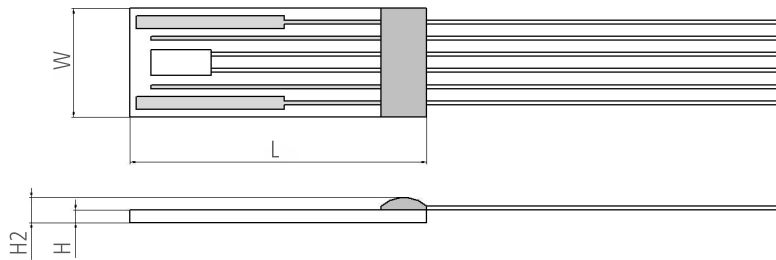
Benefits & Characteristics

- 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⁾
- Customer-specific sensor available upon request

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}
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 °C to +100 °C
Temperature sensor:*	Pt1000
Temperature coefficient (Pt1000):	3850 ppm/K
Measuring current (Pt1000) ⁵⁾ :	0.3 mA
Temperature sensor accuracy (dependent on temperature range):*	IST AG reference
	IEC 60751 F0.3 B
	IEC 60751 F0.6 C
Connection:*	Pt/Ni-wires, \varnothing 0.2 mm Cu/Ag-wires, PTFE-insulated, AWG 30

The LFS1505 supersedes the LFS155 which is no longer in production



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
Alternative construction:*	Customized over-mold

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

5) Selfheating must be considered

* Customer-specific alternatives available

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 - 6W (Ni/Pt-wires, Ø 0.2 mm, 10 mm long*)

Size	Dimensions (L x W x H / H2 in mm)	F0.3 (class B)	F0.6 (class C)
Nominal resistance: 1000 Ω at 0 °C			
1505	14.9 \pm 0.3 x 5.5 \pm 0.3 x 0.65 \pm 0.1 / 1.2 \pm 0.3	LFS1K0.1505.6W.B.010-6	LFS1K0.1505.6W.C.010-6
Order code		090.00078	090.00079

(*) Other wire lengths upon request

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Order Information - 2I (Cu/Ag-wires, PTFE-insulated, AWG 30, 70 mm long*)

Size	Dimensions (L x W x H / H2 in mm)	F0.3 (class B)	F0.6 (class C)
Nominal resistance: 1000 Ω at 0 °C			
1505	14.9 ±0.3 x 5.5 ±0.3 x 0.65 ±0.1 / 1.2 ±0.3	LFS1K0.1505.2I.B.070-6	LFS1K0.1505.2I.C.070-6
Order code		090.00080	090.00081

(* Other wire lengths upon request

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