



LFS1305

Conductivity Sensor

For various conductivity measurement applications

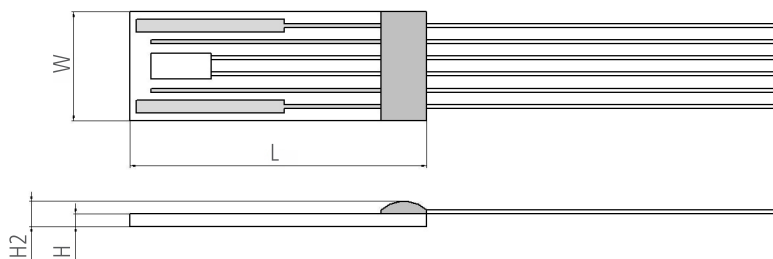
Benefits & Characteristics

- 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
- 4 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) 2 electrode configuration available upon request

Illustration³⁾



3) For actual size, see dimensions

Technical Data

Conductivity range:*	100 μ S/cm to 200 mS/cm	
Cell constant ⁴⁾ :*	typical 0.86 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	



Temperature dependence of resistivity: -50 °C to 0 °C 0 °C to 150 °C	according to IEC 60751: $R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T-100) \times T^3)$ $R(T) = R_0 \times (1 + A \times T + B \times T^2)$ 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 °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) Self heating 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, 10mm*)

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			
1305	12.9 ±0.3 x 5.5 ±0.3 x 0.65 ±0.1 / 1.2 ±0.3	LFS1K0.1305.6W.B.010-6	LFS1K0.1305.6W.C.010-6
Order code		090.00072	090.00073

(*) Other wire lengths upon request



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