Innovative Sensor Technology

physical. chemical. biological.

LFS1710

Conductivity Sensor

For various conductivity measurement applications

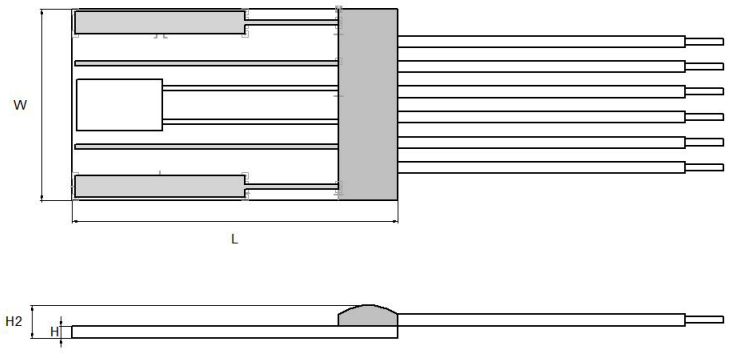
Benefits & Characteristics

- Wide conductivity and temperature range
- Fast response time
- Optimal accuracy
- Resistance to various chemicals[1)]
- Excellent long-term stability
- Integrated RTD for temperature measurement and / or compensation
- 4 electrodes measurement[2)]
- 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

Illustration[3)]



3) For actual size, see dimensions

Technical Data

Conductivity range:*	0.2 mS/cm to 200 mS/cm	
Cell constant[4)]:*	typical 0.44 cm^{-1}	
Measurement frequency range:	50 Hz to 3 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, Ø 0.2 mm	
	Cu/Ag-wires, PTFE-insulated, AWG 30	

The LFS1710 supersedes the LFS117 which is no longer in production

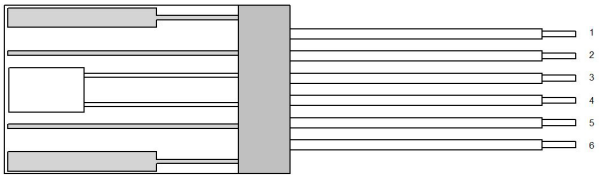
Temperature dependence of resistivity:	according to IEC 60751: -50 °C to 0 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T - 100) \times T^3)$ 0 °C to 150 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2)$ A = $3.9083 \times 10^{-3} \times °C^{-1}$ B = $-5.775 \times 10^{-7} \times °C^{-2}$ C = $-4.183 \times 10^{-12} \times °C^{-4}$ 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) Selfheating must be considered

* Customer-specific alternatives available

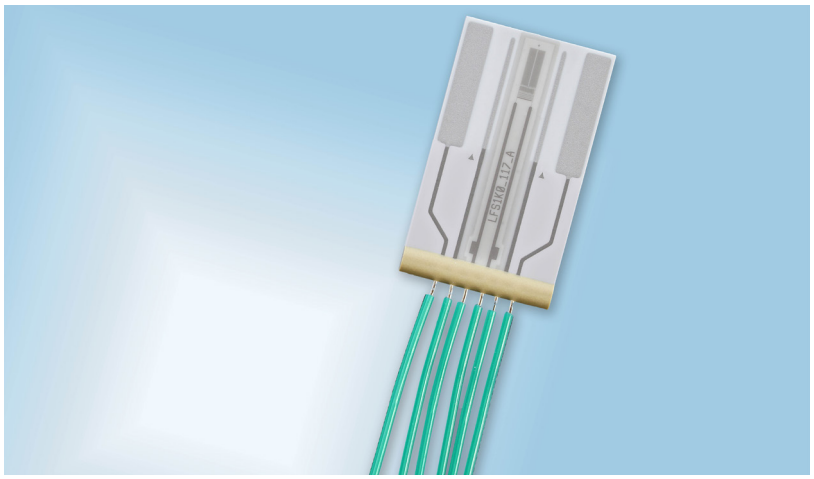
Pin Assignment



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

Product Photo



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

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			
1710	16.9 ±0.3 x 9.9 ±0.3 x 0.65 ±0.1 / 1.2 ±0.3	LFS1K0.1710.6W.B.010-6	LFS1K0.1710.6W.C.010-6
Order code		103852	103853
Former order code		*090.00074*	*090.00075*

(*) Other wire lengths upon request

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

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			
1710	16.9 ±0.3 x 9.9 ±0.3 x 0.65 ±0.1 / 1.2 ±0.3	LFS1K0.1710.2I.B.070-6	LFS1K0.1710.2I.C.070-6
Order code		103854	103855
Former order code		*090.00076*	*090.00077*

(*) Other wire lengths upon request

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