LFS1107

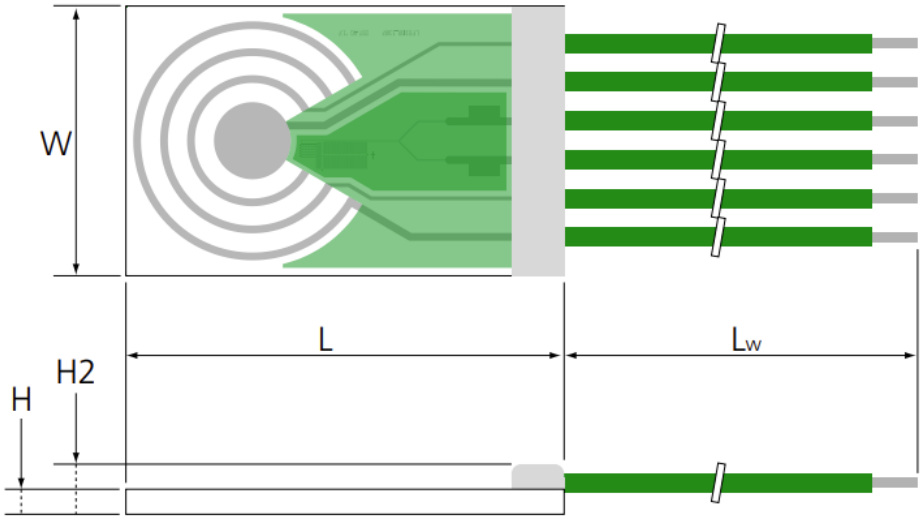
Conductivity sensor

For various conductivity measurement applications

Benefits & characteristics

- Integrated RTD for temperature measurement and / or compensation[1)]
- Very wide conductivity
- Circular electrodes
- High accuracy
- Four-electrode measurement

Illustration [2)]



L	W	H	H2	Lw
Length	Width	Substrate height	Total height	Wire length
± 0.1 mm	± 0.1 mm	± 0.1 mm	± 0.3 mm	Lw < 30 mm: ± 1 mm Lw ≤ 30 mm: ± 1.5 mm

[1)] Without integrated RTD, see data sheet Conductivity LFS1505.2L.20-4

[2)] For actual size, see dimensions

Technical data

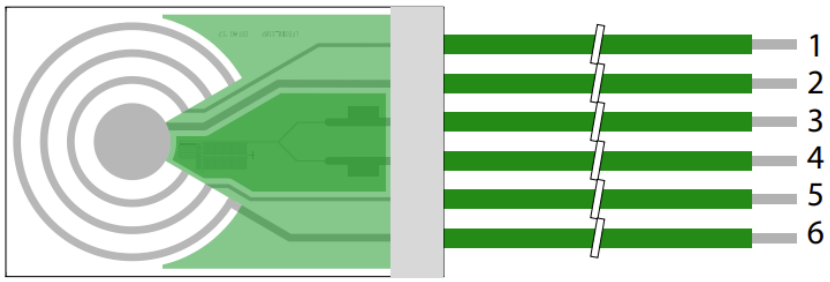
Conductivity range:[3]	10 µS/cm to 200 mS/cm	
Cell constant: [4] *	Typical 0.42 cm^{-1}	
Measurement frequency range:	100 Hz to 300 Hz	
Maximum excitation voltage (between pin 2 and pin 6):	< 0.7 Vpp (electrolysis of the analyte has to be avoided) Max. voltage depends on the solution	
Operating temperature range:	-30 °C to +100 °C	
Temperature sensor: *	1000 Ω nominal resistance at 0°C	
Temperature coefficient (Pt1000)	3850 ppm/K	
Measuring current (Pt1000) [5]	0.3 mA	
Temperature sensor accuracy (dependent on temperature range): *		**iST 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	
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	

* Customer-specific alternatives available

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

[3] Extended range from 10 µS/cm to 200 mS/cm possible with cell constant correction.
[4] Cell constant is strongly affected by external objects coming close to the front surface of the sensor. Geometry of the containing chamber or vessel in the final application can affect the cell constant and measurement range. Please contact iST for more information.
[5] Self-heating must be considered

Pin Assignment



1	2	3	4	5	6
V+	I+	T_1	T_2	V-	I-

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

Order Information

Order code	Product name	Dimensions L x W x H / H2, L_W [mm]	Temperature sensor Class
2I - Cu/Ag-wires, PTFE-insulated, AWG 30, L_W = 70 mm *			
103866	LFS1K0.1107.2I.B.070-6.S	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	Class IEC 60751 F0.3
103867	LFS1K0.1107.2I.C.070-6.S	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	Class IEC 60751 F0.6
6W - Pt/Ni-wires, Ø 0.2 mm, L_W = 10 mm *			
103868	LFS1K0.1107.6W.B.010-6.S	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	Class IEC 60751 F0.3
103869	LFS1K0.1107.6W.C.010-6.S	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	Class IEC 60751 F0.6

*Customer-specific alternatives available

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