



# LFS1305

## Conductivity Sensor

### For various conductivity measurement applications

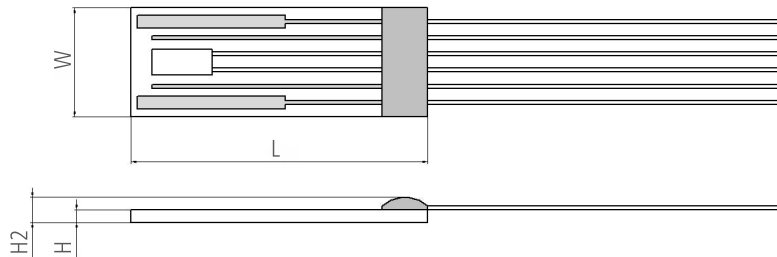
#### Benefits & Characteristics

- Wide conductivity and temperature range
- Fast response time
- Optimal accuracy
- Resistance to various chemicals<sup>1)</sup>
- Excellent long-term stability
- Integrated RTD for temperature measurement and / or compensation
- 4 electrode measurement<sup>2)</sup>
- 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<sup>3)</sup>



3) For actual size, see dimensions

#### Technical Data

Conductivity range:*	100 $\mu\text{S}/\text{cm}$ to 200 $\text{mS}/\text{cm}$	
Cell constant <sup>4)</sup> :*	typical 0.86 $\text{cm}^{-1}$	
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) <sup>5)</sup> :	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  $\Omega$  at  $T = 0 \text{ °C}$

$T$  = temperature in accordance with ITS90

Storage temperature:

-20 °C to +100 °C

Alternative construction:\*

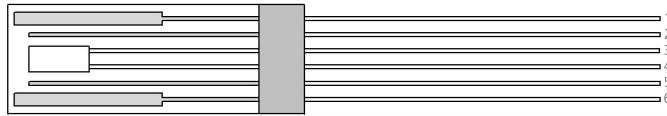
Customized over-mold

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

5) Self heating must be considered

\* Customer-specific alternatives available

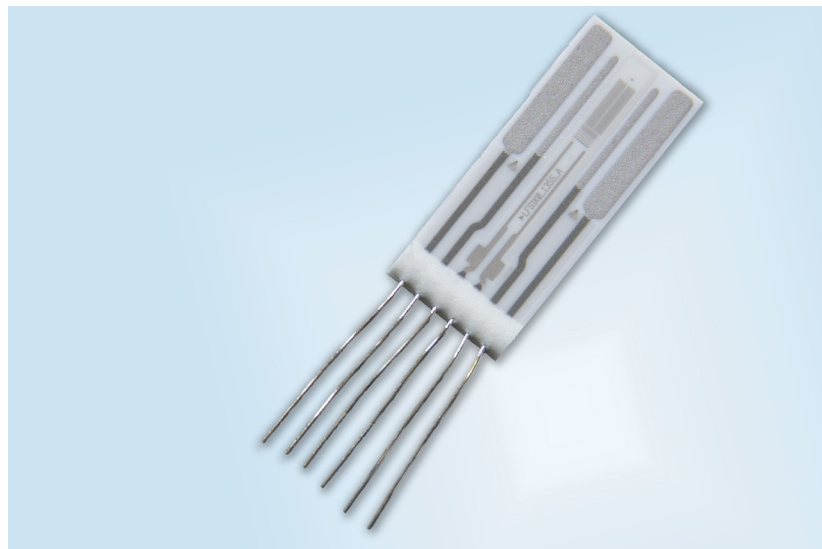
## Pin Assignment



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

## Product photo





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		103850	103851
Former order code		090.00072	090.00073

(\*) Other wire lengths upon request



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