



# LFS1305

## Conductivity Sensor

### For various conductivity measurement applications

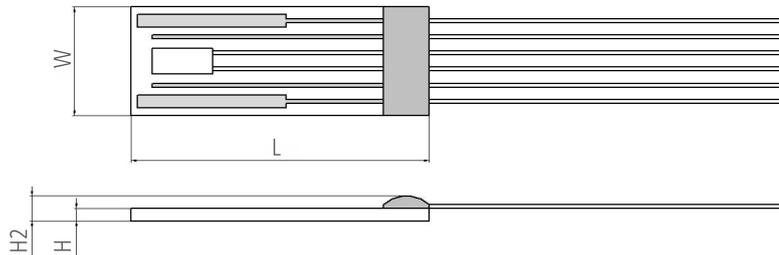
#### Benefits & Characteristics

- 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	

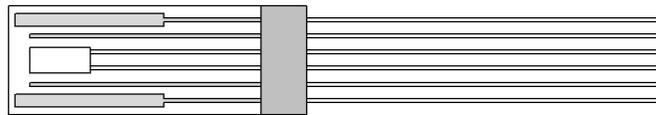


Temperature dependence of resistivity: -50 °C to 0 °C 0 °C to 150 °C	according to IEC 60751: $R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T-100) \times T^3)$ $R(T) = R_0 \times (1 + A \times T + B \times T^2)$ A = $3.9083 \times 10^{-3} \times \text{°C}^{-1}$ B = $-5.775 \times 10^{-7} \times \text{°C}^{-2}$ C = $-4.183 \times 10^{-12} \times \text{°C}^{-4}$ R <sub>0</sub> = 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 <sub>2</sub>	V <sub>2</sub>	T <sub>2</sub>	T <sub>1</sub>	V <sub>1</sub>	I <sub>1</sub>

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



IST中国代理商--上海卓蕊科技应用发展有限公司  
上海市浦东新区沪南路2633弄汇宝中心3楼 | 021-66300096 | vannessysq@163.com | www.shkr-china.com



Innovative Sensor Technology IST AG, Stegrütstrasse 14, 9642 Ebnat-Kappel, Switzerland  
Phone: +41 71 992 01 00 | Fax: +41 71 992 01 99 | Email: info@ist-ag.com | www.ist-ag.com

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