



# LFS1107

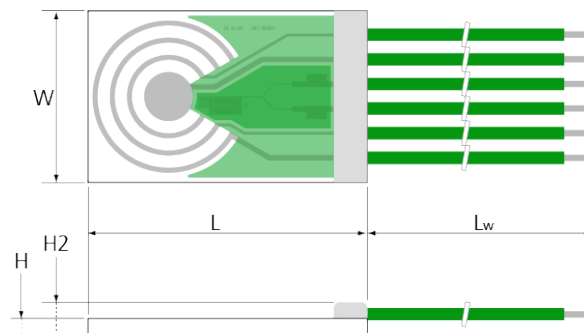
## Conductivity Sensor

### For various conductivity measurement applications

#### Benefits & Characteristics

- Very wide conductivity range
- Small size
- Integrated RTD for temperature measurement and/or compensation
- 4 electrode measurement
- Circular electrodes

#### Illustration<sup>1)</sup>



1) For actual size, see dimensions

#### Technical Data

Conductivity range <sup>2):*</sup>	10 $\mu\text{S}/\text{cm}$ to 200 $\text{mS}/\text{cm}$	
Cell constant <sup>2):*</sup>	typical 0.42 $\text{cm}^{-1}$	
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 <sup>3):</sup>	-30 °C to +100 °C	
Temperature sensor:*	Pt1000	
Temperature coefficient (Pt1000):	3850 ppm/K	
Measuring current (Pt1000) <sup>4):</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:*	Cu/Ag-wires, PTFE-insulated, AWG 30 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:

$$R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T-100) \times T^3)$$

$$R(T) = R_0 \times (1 + A \times T + B \times T^2)$$

$$A = 3.9083 \times 10^{-3} \text{ } ^\circ\text{C}^{-1}$$

$$B = -5.775 \times 10^{-7} \text{ } ^\circ\text{C}^{-2}$$

$$C = -4.183 \times 10^{-12} \text{ } ^\circ\text{C}^{-4}$$

$R_0$  = resistance value in  $\Omega$  at  $T = 0 \text{ } ^\circ\text{C}$

$T$  = temperature in accordance with ITS90

Storage temperature:

-20 °C to +100 °C

2) Geometry of the containing chamber or vessel in the final application can affect the cell constant and measurement range. Please contact IST AG for more information.

3) Although operating temperature is under 100 °C, the device will temporarily withstand higher temperatures. Contact IST AG for more information.

4) Self-heating must be considered.

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

\* Customer-specific alternatives available

### Pin Assignment:



1	2	3	4	5	6
V+	I+	T <sub>1</sub>	T <sub>2</sub>	V-	I-

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

### Order Information - 2I (Cu/Ag-wires, PTFE-insulated, AWG 30, L<sub>w</sub> = 70 mm\*)

Size	Dimensions (L x W x H / H2 in mm)	F0.3 (class B)	F0.6 (class C)
Nominal resistance: 1000 $\Omega$ at 0 °C			
1107	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	LFS1K0.1107.2I.B.070-6.S	LFS1K0.1107.2I.C.070-6.S
Order code		090.00088	090.00089



Order Information - 6W (Pt/Ni-wires, Ø 0.2 mm,  $L_w = 10 \text{ mm}^*$ )

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			
1107	11.4 ±0.3 x 7 ±0.3 x 0.63 ±0.1 / 1.2 ±0.3	LFS1K0.1107.6W.B.010-6.S	LFS1K0.1107.6W.C.010-6.S
Order code		090.00090	090.00091

\* Customer-specific alternatives available



Innovative Sensor Technology IST AG, Stegrütistrasse 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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