



# LFS1K0.1710.6W.C.010-6

## Conductivity Sensor

For various conductivity measurement applications

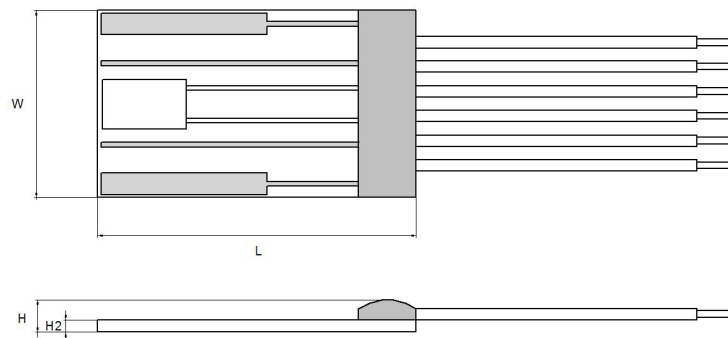
### Benefits & Characteristics

- 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 electrodes measurement<sup>2)</sup>

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:	0.2 mS/cm to 200 mS/cm	
Cell constant <sup>4)</sup> :	typical 0.44 cm <sup>-1</sup>	
Nominal resistance:	1000 Ω at 0 °C	
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) <sup>5)</sup> :	0.3 mA	
Temperature sensor accuracy (dependent on temperature range):	IEC 60751 F0.6	C (IST AG reference)
Dimensions (L x W x H / H2 in mm)	16.9 ±0.3 x 9.9 ±0.3 x 0.65 ±0.1 / 1.2 ±0.3	
Connection:	Pt/Ni-wires, Ø 0.2 mm	

The LFS1710 supersedes the LFS117 which is no longer in production



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

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  $T = 0 \text{ °C}$

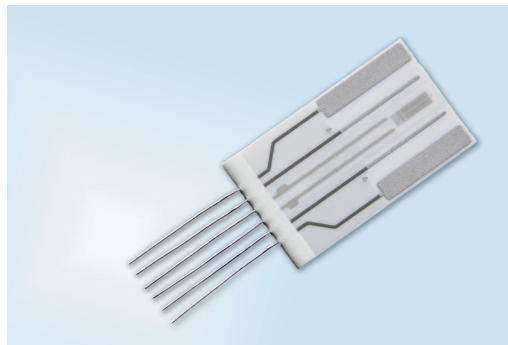
T = temperature in accordance with ITS90

Storage temperature: -20 °C to +100 °C

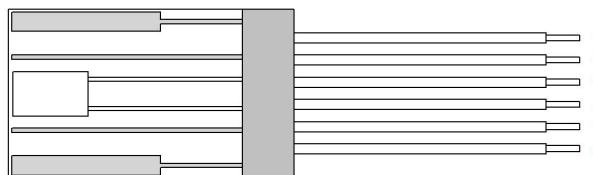
4) Cell constant is strongly affected by external objects coming close to the front surface of the sensor.

5) Selfheating must be considered

## Product Photo



## 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

## Order Information

Description:	Item number:	Former main reference:
LFS1K0.1710.6W.C.010-6	103853	090.00075



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