



# LFS1505

## Conductivity Sensor

### For various conductivity measurement applications

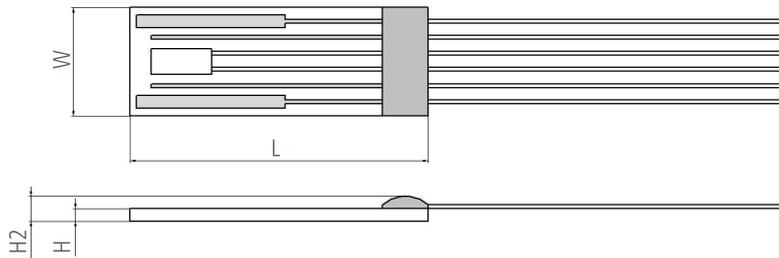
#### Benefits & Characteristics

- 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
- Four-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) Two-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 $\text{mS}/\text{cm}$ (Extended range from 10 $\mu\text{S}/\text{cm}$ to 200 $\text{mS}/\text{cm}$ possible with cell constant correction) |
| Cell constant <sup>4)</sup> :*                                 | typical 0.68 $\text{cm}^{-1}$   |
| 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<br>Cu/Ag-wires, PTFE-insulated, AWG 30  |

The LFS1505 supersedes the LFS155 which is no longer in production



|  |  |
|--|--|
| Temperature dependence of resistivity: | according to IEC 60751:<br>-50 °C to 0 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2 + C \times (T-100) \times T^3)$<br>0 °C to 150 °C $R(T) = R_0 \times (1 + A \times T + B \times T^2)$  |
|  | A = $3.9083 \times 10^{-3} \times \text{°C}^{-1}$<br>B = $-5.775 \times 10^{-7} \times \text{°C}^{-2}$<br>C = $-4.183 \times 10^{-12} \times \text{°C}^{-4}$<br>R <sub>0</sub> = resistance value in Ω at T = 0 °C<br>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) Selfheating 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, 10 mm long\*)

|                                    |  |                        |                        |
|------------------------------------|--|------------------------|------------------------|
| Size                               | Dimensions<br>(L x W x H / H2 in mm)           | F0.3 (class B)         | F0.6 (class C)         |
| Nominal resistance: 1000 Ω at 0 °C |  |                        |                        |
| 1505                               | 14.9 ±0.3 x 5.5 ±0.3 x<br>0.65 ±0.1 / 1.2 ±0.3 | LFS1K0.1505.6W.B.010-6 | LFS1K0.1505.6W.C.010-6 |
| Order code                         |  | 090.00078              | 090.00079              |

(\*) Other wire lengths upon request

The LFS1505 supersedes the LFS155 which is no longer in production



Order Information - 2I (Cu/Ag-wires, PTFE-insulated, AWG 30, 70 mm long\*)

| Size                               | Dimensions<br>(L x W x H / H2 in mm)           | F0.3 (class B)         | F0.6 (class C)         |
|------------------------------------|--|------------------------|------------------------|
| Nominal resistance: 1000 Ω at 0 °C |  |                        |                        |
| 1505                               | 14.9 ±0.3 x 5.5 ±0.3 x<br>0.65 ±0.1 / 1.2 ±0.3 | LFS1K0.1505.2I.B.070-6 | LFS1K0.1505.2I.C.070-6 |
| Order code                         |  | 090.00080              | 090.00081              |

(\* Other wire lengths upon request

The LFS1505 supersedes the LFS155 which is no longer in production



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, 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

All mechanical dimensions are valid at 25 °C ambient temperature, if not differently indicated • All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics • Technical changes without previous announcement as well as mistakes reserved • The information on this data sheet was examined carefully and will be accepted as correct; No liability in case of mistakes • Load with extreme values during a longer period can affect the reliability • The material contained herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner • Typing errors and mistakes reserved • Product specifications are subject to change without notice • All rights reserved