LSP 05X Potentiometric Level Transmitter

- Wetted parts in acid-proof, stainless steel and PEEK
- Compact, food compatible, hygienic design
- 3A approved / FDA and EHEDG compliant
- Process temperature -20...140°C
- Defined empty registration
- LED level monitor
- Unaffected by strong adhesive media
- Configurable measuring range

Description

The level measuring device LSP05X utilises the potentiometric measurement principle and can be used in all medias that have a minimum conductivity of 50 µS/cm.

From the low resistive measuring rod a high frequent current is fed through the media to the tank wall. The voltage between the tip of the rod and the tank wall is measured. This output voltage is proportional to the tank filling level.

The measurement is unaffected by temperature and adhesive media.

The instrument is ideal for measurements in small vessels with tough, pasty or strong adhesive media, such as ketchup, honey, and toothpaste. The integrated electronics provide a 4...20 mA output.

The LSP has automatic recognition of top/bottom mounting position. Even angled installation is possible. In a non-conductive tank such as a plastic tank a reference rod must be installed.

Please observe that a non-linear conductivity in the media will affect the accuracy of the measurement.

A version with separate rod sensor and electronics is available for applications where the ambient temperature at the measuring point exceeds 60°C. Due to the high temperature limit the LSP050 is well suitable for CIP and SIP processes.

The hygienic installation is guaranteed by using one of the hygienic weld-in sleeves. (Please refer to the separate data sheet).
### Technical Data

**Sensor**
- **Principle**: Potentiometric, low resistive
- **Insulating material**: PEEK
- **Media conductivity**: Min. 50 µS/cm
- **Min. span**: 50 mm, configurable by push buttons

**Electrical Connection**
- **Cable gland M16**: Plastic
- **Plug M12**: Nickel-plated brass or stainless steel

**Process Connection**
- **Integrated**: G1 hygienic (special welding part)
- **Adapters**: Refer to “Accessories” data sheet

**EMC data**
- **Immunity**: EN 61326
- **Emission**: EN 61326

**Disposal of product and packing**
- According to national laws or by returning to Baumer

### Mechanical data

**Housing**
- Stainless Steel, W1.4301/AISI 304

**Process conn. and rod**
- Stainless Steel, W1.4404/AISI 316 L

**Process temperature**
- -20...140°C

**Amb. temperature**
- -20...60°C (LSP050)
- -20...100°C (LSP055)

**Protection class**
- IP67

**Media pressure**
- Max. 16 bar

**Vibrations**
- IEC 68-2-6, GL test2

**Installation**
- Automatic top/bottom recognition

**Approval**
- 3A

### Electrical Installation

- **Push buttons > 3 sec.** to set 0% and 100%
- **Push both > 3 sec.** to reset.
- **Setpoint 100%; 20 mA**
- **Setpoint 0%; 4 mA**

**Connector**
- 18...36 Vdc (+)
- 4...20 mA (+)

**LED**
- 18...36 Vdc (-)
- 4...20 mA (-)

**Buttons**
- M12 plug

**Resolution, input**
- 15 bits

**Output**
- 4...20 mA, load max. 500 Ohm

**Accuracy**
- ± 0.5%

**Power supply**
- 18...36 Vdc, 200 mA max.

**Status signal, empty**
- 2.4 mA

**Status signal, full**
- 21.6 mA

**Repeatability**
- ± 0.1% of max. rod length

**Response time**
- $T_{66}$ 10 msec.

### Ordering Details - LSP05X

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<th>Type</th>
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<th>Rod Length</th>
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<th>Length in cm (Min. 20 cm - max. 300 cm)</th>
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<table>
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<th>11°...13° digit</th>
<th>Length in cm (Min. 100 cm - max. 500 cm)</th>
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3.1 material certificate, type number 5509-227
**Dimensional Drawings**

![Dimensional Drawings](image)

**3A Approval**

The LSP 051 and LSP 056 are approved by 3A providing it is mounted in a 3A approved counter part and installed according to the guidelines given in the installation manual.

The 3A approved products fulfill the FDA demands and follow the EHEDG guidelines regarding design, materials and finishing.

Refer to the 3A marked counter parts in the data sheet “Accessories”.

![3A Approval](image)