



Level sensors  
TDR level sensor

LFP1700-B4NMB



**Model Name** > LFP1700-B4NMB  
**Part No.** > 1057107



Illustration may differ

**At a glance**

- Level sensor for fluids
- No mechanical moving parts
- Manually cuttable and exchangeable probe with lengths from 200 mm up to 2,000 mm or rope probe up to 4,000 mm
- Resistant to deposit formation
- Process temperature up to 100 °C; process pressure up to 10 bar
- 3 in 1: combined display, analog output (acc. NAMUR NE 43) and binary output
- High enclosure rating of IP 67, rotatable housing and remote amplifier version

**Your benefits**

- Rugged design increases service life
- High flexibility due to cuttable and exchangeable monoprobe or rope probe
- Cost savings due to multiple output signals: one system for both level detection and continuous level monitoring
- Time and cost savings due to low maintenance and quick commissioning without calibration
- Titanium process connection brings high chemical resistance
- Compact and rotatable housing or remote amplifier ensures flexible installation
- No crosstalk when several sensors are mounted next to each other
- Advanced technology enables adjustment-free measurement



**Features**

|                      |                    |
|----------------------|--------------------|
| Medium:              | Fluids             |
| Measurement:         | Switch, Continuous |
| Probe type:          | Mono rod probe     |
| Probe length:        | 1,700 mm           |
| Process pressure:    | -1 bar ... 10 bar  |
| Process temperature: | -20 °C ... +100 °C |
| GOST approval:       | ✓                  |
| CULus certificate:   | ✓                  |
| RoHS certificate:    | ✓                  |
| IO-Link:             | ✓                  |
| Design:              | Standard           |

**Performance**

|                       |          |
|-----------------------|----------|
| Maximum level change: | 500 mm/s |
| Resolution:           | < 2 mm   |

|                                     |  |
|-------------------------------------|--|
| Accuracy of sensor element:         | $\pm 5 \text{ mm}$ <sup>1)</sup>                                     |
| Repeatability:                      | $\leq 2 \text{ mm}$  |
| Dielectricity constant:             | $\geq 1.8$ with coaxial tube, $\geq 5$ for mono rod probe/rope probe |
| Inactive area at process connector: | $25 \text{ mm}$ <sup>2)</sup>  |
| Inactive area at probe end:         | $10 \text{ mm}$ <sup>3)</sup>  |
| Conductivity:                       | No limitation  |
| Response time:                      | $< 400 \text{ ms}$   |
| MTTF:                               | 194.3 a (EN ISO 13849-1)   |

1) <sup>3)</sup> With water under reference conditions    <sup>2)</sup> With parameterized tank with water under reference conditions, otherwise 40 mm

### Mechanical data

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|                     |                     |
|---------------------|---------------------|
| Housing material:   | Plastic PBT         |
| Max.probe load:     | 6 Nm                |
| Process connection: | $\frac{3}{4}$ " NPT |
| Wetted parts:       | 1.4404, PTFE        |

### Electrical data

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|                      |   |
|----------------------|---|
| Temperature drift:   | $< 0.1 \text{ mm/K}$  |
| Enclosure rating:    | IP 67: EN 60529   |
| Supply voltage:      | 12 V DC ... 30 V DC <sup>1)</sup>   |
| Power consumption:   | $\leq 100 \text{ mA}$ at 24 V DC without output load  |
| Protection class:    | III   |
| Initialization time: | $\leq 5 \text{ s}$  |
| Output signal:       | 1 PNP transistor output (Q1) and 1 PNP/NPN transistor output (Q2) switchable, 4 mA ... 20 mA, 0 V ... 10 V automatic switching depending on the load.                                 |
| Output load:         | 0 V ... 10 V $> 750 \text{ Ohm}$ at $U_v \geq 14 \text{ V}$ , 4 mA ... 20 mA $< 350 \text{ Ohm}$ at $U_v > 12 \text{ V}$ , 4 mA ... 20 mA $< 500 \text{ Ohm}$ at $U_v > 15 \text{ V}$ |
| Upper signal level:  | 20 mA ... 20.5 mA   |
| Lower signal level:  | 3.8 mA ... 4 mA   |
| Hysteresis:          | Min. 2 mm, free adjustable  |
| Output current:      | $< 100 \text{ mA}$  |
| Signal voltage HIGH: | $V_s - 2 \text{ V}$   |
| Signal voltage LOW:  | $\leq 2 \text{ V}$  |
| Capacitive load:     | 100 nF  |
| Inductive load:      | $< 1 \text{ H}$   |
| Connection type:     | Round connector M12 x 1, 5-pin  |
| EMC:                 | EN 61326-1:2006, 2004/108/EG  |

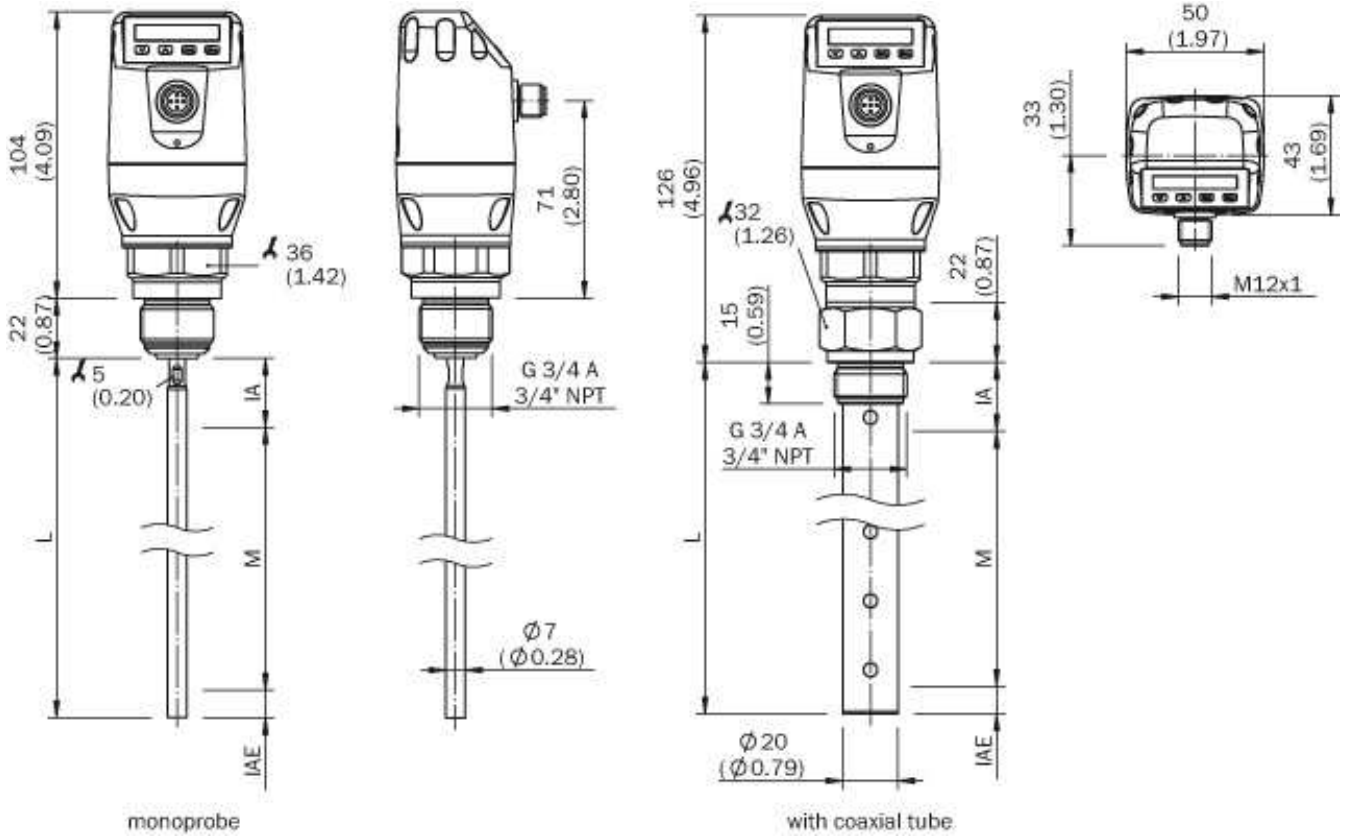
<sup>1)</sup> All connections are polarity protected. All outputs are overload and short-circuit protected.

### Ambient data

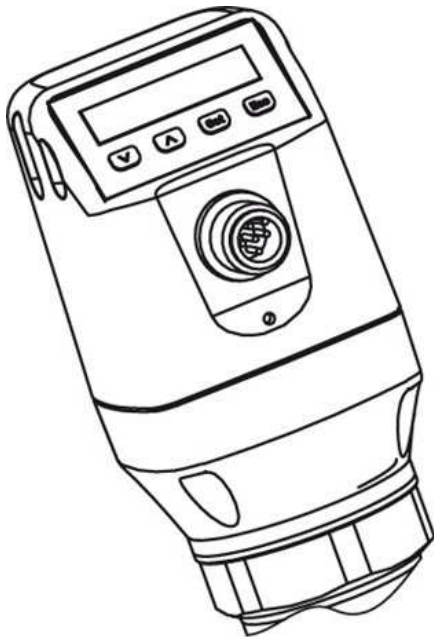
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|                                |   |
|--------------------------------|---|
| Ambient operating temperature: | $-20 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$ |
| Ambient storage temperature:   | $-40 \text{ }^\circ\text{C} \dots +80 \text{ }^\circ\text{C}$ |

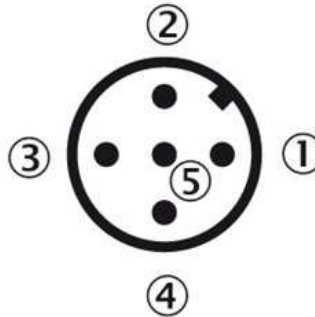
**Dimensional drawing: mono rod probe**



**Connection type**



- |1| L+: Supply voltage, brown
- |2| QA: Analog current-/voltage output, white
- |3| M: Ground, reference ground  
for current-/voltage output, blue
- |4| C/Q1: Switching output 1,  
PNP/IO-Link-communication, black
- |5| Q2: Switching output 2, PNP/NPN, grey



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