ONLINE DATA SHEET
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# Level sensors
# TDR level sensor

LFP1400-N1NMB

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**Model Name** > LFP1400-N1NMB
**Part No.** > 1059419

## At a glance

- Level monitoring in hygienic applications
- Manually cutable monoprobe up to 4,000 mm long with Ra  0.8 µm
- Process temperature up to 180 °C, process pressure up to 16 bar
- CIP/SIP resistant
- High enclosure rating IP 67 and IP 69K, autoclavable
- Interchangeable hygienic process connections
- 3 in 1: combined display, analog output and binary output
- Remote amplifier version with compact process connection

## Your benefits

- Robust design increases service life
- High flexibility due to cutable probe and interchangeable connection concept
- 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 without any calibration and quick commissioning Remote display of the measured value and space savings

IO-Link

## Features

| | |
|---|---|
| Medium: | Fluids |
| Measurement: | Switch, Continuous |
| Probe length: | 1,400 mm |
| Process pressure: | -1 bar ... 16 bar |
| Process temperature: | -20 °C ... +150 °C |
| EHEDG approval: | ✓ |
| GOST approval: | ✓ |
| UL approval: | ✓ |
| RoHS certificate: | ✓ |
| IO-Link: | ✓ |
| 3-A: | - |
| Design: | Standard |

## Performance

| | |
|---|---|
| Resolution: | < 2 mm |
| Accuracy of sensor element: | ± 5 mm |
| Repeatability: | ≤ 2 mm |
| Dielectricity constant: | ≥ 1.8 with coaxial tube, ≥ 5 for mono probe |


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| | |
|---|---|
| Inactive area at process connector: | 25 mm [1] |
| Inactive area at probe end: | 10 mm [2] |
| Conductivity: | No limitation |
| Response time: | < 400 ms [3] |
| MTTF: | 194.3 a (EN ISO 13849-1) |

[1] With parameterized tank with water under reference conditions, otherwise 40 mm [2] With water under reference conditions [3] Depending on measuring mode (high speed < 400 ms, high accuracy < 2,800 ms).

## Mechanical data

| | |
|---|---|
| Housing material: | 303 |
| Max.probe load: | 6 Nm |
| Process connection: | ¾" NPT |
| Wetted parts: | 316L (Ra ≤ 0,8 µm), PEEK |
| Housing design: | With PMMA viewing window |

## Electrical data

| | |
|---|---|
| Temperature drift: | < 0.1 mm/K |
| Enclosure rating: | IP 67: EN 60529, IP 69K: EN 40050 |
| Supply voltage: | 12 V DC ... 30 V DC [1] |
| Power consumption: | ≤ 75 mA at 24 V DC without output load |
| Protection class: | III |
| Initialization time: | ≤ 2 s |
| Output load: | 0 V ... 10 V > 750 Ohm at Uv ≥ 14 V, 4 mA ... 20 mA < 400 Ohm at Uv > 12 V, 4 mA ... 20 mA < 500 Ohm at Uv > 13,5 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 mA |
| Signal voltage HIGH: | Vs - 2 V |
| Signal voltage LOW: | ≤ 2 V |
| Capacitive load: | 100 nF |
| Inductive load: | < 1 H |
| Connection type: | Round connector M12 x 1, 5-pin |
| EMC: | EN 61326-1:2006, 2004/108/EG |
| Interference resistance: | EN 61000-6-2:2005 |
| Interference emission: | EN 61000-6-4:2007 |
| Single- and continuous shock: | EN 60068-2-27 |

[1] All connections are polarity protected. All outputs are overload and short-circuit protected.

## Ambient data

| | |
|---|---|
| Ambient operating temperature: | -20 °C ... +60 °C |
| Ambient storage temperature: | -40 °C ... +80 °C |


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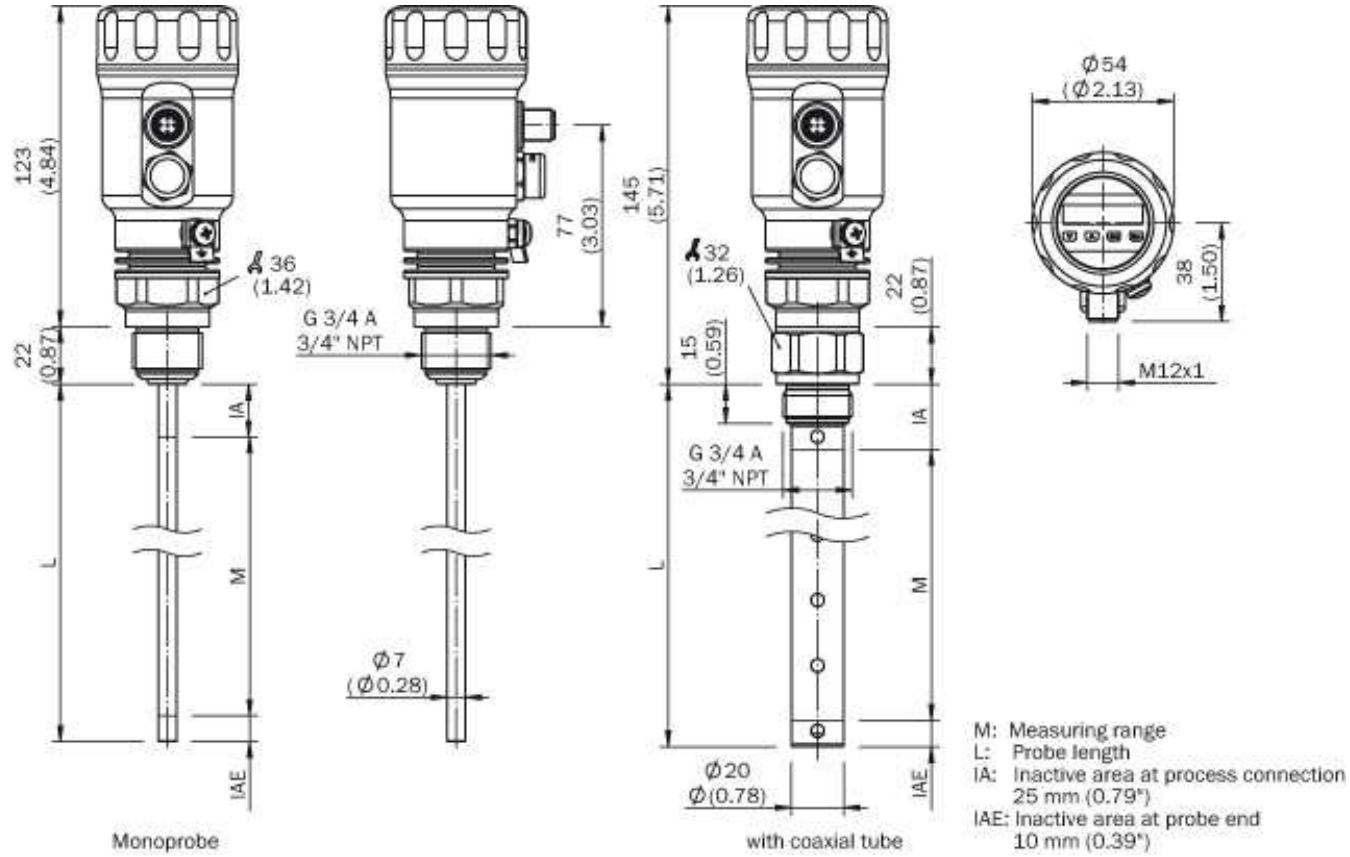
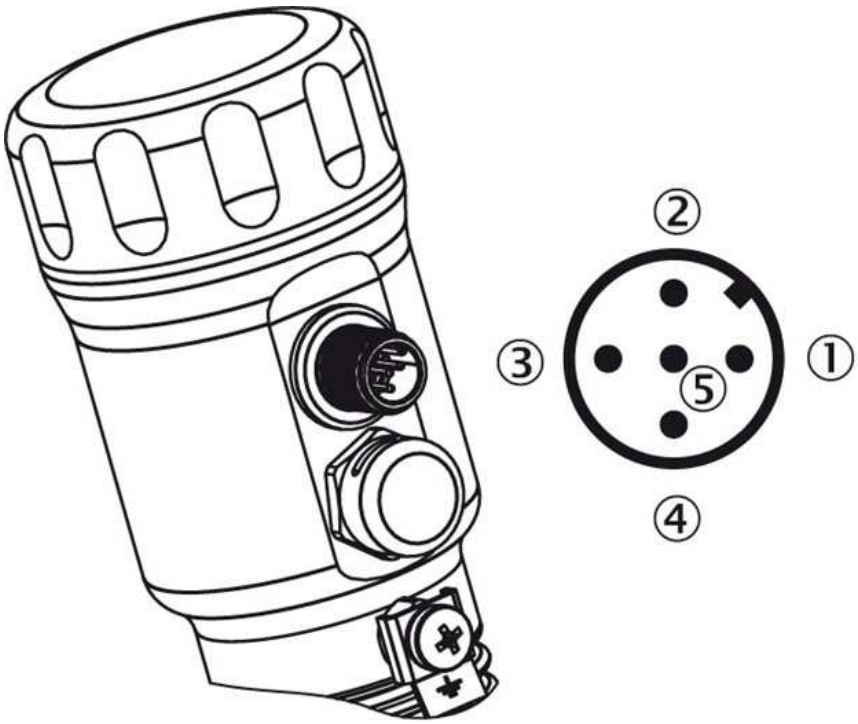
## Dimensional drawing




## 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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