



Level sensors TDR level sensor

LFP1100-N1NMB



Model Name > LFP1100-N1NMB
Part No. > 1059416



Illustration may differ

At a glance

- Level monitoring in hygienic applications
- Manually cutable monoprobe made from stainless steel 1.4404 up to 4,000 mm long with Ra 0.8 µm
- Process temperature up to 150 °C, process pressure up to 16 bar
- CIP/SIP resistant
- IP 67 and IP 69K enclosure rating
- Interchangeable hygienic process connections
- 3 in 1: combined display, analog output and binary output
- Analog output 4 mA ... 20 mA / 0 V ... 10 V, switchable, plus two binary outputs

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 and quick commissioning
- No calibration or recalibration required for commissioning, thus saving time and costs



Features

Medium:	Fluids
Measurement:	Switch, Continuous
Probe length:	1,100 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:	-

Performance

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

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

Technical drawings of three probe types: Monoprobe, with coaxial tube, and a cross-section view.

Monoprobe:

- Total length: 123 (4.84)
- Probe length: L
- Thread: G 3/4 A 3/4" NPT
- Dimension: 36 (1.42)
- Dimension: 22 (0.87)
- Dimension: 1A
- Dimension: M
- Dimension: IAE

with coaxial tube:

- Total length: 145 (5.71)
- Probe length: L
- Thread: G 3/4 A 3/4" NPT
- Dimension: 32 (1.26)
- Dimension: 15 (0.59)
- Dimension: 22 (0.87)
- Dimension: 1A
- Dimension: M
- Dimension: IAE
- Dimension: 20 (0.78)

Cross-section view:

- Outer diameter: $\varnothing 54$ ($\varnothing 2.13$)
- Inner diameter: $\varnothing 7$ ($\varnothing 0.28$)
- Height: 38 (1.50)
- Thread: M12x1

Legend:

- M: Measuring range
- L: Probe length
- 1A: Inactive area at process connection
- 25 mm (0.79")
- IAE: Inactive area at probe end
- 10 mm (0.39")

- |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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