

Deep Well Level Probe — Absolute Pressure

Model: LMP633-NLN (Non-vented) · Piezoresistive Silicon · Absolute Reference

Compact 28 mm Ø submersible level probe with a sealed, non-vented cable. Absolute pressure measurement with piezoresistive silicon sensor and SUS316 stainless steel diaphragm. Six selectable ranges cover 8–204 m H₂O depth. Available with 4–20 mA, 4–20 mA + HART, or 0.5–4.5 VDC outputs. Rated IP68 with optional intrinsic safety certification (ExiallCT4). Custom PUR or PTFE cable up to 200 m.



✓ WHY NON-VENTED? SEALED CABLE FOR LONG-TERM DEPLOYMENT

The sealed cable eliminates the risk of vent tube blockage or moisture ingress during long-term deployment — especially important for deep monitoring wells and permanent installations. A separate barometric pressure reading is used to correct the absolute measurement to water depth. For vented (gauge pressure) deployments, see the **Deep Well Level Probe (Gauge Pressure)** model.

PRESSURE RANGE	DEPTH RANGE	ACCURACY	PROBE Ø	PROTECTION	CERTIFICATIONS
250 kPa – 3.5 MPa	8 – 204 m	±0.2% URL	28 mm	IP68	CE · IS

SENSOR & CONSTRUCTION

PARAMETER	VALUE
Sensor type	Piezoresistive silicon pressure sensor
Pressure type	Absolute (non-vented) — atmospheric correction required
Application	Depth / level in wells and open waters; groundwater monitoring
Isolated diaphragm	Stainless steel SUS316
Filling fluid	Silicone oil (–45 to +205 °C process range)
Sensor seal options	O-ring FKM or stainless steel welding
Probe housing	SS304 (code 4) or SS316 (code 6) — select at order
Probe diameter	28 mm (H28 · ≈ 1.10 in)

ENVIRONMENTAL

PARAMETER	VALUE
Ambient working temperature	–10 to +70 °C
Media temperature	–10 to +70 °C
Storage temperature	–30 to +80 °C
Protection class	IP68
IS explosion-proof	ExiallCT4 (4–20 mA output only) · NEPSI GYB16.1963X

**MEASURING RANGES — SELECT AT ORDER (ABSOLUTE PRESSURE)**

ORDER CODE	NOMINAL URL	WORKING RANGE	WATER DEPTH EQUIV. ¹	LOWER LIMIT	OVERLOAD LIMIT
L254A	250 kPa	80 – 250 kPa	≈ 8.2 – 25.5 m H ₂ O	80 kPa	400 kPa
L404A	400 kPa	80 – 400 kPa	≈ 8.2 – 40.8 m H ₂ O	80 kPa	600 kPa
L604A	600 kPa	80 – 600 kPa	≈ 8.2 – 61.2 m H ₂ O	80 kPa	900 kPa
L105A	1 MPa	80 kPa – 1 MPa	≈ 8.2 – 102 m H ₂ O	80 kPa	1.5 MPa
L165A	1.6 MPa	80 kPa – 1.6 MPa	≈ 8.2 – 163 m H ₂ O	80 kPa	2.4 MPa
L355A	3.5 MPa	80 kPa – 2 MPa	≈ 8.2 – 204 m H ₂ O ²	80 kPa	5.25 MPa

¹ Water depth equivalents calculated at 1000 kg/m³ and 9.81 m/s² (1 MPa ≈ 102 m H₂O). ² L355A nominal URL is 3.5 MPa; working upper limit is 2 MPa (≈ 204 m).

OUTPUT SIGNALS & ELECTRICAL — SELECT AT ORDER

ORDER CODE	OUTPUT SIGNAL	WIRING	POWER SUPPLY	MAX CURRENT / LOAD	LOAD RESISTANCE
F	4–20 mA	2-wire	10–30 VDC	≤20.8 mA	< (U – 10) / 0.0208 Ω
H	4–20 mA + HART	2-wire	16.5–55 VDC	≤20.8 mA	250–600 Ω (HART)
5	0.5–4.5 VDC	3-wire	6–15 VDC	≤3.5 mA	≥5 kΩ (100 kΩ recommended)
6	0.5–4.5 VDC ratiometric	3-wire	5 VDC	≤3.5 mA	≥5 kΩ (100 kΩ recommended)

PERFORMANCE

PARAMETER	VALUE
Reference accuracy (linear output)	±0.2% URL typical · ±0.5% URL max
HART output accuracy	±0.1% URL
Long-term stability	±0.2% URL / year
Ambient temperature effect	±0.2% URL / 10 K (over -20 to +80 °C)
Vibration resistance	20 g, 5–2000 Hz
Pressure cycle durability	10 million cycles @ 25 °C
Damping (adjustable)	0–100 s

WIRE COLOUR CODING

Red	Power + (supply positive)
Black	Power – (supply negative / common)
Blue	Signal + (3-wire outputs only)
Yellow	Signal – (3-wire outputs only)

PHYSICAL & CABLE

PARAMETER	VALUE
Probe diameter	28 mm (H28 · ≈ 1.10 in)
Weight (without cable)	340 g
Cable pressure reference	Sealed (non-vented) — barometric correction required
Cable length	Custom — specify at order (up to 200 m)

BLUCLOUD COMPATIBILITY

✓ DIRECT BLUCLOUD INTEGRATION

Output codes 5 and 6 (0.5–4.5 VDC, 3-wire) connect directly to the BluCloud Unit's 0–5 V analog input — no signal conditioning required.

Output code F (4–20 mA, 2-wire) is compatible with the BluCloud Unit's 4–20 mA analog input.

Barometric correction for absolute-to-depth conversion can be applied automatically by BluCloud firmware when a co-located pressure reference is configured.



ORDERING — MODEL CODE STRUCTURE

LMP633 SERIES	NLN VARIANT	L254A ... L355A RANGE CODE	F / H / 5 / 6 OUTPUT CODE	4 / 6 HOUSING MATERIAL	N1 / N2 CABLE TYPE	H28 PROBE CODE	L5 ... L200 CABLE LENGTH (M)
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Range codes use **A** suffix (absolute): L254A, L404A, L604A, L105A, L165A, L355A. Housing: **4** = SS304 · **6** = SS316. Cable: **N1** = PUR · **N2** = PTFE. Contact BluCloud to confirm full model string and availability.

CERTIFICATIONS & STANDARDS

- CE
- IS EXIAIICT4
- ISO 9001

CERTIFICATION	DETAILS
CE	ISET · Reg. IT021353LG161207 · EN 61326-1:2013
Intrinsic Safety	ExialIICT4 · NEPSI GYB16.1963X Amb. temp: -40 to +60 °C Max medium temp: +120 °C (4-20 mA output code F only)
ISO 9001:2008	Intertek · Reg. 110804039

TYPICAL APPLICATIONS

- Deep Groundwater Monitoring Wells
- Permanent Long-Term Installations
- Water Supply Boreholes
- Sealed-Casing Well Deployments
- River & Lake Level Monitoring
- Industrial Process Liquid Level

DEPLOYMENT NOTE

The sealed cable makes this model ideal for wells where a vent tube would be impractical or where moisture ingress over long deployments is a concern. The 28 mm probe fits standard 2 in (50 mm) well casings. Ensure a co-located barometric reference is available for accurate depth calculation.