

LMP 305



Slimline Probe

Stainless Steel Sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 1 mH₂O up to 0 ... 250 mH₂O

Output signals

2-wire: 4 ... 20 mA
others on request

Special characteristics

- ▶ diameter 19 mm for cramped areas
- ▶ small thermal effect
- ▶ excellent long term stability
- ▶ excellent linearity

Optional versions

- ▶ different kinds of cable
- ▶ customer specific versions
e.g. special pressure ranges

The slimline probe LMP 305 with silicon stainless steel sensor is designed for continuous level measurement in confined space conditions. Permissible media are clean or lightly polluted water and thin fluids.

A piezoresistive stainless steel sensor with low thermal error, an excellent linearity and a long term stability, is basis of LMP 305.

Preferred areas of use are

Water

level measurement in confined space conditions



ground water monitoring

depth or level measurement in wells and open waters

drinking water system

level measurement in container



| Input pressure range | | | | | | | | | | | | | | |
|------------------------|---------------------|-----|------|------|-----|-----|----|-----|-----|----|----|-----|-----|-----|
| Nominal pressure gauge | [bar] | 0.1 | 0.16 | 0.25 | 0.4 | 0.6 | 1 | 1.6 | 2.5 | 4 | 6 | 10 | 16 | 25 |
| Level | [mH ₂ O] | 1 | 1.6 | 2.5 | 4 | 6 | 10 | 16 | 25 | 40 | 60 | 100 | 160 | 250 |
| Overpressure | [bar] | 1 | 1 | 1 | 1 | 3 | 3 | 6 | 6 | 20 | 20 | 60 | 60 | 100 |

| Output signal / Supply | |
|------------------------|--|
| Standard | 2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC} |

| Performance | |
|---------------------|--|
| Accuracy | standard: nominal pressure > 0.4 bar: ≤ ± 0.35 % FSO nominal pressure ≤ 0.4 bar: ≤ ± 0.50 % FSO option: nominal pressure > 0.4 bar: ≤ ± 0.25 % FSO |
| Permissible load | $R_{max} = [(V_S - V_{S min}) / 0,02 A] \Omega$ |
| Influence effects | supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ |
| Long term stability | ≤ ± 0.1 % FSO / year at reference conditions |
| Response time | < 10 msec |

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

| Thermal effects (Offset and Span) | | | | | | |
|-----------------------------------|----------------|----------|---------|--------|----------|----------|
| Nominal pressure P _N | [bar] | ≤ 0.1 | ≤ 0.25 | ≤ 0.4 | ≤ 1 | > 1 |
| Tolerance band | [% FSO] | ≤ ± 2 | ≤ ± 1.5 | ≤ ± 1 | ≤ ± 1 | ≤ ± 0.75 |
| TC, average | [% FSO / 10 K] | ± 0.3 | ± 0.2 | ± 0.14 | ± 0.1 | ± 0.07 |
| in compensated range | [°C] | 0 ... 50 | | | 0 ... 70 | |

| Permissible temperatures | |
|--------------------------|---|
| Permissible temperatures | medium: -10 ... 70 °C storage: -25 ... 70 °C |

| Electrical protection ² | |
|------------------------------------|---|
| Short-circuit protection | permanent |
| Reverse polarity protection | no damage, but also no function |
| Electromagnetic compatibility | emission and immunity according to EN 61326 |

² additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request

| Electrical connection | |
|---|---|
| Cable with sheath material ³ | PVC (-5 ... 70 °C) grey PUR (-10 ... 70 °C) black FEP ⁴ (-10 ... 70 °C) black others on request |

³ cable with integrated air tube for atmospheric pressure reference

⁴ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected

| Materials (media wetted) | |
|--------------------------|-------------------------------|
| Housing | stainless steel 1.4404 (316L) |
| Seals | FKM / EPDM |
| Diaphragm | stainless steel 1.4435 (316L) |
| Protection cap | POM |
| Cable sheath | PVC / PUR / FEP |

| Miscellaneous | |
|--------------------------------|---|
| Connecting cables (by factory) | cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μH/m |
| Current consumption | signal output current: max. 25 mA |
| Weight | approx. 100 g (without cable) |
| Ingress protection | IP 68 |
| CE-conformity | EMC Directive: 2014/30/EU |



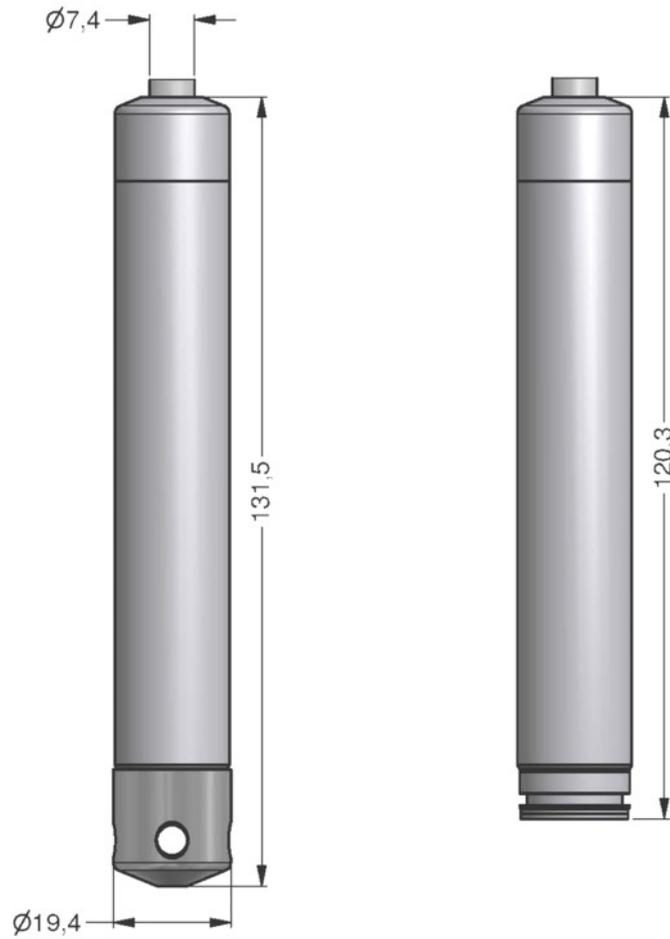
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Stainless Steel Probe

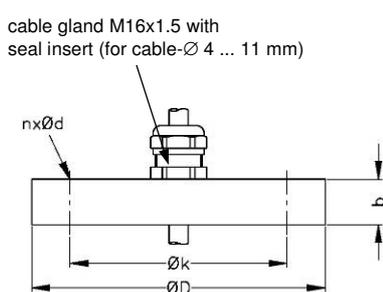
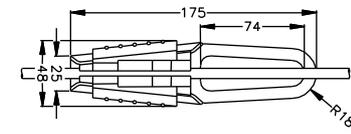
Technical Data

| Pin configuration | |
|-----------------------|---------------------------|
| Electrical connection | cable colours (IEC 60757) |
| Supply + | wh (white) |
| Supply - | bn (brown) |
| Shield | gnye (green-yellow) |

Dimensions (in mm)



Protection cap removable

| Mounting flange with cable gland | | |
|---|---|--|
| Technical data | | |
| Suitable for | all probes | |
| Flange material | stainless steel 1.4404 (316L) | |
| Material of cable gland | standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic | |
| Seal insert | material: TPE (ingress protection IP 68) | |
| Hole pattern | according to DIN 2507 | |
| Version | Size (in mm) | Weight |
| DN25 / PN40 | D = 115, k = 85, b = 18, n = 4, d = 14 | 1.4 kg |
| DN50 / PN40 | D = 165, k = 125, b = 20, n = 4, d = 18 | 3.2 kg |
| DN80 / PN16 | D = 200, k = 160, b = 20, n = 8, d = 18 | 4.8 kg |
| Ordering type | | Ordering code |
| DN25 / PN40 with cable gland brass, nickel plated | | ZMF2540 |
| DN50 / PN40 with cable gland brass, nickel plated | | ZMF5040 |
| DN80 / PN16 with cable gland brass, nickel plated | | ZMF8016 |
| Cable clamp | | |
| Technical Data | | |
| Suitable for | all probes with cable \varnothing 5.5 ... 10.5 mm | |
| Material | standard: steel, zinc plated optionally: stainless steel 1.4301 (304) | |
| Weight | approx. 160 g | |
| Ordering type | | Ordering code |
| Terminal clamp, of steel, zinc plated | | Z100528 |
| Terminal clamp, of stainless steel 1.4301 (304) | | Z100527 |
| Display program | | |
| <p>CIT 200 Process display with LED display</p> <p>CIT 250 Process display with LED display and contacts</p> <p>CIT 300 Process display with LED display, contacts and analogue output</p> <p>CIT 350 Process display with LED display, bargraph, contacts and analogue output</p> <p>CIT 400 Process display with LED display, contacts, analogue output and Ex-approval</p> <p>CIT 600 Multichannel process display with graphics-capable LC display</p> <p>CIT 650 Multichannel process display with graphics-capable LC display and datalogger</p> <p>CIT 700 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p>PA 440 Field display with 4-digit LC display</p> | |  <p>cable gland M16x1.5 with seal insert (for cable-\varnothing 4 ... 11 mm)</p>  |
| <p>For further information please contact our sales department or visit our homepage: http://www.bdsensors.com</p> | |  |

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