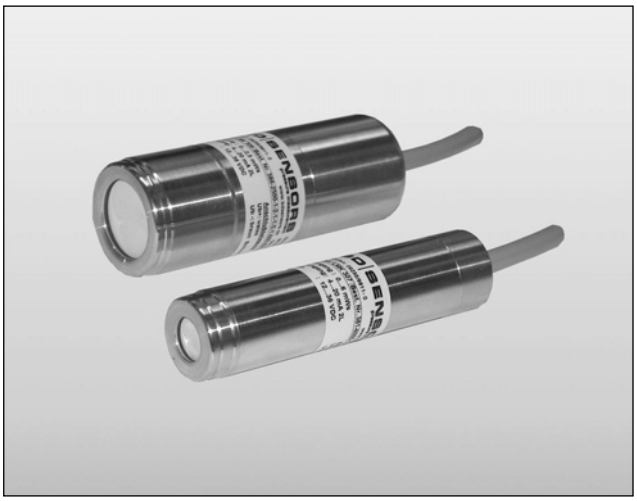
automatyka

BD SENSORS
pressure measurement



# LMK 307
# LMK 309

## Stainless Steel
## Submersible Transmitter

- thickfilm ceramic sensor
- especially for water / waste water applications
- diameter:
  LMK 307: 27 mm
  LMK 309: 39.5 mm
- nominal pressure ranges:
  LMK 307: 0 ... 6 mWC up to 0 ... 250 mWC
  LMK 309: 0 ... 1,6 mWC up to 0 ... 6 mWC

Level transmitters LMK 307 and LMK 309 are designed for continuous level measurement in water or waste water applications.

The flush ceramic diaphragm makes cleaning easier when solid parts of the medium deposit on it.

Pressure ranges from 0 ... 1.6 mWC up to 0 ... 6 mWC are being built as LMK 309 (Ø 39.5 mm); those of the LMK 307 (Ø 27) reach from 0 ... 6 mWC up to 0 ... 250 mWC.

Different cable sheath materials are available in order to achieve maximum media compatibility.

Preferred areas of use of the submersible level transmitters LMK 307 and LMK 309 are:

- environmental engineering: sewage and water treatment plants
- depth or level measurement in wells and open waters
- ground water level measurement
- level measurement in open tanks, also in aggressive media

Characteristics

- wide range of use
- easy handling
- good linearity
- good long term stability
- **option Ex: II 1 G EEx ia IIC T4 (only for 4 ... 20 mA / 2-wire) (TÜV 03 ATEX 2006 X)**
- accuracy:
  0.25 % FSO BFSL
  (0.5 % FSO IEC 60770)
- customer specific versions:
  - special pressure ranges
  - other versions on request

CE Ex

LMK 307 / 309
Stainless Steel Level Transmitter

TÜV CERT DIN EN ISO 9001

# LMK 307 / 309

Stainless Steel Level Transmitter

Technical Data

## Input pressure range [1]

| | LMK 309 | | | | LMK 307 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal pressure gauge [bar] | 0.16 | 0.25 | 0.4 | 0.6 | 1 | 1.6 | 2.5 | 4 | 6 | 10 | 16 | 25 |
| Level [mWC] | 1.6 | 2.5 | 4 | 6 | 10 | 16 | 25 | 40 | 60 | 100 | 160 | 250 |
| Permissible overpressure [bar] | 0.6 | 0.6 | 1.5 | 1.5 | 3 | 7 | 7 | 12 | 12 | 25 | 50 | 50 |

## Output signal / Supply

| | | | |
|---|---|---|---|
| Standard | 2-wire: 4 ... 20 mA / $V_S$ = 12 ... 36 $V_{DC}$ | Ex-protection: | $V_S$ = 14 ... 28 $V_{DC}$ |

## Performance

| | |
|---|---|
| Accuracy [2] | ≤ ± 0.5 % FSO (BFSL: ≤ ± 0.25 % FSO) |
| Permissible load | $R_{max} = [(V_S - V_{S\,min}) / 0.02]\ \Omega$ |
| Influence effects | supply: 0.05 % FSO / 10 V<br>load: 0.05 % FSO / kΩ |

## Thermal effects

| | |
|---|---|
| Thermal error for offset and span | ≤ ± 0.2 % FSO / 10 K |
| in compensated range | -25 ... 85 °C |

## Electrical protection [3]

| | |
|---|---|
| Short-circuit protection | permanent |
| Reverse polarity protection | no damage, but also no function |
| Electromagnetic protection | emission and immunity according to EN 61326 |
| Option Ex-protection<br>DX13-LMK 307<br>DX13-LMK 309 | II 1 G EEx ia IIC T4 (only with 4 ... 20 mA / 2-wire)<br>safety technical maximum values: $V_i$ = 28 V, $I_i$ = 93 mA, $P_i$ = 660 mW |

## Permissible temperatures

| | |
|---|---|
| Medium | -10 ... 70 °C |
| Storage | -25 ... 70 °C |

## Electrical connection

| | |
|---|---|
| Cable with sheath material [4] | PVC grey<br>PUR black<br>FEP black |

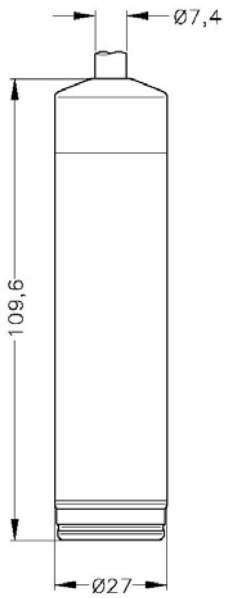
[1] LMK 309 from 0.16 bar up to 0.6 bar; LMK 307 from 0.6 bar up to 25 bar

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

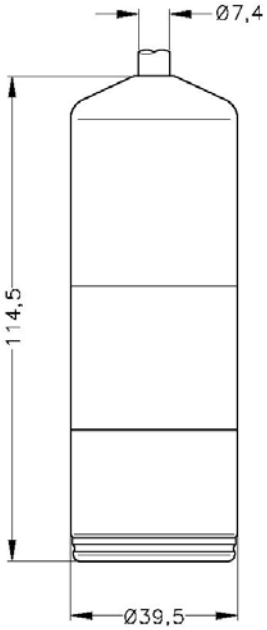
[3] additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request (please ask for data sheet)

[4] cable with integrated air tube for atmospheric pressure reference

## Dimensions




LMK 307




LMK 309

# LMK 307 / 309

Stainless Steel Level Transmitter

Technical Data

| Materials | |
|---|---|
| Housing | stainless steel 1.4571 (316Ti) |
| Seals | FKM / EPDM |
| Diaphragm | ceramic $Al_2O_3$ 96 % |
| Cable sheath | PVC / PUR / FEP |

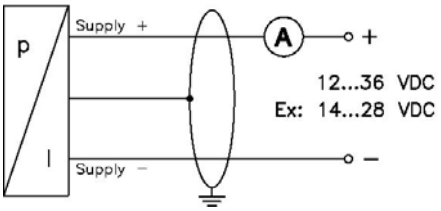
| Miscellaneous | |
|---|---|
| Current consumption | max. 25 mA |
| Weight | LMK 307: approx. 250 g (without cable)<br>LMK 309: approx. 400 g (without cable) |

| Mounting accessories (not part of delivery) |
|---|
| Screw fitting, stainless steel 1.4571 (316Ti) |
| Mounting flange for transmitter fixing, stainless steel 1.4571 (316Ti):<br>DN25 / PN40 (∅115, 18 thick, 4 drill holes ∅14 at ∅85)<br>DN50 / PN16 (∅165, 18 thick, 4 drill holes ∅18 at ∅125)<br>DN80 / PN16 (∅200, 20 thick, 8 drill holes ∅18 at ∅160) |
| Terminal clamp, stainless steel 1.4301 (304) or steel, zinc plated |

| Pin configuration | | |
|---|---|---|
| Electrical connection | | cable colours (DIN 47100) |
| 2-wire-system | Supply +<br>Supply – | white<br>brown |
| | Ground | cable shield |

## Wiring diagrams

2-wire-system (current)



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