

INTRINSICALLY SAFE TRANSMITTER FOR LEVEL MEASUREMENT ATM/N/Ex



34



II 1G EEx ia IIC T4...T6

Features

- Compact and robust stainless steel assembly 1.4435 (316L) or titanium (optional)
- Piezoresistive measuring element
- Gauge or absolute
- Standard DIN pressure ranges from 0...100 mbar to 0...25 bar
- Calibration available for all common pressure units mH₂O, mWS, mWC etc.
- Complies with the EMC directive 89/336/EEC
- High reliability
- Short delivery time
- Customized versions due to modular assembly
- Available with PUR or Teflon cable
- Reverse polarity and short circuit protected
- Surge (lightning) protection according to EN 61000-4-5 as an option

Typical applications

Depth and level measurement in hazardous areas

- Wells
- Bore holes
- Waste water
- Reservoirs
- Lakes, rivers
- Sewage treatment plant
- Fuel, diesel oil

Specifications

| Pressure range | [bar] | 0.1 ... 0.5 | > 0.5 ... 2 | > 2 ... 25 |
|-------------------------------------|-------------|----------------------------|-----------------------------------|-----------------------------------|
| Overpressure | | 3 bar | 3 x FS (min. 3 bar) | 3 x FS |
| Burst pressure | [bar] | > 200 | > 200 | > 200 |
| Accuracy¹⁾ | [± % FS] | ≤ 0.5 (optional ≤ 0.25) | ≤ 0.5 (optional ≤ 0.25, ≤ 0.1) | ≤ 0.5 (optional ≤ 0.25, ≤ 0.1) |
| Thermal shift | [± % FS/°C] | | | |
| Zero | 0...70°C | 0.06 | 0.03 | 0.015 |
| | -25...85°C | 0.08 | 0.04 | 0.02 |
| Span | 0...70°C | 0.015 | 0.015 | 0.015 |
| | -25...85°C | 0.02 | 0.02 | 0.02 |
| Long term stability (1 year) | | < 4 mbar | < 4 mbar | < 0.2% FS |

¹⁾ Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

Electrical connection

| | | | |
|--------------------------|---|----------------------------------|-----------|
| Type | 4...20 mA Two wire current transmitter | Load resistance | |
| Supply voltage | 10...30 V DC | | |
| Supply voltage influence | < 0.1% FS | | |
| Circuit diagram | | Load resistance influence | < 0.1% FS |

Ex-Approval

| | | |
|--|--|--|
| Type of protection Standards | intrinsic safety II 1G EEx ia IIC T4...T6 EN 50 014: 1992 EN 50 020: 1994 EN 50 284: 1997 | SEE Certificate SEE 99 ATEX 2640 general requirements intrinsic safety "i" special requirements zone 0 zener barrier |
| Max. values for supply/output circuit | 30V / 100mA / 1W | |
| Temperature class | T6 | T4 |
| Ambient temperature Ta | [°C] -25...55 | -25...85 |
| Process temperature | [°C] -25...55 | -25...85 |

Without any information about temperature class the transmitter will be labelled T4.
Ex-Approval for dust on request.

Materials

| | |
|---|--|
| Process connection, diaphragm, housing | Stainless steel 1.4435 (316L) or titanium (optional) |
| Seals (standard) | Viton (other materials see ordering information) |

Electromagnetic compatibility

| Standard | Level | Typical interferences | |
|---------------------------------|---------------------------------------|---------------------------------|-----------------------------|
| Emission: | | | |
| EN 50081-1:1992 | Generic emission standard | | |
| EN 55022:1994 | Emission, class B | | |
| Immunity: | | | |
| EN 50082-2:1995 | Generic immunity | | |
| EN 61000-4-2:1995 | Electrostatic discharge | 4kV contact, 8kV air | |
| ENV 50140:1993 | Radiated electro-magnetic field | 10V/m, 80-1000 MHz, 80% AM 1kHz | Cellular phones, radio sets |
| ENV 50204:1995 | Radiated electro-magnetic field (GSM) | 10V/m, 950 MHz, 200Hz on/off | Digital portable phones |
| EN 61000-4-4:1995 | Fast transients (burst) | 2 kV | Motors, valves |
| ENV 50141:1993 | Conducted radio-frequency | 10V, 0.15-80 MHz, 80% AM 1kHz | Cellular phones, radio sets |
| EN 61000-4-5:1995 ²⁾ | Surge | 10 kA (8/20 μs) | Lightning strikes |

²⁾ Only with optional surge (lightning) protection



The pressure transmitter ATM fulfill the emission and immunity requirements described in the EMC directive 89/336/EEC.

Ordering Information

| | | 34 | X | .XXXX | .XXXX | .XX | .XXX | |
|------------------------------------|--|------------|---|-------|-------|-----|------|---|
| Type | ATM/N/Ex | 34 | | | | | | |
| Pressure type | Gauge | 1 | | | | | | |
| | Absolute | 2 | | | | | | |
| Pressure range⁵⁾ | 0...100 mbar | | | 00 | | | | |
| | 0...160 mbar | | | 01 | | | | |
| | 0...250 mbar | | | 02 | | | | |
| | 0...400 mbar | | | 03 | | | | |
| | 0...600 mbar | | | 04 | | | | |
| | 0...1.0 bar | | | 05 | | | | |
| | 0...1.6 bar | | | 06 | | | | |
| | 0...2.5 bar | | | 07 | | | | |
| | 0...4.0 bar | | | 08 | | | | |
| | 0...6.0 bar | | | 09 | | | | |
| | 0...10 bar | | | 10 | | | | |
| | 0...16 bar | | | 11 | | | | |
| | 0...25 bar | | | 12 | | | | |
| | Special calibration | | | 99 | | | | |
| Version | Closed version (Fig. 1) | | | 55 | | | | |
| | Open version (Fig. 2) | | | 56 | | | | |
| | G 1/4 M (Fig. 3) | | | 11 | | | | |
| | G 1/2 M (Fig. 3) | | | 13 | | | | |
| | Special version ³⁾ | | | 99 | | | | |
| Electrical connection | Connector for option level transmitter, connectable ⁴⁾ (Fig. 4) | | | | | 99 | | |
| | PUR cable, blue ^{1) 2)} | | | | | 17 | | |
| | Teflon cable, blue ¹⁾ | | | | | 22 | | |
| Output signal | 4...20 mA | | | | | 05 | | |
| | 4...20 mA surge (lightning) protection | | | | | 08 | | |
| Accuracy | ≤±0.5 % FS | | | | | | 0 | |
| | ≤±0.25 % FS | | | | | | 1 | |
| | ≤±0.1 % FS (on request) | | | | | | 2 | |
| Temperature class | T6 (Ta: -25...55°C comp.) | | | | | | 0 | |
| | T4 (Ta: -25...85°C comp.) ²⁾ | | | | | | 1 | |
| Options | Execution titanium | | | | | | K | |
| | Ballast weight | | | | | | B | |
| | Special oil filling: | ASEOL Food | | | | | | G |
| | | Halocarbon | | | | | | H |
| | Seals: | EPDM | | | | | | S |
| | | Kalrez | | | | | | T |
| Special options | | | | | | Z | | |

¹⁾ Please specify the required cable length and media

²⁾ For media temperature > 50°C a teflon cable must be used

³⁾ Other executions or process connections on request

⁴⁾ Connector with required cable has to be ordered separately

⁵⁾ mH2O, mWS, mWC ets. available

Dimensions

Fig. 1: Closed version

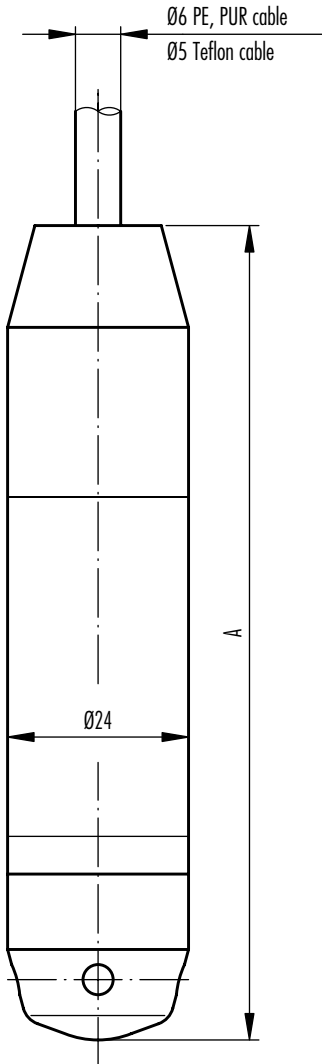


Fig. 2: Open version

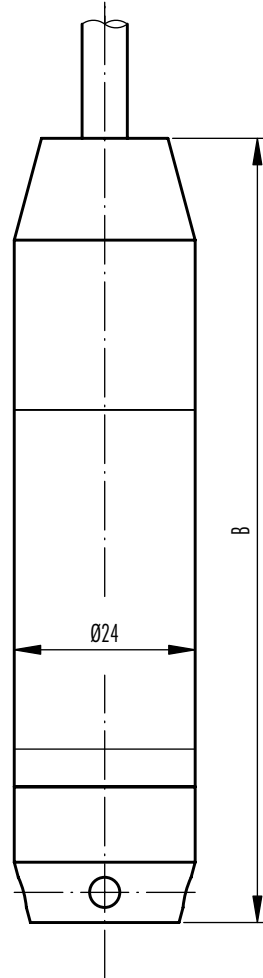


Fig. 3: with process connection

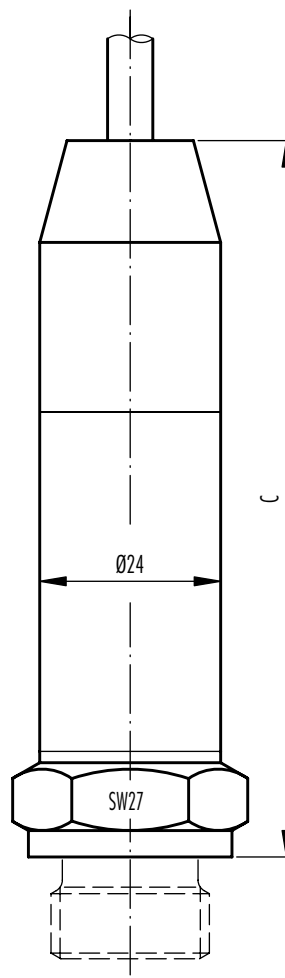
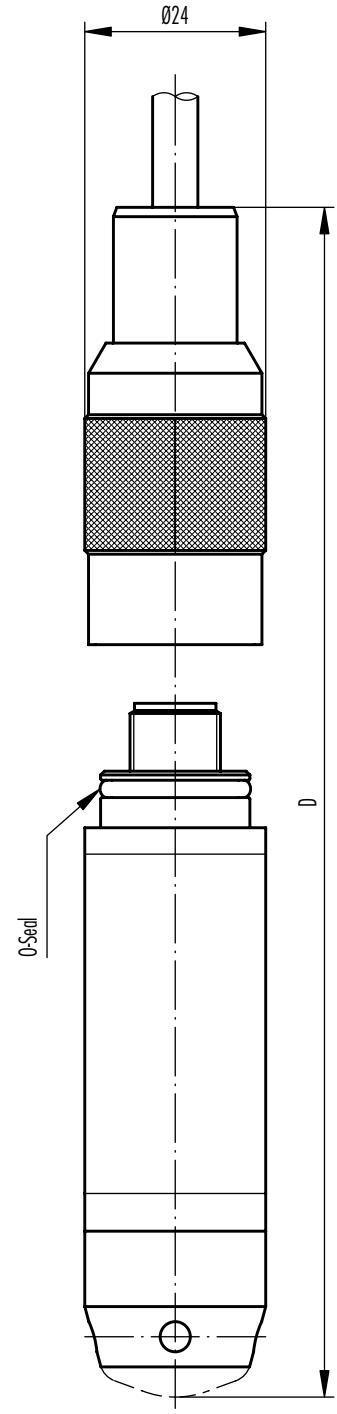


Fig. 4: Electrical connection, connectable



Standard

| | A [mm] | B [mm] | C [mm] | D [mm] | Weight [g] |
|------------------------|--------|--------|------------|------------|-------------|
| without ballast weight | 113 | 109 | on request | on request | approx. 160 |
| with ballast weight | 200 | 196 | on request | on request | approx. 420 |

Version with surge (lightning) protection

| | A [mm] | B [mm] | C [mm] | D [mm] | Weight [g] |
|------------------------|--------|--------|------------|------------|-------------|
| without ballast weight | 157 | 153 | on request | on request | approx. 200 |
| with ballast weight | 244 | 240 | on request | on request | approx. 460 |

| Colour | 2-Wire |
|--------|--------|
| white | +Vin |
| yellow | Pout |
| grey | EP |

Specifications may change without notice. Release 06/01

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