

Pressure Transmitter for Shipbuilding Industry and Off-Shore Model S-10

WIKA Data Sheet PE 81.17



Applications

- Monitoring of diesel engines, gears, pumps, transmissions and filters
- Hydraulic and pneumatic control systems

Special Features

- Pressure ranges from 0 ... 0.1 bar to 0 ... 1000 bar
- Wiring with L-connector or flying leads
- Ingress protection IP 65 to IP 67
- Case and wetted parts of stainless steel



Fig. left Pressure transmitter S-10 (L-connector)
Fig. right Pressure transmitter S-10 (Flying Leads)

Description

The principle features of these pressure transmitters are their high accuracy, their sturdy and compact construction as well as their flexibility which make these instruments universally suitable for a variety of measuring tasks.

Wetted parts are made of stainless steel and are hermetically welded. Therefore there is no need for additional sealing material, which could possibly react with the pressure medium. The compact case is also made of stainless steel and normally provides IP 65 ingress protection. For recalibration, zero and span may be adjusted by means of internal potentiometers which are easily accessible.

The transmitter can be supplied with a non-stabilized direct voltage of 10 ... 30 V and provide an output signal of 4 ... 20 mA, 2-wire which is required by measurement standards.

For pressure transmitters with flying leads, the pressure compensation to atmosphere is carried out via a small ventilation pipe which is integrated into the lead. Pressure transmitters for oxygen applications are available for pressure ranges of 0 ... 0.25 bar to 0 ... 1000 bar (Technical Safety Check of the BAM is available; BAM = German Materials Testing Institute).

Specifications

Model S-10

| | | | | | | | | | | | | |
|--|-----------|--|------|-------------------|-----|-----|-----------------------------------|------|------|------|------------------------------|----|
| Pressure ranges | bar | 0.1 | 0.16 | 0.25 | 0.4 | 0.6 | 1 | 1.6 | 2.5 | 4 | 6 | 10 |
| Over pressure safety | bar | 1 | 1.5 | 2 | 2 | 4 | 5 | 10 | 10 | 17 | 35 | 35 |
| Burst pressure | bar | 2 | 2 | 2.4 | 2.4 | 4.8 | 6 | 10 | 12 | 20.5 | 42 | 42 |
| Pressure ranges | bar | 16 | 25 | 40 | 60 | 100 | 160 | 250 | 400 | 600 | 1000 | |
| Over pressure safety | bar | 80 | 50 | 80 | 120 | 200 | 320 | 500 | 800 | 1200 | 1500 | |
| Burst pressure | bar | 96 | 96 | 400 | 550 | 800 | 1000 | 1200 | 1700 | 2400 | 3000 | |
| {Vacuum, gauge pressure, compound range, absolute pressure are available} | | | | | | | | | | | | |
| Materials | | (other materials see WIKA diaphragm seal program) | | | | | | | | | | |
| ■ Wetted parts | | Stainless steel | | | | | | | | | | |
| ■ Case | | Stainless steel | | | | | | | | | | |
| ■ Internal transmission fluid | | Synthetic oil, only for pressure ranges up to 25 bar | | | | | | | | | | |
| Power supply UB | UB in VDC | 10 < UB ≤ 30 | | | | | | | | | | |
| Signal output and maximum ohmic load RA | RA in Ohm | 4 ... 20 mA, 2-wire RA ≤ (UB - 10 V) / 0.02 A | | | | | | | | | | |
| Adjustability zero/span | % | ± 5 using potentiometers inside the instrument | | | | | | | | | | |
| Current limit | mA | 32 | | | | | | | | | | |
| Response time (10 ... 90 %) | ms | ≤ 1 (≤ 10 ms at medium temperatures < -30 °C for pressure ranges up to 25 bar) | | | | | | | | | | |
| Accuracy | % of span | ≤ 0.25 (BFSL) | | | | | | | | | | |
| | % of span | ≤ 0.5 ¹⁾ | | | | | | | | | | |
| ¹⁾ Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2) | | | | | | | | | | | | |
| Adjusted in vertical mounting position with lower pressure connection | | | | | | | | | | | | |
| Non-linearity | % of span | ≤ 0.2 (BFSL) according to IEC 61298-2 | | | | | | | | | | |
| Non-repeatability | % of span | ≤ 0.1 | | | | | | | | | | |
| 1-year stability | % of span | ≤ 0.2 (at reference conditions) | | | | | | | | | | |
| Permissible temperature of | | | | | | | | | | | | |
| ■ Medium ²⁾ | | -30 ... +100 °C {-40 ... +125 °C} | | | | | -22 ... +212 °F {-40 ... +257 °F} | | | | | |
| ■ Ambience ²⁾ | | -20 ... +80 °C | | | | | | | | | | |
| ■ Storage ²⁾ | | -40 ... +100 °C | | | | | -40 ... +212 °F | | | | | |
| ²⁾ Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3 | | | | | | | | | | | | |
| Compensated temp. range | | 0 ... +80 °C | | | | | +32 ... +176 °F | | | | | |
| Temperature coefficients within compensated temp range | | | | | | | | | | | | |
| ■ Mean TC of zero | % of span | ≤ 0.2 / 10 K (< 0.4 for pressure range 0 ... 0.1 and 0 ... 0.16 bar) | | | | | | | | | | |
| ■ Mean TC of range | % of span | ≤ 0.2 / 10 K | | | | | | | | | | |
| CE-conformity | | | | | | | | | | | | |
| ■ Pressure equipment directive | | 97/23/EC | | | | | | | | | | |
| ■ EMC directive | | 89/336/EEC emission (class B) and immunity according to EN 61 326 | | | | | | | | | | |
| Approval German Lloyd GL | | Environmental Category D, F | | | | | | | | | | |
| ESD | kV | ± 8 | | Contact discharge | | | | | | | IEC 1000-4-2 | |
| Electromagnetic fields | V/m | 10 | | 80 % AM; 1 kHz | | | | | | | IEC 1000-4-3 | |
| | | 0.01 ... 1000 MHz | | | | | | | | | | |
| Burst | kV | ± 2 | | Coupling clamp | | | | | | | IEC 1000-4-4 | |
| Conducted HF-disturbance | V | 3 | | 80% AM; 1 kHz | | | | | | | IEC 1000-4-6 | |
| | | 0.01 ... 100 MHz (up to 1MHz increased error < 2 %) | | | | | | | | | | |
| Surge | kV | ± 0.5 | | Symmetrically | | | | | | | IEC 1000-4-5 | |
| | kV | ± 1 | | Asymmetrically | | | | | | | } Ri = 42 Ohm | |
| | kV | ± 1 | | Symmetrically | | | | | | | } Ri = 42 Ohm | |
| | | ± 2 | | Asymmetrically | | | | | | | } With surge protection only | |
| | | e. g. model MM-DS/xNFE(L) | | | | | | | | | | |
| | | Dehn & Söhne Company or similar | | | | | | | | | | |
| Conducted LF-disturbance | Veff. | 3 | | 0.05 ... 10 kHz | | | | | | | IEC 945 | |
| Shock resistance | g | 1000 according to IEC 60068-2-27 (mechanical shock) | | | | | | | | | | |
| Vibration resistance | g | 20 according to IEC 60068-2-6 (vibration under resonance) | | | | | | | | | | |

Specifications

Model S-10

| | | |
|-------------------------------|-----|------------------|
| Wiring protection | | |
| ■ Overvoltage protection | VDC | 36 |
| ■ Short-circuit proofness | | Sig+ towards UB- |
| ■ Reverse polarity protection | | UB+ towards UB- |
| Weight | kg | Approx. 0.2 |

{ } Items in curved brackets are optional extras for additional price.

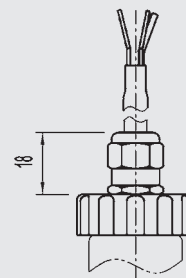
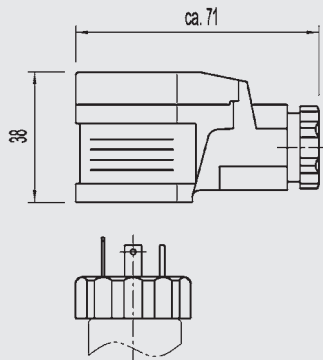
Dimensions in mm

Ingress Protection IP per IEC 60529. The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the corresponding ingress protection.

Electrical connections

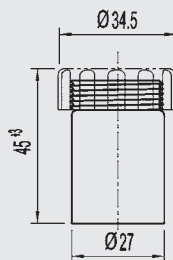
DIN 175301-803
L-connector (ship approval)
conductor outer diameter 10-14 mm
IP 65
Order code: A4 and G (approvals)

{Flying leads
conductor outer diameter 6.8 mm,
IP 67
Order code: DL}



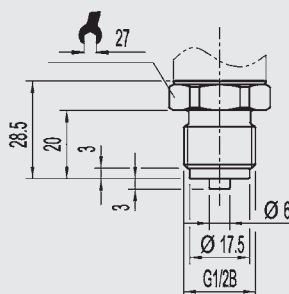
Case

case with accuracy 0.5%



Pressure connections

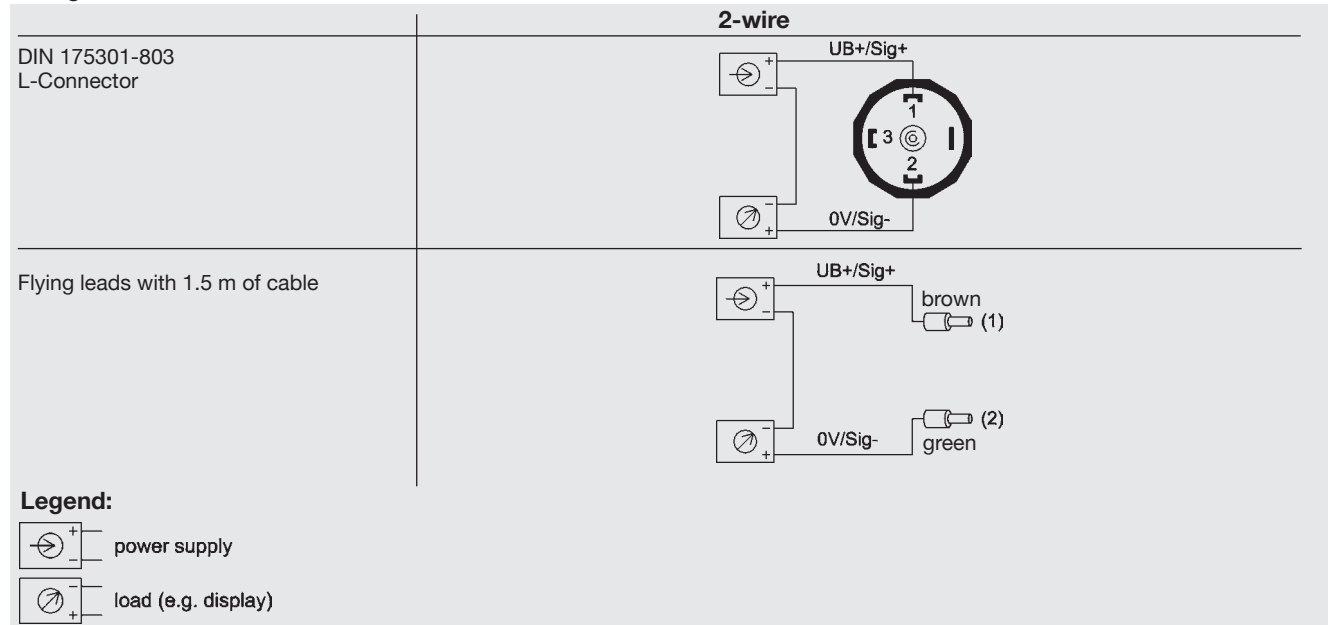
G 1/2
EN 837
Order code: GD



For installation and safety instructions see the operating instructions for this product.

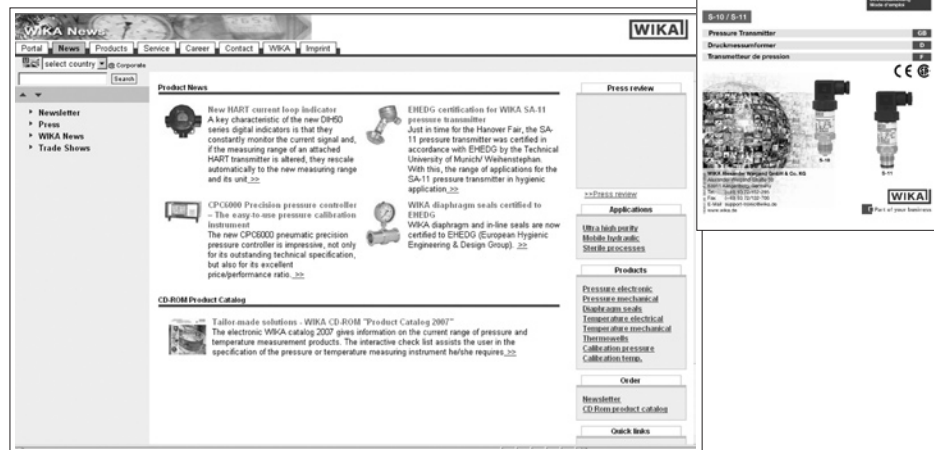
For tapped holes and welding sockets please see Technical Information IN 00.14 for download at www.wika.de -Service

Wiring details



Further information

You can obtain further information (data sheets, instructions, etc.) via our internet address www.wika.de



Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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