

High-quality pressure sensor with mounted diaphragm seal

With milk thread fitting

Model DSS18T

WIKA data sheet DS 95.05



Applications

- Hygienic pressure measurement in sanitary applications for the food and beverage industry
- For dairies, dairy products, breweries and soft drink production
- Mounting to pipelines and vessels with 4 ... 20 mA output signal
- For gases, compressed air, vapour; liquid, pasty, powdery and crystallising media

Special features

- Quick cleaning, without residue
- Milk thread fitting per DIN 11851
- Suitable for cleaning out of place (COP)



Diaphragm seal system, model DSS18T

Description

Diaphragm seal systems are used to protect the pressure measuring instrument from aggressive, adhesive, crystallising, corrosive, highly viscous, environmentally hazardous or toxic media. The diaphragm made of stainless steel provides for the separation from the medium. The pressure is transmitted to the measuring instrument via the system fill fluid which is inside the diaphragm seal system.

The DSS18T complies with all requirements of the food industry. The milk thread fitting enables a hygienic process connection. The requirements of COP (cleaning out of place) are fulfilled.

The diaphragm seal systems can withstand the cleaning vapour temperatures occurring in the SIP processes and thus ensure a sterile connection between the medium to be measured and the diaphragm seal.

The proven, all-welded construction ensures a long service life and permanent sealing.

The DSS18T is used for pressure measurement in various process steps, e.g. filtration, separation, pasteurisation, and in filling systems.

Specifications

| Model DSS18T | |
|---|---|
| Design | High-quality pressure sensor, welded to diaphragm seal |
| Current output | 4 ... 20 mA (2-wire) |
| Power supply | DC 8 ... 35 V |
| Accuracy at reference conditions | ≤ ±0.5 % of span |
| Permissible load in Ω | Current output ≤ (power supply - 7.5 V) / 0.023 A |
| Current supply | Max. 25 mA |
| Dissipation loss | 828 mW |
| Reference conditions (per IEC 61298-1) | Temperature: 15 ... 25 °C [59 ... 77 °F] Atmospheric pressure: 860 ... 1,060 mbar [12.5 ... 15.4 psi] Humidity: 45 ... 75 % r. h. Power supply: DC 24 V Mounting position: Calibrated in vertical mounting position with pressure connection facing downwards |
| Pressure limitation | < 10 bar [150 psi]: 3 times ≥ 10 bar [150 psi]: 2 times |
| Permissible temperature range | |
| Medium | -10 ... 80 °C [50 ... 176 °F], for CIP and SIP max. 130 °C [266 °F] |
| Ambient | 10 ... 40 °C [50 ... 104 °F] |
| Storage | 10 ... 60 °C [50 ... 140 °F] |
| Material | |
| wetted | Diaphragm: Stainless steel 1.4435 [316L] Diaphragm seal: Stainless steel 1.4435 [316L] |
| non-wetted | Case: Stainless steel 1.4571 [316Ti] Zero adjustment ring: PBT/PET GF30 Angular connector: PBT/PET GF30 |
| Surface roughness | |
| wetted | Ra ≤ 0,76 µm [30 µin] per ASME BPE SF3 (except for weld seam) |
| Level of cleanliness of wetted parts | Oil and grease free per ASTM G93-03 level F and ISO 15001 (< 1,000 mg/m ²) |
| System fill fluid | Medicinal white mineral oil KN 92 (FDA 21 CFR 172.878, 21 CFR 178.3620(a); USP, EP, JP) |
| Permissible humidity (per IEC 68-2-78) | ≤ 67 % r. h. at 40 °C [104 °F] (in accordance with 4K4H per EN 60721-3-4) |

Measuring ranges in bar [psi]

| Gauge pressure | | | |
|--------------------------------|-------------------------------|--------------------------------|----------------------|
| 0 ... 1 [0 ... 15] | 0 ... 1.6 [0 ... 25] | 0 ... 2.5 [0 ... 40] | 0 ... 4 [0 ... 60] |
| 0 ... 6 [0 ... 100] | 0 ... 10 [0 ... 160] | 0 ... 16 [0 ... 250] | 0 ... 25 [0 ... 300] |
| Vacuum and +/- measuring range | | | |
| -1 ... +5 [-30 inHg ... +70] | -1 ... +9 [-30 inHg ... +130] | -1 ... +10 [-30 inHg ... +145] | |

Electrical connection

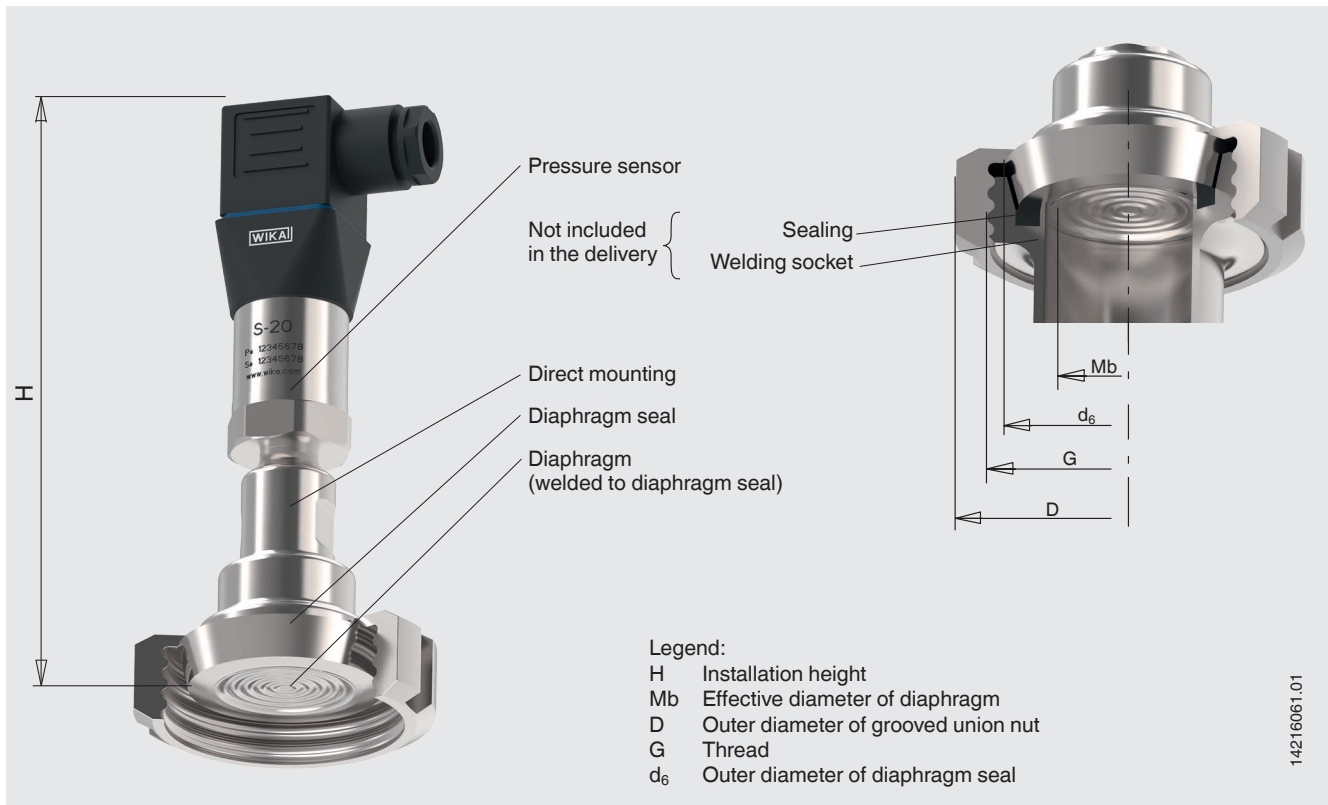
| Angular connector DIN 175301-803 A | | | | |
|------------------------------------|----------------------------------|--------------------------|------------|-----------------------------------|
| Electrical connection | Ingress protection ¹⁾ | Wire cross-section | Cable Ø | Permissible temperature |
| with mating connector | IP65 | max. 1.5 mm ² | 6 ... 8 mm | -30 ... +100 °C [-22 ... +212 °F] |

1) Only applies when plugged in using a suitable mating connector that has the appropriate ingress protection.

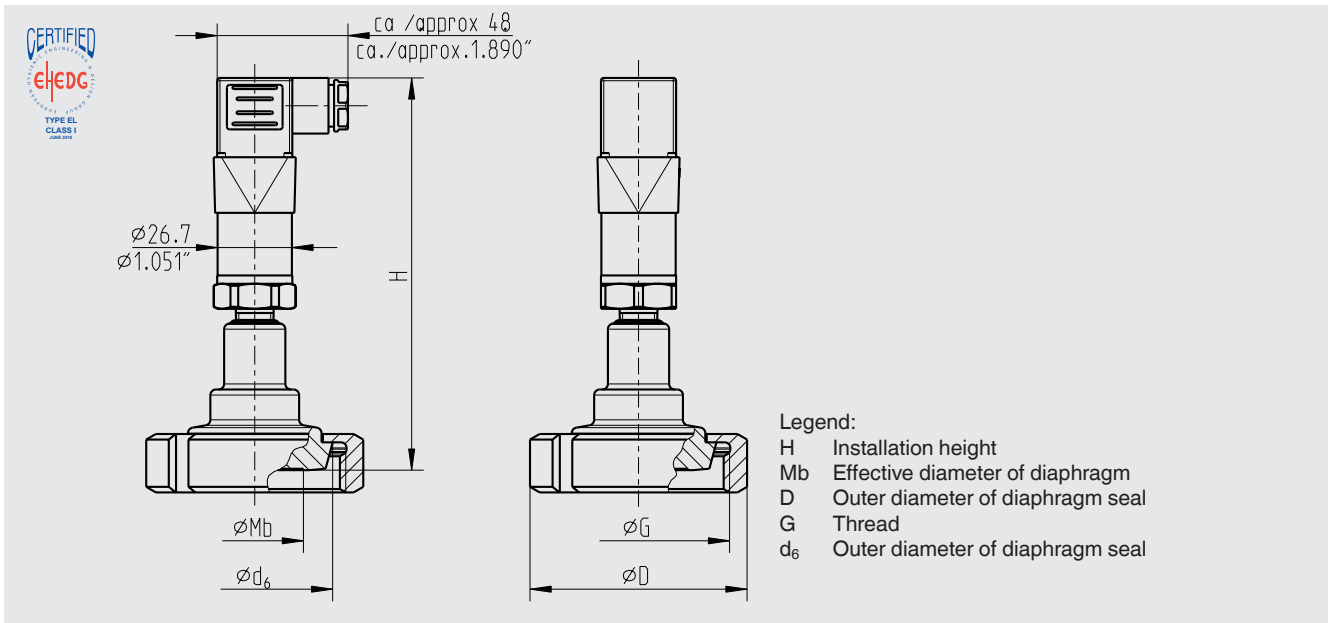
Connection diagram



Model DSS18T illustrated on a pipe socket



Dimensions in mm [in]



Type of process connection: Milk thread fitting following DIN 11851

Pipe standard: Pipes per DIN 11850 row 2

| DN | For pipe Outer \varnothing x wall thickness | PN | Dimensions in mm [in] | | | | |
|----|--|----|------------------------------|-------------|------------|----------------|------------|
| | | | G | H | D | d ₆ | Mb |
| 25 | 29 x 1.5 [1.142 x 0.059] | 40 | RD 52 x 1/6 [2.047 x 1/6] | 139 [5,472] | 63 [2.48] | 44 [1.732] | 26 [1.024] |
| 40 | 41 x 1.5 [1.614 x 0.059] | 40 | RD 65 x 1/6 [2.559 x 1/6] | 141 [5,551] | 78 [3.07] | 56 [2.205] | 35 [1.378] |
| 50 | 53 x 1.5 [2.087 x 0.059] | 25 | RD 78 x 1/6 [3.071 x 1/6] | 143 [5,63] | 92 [3.622] | 68.5 [2.697] | 52 [2.047] |

Approvals

| Logo | Description | Country |
|---|---|--------------------|
|  | EHEDG Hygienic Equipment Design | European Community |

Certificates (option)

3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metallic parts, calibration certificate)

Approvals and certificates, see website

Ordering information

Scale range / Process connection (type of process connection, pipe standard, pipe dimension) / Materials / Certificates

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