

High-quality pressure sensor with mounted diaphragm seal With clamp connection Model DSS22T



Applications

- Hygienic pressure measurement in sanitary applications for the food and beverage industry
- Mounting to pipelines and vessels with 4 ... 20 mA output signal
- Pressure/vacuum monitoring during cleaning, sterilisation, pressure testing
- For gases, compressed air, vapour; liquid, pasty, powdery and crystallising media

Special features

- Quick cleaning, without residue
- Clamp connection easy to open for cleaning and seal replacement
- Suitable for SIP and CIP



Diaphragm seal system, model DSS22T

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 DSS22T complies with all requirements of the food industry. The particular suitability for foodstuffs rests on the fact that the measuring point can be cleaned while installed.

The requirements of CIP (cleaning in place) and SIP (sterilisation in place) are fulfilled. The clamp connection enables the quick and easy dismounting and thus a simple cleaning with seal replacement.

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

The DSS22T is particularly well suited for gases, compressed air and vapour as well as liquid, pasty, powdery and crystallising media.

Specifications

Model DSS22T	
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 °]
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 SF4 (except for weld seam)
Level of cleanliness of wetted parts	Oil and grease free per ASTM G93-03 level F WIKA standard (< 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), recommendation for pharmaceutical and cosmetics applications
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]

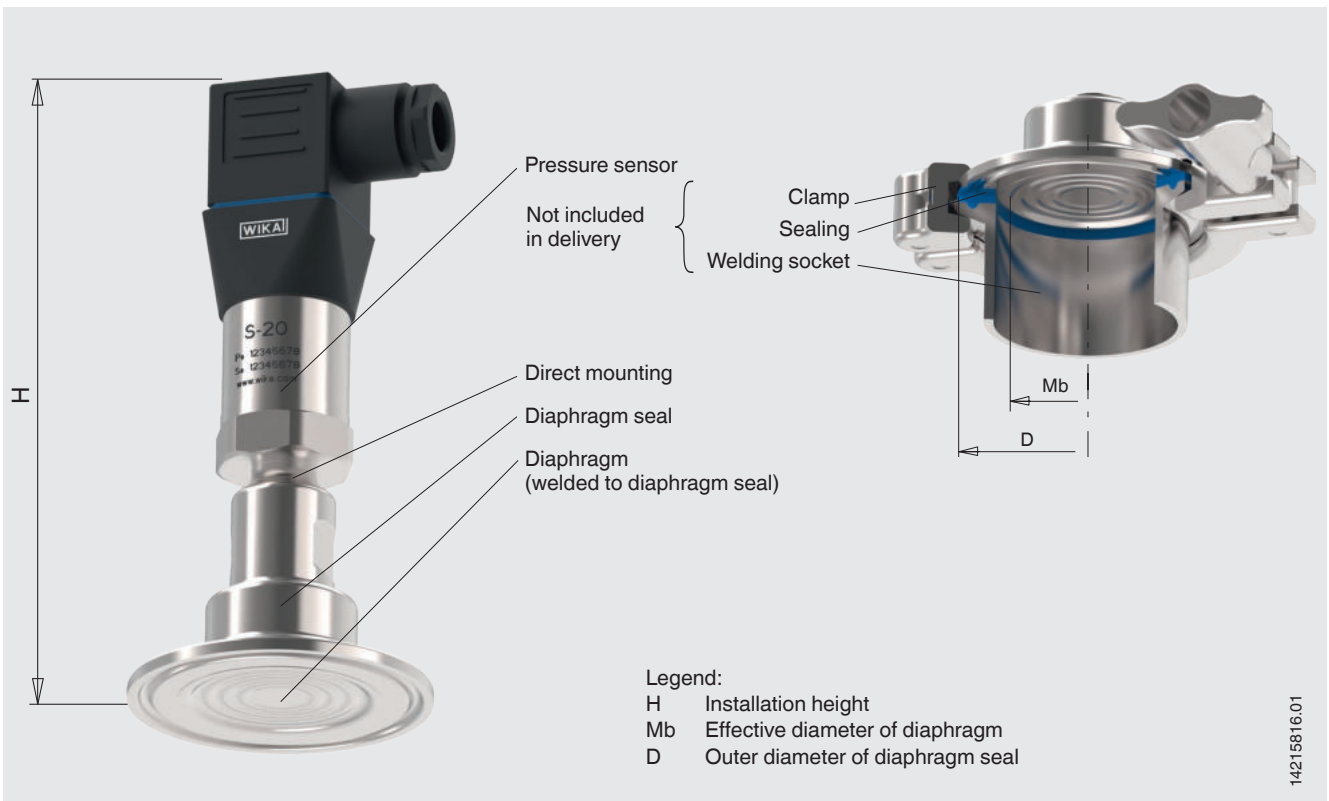
1) Only applies when plugged in using a suitable mating connector that has the appropriate ingress protection.

Connection diagram

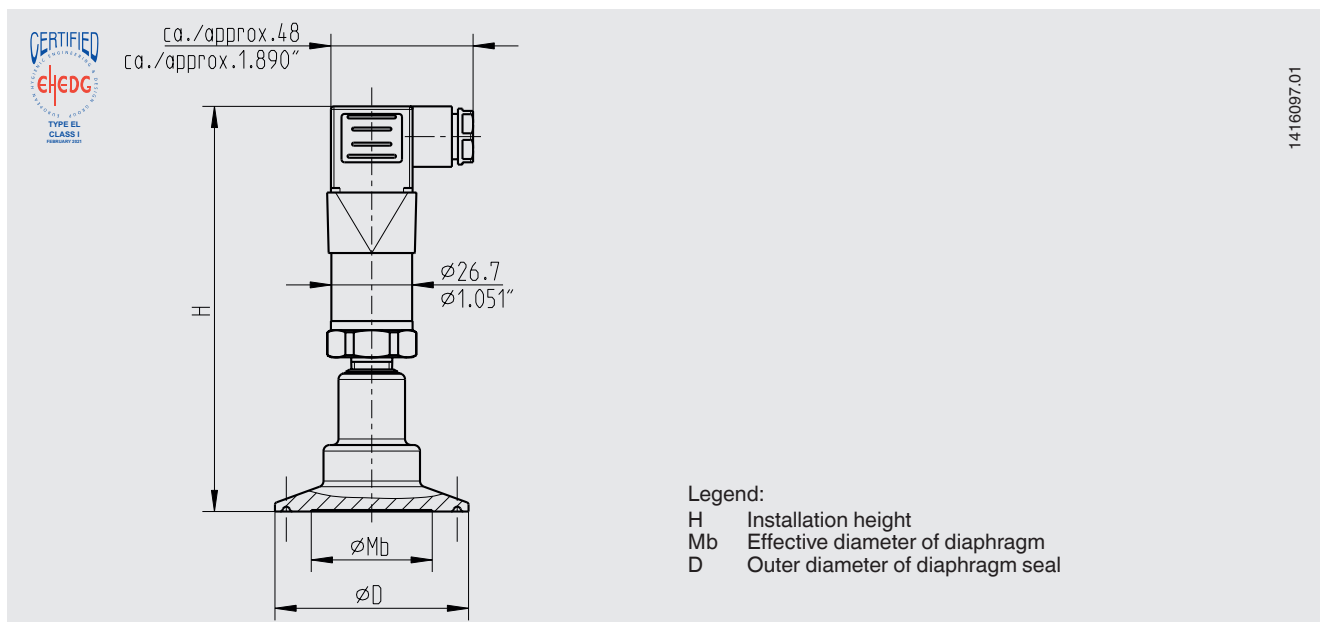
Angular connector DIN 175301-803 A, 2-wire

	U+	1
	U-	2

Model DSS22T illustrated on a pipe socket



Dimensions in mm [in]



Type of process connection: Clamp connection per DIN 32676

Pipe standard: Pipes per DIN 11866 row C or ASME BPE

DN	For pipe Outer \varnothing x wall thickness	PN ¹⁾	Dimensions in mm [in]		
			H	D	Mb
1 1/2"	38.1 x 1.65 [1.5 x 0.065]	40	115 [4.528]	50.5 [1.988]	32 [1.26]
2"	50.8 x 1.65 [2 x 0.065]	40	118 [4.646]	64 [2.52]	40 [1.575]

Type of process connection: Clamp connection per DIN 32676

Pipe standard: Pipes per DIN 11866 row B or ISO 1127 row 1

DN	For pipe Outer \varnothing x wall thickness	PN ¹⁾	Dimensions in mm [in]		
			H	D	Mb
42.4 [DN 32]	42.4 x 2 [1.669 x 0.079]	40	118 [4.646]	64 [2.52]	32 [1.26]
48.3 [DN 40]	48.3 x 2 [1.906 x 0.079]	40	118 [4.646]	64 [2.52]	40 [1.575]

Type of process connection: Clamp connection per BS4825 part 3

Pipe standard: Pipes per BS4825 part 1 and O.D. tube

DN	For pipe Outer \varnothing x wall thickness	PN ¹⁾	Dimensions in mm [in]		
			H	D	Mb
1 1/2"	38.1 x 1.6 [1.5 x 0.063]	40	115 [4.52]	50.5 [1.988]	32 [1.26]
2"	50.8 x 1.6 [2 x 0.063]	40	118 [4.646]	64 [2.52]	40 [1.575]

1) For maximum pressure range consider pressure rating of clamp.

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