

High-quality pressure sensor with mounted diaphragm seal

With flange connection, flush diaphragm

Model DSS27T

WIKA data sheet DS 95.13

Applications

- For aggressive, highly viscous, crystallising or hot media
- Process industry
- Machine building and plant construction

Special features

- Flange with a flush welded diaphragm
- Robust, all welded design
- Universal application



Diaphragm seal system, model DSS27T

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.

Due to its design – with flange connection and flush diaphragm – the DSS27T is suitable for all commonly used standard flanges and is mounted for pressure measurement in lieu of a blind flange.

The DSS27T is ideally suited for demanding measuring tasks and achieves a very high accuracy. It offers the advantage of being able to transmit the measuring signal directly and to combine it with a variety of electrical connections.

Mounting of the diaphragm seal to the measuring instrument is made via direct mounting as standard.

The DSS27T is particularly well suited for aggressive, highly viscous, crystallising or hot media. The measuring system is successfully used worldwide in the chemical process and petrochemical industries with high measuring requirements.

Specifications

Model DSS27T	
Design	High-quality pressure sensor, diaphragm seal with flange connection, flush diaphragm
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 ... 150 °C [14 ... 302 °F]
Ambient	10 ... 40 °C [50 ... 104 °F]
Storage	10 ... 60 °C [50 ... 140 °F]
Ingress protection	IP65 per IEC/EN 60529
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
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	Silicone oil KN 2 for general 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]	0 ... 40 [0 ... 600]	

Vacuum and +/- measuring range		
-1 ... +5 [-30 inHg ... +70]	-1 ... +9 [-30 inHg ... +130]	-1 ... +10 [-30 inHg ... +145]

Electrical connection

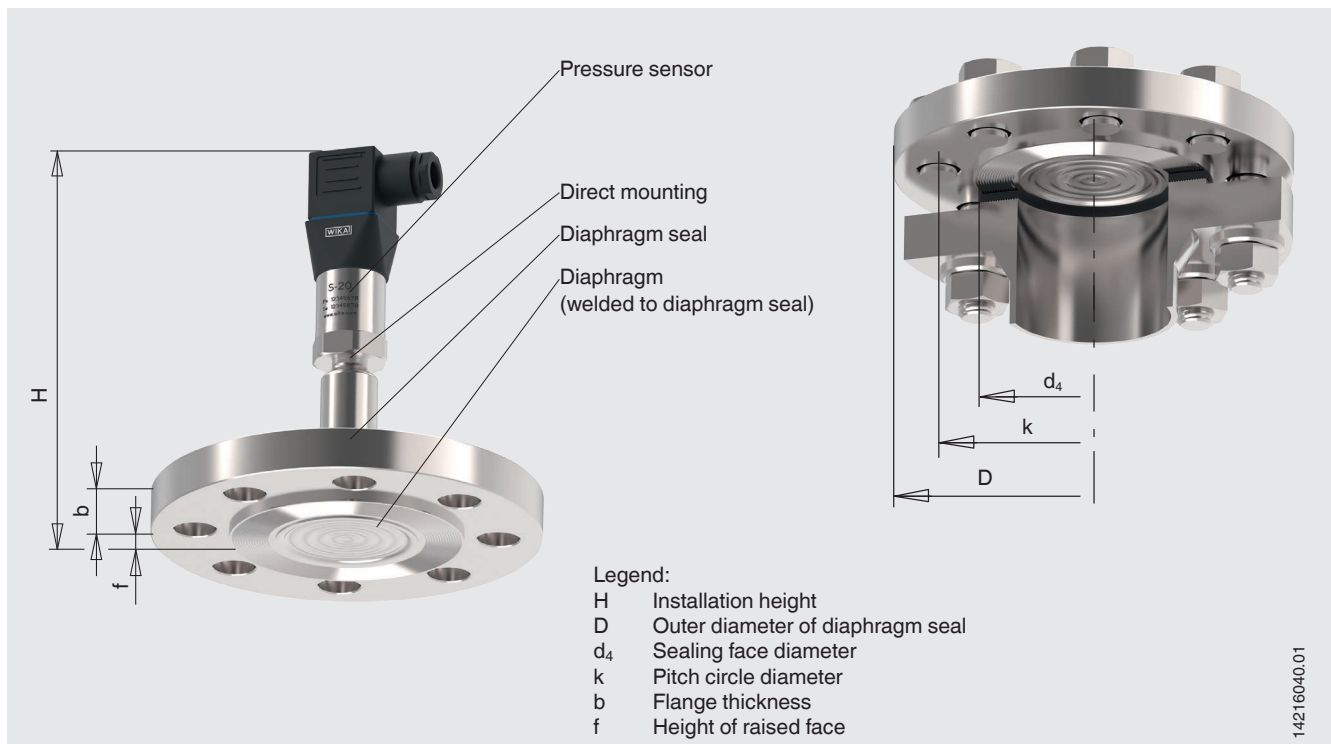
Angular connector DIN 175301-803 A				
Electrical connection	Ingress protection ¹⁾	Wire cross-section	Cable Ø	Permissible temperature
with mating connector	IP65	max. 1.5 mm ²	6 ... 8 mm	-30 ... +100 °C [-22 ... +212 °F]

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

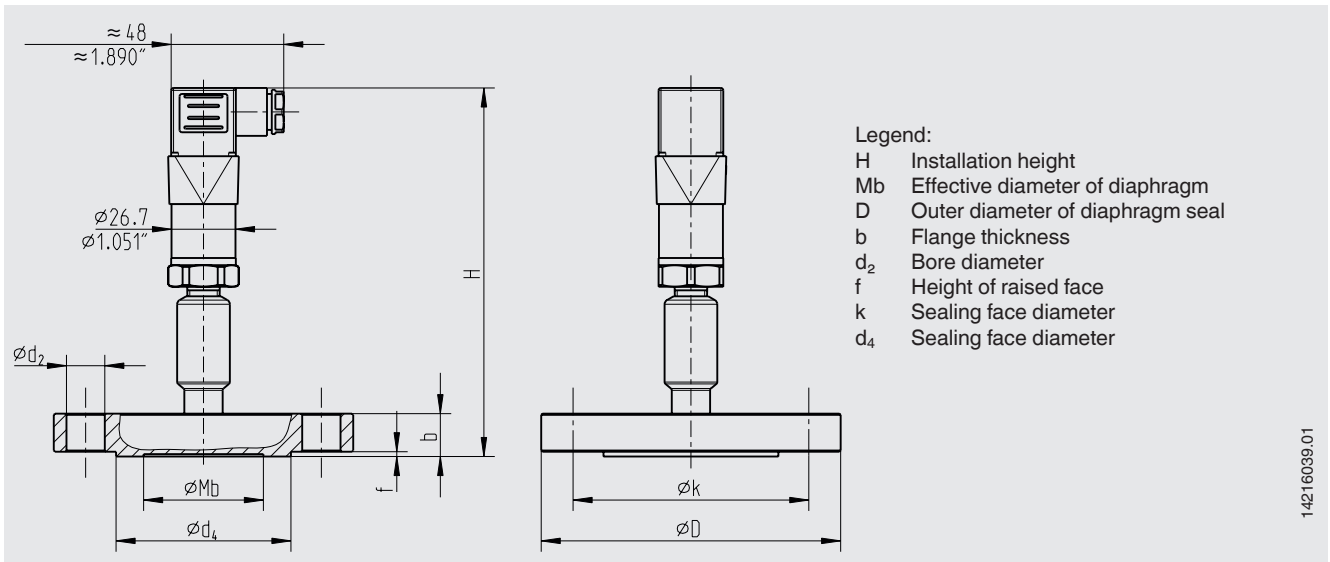
Connection diagram

Angular connector DIN 175301-803 A, 2-wire		
	U+	1
	U-	2

Installation example, model DSS27T



Dimensions in mm [in]



14216039.01

Type of process connection: Flange connection following EN 1092-1

Sealing face: Form B1

DN	PN	Dimensions in mm [in]							
		H	Mb	D	b	k	d ₂	d ₄	f
50	10/40	154 [6.063]	59 [2.323]	115 [4.528]	18 [0.709]	85 [3.346]	14 [0.551]	68 [2.677]	2 [0.079]
80	10/16	156 [6.142]	89 [3.504]	200 [7.874]	20 [0.787]	160 [6.299]	18 [0.709]	138 [5.433]	
80	25/40	160 [6.299]			24 [0.945]				

Type of process connection: Flange connection following ASME B16.5

Sealing face: RF 125 ... 250 AA

DN	Class	Dimensions in mm [in]							
		H	Mb	D	b	k	d ₂	d ₄	f
2"	150	155.5 [6.122]	59 [2.323]	150 [5.905]	19.5 [0.767]	120.7 [4.752]	19 [0.748]	92 [3.662]	2 [0.079]
	300	158.7 [6.248]		165 [6.496]	22.7 [0.894]	127 [5]			
3"	150	160.3 [6.311]	89 [3.504]	190 [7.48]	24.3 [0.957]	152.4 [6]	19 [0.748]	127 [5]	
	300	165 [6.490]		210 [8.268]	29 [1.142]	168.3 [6.626]	22 [0.866]		

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) / Parts / Certificates

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