

# 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.

The DSS27T with flange connection and flush diaphragm is available following currently used, international flange standards.

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	
<b>Design</b>	High-quality pressure sensor, diaphragm seal with flange connection, flush diaphragm
<b>Current output</b>	4 ... 20 mA (2-wire)
<b>Power supply</b>	DC 8 ... 35 V
<b>Accuracy at reference conditions</b>	≤ ±0.5 % of span
<b>Permissible load in Ω</b>	Current output ≤ (power supply - 7.5 V) / 0.023 A
<b>Current supply</b>	Max. 25 mA
<b>Dissipation loss</b>	828 mW
<b>Reference conditions (per IEC 61298-1)</b>	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.
<b>Pressure limitation</b>	< 10 bar [150 psi]: 3 times ≥ 10 bar [150 psi]: 2 times
<b>Permissible temperature range</b>	
Medium	-10 ... 150 °C [14 ... 302 °F]
Ambient	10 ... 40 °C [50 ... 104 °F]
Storage	10 ... 60 °C [50 ... 140 °F]
<b>Ingress protection</b>	IP65 per IEC/EN 60529
<b>Material</b>	
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
<b>Level of cleanliness of wetted parts</b>	Oil and grease free per ASTM G93-03 level F and ISO 15001 (< 1,000 mg/m <sup>2</sup> )
<b>System fill fluid</b>	Silicone oil KN 2 for general applications
<b>Permissible humidity (per IEC 68-2-78)</b>	≤ 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

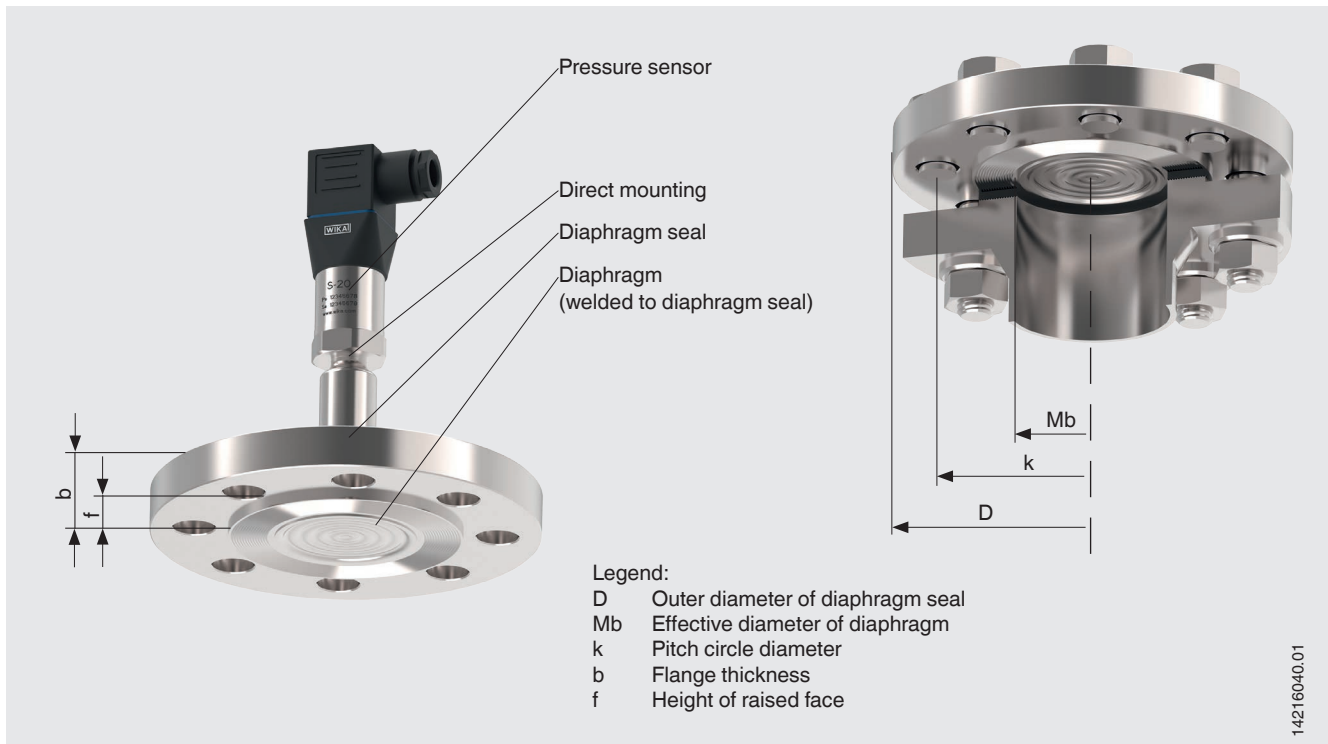
Angular connector DIN 175301-803 A				
Electrical connection	Ingress protection <sup>1)</sup>	Wire cross-section	Cable Ø	Permissible temperature
with mating connector	IP65	max. 1.5 mm <sup>2</sup>	6 ... 8 mm	-30 ... +100 °C [-22 ... +212 °F]

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

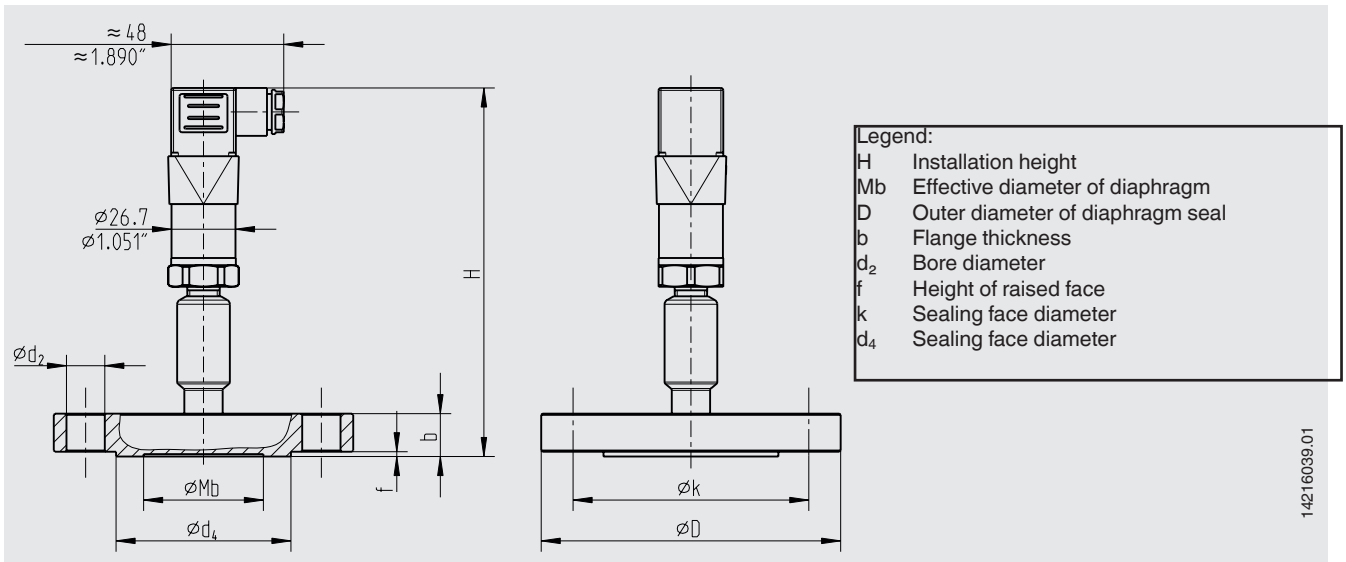
## Connection diagram

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

## Installation example, model DSS27T



## Dimensions in mm [in]



### 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 <sub>2</sub>	d <sub>4</sub>	f
50	10/40	156 [6.142]	59 [2.323]	165 [6.496]	20 [0.787]	125 [4.921]	18 [0.709]	102 [4.016]	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 <sub>2</sub>	d <sub>4</sub>	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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