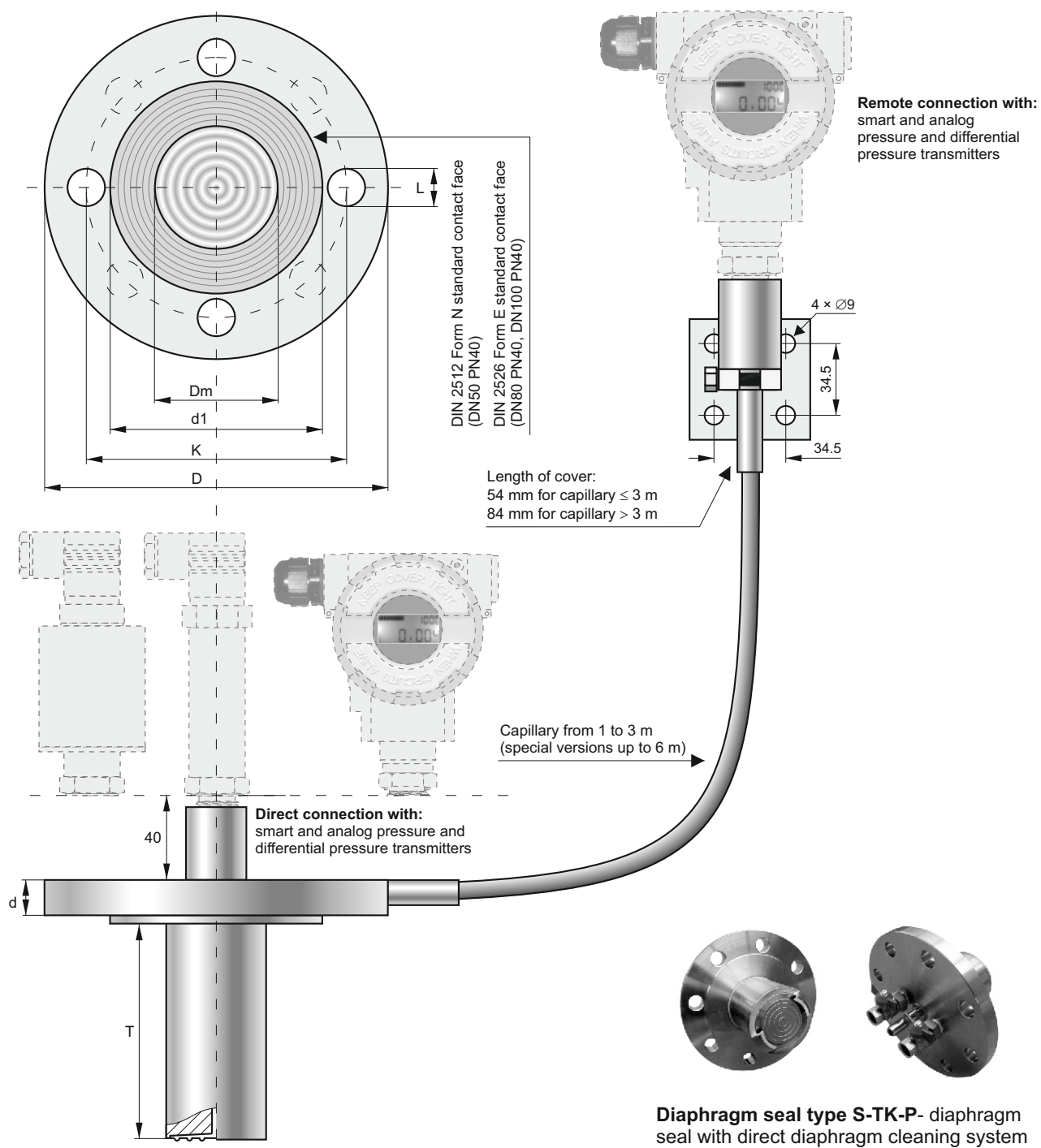


# Technical Datasheet



## D-Series Flanged Seals with Extended Diaphragm Models: S-T



## Dimensions

Version	Diaphragm diameter <b>Dm</b>	Contact face diameter <b>d1</b>	Diameter of bolt circle <b>K</b>	External diameter <b>D</b>	Thickness <b>d</b>	Diameter of holes <b>L</b>	Number of holes	Tube length <b>T</b>
<b>DN50 PN40</b>	48	102	125	165	22	18	4	50, 100
<b>2" ANSI 150</b>	48	92	120,5	150	20	20	4	
<b>DN80 PN40</b>	75	138	160	200	24	18	8	150, 200
<b>3" ANSI 150</b>	75	127	152,5	190	24	20	4	
<b>DN100 PN40</b>	88	162	190	235	24	22	8	50, 100
<b>4" ANSI 150</b>	89	158	190,5	230	24	20	8	

## Application

The diaphragm seal is a pressure transmitting, diaphragm-type device. The pressure signal is sent to the cooperating pressure measuring device (pressure transmitter, pressure gauge) through manometric liquid filling the space between the separating diaphragm of the seal and the pressure measuring device. The diaphragm seal task is to isolate the pressure measuring device from damaging impacts caused by either medium or installation:

- ♦ Low or high temperature, increased viscosity, and impurities
- ♦ Tendency of crystallisation on the tank walls
- ♦ Vibrations of the installation (remote diaphragm seal)

The flanged diaphragm seal with extended diaphragm is typically applies to measure the pressure or level of the media in a multi-walled tank, where the separating diaphragm should be placed close to the inner wall of the tank.

## Measuring Ranges

**Recommended minimum measuring range (bar)  
depending on the type of the set: pressure measuring device - diaphragm seal**

Pressure measuring device	Seal type	Diaphragm Seal Version		
		DN50 / 2"	DN80 / 3"	DN100 / 4"
<b>Smart transmitters*</b>	direct	0.4	0.1	0.1
	remote (2 m)	6	0.5	0.25
<b>PCE-28</b>	direct	0.1	0.1	0.1
	remote (2 m)	2	0.5	2.5

**Additional absolute zero error resulting from ambient temperature fluctuations, depending on the type of the set: pressure transmitter - diaphragm seal with a 100 mm of tube**

Diaphragm seal type	Absolute zero error per 10°C for the diaphragm seal			An additional zero error, resulting from temperature fluctuations in a medium, depends on the temperature gradient in the oil-based diaphragm sealing system. The error value is, in any case, significantly smaller than the error value shown in the table.
	DN50 / 2"	DN80 / 3"	DN100 / 4"	
direct	2 mbar	0.6 mbar	0.4 mbar	
remote (2 m capillary)	10 mbar	2 mbar	1 mbar	

## Temperature range of measured medium

Remote diaphragm seal			Direct diaphragm seal
Manometric liquid	Underpressure measurements	Overpressure measurements	-30...150°C
high-temperature (DC)	-10...150°C	-10...315°C	
low-temperature (AK)	not recommended for measurement of pressures < 0.5 bar ABS	-60...200°C	
Note: When operating with an ambient temperature of <15°C, heating of capillaries filled with DC fluid is recommended.			

## Special versions

**Maximum pressure for PN40 – 40 bar**  
**Maximum pressure for ANSI 150 – 150 psi**  
**Material of diaphragm, tube and flange 316Lss**

Other standards DIN and ANSI  
 Direct diaphragm seal for medium temp. over 150°C  
 Others

### Important:

- contact face in diaphragm seal DN50 have a milled slot for a gasket (acc. to DIN 2512 FormN). Version without any slot available on request. (acc. to DIN 2526 FormE)
- standard outlet of capillary from flange:
  - direct mounted diaphragm seal - axial
  - remote mounted diaphragm seal - radial

## Recommendations

The essential metrological problem with diaphragm seals operational use is an absolute thermal zero error, resulting from the thermal expansion of the manometer liquid. The expansion effect must be compensation for by the separating diaphragm's flexibility.

To minimise this effect, it is advisable to:

- ♦ Use capillaries which are as short as possible in order to greatly reduce the volume of manometer liquid
- ♦ Use seals with greater diameters in order to maximise flexibility of the separating diaphragm
- ♦ Place the capillaries in locations in which the temperature fluctuations will be minimal

## How to Order

Direct diaphragm seal:

**pressure measuring device / S-T – DN..... / T = ..... mm / special version (description)**

Remote diaphragm seal:

**pressure measuring device / S-TK – DN..... / T = ..... mm / K = ..... m / special version (description)**

Transmitter or gauge  
– see the code in the  
appropriate catalogue sheet

Seal  
version

Tube  
length

Capillary  
length

**Example:** DPC-2000 pressure transmitter, nominal measuring range 0 ÷ 25 bar, DN 50 remote flanged seal with extended diaphragm, 100 mm tube, 2 m capillary.

**DPC-2000ALW / 0 ÷ 25 bar / S-TK – DN50 / T = 100 mm / K = 2 m**

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**Delta Controls Limited**

Riverside Business Park, Dogflud Way, Farnham, Surrey GU9 7SS, UK.

**T**+44 (0)1252 729 140 **F**+44 (0)1252 729 168 **E** [sales@delta-controls.com](mailto:sales@delta-controls.com) **W** [www.delta-controls.com](http://www.delta-controls.com)

