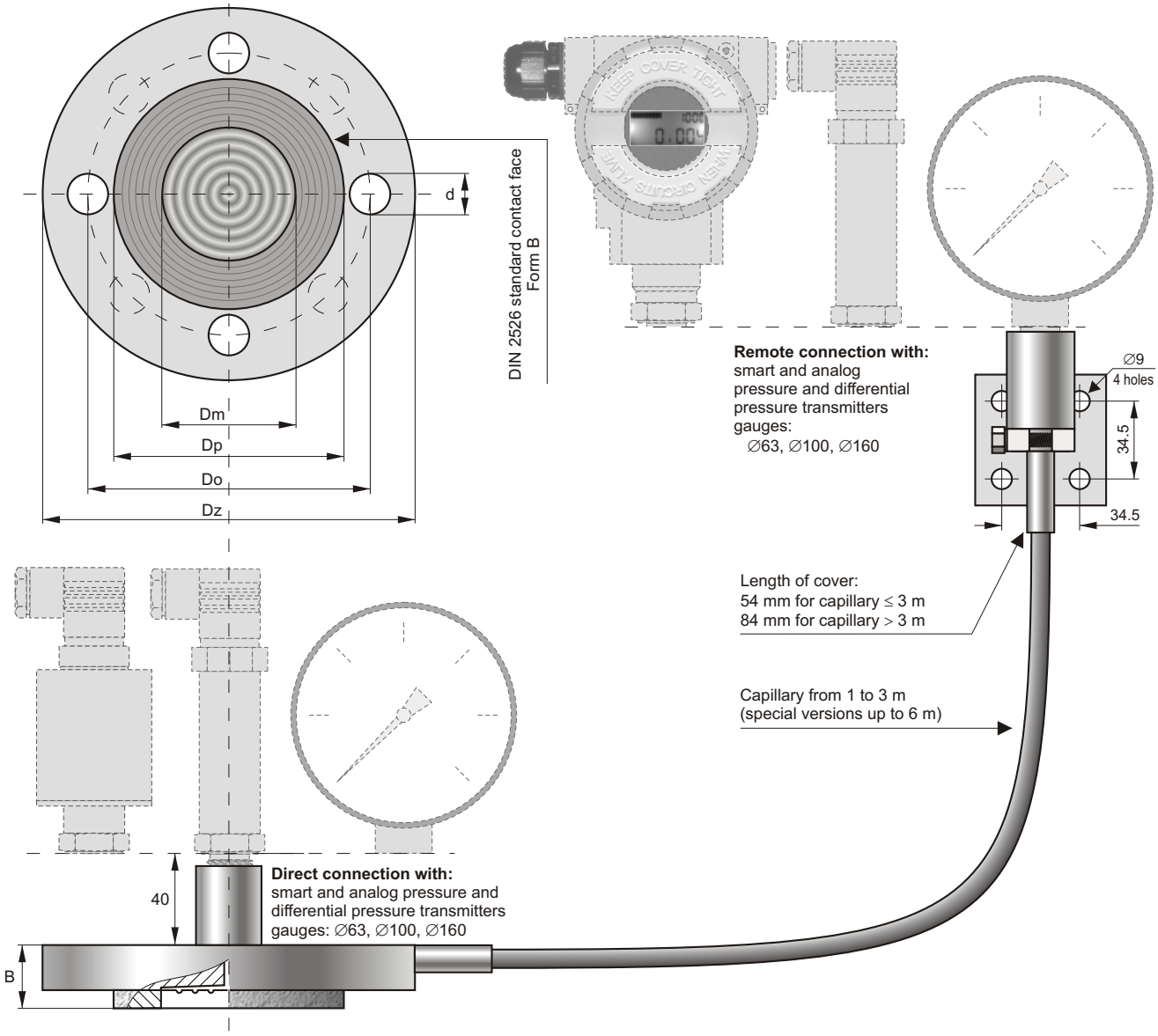
Chemical flanged seals with flush diaphragm S-Ch



Diaphragm seal dimensions

Version	Diaphragm diameter **Dm**	Contact face diameter **Dp**	Partition diameter **Do**	External diameter **Dz**	Thick-ness **B**	Thickness (teflon version) **B**	Diameter of openings **d**	Number of openings
DN50	60	102	125	165	24,2	27,7	18	4
DN80	89	138*	160	200	28,9	33,1	18	8

* for tantalum 127 lining

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:

- high corrosiveness;
- low or high temperature, increased viscosity, impurities;
- vibrations of the installation (remote diaphragm seal).

The material of both diaphragms and contact faces for the chemical-resistant diaphragm seals is corrosion-resistant, considering the chemical composition of medium as well as its expected concentration range and temperature range.

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

Pressure measuring device	Diaphragm seal type	Diaphragm seal version	
		DN50 PN16	DN80 PN40
Transmitter	direct	0.4	0.1
	remote	1	0.4
Gauge ∅100	direct	6	1
	remote	6	2.5

Available chemical-resistant materials

Diaphragm material	Contact face material	Over pressure limit
Monel	Monel	40 bar
Hastelloy	Hastelloy	40 bar
Nickel	Nickel	40 bar
Tantalum	Tantalum	16 bar
Tantalum	Teflon	16 bar
Titanium	Titanium	40 bar

Diaphragm seals with Teflon contact faces are more economical than tantalum seals.

Additional absolute zero error resulting from ambient temperature fluctuations, depending on the type of the set: pressure transmitter - diaphragm seal

Diaphragm seal type	Absolute zero error per 10°C for the diaphragm seal	
	DN50	DN80
direct	5 mbar	2 mbar
remote (2 m capillary)	10 mbar	4 mbar

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.

Medium temperature range

-30...180°C for remote diaphragm seal
special versions up to 250°C
-30...150°C for diaphragm seal

Special versions

Diaphragm seal meeting ANSI standard (2″, 3″)
Filling liquid – FLUOROLUBE
Capillary outlet at the axis of the diaphragm seal
Direct diaphragm seal for a medium temp. over 150°C

Ordering procedure

direct diaphragm seal: **pressure measuring device / S-Ch ..... – DN..... / special version – description**

remote diaphragm seal: **pressure measuring device / S-ChK ..... – DN..... / K = ... m / special version – description**

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

Material of diaphragm and contact face

Capillary length

Diaphragm seal version

Example: APCE-2000PZ pressure transmitter, nominal measuring range 0÷1bar, direct chemical flanged seal with flush diaphragm and contact face made from titanium (DN80).

APCE-2000PZ / 0 ÷ 1 bar / S-Ch titanium – DN80

When ordering a diaphragm seal please state the type of medium and the expected ranges of concentration and temperature.