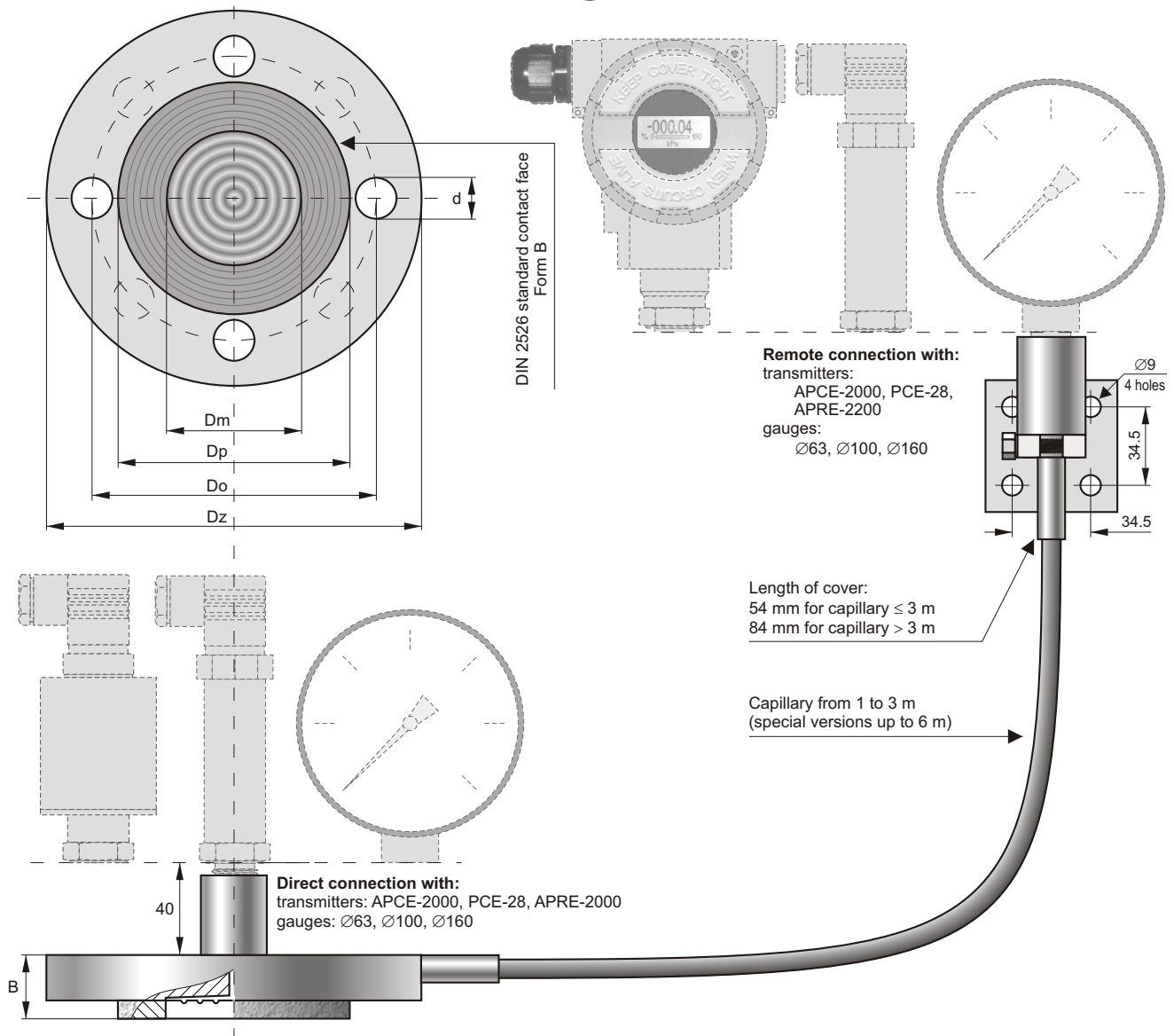


Chemical flanged seals with flush diaphragm S-Ch



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 Ø100 | direct | 6 | 1 |
| | remote | 6 | 2.5 |

Available chemical-resistant materials

| Diaphragm material | Contact face material | Over pressure limit | Warning |
|--------------------|-----------------------|---------------------|---|
| | | | The materials cannot be used in the following measurement conditions: |
| Hastelloy | Hastelloy | 40 bar | Presence of hot concentrated hydrochloric acid |
| Nickel | Nickel | 40 bar | Presence of acids |
| Tantalum | Tantalum | 25 bar | Presence of hydrofluoric acid or soda lye; |
| Tantalum | Teflon | 16 bar | – Presence of gaseous chlorine or fluorine, – Pressure higher than 1MPa when the temperature is over 95°C, – At any other circumstances where tantalum usage is not allowed |
| Titanium | Titanium | 40 bar | Dry chlorine |

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.