

Diaphragm type chemical seal "Compact"

Process connection: flange to DIN 2 501
or flange to ANSI B 16.5



Description

Chemical seals are used when media can falsify the pressure measurements due to high temperature, high viscosity (media in paste form) or their propensity to crystallise.

Chemical seals transmit the process pressure to the measuring instrument, with the diaphragm forming a hermetic seal between the medium and measuring instrument. With various process connection systems, the chemical seals of type "**Compact**" are especially suitable for general process engineering applications.

The flanges of the diaphragm type chemical seal "Compact" match the dimensions of standardised flanges. The diaphragm is either internal or flush at the front, depending on the design.

For \leq DN 25 and 1": open flange with internal diaphragm.

For \geq DN 40 and 1½": flush diaphragm at the front.

The medium wetted parts of these chemical seals are manufactured in stainless steel as standard. In connection with a Bourdon tube pressure gauge or an transducer, they are suitable for pressure ranges from 0 .. 25 bar to 0..250 bar.

The parts in contact with the medium can be manufactured in special materials for particular service conditions.

When the permissible rated pressure is exceeded, a specially designed diaphragm prevents damage to the chemical seal.

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- o Compact design with internal diaphragm for \leq DN 25 and 1"
- o Flush diaphragm at the front for \geq DN 40 and 1½"
- o Overload protection by diaphragm bed
- o Diaphragms in special materials metallicly bonded
- o Special materials for extreme service requirements
- o For media up to 400°C
- o Mountable on instrumentation and control equipment

Pressure ranges

0 ... 25 mbar to 0 ... 250 bar

Rated pressure


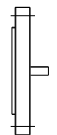
max. PN 250

Applications

Plant and apparatus construction,
Process engineering,
Chemical and petrochemical industries

Models : P3005 , P3006

Technical data

| Models | P3005 | P3006 | Options |
|-----------------------|---|---|--|
| |  |  | |
| Process connection | Flange to DIN 2501 | Flange to ANSI B 16.5 | Other on request |
| Sealing faces | DIN 2526 Form D | ANSI B 16.5 RF | DIN 2526 Form E or C DIN 2512 groove/ring DIN 2513 spigot/socket ANSI B 16.5 RFSF ANSI groove-ring Form RJF Not with all special materials (please ask for) |
| Instrument connection | Capillary, s.s. 1.4571 with gauge adaptor G1/2 female to DIN 16 288 | | Capillary with free welding end; axial welded connection thread to DIN 16288; Square tube or L-bow 90°; Cooling element (with direct mounting and temperature > 100°C) Flame proof throttle approved for "Zone 0" |
| Flange body | Stainless steel, 1.4571 | | Special materials on request |
| Diaphragm | Stainless steel, 1.4571, welded with body | | Stainless steel 1.4401; 1.4435; 1.4541; Hastelloy B2, C4, C276; Monel 400; Nickel; Inconel 600, Incoloy 825; Titan; Tantalum; these materials are for DN ≥ 40 and 1½" metallicly bonded with flange body, s.s. 1.4571 (up to 400°C); Silver-foil (up to 150°C); 25 micron gold plating; PTFE-foil (up to 150°C, < 100 bar); PFA-coating (up to 260°C); ECTFE-coating (up to 150°C); |
| Capillary | Stainless steel, 1.4571, axial welded with body, DN 50 and 2" and above: with trail handspike Standard extension: 1; 1.6; 2.5; 4; 6; 8; 10; 15 m; minimum curve radius: 50 mm | | Capillary entry: radial Length extension: between 1 and 15 m |
| Protection hose | Stainless steel, 1.4301 | | PE, smooth |
| Filling liquid | Silicon oil, FFL-No. 2 | | Others available in consideration of process conditions |
| Operating temperature | Tmin -20°C Tmax +200°C | | Tmin -90°C Tmax +400°C |

Installation : Gasket to DIN 2690, 2698 resp. ANSI B 16.5 (gasket not inclusive)

Important notes on the selection of chemical seals

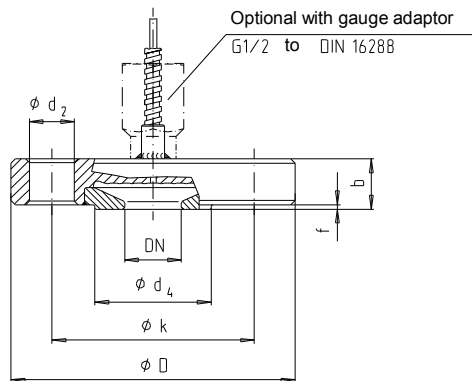
The process pressure to be measured is applied to the measuring instrument by the chemical seal with the aid of a liquid. The chemical seal and measuring instrument can be connected together by capillary lines (length up to max. 15 m) for system related reasons and in order to prevent the exposure of measuring instruments to impermissibly high temperatures. The temperature drop between the instrumentation and control unit and the chemical seal can be several 100° C. Measuring errors resulting from temperature are therefore possible and may be of a magnitude several times the accuracy of the measuring instrument. The particular operating conditions can be taken into account in the manufacture of I&C device-chemical seal combinations.

Matching of the chemical seal and pressure measuring instrument therefore requires expertise, and we shall be pleased to assist you. We recommend you to request our special questionnaire on service conditions and order data.

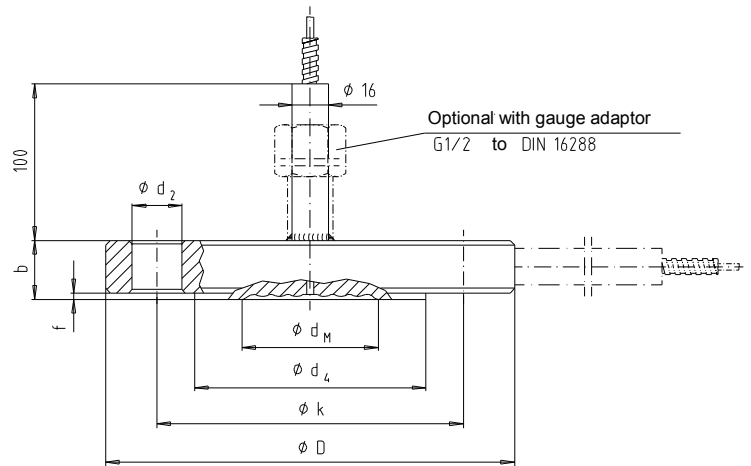
Dimensions (mm)

Model P3005

Type DN ≤ 25



Type DN ≥ 40



Model P3005

Thread to
DIN 2501

| DN | PN | Dimensions (mm) | | | | | | | | Weight (kg) |
|-----|----------|-----------------|-----|----|----------------|-----|----------------|-----|----|-------------|
| | | d _M | D | b | d ₂ | k | Raised portion | | x | |
| 15 | 10 / 40 | 40 | 95 | 22 | 14 | 65 | 2 | 45 | 4 | 1.00 |
| 20 | 10 / 40 | 40 | 105 | 22 | 14 | 75 | 2 | 58 | 4 | 1.30 |
| 25 | 10 / 40 | 52 | 115 | 22 | 14 | 85 | 2 | 68 | 4 | 1.50 |
| 40 | 10 / 40 | 48 | 150 | 18 | 18 | 110 | 3 | 88 | 4 | 2.10 |
| | 63 / 100 | 48 | 170 | 26 | 22 | 125 | 3 | 88 | 4 | 4.00 |
| | 160 | 48 | 170 | 28 | 22 | 125 | 3 | 88 | 4 | 4.30 |
| 50 | 250 | 48 | 185 | 34 | 26 | 135 | 3 | 88 | 4 | 6.30 |
| | 10/40 | 59 | 165 | 20 | 18 | 125 | 3 | 102 | 4 | 3.30 |
| | 63 | 59 | 180 | 26 | 22 | 135 | 3 | 102 | 4 | 5.10 |
| | 100 | 59 | 195 | 28 | 26 | 145 | 3 | 102 | 4 | 6.50 |
| 80 | 160 | 59 | 195 | 30 | 26 | 145 | 3 | 102 | 4 | 7.00 |
| | 250 | 59 | 200 | 38 | 26 | 150 | 3 | 102 | 8 | 9.30 |
| | 10/16 | 89 | 200 | 20 | 18 | 160 | 3 | 138 | 8 | 4.90 |
| | 25/40 | 89 | 200 | 24 | 18 | 160 | 3 | 138 | 8 | 5.80 |
| | 63 | 89 | 215 | 28 | 22 | 170 | 3 | 138 | 8 | 7.90 |
| | 100 | 89 | 230 | 32 | 26 | 180 | 3 | 138 | 8 | 10.40 |
| 100 | 160 | 89 | 230 | 36 | 26 | 180 | 3 | 138 | 8 | 11.70 |
| | 250 | 89 | 255 | 46 | 30 | 200 | 3 | 138 | 8 | 18.40 |
| | 10/16 | 89 | 220 | 20 | 18 | 180 | 3 | 158 | 8 | 5.90 |
| | 25/40 | 89 | 235 | 24 | 22 | 190 | 3 | 162 | 8 | 8.10 |
| | 63 | 89 | 250 | 30 | 26 | 200 | 3 | 162 | 8 | 11.50 |
| | 100 | 89 | 265 | 36 | 30 | 210 | 3 | 162 | 8 | 15.50 |
| 125 | 160 | 89 | 265 | 40 | 30 | 210 | 3 | 162 | 8 | 17.30 |
| | 250 | 89 | 300 | 54 | 33 | 235 | 3 | 162 | 8 | 29.90 |
| | 10/16 | 124 | 250 | 22 | 18 | 210 | 3 | 188 | 8 | 8.40 |
| | 25/40 | 124 | 270 | 26 | 26 | 220 | 3 | 188 | 8 | 11.60 |
| | 63 | 124 | 295 | 34 | 30 | 240 | 3 | 188 | 8 | 14.70 |
| | 100 | 124 | 315 | 40 | 33 | 250 | 3 | 188 | 8 | 24.40 |
| 125 | 160 | 124 | 315 | 44 | 33 | 250 | 3 | 188 | 8 | 26.90 |
| | 250 | 124 | 340 | 60 | 33 | 275 | 3 | 188 | 12 | 42.70 |

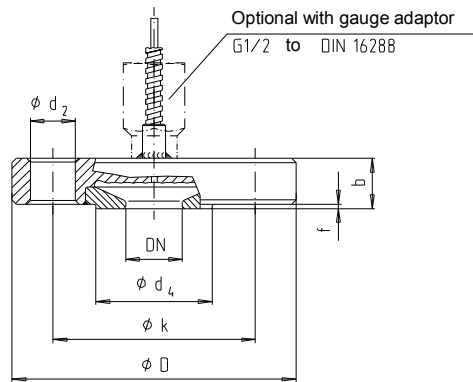
Effective diaphragm $\varnothing = d_M$

Number of bolt holes = x

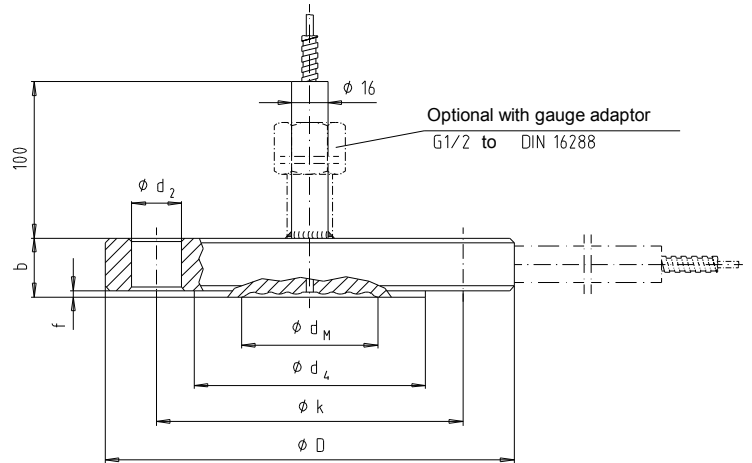
Dimensions (mm)

Model P3006

Type DN ≤ 1"



Type DN ≥ 1 1/2"



Model P3006

Thread to
ANSI B 16.5

| DN | Class | Dimensions (mm) | | | | | | | | Weight (kg) |
|--------|-------|-----------------|-----|------|----------------|-------|----------------|-----|---|-------------|
| | | d _M | D | b | d ₂ | k | Raised portion | | x | |
| 1/2" | 150 | 32 | 95 | 22 | 16 | 60.5 | 2 | 35 | 4 | 1.00 |
| | 300 | 40 | 95 | 22 | 16 | 66.5 | 2 | 35 | 4 | 1.00 |
| 3/4" | 150 | 40 | 100 | 22 | 16 | 70 | 2 | 43 | 4 | 1.10 |
| | 300 | 40 | 120 | 22 | 20 | 82.5 | 2 | 43 | 4 | 1.60 |
| 1" | 150 | 52 | 110 | 22 | 16 | 79.5 | 2 | 51 | 4 | 1.40 |
| | 300 | 52 | 125 | 22 | 20 | 89 | 2 | 51 | 4 | 1.70 |
| 1 1/2" | 150 | 48 | 130 | 22 | 16 | 98.5 | 2 | 73 | 4 | 1.60 |
| | 300 | 48 | 155 | 22 | 22 | 114.5 | 2 | 73 | 4 | 2.50 |
| | 600 | 48 | 155 | 29.5 | 22 | 114.5 | 7 | 73 | 4 | 3.30 |
| | 2500 | 48 | 205 | 51.5 | 33 | 146 | 7 | 73 | 4 | 10.40 |
| 2" | 150 | 59 | 150 | 20 | 20 | 120.5 | 1.6 | 92 | 4 | 2.70 |
| | 300 | 59 | 165 | 22.5 | 20 | 127 | 1.6 | 92 | 8 | 3.70 |
| | 600 | 59 | 165 | 32 | 20 | 127 | 6.4 | 92 | 8 | 5.70 |
| | 1500 | 59 | 215 | 45 | 26 | 165 | 6.4 | 92 | 8 | 13.20 |
| | 2500 | 59 | 235 | 57.5 | 30 | 171.5 | 6.4 | 92 | 8 | 19.80 |
| 3" | 150 | 89 | 190 | 24 | 20 | 152.5 | 1.6 | 127 | 4 | 5.30 |
| | 300 | 89 | 210 | 29 | 22 | 168.5 | 1.6 | 127 | 8 | 7.80 |
| | 600 | 89 | 210 | 38.5 | 22 | 168.5 | 6.4 | 127 | 8 | 11.00 |
| | 900 | 89 | 240 | 45 | 26 | 190.5 | 6.4 | 127 | 8 | 16.70 |
| | 1500 | 89 | 270 | 54.5 | 33 | 203 | 6.4 | 127 | 8 | 24.50 |
| | 2500 | 89 | 305 | 73.5 | 36 | 228.5 | 6.4 | 127 | 8 | 42.70 |
| 4" | 150 | 89 | 230 | 24 | 20 | 190.5 | 1.6 | 158 | 8 | 7.70 |
| | 300 | 89 | 255 | 32 | 22 | 200 | 1.6 | 158 | 8 | 12.70 |
| | 400 | 89 | 255 | 41.5 | 26 | 200 | 6.4 | 158 | 8 | 17.40 |
| | 600 | 89 | 275 | 45 | 26 | 216 | 6.4 | 158 | 8 | 21.50 |
| | 900 | 89 | 295 | 51 | 32 | 235 | 6.4 | 158 | 8 | 27.70 |
| | 1500 | 89 | 310 | 60.5 | 36 | 241.5 | 6.4 | 158 | 8 | 37.00 |
| | 2500 | 89 | 355 | 83 | 42 | 273 | 6.4 | 158 | 8 | 65.70 |

Effective diaphragm $\phi = d_M$

Number of bolt holes = x

Ordering details :

Model / process connection (Size / Norm) / Material (wetted parts) / Instrument connection / Filling liquid / Installation at pressure gauge / Process conditions as per questionnaire.