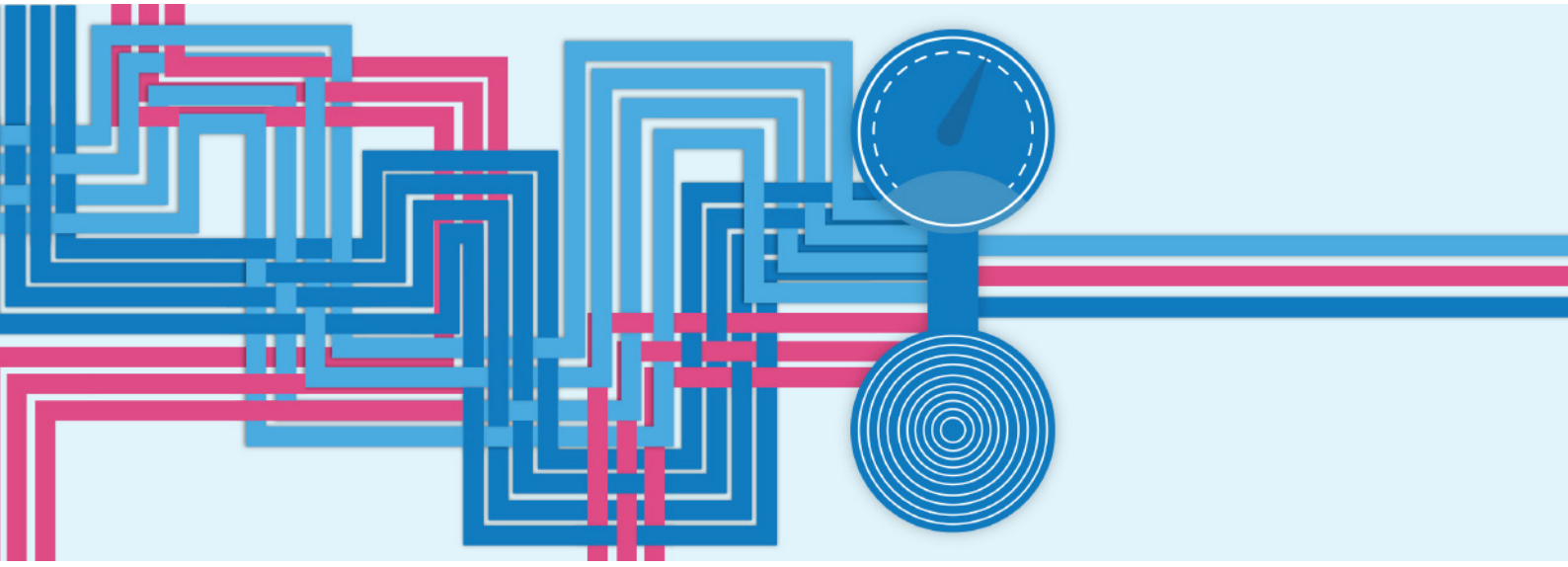
BADOTHERM®



Badotherm: Diaphragm Seal Solutions

PTH Diaphragm Seal – Direct manifold mount suitable for high Proces Temperatures

The PTH Diaphragm Seal construction is designed to make the differential or gauge pressure transmitter suitable for a direct manifold fit, meeting the requirements of the IEC 61518. The PTH is standard suitable for pressure measurement up to a maximum process temperature of 200°C. This can however be increased to higher temperatures when combined with different fill fluids. The wetted parts are all made from AISI 316(L), this can be varied depending on the process conditions.

PTH Diaphragm Seal – Direct manifold mount suitable for high Proces Temperatures

Measuring Pressure at High Process Temperature

The PTH is a solution that is developed as an alternative to the Rosemount 3051H high process temperature pressure transmitter and is fully interchangeable. The 3051H had a high process temperature capability of 191°C for measuring differential or gauge pressure without the use of remote Diaphragm Seals or capillaries. Badotherm have developed a Diaphragm Seal solution perfectly suited to this type of requirement.

This solution makes it possible to continue measuring pressure at high process temperature (capability of 200°C or higher) for measuring differential or gauge pressure by means of a direct manifold-mounted solution.

Maximum Temperature

Using BSO-22, the maximum process temperature it can withstand is 200°C. In combination with other filling fluids, the maximum process temperature can increase to 420°C.

Maximum Static Pressure

- 200 bar / 200°C
- 250 bar / 20°C
- 350 bar / 20°C (design)

Reference Accuracy

0,025% for the Diaphragm Seal + transmitter specifications.

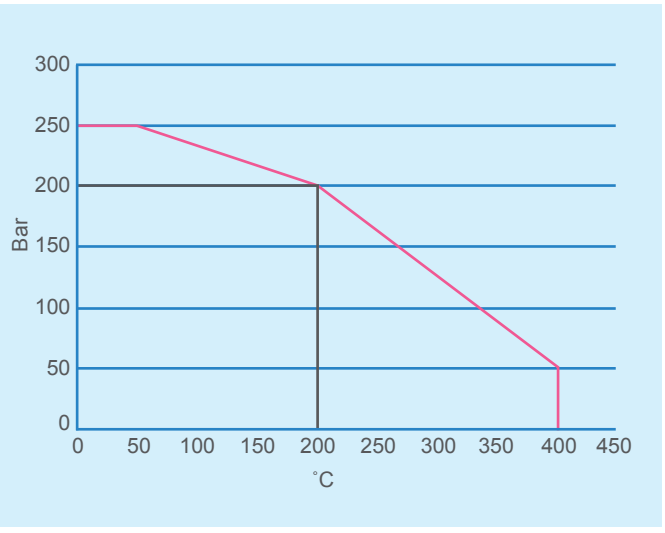
Mounting position effects

Zero shifts up to 15 mbar (at 180°C), which can be calibrated out. There is no span effect.

Mounting

The PTH dimensions are according to the IEC standard 61518 and is still suitable for mounting to the process connectors according the DIN19213 1982 part 2 for manifold mounts.

Pressure Temperature rating



Graph with Pressure Temperature rating of the PTH Diaphragm Seal.

Temperature Effect

Options	Temperature effect
Standard	0,24 mbar / Δ10°C
With temperature test	0,15 mbar / Δ10°C

Values are applicable for standard configurations with 75µm diaphragms with material AISI 316(L) and BSO-22.

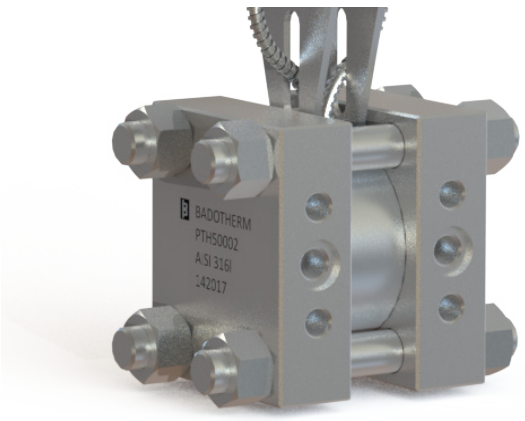
Temperature limits

Filling fluid	Temperature specifications
BSO-22 (standard)	-40°C to +200°C
BSO-40 (FDA approved)	-15°C to +235°C
BSO-18	-10°C to +315°C
BSO-42	-10°C to +350°C
BSO-48	-20°C to +420°C

For vapor pressure curves and other specific fill fluid information, see the individual datasheets of the filling fluids.

Coplanar and low volume design

There are two constructions for the PTH, being the coplanar design and the low volume cover construction. As such, it is possible to offer a solution to all brands of pressure transmitter. See below a 3D image of the low volume construction.



3D example of a PTH with low volume construction.

Special materials and coatings

The PTH can be supplied with various exotic diaphragm materials such as Hastelloy C276, Monel or Tantalum. The process flanges can also be supplied with similar exotic materials. Other materials are on request.The PTH is suitable for Gold Coating on the diaphragm. Available in 25 µm and 40 µm thickness. Gold Coating is often selected to protect the instrument against hydrogen permeation or for chemical resistance, or both.

40 µm gold coating layer on PTH coplanar design.

Gasket material

Camprofile AISI 316 ring with Graphite soft layer, suitable up to 500°C.

Bolt Material

ASTM A193 B8M cl. 2.

Other options

- Mounting with process connectors (1/2” NPT-f).
- Degreasing treatment of wetted parts.

Weight

Approx. 7.5 KG.