

Chemical industry  
Pharmaceutical

# Diaphragm break monitoring for **Diaphragm Seals**



**WIKAI**

Part of your business

# DIAPHRAGM SEALS

By using diaphragm seals, pressure measuring instruments can be adapted to even the harshest of conditions within process industries. A diaphragm made of the appropriate material separates the process medium from the pressure measuring instrument.

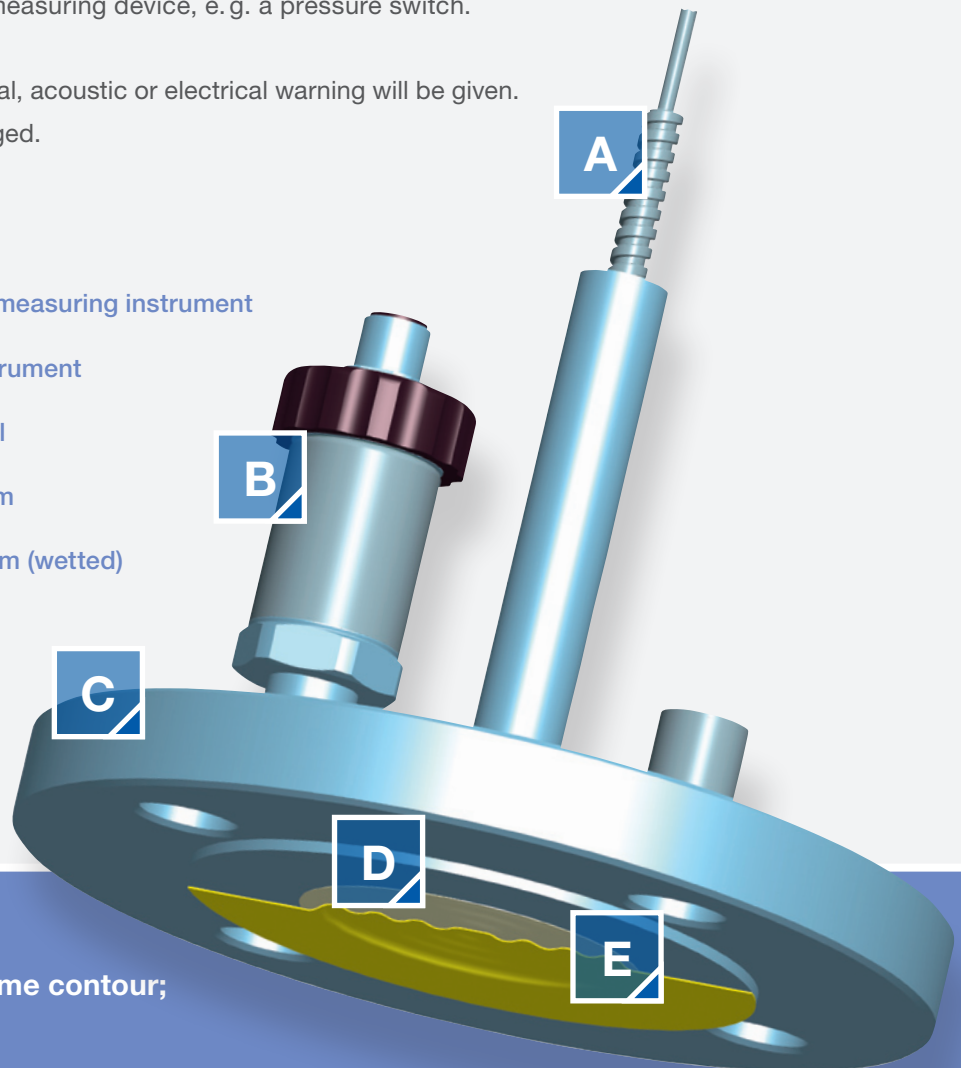
In this way, the pressure can be reliably measured. However, even a stainless steel diaphragm can wear over time if it is in continuous contact with aggressive media.

## DIAPHRAGM BREAK MONITORING

WIKA's patented double-diaphragm design (Patent No. DE19949831) offers a solution for critical processes where the product must not find its way into the environment, or where the fill fluid in the diaphragm seal assembly must not come in contact with the product for any reason. The space between the two diaphragms is evacuated. The resulting vacuum is monitored by a measuring device, e. g. a pressure switch.

Should a diaphragm rupture, an optical, acoustic or electrical warning will be given. The damaged system can be exchanged.

- A** Connection to measuring instrument
- B** Monitoring instrument
- C** Diaphragm seal
- D** Inner diaphragm
- E** Outer diaphragm (wetted)



Diaphragm seal with double-diaphragm system with the same contour; welded independently.

# VARIABILITY

The diaphragm break monitoring is available in a number of variations. There are two basic models:

- Double-diaphragm design for flange-type diaphragm seals with a flush diaphragm (up to diaphragm diameters of 124 mm).
- Double-diaphragm design for diaphragm seals with sterile connections, e.g. for pharmaceutical applications.

Pressure gauges, pressure transmitters, pressure switches or pressure transmitters are suitable as measuring instruments.

On the following page you will find guidelines on how to order. Please enter specific data here for your applications, e.g. measuring range, or temperature conditions.

## Application example

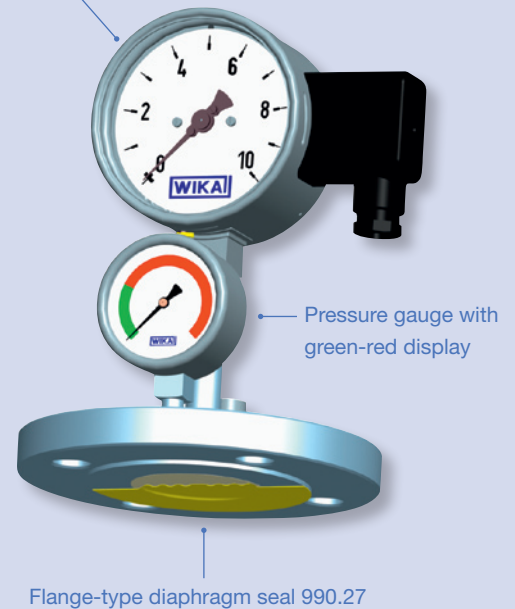
Application in pharmaceutical production:

Before the products can be subsequently used, all measuring instruments must be disconnected from the process and checked whether the diaphragm has become damaged during production. The system fill fluid must not come in contact with the product. This procedure is no longer needed.



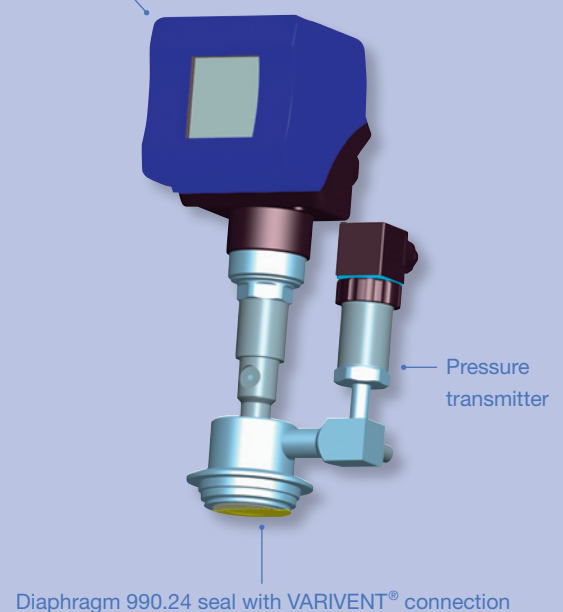
## Example of a measuring assembly with flange connection

intelliGAUGE PGT23.100



## Example of a measuring assembly with sterile connection

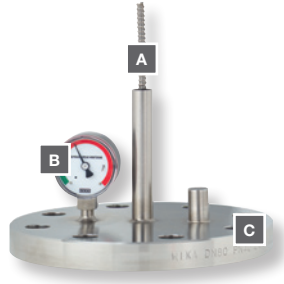
Pressure transmitter IUT-10



## Ordering guidelines for diaphragm break monitoring

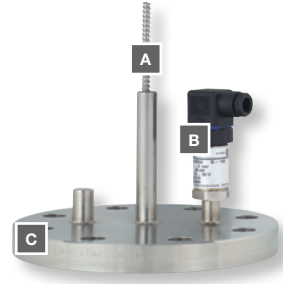
### Example:

Monitoring with pressure gauge



### Example:

Monitoring with pressure transmitter



#### A Pressure measuring instrument

Pressure gauge

Model  Nominal size

Pressure range

Alarm contact, Model\*

Approvals\*

#### B Monitoring instrument

Pressure gauge

Model  Nominal size

Dial layout  with scale  green-red

Signal output, model\*

Approvals\*

Pressure transmitter

Model

Pressure range

Electrical output signal

Electrical connection

Approvals\*

Pressure transmitter

Pressure switch

Model

Measuring range

Electrical output signal

Electrical connection

Approvals\*

#### C Diaphragm seal

Model

Process connection

Suitable wetted parts material

#### Connection

Direct mounting

Cooling tower between diaphragm seal and measuring instrument

Capillary length  meters

System fill fluid

#### Process conditions

Process medium

Pressure limitation max.  bar (Vacuum pressure ranges impossible)

\*optional

Process temperature from  to  °C

Ambient temperature from  to  °C

**WIKA Alexander Wiegand SE & Co. KG**

Alexander-Wiegand-Straße 30 • 63911 Klingenberg • Germany

Tel. (+49) 9372/132-0 • Fax (+49) 9372/132-406

E-Mail info@wika.de • www.wika.de



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