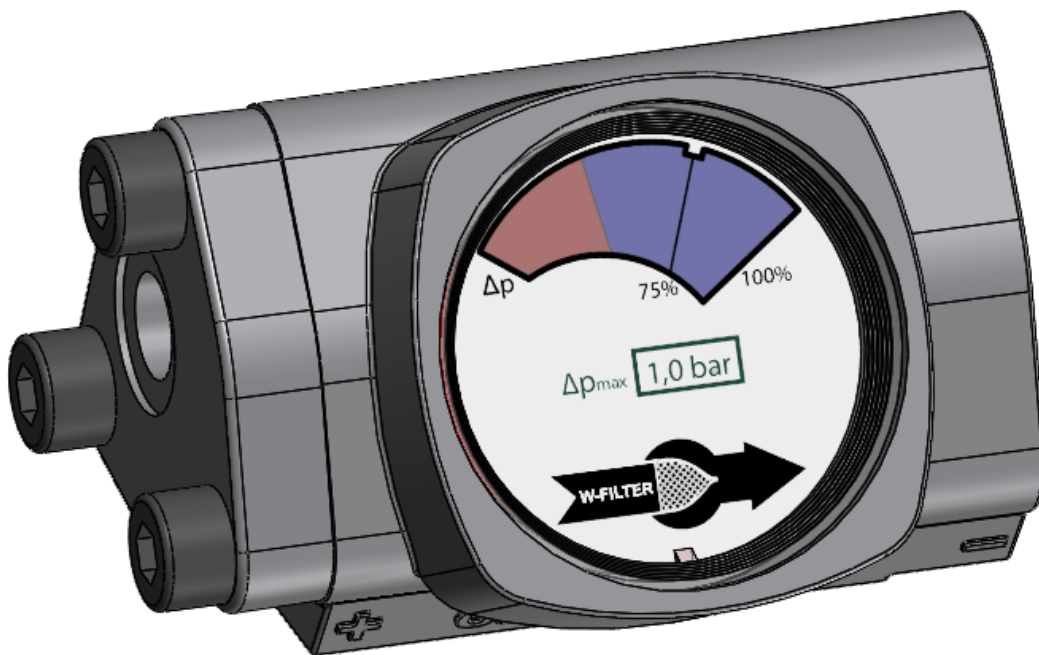




## Differential Pressure Indicator Type W-DP-5.02

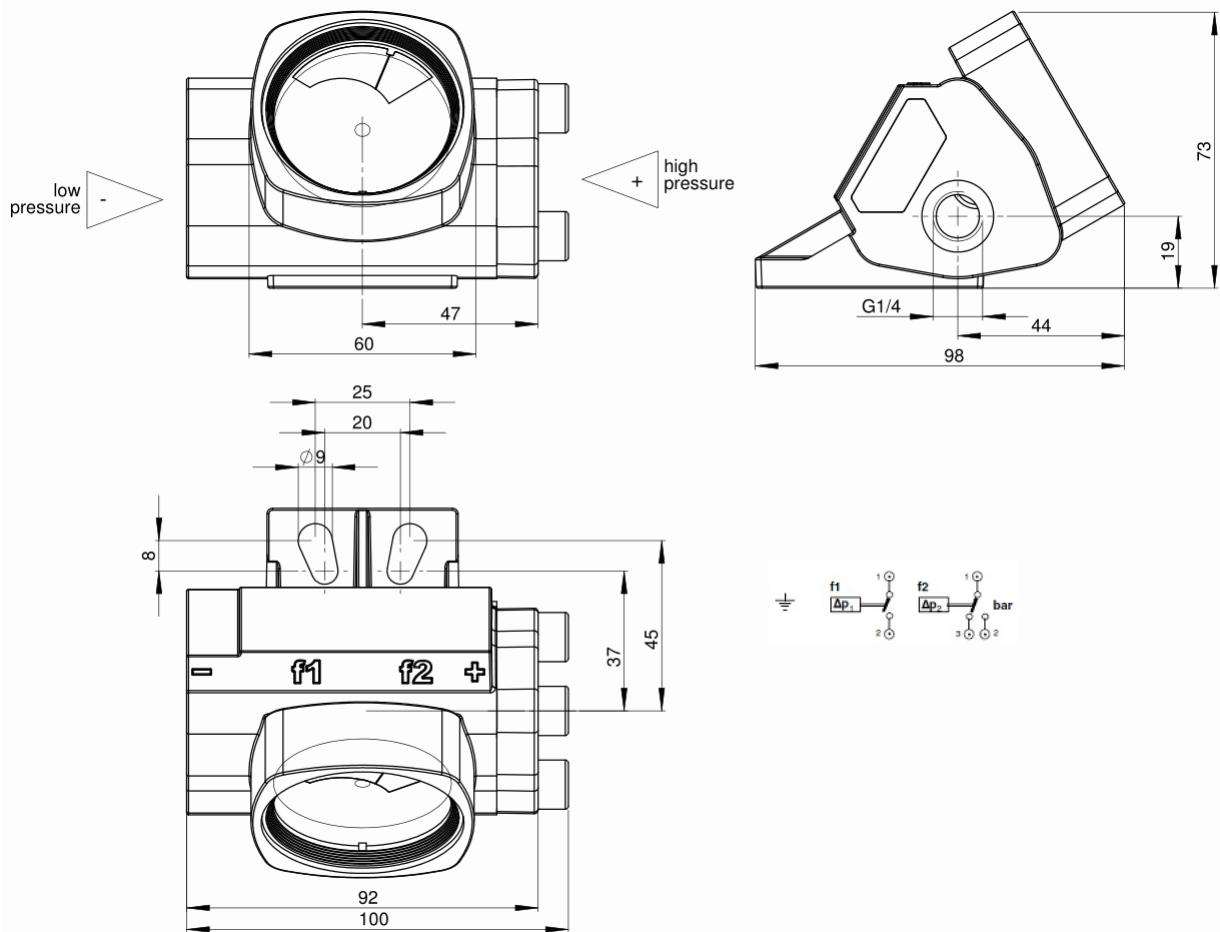


## Installation and Operation Instructions

Stand 01/2015

© W-FILTER

## 1. Dimension



## 2. Application

The W-DP - Differential Pressure Indicators are used for the monitoring of a variable pressure difference via an optical display and electrical contacts in up to two points.

## 3. Description

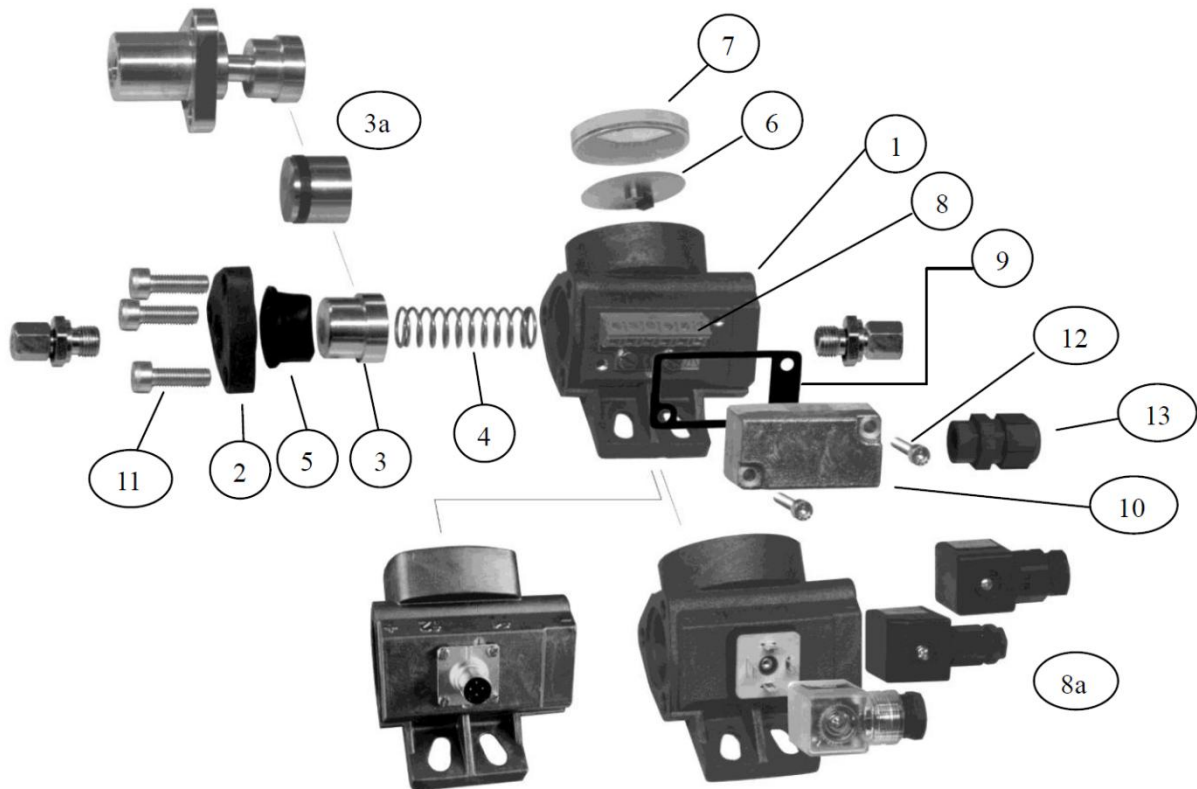
A piston, hermetically sealed, moves against the effect of a calibrated measuring spring. The piston's position is transmitted magnetically, which means without friction, to an indicating display and in addition to Reed-contacts for electrical signals.

In the range of 10...100%  $\Delta p$ , monitored by 0... 110° display-angle, the red part of the display becomes visible. In the standard version at 75%  $\Delta p$  (mark in the display) usually the first (f1), at 100%  $\Delta p$  the second (f2) Reed-contact is switched. The switching points are engraved into the display.

## 4. Connection

**Connection** Connection should be carried out by specialised personnel, to ensure proper function. The device is prepared for G1/4" - pipe-connectors. Sealing can be done with gaskets, PTFE-Tape or glue. The low pressure is to be connected to the side marked with "-", the high pressure to the side marked with "+".

## 5. Components



No.	Description	Material/Description	Optional
1	Casing	GK AlSi 12, hard coated	
2	Cover	GK AlSi 12, hard coated	
3	Piston with ring-magnet	Ms, Barium ferrite	Stainless steel, special materials
3a	Special piston	Special gaskets instead of rolling diaphragm (Kotef / O-Rings)	Adapter für $\Delta p > 5$ bis $\leq 20$ bar
4	Measuring spring	1.4310	PTFE-surface, special materials
5	Rolling diaphragm	Perbunan	Viton, EP
6	Display disk (blue/red) with magnet	Aluminium, Brass, Barium ferrite	
7	Display	Polycarbonate (Makrolon)	
8	Clamp	Plastic material, Brass (tin surface)	Plug system
8a	Plugs	DIN 43650	others on request
8b	Circle Plug	M12	
9	Gasket for cover	Perbunan	
10	Cover	GK AlSi 12	
11	Screw	DIN 912 M8x25 stainless steel	
12	Screw	DIN 912 M5x25 stainless steel	
13	Cable gland	M16x1.5	Pipe-connectors G 1/4"



## 6. Maintenance

W-DP-Differential pressure indicators generally need no maintenance.

Due to aging or very high differential pressure loads the rolling diaphragm can be damaged because of. If the rolling diaphragm or the gasket is damaged the differential pressure can't be monitored correctly!

This might be caused by the narrow fit size to an only slight by-pass flow through the inside of the indicator. Hitherto, the instrument interior might pollute.

If constant differential pressure should be indicated during an unusually long time it is advisable to check the instrument interior for pollution and especially to check the rolling diaphragm or gasket for damages. If necessary the instruments interior and the connection piping are to be cleaned and the gaskets changed.

When installing the rolling diaphragm pay attention to the fitting nipples at the bottom of the diaphragm to the piston's side.

## 7. Additional Information on the differential pressure indicator

### W-DP-5.02.\_\_.f1.\_\_.Eex.T4 & W-DP-5.02.\_\_.f2.\_\_.Eex.T4

The Differential Pressure Indicators mentioned above ("\_\_" designates order-specific differential pressure values which do not effect electrical properties of the device), under proper usage and connection to an intrinsically safe circuit, do not hold any effective mechanically or electrically generated risks for ignition. According to EN60079-11 the Differential Pressure Indicator is - conducted to an intrinsically safe circuit – a passive component and therefore ordinary electrical equipment without own potential for ignitions. According to Art.1 (3) of the Guideline RL/94/9EG the same guideline's regulations do not apply to this device.

### 7.1 Electrical Connection



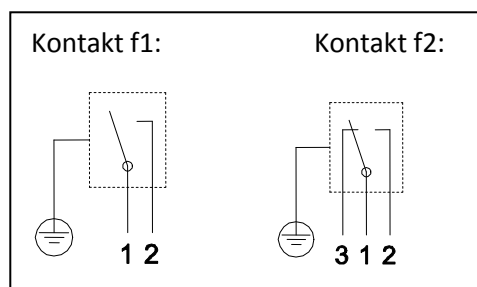
The Differential Pressure Indicator must be connected only to an approved intrinsically safe circuit. The given upper limits, as listed under *Technical Data*, must not be exceeded. Installation and initial start-up must be conducted by experts only.

#### Caution

Prior to commissioning, it must be ensured that

- the device is not damaged;
- the upper limiting values of any connectors cannot be exceeded;
- connecting cables are intact, and cables are at zero potential;
- the polarity of cables is correct.

Electrical connection (either contact f1 or contact f2) has to be carried out in accordance with adjacent diagram.





## 7.2 Technical Data

Switching Function	closing contact (SPST, "f1") / change-over contact ("f2")
Max. Voltage $U_i$	30 VDC
Max. Current $I_i$	165 mA
Max. Switching Power $P_i$	0,9 W
Capacity of open contacts $C_i$	1 pF
Protection Class	IP65
Internal inductivity	negligible
Approved cross-section of cable:	0.5...1.5 mm <sup>2</sup> (use cable end sleeves for strands!)

## 7.3 Temperatures

Media temperature	Ambient temperature	Temperature class	max. Surface temperature
-10 ... +120°C	-20 ... + 80°C	T4	135°C
-10 ... +100°C	-20 ... + 80°C	T5	100°C
-10 ... + 85°C	-20 ... + 80°C	T6	85°C

Media temperature: Temperature of the media inside  
Ambient temperature: room temperature surrounding the device  
Temperature class: determines the max. surface temperature



When used in explosive atmosphere caused by combustible dust, the highest admissible media temperature must be considered (instead of the max. surface temperature). Additional heating of the device, e.g. due to radiation, is strictly forbidden. If necessary, measures must be taken to prevent such additional heating!

## 7.4 Safety advice

**Caution** The device must be taken out of operation, when safe operation cannot be ensured (e.g. visible damage). For repair, do only send back to manufacturer's site. Improper handling of the instrument – except connection and maintenance work as mentioned above – invalidates any warranty claims.