

# Differential pressure gauge

## Model 700.01, with magnetic piston

## Model 700.02, with magnetic piston and separating diaphragm

WIKA data sheet PM 07.14



for further approvals  
see page 3

### Applications

- Filter systems
- Pump monitoring
- Cooling circuits
- Pipeline systems

### Special features

- Differential pressure measuring ranges  
Model 700.01: 0 ... 400 mbar to 0 ... 10 bar  
Model 700.02: 0 ... 160 mbar to 0 ... 2.5 bar
- Compact system case from stainless steel, suitable for high working pressures (static pressures) selectable, 100, 250 or 400 bar (model 700.02 up to a max. 100 bar)
- Overload safety either side to maximum working pressure (exception with model 700.02: see table page 2)
- System and indicating case exchangeable on site
- Up to 2 reed contacts, can be retrofitted and adjusted on site

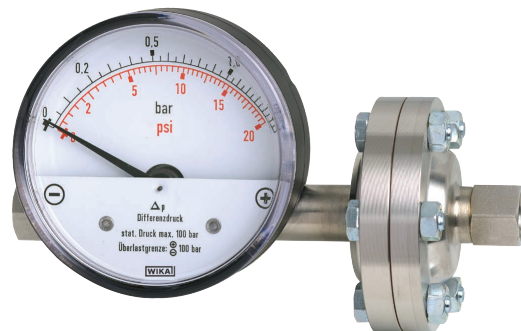


Fig. top: Model 700.01

Fig. below: Model 700.02, with separating diaphragm

### Description

The model 700.01 is primarily used for monitoring differential pressures, even at high working pressures, in the gas and air preparation and supply industry.

The model 700.02 version with separating diaphragm is for liquid media and, thus, suitable for the water treatment and supply industries.

This piston-type differential pressure measuring instrument offers particular advantages through its compact, modular design. Thus, subsequent replacement of the measuring system and the indicating case is possible on site. The reed contacts can also be retrofitted and adjusted on site.

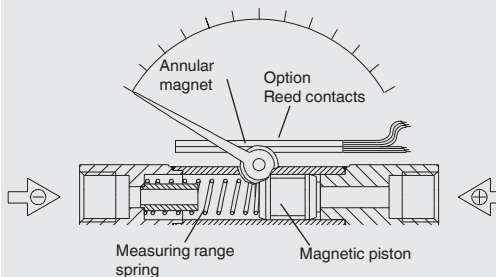
A panel mounting flange can be retrofitted to the model 700.01.

Although these models have a high overload safety either side up to the maximum working pressure, the weight of the standard versions is extremely low, i.e. approx. 220 g in the case of model 700.01 and approx. 500 g in the case of model 700.02. Thus, an economical and flexible solution to your measuring tasks is provided.

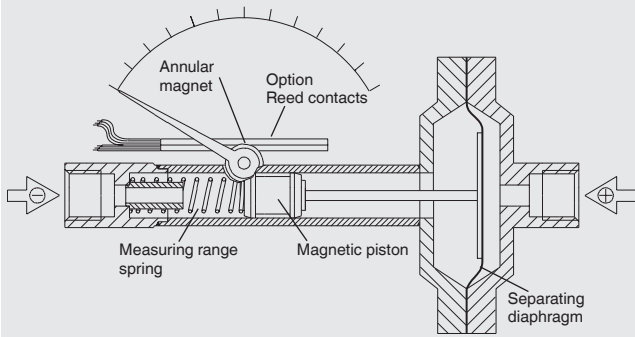
This compact design with a measuring system from stainless steel enables an optimal price-performance ratio.

## Illustrations of the principle

### Model 700.01



### Model 700.02



## Design and operating principle

Pressures  $p_1$  and  $p_2$  prevail in the  $\oplus$  and  $\ominus$  measuring chambers, separated by the pressure-loaded magnetic piston (or magnetic piston and separating diaphragm for model 700.02).

The difference in pressure causes an axial movement (deflection) of the piston supported by the measuring range spring.

An annular magnet mounted on the instrument pointer follows the magnet integrated in the piston so that each piston position is assigned a defined position of the pointer.

This design enables the complete mechanical separation of the measuring system and the indication while eliminating any leakage to the outside.

With the model 700.01 the volume flow from the  $\oplus$  media chamber to the  $\ominus$  media chamber is minimised by the mechanical design and will not interfere with standard processes.

For media with suspended solids or liquid media, the model 700.02 version with separating diaphragm must be provided (no volume flow from the  $\oplus$  to the  $\ominus$  media chamber).

### Mounting

in accordance with affixed symbols  $\oplus$  and  $\ominus$ ,  $\oplus$  high pressure,  $\ominus$  low pressure.

Mounting by means of:

- Rigid measuring lines or
- Panel mounting flange (option) or
- Instrument mounting bracket for wall mounting (option)

Specifications	Model 700.01	Model 700.02
Nominal size	80	
Indication accuracy	$\pm 3\%$ of full scale value with increasing differential pressure	$\pm 5\%$ of full scale value with increasing differential pressure
Scale ranges	0 ... 400 mbar to 0 ... 10 bar	0 ... 160 mbar to 0 ... 2.5 bar
Max. working pressure (static pressure)	optionally 100, 250 or 400 bar	100 bar (scale ranges 0 ... 160 mbar and 0 ... 250 mbar: 50 bar)
Overload safety	either side to maximum working pressure (exception for model 700.02, scale ranges 0 ... 160 mbar and 0 ... 250 mbar: Overload safety up to 50 bar)	
Permissible temperature		
Ambient	0 ... +60 °C	
Medium	+100 °C maximum	
Ingress protection per IEC/EN 60529	IP54	
Measuring chamber with pressure connection (wetted)	Stainless steel 1.4571, 2 x G 1/4 female, on the right and left side, in-line (EN 837-1 / 7.3)	
Pressure element (wetted)	Compression spring, stainless steel 1.4310	
Magnetic piston (wetted)	Piston: Stainless steel 1.4571, Magnet: Hard ferrite	
Separating diaphragm (wetted)	-	NBR
Dial	Aluminium, white, scaling: Scale, outer black (bar), inner red (psi)	
Pointer	Aluminium, black	
Indicating case	Aluminium die-casting, black	
Window	Clear non-splintering plastic, snapped into the case	

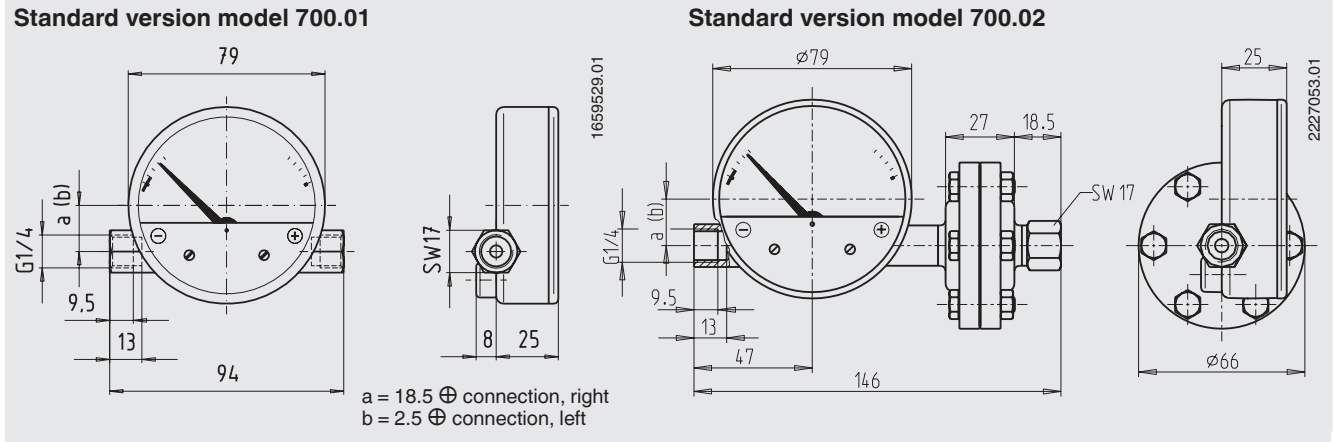
## Options

- Other pressure connections via female or male threads
- Lower mount or back mount, ⊕ connection left
- Fine filter integrated into the ⊕ connection
- Maximum drag pointer

Can be retrofitted on site:

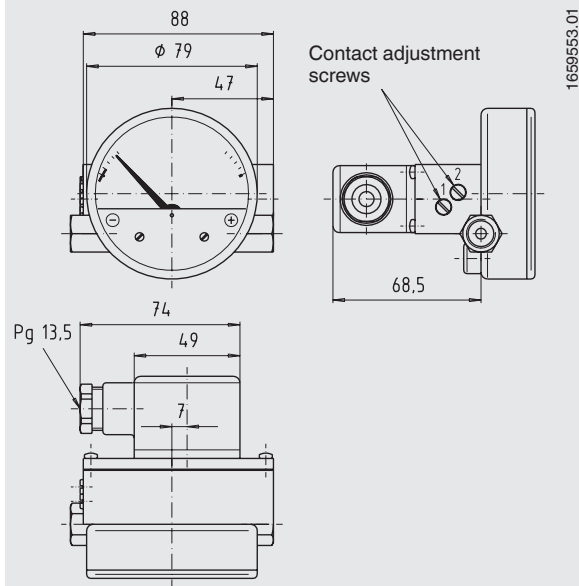
- Reed contacts, single or dual change-over contact, settable from outside
- Panel mounting flange (only with model 700.01)
- Instrument mounting bracket for wall mounting

## Dimensions in mm

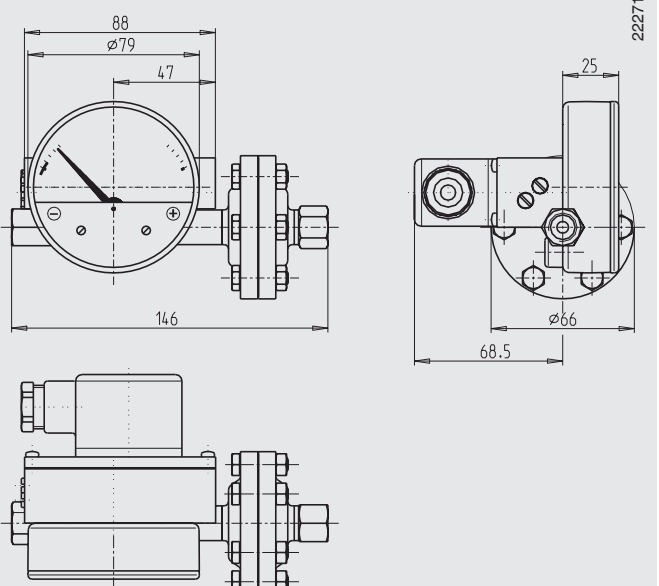


## Option reed contacts (1- or 2-times change-over contact)

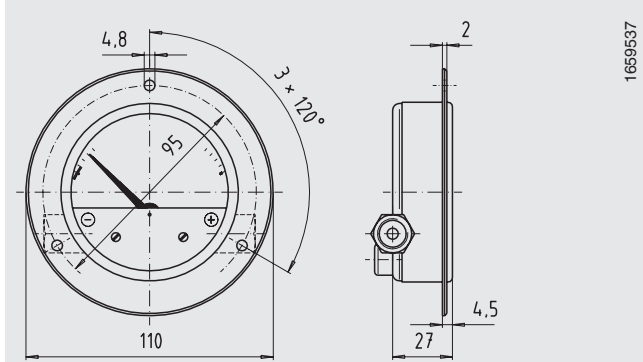
**Model 700.01**



## Model 700.02



## Option, panel mounting flange (only with model 700.01)



### Option reed contact, model 851.3 or 851.33

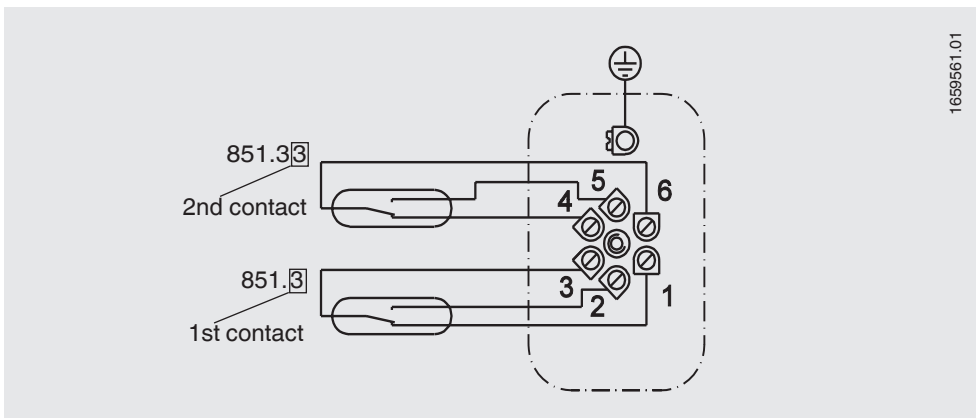
Reed contacts are suitable for the switching of both high powers (up to 60 watt) and also very low currents and voltages (e.g. PLC applications). With the contact adjustment screws, the reed contact can be set from outside in the range of 10 ... 100 % of the full scale value.

	Model 851.3	Model 851.33
<b>Number of contacts</b>	1 x change-over contact	2 x change-over contacts







Specifications	Contact versions	
<b>Switching voltage DC or AC</b>	≤ 250 V	≤ 30 V
<b>Switching current</b>	≤ 1 A	≤ 0.25 A
<b>Maximum switching power</b>	60 W/VA	3 W/VA
<b>Switch hysteresis</b>	≤ 10 % of full scale value	≤ 5 % of full scale value

For further information see data sheet AC 08.01, electrical switch contacts

### Terminal assignment cable socket



## Approvals

Logo	Description	Country
	<b>EAC (option)</b> Pressure equipment directive	Eurasian Economic Community
	<b>GOST (option)</b> Metrology, measurement technology	Russia
	<b>KazInMetr (option)</b> Metrology, measurement technology	Kazakhstan
-	<b>MTSCHS (option)</b> Permission for commissioning	Kazakhstan
	<b>BelGIM (option)</b> Metrology, measurement technology	Belarus
	<b>UkrSEPRO</b> Metrology, measurement technology	Ukraine
	<b>Uzstandard (option)</b> Metrology, measurement technology	Uzbekistan
-	<b>CPA</b> Metrology, measurement technology	China
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...)	Canada

## Certificates (option)

- 2.2 test report
- 3.1 inspection certificate

Approvals and certificates, see website

## Ordering information

Model / Scale range / Scale / Process connection / Connection location / Overload limit (max. working pressure) / Options

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