

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 4

Applications

- For gaseous and liquid media that are not highly viscous or crystallising
- 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), optionally 100, 250 or 400 bar
- Overload safety either side to maximum working pressure
- System and indicator case exchangeable on-site
- Up to 2 reed contacts can be retrofitted and adjusted on-site

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.

The compact and modular design of these differential pressure gauges enables the later exchange of the measuring system and scale range, as well as the retrofitting and adjustment of reed contacts on-site.

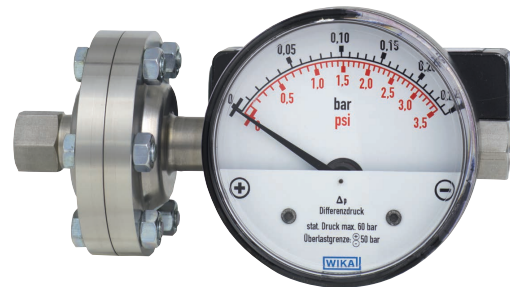


Fig. top: model 700.01

Fig. below: model 700.02, with separating diaphragm

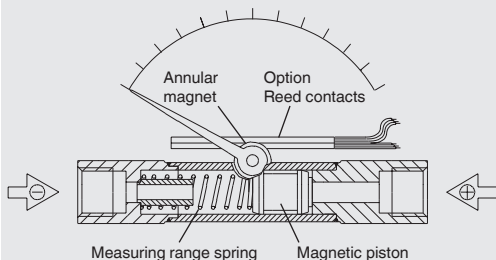
A panel mounting flange can be retrofitted to the model 700.01.

Although these models have a substantial overload safety up to the maximum working pressure, the weight of the standard versions is very low with 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.

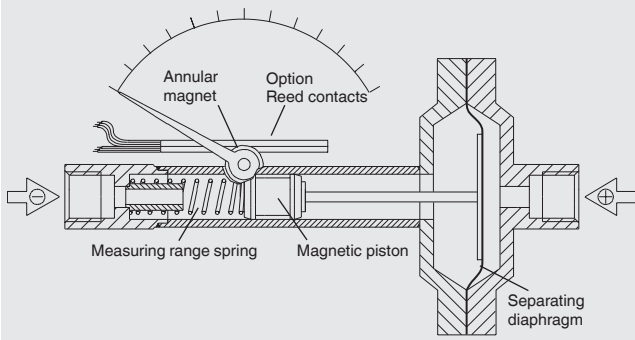
This compact design with a measuring system from stainless steel enables an optimal price-performance ratio.

Illustrations of the principle

Model 700.01



Model 700.02



Design and operating principle

Pressures p_1 and p_2 act on the \oplus and \ominus side of the measuring chamber, separated by the pressure-loaded magnetic piston or magnetic piston with 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 to the \ominus side in the measuring 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, since there is no volume flow from the \oplus to the \ominus side of the measuring chamber.

Mounting according to affixed symbols
 \oplus high pressure, \ominus low pressure

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)	<ul style="list-style-type: none"> ■ 100 bar ■ 250 bar ■ 400 bar 	<ul style="list-style-type: none"> ■ 50 bar (scale ranges 0 ... 160 mbar and 0 ... 250 mbar) ■ 100 bar
Overload safety	Either side to maximum working pressure	
Permissible temperature		
Ambient	0 ... +60 °C	
Medium	+100 °C maximum	
Ingress protection per IEC/EN 60529	IP54	
Wetted materials		
Measuring chamber with pressure connection	Stainless steel 1.4571, 2 x G ¼ female, on the right and left side, in-line (EN 837-1/7.3) <ul style="list-style-type: none"> ■ Other pressure connections via female or male threads ■ Lower mount or back mount, \oplus connection left ■ Fine filter integrated into the \oplus connection 	
Pressure element	Compression spring, stainless steel 1.4310	
Magnetic piston	Piston: Stainless steel 1.4571, magnet: Hard ferrite	
Separating diaphragm	-	NBR

	Model 700.01	Model 700.02
Non-wetted materials		
Dial	Aluminium, white, lettering: Scale, outside black (bar), inside red (psi)	
Pointer	<ul style="list-style-type: none"> ■ Aluminium, black ■ Maximum drag pointer 	
Indicator case	Aluminium die-casting, black	
Window	Clear non-splintering plastic, snap-fitted in case	
Mounting	Mounting by means of: <ul style="list-style-type: none"> ■ Rigid measuring lines ■ Panel mounting flange (only with model 700.01) ■ Instrument mounting bracket for wall mounting 	

Version with reed contact, model 851.3 or 851.33

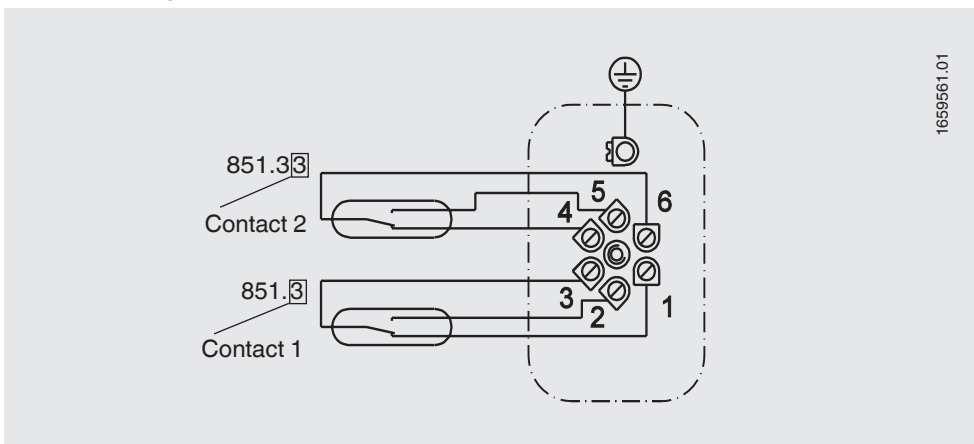
Reed contacts are suitable for the switching of both high powers (up to 60 watt) and also very low currents and voltages (e.g. PLC applications). With the contact adjustment screws, the reed contact can be set from outside in the range of 20 ... 80 % of the full scale value. Other setting ranges on request.

	Model 851.3	Model 851.33
Number of contacts	1 x change-over contact	2 x change-over contacts



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

→ For further information on electrical switch contacts, see technical information IN 00.48

Terminal assignment, cable socket



Optional approvals

Logo	Beschreibung	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	MChS Permission for commissioning	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	PAC China Metrology, measurement technology	China
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

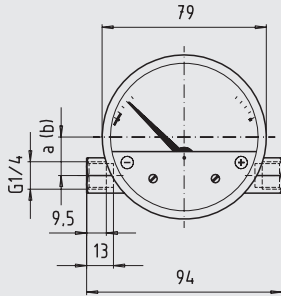
Certificates

Certificates	
Certificates	<ul style="list-style-type: none"> ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

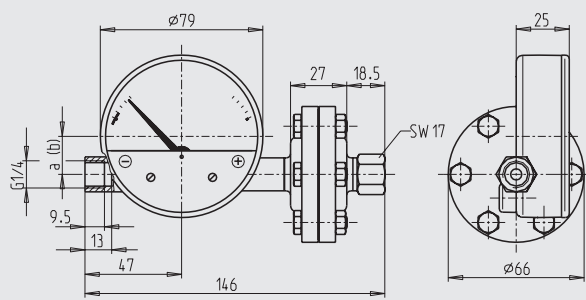
Dimensions in mm

Model 700.01



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Model 700.02

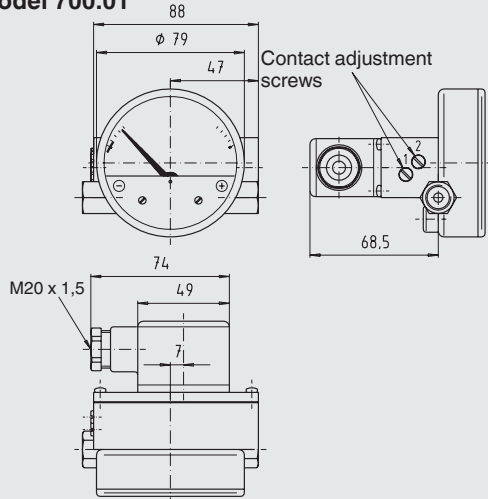


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a = 18.5 ⊕ connection, right
b = 2.5 ⊕ connection, left

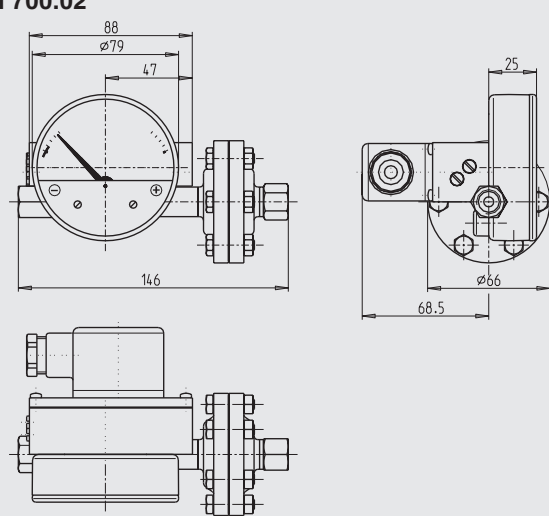
With reed contact (1- or 2-times change-over contact)

Model 700.01



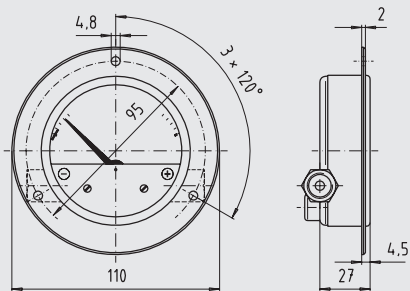
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Model 700.02



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With panel mounting flange (only with model 700.01)



1659537

Ordering information

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

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