

# Differential Pressure Gauges

With Magnetic Piston • Model 700.01

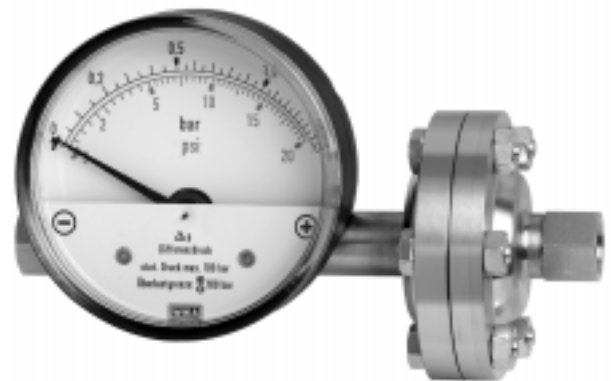
With Magnetic Piston and Separation Diaphragm • Model 700.02

## Pressure Gauges

- Differential pressure measuring ranges  
 Model 700.01: from 0 ... 0.4 to 0 ... 10 bar  
 Model 700.02: from 0 ... 0.16 to 0 ... 4 bar
- Sturdy and compact system case made of stainless steel
- High working pressures (static pressures), optionally 100, 250 or 400 bar (Model 700.02 to 100 bar)
- Overpressure safe either side to maximum working pressure
- System and/or case of indication may be changed locally
- Reed contacts may also be adjusted and retrofitted locally
- Panel mounting flange (for Model 700.01) may also be retrofitted locally
- Most simple mounting without any additional elements
- Optimal price/performance ratio



Model 700.01



Model 700.02 with separation diaphragm

### General features

Model 700.01 is particularly intended for the monitoring of differential pressures even in the case of high working pressures in gas and air preparation and supply systems.

Model 700.02, the version with a separation diaphragm, is suitable for liquidous media and therefore also for water treatment and supply systems.

This piston-type differential pressure gauge offers special advantages due to its compact modular design. For instance an on-the-spot replacement of measuring system and case of indication is possible in retrospect and the Reed contacts can be retrofitted and adjusted on the spot. A front surface mounting flange may be retrofitted on model 700.01.

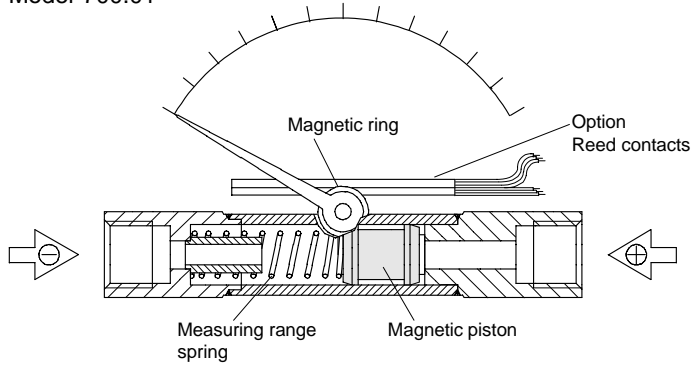
Although these models have a high overload capacity either side up to the maximum working pressure, the weight of the standard versions, i.e. approx. 220 g in the case of model 700.01 and approx. 500 g in the case of model 700.02, is extremely low. Therefore, these gauges provide an economical and flexible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

### Main applications

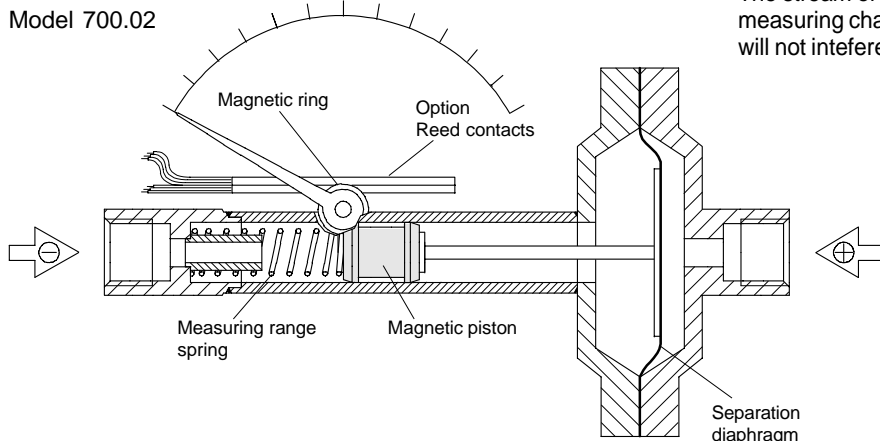
- Filter plants
- Monitoring of pumps
- Cooling circuits
- Pipeline systems

## Illustration of operating principle

Model 700.01



Model 700.02



## Design and operating principle

Pressure  $p_1$  and  $p_2$  are given in the  $\oplus$  and  $\ominus$  measuring medium chambers separated by **magnetic piston** under pressure.

The difference in pressure causes axial movement (measuring travel) of the piston supported by a **measuring range spring**.

A **magnetic ring** mounted on the instrument pointer follows the magnets movement in the piston so that each piston position is appropriated to a defined pointer position.

This design ensures complete mechanical separation of the measuring system and the case and eliminates external leakage.

The stream of volume from the  $\oplus$  measuring chamber to the  $\ominus$  measuring chamber is minimized by the constructive design and will not interfere with the process (only for Model 700.01).

A microfilter has to be provided in the  $\oplus$  measuring chamber for dirty and heavily contaminated media (only for Model 700.01).

For applications where liquids are to be measured the version with a **separation diaphragm**, model 700.02, is suitable (no volume flow from  $\oplus$  to  $\ominus$  media chamber).

### Gauge mounting

Pressure entries identified  $\oplus$  and  $\ominus$ ,  
 $\oplus$  high pressure,  $\ominus$  low pressure

Mounting by means of

- rigid tailpipes,
- panel mounting (optional extra) or
- device for surface mounting (optional extra)

Technical data	Model 700.01	Model 700.02
Nominal size	80 mm	
Accuracy	accuracy $\pm 3\%$ full scale ascending	accuracy $\pm 5\%$ full scale ascending
Scale ranges	0 ... 400 mbar to 0 ... 10 bar	0 ... 160 mbar to 0 ... 4 bar
Working pressure max. (static pressure)	optionally 100, 250 or 400 bar	100 bar
Overpressure safety	either side to maximum working pressure	
Operating temperature Ambient Medium	0 ... +60 °C +100 °C maximum	
Degree of protection	IP 54 (EN 60 529 / IEC 529)	
Pressure chamber with connections (exposed to pressure medium)	stainless steel 1.4571, 2 x G 1/4 female, entry on the right and left, in-line (EN 837-1 / 7.3)	
Pressure element (exposed to pressure medium)	compression spring, stainless steel 1.4310	
Magnetic piston (exposed to pressure medium)	piston: stainless steel 1.4571 magnet: hard-ferrit	
Separation diaphragm (exposed to pressure medium)	-	NBR
Dial	white aluminum with dual scale: outer scale black (bar) inner scale red (psi)	
Pointer	black aluminum	
Case of indication	black aluminium, die-casting	
Window	acrylic plastic, snap-fit window	

### Optional extras

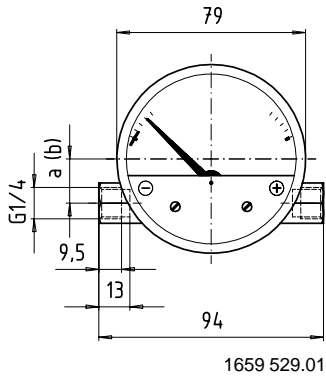
- Other threaded pressure connection female or male
- Bottom or back pressure entry,  $\oplus$  connection left
- Fine strainer integrated in  $\oplus$  connection
- Resettable max. drag pointer

Following accessories may be retrofitted locally:

- Reed contacts, single or double change over contact (SPDT or DPDT) adjustable from the outside
- Panel mounting flange (only for Model 700.01)
- Device for surface mounting

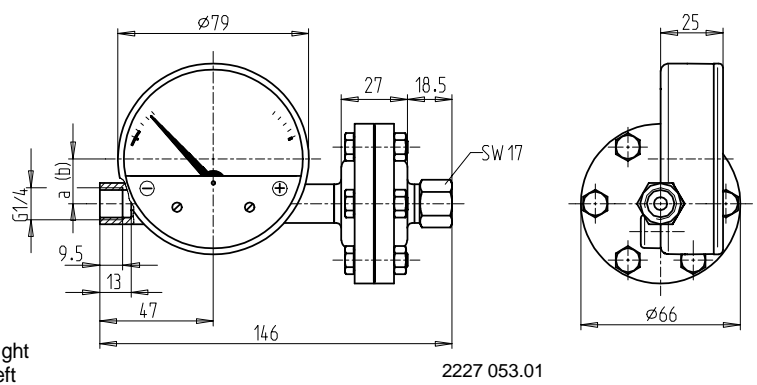
**Dimensions Standard version**

Model 700.01

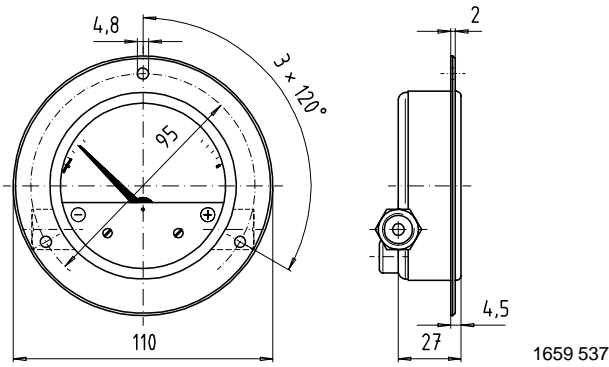


a = 18,5 j connection right  
b = 2,5 j connection left

Model 700.02

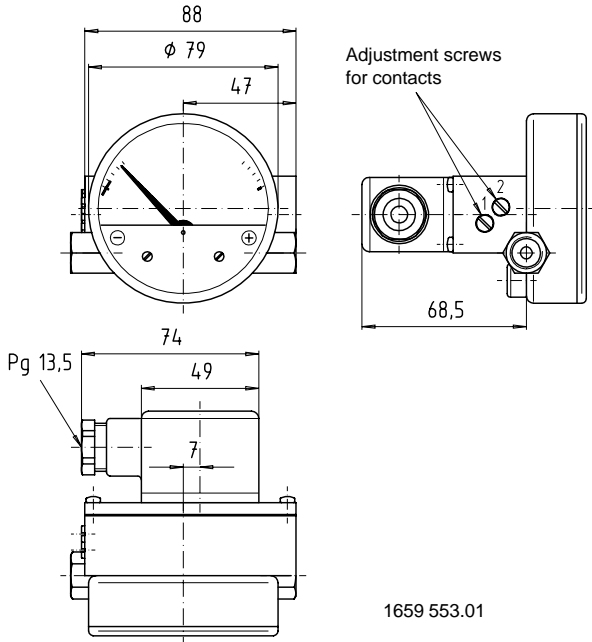


**Optional version Panel mounting flange (only for Model 700.01)**

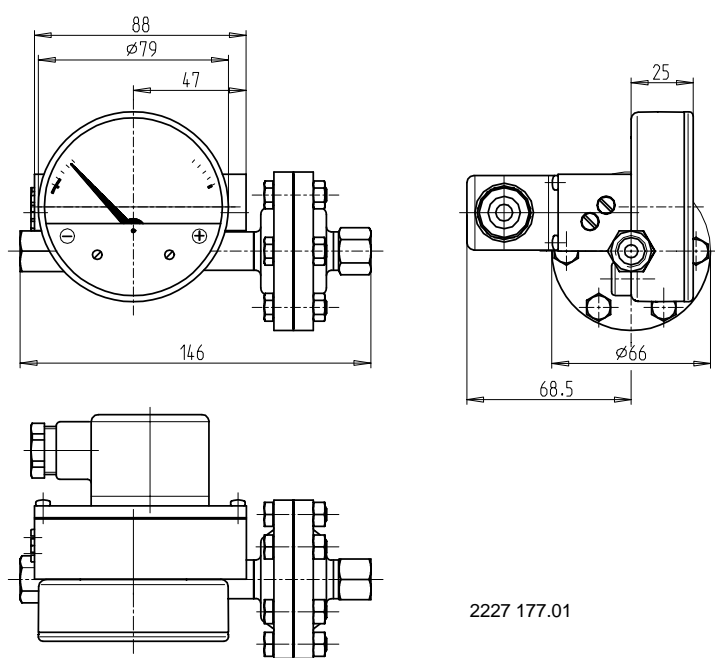


**Optional version Reed contacts (single and/or double change over contact)**

Model 700.01



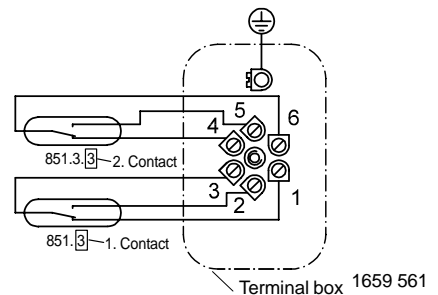
Model 700.02



**Electric wiring diagram and technical data Reed contact model 851.3 or 851.33:**

Especially conceived to allow low current circuits to be switched directly, switch point may be set by means of adjusting spindle from the exterior in a range of 10 ... 100 % of full scale value.

Max. switching voltage: 250 VDC / VAC 30 VDC / VAC  
Max. load: 60 W 3 W  
Max. strength of current: 1 A 0.2 A  
Switching hysteresis: 5 % of full scale value



Order code for differential pressure gauges with magnetic piston Model 700.01/700.02

Field No.	Code	Features
<b>Separation diaphragm</b>		
1	1	without <i>Model 700.01</i>
	2	with <i>Model 700.02, Diaphragm material NBR</i>
<b>Unit</b>		
2	G	dual scale bar/psi (black/red) <i>standard</i>
	?	other <i>Please state as additional text</i>
<b>Range</b>		
3	AM	0 ... 0.16 bar 2nd scale psi red <i>only for Model 700.02</i>
	AN	0 ... 0.25 bar 2nd scale psi red <i>only for Model 700.02</i>
	BB	0 ... 0.4 bar 2nd scale psi red
	BC	0 ... 0.6 bar 2nd scale psi red
	BD	0 ... 1 bar 2nd scale psi red
	BE	0 ... 1.6 bar 2nd scale psi red
	BF	0 ... 2.5 bar 2nd scale psi red
	BG	0 ... 4 bar 2nd scale psi red
	BH	0 ... 6 bar 2nd scale psi red <i>only for Model 700.01</i>
	BI	0 ... 10 bar 2nd scale psi red <i>only for Model 700.01</i>
3	??	other <i>Please state as additional text</i>
	<b>Process connection</b>	
4	AA	2 x G 1/4 female <i>standard</i>
	AH	2 x 1/4 NPT female
	AL	2 x G 1/4 B with stainless steel connection pieces
	AB	2 x G 1/2 B with stainless steel connection pieces
	AK	2 x 1/2 NPT female with stainless steel connection pieces
	??	other <i>Please state as additional text</i>
<b>Connector position</b>		
5	K	+ right/ - left horizontal in-line (side by side) <i>standard</i>
	T	+ left/ - right horizontal in-line (side by side)
	?	other <i>Please state as additional text</i>
<b>Overpressure safety / working pressure max.</b>		
6	H	PN 100 bar <i>standard</i>
	F	PN 250 bar <i>only for Model 700.01</i>
	V	PN 400 bar <i>only for Model 700.01</i>
<b>Fine strainer</b>		
7	Z	without <i>standard</i>
	J	integrated in + connection
<b>Mounting device</b>		
8	Z	without <i>standard</i>
	D	panel mounting flange, black steel <i>only for Model 700.01</i>
	W	device for surface mounting
<b>Set / drag pointer</b>		
9	Z	without <i>standard</i>
	K	adjustable red maximum drag pointer on acrylic window
<b>Alarm contacts</b>		
10	Z	without <i>standard</i>
	1	SPDT reed contact 851.3 3W/ 30V (DC/AC) / 0,2 A
	2	SPDT reed contact 851.3 60W/ 250V (DC/AC) / 1 A
	3	DPDT reed contact 851.3 .3 3W/ 30V (DC/AC) / 0,2 A
	4	DPDT reed contact 851.3 .3 60W/ 250V (DC/AC) / 1 A
<b>Wiring</b>		
11	Z	without <i>standard</i>
	P	terminal box <i>standard for alarm contacts</i>
	1	other <i>Please state as additional text</i>

**Additional order info**

Order code for Model 700.01 and 700.02

1	2	3	4	5	6	7	8	9	10	11	12	13
700.0	-D	-	-	-	-	-	-	-	-	-	-	-

Additional text: \_\_\_\_\_

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.