

## Differential pressure gauge with switch contacts Integrated working pressure indication and micro switch Model 702.02.100

WIKA data sheet PV 27.16



**DELTA-comb**

### Applications

- For gaseous and liquid media that are not highly viscous or crystallising
- Heating, ventilation, air-conditioning, dust removing technology
- Technical building equipment, filter systems, drinking and service water treatment
- Monitoring and control of pumps in pressure boosting and fire-extinguishing systems

### Special features

- Differential pressure measuring ranges from 0 ... 250 mbar to 0 ... 25 bar
- High working pressure (static pressure) up to 25 bar
- One or two adjustable micro switches
- High repeatability of the switch points



**DELTA-comb with two micro switches, option terminal box and option compression fitting with ferrule**

### Description

These differential pressure gauges are particularly used for the monitoring and control of differential pressures in filter systems, pumps and pipeline systems in the heating, ventilation and air-conditioning sector, technical building equipment and in the water management industry.

Apart from the display of the differential pressure, these applications also require, as a rule, the display of the current working pressure. For this reason, a working pressure indication is integrated in the DELTA-comb differential pressure gauge as a standard.

An additional measuring point for the working pressure indication, involving additional expenses for piping and mounting, is thus no longer required. The white dial of the

working pressure indication distinctly stands out against the blue background of the display of the differential pressure indication, thus enabling a quick and reliable reading of both measurement parameters.

The scale ranges of 0 ... 250 mbar to 0 ... 25 bar are available to meet the requirements of a wide variety of applications. With its robust and compact design the differential pressure gauge can even be used under tough industrial ambient conditions.

## Design and operating principle

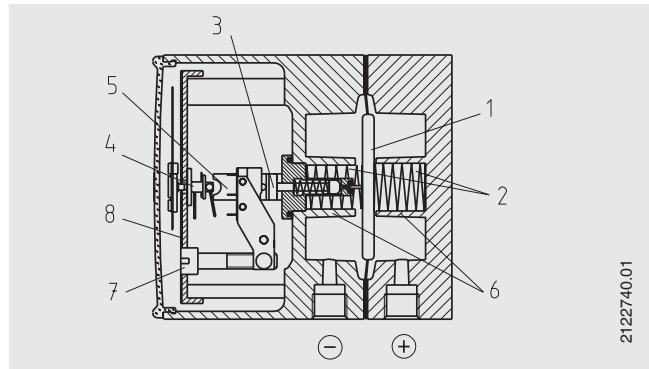
Pressures  $p_1$  and  $p_2$  act on the media chambers  $\oplus$  and  $\ominus$ , which are separated by an elastic diaphragm (1).

The differential pressure ( $\Delta p = p_1 - p_2$ ) leads to an axial deflection (measuring travel) of the diaphragm against the measuring range spring (2).

The deflection, which is proportional to the differential pressure, is transmitted to the movement (4) in the indicating case and to the plungers of the micro switches (5) via a pressure-tight and low friction connecting rod (3). Overpressure safety is provided by metal bolsters (6) resting against the elastic diaphragm.

The adjustment of the switch point is made by the adjustment screws accessible from the front (7). The assistant scales (8) enable a relatively accurate adjustment of the switch points over  $270^\circ$  and indicate the set point that is currently adjusted.

## Illustration of the principle



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

Mounting by means of:

- rigid tailpipe
- or wall mounting with available mounting links

Specifications		DELTA-comb model 702.02.100
Nominal size	mm	Differential pressure indication: $\varnothing$ 100
	mm	Working pressure indication: $\varnothing$ 23
Accuracy class		Differential pressure indication: 2.5
		Working pressure indication: 4
Scale ranges per EN 837	bar	Differential pressure: 0 ... 0.25 to 0 ... 25
	bar	Working pressure: 0 ... 25
Max. working pressure (stat.)	bar	25
Overpressure safety	bar	Either side max. 25
Permissible temperature	$^\circ\text{C}$	Ambient: -10 ... +70
	$^\circ\text{C}$	Medium: max. +90
Ingress protection		IP 54 per EN 60529/IEC 529
Media chamber	wetted	GD-AISI 12 (Cu) 3.2982, black lacquered
Process connections	wetted	2 x G 1/4 female, lower mount (LM), in-line, centre distance 26 mm
Measuring elements	wetted	Differential pressure: Compression spring of stainless steel 1.4310 or FD SiCr EN 10270-2 and separating diaphragm of FPM/FKM fabric-reinforced (option: NBR)
		Working pressure: Bourdon tube of Cu-alloy
Transmission parts	wetted	Stainless steel 1.4305, FPM/FKM (option: NBR)
Sealings	wetted	FPM/FKM (option: NBR)
Movement		Cu-alloy, wear parts argentan
Dial		Differential pressure indication: Aluminium, blue, white lettering
		Working pressure indication: Plastic, white, black lettering
Pointer		Differential pressure indication: Adjustable pointer, aluminium, white
		Working pressure indication: Plastic, black
Zero adjustment for differential pressure indication		By means of adjustable pointer
Case		GD-AISI 12 (Cu) 3.2982, black lacquered
Window		PMMA
Weight	kg	Approx. 1.4

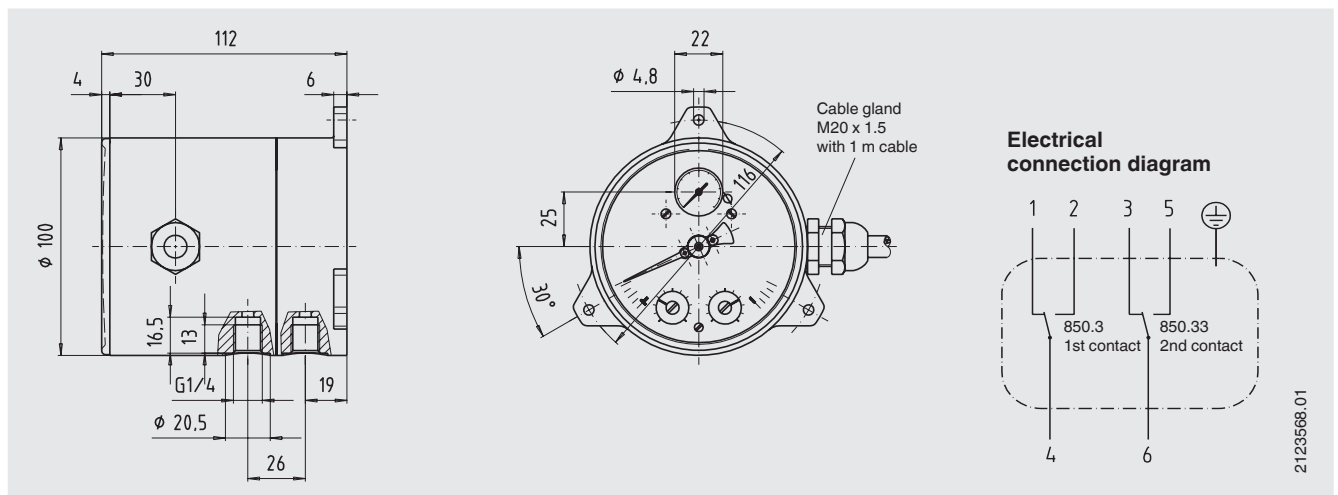
## Options

- Media chamber GD-AISI 12 (Cu) HART-COAT-surface protection
- Media chamber of stainless steel (without working pressure indication)
- Accuracy class 1.6 for differential pressure indication with factory-set switch points for scale ranges from 0 ... 1 bar to 0 ... 25 bar (switching direction to be specified)
- Ingress protection IP 65
- Integrated pressure equalising valve (stainless steel and FPM/FKM)
- 4-way valve manifold of Cu-alloy or stainless steel, (1x pressure equalising valve, 2x pressure gauge valve, 1x valve for purging and ventilating)
- Other threaded process connections female and male
- Compression fittings with ferrule or clamp ring for pipe diameters 6, 8 and 10 mm
- Panel mounting flange
- Electrical connection via cable terminal box M20 x 1.5 or L-connector

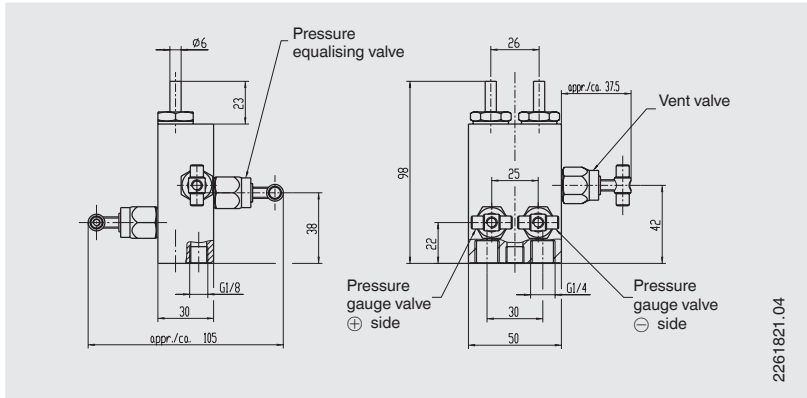
## Electrical contact

<b>Contact type</b>	Micro switch	
<b>Contact functions</b>	1xSPDT 850.3	2xSPDT 850.3.3
<b>Load data</b>	Voltage AC	Voltage DC
<b>U max.</b>	250 V	30 V
<b>I max.</b>	5 A	0.4 A
<b>P max.</b>	250 VA	10 W
<b>Switch point adjustment</b>	from the outside at assistant scale by means of adjustment screw(s)	
<b>Setting range</b>	from 10 % to 100 % of the full scale value	
<b>Switch point repeatability</b>	≤ 1.6 %	
<b>Switch hysteresis</b>	max. 5 % of the full scale value (option: max. 2.5 %)	
<b>Electrical connection</b>	via cable gland M20 x 1.5 with 1 m free cable end	

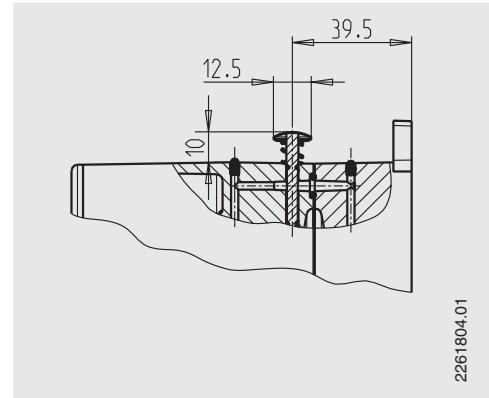
## Dimensions in mm



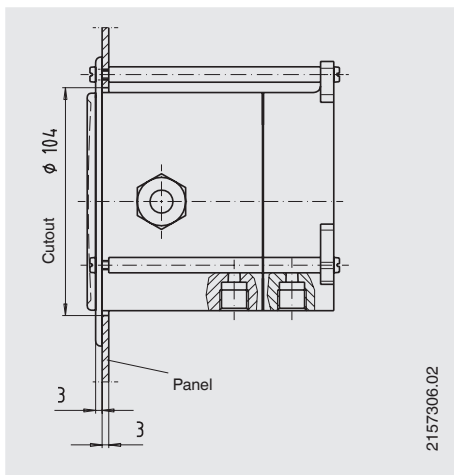
## Option 4-way valve manifold



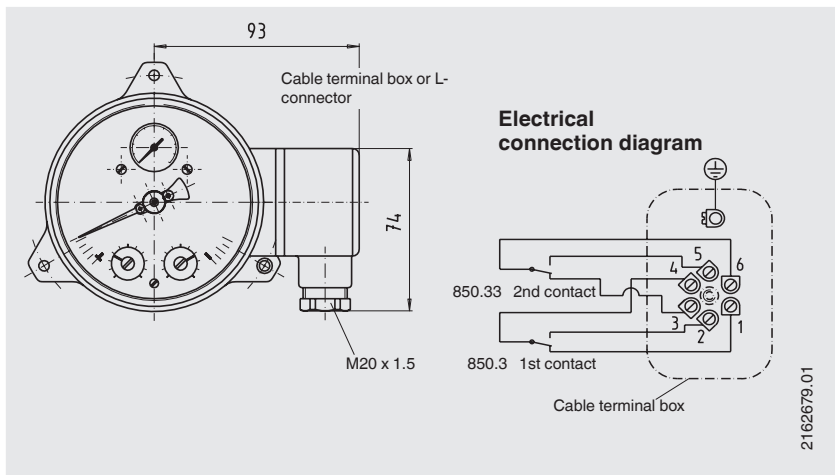
## Option Integrated pressure equalising valve



## Option Panel mounting



## Option Electrical connection variants



## Ordering information

Model / Scale range / Process connection / Material of media chamber / Material of separating diaphragm and sealings / Accuracy class for differential pressure indication / Options

The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

