

Differential Pressure Switches Model 851.02.100

WIKA Data Sheet PV 27.17



DELTA-switch

Applications

- Suitable for all gaseous and liquid media that will not obstruct the pressure system
- Heating, climatic, ventilating, dust removing technology
- Technical building equipment, filter plants, drinking and service water treatment
- Monitoring and control of pumps in pressure boosting and fire extinguishing plants

Special Features

- Differential pressure measuring ranges from 0 ... 250 mbar to 0 ... 25 bar
- High working pressure (static pressure) up to 25 bar
- Overpressure safety either side up to 25 bar
- One or two adjustable microswitches respectively
- High repeatability



DELTA-switch with two microswitches and compression fitting with ferrule (option)

Description

These differential pressure switches are particularly intended for the monitoring of differential pressures in filter systems in the heating, climatic and ventilating technology sector, technical building equipment and in the water management industry.

The differential pressure ranges of 0 ... 250 mbar up to 0 ... 25 bar provide ranges, which are required in most applications.

The sturdy and compact design of the differential pressure switch sv makes it possible to use it even under tough industrial ambient conditions.

The adjustment of the switchpoint is made by setpoint screws accessible from the front. The assistant scale enables a relatively accurate adjustment of the switchpoints over 270 ° and indicates the setpoint that is momentarily adjusted.

Design and operating principle

Pressure p_1 and p_2 are given in the \oplus and \ominus measuring medium chambers separated by an elastic diaphragm (1).

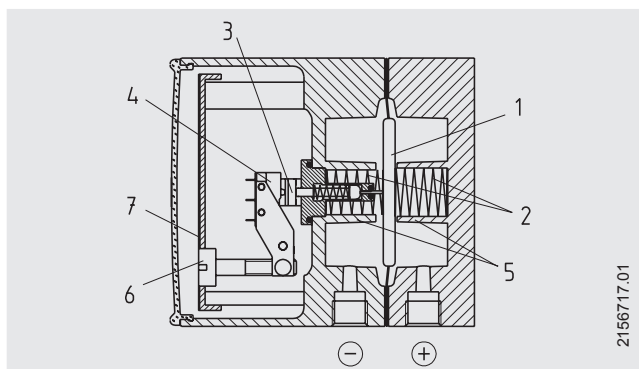
The differential pressure ($p = p_1 - p_2$) causes axial movement (measuring travel) of the diaphragm against the measuring range spring (2).

The transmission of the differential pressure proportional to the measuring travel into the switch case and to the plungers of the microswitches (4) is carried out pressure sealed and with little friction by means of a connecting rod (3).

The overpressure protection is provided by contoured metal bolsters for the elastic diaphragm (5).

The adjustment of the switchpoint is made by setpoint screws accessible from the front (6). The assistant scales (7) enable a relatively accurate adjustment of the switchpoints and indicate the setpoint that is momentarily adjusted.

Illustration of operating principle



Pressure entries identified \oplus and \ominus ,
 \oplus higher pressure, \ominus lower pressure.

Mounting by means of
 ■ rigid tailpipes or
 ■ wall mounting with mounting brackets

Specifications		DELTA-switch Model 851.02.100
Case diameter	mm	100
Differential measuring ranges	bar	0 ... 0.25 to 0 ... 25
Max. working pressure (stat.)	bar	25
Overpressure safety	bar	Either side max. 25
Operating temperature	°C	Ambient: -10 ... +70
	°C	Medium: +90 max.
Ingress protection		IP 54 per EN 60 529 / 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, axle base 26 mm
Pressure elements	(wetted)	Compression string: stainless steel 1.4310 or FD SiCr EN 10270-2 and separating diaphragm: FPM/FKM fabric back stay (option: NBR)
Links	(wetted)	Stainless steel 1.4305, FPM/FKM (option: NBR)
Sealings	(wetted)	FPM/FKM (option: NBR)
Case		GD-AISI 12 (Cu) 3.2982, black lacquered
Window		acrylic
Weight	kg	approx. 1.4

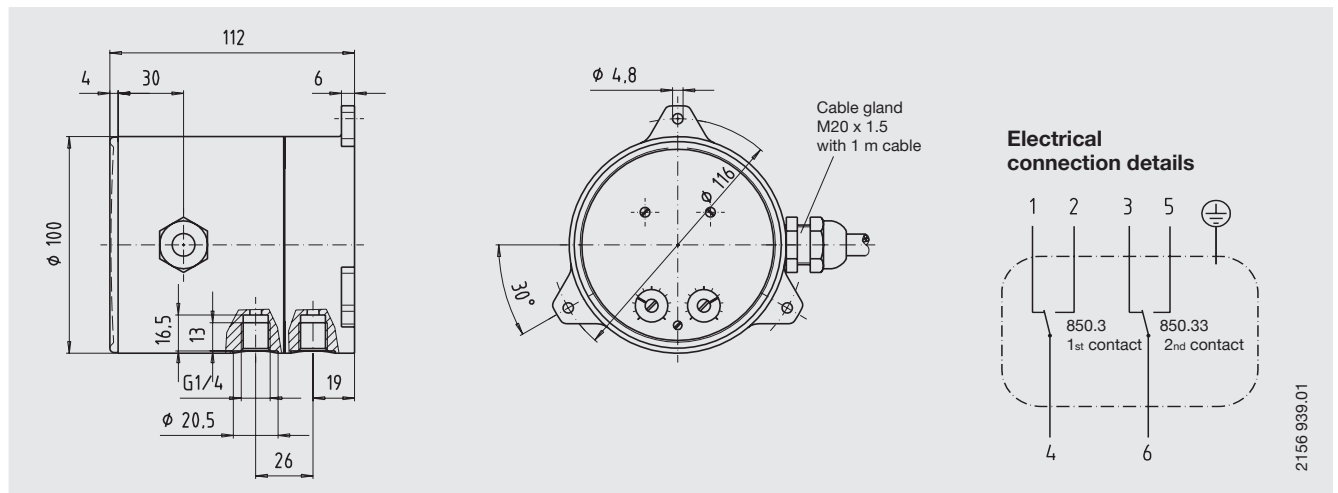
Options

- Media chamber GD-AISI 12 (Cu) HART-COAT surface protection
- Media chamber of stainless steel
- Ingress protection IP 65
- 4-way valve manifold Cu-alloy or stainless steel (1x pressure equalising valve, 2x pressure gauge valve, 1x valve for purging or air bleeding)
- Other threaded process connections female or male
- Compression fitting with ferrule for pipe \varnothing 6, 8 or 10 mm
- Panel mounting flange
- Wiring with terminal box, cable gland M20 x 1.5 or L-plug

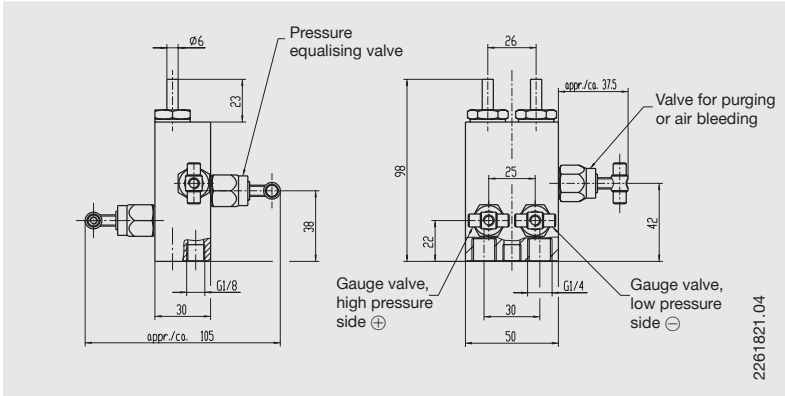
Electrical contact

Contact type	Micro switch	
Contact functions	1x SPDT 850.3	2x SPDT 850.3.3
Load data	Voltage AC	Voltage DC
U max.	250 V	30 V
I max.	5 A	0.4 A
P max.	250 VA	10 W
Switching point adjustment	from the outside at assistant scale by means of setpoint screw(s)	
Setting range	from 10 % to 100 % of full scale value	
Switching point repeatability	≤ 1.6 %	
Contact hysteresis	max. 5 % of full scale value (option 2.5 % max.)	
Wiring	Cable gland M20 x 1.5 with 1 m connected cable	

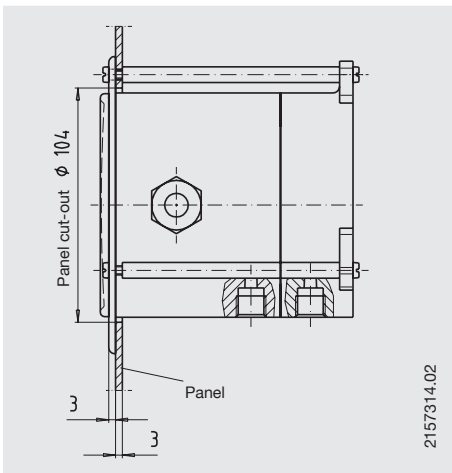
Dimensions in mm



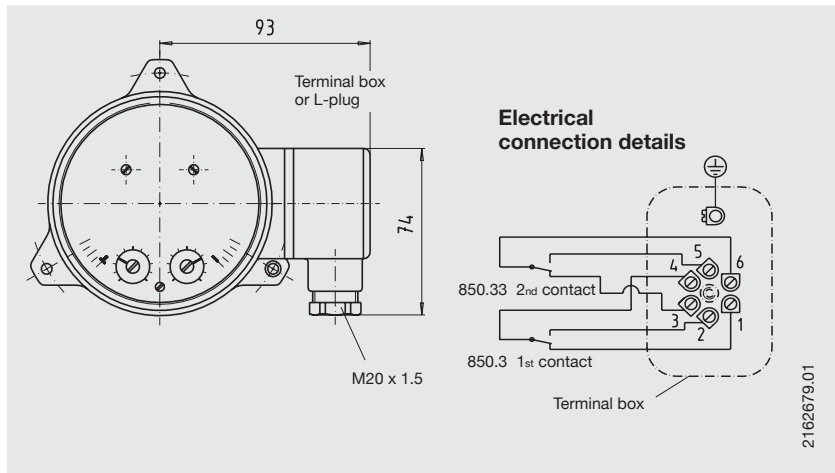
Option 4-way valve manifold



Option Panel mounting



Option Wiring versions



Ordering information

Model / Measuring range / Process connection / Material of media chamber / Material of separation diaphragm and sealings / Options

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