Differential pressure gauges with switch contacts Model DPGS43.1x0, stainless steel version All welded construction

WIKA data sheet PV 27.05





Applications

- Control and regulation of process values
- Monitoring of plants and switching of electric circuits
- For measuring points with increased differential overpressure
- Monitoring and control of pumps
- Filter monitoring
- Level measurement in closed tanks

Special features

- Differential pressure measuring ranges from 0 ... 16 mbar
- High working pressure (static pressure) and high overpressure safety up to 40 bar
- Also available with liquid-filled case for high dynamic pressure loads or vibrations
- Gauges with inductive contacts for use in hazardous areas with ATEX approval
- Gauges with electronic contacts for PLC applications

switch**GAUGE**



switchGAUGE model DPGS43.100

Description

Wherever the process pressure has to be indicated locally, and, at the same time, circuits are to be made or broken, the model DPGS43.1x0 switchGAUGE can be used.

Switch contacts (electrical alarm contacts) make or break an electric control circuit dependent upon the position of the instrument pointer. The switch contacts are adjustable over the full extent of the scale range (see DIN 16085), and are mounted predominantly below the dial, though also partly on top of the dial. The instrument pointer (actual value pointer) moves freely across the entire scale range, independent of the setting.

The set pointer can be adjusted using a removable adjustment key in the window.

Switch contacts consisting of several contacts can also be set to a single set point. Contact actuation is made when the actual value pointer travels beyond or below the desired set point.

The pressure gauge is manufactured in accordance with DIN 16085 and fulfils all requirements of the relevant standards (EN 837-3) and regulations for the on-site display of the operating pressure of pressure vessels.

As switch contacts magnetic snap-action contacts, reed switches, inductive contacts - for requirements to ATEX - or electronic contacts for triggering a PLC are available. For further information on the different switch contacts please see data sheet AC 08.01.

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Standard version

Version

Lower mount pressure connections, highly corrosion-resistant all-metal construction, gauge head secured against unauthorised intervention, pressure connection location adjustable to mounting conditions,

WIKA trade pattern DT - GM 86 08 176

Nominal size in mm

100, 160

Accuracy class

1.6 (2.5 at 0 ... 16 mbar and 0 ... 25 mbar)

Scale ranges

0 ... 16 mbar to 0 ... 25 bar

Pressure limitation

Steady: full scale value Fluctuating: 0.9 x full scale value

Overpressure safety

see table on page 3

Max. working pressure (static pressure)

see table on page 3

Operating temperature

Ambient: -20 ... +60 °C

Medium: +100 °C maximum

Temperature effect

When the temperature of the measuring system deviates from the reference temperature (\pm 20 °C): max. \pm 0.5 %/10 K of full scale value

Measuring chamber with process connection (wetted)

Stainless steel 1.4571, lower mount (LM), 2 x G ½ female

Pressure elements (wetted)

≤ 0.25 bar: stainless steel 1.4571 > 0.25 bar: NiCrCo-alloy (Duratherm)

Sealing bellows (wetted)

Stainless steel 1.4571

Venting of the media chambers (wetted)

Stainless steel 1.4571 for scale ranges \leq 0.25 bar (optional for scale ranges \geq 0.4 bar!)

Movement

Stainless steel

Dial

Aluminium, white, black lettering

Pointer

Aluminium, black

Case

Stainless steel, with pressure vent

Window

Laminated safety glass

Bezel ring

Cam ring (bayonet type), stainless steel

Mounting

according to affixed symbols

⊕ high pressure,

⊖ low pressure

Mounting by means of:

- Rigid tailpipes
- Threaded mounting holes in measuring flange
- Panel mounting flange (option)
- Mounting bracket for wall or pipe mounting (option)

Electrical connection

Junction box

Ingress protection

IP 54 per EN 60529 / IEC 529 (with liquid filling IP 65)

Switch contacts

Magnetic snap-action contact model 821

- No control unit and no extra power supply required
- Direct switching up to 250 V
- Up to 4 switch contacts per measuring instrument

Inductive contact model 831

- Long service life due to non-contact sensor
- Additional control unit required
- With corresponding control unit suitable for use in zone 1 / 21 (2 GD) hazardous areas
- Low reaction on the indication accuracy
- Fail-safe switching at high switching rates
- Insensitive to corrosion
- Up to 3 switch contacts per measuring instrument

Electronic contact model 830 E

- For direct triggering of a Programmable Logic Controller (PLC)
- No additional control unit required
- Long service life due to non-contact sensor
- Low reaction on the indication accuracy
- Fail-safe switching at high switching rates
- Insensitive to corrosion
- Up to 3 switch contacts per measuring instrument

- Reed switch model 851
- No control unit and no extra power supply required
- Direct switching up to 250 V, 1 A
- Also suitable for direct triggering of a Programmable Logic Controller (PLC)
- Free from wear as without contact
- Up to two change-over contacts per measuring instrument

Switching function

The switching function of the switch is indicated by function index 1, 2 or 3.

Model 8XX.1: NO - normally open (clockwise pointer motion)
Model 8XX.2: NC - normally closed (clockwise pointer
motion)

Model 821.3 and 851.3: Change-over; one contact breaks and one contact makes simultaneously when pointer reaches set point

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

Options

- Liquid filling
- Safety version
- Higher max. working pressure (static pressure) and higher overpressure safety (see table)
- Indication accuracy better than class 1.6
- Venting of the media chambers (wetted) for scale ranges
 ≥ 0.4 bar
- Zero adjustment appliance
- Lateral connection location (right, left, front or back)
- Other threaded pressure connections, female or male
- Combined differential pressure and working pressure readout
- Medium temperature > 100 °C
- Admissible ambient temperature -40 ... +60 °C (silicone oil filling)
- Mounting bracket for wall or pipe mounting
- Panel mounting flange
- Pressure equalising valve (data sheet AC 09.11)
- Inductive contacts also in safety version

Instruments with special approvals: 1)

- Gosstandart approval (Russia)
- 1) Specification on request

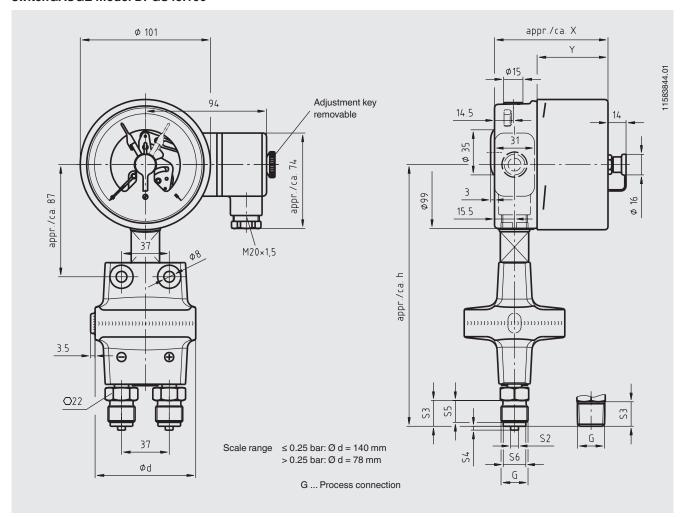
Max. working pressure / Overpressure safety

Scale ranges	Max. working p		Overpressure safety in bar either side max.		
	Standard	Option	Standard	Option	
0 16 to 0 40 mbar	2.5	6 ¹⁾	2.5	-	
0 60 to 0 250 mbar	6	10	2.5	6	
0 400 mbar	25	40	4	40	
0 0.6 bar	25	40	6	40	
0 1 bar	25	40	10	40	
0 1.6 bar	25	40	16	40	
0 2.5 to 0 25 bar	25	40	25	40	

¹⁾ Accuracy class 2.5

Dimensions in mm

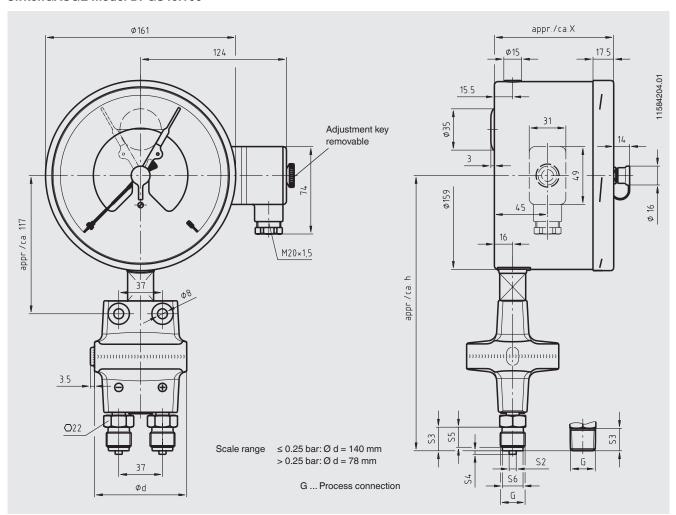
switchGAUGE model DPGS43.100



Type of contact	Dimensions in mm			
	X	Υ		
Single or double contact	88	55		
Double contact (SPDT)	113	80		
Triple contact	96	63		
Quadruple contact	113	80		

Process	Dimensions in mm							
connection	h±1	Н	S2	S3	S 4	S5	S6	
G 1/2 B	203	66	6	20	3	17	17.5	
½ NPT	201	65	-	19	-	-	-	

switchGAUGE model DPGS43.160



Type of contact	Dimensions in mm		
	Х		
Single or double contact	102		
Double contact (SPDT)	116		
Triple contact	102		
Quadruple contact	116		

Process	Dimensions in mm						
connection	h±1	Н	S2	S3	S 4	S5	S6
G 1/2 B	233	66	6	20	3	17	17.5
½ NPT	231	65	-	19	-	-	-

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	3		

Model / Nominal size / Type of contact and switching function / Scale range / Scale layout (linear pressure or square root incrementation) / Max. working pressure (static pressure) / Connection size / Connection location / 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.

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