

Bourdon tube pressure gauge with one or two switch contacts

Stainless steel case

Model PGS11

WIKA data sheet PV 21.01



for further approvals
see page 3

switchGAUGE

Applications

- Pressure gauge for indicating and monitoring the pressure in tanks and for signalling leaks
- General industrial applications

Special features

- High switching reliability and long service life
- Design per EN 837-1
- Pressure indication over 270 angular degrees
- One or two preset, adjustable contacts



Bourdon tube pressure gauge model PGS11

Description

The model PGS11 switchGAUGE is a combination of a Bourdon tube pressure gauge and a pressure switch. It offers the usual analogue display, which can be read on-site irrespective of the power supply, and in addition the possibility to switch a potential-free electrical signal.

The preset switch points are indicated on the dial by red mark pointers and can be reset at any time by the customer, between 10 and 90 % of the scale range. Depending on the pressure gauge's pointer position, the circuit will be opened or closed. Thus the switchGAUGE can be used actively for process monitoring, for example to control the level of a gas cylinder or a hydraulic circuit.

The switchGAUGE is available as standard in scale ranges from 0 ... 2.5 to 0 ... 400 bar with an accuracy class of 2.5 and a 1 m round cable for the electrical connection.

Through various options (e.g. higher accuracy class, other cable lengths, cable outlet at 8 o'clock on the instrument's circumference) the pressure measuring instrument can be matched exactly to the customer-specific requirements of each application.

The instrument has been designed in accordance with EN 837-1 and fulfils all the requirements within it.

Standard version

Design

EN 837-1

Nominal size in mm

40, 50, 63 (double contact only with NS 50 and 63)

Accuracy class

2.5

Switch point tolerance

Factory-set

With single contact: $\pm 2.5\%$ of full scale value

With double contact: $\pm 4\%$ of full scale value
(see also "Contact adjustment" on the right)

Scale ranges

0 ... 2.5 to 0 ... 400 bar

(NS 40 radial only 0 ... 2.5 to 0 ... 100 bar)

Pressure limitation

Steady: $3/4$ x full scale value

Fluctuating: $2/3$ x full scale value

Short time: Full scale value

Permissible temperature

Ambient: $-20 \dots +60$ °C

Medium: $+60$ °C maximum

Temperature effect

When the temperature of the measuring system deviates from the reference temperature ($+20$ °C):
max. $\pm 0.4\%$ / 10 K of the span

Process connection

Copper alloy, lower mount (LM) or centre back mount (CBM)

NS 40: G 1/8 B (male), 14 mm flats

NS 50, 63: G 1/4 B (male), 14 mm flats

Pressure element

Copper alloy

C-type or helical type

Movement

Copper alloy

Dial

NS 40, 50: Aluminium, white

NS 63: Stainless steel, white

Pointer

Plastic, black

Case

Stainless steel

Window

Polycarbonate

Ingress protection

IP 41 per EN 60529 / IEC 529

Helium leak test

Leak rate 10^{-5} mbar \cdot l/s

Electrical data

Switching voltage: DC / AC 4.5 ... 24 V

Switching current: 5 ... 100 mA

Contact load: max. 2.4 W

Switch contact: Normally closed (NC) or normally open (NO)

Double contact only with NS 50 and 63

Index	Designation	Symbol	Switching function / setting direction	Code
1	Normally open (NO)		Contact makes with rising pressure or clockwise pointer motion (standard)	1
			Contact breaks with falling pressure or anticlockwise pointer motion	5
2	Normally closed (NC)		Contact breaks with rising pressure or clockwise pointer motion (standard)	2
			Contact makes with falling pressure or anticlockwise pointer motion	4
12	Normally open / normally closed (NO-NC)		See switching function or setting direction for single contact	
11	Normally open / normally open (NO-NO)		See switching function or setting direction for single contact	
22	Normally closed / normally closed (NC-NC)		See switching function or setting direction for single contact	

Contact setting: To customer requirements (if not specified, to mean value of the scale range)

Contact adjustment: Adjustable between 10 and 90 % of the scale range

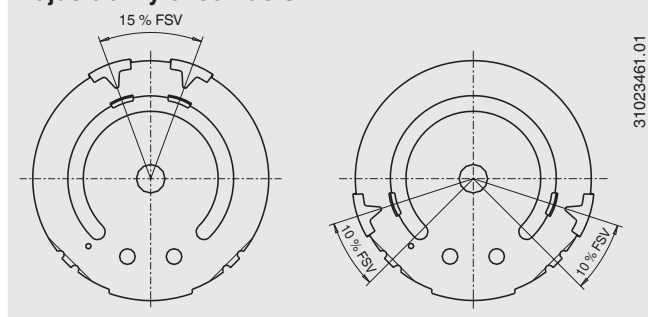
If the contact is reset without an adjustment unit, the following switching tolerances can be achieved:

With single contact: $\pm 4\%$ of full scale value

With double contact: $\pm 5.5\%$ of full scale value

Potential-free

Adjustability of contacts



Electrical connection

Cable outlet, standard length 1 m

Single contact		Double contact	
red:	UB+	red:	UB+ (common)
black:	SP 1	orange:	SP 1
		black:	SP 2

Options

- Other process connection
- Ingress protection IP 65 (model PGS21, data sheet PV 21.02)
- Accuracy class 1.6 (with single contact)
- Cable outlet at case circumference, 8 o'clock (only with NS 50, single contact)
- Other cable length
- Instruments with VdS approval (NS 40, data sheet SP 21.01)

CE conformity

Pressure equipment directive

97/23/EC, PS > 200 bar, module A, pressure accessory

Approvals

- **GOST-R**, import certificate, Russia
- **CRN**, safety (e.g. electr. safety, overpressure, ...), Canada

Certificates ¹⁾

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)

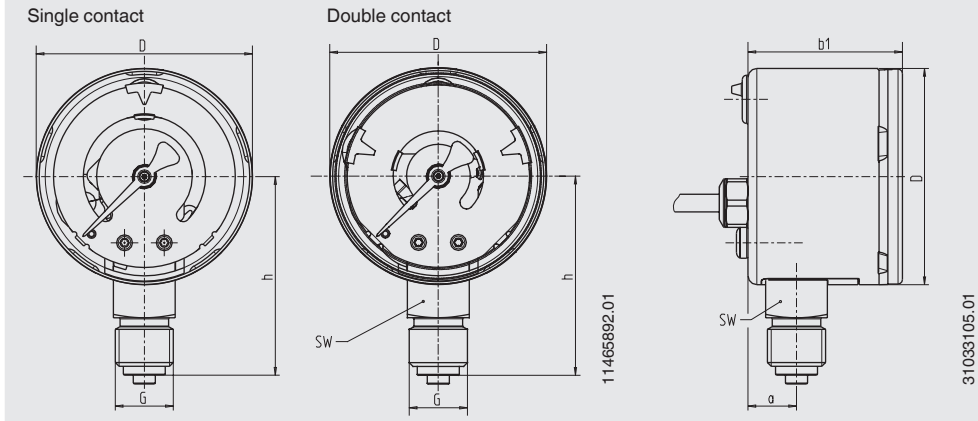
1) Option

Approvals and certificates, see website

Dimensions in mm

Standard version

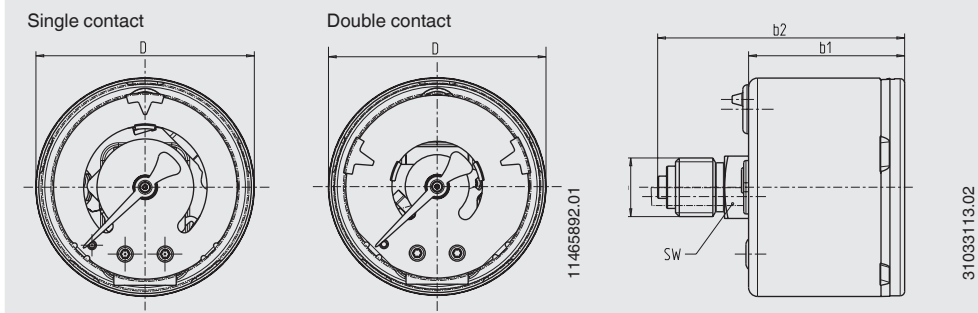
Lower mount (LM)



NS	Type of contact	Dimensions in mm					G	SW	Weight in kg
		D	h	b ₁	a				
40	Single contact	40	36	34.6	10.7	G 1/8 B	14	0.10	
50	Single contact	49	45	35	11	G 1/4 B	14	0.12	
	Double contact	49	45	41	11	G 1/4 B	14	0.12	
63	Single contact	61.9	53.5	35.1	11.4	G 1/4 B	14	0.14	
	Double contact	61.9	53.5	41.1	11.4	G 1/4 B	14	0.14	

Process connection per EN 837-1 / 7.3

Centre back mount (CBM)



NS	Type of contact	Dimensions in mm			G	SW	Weight in kg
		D	b ₁	b ₂			
40	Single contact	40	30.6	48	G 1/8 B	14	0.10
50	Single contact	49	35	55.4	G 1/4 B	14	0.12
	Double contact	49	41	59.4	G 1/4 B	14	0.12
63	Single contact	61.9	35.1	55.1	G 1/4 B	14	0.14
	Double contact	61.9	41.1	61.1	G 1/4 B	14	0.14

Process connection per EN 837-1 / 7.3

Ordering information

Model / Nominal size / Scale range / Connection size / Connection location / Switch point and function / Options

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