

# Bourdon tube pressure gauge with switch contacts

## For the process industry, NS 100 [4"] and 160 [6"]

### Models PGS23.100, PGS23.160, PGS26.100 and PGS26.160

WIKA data sheet PV 22.02



For further approvals,  
see page 11

**switchGAUGE**

### Applications

- Control and regulation of processes
- Monitoring of plants and switching of circuits
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Chemical industry, petrochemical industry, power plants, mining, on-/offshore, environmental technology, machine building and general plant construction

### Special features

- Up to 3 switch contacts per instrument
- Also available with case filling for high dynamic pressure loads or vibrations
- Instruments with inductive contacts for use in hazardous areas
- Instruments with contacts for PLC applications
- Safety version with solid baffle wall (Solidfront) available



**Model PGS23.100 with switch contact model 831.1**

### Description

Wherever the process pressure has to be indicated locally and, at the same time, circuits need to be switched, this switchGAUGE finds its use.

Switch contacts (electrical switch contacts) make or break an electric control circuit dependent upon the pointer position of the indicating measuring instrument. 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 all requirements of the relevant international standards and regulations for the on-site indication of the working pressure of pressure vessels.

As switch contacts, magnetic snap-action contacts, reed switches, inductive contacts and electronic contacts are available. Inductive contacts can be used in hazardous areas. For triggering programmable logic controllers (PLC), electronic contacts and reed switches can be used.

# Specifications

Basic information	
<b>Standard</b>	
Bourdon tube pressure gauges	<ul style="list-style-type: none"> <li>■ EN 837-1</li> <li>■ ASME B40.100</li> </ul>
Pressure gauges with electrical limit contact devices	DIN 16085
→ For information on the “Selection, installation, handling and operation of pressure gauges”, see technical information IN 00.05.	
<b>Further version</b>	<ul style="list-style-type: none"> <li>■ Oil- and grease-free</li> <li>■ For oxygen, oil- and grease-free</li> <li>■ Silicone-free</li> <li>■ Per NACE <sup>1)</sup> MR0175 / ISO 15156, use in H<sub>2</sub>S-containing environments in oil and gas production</li> <li>■ Per NACE <sup>1)</sup> MR0103 / ISO 17945, metals resistant to sulphide stress cracking</li> <li>■ With pre-volume deflagration flame arrester<sup>2)</sup> for mounting to zone 0 (EPL Ga); model 910.21, see data sheet AC 91.02</li> </ul>
<b>Nominal size (NS)</b>	<ul style="list-style-type: none"> <li>■ Ø 100 mm [4"]</li> <li>■ Ø 160 mm [6"]</li> </ul>
<b>Connection location</b>	<ul style="list-style-type: none"> <li>■ Lower mount (radial)</li> <li>■ Lower back mount</li> </ul>
<b>Window</b>	<ul style="list-style-type: none"> <li>■ Laminated safety glass</li> <li>■ Polycarbonate<sup>3)</sup></li> </ul>
<b>Case</b>	
Design	<ul style="list-style-type: none"> <li>■ Safety level “S1” per EN 837-1: with blow-out device</li> <li>■ Safety level “S3” per EN 837-1: with solid baffle wall and blow-out back</li> </ul>
Material	<ul style="list-style-type: none"> <li>■ Stainless steel 1.4301 (304)</li> <li>■ Stainless steel 1.4571 (316 Ti)<sup>4)</sup></li> </ul>
<b>Case filling</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Silicone oil M50<sup>5)</sup></li> </ul> <p>Instruments with case filling with compensating valve to vent case.</p>
<b>Movement</b>	Stainless steel

- 1) General information about NACE standards, see data sheet IN 00.21  
 2) Only for instruments with Ex approval  
 3) If Ex approval is required, the polycarbonate window is only available for NS 100 [4"]  
 4) Only available for NS 100 [4"]  
 5) Not available for NS 160 [4"] with safety level “S3” per EN 837-1

Measuring element	
<b>Type of measuring element</b>	Bourdon tube, C-type or helical type
<b>Material</b>	
Model PGS23	Stainless steel 1.4404 (316L)
Model PGS26	Monel 400 (2.4360)
<b>Leak tightness</b>	<ul style="list-style-type: none"> <li>■ Helium tested, leakage rate: &lt; 5 · 10<sup>-3</sup> mbar l/s</li> <li>■ Helium tested, leakage rate: &lt; 1 · 10<sup>-6</sup> mbar l/s</li> </ul>

Accuracy specifications	
<b>Accuracy class</b>	
EN 837-1	<ul style="list-style-type: none"> <li>■ Class 1.0</li> <li>■ Class 2.5</li> </ul>
ASME B40.100	<ul style="list-style-type: none"> <li>■ ±1 % of measuring span (grade 1A)</li> <li>■ ±3 %   ±2 %   ±3 % of measuring span (grade B)</li> </ul>

Accuracy specifications	
Temperature error	On deviation from the reference conditions at the measuring system: $\leq \pm 0.4\%$ per 10 °C [ $\leq \pm 0.4\%$ per 18 °F] of full scale value
Switch hysteresis	Depending on the type of contact used, see page 8
Reference conditions	
Ambient temperature	+20 °C [+68 °F]

## Scale ranges

bar	
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 1,000
0 ... 25	0 ... 1,600

kg/cm <sup>2</sup>	
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160
0 ... 4	0 ... 250
0 ... 6	0 ... 400
0 ... 10	0 ... 600
0 ... 16	0 ... 1,000
0 ... 25	0 ... 1,600

kPa	
0 ... 60	0 ... 4,000
0 ... 100	0 ... 6,000
0 ... 160	0 ... 10,000
0 ... 250	0 ... 16,000
0 ... 400	0 ... 25,000
0 ... 600	0 ... 40,000
0 ... 1,000	0 ... 60,000
0 ... 1,600	0 ... 100,000
0 ... 2,500	0 ... 160,000

MPa	
0 ... 0.06	0 ... 4
0 ... 0.1	0 ... 6
0 ... 0.16	0 ... 10
0 ... 0.25	0 ... 16
0 ... 0.4	0 ... 25
0 ... 0.6	0 ... 40
0 ... 1	0 ... 60
0 ... 1.6	0 ... 100
0 ... 2.5	0 ... 160

psi	
0 ... 10	0 ... 1,000
0 ... 15	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 60	0 ... 3,000
0 ... 100	0 ... 4,000
0 ... 160	0 ... 5,000
0 ... 200	0 ... 6,000
0 ... 300	0 ... 7,500
0 ... 400	0 ... 10,000
0 ... 600	0 ... 15,000
0 ... 800	0 ... 20,000

## Vacuum and +/- scale ranges

bar	
-0.6 ... 0 <sup>1)</sup>	-1 ... +5
-1 ... 0	-1 ... +9
-1 ... +0.6	-1 ... +15
-1 ... +1.5	-1 ... +24
-1 ... +3	-1 ... +30

MPa	
-0.06 ... 0 <sup>1)</sup>	-0.1 ... +0.5
-0.1 ... 0	-0.1 ... +0.9
-0.1 ... +0.06	-0.1 ... +1.5
-0.1 ... +0.15	-0.1 ... +2.4
-0.1 ... +0.3	-0.1 ... +3

kPa	
-60 ... 0 <sup>1)</sup>	-100 ... +500
-100 ... 0	-100 ... +900
-100 ... +60	-100 ... +1,500
-100 ... +150	-100 ... +2,400
-100 ... +300	-100 ... +3,000

psi	
-30 inHg ... 0	-30 inHg ... +100
-30 inHg ... +15	-30 inHg ... +160
-30 inHg ... +30	-30 inHg ... +200
-30 inHg ... +60	-30 inHg ... +300

Further details on: scale ranges	
<b>Special scale ranges</b>	Other scale ranges on request
<b>Unit</b>	<ul style="list-style-type: none"> <li>■ bar</li> <li>■ psi</li> <li>■ kg/cm<sup>2</sup></li> <li>■ kPa</li> <li>■ MPa</li> </ul>
<b>Increased overload safety</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ 2 times</li> <li>■ 3 times</li> <li>■ 4 times</li> <li>■ 5 times</li> </ul> <p>The possibility of selection depends on scale range and nominal size</p>
<b>Vacuum resistance</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Vacuum-resistant to -1 bar</li> </ul>
<b>Dial</b>	
Scale colour	Black
Material	Aluminium
Special scale	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ With temperature scale for refrigerant, e.g. for NH<sub>3</sub>: R 717</li> </ul> <p>Other scales, e.g. with red mark, circular arcs or circular sectors, on request → Alternatively, adhesive label set for red and green circular arcs, see data sheet AC 08.03</p>
<b>Pointer</b>	
Instrument pointer	Aluminium, black
Set pointer	Aluminium, red

Process connection		
<b>Standard</b>	<ul style="list-style-type: none"> <li>■ EN 837-1</li> <li>■ ISO 7</li> <li>■ ANSI/B1.20.1</li> </ul>	
<b>Size</b>		
EN 837-1	<ul style="list-style-type: none"> <li>■ G ¼ B, male thread</li> <li>■ G ½ B, male thread</li> </ul>	
ISO 7	<ul style="list-style-type: none"> <li>■ R ¼, male thread</li> <li>■ R ½, male thread</li> </ul>	
ANSI/B1.20.1	<ul style="list-style-type: none"> <li>■ ¼ NPT, male thread</li> <li>■ ½ NPT, male thread</li> </ul>	
<b>Restrictor</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Ø 0.6 mm [0.024"], stainless steel</li> <li>■ Ø 0.3 mm [0.012"], stainless steel</li> <li>■ Ø 0.6 mm [0.024"], Monel</li> </ul>	
<b>Material (wetted)</b>		
Process connection	Model PGS23	Stainless steel 1.4404 (316L)
	Model PGS26	Monel 400 (2.4360)
Bourdon tube	Model PGS23	Stainless steel 1.4404 (316L)
	Model PGS26	Monel 400 (2.4360)

Other process connections on request

Output signal	
<b>Type of contact</b>	<ul style="list-style-type: none"> <li>■ Magnetic snap-action contact, model 821, see page 6</li> <li>■ Inductive contact, model 831, see page 7</li> <li>■ Electronic contact, model 830 E, see page 8</li> <li>■ Reed switch, model 851, see page 9</li> </ul>
<b>Switching technology</b>	
Magnetic snap-action contact, model 821	<ul style="list-style-type: none"> <li>■ No control unit and no supply voltage required</li> <li>■ Direct switching up to 250 V, 1 A</li> </ul>
Inductive contact, model 831	<ul style="list-style-type: none"> <li>■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx)</li> <li>■ Long service life due to non-contact sensor</li> <li>■ Low influence on the indication accuracy</li> <li>■ Fail-safe switching at high switching frequency</li> <li>■ Insensitive to corrosion</li> <li>■ Also available in safety version</li> </ul>
Electronic contact, model 830 E	<ul style="list-style-type: none"> <li>■ For direct triggering of a programmable logic controller (PLC)</li> <li>■ Long service life due to non-contact sensor</li> <li>■ Low influence on the indication accuracy</li> <li>■ Fail-safe switching at high switching frequency</li> <li>■ Insensitive to corrosion</li> </ul>
Reed switch, model 851	<ul style="list-style-type: none"> <li>■ No control unit and no supply voltage required</li> <li>■ Direct switching up to 250 V, 1 A</li> <li>■ For direct triggering of a programmable logic controller (PLC)</li> <li>■ Free from wear as without contact</li> </ul>
<b>Contact setting</b>	<ul style="list-style-type: none"> <li>■ Contact(s) adjustable, adjustment key attached to cable socket</li> <li>■ Contact(s) fixed, without adjustment lock <sup>1)</sup></li> <li>■ Adjustment lock sealable (tamper-proof)</li> <li>■ Adjustment lock sealed (tamper-proof) <sup>1)</sup></li> <li>■ Captive adjustment key with the adjustment lock connected</li> </ul>

1) Specify switch point(s) when ordering.

Output signal: magnetic snap-action contact, model 821	
Type of contact	Magnetic snap-action contact
Switching technology	<ul style="list-style-type: none"> <li>■ No control unit and no supply voltage required</li> <li>■ Direct switching up to 250 V, 1 A</li> </ul>
Number of switch contacts	Max. 3 switch contacts
Switching function	<ul style="list-style-type: none"> <li>■ Separate circuits with <math>\geq 2</math> switches</li> <li>■ Cable break monitoring with parallel resistance (47 k<math>\Omega</math> or 100 k<math>\Omega</math>)</li> </ul> <p>The switching function of each switch is indicated by index 1, 2 or 3</p>
Model 821.1	Normally open (clockwise pointer motion)
Model 821.2	Normally closed (clockwise pointer motion)
Model 821.3	Change-over contact; one contact breaks and one contact makes simultaneously when pointer reaches set point
Switch point setting	Set pointers of the contact pressure gauges are freely adjustable over the full scale range
Setting range (recommended)	25 ... 75 % of span <sup>1)</sup>
Distance between switch points	Recommended minimum distance between 2 contacts: 20 % of span
Switch hysteresis	2 ... 5 % (typical)
Switching current	0.02 ... 0.3 A (resistive load) Permissible switch-on and switch-off current: $\leq 0.5$ A
Switching voltage <sup>2)</sup>	AC/DC 24 ... 250 V
Switching power	
Unfilled instruments	$\leq 30$ W, $\leq 50$ VA
Filled instruments	$\leq 20$ W, $\leq 20$ VA
Contact material	Silver-nickel, gold-plated

1) 0 ... 100 % of span on request

2) Increasing the switching power with contact protection relay, model 905 possible, see data sheet AC 08.05

### Recommended contact load

Switching voltage	Unfilled instruments			Filled instruments		
	Resistive load		Inductive load	Resistive load		Inductive load
	Direct current	Alternating current	$\cos \varphi > 0.7$	Direct current	Alternating current	$\cos \varphi > 0.7$
DC 220 V / AC 230 V	100 mA	120 mA	65 mA	65 mA	90 mA	40 mA
DC 110 V / AC 110 V	200 mA	240 mA	130 mA	130 mA	180 mA	85 mA
DC 48 V / AC 48 V	300 mA	450 mA	200 mA	190 mA	330 mA	130 mA
DC 24 V / AC 24 V	400 mA	600 mA	250 mA	250 mA	450 mA	150 mA

→ For further information on switch contacts, see technical information IN 00.48

Output signal: inductive contact, model 831	
Type of contact	Inductive contact
Switching technology	<ul style="list-style-type: none"> <li>■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx)</li> <li>■ Long service life due to non-contact sensor</li> <li>■ Low influence on the indication accuracy</li> <li>■ Fail-safe switching at high switching frequency</li> <li>■ Insensitive to corrosion</li> <li>■ Safety version available</li> </ul>
Number of switch contacts	Max. 3 switch contacts
Switching function	Contact versions: <ul style="list-style-type: none"> <li>■ 831-N</li> <li>■ 831-SN, safety version <sup>1)</sup></li> <li>■ 831-S1N, safety version <sup>1)</sup>, inverted signal</li> </ul> The switching function of each switch is indicated by index 1 or 2
Model 831.1	Normally open (clockwise pointer motion)
Model 831.2	Normally closed (clockwise pointer motion)
Switch point setting	Set pointers of the contact pressure gauges are freely adjustable over the full scale range
Setting range (recommended)	10 ... 90 % of span <sup>2)</sup>
Distance between switch points	Up to 2 contacts can be set to an identical set point. For a version with 3 contacts this is not possible. The left (no. 1) or right (no. 3) contact may not be set to the same set point as the other 2 contacts. The required displacement is approx. 30°, optionally to the right or to the left.
Switching current	Depending on the control unit used, see data sheet AC 08.04
Switching voltage	Depending on the control unit used, see data sheet AC 08.04
Switching power	Depending on the control unit used, see data sheet AC 08.04
<b>Permissible temperature ranges in hazardous areas</b>	
T6	-20 ... +60 °C
T5 ... T1	-20 ... +70 °C
T135°C	-20 ... +70 °C

1) Only operate with a corresponding control unit (model 904.3x)

2) 0 ... 100 % of span on request

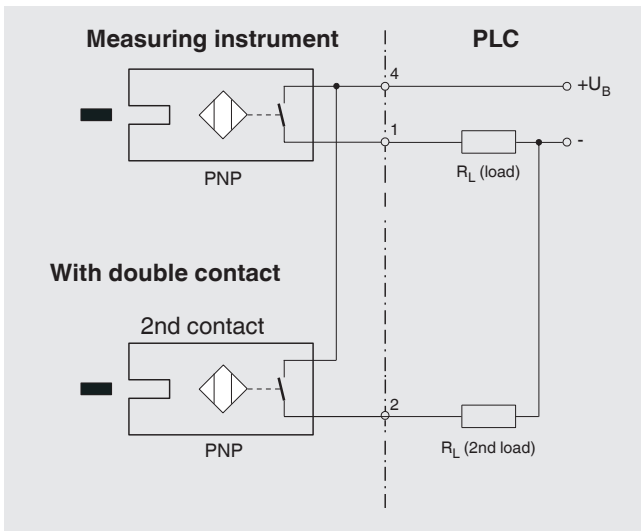
### Associated control units

Model	Version	Ex version
904.28 KFU8-SR-Ex1.W	1 contact	Yes
904.29 KFU8-SR-Ex2.W	2 contacts	Yes
904.30 KHA6-SH-Ex1	1 contact	Yes - Safety version
904.33 KFD2-SH-Ex1	1 contact	Yes - Safety version
904.25 MSR 010-I	1 contact	No
904.26 MSR 020-I	2 contacts	No
904.27 MSR 011-I	Two-point control	No

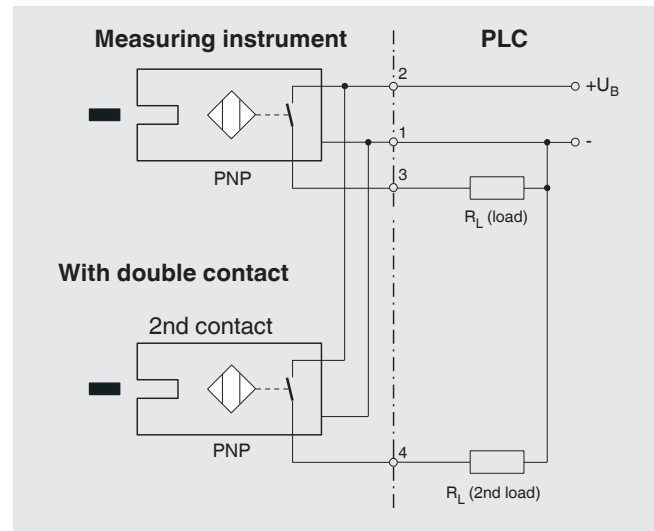
→ For further information on switch contacts, see technical information IN 00.48

Output signal: electronic contact, model 830 E	
Type of contact	Electronic contact (PNP transistor)
Switching technology	<ul style="list-style-type: none"> <li>■ For direct triggering of a programmable logic controller (PLC)</li> <li>■ Long service life due to non-contact sensor</li> <li>■ Low influence on the indication accuracy</li> <li>■ Fail-safe switching at high switching frequency</li> <li>■ Insensitive to corrosion</li> </ul>
Number of switch contacts	Max. 3 switch contacts
Switching function	Contact versions: <ul style="list-style-type: none"> <li>■ 2-wire system</li> <li>■ 3-wire system</li> </ul> The switching function of each switch is indicated by index 1 or 2
Model 830 E.1	Normally open (clockwise pointer motion)
Model 830 E.2	Normally closed (clockwise pointer motion)
Setting range (recommended)	10 ... 90 % of span (0 ... 100 % on request)
Distance between switch points	Up to 2 contacts can be set to an identical set point. For a version with 3 contacts this is not possible. The left (no. 1) or right (no. 3) contact may not be set to the same set point as the other 2 contacts. The required displacement is approx. 30°, optionally to the right or to the left.
Switching current	$\leq 100 \text{ mA}$
Switching voltage	DC 10 ... 30 V

### 2-wire system



### 3-wire system



→ For further information on switch contacts, see technical information IN 00.48



Output signal: reed switch, model 851	
Type of contact <sup>1)</sup>	Bistable reed switch
Switching technology	<ul style="list-style-type: none"> <li>■ No control unit and no supply voltage required</li> <li>■ Direct switching up to 250 V, 1 A</li> <li>■ For direct triggering of a programmable logic controller (PLC)</li> <li>■ Free from wear as without contact</li> </ul>
<b>Number of switch contacts</b>	
NS 100	Max. 2 switch contacts
NS 160 <sup>2)</sup>	1 switch contact
Switching function	<ul style="list-style-type: none"> <li>■ Separate circuits with <math>\geq 2</math> switches</li> <li>■ Cable break monitoring with parallel resistance (47 k<math>\Omega</math> or 100 k<math>\Omega</math>)</li> </ul> <p>The switching function of each switch is indicated by index 1, 2 or 3</p>
Model 851.1	Normally open (clockwise pointer motion)
Model 851.2	Normally closed (clockwise pointer motion)
Model 851.3	Change-over contact; one contact breaks and one contact makes simultaneously when pointer reaches set point
Switch point setting	Set pointers of the contact pressure gauges are freely adjustable over the full scale range
Setting range (recommended)	10 ... 90 % of span
Distance between switch points	When using two contacts, these cannot be set to the same point. Depending on the switching function, a minimum clearance of 15 ... 30° is required.
Switch hysteresis	3 ... 5 %
Switching current	$\leq$ AC/DC 1 A
Switching voltage	$\leq$ AC/DC 250 V
Switching power	$\leq$ 60 W, 60 VA
Contact material	Rhodium
Transport current	AC/DC 2 A
Inductive load $\cos \varphi$	1
Contact resistance (static)	100 m $\Omega$
Insulation resistance	10 <sup>9</sup> $\Omega$
Breakdown voltage	DC 1,000 V
Switching time incl. contact chatter	4.5 ms

1) For NS 100, the case conforms to the safety level "S3" in accordance with EN 837



2) For switching voltages AC < 50 V and DC < 75 V, switch contact not adjustable from outside

→ For further information on switch contacts, see technical information IN 00.48











Electrical connection	
Connection type	<ul style="list-style-type: none"> <li>■ Cable socket, black Per VDE 0110 insulation group C/250 V Cable gland M20 x 1.5</li> <li>■ Connector</li> </ul>
Wire cross-section	6 screw terminals + PE for 2.5 mm <sup>2</sup>
Cable diameter	Use cable with a diameter of 7 ... 13 mm [0.276 ... 0.512 in]
Pin assignment	Connection details are given on the product label of the instrument. Connection terminals and ground terminals are appropriately marked.
Material	PA 6 (polyamide)

Operating conditions	
<b>Medium temperature</b>	
Unfilled instruments	-20 ... +200 °C [-4 ... +392 °F]
Instruments with silicone oil filling	-20 ... +100 °C [-4 ... +212 °F]
<b>Ambient temperature</b>	-20 ... +60 °C [-4 ... +140 °F]
<b>Pressure limitation</b>	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Short time	1.3 x full scale value
<b>Ingress protection per IEC/EN 60529</b>	<ul style="list-style-type: none"> <li>■ IP65</li> <li>■ IP66</li> </ul>

## Approvals

Logo	Description	Region
	<b>EU declaration of conformity</b>	European Union
	EMC directive	
	Low Voltage Directive	
	RoHS directive	
	<b>UKCA</b> Pressure equipment (safety) regulations	United Kingdom
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...)	Canada

## Optional approvals

Logo	Description	Region	
 	<b>EU declaration of conformity</b>	European Union	
	ATEX directive <sup>1)</sup> Hazardous areas Gas II 2G Ex ia IIC T6/T5/T4 Gb Dust II 2D Ex ia IIIB T135°C Db		
	 		<b>IECEx <sup>1)</sup></b> Hazardous areas Gas Ex ia IIC T6/T5/T4 Gb Dust Ex ia IIIB T135°C Db
			<b>EAC</b> EMC directive Low voltage directive Hazardous areas <sup>1)</sup>
	<b>Ex Ukraine</b> Hazardous areas <sup>1)</sup>	Ukraine	
	<b>NEPSI</b> Hazardous areas <sup>1)</sup>	China	
	<b>PAC Kazakhstan</b> Metrology, measurement technology	Kazakhstan	
-	<b>MChS</b> Permission for commissioning	Kazakhstan	
	<b>PAC Ukraine</b> Metrology, measurement technology	Ukraine	
	<b>PAC Uzbekistan</b> Metrology, measurement technology	Uzbekistan	

1) Only for instruments with inductive contact model 831

## Certificates (option)

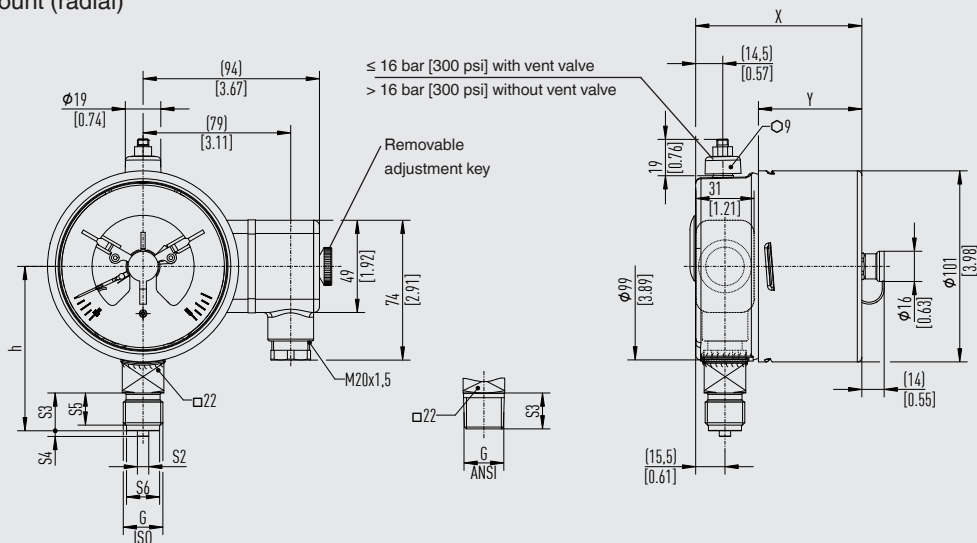
Certificates	
<b>Certificates</b>	<ul style="list-style-type: none"> <li>■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy)</li> <li>■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)</li> </ul>
<b>Recommended calibration interval</b>	1 year (dependent on conditions of use)

→ Approvals and certificates, see website

## Dimensions in mm [in]

switchGAUGE model PGS23.100, safety level "S1" per EN 837-1  
With switch contact model 821, 831 or 830 E

Lower mount (radial)



11417412.02

### Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	80 [3.15]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	87 [3.43]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

### Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	80 [3.15]	13 [0.51]
R ½	86 [3.39]	19 [0.75]

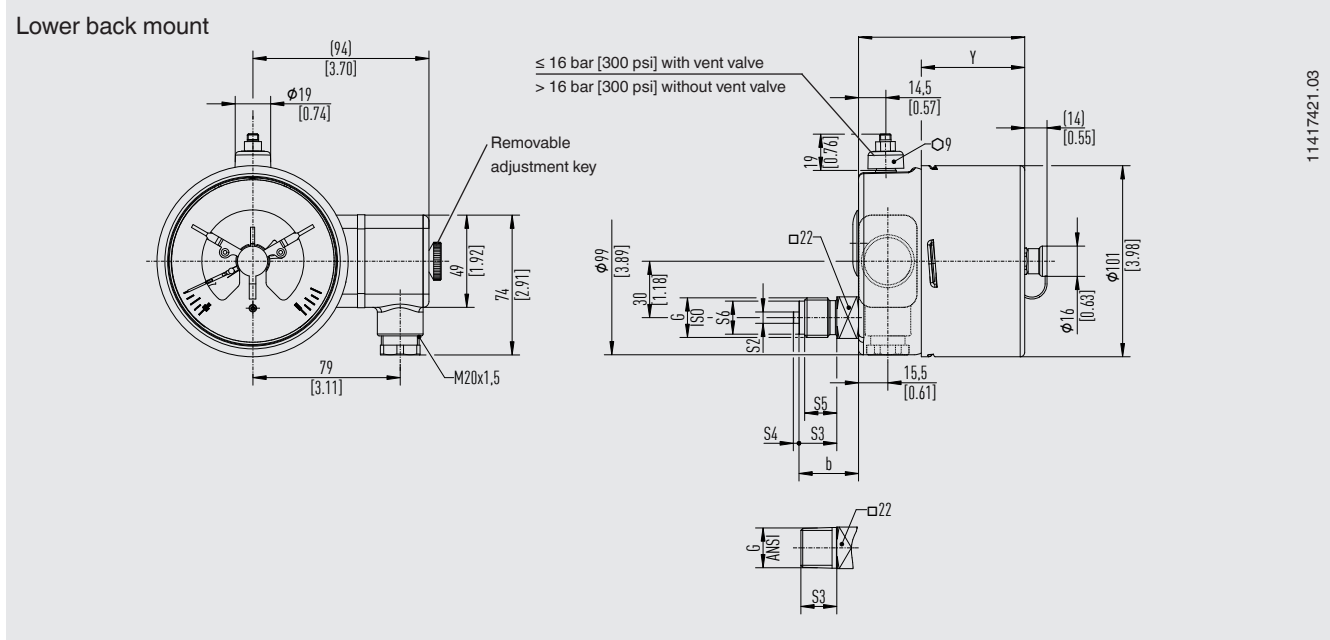
### Process connection with thread per ANSI/B1.20.1

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	80 [3.15]	13 [0.51]
½ NPT	86 [3.39]	19 [0.75]

### Case dimensions and weight

Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
	X	Y	Unfilled	Filled
Single or double contact	88 [3.46]	55 [2.17]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Double pole change-over contact	113 [4.45]	80 [3.15]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Triple contact	96 [3.78]	63 [2.48]	Approx. 1.5 [3.31]	Approx. 2 [4.41]

switchGAUGE model PGS23.100, safety level "S1" per EN 837-1  
 With switch contact model 821, 831 or 830 E



Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	b ±1 [0,04]	S2	S3	S4	S5	S6
G ¼ B	25 [0.98]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	32 [1.26]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
R ¼	25 [0.98]	13 [0.51]
R ½	31 [1.22]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

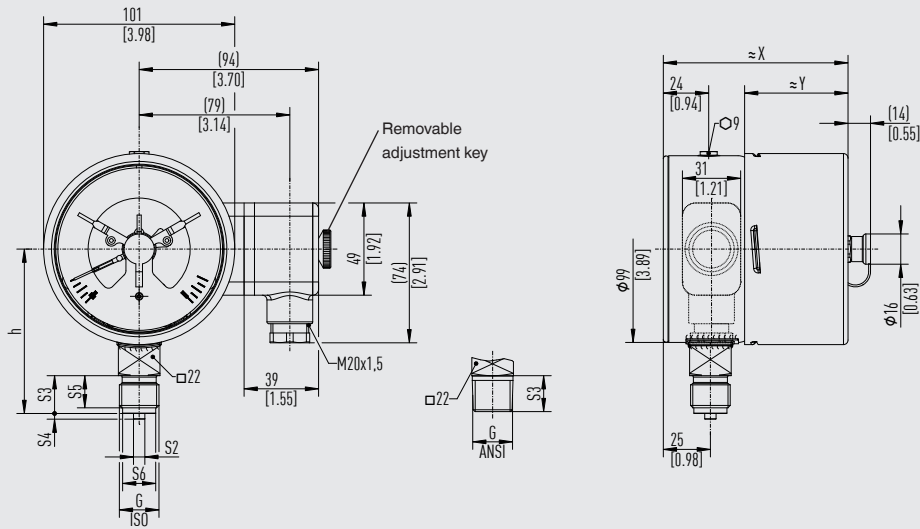
G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
¼ NPT	25 [0.98]	13 [0.51]
½ NPT	31 [1.22]	19 [0.75]

Case dimensions and weight

Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
	X	Y	Unfilled	Filled
Single or double contact	88 [3.46]	55 [2.17]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Double pole change-over contact	113 [4.45]	80 [3.15]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Triple contact	96 [3.78]	63 [2.48]	Approx. 1.5 [3.31]	Approx. 2 [4.41]

switchGAUGE model PGS23.100, safety level "S3" per EN 837-1  
 With switch contact model 821, 831 or 830 E

Lower mount (radial)



11417005.02

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	80 [3.15]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	87 [3.43]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	80 [3.15]	13 [0.51]
R ½	86 [3.39]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

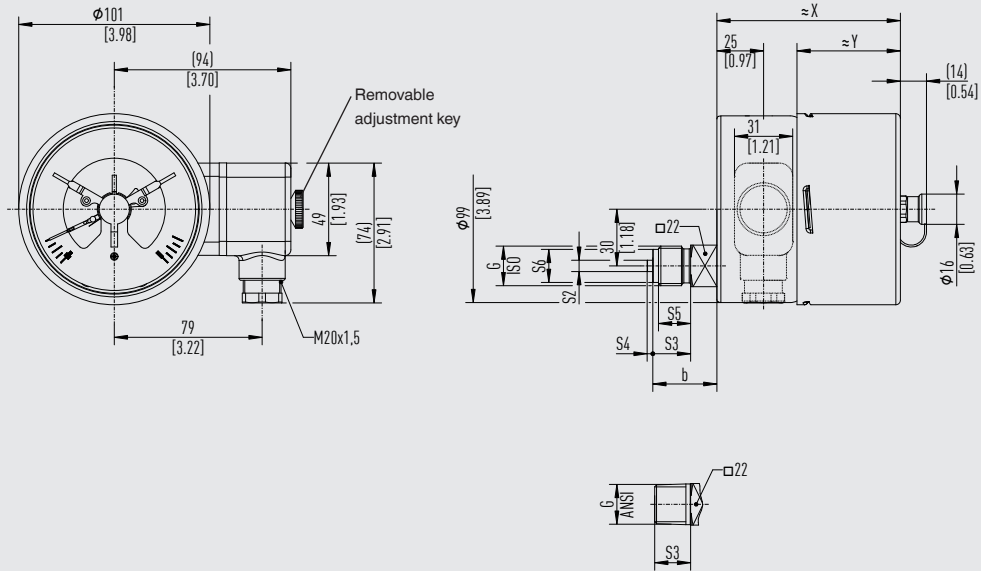
G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	80 [3.15]	13 [0.51]
½ NPT	86 [3.39]	19 [0.75]

Case dimensions and weight

Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
	X	Y	Unfilled	Filled
Single or double contact	97 [3.82]	55 [2.17]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Double pole change-over contact	122 [4.8]	80 [3.15]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Triple contact	105 [4.13]	63 [2.48]	Approx. 1.5 [3.31]	Approx. 2 [4.41]

switchGAUGE model PGS23.100, safety level "S3" per EN 837-1  
 With switch contact model 821, 831 or 830 E

Lower back mount



11417013.03

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	b ±1 [0,04]	S2	S3	S4	S5	S6
G ¼ B	27 [1.06]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	34 [1.34]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
R ¼	27 [1.06]	13 [0.51]
R ½	33 [1.3]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

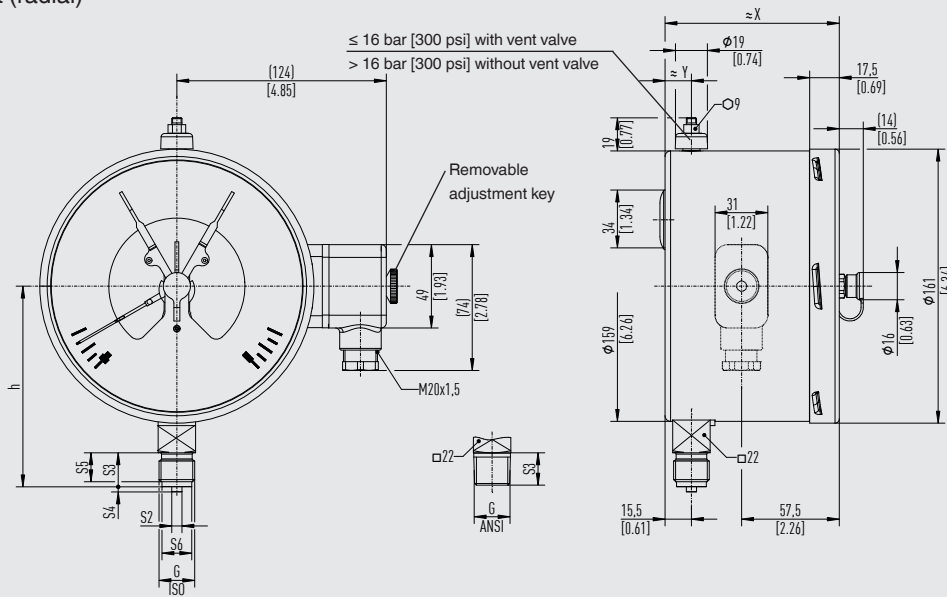
G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
¼ NPT	27 [1.06]	13 [0.51]
½ NPT	33 [1.3]	19 [0.75]

Case dimensions and weight

Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
	X	Y	Unfilled	Filled
Single or double contact	97 [3.82]	55 [2.17]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Double pole change-over contact	122 [4.8]	80 [3.15]	Approx. 1.5 [3.31]	Approx. 2 [4.41]
Triple contact	105 [4.13]	63 [2.48]	Approx. 1.5 [3.31]	Approx. 2 [4.41]

switchGAUGE model PGS23.160, safety level "S1" per EN 837-1  
 With switch contact model 821, 831 or 830 E

Lower mount (radial)



14573682.01

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	111 [4.37]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	118 [4.65]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	111 [4.37]	13 [0.51]
R ½	117 [4.61]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	111 [4.37]	13 [0.51]
½ NPT	117 [4.61]	19 [0.75]

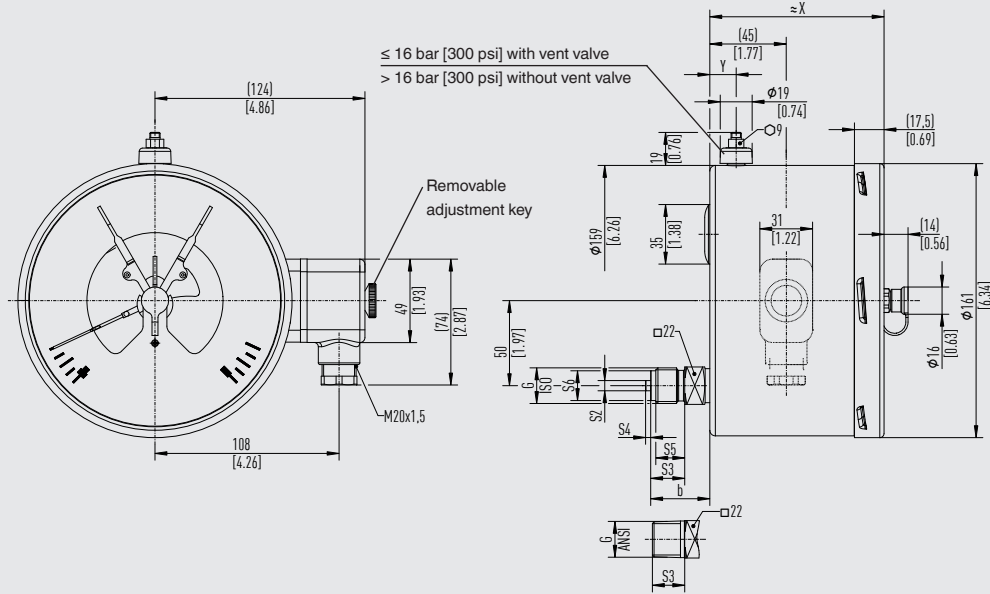
Case dimensions and weight

Scale range	Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
		X	Y	Unfilled	Filled
≤ 100 bar [1,500 psi]	Single or double contact	102 [4.02]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
	Double pole change-over contact, triple contact	116 [4.57]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
> 100 bar [1,500 psi]	Triple contact	116 [4.57]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
	Double pole change-over contact, triple contact	129 [5.08]	29 [1.14]	Approx. 2 [4.41]	Approx. 3 [6.61]



switchGAUGE model PGS23.160, safety level "S1" per EN 837-1  
 With switch contact model 821, 831 or 830 E

Lower back mount



14573882.01

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	b ±1 [0,04]	S2	S3	S4	S5	S6
G ¼ B	23.5 [0.93]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	30.5 [1.20]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
R ¼	23.5 [0.93]	13 [0.51]
R ½	29.5 [1.16]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

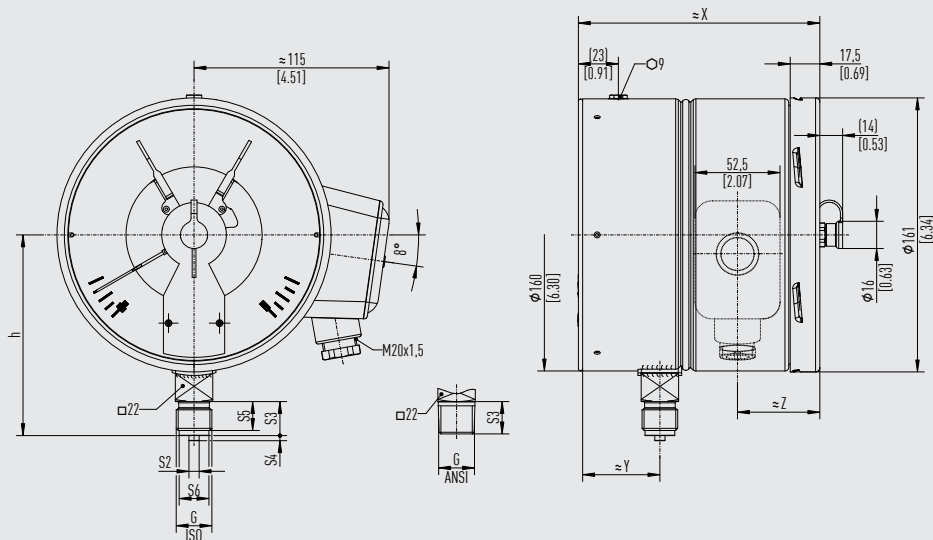
G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
¼ NPT	23.5 [0.93]	13 [0.51]
½ NPT	29.5 [1.16]	19 [0.75]

Case dimensions and weight

Scale range	Type of contact	Dimensions in mm [in]		Weight in kg [lb]	
		X	Y	Unfilled	Filled
≤ 100 bar [1,500 psi]	Single or double contact	102 [4.02]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
	Double pole change-over contact, triple contact	116 [4.57]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
> 100 bar [1,500 psi]	Triple contact	116 [4.57]	15.5 [0.61]	Approx. 2 [4.41]	Approx. 3 [6.61]
	Double pole change-over contact, triple contact	129 [5.08]	29 [1.14]	Approx. 2 [4.41]	Approx. 3 [6.61]

switchGAUGE model PGS23.160, safety level "S3" per EN 837-1  
 With switch contact model 821, 831 or 830 E

Lower mount (radial)



14573755.01

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	111 [4.37]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	118 [4.65]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	111 [4.37]	13 [0.51]
R ½	117 [4.61]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

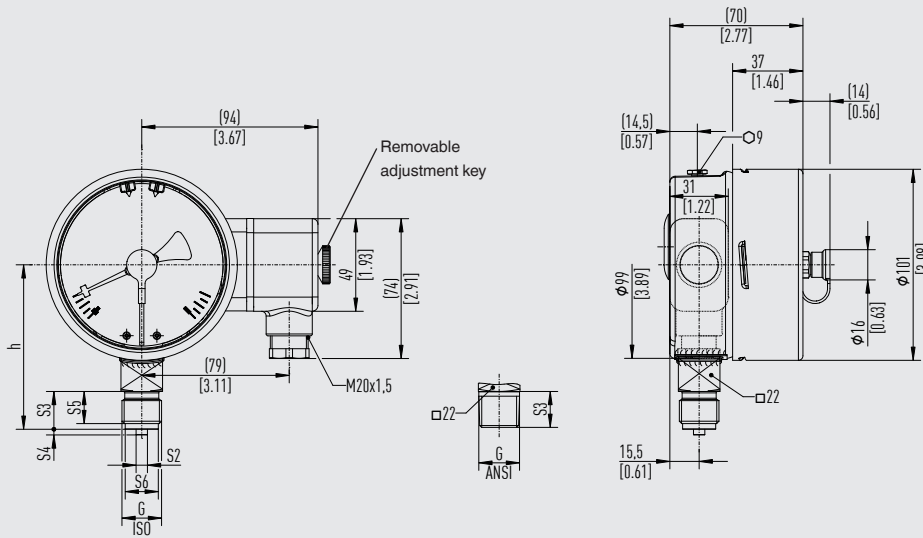
G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	111 [4.37]	13 [0.51]
½ NPT	117 [4.61]	19 [0.75]

Case dimensions and weight

Scale range	Type of contact	Dimensions in mm [in]			Weight in kg [lb]	
		X	Y	Z	Unfilled	Filled
≤ 100 bar [1,500 psi]	Single or double contact	141 [5.55]	28.5 [1.12]	48 [1.89]	Approx. 3 [6.61]	Approx. 5 [11.02]
	Triple contact	141 [5.55]	28.5 [1.12]	60.5 [2.38]		
> 100 bar [1,500 psi]	Single or double contact	141 [5.55]	11.5 [0.45]	48 [1.89]	Approx. 3 [6.61]	Approx. 5 [11.02]
	Triple contact	141 [5.55]	11.5 [0.45]	60.5 [2.38]		

switchGAUGE model PGS23.100, safety level "S1" per EN 837-1  
 With switch contact model 851.3 or 851.33

Lower mount (radial)



14021955.02

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	80 [3.15]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	87 [3.43]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	80 [3.15]	13 [0.51]
R ½	86 [3.39]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

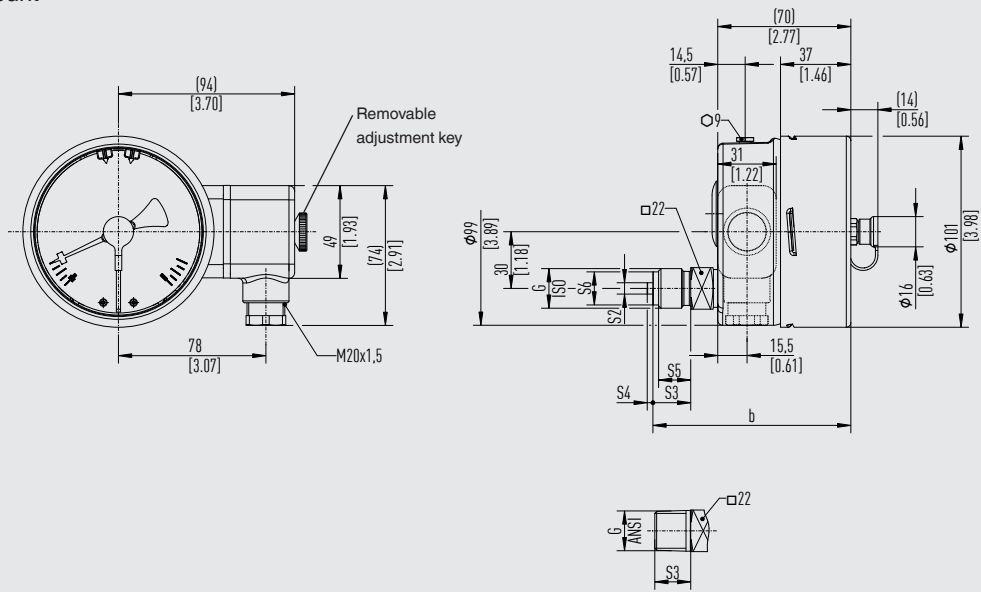
G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	80 [3.15]	13 [0.51]
½ NPT	86 [3.39]	19 [0.75]

Weight

Weight in kg [lb]	
Unfilled	Filled
Approx. 1.3 [2.87]	Approx. 1.8 kg [3.97]

switchGAUGE model PGS23.100, safety level "S1" per EN 837-1  
 With switch contact model 851.3 or 851.33

Lower back mount



14034487.02

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	b ±1 [0,04]	S2	S3	S4	S5	S6
G ¼ B	96 [3.78]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	103 [4.06]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
R ¼	96 [3.78]	13 [0.51]
R ½	102 [4.02]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

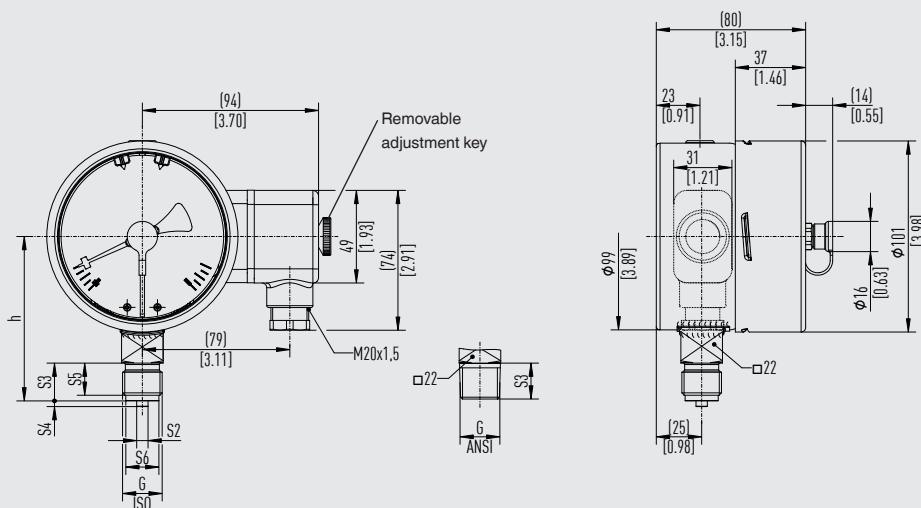
G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
¼ NPT	96 [3.78]	13 [0.51]
½ NPT	102 [4.02]	19 [0.75]

Weight

Weight in kg [lb]	
Unfilled	Filled
Approx. 1.3 kg [2.87 lb]	Approx. 1.8 kg [3.97 lb]

**switchGAUGE model PGS23.100, safety level "S3" per EN 837-1**  
**With switch contact model 851.3 or 851.33**

Lower mount (radial)



14034797.02

**Process connection with thread per EN 837-1**

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	80 [3.15]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	87 [3.43]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

**Process connection with thread per ISO 7**

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	80 [3.15]	13 [0.51]
R ½	86 [3.39]	19 [0.75]

**Process connection with thread per ANSI/B1.20.1**

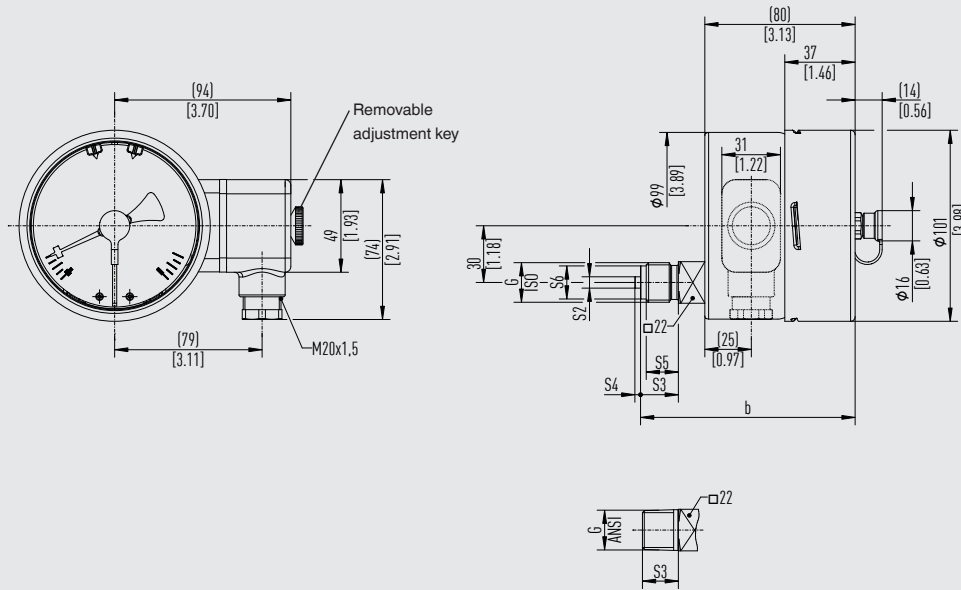
G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	80 [3.15]	13 [0.51]
½ NPT	86 [3.39]	19 [0.75]

**Weight**

Weight in kg [lb]	
Unfilled	Filled
Approx. 1.3 kg [2.87 lb]	Approx. 1.8 kg [3.97 lb]

switchGAUGE model PGS23.100, safety level "S3" per EN 837-1  
 With switch contact model 851.3 or 851.33

Lower back mount



14034471.02

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	b ±1 [0,04]	S2	S3	S4	S5	S6
G ¼ B	106 [4.17]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	113 [4.45]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
R ¼	106 [4.17]	13 [0.51]
R ½	112 [4.41]	19 [0.75]

Process connection with thread per ANSI/B1.20.1

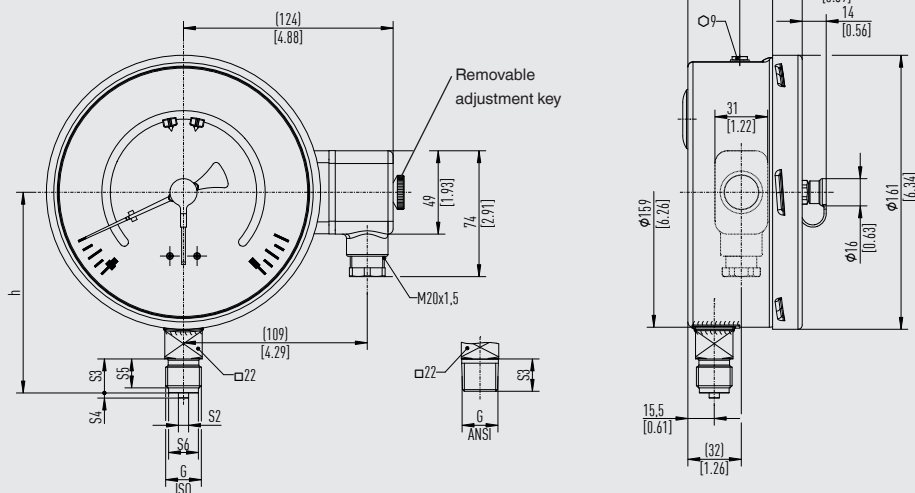
G	Dimensions in mm [in]	
	b ±1 [0,04]	S3
¼ NPT	106 [4.17]	13 [0.51]
½ NPT	112 [4.41]	19 [0.75]

Weight

Weight in kg [lb]	
Unfilled	Filled
Approx. 1.3 kg [2.87 lb]	Approx. 1.8 kg [3.97 lb]

switchGAUGE model PGS23.160, safety level “S1” per EN 837-1  
 With switch contact model 851.3 or 851.33

Lower mount (radial)



14021931.02

Process connection with thread per EN 837-1

G	Dimensions in mm [in]					
	h ±1 [0.04]	S2	S3	S4	S5	S6
G ¼ B	111 [4.37]	5 [0.20]	13 [0.51]	2 [0.08]	11 [0.43]	9.5 [0.37]
G ½ B	118 [4.65]	6 [0.24]	20 [0.79]	3 [0.12]	17 [0.67]	17.5 [0.69]

Process connection with thread per ISO 7

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
R ¼	111 [4.37]	13 [0.51]
R ½	117 [4.61]	19 [0.75]






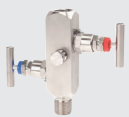


Process connection with thread per ANSI/B1.20.1

G	Dimensions in mm [in]	
	h ±1 [0.04]	S3
¼ NPT	111 [4.37]	13 [0.51]
½ NPT	117 [4.61]	19 [0.75]

Weight

Weight in kg [lb]	
Unfilled	Filled
Approx. 2 [4.41]	Approx. 3 [6.61]

## Accessories and spare parts

Model	Description
	<b>910.33</b> Adhesive label set for red and green circular arcs → See data sheet AC 08.03
	<b>910.17</b> Seals → See data sheet AC 09.08
	<b>910.15</b> Syphons → See data sheet AC 09.06
	<b>910.13</b> Overpressure protector → See data sheet AC 09.04
	<b>IV10, IV11</b> Needle valve and multiport valve → See data sheet AC 09.22
	<b>IV20, IV21</b> Block-and-bleed valve → See data sheet AC 09.19
	<b>IVM</b> Monoflange, process and instrument version → See data sheet AC 09.17
	<b>BV</b> Ball valve, process and instrument version → See data sheet AC 09.28

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