

# 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

- 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
- QR code on dial links to instrument-specific information



**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.

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.

The QR code on the dial allows instrument-specific information such as the serial number, the order number, certificates and other product data to be retrieved from the internet easily and in the long term.

## 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>                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                    | Instruments with case filling with compensating valve to vent case.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <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: <math>&lt; 5 \cdot 10^{-3}</math> mbar l/s</li> <li>■ Helium tested, leakage rate: <math>&lt; 1 \cdot 10^{-6}</math> 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>■ <math>\pm 1</math> % of measuring span (grade 1A)</li> <li>■ <math>\pm 3</math> %   <math>\pm 2</math> %   <math>\pm 3</math> % of measuring span (grade B)</li> </ul> |

| Accuracy specifications |                                                                                                                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature error       | On deviation from the reference conditions at the measuring system:<br>$\leq \pm 0.4 \text{ \% per } 10 \text{ }^{\circ}\text{C}$ [ $\leq \pm 0.4 \text{ \% per } 18 \text{ }^{\circ}\text{F}$ ] 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 |

| 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 |

| 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   |

| 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<br/>→ 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 |                                                                                                  |                               |
|--------------------|--------------------------------------------------------------------------------------------------|-------------------------------|
| Standard           | <div><div></div> EN 837-1</div> <div><div></div> ISO 7</div> <div><div></div> ANSI/B1.20.1</div> |                               |
|                    |                                                                                                  |                               |
|                    |                                                                                                  |                               |
| Size               |                                                                                                  |                               |
| EN 837-1           | <div><div></div> G ¼ B, male thread</div> <div><div></div> G ½ B, male thread</div>              |                               |
| ISO 7              | <div><div></div> R ¼, male thread</div> <div><div></div> R ½, male thread</div>                  |                               |
| ANSI/B1.20.1       | <div><div></div> ¼ NPT, male thread</div> <div><div></div> ½ NPT, male thread</div>              |                               |
| Restrictor         | <div><div></div> Without</div>                                                                   |                               |
|                    | <div><div></div> Ø 0.6 mm [0.024"], stainless steel</div>                                        |                               |
|                    | <div><div></div> Ø 0.3 mm [0.012"], stainless steel</div>                                        |                               |
|                    | <div><div></div> Ø 0.6 mm [0.024"], Monel</div>                                                  |                               |
| Material (wetted)  |                                                                                                  |                               |
| 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                           |                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of contact                         | <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>                                                                                                                           |
| Switching technology                    |                                                                                                                                                                                                                                                                                                                                                                                       |
| 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>                                                                                                                     |
| Contact setting                         | <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)<br>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                                                                                                                                                                                                                                                                                                                          |
| Permissible temperature ranges in hazardous areas |                                                                                                                                                                                                                                                                                                                                                                                      |
| 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

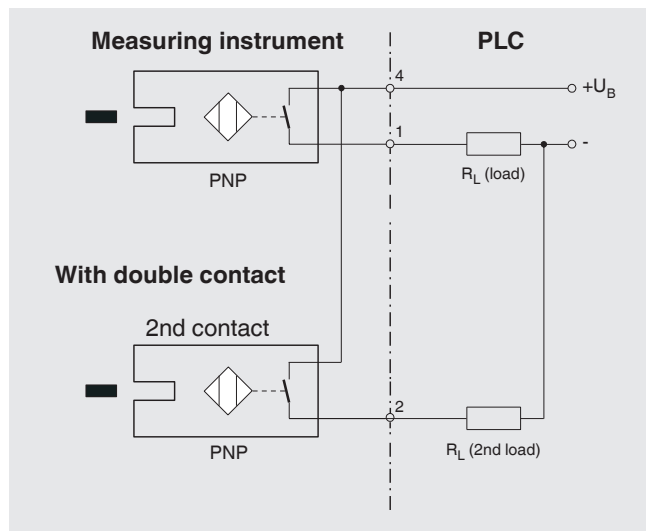
## Associated control units

| 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                   |

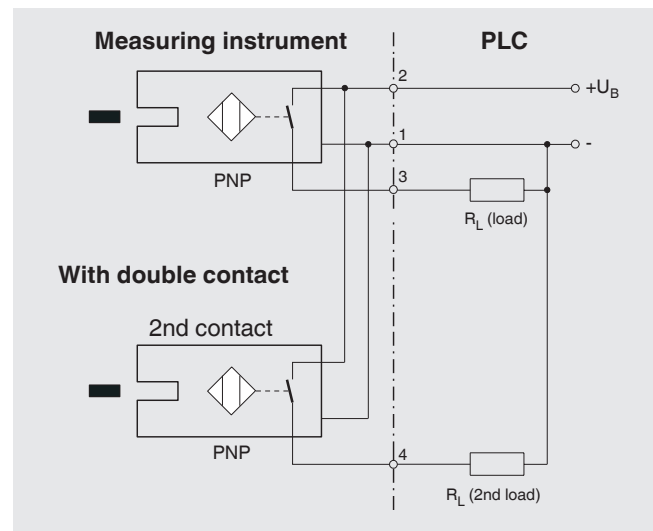
→ For further information on switch contacts, see technical information IN 00.48

| 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>                                |
| Number of switch contacts             |                                                                                                                                                                                                                                                                                                       |
| 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<br/>Per VDE 0110 insulation group C/250 V<br/>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                  |                                                                          |
|---------------------------------------|--------------------------------------------------------------------------|
| Medium temperature                    |                                                                          |
| Unfilled instruments                  | -20 ... +200 °C [-4 ... +392 °F]                                         |
| Instruments with silicone oil filling | -20 ... +100 °C [-4 ... +212 °F]                                         |
| Ambient temperature                   | -20 ... +60 °C [-4 ... +140 °F]                                          |
| Pressure limitation                   |                                                                          |
| Steady                                | Full scale value                                                         |
| Fluctuating                           | 0.9 x full scale value                                                   |
| Short time                            | 1.3 x full scale value                                                   |
| Ingress protection per IEC/EN 60529   | <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><br>Pressure equipment (safety) regulations        | United Kingdom |
| -                                                                                 | <b>CRN</b><br>Safety (e.g. electr. safety, overpressure, ...) | Canada         |

## Optional approvals

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

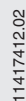
1) Only for instruments with inductive contact model 831

## 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

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



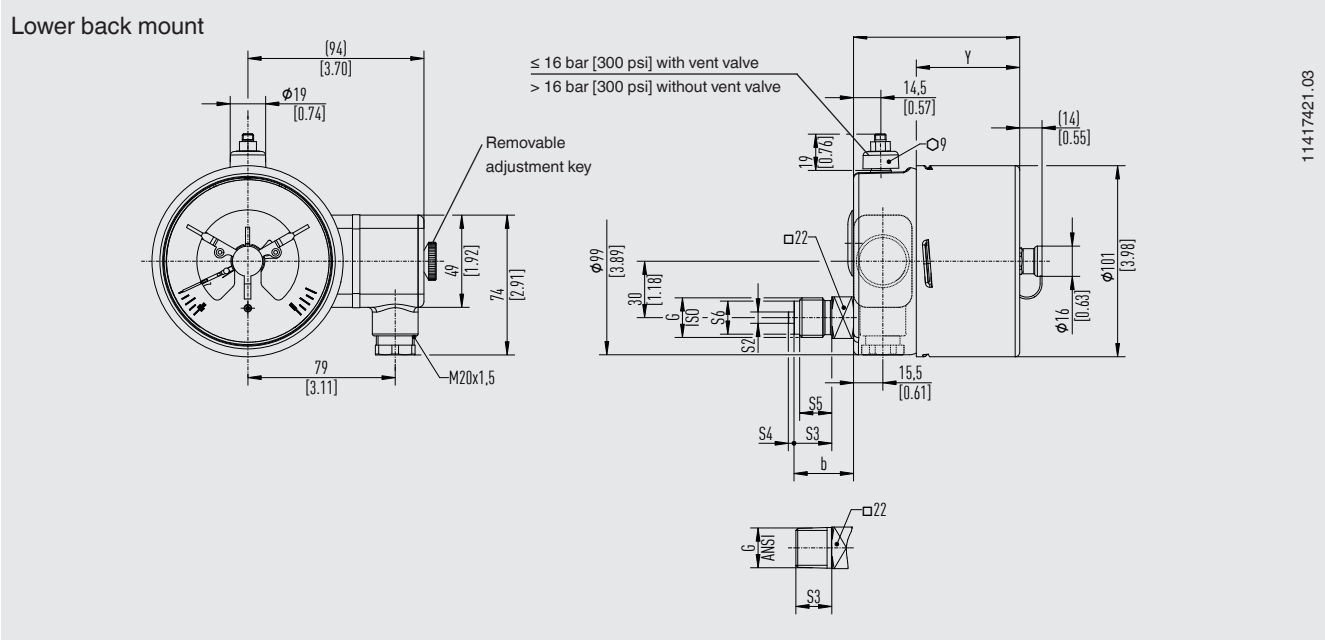
| G            | Dimensions in mm [in] |          |           |          |           |             |
|--------------|-----------------------|----------|-----------|----------|-----------|-------------|
|              | h ±1 [0.04]           | S2       | S3        | S4       | S5        | S6         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

| G   | Dimensions in mm [in] |           |
|-----|-----------------------|-----------|
|     | h ±1 [0.04]           | S3        |
| R ¼ | 80 [3.15]             | 13 [0.51] |
| R½  | 86 [3.39]             | 19 [0.75] |

| 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] |

| 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] |

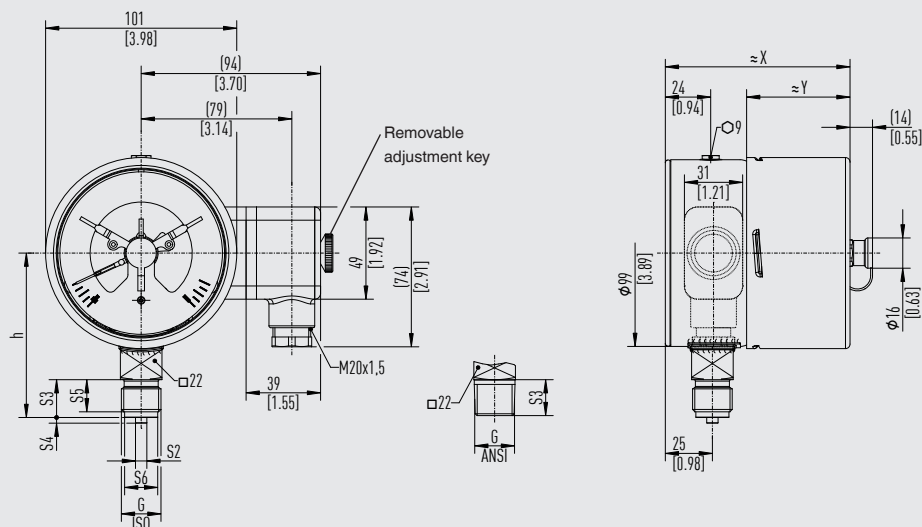
**Process connection with thread per ANSI/B1.20.1**

| 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] |

**With switch contact model 821, 831 or 830 E**



11417005.02

## Process connection with thread per EN 837-1

| G            | Dimensions in mm [in] |          |           |          |           |             |
|--------------|-----------------------|----------|-----------|----------|-----------|-------------|
|              | h ±1 [0.04]           | S2       | S3        | S4       | S5        | S6          |
| <b>G ¼ B</b> | 80 [3.15]             | 5 [0.20] | 13 [0.51] | 2 [0.08] | 11 [0.43] | 9.5 [0.37]  |
| <b>G ½ B</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] |
| R½  | 86 [3.39]             | 19 [0.75] |

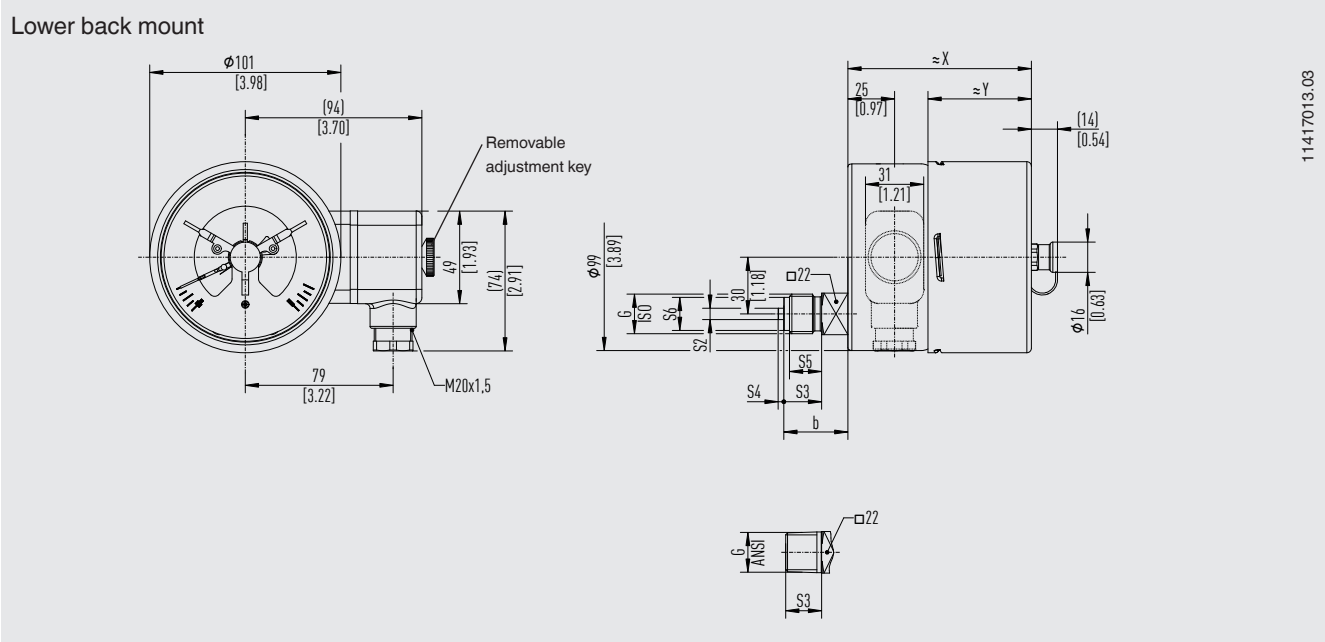
## Process connection with thread per ANSI/B1.20.1

| 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**



**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] |

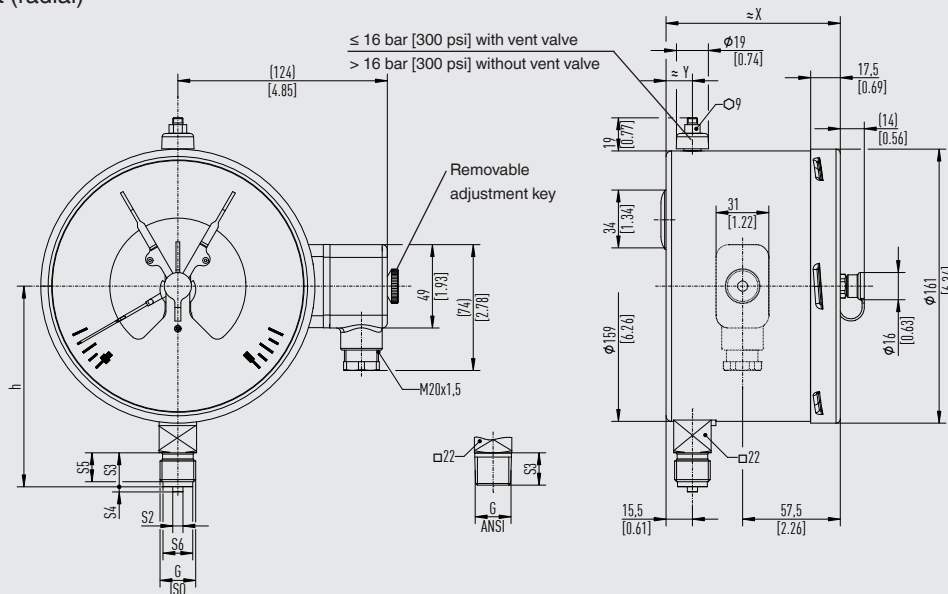
**Process connection with thread per ANSI/B1.20.1**

| 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] |

**With switch contact model 821, 831 or 830 E**



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] |
| R½  | 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] |

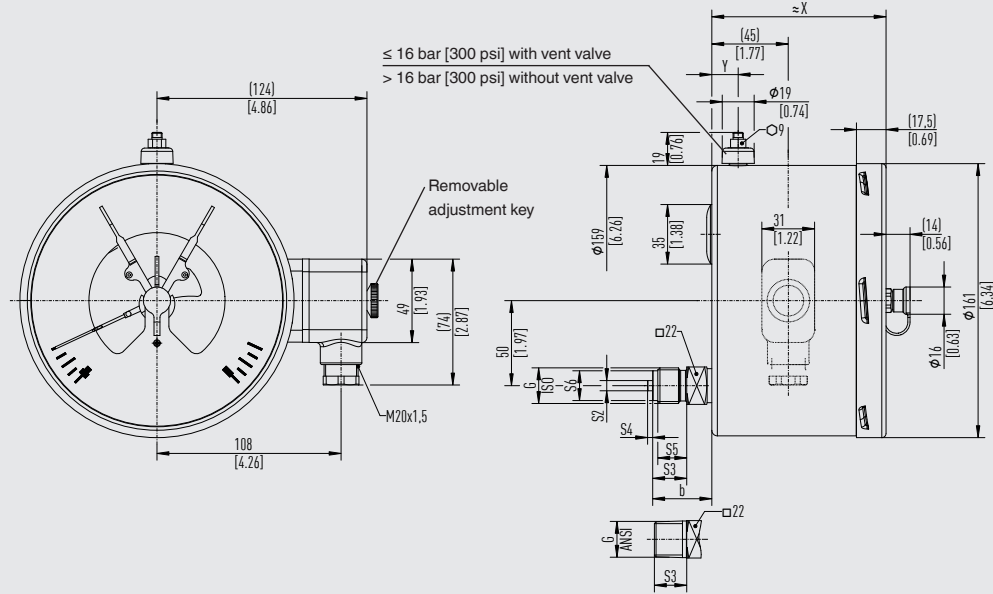
## Case dimensions and weight

| Scale range              | Type of contact                                 | Dimensions in mm [in] |             | Weight in kg [lb] |                  |
|--------------------------|-------------------------------------------------|-----------------------|-------------|-------------------|------------------|
|                          |                                                 | X                     | Y           | Unfilled          | Filled           |
| ≤ 100 bar<br>[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<br>[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



**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] |

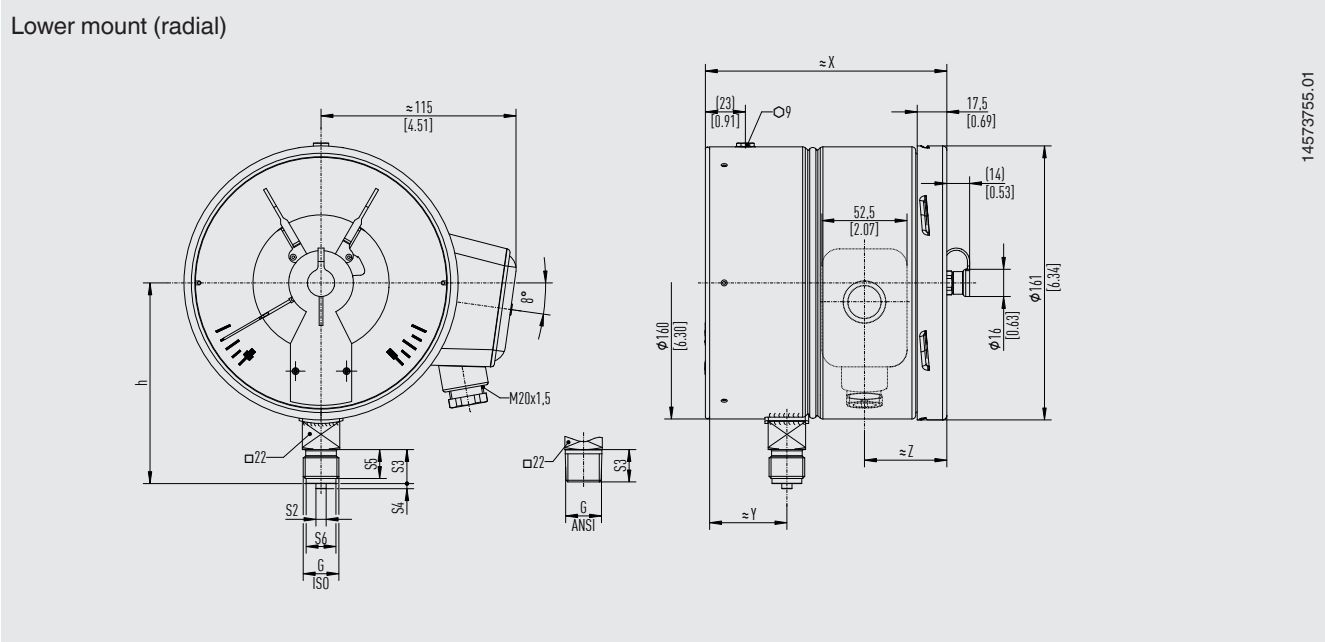
**Process connection with thread per ANSI/B1.20.1**

| 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



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

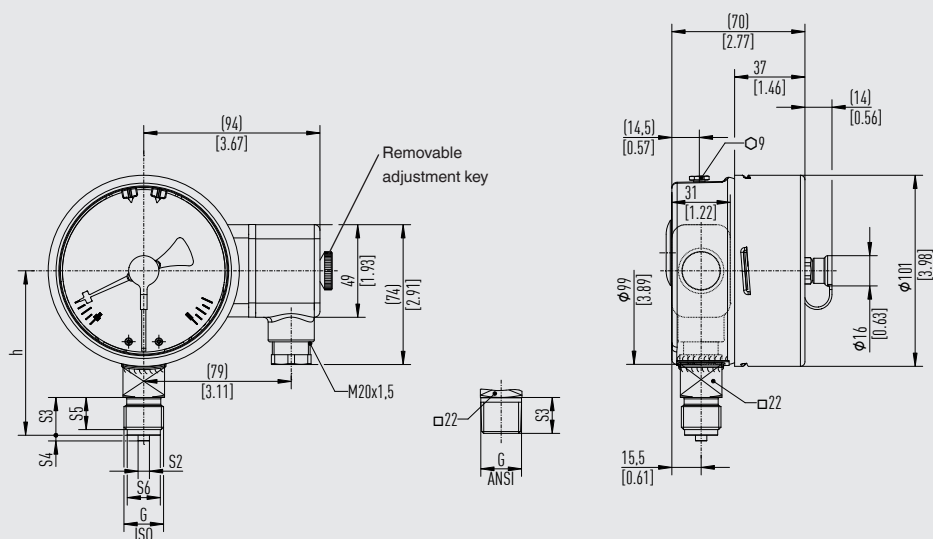
| G     | Dimensions in mm [in] |           |
|-------|-----------------------|-----------|
|       | h ±1 [0.04]           | S3        |
| ¼ NPT | 111 [4.37]            | 13 [0.51] |
| ½ NPT | 117 [4.61]            | 19 [0.75] |

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] |
| R½  | 86 [3.39]             | 19 [0.75] |

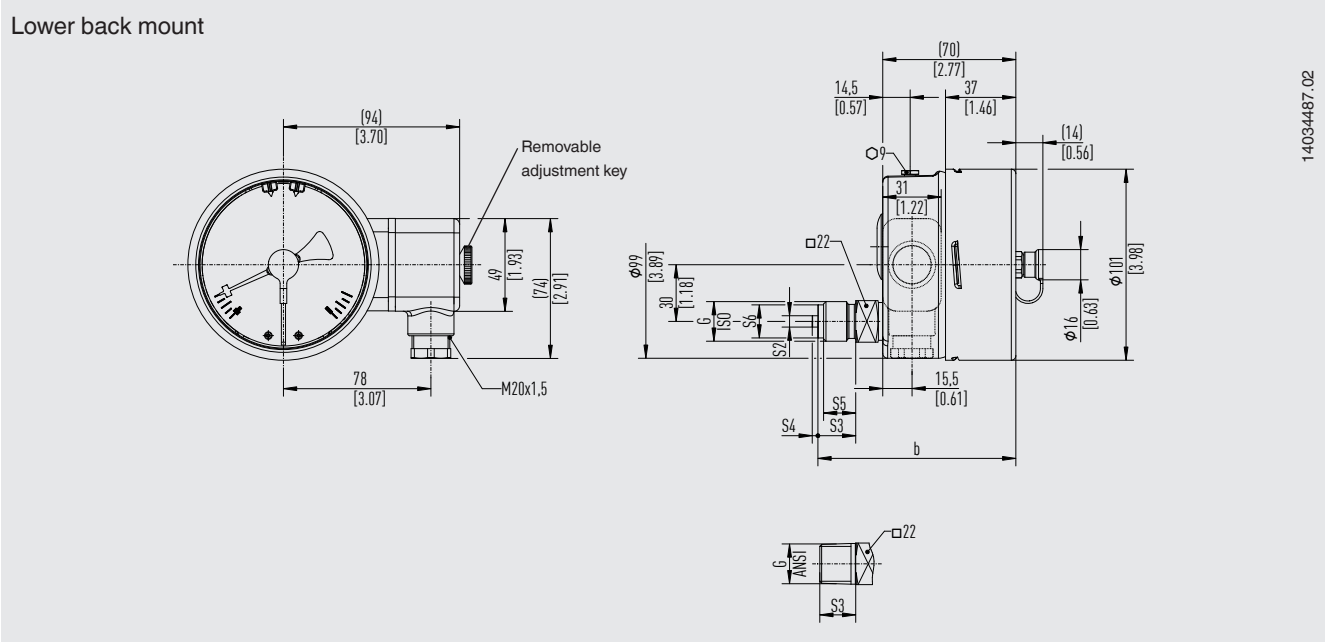
## Process connection with thread per ANSI/B1.20.1

| 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**



**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] |

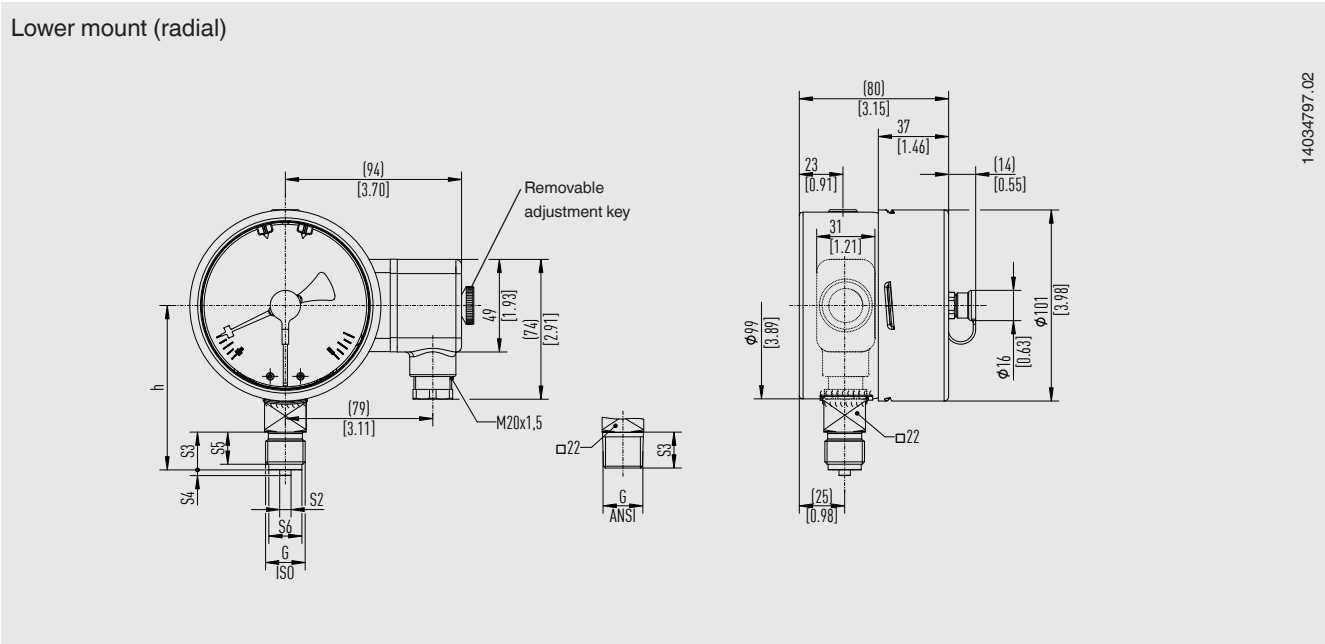
**Process connection with thread per ANSI/B1.20.1**

| 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**



**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] |

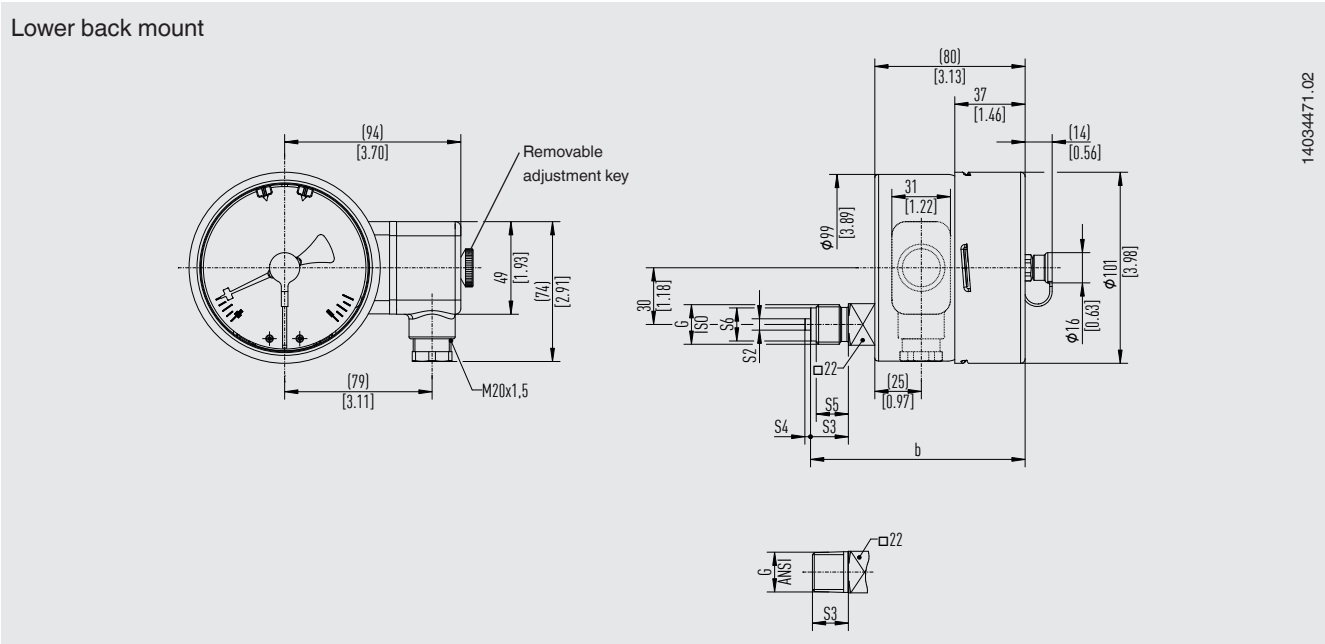
**Process connection with thread per ANSI/B1.20.1**

| 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**



**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] |

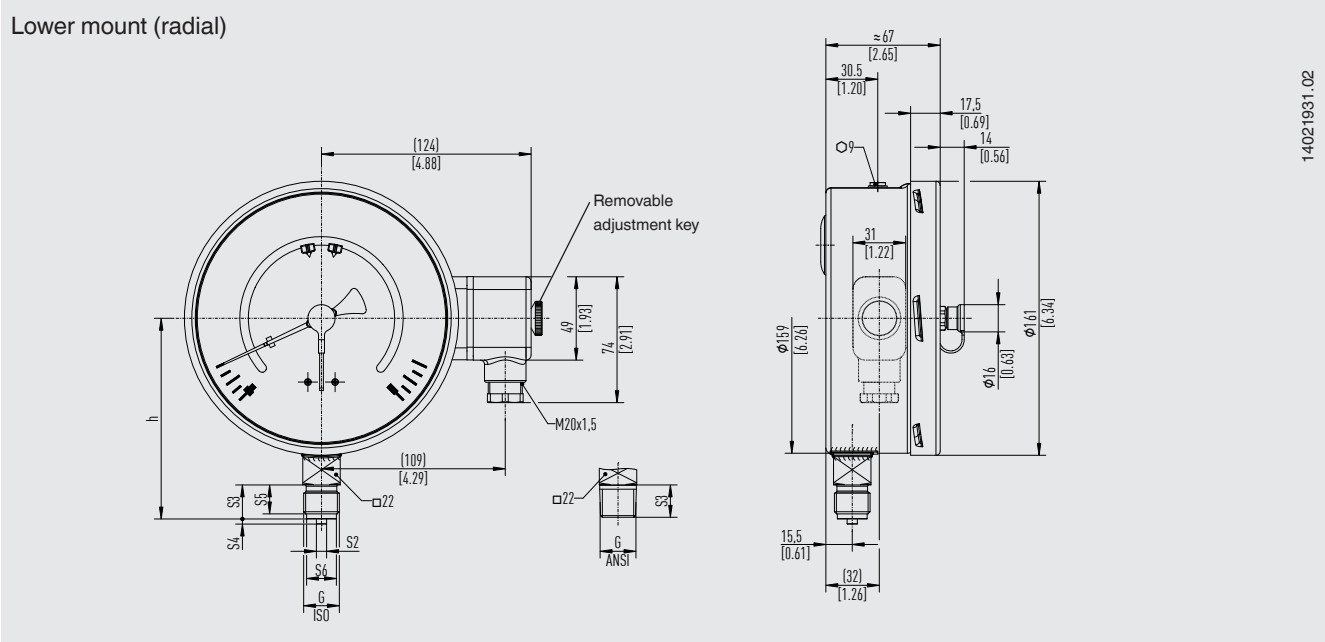
**Process connection with thread per ANSI/B1.20.1**

| 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**



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

© 11/2008 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.  
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.  
In case of a different interpretation of the translated and the English data sheet, the English wording shall prevail.

