Pressure gauge, standard version

Undamped:
- Connection and measuring system made of copper alloy
- Plastic housing
- Transparent plastic inspection window
- Design according to EN837-1

Contact pressure gauge, type 821.21

Undamped / Damped:
- Control and regulation of industrial processes
- High degree of reliability and long service life
- For high dynamic pressure loads and vibrations
- Connection and measuring system made of copper alloy
- Housing made of CrNi steel
- Polycarbonate inspection window
- Design according to EN837-1
Pressure gauge

Pressure gauge standard version / chemical version / contact pressure gauge type 821.21

Measuring range
- 0–2.5 bar (only for standard and chemical version of pressure gauge)
- 0–4 bar
- 0–6 bar
- 0–10 bar

Measuring accuracy
- Accuracy class < ø 100; 1.6
- Accuracy class < ø 100 = 1.0
- Accuracy class, standard version 2.5

ASV-Stübbe resistance guide

Pressure gauge version
Standard version:
- Housing: ABS
- Measuring system: Copper alloy
Chemical version:
- Housing: CrNi steel (1.4571)
- Measuring system: CrNi steel (1.4571)
- liquid-damped/undamped

Contact pressure gauge:
- Housing: CrNi steel (1.4571)
- Measuring system: Copper alloy
- liquid-damped/undamped

Pressure gauge connection
Standard version:
- G 1/4" or G 1/2"
- Rear connection G 1/4"
Chemical version:
- G 1/4" or G 1/2"
- Rear connection G 1/4"

Contact pressure gauge:
- G 1/2"

Contact pressure gauge type 821.21

Application
- plant monitoring and switching of electric circuits
- display of limit conditions
- inductive alarm sensors for particularly safe contacting, even in potentially explosive areas
- can be used in almost any operating situation

Magnetic snap-action contact, type 821
- No control unit or auxiliary energy required
- Direct switching up to 250 V, 1 A
- Maximum of 4 switching contacts per measuring instrument

Functions
- A screw-connected permanent magnet is fitted to the set-point value indicator to give the contact system a snap-action feature and increase the contact pressure.
- The switching function of the switch is indicated by the code number 1, 2 or 3.
  - Type 8xx.1: Normally open contact (for clockwise indicator movement)
  - Type 8xx.2: Normally closed contact (for clockwise indicator movement)
  - Type 8xx.3: Two-way contact; when the value is exceeded, one circuit is opened and one circuit is closed simultaneously

Switching function
- Normal switching function: for clockwise indicator movement
- Reversed switching function: for counter-clockwise indicator movement

Material
Contacts:
- Silver-nickel (80 % silver / 20 % nickel / 10 µm gold-plated)

Ambient temperature
- -20–70 °C

Contact types
- Single or double contact
- NC, NO or two-way contact

We reserve the right to make technical changes.
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Print-No. 301337
TR MA DE Rev001
Contact pressure gauge – Technical data
Contact load limit values for resistive load

<table>
<thead>
<tr>
<th></th>
<th>Unfilled units</th>
<th>Filled units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal operating voltage $U_{\text{eff}}$ max. (V)</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Activation / deactivation current (A)</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Continuous current (A)</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Switching power, max.</td>
<td>30 W 50VA</td>
<td>20 W 20 VA</td>
</tr>
<tr>
<td>Number of contacts</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Recommended contact load for resistive and inductive load

<table>
<thead>
<tr>
<th>Voltage (V)</th>
<th>Unfilled units</th>
<th>Filled units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistive load</td>
<td>Direct current (mA)</td>
<td>100</td>
</tr>
<tr>
<td>Alternating current (mA)</td>
<td>120</td>
<td>240</td>
</tr>
<tr>
<td>Inductive load $\cos \beta &lt; 0.7$ (mA)</td>
<td>65</td>
<td>130</td>
</tr>
</tbody>
</table>

**Attention**

To guarantee a high switching reliability of the contacts, even when permanent environmental factors are taken into account, the switching voltage should be no less than 24 V.
**Pressure gauge**

**Switching function options, contact pressure gauge**
Switching functions when exceeding the set-point value

**Single contact**

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>Contact opens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>Actual value indicator</td>
</tr>
</tbody>
</table>

821.2 (.4)

<table>
<thead>
<tr>
<th>Description</th>
<th>1</th>
<th>Contact closes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>Actual value indicator</td>
</tr>
</tbody>
</table>

821.1 (.5)

<table>
<thead>
<tr>
<th>Description</th>
<th>1 / 2</th>
<th>Contact switches (two-way contact), i.e. one contact opens and one contact closes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>Actual value indicator</td>
</tr>
</tbody>
</table>

821.3 (.6)

**Attention**

For the reverse switching functions, use the numbers in the brackets according to Din 16 085. Combinations are possible.

The switching function of the switch is indicated by the code number 1, 2 or 3.
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- Type 8xx.2: Normally closed contact (for clockwise indicator movement)
- Type 8xx.3: Two-way contact; when the value is exceeded, one circuit is opened and one circuit is closed simultaneously
Double contact

Standard version

<table>
<thead>
<tr>
<th>Description</th>
<th>821.21 (.45)</th>
<th>Description</th>
<th>821.12 (.54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contact opens</td>
<td>1</td>
<td>Contact closes</td>
</tr>
<tr>
<td>2</td>
<td>Contact closes</td>
<td>2</td>
<td>Contact opens</td>
</tr>
<tr>
<td>4</td>
<td>Actual value indicator</td>
<td>4</td>
<td>Actual value indicator</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>821.22 (.44)</th>
<th>Description</th>
<th>821.11 (.55)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 and 2</td>
<td>Contacts open</td>
<td>1 and 2</td>
<td>Contacts close</td>
</tr>
<tr>
<td>4</td>
<td>Actual value indicator</td>
<td>4</td>
<td>Actual value indicator</td>
</tr>
</tbody>
</table>

Attention

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

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- Type 8xx.3: Two-way contact; when the value is exceeded, one circuit is opened and one circuit is closed simultaneously
## Contact pressure gauge – Electrical connection

<table>
<thead>
<tr>
<th>Contact pressure gauge</th>
<th>Contact pressure gauge – Circuit diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material, junction box</td>
<td>PA 6, black</td>
</tr>
<tr>
<td>Temperature resistance according to VDE 0110</td>
<td>-40–80 °C</td>
</tr>
<tr>
<td>Insulation group</td>
<td>C / 250 V</td>
</tr>
<tr>
<td>Cable screw-connection</td>
<td>M 20 x 1.5 (leading downward)</td>
</tr>
<tr>
<td>Tension relief</td>
<td>6 screw terminals + PE for wire cross section 2.5 mm², fitted to the right side of the housing</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP65</td>
</tr>
</tbody>
</table>

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TR MA DE Rev001
Pressure gauge

**standard version / chemical version**

<table>
<thead>
<tr>
<th>M (mm)</th>
<th>63</th>
<th>80</th>
<th>100</th>
<th>101</th>
<th>160</th>
</tr>
</thead>
<tbody>
<tr>
<td>G (inch)</td>
<td>1/4</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>G*</td>
<td>Standard version</td>
<td>1/4</td>
<td>1/2</td>
<td>1/2</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Chemical version, undamped</td>
<td>1/4</td>
<td>–</td>
<td>1/2</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Chemical version, damped</td>
<td>1/4</td>
<td>–</td>
<td>1/2</td>
<td>–</td>
</tr>
<tr>
<td>Rear connection</td>
<td>Standard version</td>
<td>1/4</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Chemical version, damped</td>
<td>1/4</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Contact pressure gauge</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1/2</td>
<td>–</td>
</tr>
<tr>
<td>X for single or double contact</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>88</td>
<td>–</td>
</tr>
<tr>
<td>for double contact (two-way contact)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>113</td>
<td>–</td>
</tr>
</tbody>
</table>

all dimensions in mm / * dimensions in inch

Contact pressure gauge