Electrical temperature measurement

WIKA data sheet PV 21.04

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The robust model PGS25 switchGAUGE is a combination of a Bourdon tube pressure gauge and a pressure switch. It offers the usual analogue display, which enables reading the process pressure on site, and in addition the possibility to switch up to two electrical signals. The switch contacts are factory-set in a range between 5 % and 95 % of the scale range.

The measuring system with Bourdon tube per EN 837-1 produces a pointer rotation proportional to the pressure. An electronic angle encoder, proven in safety-critical automotive applications, determines the position of the pointer shaft - it is a non-contact sensor and therefore completely free from wear and friction. That provides a pressure-proportional signal for further processing. Depending on the switch point setting, the circuit is opened or closed when the alarm value is reached. Thus the switchGAUGE can be used actively for process monitoring, for example to control the level of a gas cylinder or a hydraulic circuit.

The switchGAUGE is available as standard in scale ranges from 0 ... 1.6 bar to 0 ... 400 bar with an accuracy class of 2.5 and a 1 m round cable for the electrical connection. The stainless steel case fulfils the requirements of IP65 ingress protection. The resistance to shock and vibration can be increased by the silicone oil case filling. Thus the instrument is perfectly suited for use in harsh industrial environments. Through various options (e.g. higher accuracy class, other cable length) the pressure measuring instrument can be matched exactly to the customer-specific requirements of each application.

Applications

- General machine building
- Technical and medical gases
- Renewable energies

Special features

- Non-contact sensor (wear-free)
- Robust stainless steel case
- Scale ranges 0 ... 1.6 bar to 0 ... 400 bar
- NPN or PNP switching outputs
- Both switch points factory-programmable between 5 % and 95 % of the scale range

The switchGAUGE is standard version, with electronic pressure switch, cable outlet; model PGS05; see data sheet PV 21.03
Specifications

Design
Measuring system with Bourdon tube per EN 837-1

Nominal size in mm
50, 63

Accuracy class
2.5

Scale ranges
0 ... 1.6 to 0 ... 400 bar
or all other equivalent vacuum or combined pressure and vacuum ranges

Pressure limitation
Steady: 3/4 x full scale value
Fluctuating: 2/3 x full scale value
Short time: Full scale value

Permissible temperature
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage temperature: -40 ... +70 °C

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

Process connection
Copper alloy
Lower mount (radial) or centre back mount
NS 50, 63: G ¼ B (male), SW 14

Pressure element
Copper alloy

Movement
Copper alloy

Dial
Plastic, white, black lettering

Pointer
Plastic, black

Case
Stainless steel

Window
Plastic, crystal-clear (PC)

Ingress protection
IP65 per EN/IEC 60529

Electronics

Power supply (Ub+)
DC 12 ... 32 V

Switching output
- NPN
- PNP
Normally closed (NC) or normally open (NO)
NS 50, 63: 1 or 2 switching outputs selectable

Electrical connection
Cable outlet, standard length 2 m

<table>
<thead>
<tr>
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<th>Assignment</th>
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<tr>
<td>red</td>
<td>Ub+</td>
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<tr>
<td>black</td>
<td>GND</td>
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<tr>
<td>orange</td>
<td>SP1</td>
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<tr>
<td>brown</td>
<td>SP2</td>
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Switching current
Max. 1 A, short-circuit-proof

Electromagnetic compatibility
Per test standards EN 61000-4-6 / EN 61000-4-3

Options
- Other process connection (with adapter, copper alloy)
- Other cable length
- Other electrical connection (e.g. M12 x 1)
- Ingress protection IP67
- Accuracy class 1.6
- Liquid filling (silicone oil)
### Approvals

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<th>Logo</th>
<th>Description</th>
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<tr>
<td>CE</td>
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<td>■ Pressure equipment directive</td>
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<td>Safety (e.g. electr. safety, overpressure, ...)</td>
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### Certificates (option)

- 2.2 test report
- 3.1 inspection certificate

### Dimensions in mm

#### Standard version

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<th>Dimensions in mm</th>
<th>Weight in kg</th>
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Process connection per EN 837-1 / 7.3

**Ordering information**

Model / Nominal size / Scale range / Connection size / Connection location / Switch point and function (1 or 2) / Options

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