

Bourdon tube pressure gauge with switch contact

Stainless steel case, with VdS approval

Models PGS21.040 and PGS21.050, NS 40 and NS 50

WIKA data sheet SP 21.03



For further approvals,
see page 3

switchGAUGE

Applications

- For use in high-pressure gas fire-extinguishing systems for monitoring vessels filled with liquefied inert gases or with halogenated hydrocarbons with superposition of pressure
- For the display and monitoring of the vessel pressure and for alerting the loss of contents from the vessel

Special features

- High switching reliability and long service life
- Design per EN 12094-10 and in line with EN 837-1
- Pressure indication over 270 angular degrees
- One fixed contact
- Increased ingress protection, IP65



Bourdon tube pressure gauge with switch contact and VdS approval, model PGS21.050

Description

The model PGS21 switchGAUGE with VdS approval is a combination of a Bourdon tube pressure gauge and a pressure switch. It offers the usual analogue display, which can be read on-site irrespective of the power supply, and in addition the possibility to switch a potential-free electrical signal.

The switch point is factory-set to customer requirements (in line with the switch points approved by VdS) and indicated on the dial by a red mark pointer. Depending on the instrument's pointer position, the circuit will be opened or closed. Thus the switchGAUGE can be used for process monitoring, for example to control the level of a gas cylinder.

For the PGS21.040 and PGS21.050 switchGAUGE models, approval from VdS Schadenverhütung GmbH in accordance with DIN EN 12094-10 has been achieved. Among experts within the fire protection industry, this approval is increasingly being recognised as an important safety feature and creates confidence among producers and operators of fire protection systems. With the offer of VdS-approved pressure measuring instruments, WIKA is supporting its customers in the fire protection industry to fulfil the criteria required by authorities and insurance companies.

The certificate is available for download online.

The model PGS21 switchGAUGE with VdS approval offers an increased ingress protection of IP65 and exceeds the demands of DIN EN 12094-10.

Specifications

Version

Per EN 12094-10 and in line with EN 837-1

Nominal size in mm

40, 50

Accuracy class

1.6

Scale ranges

0 ... 40 to 0 ... 400 bar

Pressure limitation

Steady ¹⁾: 3/4 x full scale value
 Fluctuating: 2/3 x full scale value
 Short time: Full scale value

1) Maximum allowable pressure PS per European Pressure Equipment Directive

Permissible ambient temperature range

Per VdS approval the instruments with switch contact shall be used between 5 ... 25 °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, male thread
 NS 40: centre back mount
 NS 50: centre back mount or lower mount (radial)
 For thread sizes see table on page 4

Pressure element

Copper alloy

Movement

Copper alloy

Dial

Aluminium, white, black lettering

Pointer

Plastic, black

Case

Stainless steel

Window

Polycarbonate

Ingress protection per IEC/EN 60529

IP65

Helium leak test

Leakage rate 10⁻⁵ mbar^{*}l/s

Switch point setting

Fixed ex-works

If the switch point is changed, the VdS approval becomes void.

Switch point selection depending on scale range; see certificate.

Electrical data

Switching voltage U_{B+}: DC / AC 4.5 ... 24 V
 Switching current: 5 ... 100 mA
 Contact load: max. 2.4 W/VA
 Contact version: 1 x normally closed (NC) or 1 x normally open (NO), potential-free contact

Switch point SP 1: Fixed ex-works

Index	Switching function	Symbol	Switch point/ reset point	Code
1	Normally open (NO)		Contact makes with rising pressure or clockwise pointer motion (standard)	1
			Contact breaks with falling pressure or anticlockwise pointer motion	5
2	Normally closed (NC)		Contact breaks with rising pressure or clockwise pointer motion (standard)	2
			Contact makes with falling pressure or anticlockwise pointer motion	4

Electrical connection and pin assignment

Cable outlet, length 1 m (standard)

Pin assignment	Wire colour
U ₊	Red
SP 1	Black


Angular connector EN 175301-803-C (option)

	Pin assignment	
	U ₊	1
	SP 1	2

Circular connector M12 x 1 (option)

	Pin assignment	
	U ₊	1
	SP 1	4

Circular connector M8 x 1 (option)

	Pin assignment	
	U+	1
	SP 1	4

In order to achieve an IP65 ingress protection for the plug connections shown above, the mating connector used must also provide this ingress protection.


Other versions

Model PGS21B.050

The model PGS21B.050 Bourdon tube pressure gauge corresponds to the specifications and dimensions of PGS21.050 without electrical switch contact.

This basic version is a purely mechanical pressure display with VdS approval.

Approvals

Logo	Description	Country
	EU declaration of conformity	European Union
	Declaration of performance per construction products regulation (EU) no. 305/2011	
	Pressure equipment directive PS > 200 bar, module A, pressure accessory	
	UKCA Pressure equipment (safety) regulations	United Kingdom
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada
	VdS Fire-extinguishing systems Recognition per VDS 2344 and DIN EN 12094-10	European Union
-	LPCB (only available for model PGS21.050) Fire-extinguishing systems	Great Britain

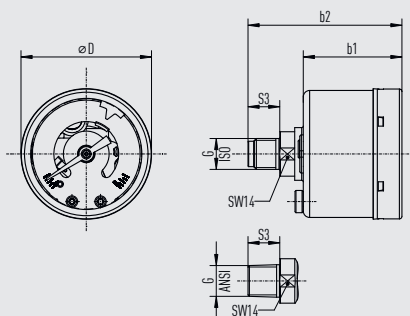
Certificates

- 2.2 test report
- 3.1 material certificate for the wetted parts

→ Approvals and certificates, see website

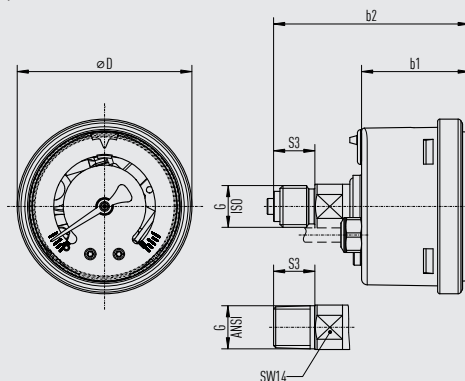
Dimensions in mm [in]

NS 40, centre back mount



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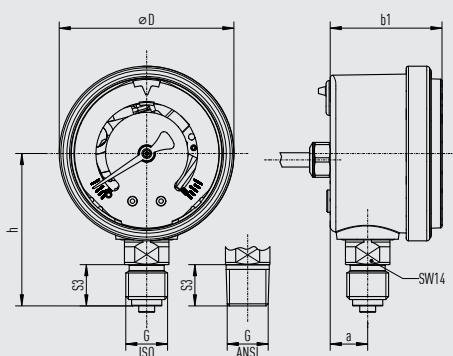
NS 50, centre back mount



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NS	G	Dimensions in mm [in]				Weight in g [oz]
		D	$b_1 \pm 0.5$ [± 0.02]	$b_2 \pm 1$ [± 0.04]	S3	
40	G 1/8 B	41 [1.61]	31 [1.22]	48.5 [1.91]	10 [0.39]	Approx. 100 [3.53]
	1/8 NPT	41 [1.61]	31 [1.22]	48.5 [1.91]	10 [0.39]	Approx. 100 [3.53]
	R 1/8	41 [1.61]	31 [1.22]	48.5 [1.91]	10 [0.39]	Approx. 100 [3.53]
50	G 1/8 B	55 [2.17]	35.5 [1.4]	60 [2.36]	10 [0.39]	Approx. 180 [6.35]
	G 1/4 B	55 [2.17]	35.5 [1.4]	63 [2.48]	13 [0.51]	Approx. 180 [6.35]
	1/8 NPT	55 [2.17]	35.5 [1.4]	60 [2.36]	10 [0.39]	Approx. 180 [6.35]
	1/4 NPT	55 [2.17]	35.5 [1.4]	63 [2.48]	13 [0.51]	Approx. 180 [6.35]
	R 1/8	55 [2.17]	35.5 [1.4]	60 [2.36]	10 [0.39]	Approx. 180 [6.35]
	R 1/4	55 [2.17]	35.5 [1.4]	63 [2.48]	13 [0.51]	Approx. 180 [6.35]

NS 50, lower mount (radial)



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NS	G	Dimensions in mm [in]					Weight in g [oz]
		D	h	$b_1 \pm 0.5$ [± 0.02]	a	S3	
50	G 1/8 B	55 [2.17]	45 [1.77]	35.5 [1.4]	11.5 [0.45]	10 [0.39]	Approx. 180 [6.35]
	G 1/4 B	55 [2.17]	48 [1.90]	35.5 [1.4]	11.5 [0.45]	13 [0.51]	Approx. 180 [6.35]
	1/8 NPT	55 [2.17]	45 [1.77]	35.5 [1.4]	11.5 [0.45]	10 [0.39]	Approx. 180 [6.35]
	1/4 NPT	55 [2.17]	48 [1.90]	35.5 [1.4]	11.5 [0.45]	13 [0.51]	Approx. 180 [6.35]
	R 1/8	55 [2.17]	45 [1.77]	35.5 [1.4]	11.5 [0.45]	10 [0.39]	Approx. 180 [6.35]
	R 1/4	55 [2.17]	48 [1.90]	35.5 [1.4]	11.5 [0.45]	13 [0.51]	Approx. 180 [6.35]

Ordering information

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

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