

Bourdon tube pressure gauge with switch contacts

Stainless steel case, 50 [2"] and 63 [2 ½"]

Model PGS25

WIK A data sheet PV 21.04



For further approvals,
see page 6

switchGAUGE

Applications

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

Special features

- Non-contact sensor (wear-free)
- Robust stainless steel case
- Scale ranges 0 ... 1.6 to 0 ... 400 bar or
0 ... 30 to 0 ... 6,000 psi
- NPN or PNP switching outputs
- Both switch points factory-programmable between
5 ... 95 % of the scale range



Configurator



Bourdon tube pressure gauge model PGS25

Description

The model PGS25 switchGAUGE is a combination of a Bourdon tube pressure gauge and an electronic pressure switch. It offers the usual analogue indication, which can be read on-site irrespective of the power supply. Additionally the instrument is capable of switching up to two transistor outputs.

One or two switch points are factory-set to customer requirements, fixed between 5 and 95 % of the scale range, and indicated on the dial by red mark pointers. Depending on the pointer position, the circuit will be opened or closed.

The switchGAUGE is available in scale ranges from 0 ... 1.6 to 0 ... 400 bar or 0 ... 30 to 0 ... 6,000 psi with an accuracy class of 2.5 or 1.6 and a 2 m [0.08 in] 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.

The switchGAUGE can be used actively for process monitoring, for example to control the level of a gas cylinder or a hydraulic circuit. Through various options the pressure gauge can be matched exactly to the customer-specific requirements of each application.

Specifications

Basic information	
Standard	
Bourdon tube pressure gauges	EN 837-1
→ For information on the "Selection, installation, handling and operation of pressure gauges", see technical information IN 00.05.	
Nominal size (NS)	■ Ø 50 mm [2"] ■ Ø 63 mm [2 ½"]
Connection location	■ Lower mount (radial) ■ Centre back mount
Window	Polycarbonate (PC)
Case	
Design	Safety level "S1" per EN 837-1: with blow-out device
Material	Stainless steel 1.4301 (304)
Case filling	■ Without ■ Silicone oil
Movement	Copper alloy

Measuring element	
Type of measuring element	Bourdon tube, C-type or helical type
Materials (wetted)	Copper alloy
Leak tightness	Helium tested, leakage rate: $< 5 \cdot 10^{-5}$ mbar l/s

Accuracy specifications	
Accuracy class	■ 2.5 ■ 1.6
Temperature error	On deviation from the reference conditions at the measuring system: $\leq \pm 0.4 \%$ per 10 °C [$\leq \pm 0.4 \%$ per 18 °F] of full scale value
Reference conditions	
Ambient temperature	+20 °C

Scale ranges

bar	
0 ... 1.6	0 ... 30
0 ... 2	0 ... 35
0 ... 2.5	0 ... 40
0 ... 4	0 ... 60
0 ... 6	0 ... 70
0 ... 7	0 ... 100
0 ... 10	0 ... 140
0 ... 12	0 ... 160
0 ... 14	0 ... 200
0 ... 16	0 ... 250
0 ... 20	0 ... 315
0 ... 25	0 ... 400
0 ... 28	-

kg/cm ²	
0 ... 1.6	0 ... 30
0 ... 2	0 ... 35
0 ... 2.5	0 ... 40
0 ... 4	0 ... 60
0 ... 6	0 ... 70
0 ... 7	0 ... 100
0 ... 10	0 ... 140
0 ... 12	0 ... 160
0 ... 14	0 ... 200
0 ... 16	0 ... 250
0 ... 20	0 ... 315
0 ... 25	0 ... 350
0 ... 28	0 ... 400

kPa	
0 ... 160	0 ... 3,000
0 ... 200	0 ... 4,000
0 ... 250	0 ... 6,000
0 ... 300	0 ... 7,000
0 ... 400	0 ... 10,000
0 ... 600	0 ... 14,000
0 ... 700	0 ... 16,000
0 ... 1,000	0 ... 20,000
0 ... 1,400	0 ... 25,000
0 ... 1,600	0 ... 31,500
0 ... 2,500	0 ... 40,000

MPa	
0 ... 0.16	0 ... 4
0 ... 0.25	0 ... 6
0 ... 0.4	0 ... 7
0 ... 0.6	0 ... 14
0 ... 1	0 ... 16
0 ... 1.6	0 ... 20
0 ... 2	0 ... 25
0 ... 2.5	0 ... 31.5
0 ... 3	0 ... 40

psi	
0 ... 30	0 ... 600
0 ... 60	0 ... 800
0 ... 100	0 ... 1,000
0 ... 160	0 ... 1,500
0 ... 200	0 ... 2,000
0 ... 250	0 ... 3,000
0 ... 300	0 ... 4,000
0 ... 400	0 ... 6,000
0 ... 500	-

Vacuum and compound scale ranges

bar	
-0.6 ... 0	-1 ... +30
-1 ... 0	-

kPa	
-100 ... 0	-

psi	
-30 inHg ... 0	-

kg/cm ²	
-0.6 ... 0	-1 ... 0

MPa	
-0.06 ... 0	-0.1 ... 0

→ Other scale ranges on request

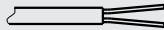
Further details on: scale ranges		
Unit	bar psi kg/cm² MPa kPa	
	→ Other units on request	
Dial		
Scale layout	Single scale Dual scale	
Scale colour	Single scale	Black
	Dual scale	Black/red
Material	Aluminium	
Customer-specific version	→ Other scales, e.g. with red mark, circular arcs or circular sectors, on request	
Instrument pointer	Plastic, black	

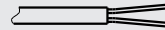
Process connection	
Standard	EN 837 ANSI/B1.20.1 ISO 7
Size	
EN 837-1	G ½ B, male thread G ¼ B, male thread M10 x 1, male thread
ANSI/B1.20.1	⅜ NPT, male thread ¼ NPT, male thread
ISO 7	R ⅜, male thread R ¼, male thread
Materials (wetted)	
Measuring element	Copper alloy

→ Other process connections on request

Output signal	
Type	■ 1 PNP or NPN transistor output ■ 2 PNP or NPN transistor outputs ■ 1 PNP or NPN transistor output + 4 ... 20 mA, 2-wire analogue output
Switching functions	Normally closed (NC) or normally open (NO)
Switch point setting	Set pointer factory-set, fixed within scale range
Setting range	5 ... 95 % of span
Distance between switch points	With a version with 2 contacts, these must not be set to the same point. The required offset is approx. 15 % of the span.
Switching current	≤ 1 A, short-circuit-proof
Supply voltage	DC 12 ... 32 V

Electrical connection	
Connection type	Cable
Wire cross-section	0.14 mm ² [AWG 26]
Cable diameter	4 mm [0.16 in]
Ingress protection	IP67
Cable length	2 m [0.08 in]
Short-circuit resistance	Short-circuit-proof
Material	PVC

Cable outlet, 1 contact / 1 contact + analogue output		
	U+	Red
	SP1 / S+	Orange
	GND	Black

Cable outlet, 2 contacts		
	U+	Red
	SP1	Orange
	SP2	Brown
	GND	Black

Legend

U+ Positive power supply terminal
 SP1 Normally open / normally closed for switch contact 1
 SP2 Normally open / normally closed for switch contact 2
 S+ Analogue output

Operating conditions	
Medium temperature range	≤ +60 °C [+140 °F]
Ambient temperature range	-20 ... +60 °C [-4 ... +140 °F]
Storage temperature range	-40 ... +70 °C [-40 ... +158 °F]
Pressure limitation	
Steady	¾ x full scale value
Fluctuating	⅔ x full scale value
Short time	Full scale value
Ingress protection per IEC/EN 60529	IP65

Approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	RoHS directive	
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

Optional approvals

Logo	Description	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan

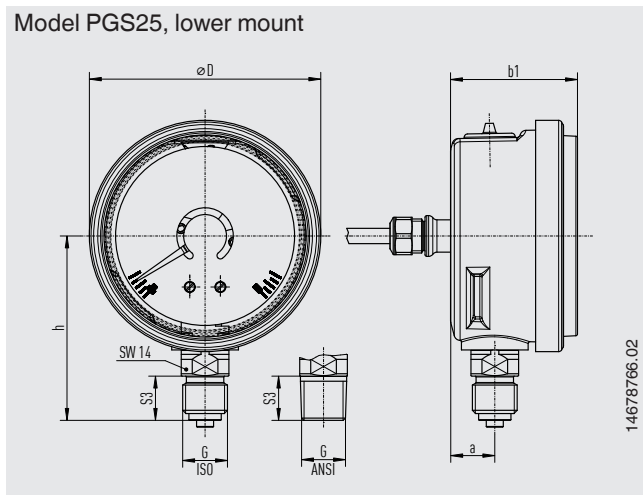
Certificates (option)

Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

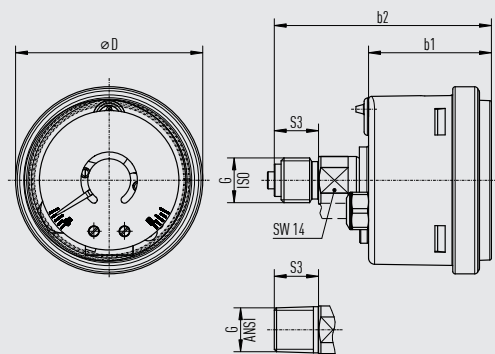
Dimensions in mm [in]

Model PGS25, lower mount



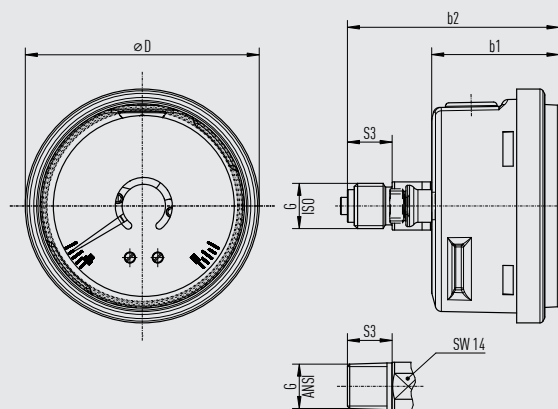
NS	G	Dimensions in mm [in]					Weight in g [oz]
		D	h	$b1 \pm 0.5$ [± 0.02]	a	S3	
50 [2"]	G ½ B	55 [2.17]	45 [1.77]	36 [1.42]	12 [0.47]	10 [0.39]	Approx. 200 [7.05]
	G ¼ B	55 [2.17]	48 [1.89]	36 [1.42]	12 [0.47]	13 [0.51]	Approx. 200 [7.05]
	M10 x 1	55 [2.17]	45 [1.77]	36 [1.42]	12 [0.47]	10 [0.39]	Approx. 200 [7.05]
	½ NPT	55 [2.17]	45 [1.77]	36 [1.42]	12 [0.47]	10 [0.39]	Approx. 200 [7.05]
	¼ NPT	55 [2.17]	48 [1.89]	36 [1.42]	12 [0.47]	13 [0.51]	Approx. 200 [7.05]
	R ½	55 [2.17]	45 [1.77]	36 [1.42]	12 [0.47]	10 [0.39]	Approx. 200 [7.05]
	R ¼	55 [2.17]	48 [1.89]	36 [1.42]	12 [0.47]	13 [0.51]	Approx. 200 [7.05]
63 [2 ½"]	G ½ B	68 [2.68]	51 [2.01]	37 [1.46]	13 [0.51]	10 [0.39]	Approx. 300 [10.58]
	G ¼ B	68 [2.68]	54 [2.13]	37 [1.46]	13 [0.51]	13 [0.51]	Approx. 300 [10.58]
	M10 x 1	68 [2.68]	51 [2.01]	37 [1.46]	13 [0.51]	10 [0.39]	Approx. 300 [10.58]
	½ NPT	68 [2.68]	51 [2.01]	37 [1.46]	13 [0.51]	10 [0.39]	Approx. 300 [10.58]
	¼ NPT	68 [2.68]	54 [2.13]	37 [1.46]	13 [0.51]	13 [0.51]	Approx. 300 [10.58]
	R ½	68 [2.68]	51 [2.01]	37 [1.46]	13 [0.51]	10 [0.39]	Approx. 300 [10.58]
	R ¼	68 [2.68]	54 [2.13]	37 [1.46]	13 [0.51]	13 [0.51]	Approx. 300 [10.58]

Model PGS25, NS 50 [2"], centre back mount



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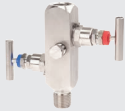
Model PGS25, NS 63 [2 ½"], centre back mount



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NS	G	Dimensions in mm [in]				Weight in g [oz]
		D	$b_1 \pm 0.5 [\pm 0.02]$	$b_2 \pm 1 [\pm 0.04]$	S_3	
50 [2"]	G ½ B	55 [2.17]	36 [1.42]	61 [2.40]	10 [0.39]	Approx. 200 [7.05]
	G ¼ B	55 [2.17]	36 [1.42]	64 [2.52]	13 [0.51]	Approx. 200 [7.05]
	M10 x 1	55 [2.17]	36 [1.42]	61 [2.40]	10 [0.39]	Approx. 200 [7.05]
	½ NPT	55 [2.17]	36 [1.42]	61 [2.40]	10 [0.39]	Approx. 200 [7.05]
	¼ NPT	55 [2.17]	36 [1.42]	64 [2.52]	13 [0.51]	Approx. 200 [7.05]
	R ½	55 [2.17]	36 [1.42]	61 [2.40]	10 [0.39]	Approx. 200 [7.05]
	R ¼	55 [2.17]	36 [1.42]	64 [2.52]	13 [0.51]	Approx. 200 [7.05]
63 [2 ½"]	G ½ B	68 [2.68]	37 [1.46]	58.5 [2.30]	10 [0.39]	Approx. 300 [10.58]
	G ¼ B	68 [2.68]	37 [1.46]	61.5 [2.42]	13 [0.51]	Approx. 300 [10.58]
	M10 x 1	68 [2.68]	37 [1.46]	58.5 [2.30]	10 [0.39]	Approx. 300 [10.58]
	½ NPT	68 [2.68]	37 [1.46]	58.5 [2.30]	10 [0.39]	Approx. 300 [10.58]
	¼ NPT	68 [2.68]	37 [1.46]	61.5 [2.42]	13 [0.51]	Approx. 300 [10.58]
	R ½	68 [2.68]	37 [1.46]	58.5 [2.30]	10 [0.39]	Approx. 300 [10.58]
	R ¼	68 [2.68]	37 [1.46]	61.5 [2.42]	13 [0.51]	Approx. 300 [10.58]

Accessories and spare parts

Model	Description	
	910.17	Seals → See data sheet AC 09.08
	910.15	Syphons → See data sheet AC 09.06
	910.13	Overpressure protector → See data sheet AC 09.04
	IV1	Needle valve and multiport needle valve → See data sheet AC 09.22
	IV2	Block-and-bleed valve → See data sheet AC 09.19

Ordering information

Model / Nominal size / Contact model / Contact version /
 Scale range / Connection location / Process connection /
 Options

Configurator



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