

Diaphragm pressure gauge with switch contacts

For the process industry, up to 10-fold overload safety, max. 40 bar

Models PGS43.100, PGS43.160

WIKA data sheet PV 24.03



for further approvals,
see page 12

switchGAUGE

Applications

- Control and regulation of industrial processes at measuring locations with increased overload and scale ranges from 0 ... 25 mbar
- Monitoring of plants and switching of circuits
- For gaseous and liquid, aggressive and highly viscous or contaminated media, also in aggressive environments
- Process industry: Chemical industry, petrochemical industry, power plants, mining, on-/offshore, environmental technology, machine building and general plant construction

Special features

- High reliability and long service life
- Wide choice of special materials
- Up to 4 switch contacts per instrument
- Can be used with case filling for high dynamic pressure loads or vibrations
- Instruments with inductive contacts for use in hazardous areas
- Instruments with switch contact for PLC applications

Description

Wherever the process pressure has to be indicated locally and, at the same time, circuits need to be switched, the model PGS43 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.



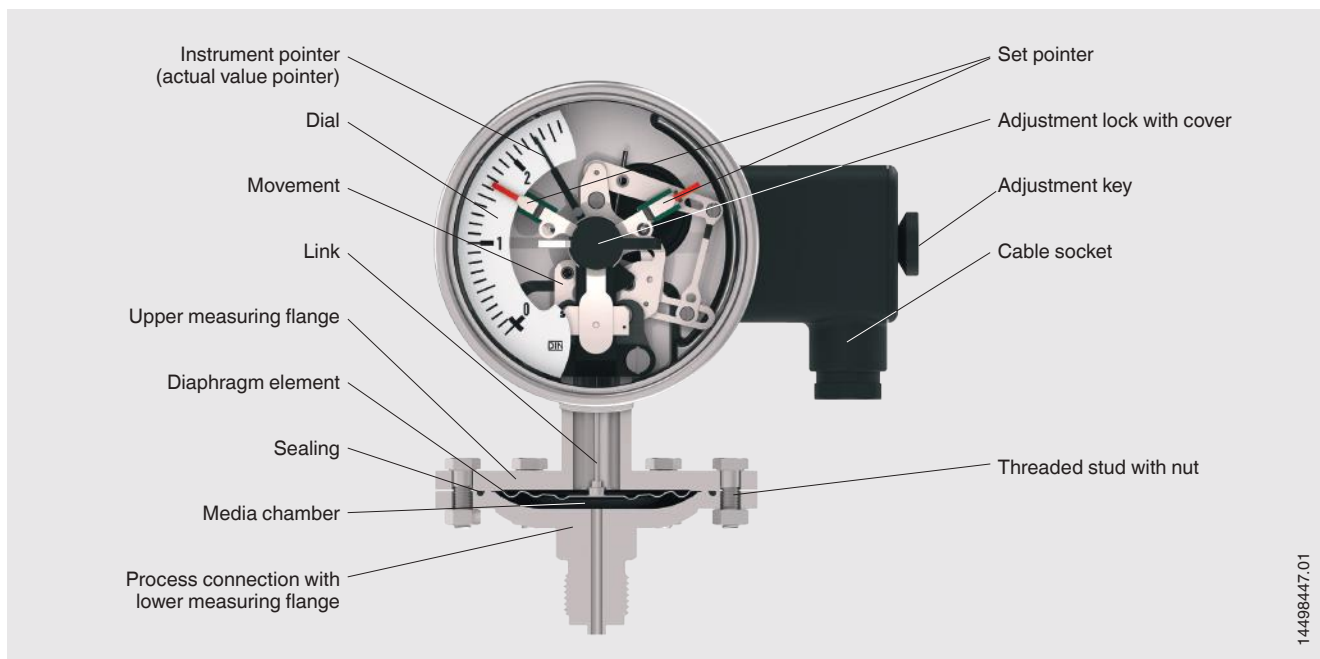
Diaphragm pressure gauge model PGS43.100 with contact model 831.21

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.

The pressure gauge is manufactured in accordance with DIN 16085 and fulfils all requirements of the relevant standards (EN 837-3) and regulations for the on-site display of the working pressure of pressure vessels.

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.

Functionality



Diaphragm elements are circular, corrugated diaphragms. They are clamped or welded together at the edge between two flanges and are subjected to the pressure on one side by the pressure in the media chamber. The resulting deflection is transmitted to the movement via the link and displayed on the dial with the instrument pointer (actual value pointer).

Switch contacts

The switch contacts are designed to allow the instrument pointer (actual value pointer) to move beyond the adjusted set pointer after contact actuation takes place, with the contact remaining actuated. The set pointer can be adjusted using a removable adjustment key (stored in the cable socket) via an adjustment lock in the window.

Overload safety

Diaphragm elements have a relatively large actuating force and, due to the annular clamping of the element, they are less sensitive to vibration in comparison with Bourdon tubes. Diaphragm elements can be subject to higher overload of up to 10 times the full scale value, up to a max. of 40 bar, through load take-up points (by bringing the diaphragm element up against the upper flange). With a display range of 0 ... 4 bar and 10-fold overload safety, a short-term overpressure of up to 40 bar is not problematic, as neither the accuracy nor the switch point setting is affected.

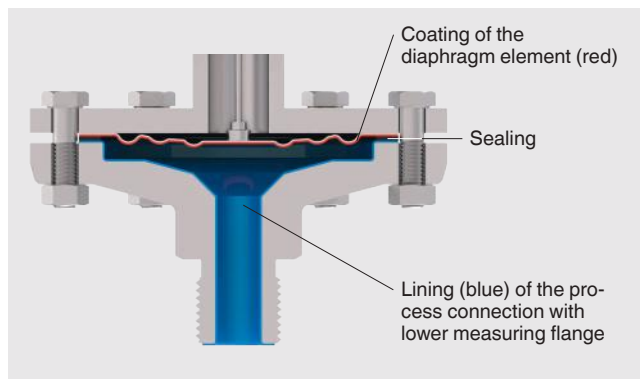
Versions for special media

Larger pressure ports, open connecting flanges and purging plugs can be integrated for measuring highly viscous, contaminated or crystallising media.

Coating / Lining of wetted parts

By selecting a coating / lining for the wetted parts, the instrument can also be used for extremely corrosive media. The materials suitable for this can either be selected for the diaphragm element only, or together with the process connection with lower measuring connection in a freely combinable manner. The selection of the material combination determines whether it is self-sealing or implemented with a sealing.

→ Available materials (wetted) see page 3



Specifications

Basic information	
Standard	
Diaphragm and capsule pressure gauges	EN 837-3
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.	
Nominal size (NS)	<ul style="list-style-type: none"> ■ Ø 100 mm [4"] ■ Ø 160 mm [6"]
Window	Laminated safety glass
Case	
Design	<ul style="list-style-type: none"> ■ Safety level “S1” per EN 837-1: With blow-out device ■ Safety level “S3” per EN 837-1: With solid baffle wall and blow-out back
Material	<ul style="list-style-type: none"> ■ Stainless steel 1.4301 (304) ■ Stainless steel 1.4571 (316 Ti)
Case filling	<ul style="list-style-type: none"> ■ Without ■ Silicone oil M50 ¹⁾ Instruments with case filling with compensating valve to vent case.
Movement	Stainless steel

1) Ingress protection IP65 for instruments with case filling

Measuring element	
Type of measuring element	Diaphragm element
Materials (wetted)	
Diaphragm element	<ul style="list-style-type: none"> ■ Stainless steel 316L, for span ≤ 0.25 bar ■ NiCr alloy (Inconel), for span > 0.25 bar
Process connection with lower measuring flange	Stainless steel 316L
Coating / Lining ^{1) 2)}	<ul style="list-style-type: none"> ■ Without ■ PTFE ■ Hastelloy ■ Monel ■ Tantalum ■ Gold (only for diaphragm element) Other materials on request
Sealing ³⁾	FPM/FKM

1) Diaphragm elements and process connections with lower measuring flanges can be coated / lined with various materials.

→ See page 2

2) Accuracy class 2.5 with selection of a coating / lining.

3) The selection of the material combination determines whether it is self-sealing or implemented with a sealing.

Accuracy specifications	
Accuracy class	<ul style="list-style-type: none"> ■ 1.6 ¹⁾ ■ 2.5 ^{2) 3)}
Temperature error	On deviation from the reference conditions at the measuring system: ≤ ±0.8 %/10 K of respective full scale value
Switch hysteresis	Depending on the type of contact used (→ See page 6)
Reference conditions	
Ambient temperature	+20 °C

1) After feasibility test, if necessary, accuracy class 1.0 is possible.

2) Accuracy class 2.5 with smallest scale range. Depending on the built-in type of contact, 0 ... 25 mbar or 0 ... 40 mbar.

3) Accuracy class 2.5 with selection of a coating / lining.

Scale ranges

Scale range	Overload safety ¹⁾	Vacuum-resistant to -1 bar
mbar		
0 ... 25	■ 125 ■ 250	Selectable
0 ... 40	■ 200 ■ 400	Selectable
0 ... 60	■ 300 ■ 600	Selectable
0 ... 100	■ 500 ■ 1,000	Selectable
0 ... 160	■ 800 ■ 1,600	Selectable
0 ... 250	■ 1,250 ■ 2,500	Selectable
0 ... 400	■ 2,000 ■ 4,000	Selectable
0 ... 600	■ 3,000 ■ 6,000	Selectable
0 ... 1,000	■ 5,000 ■ 10,000	Selectable
bar		
0 ... 0.6	■ 3 ■ 6	Selectable
0 ... 1	■ 5 ■ 10	Selectable
0 ... 1.6	■ 8 ■ 16	Selectable
0 ... 2.5	■ 12.5 ■ 25	Selectable
0 ... 4	■ 20 ■ 40	Yes
0 ... 6	■ 30 ■ 40	Yes
0 ... 10	40	Yes
0 ... 16	40	Yes
0 ... 25	40	Yes

Vacuum scale ranges ²⁾

Scale range	
mbar	bar
-25 ... 0	-0.6 ... 0
-40 ... 0	-1 ... 0
-60 ... 0	psi
-100 ... 0	-15 inHg ... 0
-160 ... 0	-30 inHg ... 0
-250 ... 0	
-400 ... 0	
-600 ... 0	
-1,000 ... 0	

1) The specified values for overload safety and vacuum resistance are only valid for versions without coating / lining.

2) Specifications for overload safety and vacuum resistance on request.

Other scale ranges on request

Scale range	Overload safety ¹⁾	Vacuum-resistant to -1 bar
psi		
0 ... 10	■ 50 ■ 100	Selectable
0 ... 15	■ 75 ■ 150	Selectable
0 ... 30	■ 150 ■ 300	Selectable
0 ... 60	■ 300 ■ 600	Yes
0 ... 100	■ 500 ■ 1,000	Yes
0 ... 150	■ 750 ■ 1,500	Yes
0 ... 160	■ 800 ■ 1,600	Yes
0 ... 200	■ 1,000 ■ 2,000	Yes
0 ... 250	■ 1,250 ■ 2,500	Yes
0 ... 300	■ 1,500 ■ 3,000	Yes
0 ... 400	■ 2,000 ■ 4,000	Yes

+/- scale ranges ²⁾

Scale range	
mbar	bar
-5 ... +20	-1 ... +0.6
-10 ... +15	-1 ... +1
-15 ... +25	-1 ... +1.5
-20 ... +40	-1 ... +2
-30 ... +30	-1 ... +3
-40 ... +60	-1 ... +5
-50 ... +200	-1 ... +9
-60 ... +100	-1 ... +10
-100 ... +150	-1 ... +15
-125 ... +125	-1 ... +24
-150 ... +250	psi
-250 ... +750	-30 inHg ... +15
-400 ... +600	-30 inHg ... +60
-500 ... +500	-30 inHg ... +100
-600 ... +400	-30 inHg ... +160
-750 ... +250	-30 inHg ... +200
-800 ... +200	-30 inHg ... +300

Further details on: Scale ranges		
Unit	<ul style="list-style-type: none"> ■ bar ■ psi ■ mbar ■ kg/cm² ■ MPa ■ kPa 	
	Other units on request	
Overload safety	<ul style="list-style-type: none"> ■ 5 x full scale value, max. 40 bar ■ 10 x full scale value, max. 40 bar 	
Vacuum resistance	<ul style="list-style-type: none"> ■ Without ■ Vacuum-resistant to -1 bar 	
Dial		
Scale layout	<ul style="list-style-type: none"> ■ 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 → Alternatively, adhesive label set for red and green circular arcs; see data sheet AC 08.03	
Instrument pointer	Aluminium, black	
Set pointer	Aluminium, red	

Process connection	
Standard	<ul style="list-style-type: none"> ■ EN 837 ■ ANSI / ASME B1.20.1 ■ ASME B16.5 ■ EN 1092-1, form B
Size ¹⁾	
EN 837	<ul style="list-style-type: none"> ■ G ½ B ■ M20 x 1.5
ANSI / ASME B1.20.1	<ul style="list-style-type: none"> ■ ½ NPT
ASME B16.5	<ul style="list-style-type: none"> ■ Open connecting flange 1" class 150, RF ■ Open connecting flange 2" class 150, RF ■ Open connecting flange 1" class 300, RF
EN 1092-1, form B	<ul style="list-style-type: none"> ■ Open connecting flange DN 25 PN 40 ■ Open connecting flange DN 50 PN 40
Materials (wetted)	
Diaphragm element	<ul style="list-style-type: none"> ■ Stainless steel 316L, for span ≤ 0.25 bar ■ NiCr alloy (Inconel), for span > 0.25 bar
Process connection with lower measuring flange	Stainless steel 316L
Coating / Lining ^{2) 3)}	<ul style="list-style-type: none"> ■ Without ■ PTFE ■ Hastelloy ■ Monel ■ Tantalum ■ Gold (only for diaphragm element)
	Other materials on request
Sealing ⁴⁾	FPM/FKM

1) Further threaded connections and open connecting flanges per ASME B16.5 / EN 1092-1 form B from DN 15 to DN 80 (→ See data sheet IN 00.10)

2) Diaphragm elements and process connections with lower measuring flanges can be coated / lined with various materials.

→ See page 2

3) Accuracy class 2.5 with selection of a coating / lining.

4) The selection of the material combination determines whether it is self-sealing or implemented with a sealing.

Other process connections on request

Output signal	
Type of contact	<ul style="list-style-type: none"> ■ Magnetic snap-action contact, model 821 (→ See page 7) ■ Inductive contact, model 831 (→ See page 8) ■ Electronic contact, model 830 E (→ See page 9) ■ Reed switch, model 851 (→ See page 10)
Switching technology	
Magnetic snap-action contact, model 821	<ul style="list-style-type: none"> ■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A
Inductive contact, model 831	<ul style="list-style-type: none"> ■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx) ■ Long service life due to non-contact sensor ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion ■ Also available in safety version
Electronic contact, model 830 E	<ul style="list-style-type: none"> ■ For direct triggering of a programmable logic controller (PLC) ■ Long service life due to non-contact sensor ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion
Reed switch, model 851	<ul style="list-style-type: none"> ■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A ■ For direct triggering of a programmable logic controller (PLC) ■ Free from wear as without contact
Contact setting	<ul style="list-style-type: none"> ■ Contact(s) adjustable, adjustment key attached to cable socket ■ Contact(s) fixed, without adjustment lock ¹⁾ ■ Adjustment lock sealable (tamper-proof) ■ Adjustment lock sealed (tamper-proof) ¹⁾ ■ Captive adjustment key with the adjustment lock connected

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"> ■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A
Number of switch contacts	
Span \geq 25 mbar ... < 40 mbar ¹⁾	Max. 2 switch contacts
Span \geq 40 mbar	Max. 4 switch contacts
Switching function	<ul style="list-style-type: none"> ■ Separate circuits with \geq 2 switches ■ Cable break monitoring with parallel resistance (47 kΩ or 100 kΩ) <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; 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 (0 ... 100 % on request)
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) Permissible switch-on and switch-off current: \leq 0.5 A
Switching voltage	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) For scale range 0 ... 25 mbar and scale range 0 ... 40 mbar with 3 or 4 contacts, accuracy class 2.5 applies

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 data sheet AC 08.01

Output signal: Inductive contact, model 831	
Type of contact	Inductive contact
Switching technology	<ul style="list-style-type: none"> ■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx) ■ Long service life due to non-contact sensor ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion ■ Also available in safety version
Number of switch contacts	
Span \geq 25 mbar ¹⁾	Max. 3 switch contacts
Switching function	Contact versions: <ul style="list-style-type: none"> ■ 831-N ■ 831-SN, safety version ²⁾ ■ 831-S1N, safety version ²⁾, inverted signal 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 (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	Depending on the isolating amplifier/control unit used (→ See data sheet AC 08.01)
Switching voltage	Depending on the isolating amplifier/control unit used (→ See data sheet AC 08.01)
Switching power	Depending on the isolating amplifier/control unit used (→ See data sheet AC 08.01)
Permissible temperature ranges in hazardous areas	
T6	-20 ... +60 °C
T5 ... T1	-20 ... +70 °C
T135°C	-20 ... +70 °C

1) For scale range 0 ... 25 mbar, accuracy class 2.5 applies

2) Only operate with a corresponding isolating amplifier (model 904.3x)

Associated isolating amplifiers/control units

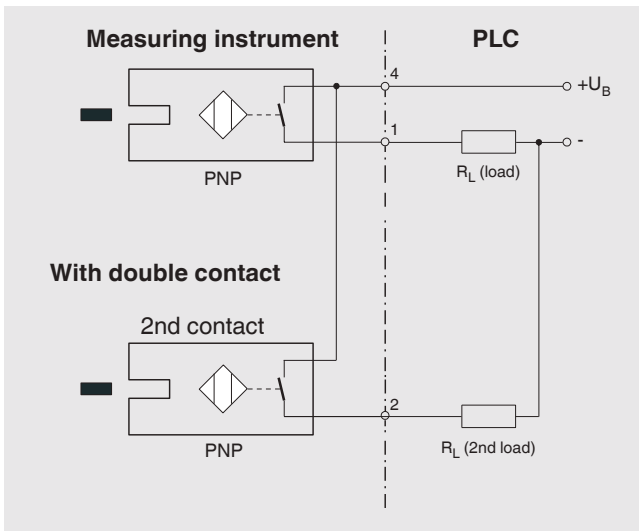
Model	Version	Ex version
904.28 KFA6 - SR2 - Ex1.W	1 contact	Yes
904.29 KFA6 - SR2 - Ex2.W	2 contacts	Yes
904.30 KHA6 - SH - Ex1	1 contact	Yes - Safety version
904.33 KFD2 - SH - Ex1	1 contact	Yes - Safety version
904.25 MSR 010-I	1 contact	No
904.26 MSR 020-I	2 contacts	No
904.27 MSR 011-I	Two-point control	No

→ For further information on switch contacts, see data sheet AC 08.01

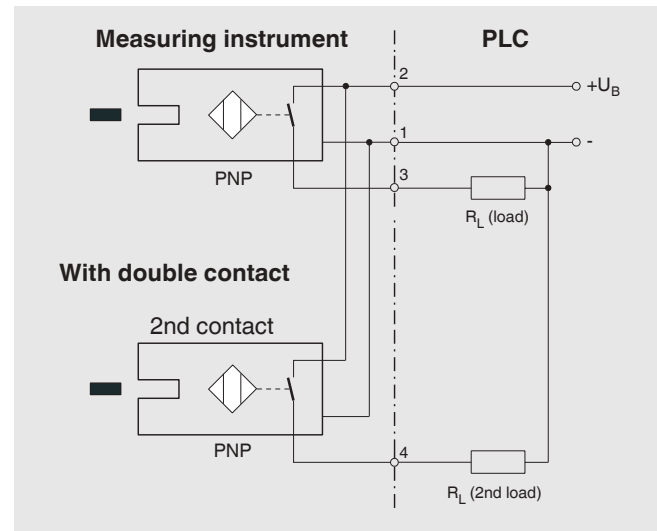
Output signal: Electronic contact, model 830 E

Type of contact	Electronic contact (PNP transistor)
Switching technology	<ul style="list-style-type: none"> ■ For direct triggering of a programmable logic controller (PLC) ■ Long service life due to non-contact sensor ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion
Number of switch contacts	
Span ≥ 25 mbar ¹⁾	Max. 3 switch contacts
Switching function	Contact versions: <ul style="list-style-type: none"> ■ 2-wire system ■ 3-wire system 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	≤ 100 mA
Switching voltage	DC 10 ... 30 V

2-wire system



3-wire system



→ For further information on switch contacts, see data sheet AC 08.01

Output signal: Reed switch, model 851	
Type of contact ^{1) 2)}	Bistable reed switch
Switching technology	<ul style="list-style-type: none"> ■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A ■ For direct triggering of a programmable logic controller (PLC) ■ Free from wear as without contact
Number of switch contacts	
NS 100	Max. 2 switch contacts
NS 160 ³⁾	1 switch contact
Switching function	<ul style="list-style-type: none"> ■ Separate circuits with ≥ 2 switches ■ Cable break monitoring with parallel resistance (47 kΩ or 100 kΩ) <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; 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 ϕ	1
Contact resistance (static)	100 m Ω
Insulation resistance	109 Ω
Breakdown voltage	DC 1,000 V
Switching time incl. contact chatter	4.5 ms

1) For scale range 0 ... 25 mbar, accuracy class 2.5 applies

2) For NS 100, the case conforms to the safety level "S3" in accordance with EN 837

3) For switching voltages AC < 50 V and DC < 75 V, switch contact not adjustable from outside

→ For further information on switch contacts, see data sheet AC 08.01

Electrical connection	
Connection type	<ul style="list-style-type: none"> ■ Cable socket, black Per VDE 0110 insulation group C/250 V Cable gland M20 x 1.5 ■ Connector (instead of cable socket)
Wire cross-section	6 screw terminals + PE for 2.5 mm ²
Cable diameter	→ See dimensions
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 range	<ul style="list-style-type: none"> ■ +100 °C [+212 °F] maximum ■ +200 °C [+392 °F] maximum
Ambient temperature range	-20 ... +60 °C [-4 ... 140 °F]
Storage temperature range	-20 ... +60 °C [-4 ... 140 °F]
Pressure limitation	
Steady	Full scale value
Fluctuating	0.9 x full scale value
Ingress protection per IEC/EN 60529	<ul style="list-style-type: none"> ■ IP54 ■ IP65 ¹⁾ ■ IP66 ²⁾ (ingress protection of the case)

- 1) Ingress protection IP65 for instruments with case filling
2) Hermetically sealed case; see data sheet IN 00.18

For hazardous areas, the permissible temperature of the contact model 831 will exclusively apply (see page 8). These must not be exceeded at the instrument either (for details, see operating instructions). If necessary, measures for cooling (e.g. syphon, instrumentation valve, etc.) have to be taken.

Other versions














- Oil- and grease-free
- For oxygen, oil- and grease-free
- Silicone-free
- Per NACE ¹⁾ MR 0175 / ISO 15156, use in H₂S-containing environments in oil and gas production
- Per NACE ¹⁾ MR 0103 / ISO 17945, metals resistant to sulfide stress cracking
- With pre-volume deflagration flame arrester ¹⁾ for connection to zone 0 (EPL Ga); model 910.21; see data sheet AC 91.02

- 1) General information about NACE standards; see data sheet IN 00.21
2) Only for instruments with Ex approval

Approvals

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

Optional approvals

Logo	Description	Region
 	EU declaration of conformity	European Union
	ATEX directive ¹⁾ Hazardous areas Without coating / lining from PTFE Gas II 2G Ex ia IIC T6/T5/T4 Gb Dust II 2D Ex ia IIIB T135°C Db With coating / lining from PTFE Gas II 2G Ex ia IIC T6/T5/T4 Gb ²⁾	
 	IECEx ¹⁾ Hazardous areas Without coating / lining from PTFE Gas Ex ia IIC T6/T5/T4 Gb Dust Ex ia IIIB T135°C Db With coating / lining from PTFE Gas Ex ia IIC T6/T5/T4 Gb ²⁾	International
 	EAC	Eurasian Economic Community
	EMC directive	
	Low voltage directive	
	Hazardous areas ¹⁾	
	Ex Ukraine Hazardous areas ¹⁾	Ukraine
	NEPSI Hazardous areas ¹⁾	China
	PAC Russia Metrology, measurement technology	Russia
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	MChS Permission for commissioning	Kazakhstan
	PAC Belarus Metrology, measurement technology	Belarus
	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan

1) Only for instruments with inductive contact model 831

2) In the area of the coating / lining from PTFE, measures must be taken, if necessary, in order to exclude electrostatic charging.

Certificates (option)

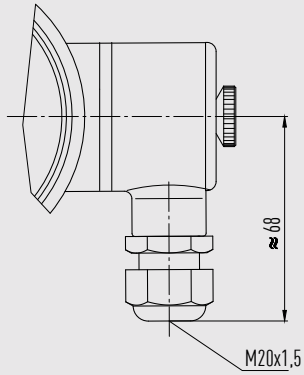
Certificates	
Certificates	<ul style="list-style-type: none"> ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
Recommended recalibration interval	1 year (dependent on conditions of use)

Approvals and certificates, see website

Dimensions in mm

Standard cable socket

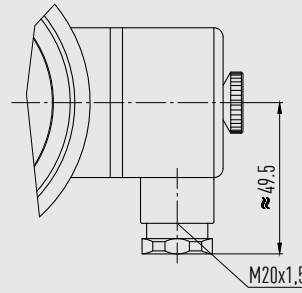
Contact models: 821 and 851



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Only use cable with a diameter of 5 ... 10 mm

Contact models: 831 and 830 E



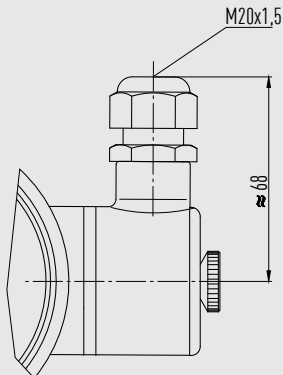
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Only use cable with a diameter of 7 ... 13 mm

NS 100 instruments with contact models 821 or 851 are delivered with the cable socket turned through 180° for measuring ranges ≤ 250 mbar or for process connections with open connecting flanges.

Cable socket, turned through 180°

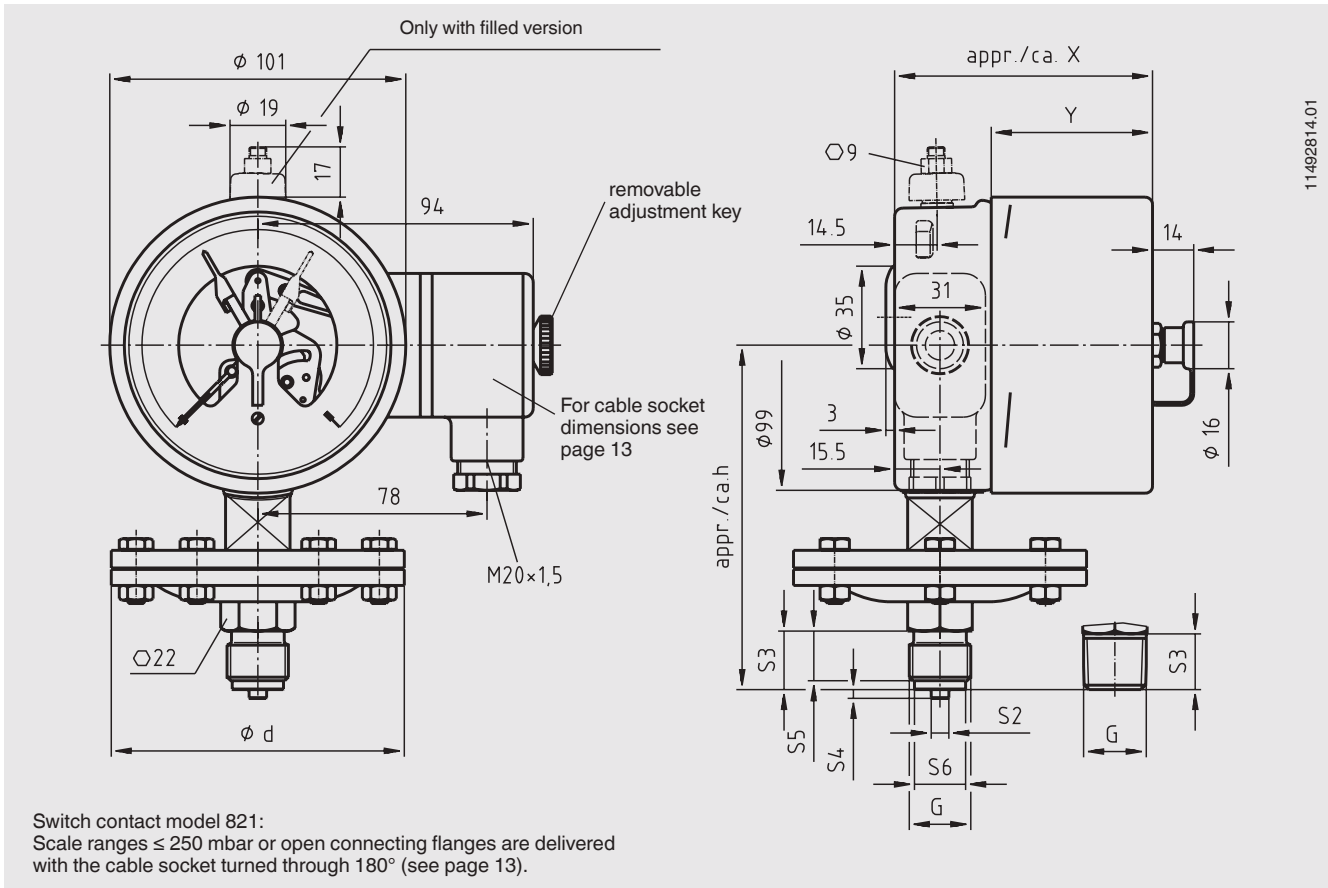
Contact models: 821 and 851



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Only use cable with a diameter of 5 ... 10 mm

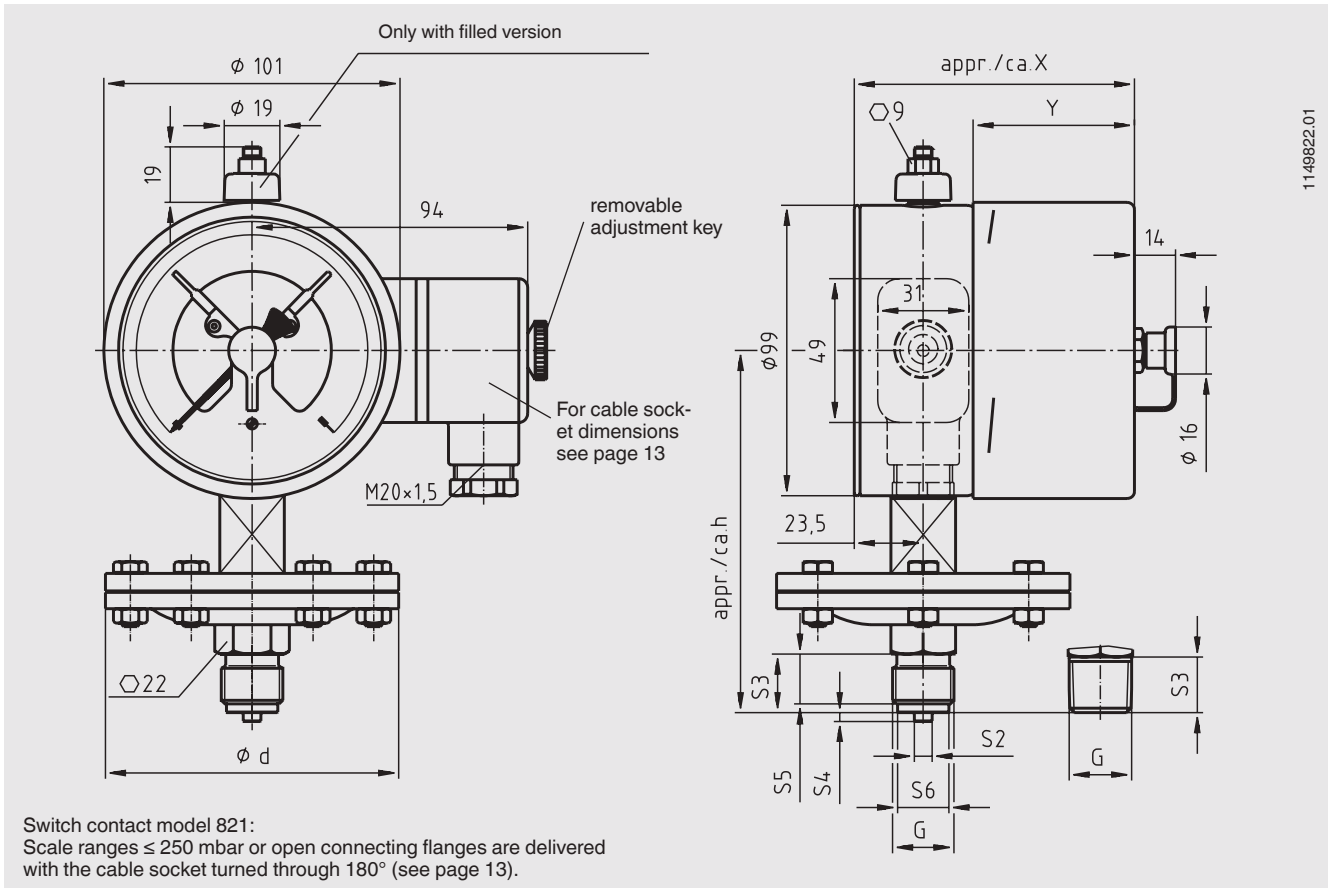
switchGAUGE model PGS43.100, safety level "S1", with switch contact model 821, 831 or 830 E



Process connection G	Scale range	Dimensions in mm						
		$\varnothing d$	h	S2	S3	S4	S5	S6
G 1/2 B	≤ 250 mbar	160	119	$\varnothing 6$	20	3	17	$\varnothing 17.5$
G 1/2 B	> 250 mbar	100	117	$\varnothing 6$	20	3	17	$\varnothing 17.5$
1/2 NPT	≤ 250 mbar	160	118	-	19	-	-	-
1/2 NPT	> 250 mbar	100	116	-	19	-	-	-

Type of contact	Dimensions in mm	
	X	Y
Single or double contact	88	55
Double (change-over) contact	113	80
Triple contact	96	63
Quadruple contact	113	80

switchGAUGE model PGS43.100, safety level "S3", with switch contact model 821, 831 or 830 E

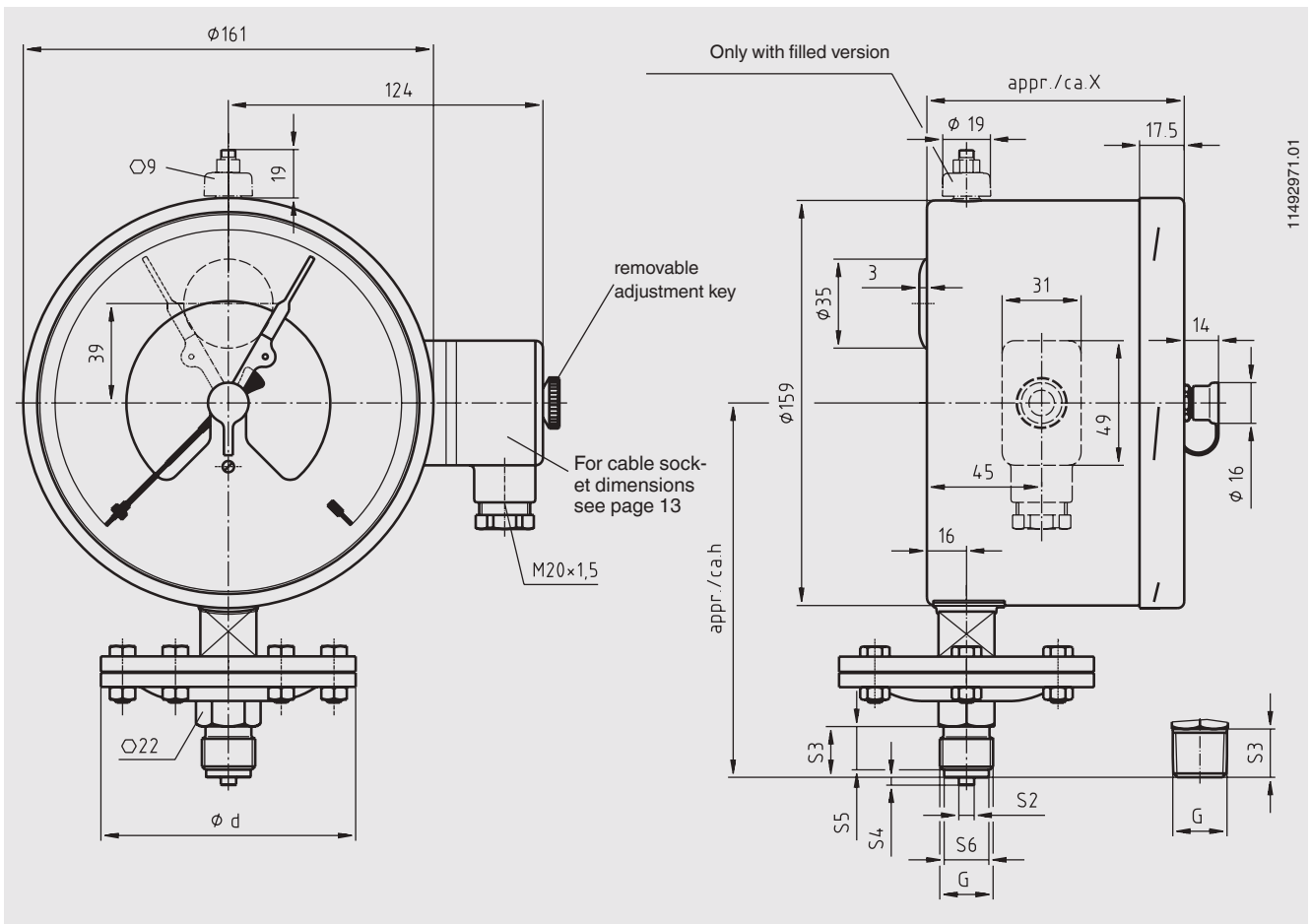


1149822.01

Process connection G	Scale range	Dimensions in mm						
		$\varnothing d$	h	S2	S3	S4	S5	S6
G 1/2 B	≤ 250 mbar	160	119	$\varnothing 6$	20	3	17	$\varnothing 17.5$
G 1/2 B	> 250 mbar	100	117	$\varnothing 6$	20	3	17	$\varnothing 17.5$
1/2 NPT	≤ 250 mbar	160	118	-	19	-	-	-
1/2 NPT	> 250 mbar	100	116	-	19	-	-	-

Type of contact	Dimensions in mm	
	X	Y
Single or double contact	88	55
Double (change-over) contact	113	80
Triple contact	96	63
Quadruple contact	113	80

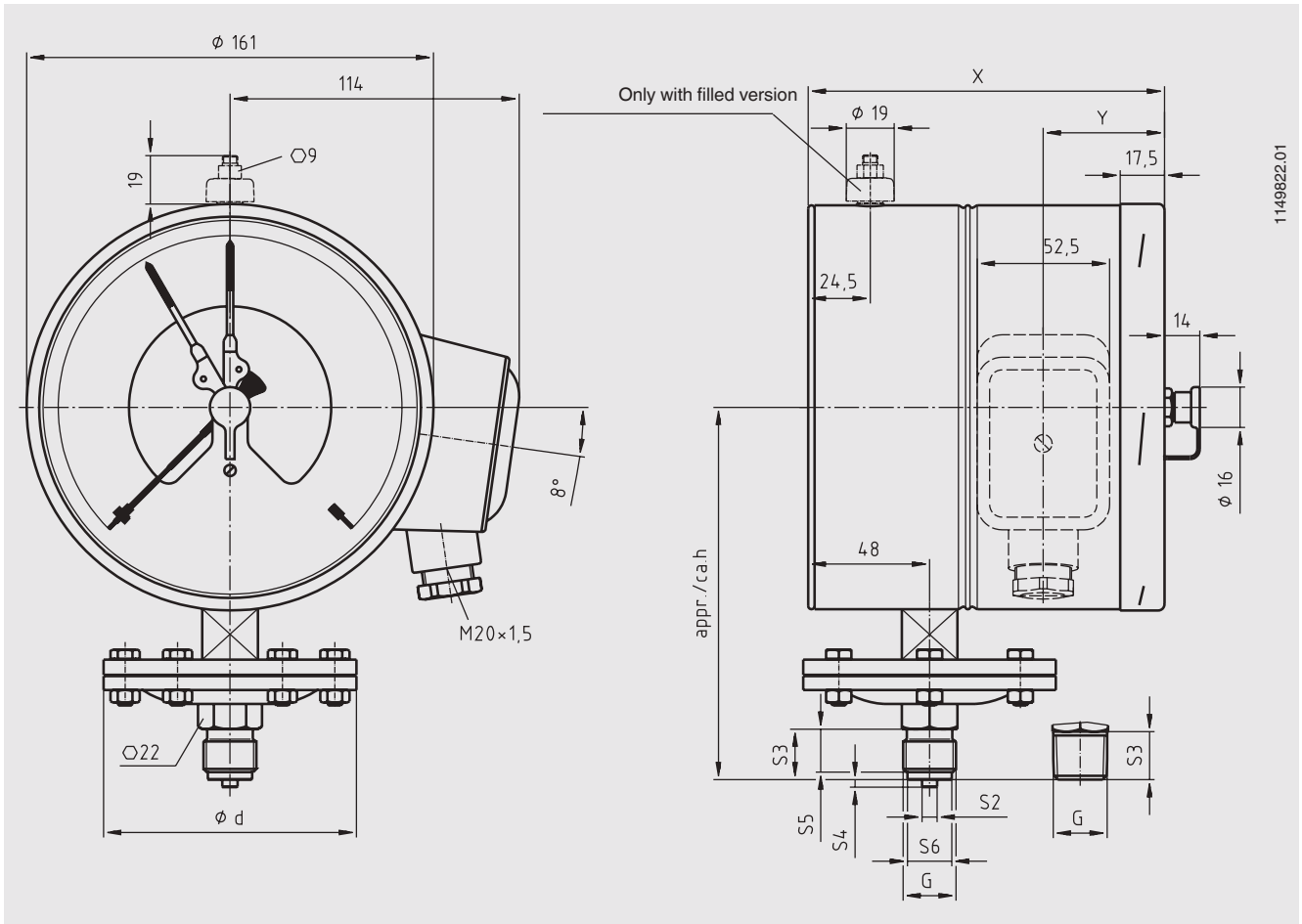
switchGAUGE model PGS43.160, safety level "S1", with switch contact model 821, 831 or 830 E



Process connection G	Scale range	Dimensions in mm						
		Ø d	h	S2	S3	S4	S5	S6
G ½ B	≤ 250 mbar	160	149	Ø 6	20	3	17	Ø 17.5
G ½ B	> 250 mbar	100	147	Ø 6	20	3	17	Ø 17.5
½ NPT	≤ 250 mbar	160	148	-	19	-	-	-
½ NPT	> 250 mbar	100	146	-	19	-	-	-

Type of contact	Dimensions in mm
	X
Single or double contact	102
Double (change-over) contact	116
Triple contact	102
Quadruple contact	116

switchGAUGE model PGS43.160, safety level "S3", with switch contact model 821, 831 or 830 E

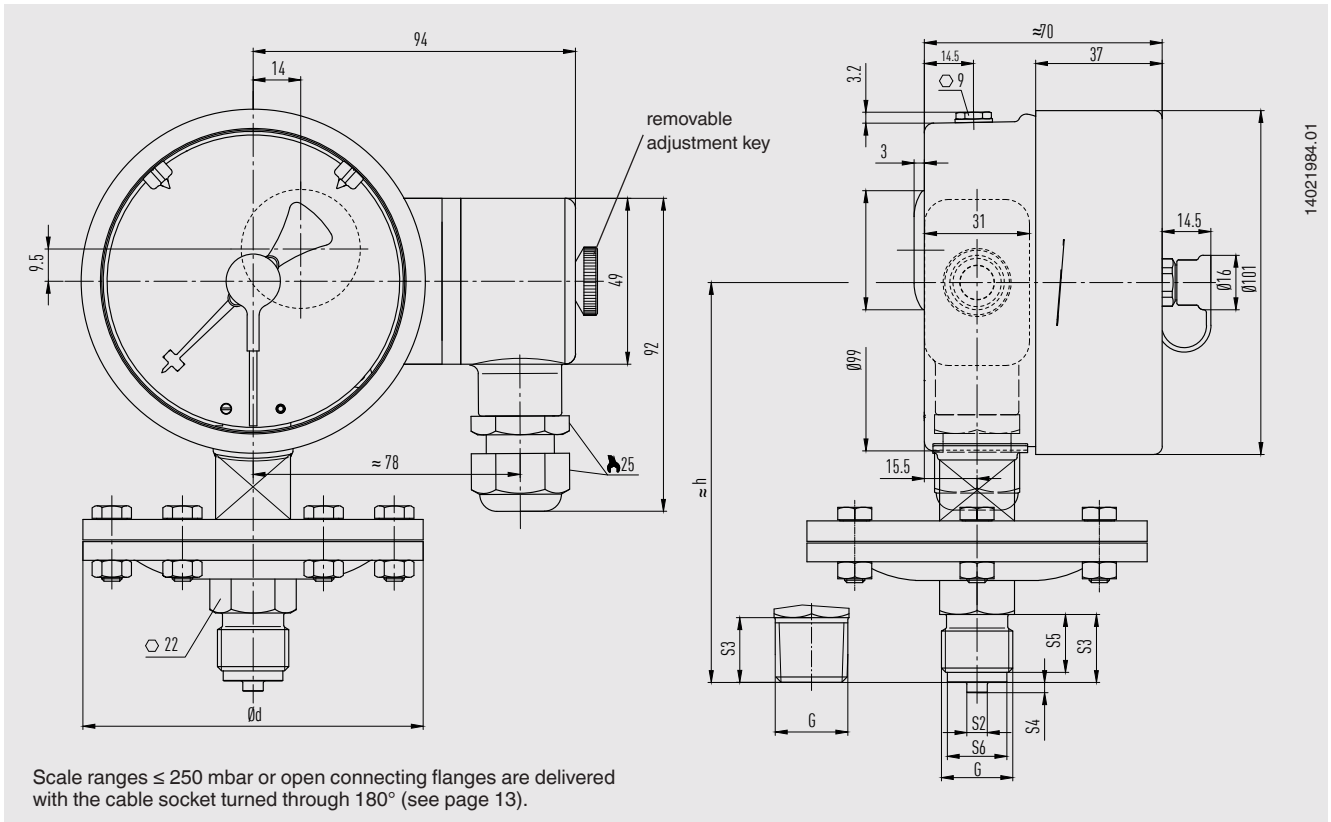


1149822.01

Process connection G	Scale range	Dimensions in mm						
		Ø d	h	S2	S3	S4	S5	S6
G ½ B	≤ 250 mbar	160	149	Ø 6	20	3	17	Ø 17.5
G ½ B	> 250 mbar	100	147	Ø 6	20	3	17	Ø 17.5
½ NPT	≤ 250 mbar	160	148	-	19	-	-	-
½ NPT	> 250 mbar	100	146	-	19	-	-	-

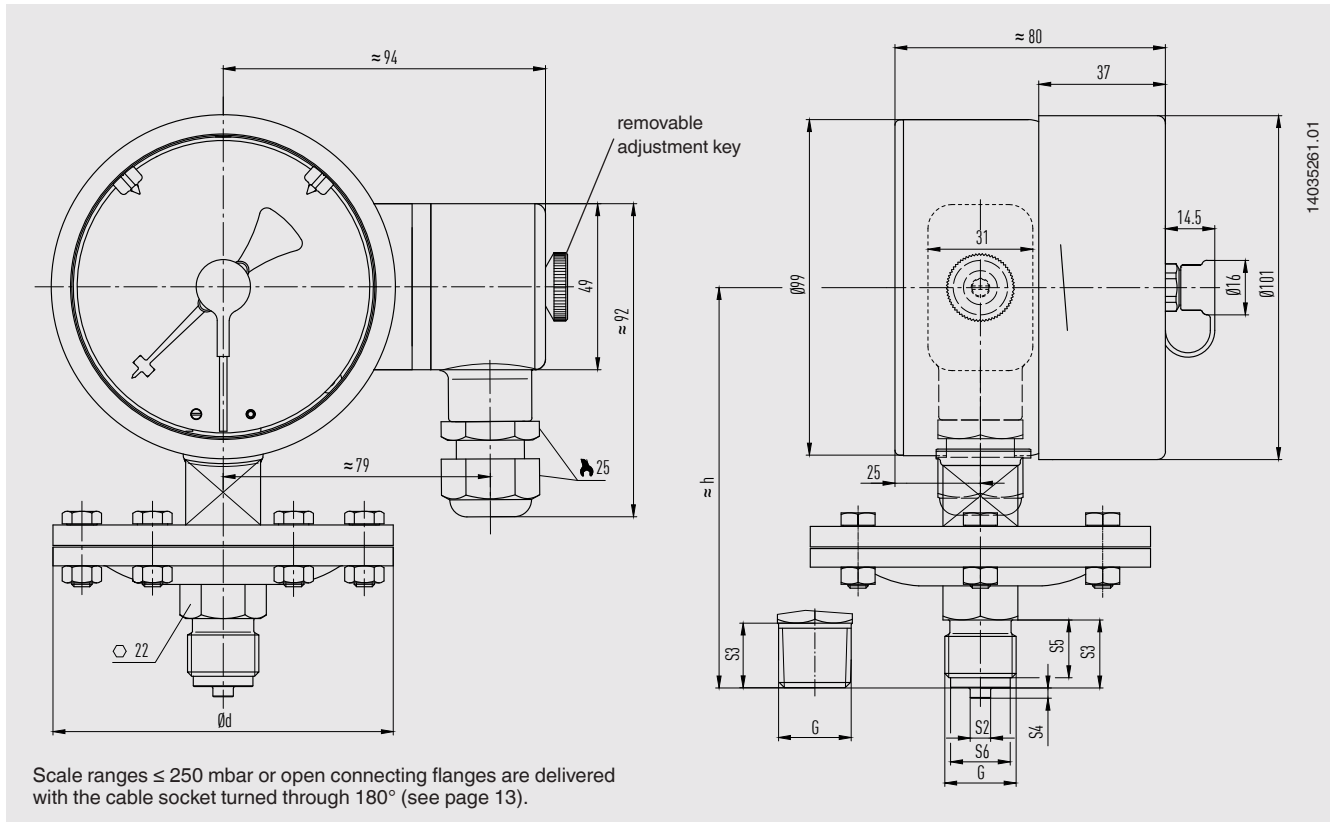
Type of contact	Dimensions in mm	
	X	Y
Single or double contact	141	48
Triple contact	153.5	60.5

switchGAUGE model PGS43.100, safety level "S1", with switch contact model 851.3 or 851.33



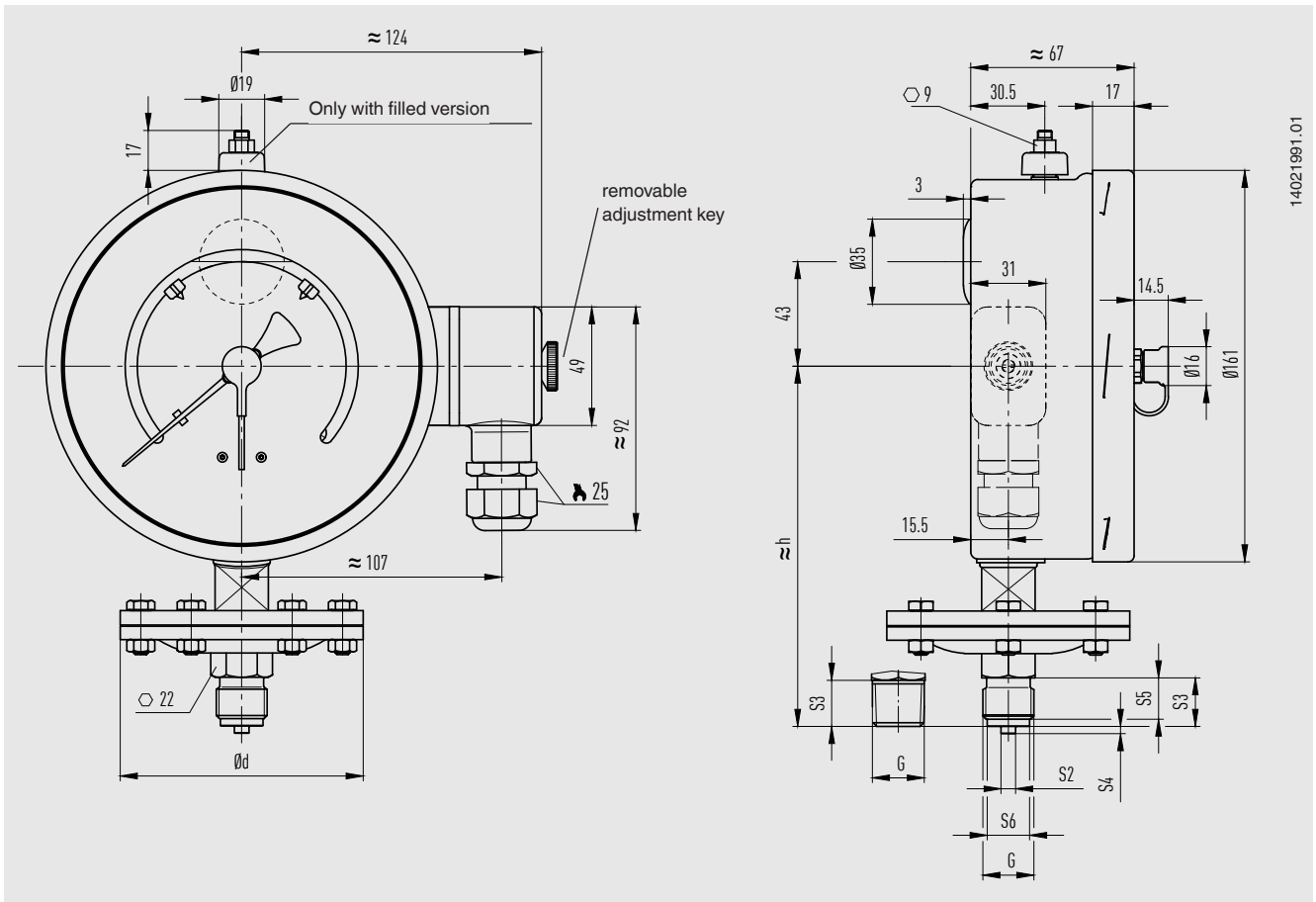
Process connection G	Scale range	Dimensions in mm						
		$\varnothing d$	h	S2	S3	S4	S5	S6
G 1/2 B	≤ 250 mbar	160	119	$\varnothing 6$	20	3	17	$\varnothing 17.5$
G 1/2 B	> 250 mbar	100	117	$\varnothing 6$	20	3	17	$\varnothing 17.5$
1/2 NPT	≤ 250 mbar	160	118	-	19	-	-	-
1/2 NPT	> 250 mbar	100	116	-	19	-	-	-

switchGAUGE model PGS43.100, safety level "S3", with switch contact model 851.3 or 851.33



Process connection G	Scale range	Dimensions in mm						
		$\varnothing d$	h	S2	S3	S4	S5	S6
G ½ B	≤ 250 mbar	160	119	$\varnothing 6$	20	3	17	$\varnothing 17.5$
G ½ B	> 250 mbar	100	117	$\varnothing 6$	20	3	17	$\varnothing 17.5$
½ NPT	≤ 250 mbar	160	118	-	19	-	-	-
½ NPT	> 250 mbar	100	116	-	19	-	-	-

switchGAUGE model PGS43.160, safety level "S1", with switch contact model 851.3 or 851.33



Process connection G	Scale range	Dimensions in mm						
		Ø d	h	S2	S3	S4	S5	S6
G ½ B	≤ 250 mbar	160	149	Ø 6	20	3	17	Ø 17.5
G ½ B	> 250 mbar	100	147	Ø 6	20	3	17	Ø 17.5
½ NPT	≤ 250 mbar	160	148	-	19	-	-	-
½ NPT	> 250 mbar	100	146	-	19	-	-	-

Accessories and spare parts

Model	Description	Data sheet
910.33	Adhesive label set for red and green circular arcs	AC 08.03
910.17	Sealings	AC 09.08
910.15	Syphons	AC 09.06
910.32	Cooling element	AC 09.21
IV20	Block-and-bleed valve, 2-valve, square version	AC 09.19
IV21	Block-and-bleed valve, 2-valve, flat form	AC 09.19

Ordering information

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

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