

Differential pressure gauge with switch contacts For the process industry Models DPGS43HP.1x0, high overload safety up to 650 bar [9,425 psi]

WIKA data sheet PV 27.13



For further approvals,
see page 11

switchGAUGE

Applications

- Control and regulation of processes
- Monitoring of plants and switching of circuits
- For measuring locations with a high differential pressure overload and/or high operating pressures (static pressures), also in aggressive environments
- Easy-to-read, analogue on-site indication needing no auxiliary power
- Pump monitoring and control, filter monitoring, level measurement on closed vessels

Special features

- High operating pressure (static pressure) and high overload safety, selectable up to 40, 100, 250, 400 or 650 bar [580, 1,450, 3,625, 5,800 or 9,425 psi]
- Hydraulic cushioning protection against rapid pressure changes
- Instruments with inductive contacts for use in hazardous areas
- Instruments with switch contact for PLC applications
- QR code on dial links to instrument-specific information

Description

Wherever the process pressure has to be indicated locally and, at the same time, circuits need to be switched, the model DPGS43HP.1x0 switchGAUGE finds its use.

Switch contacts (electrical alarm contacts) make or break circuits dependent upon the pointer position of the indicating measuring instruments. 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.



Differential pressure gauge model DPGS43HP.100 with switch contact model 821.21

Configurator



Standard article



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 indication of the operating 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.

The QR code on the dial allows instrument-specific information such as the serial number, the order number, certificates and other product data to be retrieved from the internet easily and in the long term.

Specifications

Basic information	
Standard	
EN 837-3	Diaphragm and capsule pressure gauges
DIN 16003	Pressure measuring instruments for differential pressure
DIN 16085	Pressure gauges with electrical limit contact devices
→ For information on the “Selection, installation, handling and operation of pressure gauges”, see technical information IN 00.05.	
Further version	■ Oil- and grease-free ■ Oil- and grease-free for oxygen ■ Silicone-free ■ Per NACE ¹⁾ MR0175 / ISO 15156, use in H₂S-containing environments in oil and gas production ■ Per NACE ¹⁾ MR0103 / ISO 17945, metals resistant to hydrogen sulphide stress cracking ■ With pre-volume deflagration flame arrester²⁾ for mounting to zone 0 (EPL Ga); model 910.21, see data sheet AC 91.02
Nominal size (NS)	■ Ø 100 mm [4"] ■ Ø 160 mm [6"]
Window	■ Laminated safety glass ■ Polycarbonate
Connection location	Lower mount (radial)
	Other connection locations on request
Case	
Material	■ Stainless steel 1.4404 (316L) ■ Stainless steel 1.4571 (316Ti) ■ Stainless steel 1.4301 (304)
Case filling ³⁾	■ Without ■ Silicone oil
	Instruments with case filling can be vented and resealed for internal pressure equalisation.
Venting of the media chambers	
Span ≤ 0.25 bar [3.63 psi]	With venting
Span > 0.25 bar [3.63 psi]	■ Without ■ With venting
Movement	Stainless steel

1) General information about NACE standards; see data sheet IN 00.21

2) Only for instruments with Ex approval

3) Ingress protection IP65 for instruments with case filling

Measuring element		
Type of measuring element	2 diaphragm elements with transmission fluid	
Material		
Diaphragm element	Span ≤ 0.25 bar [3.63 psi]	■ Stainless steel 316L ■ Hastelloy C276 ■ Monel 2.4375
	Span > 0.25 bar [3.63 psi]	■ Stainless steel 316L / NiCr alloy (Inconel) ■ Hastelloy C276 ■ Monel 2.4375

Accuracy specifications	
Accuracy class	■ 1.6 ■ 2.5 ■ 1.0 (application test required)
Zero point setting	
Instruments with case filling	External setting
Instruments without case filling	Without
Influence of static pressure	Depending on scale range and pressure rating → See table „Influence of static pressure“
Temperature error	On deviation from the reference conditions at the measuring system: $\leq \pm 0.5 \%$ per $10 \text{ }^{\circ}\text{C}$ [$\leq \pm 0.5 \%$ per $18 \text{ }^{\circ}\text{F}$] of full scale value
Switch hysteresis	Depending on the type of contact used, see from page 6
Reference conditions	
Ambient temperature	$+20 \text{ }^{\circ}\text{C}$ [$+68 \text{ }^{\circ}\text{F}$]

Influence of static pressure

Span ¹⁾	Measuring deviation relative to the static pressure in % per 10 bar ^{2) 3)}				
	PN 40	PN 100	PN 250	PN 400	PN 650
0.06 ... 0.16 bar [0.9 ... 2.3 psi]	$\leq \pm 0.125$	$\leq \pm 0.1$	$\leq \pm 0.12$	-	-
0.25 bar [3.6 psi]	$\leq \pm 0.125$	$\leq \pm 0.15$	-	-	-
0.4 bar [5.8 psi]	$\leq \pm 0.125$	$\leq \pm 0.1$	$\leq \pm 0.1$	-	-
0.6 ... 40 bar [8.7 ... 580 psi]	$\leq \pm 0.125$	$\leq \pm 0.1$	$\leq \pm 0.06$	$\leq \pm 0.063$	$\leq \pm 0.038$

- 1) Customised scale ranges are determined after application-specific testing
2) Other measuring deviations possible for special material Monel or Hastelloy
3) Definition of the influence of static pressure per DIN 16003

Scale ranges

mbar	
0 ... 60	0 ... 1,000
0 ... 100	0 ... 1,100
0 ... 160	0 ... 1,200
0 ... 250	0 ... 1,600
0 ... 400	0 ... 2,500
0 ... 600	-

bar	
0 ... 0.25	0 ... 7
0 ... 0.4	0 ... 10
0 ... 0.6	0 ... 14
0 ... 1	0 ... 16
0 ... 1.6	0 ... 20
0 ... 2.5	0 ... 25
0 ... 4	0 ... 30
0 ... 6	0 ... 40

psi	
0 ... 10	0 ... 200
0 ... 15	0 ... 250
0 ... 30	0 ... 300
0 ... 60	0 ... 400
0 ... 100	0 ... 500
0 ... 150	0 ... 600
0 ... 160	-

kPa	
0 ... 6	0 ... 300
0 ... 10	0 ... 400
0 ... 16	0 ... 600
0 ... 25	0 ... 700
0 ... 40	0 ... 800
0 ... 60	0 ... 1,000
0 ... 70	0 ... 1,400
0 ... 100	0 ... 1,600
0 ... 160	0 ... 2,500
0 ... 200	0 ... 3,000
0 ... 250	0 ... 4,000

Vacuum and compound scale ranges

mbar	
-60 ... 0	-10 ... +50
-100 ... 0	-20 ... +80
-160 ... 0	-40 ... +120
-250 ... 0	-50 ... +50
-400 ... 0	-50 ... +200
-600 ... 0	-80 ... +80
-1,000 ... 0	-100 ... +150
-1,100 ... 0	-200 ... +600
-1,200 ... 0	-500 ... +500

bar	
-0.6 ... 0	-1 ... +5
-1 ... 0	-1 ... +7
-1 ... +1	-1 ... +9
-1 ... +1.5	-1 ... +10
-1 ... +2	-1 ... +15
-1 ... +3	-1 ... +24
-1 ... +4	-1 ... +30

psi	
-15 ... 0 inHg	-30 inHg ... +100
-30 ... 0 inHg	-30 inHg ... +160
-30 inHg ... +15	-30 inHg ... +200
-30 inHg ... +30	-30 inHg ... +300
-30 inHg ... +60	-

kPa	
-60 ... 0	-100 ... +200
-100 ... 0	-100 ... +300
-2 ... +4	-100 ... +400
-4 ... +6	-100 ... +500
-6 ... +10	-100 ... +700
-10 ... +15	-100 ... +900
-15 ... +15	-100 ... +1,000
-100 ... +100	-100 ... +1,500
-100 ... +150	-100 ... +2,400

Other scale ranges on request

Further details on: scale ranges				
Unit	■ mbar ■ bar ■ psi ■ kPa ■ MPa		■ mmH₂O ■ inH₂O ■ kg/cm² ■ oz/cm²	
	→ Other units on request			
Overload safety and max. operating pressure (static pressure)				
Pressure ratings PN 40 ... PN 400	Max. 40, 100, 250 or 400 bar [580, 1,450, 3,625 or 5,800 psi] On one, both and alternatingly on the ⊕ and ⊖ sides			
Pressure rating PN 650	Max. 400 bar [5,800 psi] on one side and alternatingly on the ⊕ and ⊖ sides Max. 650 bar [9,425 psi] on both sides on the ⊕ and ⊖ sides			
Dial				
Scale layout	■ Single scale ■ Dual scale			
Scale colour	Single scale	Black		
	Dual scale	Black/red		
Material	Aluminium			
Customer-specific version	■ Without ■ With special scale, e.g. linear pressure or square root incrementation			
	→ 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	■ EN 837-1 ■ ANSI/B1.20.1 ■ EN 61518 → For valve manifolds for an instrument hook-up, see "Accessories and spare parts".
Size	
EN 837-1	■ 2 x G ½, female thread ■ 2 x G ½ B, male thread
ANSI/B1.20.1	2 x ½ NPT, male thread
EN 61518	Flange with differential pressure connection
Restrictor	■ Without ■ Ø 0.6 mm [0.024"], stainless steel ■ Ø 0.3 mm [0.012"], stainless steel

→ Other process connections on request

Material		
Material (wetted)		
Measuring flanges with process connection	Stainless steel 316L Hastelloy C276 Monel 2.4360	
Seal	FPM/FKM Further materials on request	
Venting of the media chambers	Stainless steel 316L Hastelloy C276 Monel 2.4360	
Diaphragm element	Stainless steel 316L Hastelloy C276 Monel 2.4375	
Material (non-wetted)		
Flange connecting screws	PN 40 ... PN 100	Stainless steel
	PN 250 ... PN 650	Steel, corrosion-protected
Measuring chamber	PN 40 ... PN 100	Stainless steel, stainless steel / Monel, stainless steel / Hastelloy C276
	PN 250 ... PN 650	Stainless steel / chromium steel, stainless steel / chromium steel / Monel, stainless steel / chromium steel / Hastelloy C276
Case	Stainless steel	
Movement, bayonet bezel	Stainless steel	
Dial	Aluminium, white, black lettering	
Window	Laminated safety glass Polycarbonate	

Output signal	
Type of contact	■ Magnetic snap-action contact, model 821, see page 6 ■ Inductive contact, model 831, see page 7 ■ Electronic contact, model 830 E, see page 8 ■ Reed switch, model 851, see page 9
Switch technology	
Magnetic snap-action contact, model 821	■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A
Inductive contact, model 831	■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx) ■ Long service life due to non-contact switching ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion ■ Also available in safety version

Output signal	
Electronic contact, model 830 E	■ For direct triggering of a programmable logic controller (PLC) ■ Long service life due to non-contact switching ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion
Reed switch, model 851	■ 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) ■ Wear-free, as non-contact
Contact setting	■ 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
Switch technology	■ No control unit and no supply voltage required ■ Direct switching up to 250 V, 1 A
Number of switch contacts	Max. 3 switch contacts With measuring span < 100 mbar, max. 2 switch contacts
Switching function	■ Separate circuits with ≥ 2 switches ■ Cable break monitoring with parallel resistance (47 kΩ or 100 kΩ) The switching function of each switch is indicated by index 1, 2 or 3
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 ¹⁾
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: ≤ 0.5 A
Switching voltage ¹⁾	AC/DC 24 ... 250 V
Switching power	
Instruments without filling	≤ 30 W, ≤ 50 VA
Instruments with filling	≤ 20 W, ≤ 20 VA
Contact material	Silver-nickel, gold-plated

1) Special setting ranges on request

Recommended contact load

Switching voltage	Instruments without filling			Instruments with filling		
	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 technical information IN 00.48

Output signal: Inductive contact, model 831	
Type of contact	Inductive contact
Switch technology	■ Suitable for use in hazardous areas with corresponding control unit (model 904.xx) ■ Long service life due to non-contact switching ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion ■ Safety version available
Number of switch contacts	Max. 3 switch contacts With measuring span < 100 mbar, max. 2 switch contacts
Switching function	Contact versions: ■ 831-N ■ 831-SN, safety version ¹⁾ ■ 831-S1N, safety version ¹⁾, 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 ²⁾
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 (1st contact) or right (3rd contact) contact may not be set to the same set point as the other two contacts. The required displacement is approx. 30°, optionally to the right or to the left.
Switching current	Depending on the control unit used, see data sheet AC 08.04
Switching voltage	Depending on the control unit used, see data sheet AC 08.04
Switching power	Depending on the control unit used, see data sheet AC 08.04
Permissible temperature ranges in hazardous areas	
T6	-20 ... +60 °C
T4 ... T1	-20 ... +70 °C
T135°C	-20 ... +70 °C
Safety-related characteristic values (Ex) ³⁾	
Max. input voltage U _i	16 V
Max. input current I _i	25 mA
Max. input power P _i	64 mW
Effective internal capacitance C _i	30 nF
Effective internal inductance L _i	100 µH

1) Only operate with a corresponding control unit (model 904.3x)

2) 0 ... 100 % of span on request

3) These values refer to the 831-N inductive contact with PT2 power type; for other contact versions and switching amplifiers, see the operating instructions

Associated control units

Model	Version	Ex version
904.28 KFU8-SR-Ex1.W	1 contact	Yes
904.29 KFU8-SR-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

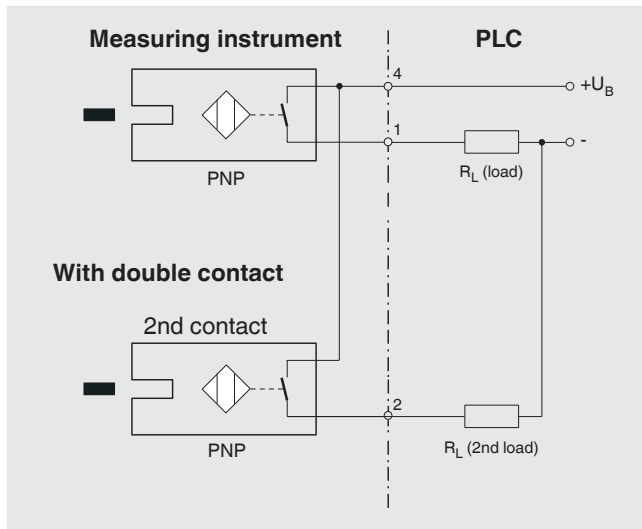
→ For further information on switch contacts, see technical information IN 00.48

Output signal: electronic contact, model 830 E

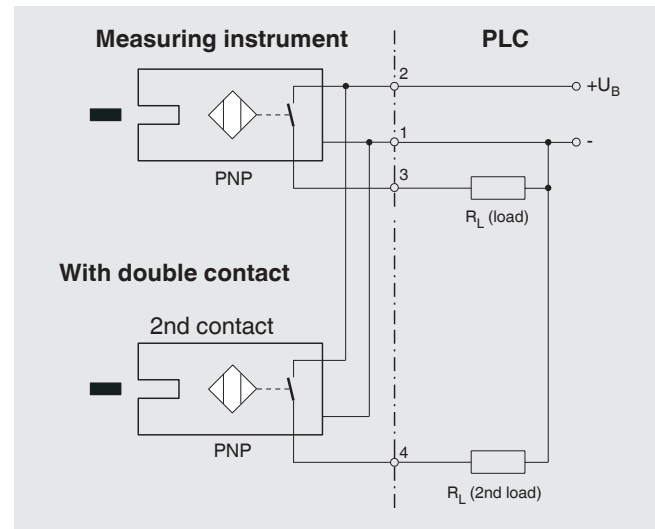
Type of contact	Electronic contact (PNP transistor)
Switch technology	■ For direct triggering of a programmable logic controller (PLC) ■ Long service life due to non-contact switching ■ Low influence on the indication accuracy ■ Fail-safe switching at high switching frequency ■ Insensitive to corrosion
Number of switch contacts	Max. 3 switch contacts With measuring span < 100 mbar, max. 2 switch contacts
Switching function	Contact versions: ■ 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 ¹⁾
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 (1st contact) or right (3rd contact) contact may not be set to the same set point as the other two 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

1) 0 ... 100 % of span on request

2-wire system



3-wire system



→ For further information on switch contacts, see technical information IN 00.48

Output signal: Reed switch, model 851	
Type of contact	Bistable reed switch
Switch technology	■ 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) ■ Wear-free, as non-contact
Number of switch contacts	
NS 100	Max. 2 switch contacts
NS 160	1 switch contact
Switching function	■ Separate circuits with ≥ 2 switches ■ Cable break monitoring with parallel resistance (47 kΩ or 100 kΩ) The switching function of this switch is indicated by index 3
Model 851.3	1 x 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 within 10 ... 90 % of span
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 $\cos \varphi$	1
Contact resistance (static)	100 m Ω
Insulation resistance	10 ⁹ Ω
Breakdown voltage	DC 1,000 V
Switching time incl. contact bounce	4.5 ms

→ For further information on switch contacts, see technical information IN 00.48

Electrical connection	
Connection type	■ Cable socket, black Per VDE 0110 insulation group C/250 V Cable gland M20 x 1.5 ■ Connector
Wire cross-section	6 screw terminals + PE for 2.5 mm ²
Cable diameter	Use cable with a diameter of 7 ... 13 mm [0.276 ... 0.512 in]
Pin assignment	The pin assignment is given on the product label of the instrument. The connection and grounding terminals are appropriately marked.
Material	PA 6 (polyamide)

Operating conditions	
Medium temperature range	■ -20 ... 100 °C [-4 ... +212 °F] ■ +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	■ IP54 ■ IP65 ¹⁾ ■ IP66 (application test required)

1) Ingress protection IP65 for instruments with case filling

Approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	Pressure Equipment Directive PS > 200 bar, module A, pressure accessory	
	EMC Directive	
	Low Voltage Directive	
	RoHS directive	

Optional approvals

Logo	Description	Region
	EU declaration of conformity	European Union
	ATEX directive ¹⁾ Hazardous areas	
	Gas II 2G Ex ia IIC T6/T5/T4 Gb	
	Dust II 2D Ex ia IIIB T135°C Db	
	IECEx ¹⁾	International
	Hazardous areas	
	Gas Ex ia IIC T6/T5/T4 Gb	
	Dust Ex ia IIIB T135°C Db	
	Ex Ukraine Hazardous areas ¹⁾	Ukraine
	NEPSI Hazardous areas ¹⁾	China
	KCs Hazardous areas ¹⁾	Korea
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

¹⁾ Only for instruments with inductive contact model 831

Certificates (option)

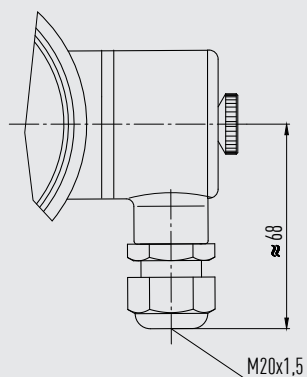
Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

Dimensions in mm

Cable socket

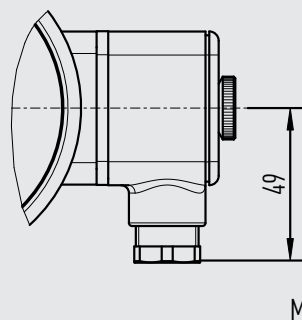
Contact models: 821, 851 and 830 E



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

14062234.01

Contact model: 831



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

14336089.01

switchGAUGE model DPGS43HP.100 with switch contact model 821, 831 or 830 E



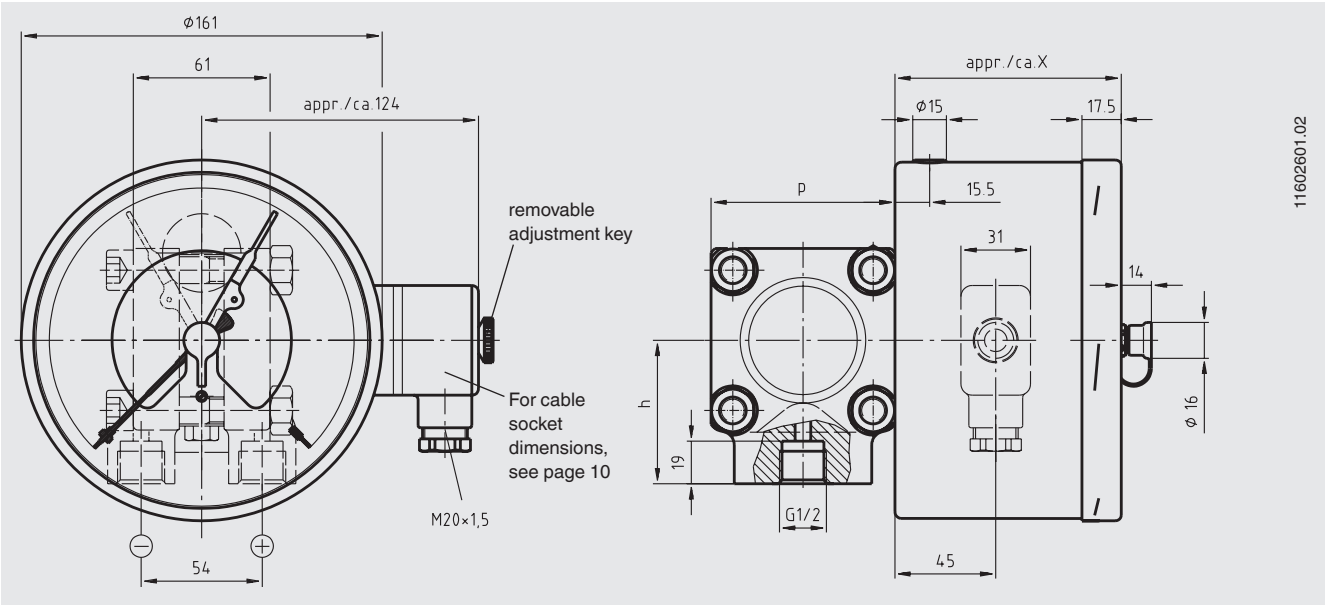
NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
100 [4"]	≤ 0.16 bar [2.3 psi]	86 [3.4]	140 [5.5]	Approx. 14 [30.8]	Approx. 14.4 [31.7]
	≥ 0.25 bar [3.6 psi]	64 [2.5]	82 [3.2]	Approx. 4.9 [10.8]	Approx. 5.3 [11.6]

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
100 [4"]	≤ 0.25 bar [3.6 psi]	86 [3.4]	140 [5.5]	Approx. 16 [35.2]	Approx. 16.4 [36.1]
	≥ 0.4 bar [5.8 psi]	64 [2.5]	82 [3.2]	Approx. 5.1 [11.2]	Approx. 5.6 [12.3]

NS	Scale range	Dimensions in mm [in]				Weight in kg [lb]	
		b	D ₁	h ±1	p □	Without filling	With filling
100 [4"]	≥ 0.4 bar [5.8 psi]	58.5 [2.3]	101 [4.0]	64 [2.5]	86 [3.4]	6.2 [13.6]	6.7 [14.7]

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switchGAUGE model DPGS43HP.160 with switch contact model 821, 831 or 830 E



Pressure ratings PN 40 ... PN 100

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≤ 0.16 bar [2.3 psi]	86 [3.4]	140 [5.5]	Approx. 14.2 [31.3]	Approx. 6.9 [15.2]
	≥ 0.25 bar [3.6 psi]	64 [2.5]	82 [3.2]	Approx. 5.5 [12.1]	Approx. 6.9 [15.2]

1) The dimensions of customised scale ranges between 0.16 bar [2.3 psi] and 0.25 bar [3.6 psi] are determined after application-specific testing.

Pressure rating PN 250

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≤ 0.25 bar [3.6 psi]	86 [3.4]	140 [5.5]	Approx. 17.4 [38.3]	Approx. 17.8 [39.2]
	≥ 0.4 bar [5.8 psi]	64 [2.5]	82 [3.2]	Approx. 6 [13.2]	Approx. 7.2 [15.8]

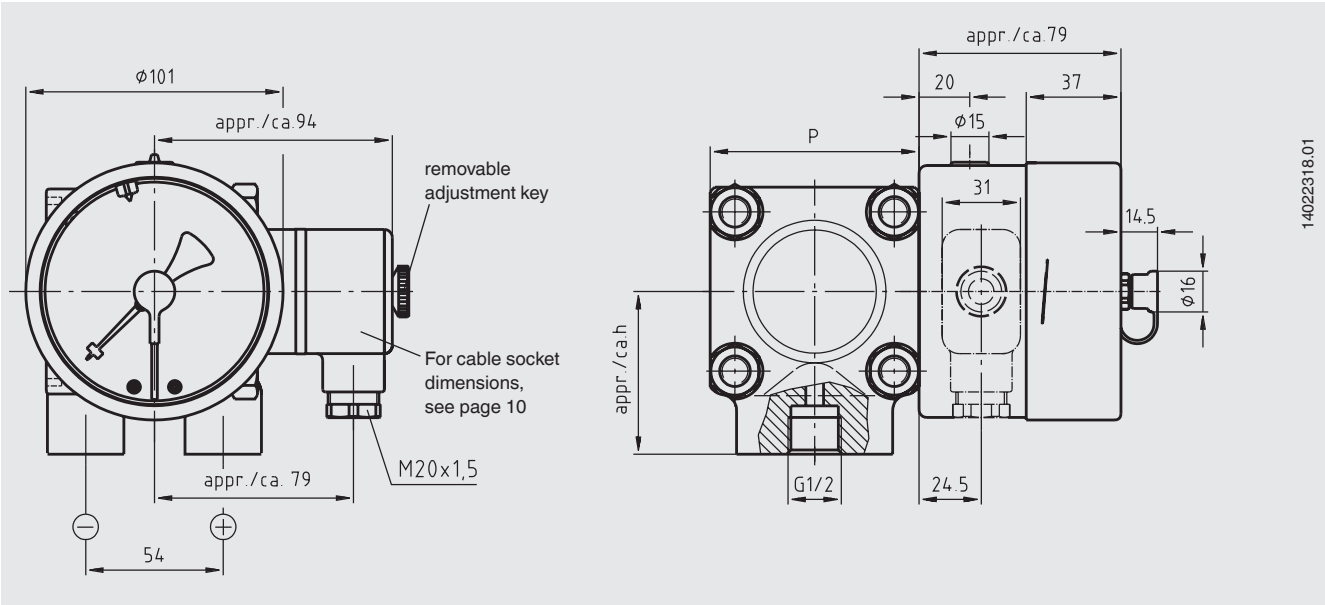
1) The dimensions of customised scale ranges between 0.25 bar [3.6 psi] and 0.4 bar [5.8 psi] are determined after application-specific testing.

Pressure ratings PN 400 ... PN 650

NS	Scale range	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≥ 0.4 bar [5.8 psi]	64 [2.5]	86 [3.4]	Approx. 7 [15.4]	Approx. 8.3 [18.2]

Type of contact	Dimensions in mm [in]
	X
Single or double contact	102 [4.02]
Double (change-over) contact	116 [4.57]
Triple contact	102 [4.02]

switchGAUGE model DPGS43HP.100 with switch contact model 851.3 or 851.33



Pressure ratings PN 40 ... PN 100

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
100 [4"]	≤ 0.16 bar [2.3 psi]	86 [3.4]	140 [5.5]	Approx. 12.1 [26.7]	Approx. 12.7 [28]
	≥ 0.25 bar [3.6 psi]	64 [2.5]	82 [3.2]	Approx. 3.6 [7.9]	Approx. 4.2 [9.3]

1) The dimensions of customised scale ranges between 0.16 bar [2.3 psi] and 0.25 bar [3.6 psi] are determined after application-specific testing.

Pressure rating PN 250

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
100 [4"]	≤ 0.25 bar [3.6 psi]	86 [3.4]	140 [5.5]	Approx. 13.1 [28.9]	Approx. 13.7 [30.2]
	≥ 0.4 bar [5.8 psi]	64 [2.5]	82 [3.2]	Approx. 3.9 [8.6]	Approx. 4.5 [9.9]

1) The dimensions of customised scale ranges between 0.25 bar [3.6 psi] and 0.4 bar [5.8 psi] are determined after application-specific testing.

Pressure ratings PN 400 ... PN 650

NS	Scale range	Dimensions in mm [in]				Weight in kg [lb]	
		b	D ₁	h ±1	p □	Without filling	With filling
100 [4"]	≥ 0.4 bar [5.8 psi]	58.5 [2.3]	101 [4.0]	64 [2.5]	86 [3.4]	4.5 [9.9]	5.1 [11.2]

Technical drawing of the 14022276.01 cable socket assembly, showing front and side views with dimensions.

Front View Dimensions:

- Overall diameter: $\varnothing 161$
- Distance from center to mounting hole center: appr. / ca 124
- Distance from center to cable socket center: appr. / ca 109
- Distance between mounting holes: 54
- Mounting hole size: M20x1,5
- Reference: For cable socket dimensions, see page 10

Side View Dimensions:

- Overall height: appr. / ca 65.5
- Distance from top to mounting hole center: 20
- Distance from mounting hole center to cable socket center: 17.5
- Mounting hole diameter: $\varnothing 15$
- Distance from center to mounting hole center: P
- Distance from center to cable socket center: 31
- Distance from center to cable socket center: 24.5
- Distance from center to cable socket center: 19
- Distance from center to cable socket center: G1/2

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≤ 0.16 bar [2.3 psi]	86 [3.4]	140 [5.5]	Approx. 12.5 [27.6]	Approx. 14.2 [31.1]
	≥ 0.25 bar [3.6 psi]	64 [2.5]	82 [3.2]	Approx. 4 [8.8]	Approx. 5.7 [12.6]

NS	Scale range ¹⁾	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≤ 0.25 bar [3.6 psi]	86 [3.4]	140 [5.5]	Approx. 13.5 [29.8]	Approx. 15.2 [33.5]
	≥ 0.4 bar [5.8 psi]	64 [2.5]	82 [3.2]	Approx. 4.3 [9.5]	Approx. 6 [13.2]

NS	Scale range	Dimensions in mm [in]		Weight in kg [lb]	
		h ±1	p □	Without filling	With filling
160 [6"]	≥ 0.4 bar [5.8 psi]	64 [2.5]	86 [3.4]	Approx. 4.9 [10.8]	Approx. 6.6 [14.6]

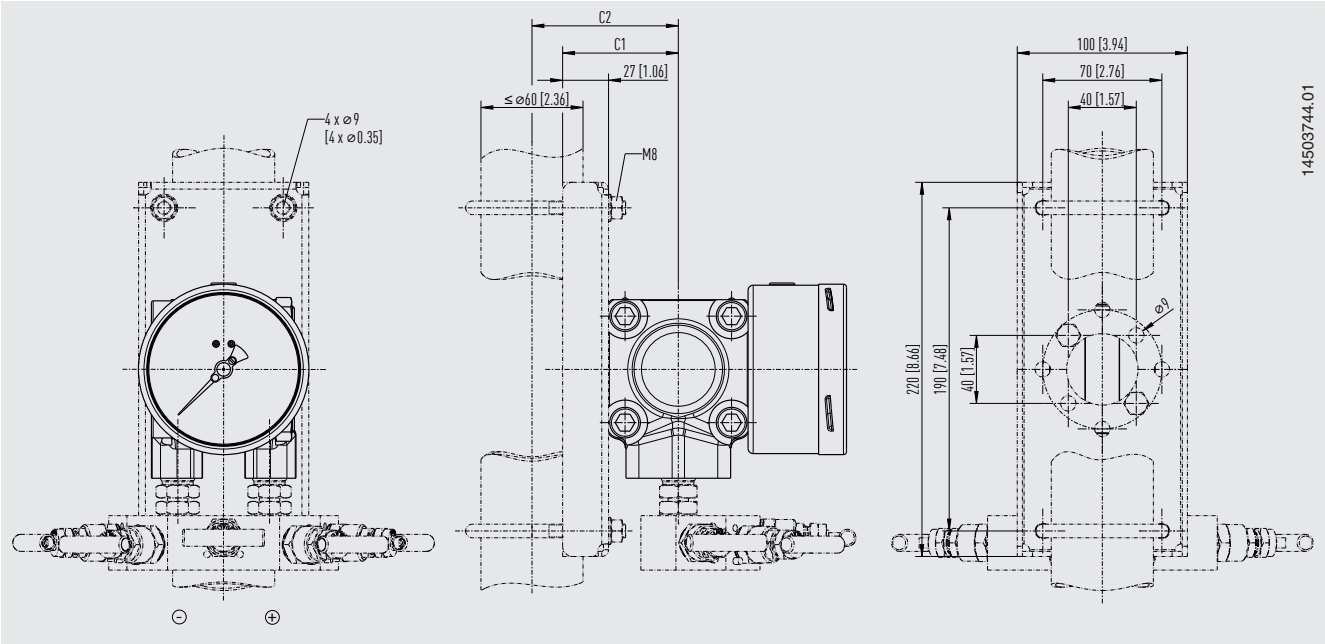
Accessories and spare parts

Model	Description	Order number
	910.33 Adhesive label set for red and green circular arcs → See data sheet AC 08.03	-
	NS 100 [4"]	14238945
	NS 160 [6"]	14228352
	910.17 Seals → See data sheet AC 09.08	On request
	910.13 Overpressure protector → See data sheet AC 09.04	On request
	IV315 3-valve manifold Process connection / Instrument connection: 2 x G 1/2, male thread / 2 x G 1/2, male nut	81640945
	3-valve manifold Process connection / Instrument connection: 2 x 1/2 NPT, male thread / 2 x G 1/2, male nut	36709683
	IV515 5-valve manifold Process connection / Instrument connection / Vent connection: 2 x G 1/2, male thread / 2 x G 1/2, male nut / 2 x G 1/4, female thread	83141757
	5-valve manifold Process connection / Instrument connection / Vent connection: 2 x 1/2 NPT, male thread / 2 x G 1/2, male nut / 2 x G 1/4, female thread	84050640
	Valve manifolds for differential pressure measuring instruments → See data sheet AC 09.23	On request
-	Instrument mounting bracket for wall or pipe mounting Steel, silver painted	2393340
	Instrument mounting bracket for wall or pipe mounting Stainless steel	2094941

Accessories

Dimensions in mm [in]

Representation with mounting bracket for wall or pipe mounting and fitted 5-valve manifold



Pressure ratings PN 40 ... PN 100

NS	Scale range ¹⁾	Dimensions in mm [in]	
		C1	C2
100 [4"]	≤ 0.16 bar [2.3 psi]	97 [3.82]	115 [4.53]
	≥ 0.25 bar [3.6 psi]	68 [2.68]	86 [3.39]
160 [6"]	≤ 0.16 bar [2.3 psi]	97 [3.82]	115 [4.53]
	≥ 0.25 bar [3.6 psi]	68 [2.68]	86 [3.39]

1) The dimensions of customised scale ranges between 0.16 bar [2.3 psi] and 0.25 bar [3.6 psi] are determined after application-specific testing.

Pressure rating PN 250

NS	Scale range ¹⁾	Dimensions in mm [in]	
		C1	C2
100 [4"]	≤ 0.25 bar [3.6 psi]	97 [3.82]	115 [4.53]
	≥ 0.4 bar [5.8 psi]	68 [2.68]	86 [3.39]
160 [6"]	≤ 0.25 bar [3.6 psi]	97 [3.82]	115 [4.53]
	≥ 0.4 bar [5.8 psi]	68 [2.68]	86 [3.39]

1) The dimensions of customised scale ranges between 0.25 bar [3.6 psi] and 0.4 bar [5.8 psi] are determined after application-specific testing.

Pressure ratings PN 400 ... PN 650

NS	Scale range	Dimensions in mm [in]	
		C1	C2
100 [4"]	≥ 0.4 bar [5.8 psi]	70 [2.76]	88 [3.46]
160 [6"]	≥ 0.4 bar [5.8 psi]	70 [2.76]	88 [3.46]

Ordering information

Model / Nominal size / Type of contact / Contact version / Scale range / Scale layout (linear pressure or square root incrementation) / Max. operating pressure (static pressure) / Process connection / Connection location / Options



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