



PRESSURE **2025**



PRESSURE SWITCHES



PS-00

Low-Cost Pressure Switch



Features

- / Settings can be made on location
- / Long mechanical life span
- / Small dimensions
- / Silver or gold contacts
- / Critical media version
(paint, grease etc.) on request

Description:

A spring-loaded membrane or (in higher ranges of pressure) a spring-loaded piston form the measurement technical basis for the Profimess' Low-Cost Pressure switch PS-00. Under the influence of pressure the operating element actuates an electrical micro-switch that is equipped with silver contacts and thus ensures a long life span. By means of a setting screw the pre-tension for the spring can be smoothly adjusted, with the result that the setpoint can be varied along entire range of setting.

Application:

Mechanical pressure switches are used in all areas where an electrical signal is required depending on the specified pressure parameters. These devices are predestined - thanks to small dimensions, high reliability and long life span – especially for applications in the construction of machines and installations. Due to excellent price to performance ratio, the PS-00 range of pressure switches are suited for OEM applications as well regardless of average to high numbers.



Technical Specifications:

Operating range /	see ordering codes
Mode of setting /	by setting screw, under pressure
Switch. hysteresis /	15...30% of set point value
Tolerance /	PS-00.1.: ± 0.2 bar PS-00.2.: ± 0.5 bar PS-00.3.: ± 3.0 bar PS-00.4.: ± 5.0 bar PS-00.5.: ± 100 mbar
max. Op. pressure /	1 x end of range
Bursting pressure /	PS-00.1.: 10 bar PS-00.2.: 20 bar PS-00.3.: 120 bar PS-00.4.: 300 bar PS-00.5.: 2 bar
Mech. Lifetime /	10 ⁶ switching cycles
max. Media temp. /	-25...+85°C
Housing /	see Table 1
Process connection /	G1/4"B for overpressure ranges, G1/8"B for neg. pressure ranges
Weight /	PS-00.1-2.: approx. 65 g PS-00.3-4.: approx. 95 g PS-00.5.: approx. 120 g

Electrical Specifications:

Reference voltage /	max. 42 V
Reference frequency /	not over 100 Hz
Switching load /	max. 100 VA
Switching function /	change-over (NO-contact or NC-contact on request)
Connection /	flat plug 3 x 6.3 x 0.8
Protection class /	IP65 on media side IP00 on clamp side

Breaking capacity	AC		DC				
Voltage up to	125 V	250 V	30 V	50 V	75 V	125 V	250 V
Resistance load	4 A	4 A	2 A	2 A	1 A	0,5 A	0,25 A
Inductive load	1 A	1 A	1 A	1 A	0,5 A	0,2 A	0,2 A

Configuration Possibilities:

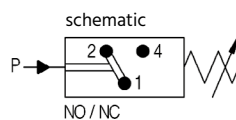
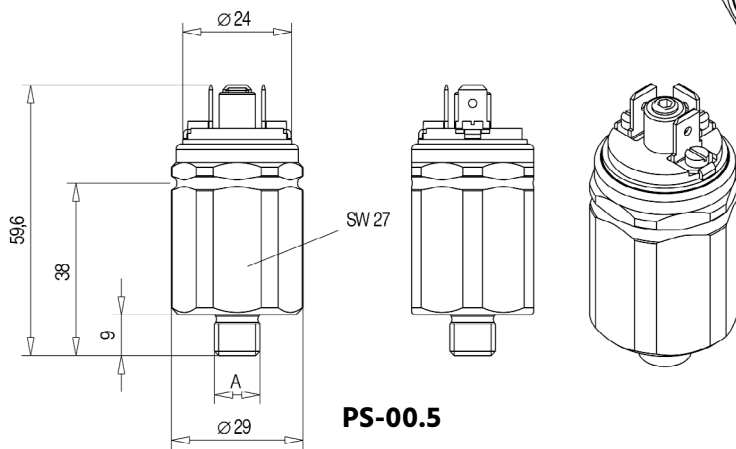
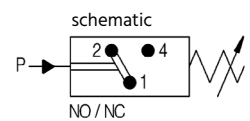
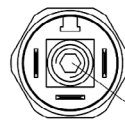
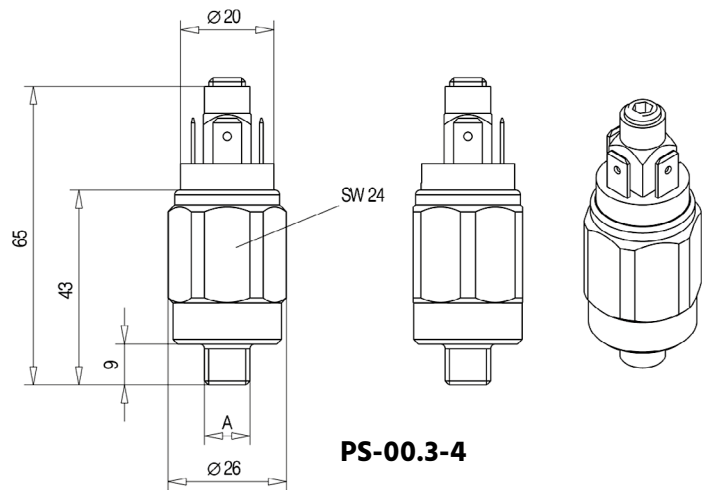
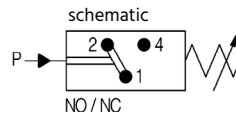
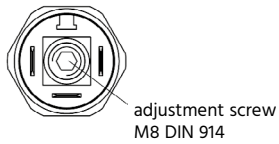
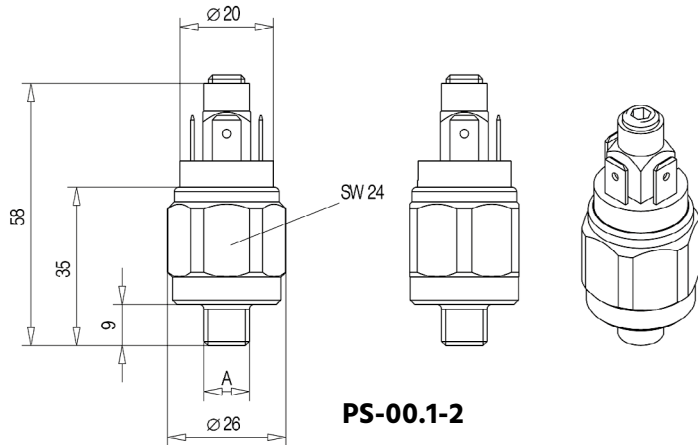
Auswahlmöglichkeit	PS-00.1	PS-00.2	PS-00.3	PS-00.4	PS-00.5
Contact silver	standard	standard	standard	standard	standard
Contact gold	option	option	option	option	option
Membrane material NBR	standard	standard	-	-	standard
Membrane material Viton	option	option	-	-	option
Membrane material EPDM	option	option	-	-	option
Seal material UR	-	-	standard	standard	-
Seal material Viton	-	-	option	option	-
Housing steel zinc plated	standard	standard	standard	standard	-
Housing st. steel 1.4305	option	option	option	option	-
Housing st. steel 1.4571	option	option	-	-	-
Housing material brass	option	option	-	-	standard

Ordering Codes:

Order number	PS-00.	2.	2.	1.	3.	1
PS-00 Low-Cost Pressure Switch						
Operating ranges /						
1 = 0.5...2 bar						
2 = 1...10 bar						
3 = 10...70 bar						
4 = 50...200 bar						
5 = -800...-200 mbar						
Contact /						
1 = silver						
2 = gold						
Membrane material /						
(ranges 1, 2 and 5 - refer to table 1)						
1 = NBR						
2 = Viton						
3 = EPDM						
Seal material /						
(ranges 3 and 4 - refer to table 1)						
4 = UR						
6 = Viton						
Housing /						
(all ranges - refer to table 1)						
1 = steel zinc plated						
2 = stainless steel 1.4305						
3 = stainless steel 1.4571						
4 = brass						
Protective cover /						
0 = none						
1 = NBR 55° Sh for Operating ranges 1-4						
2 = NBR 55° Sh for Operating ranges 5						



Dimensions in mm:

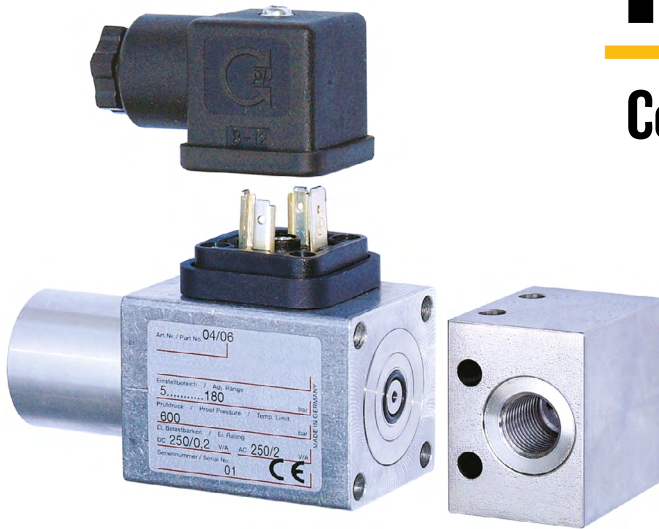






PS-02N

Compact Pressure Switch



Features

- / Compact
- / Robust
- / 6 Pressure ranges
- / Up to 600 bar
- / Plug connection

Description:

Mechanical pressure switches are intended for pressure-dependent switching on and off an electrical circuit. A pressure switch can be used as a control device as well as for visual or acoustical control for an operating point. The PS-02N series of compact pressure switches is designed as piston or diaphragm pressure switches depending on the pressure range. Both the versions are similar in construction where, in the case of the former, a spring-loaded piston actuates the micro-switch while, in the case of the latter, a spring-loaded elastomer membrane assumes this function. The setpoints can be set by means of a female hexagon SW5. Fine adjustments are optionally possible depending on customer requirements. The contacts for the micro-switch can be gold-plated on request so as to minimize the electrical transitional resistance, if necessary.

Application:

Thanks to the compact design of the PS-02N series and the broad spectrum of pressure range of 1 bar to 600 bar in 6 levels, these switches are well-suited for machine and vehicle manufacturing, packaging industry, pneumatic and hydraulic technologies and for equipment manufacturing.



Electrical Specifications:

- Switching Element /** changeover contact (SPDT)
- Electrical connection /** plug DIN EN 175301-803A or plug M 12x1, 4-pole or plug M 12x1, 4-pole with 2 m tipped cable or cable gland with 0,7 m cable
- Protection class /** IP65 for plug connections
IP68 for cable gland with 0,7 m cable
- EX-Versions /** intrinsically safe design on request
EEx ia ($U_{max} = 28 V, I_{max} = 50 mA$)
- Options /** approval for shipping as per GL
US-approval as per UL
Low hysteresis LH

Technical Specifications:

- Media temp. /** -40...+80°C for piston switch
-20...+80°C for diaphragm switch
-50°C on request
- Switching frequency /** max. 60/min for piston switch
max. 30/min for diaphragm switch
- Repeatability /** ±1% for piston switch
±2% for diaphragm switch
- Housing /** Aluminium, st. steel 1.4305 on request
- Wetted parts /** NBR, PTFE with bronze and st. steel 1.4301;
for piston switch: steel FKM, EPDM, CR instead of NBR
- Setting Screw /** st. steel 1.4305 (SW5)
- Pressure connection /** G1/4"-female, 1/4"-NPT-female straight or angular (others on request)
- Total weight /** approx. 350g

Electrical Connection /

	Plug DIN EN 175301-803A	Plug M12x1, 4-pole	Cable gland with two meters cable
COMMON	1	1	BN
normally closed	2	2	BK
normally open	3	4	GY
PE	-	3	GN / YE

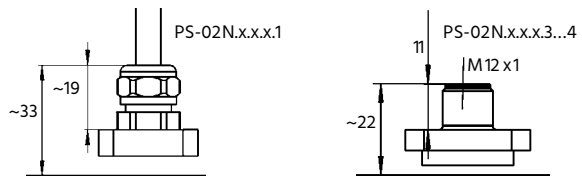
Electrical load capacity /

Ag contacts	ind. load	res. load	Au contacts	ind. / res. load
30 VDC	2.0 A	5.0 A	≅ 300 mVDC	- / ≅ 400 mA
250 VDC	0.03 A	0.2 A	≅ 30 VDC	- / ≅ 4 mA
250 VAC	2.0 A	5.0 A	AC	U x I = max. 0.12 VA
125 VAC	2.0 A	5.0 A		
minimum load	10 mA at 12 VDC		0 mA / 0 VDC	

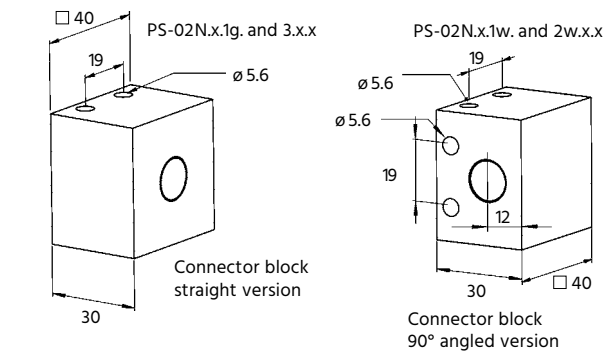
Operating range /

Type	Setting range dropping pressure	Setting range rising pressure	max. Hysteresis (end of range)	max. op. Pressure [bar] (*test press.)
Diaphragm switch				
PS-02N.1	0.4...5.7 bar	0.6...6.0 bar	≤ 15%	50 (*80)
PS-02N.2	2.0...17 bar	3.0...20 bar	≤ 15%	50 (*80)
PS-02N.3	3.0...41 bar	4.0...45 bar	≤ 15%	50 (*80)
Piston switch				
PS-02N.5	3.0...160 bar	5.0...180 bar	≤ 15%, at LH ≅ 7.5%	250 (*600)
PS-02N.6	30...300 bar	50...350 bar	≤ 15%, at LH ≅ 7.5%	450 (*600)
PS-02N.7	55...520 bar	80...600 bar	≤ 15%, at LH ≅ 7.5%	600 (*900)

Electrical Connection /

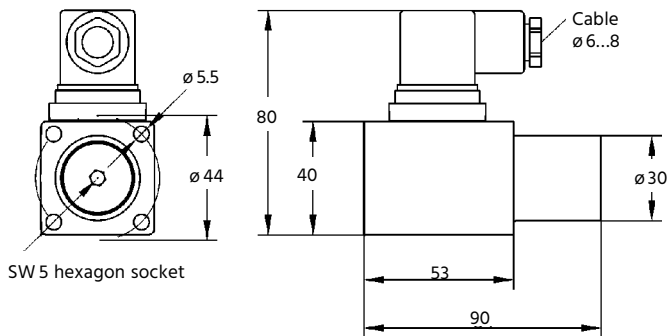


Process connection /





Dimensions in mm:



Ordering Codes:

Order number PS-02N. 7. 1w. 1. 1

PS-02N Compact Pressure Switch

Operating range /

- 1 = 0.4 .. 5.7 bar falling, 0.6 .. 6.0 bar rising
- 2 = 2.0 .. 17 bar falling, 3.0 .. 20 bar rising
- 3 = 3.0 .. 41 bar falling, 4.0 .. 45 bar rising
- 5 = 3.0 .. 160 bar falling, 5.0 .. 180 bar rising
- 6 = 30 .. 300 bar falling, 50 .. 350 bar rising
- 7 = 55 .. 520 bar falling, 80 .. 600 bar rising

Process connection /

- 1g = G1/4"-female straight
- 1w = G1/4"-female angular
- 2g = 1/4"-NPT-female straight
- 2w = 1/4"-NPT-female angular

Contacts /

- 1 = silver
- 2 = gold

Electrical connection /

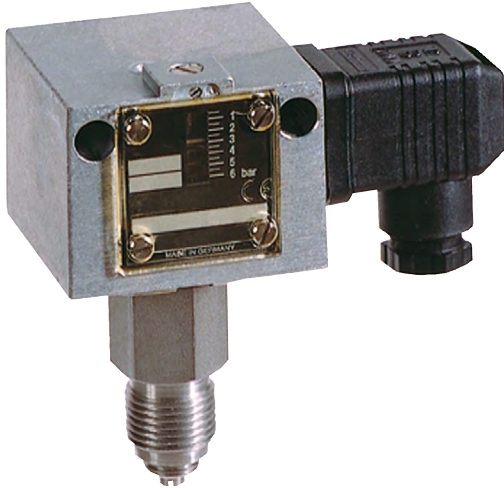
- 1 = Cable gland, 0,7 m cable, IP68
- 2 = Plug DIN EN175301-803A, IP65, with counterpart
- 3 = Plug M12, 4-pole, without counterpart, IP65
- 4 = Plug M12, 4-pole, with counterpart angular 90° with 2 m cable, IP65





PDC-1

Pressure Switch for Non-Hostile Fluids and Gases



Features

- / Extremely resilient
- / Universal connection
- / Hysteresis can be set
- / Wide span of measuring

Description:

The PDC series of mechanical pressure switches is characterized by their extreme resilience. The PDC-1 has a robust housing made of sea-water resistant aluminium die casting. Depending on the pressure range, it has a connection fitting in copper and brass or stainless steel with a G1/2"-male and a G1/4"-female thread. Excrescent pressure changes at the connection act on an internal measuring diaphragm the movements of which are transferred to a high-performance micro-switch through a connecting bridge. The setpoint is set externally by rotating a spindle for nominal value that directly modifies the pre-tension of a spring. In addition, the construction has a counter-pressure spring that ensures a very stable connection even at low set-points. The PDC series of pressure switches can be provided with a terminal housing in IP65 and a blue cable gland, to allow the operation in hazardous areas (in connection with a suitable isolating switch amplifier) or even as an Ex-d version.

Application:

The PDC-1 series of pressure switches is used in applications where high requirements are placed on the switch's life span and mechanical strength. Due to the fact that the pressure-sensing measuring diaphragms are only less loaded – considering their permissible values – the PDC-1 guarantees an excellent long-term stability at minimal setpoint drift. Consequent to its design, the upstroke of the pressure diaphragms is limited by means of a stopper so that high overpressure safety is ensured even in small operating ranges. A number of operating ranges are available of which also a version with adjustable hysteresis can be supplied. This enables the user to accurately control a span of pressures with only a single device. Thanks to its material quality, flexibility of connections and high switching load of the micro-switch, the PDC-1 is predestined for use across all sections of the industry.



Technical Specifications:

Operating range /	refer to table
Mounting position /	vertically upright and horizontal (operating range A and B only vertically upright)
max. Pressure /	refer to table
max. Media temperature /	-25°C to +70°C (-15°C...+60°C for ranges A, B and C) short spell up to +85°C. Cooling elements are recommended for higher temperatures
Setpoint /	Can be set externally by means of screw-driver on the spindle
Repeatability /	< 1% of working range (for pressure ranges > 1 bar)
Adjustment /	The scales are calibrated for decreasing pressures. The reading corresponds therefore to lower setpoint, the upper setpoint is higher by the hysteresis
Lead sealing /	On request, ex-factory; sealing can also be undertaken later
Vacuum /	All PDC-1 besides the PDC-1.x.C can be impacted by vacuum; the device will not be damaged
Vibration /	Up to 4g no significant deviations
Mechanical Life span /	10 x 10 ⁶ for room temperature and sinusoidal pressure impact. Life span depends highly on the sort of pressure impact. This value is therefore just a guide value. For applications with pulsating pressure or pressure surges we recommend the use of a pressure surge reducer.
Electrical Life span /	100,000 switching cycles at nominal current 8 A, 250 VAC
Isolation /	overvoltage category III, pollution degree 3, rated impulse voltage 4000V, fullfills DIN VDE 01 10
Hysteresis /	In PDC-1.1.A to PDC-1.1.M the hysteresis cannot be set. In PDC-1.2.D to PDC-1.2.M the hysteresis can be set as specified in the following tables.

Process connection /	G1/2"-male (pressure gauge connection acc. DIN 16288), G1/4"-female acc. ISO 228 part 1. Using the G1/2"-male the PDC-1 can be directly screwed on to the pressure pipe, alternatively fastening by means of 2 screws (4mm Ø) on a plane surface is also possible.
Housing material /	Aluminium casting GD Al Si 12 (sea-water resistant)
Sensor material /	refer to following tables
rel. Humidity /	15%...95%, non-condensing

Ordering Codes:

Order number	PDC-1.	1.	B1.	4
PDC-1 Pressure switch for non-hostile fluids and gases				
Hysteresis /				
1 = Hysteresis cannot be adjusted (A - M)				
2 = Hysteresis can be adjusted (D - M)				
Operating range /				
A = 1...16 mbar				
B = 4...25 mbar				
B1 = 15...60 mbar				
C = 10...100 mbar				
D = 0.04...0.25 bar				
E = 0.1...0.6 bar				
F = 0.2...1.6 bar				
G = 0.2...2.5 bar				
H = 0.5...6 bar, overload up to 16 bar				
HD = 0.5...6 bar, overload up to 25 bar				
I = 1...10 bar				
J = 3...16 bar				
K = 4...25 bar				
L = 8...40 bar				
M = 16...63 bar				
N = 40...75 bar				
Options /				
0 = without				
Exi = gold-plated contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA; media temperature max. 60°C, ignition protection class II 1/2G Ex ia IIC T6 Ga/Gb, II 1/2D Ex ia IIIC T80 °C ⁽¹⁾				
Exd = standard contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 250 VAC, 3 (2) A or 24 VDC, 3 A or 250 VDC, 0.1 A, min. 24 VDC, 2 mA, media temperature max. 60°C, ignition protection class II 2G Ex d e IIC T6 Gb, II 1/2D Ex ta/tb IIIC T80 °C Da/Db ⁽¹⁾				
2 = gold-plated contacts, SPDT, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA. And others not available with adjustable hysteresis.				
3 = two microswitches, switching in parallel or in succession, fixed switching interval (with the exception of PDC-1.1.A/B/C) ⁽¹⁾				
4 = two microswitches, 1 plug, switching in succession, adjustable switching interval (with the exception of PDC-1.1.A/B/C)				
5 = terminal connection housing, IP65				
6 = protection class IP65 and switching housing with surface protection (chemical version)				

⁽¹⁾ incl. terminal connection housing, IP65



Electrical Specifications:

Connection / plug connection

Protection class / IP54 in vertical position

Switching load / 250 VAC, 8 A (ohmic), 5A (inductive)
250 VDC, 0.3 A (ohmic),
24 VDC, 8 A (ohmic),
min. 10 mA, 12 VDC

Contacts / SPDT

Units with fixed hysteresis (PDC-1.1):

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted materials	Sketch no.	Manufacturer number
PDC-1.1.A	1...16 mbar	2 mbar	1 bar	sensor housing 1.4301 + membrane perbunan	1 + 11	DCM4016
PDC-1.1.B	4...25 mbar	2 mbar	1 bar	sensor housing 1.4301 + membrane perbunan	1 + 11	DCM4025
PDC-1.1.C	10...100 mbar	12 mbar	10 bar	sensor housing brass + membrane perbunan	1 + 10	DCM1000
PDC-1.1.D	0.04...0.25 bar	0.03 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCM025
PDC-1.1.E	0.1...0.6 bar	0.04 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCM06
PDC-1.1.F	0.2...1.6 bar	0.04 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCM1
PDC-1.1.G	0.2...2.5 bar	0.1 bar	16 bar	sensor housing 1.4104 + bellow 1.4571	1 + 18	DCM3
PDC-1.1.H	0.5...6 bar	0.15 bar	16 bar	sensor housing 1.4104 + bellow 1.4571	1 + 18	DCM6
PDC-1.1.HD	0.5...6 bar	0.25 bar	25 bar	sensor housing 1.4104 + bellow 1.4571	1 + 17	DCM625
PDC-1.1.I	1...10 bar	0.3 bar	25 bar	sensor housing 1.4104 + bellow 1.4571	1 + 17	DCM10
PDC-1.1.J	3...16 bar	0.5 bar	25 bar	sensor housing 1.4104 + bellow 1.4571	1 + 17	DCM16
PDC-1.1.K	4...25 bar	1.0 bar	60 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCM25
PDC-1.1.L	8...40 bar	1.3 bar	60 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCM40
PDC-1.1.M	16...63 bar	2.0 bar	130 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCM63
PDC-1.1.N	40...75 bar	2,3 bar	130 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCM63-406

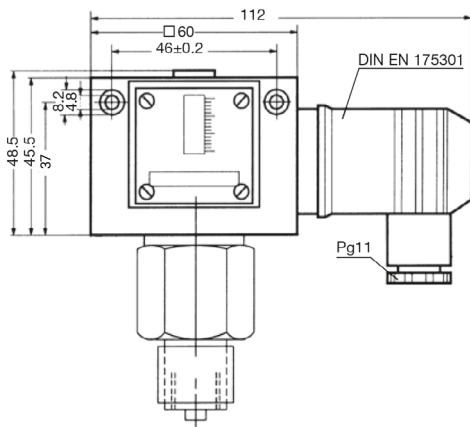
Units with adjustable hysteresis (PDC-1.2):

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted materials	Sketch no.	Manufacturer number
PDC-1.2.D	0.04...0.25 bar	0.03 - 0.4 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCMV025
PDC-1.2.E	0.1...0.6 bar	0.04 - 0.5 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCMV06
PDC-1.2.F	0.2...1.6 bar	0.07 - 0.55 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCMV1
PDC-1.2.G	0.2...2.5 bar	0.15 - 1.5 bar	16 bar	sensor housing 1.4104 + bellow 1.4571	1 + 18	DCMV3
PDC-1.2.H	0.5...6 bar	0.25 - 2.0 bar	16 bar	sensor housing 1.4104 + bellow 1.4571	1 + 18	DCMV6
PDC-1.2.I	1...10 bar	0.5 - 2.8 bar	25 bar	sensor housing 1.4104 + bellow 1.4571	1 + 17	DCMV10
PDC-1.2.J	3...16 bar	0.7 - 3.5 bar	25 bar	sensor housing 1.4104 + bellow 1.4571	1 + 17	DCMV16
PDC-1.2.K	4...25 bar	1.3 - 6.0 bar	60 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCMV25
PDC-1.2.L	8...40 bar	2.6 - 6.6 bar	60 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCMV40
PDC-1.2.M	16...63 bar	3.0 - 10.0 bar	130 bar	sensor housing 1.4104 + bellow 1.4571	1 + 16	DCMV63

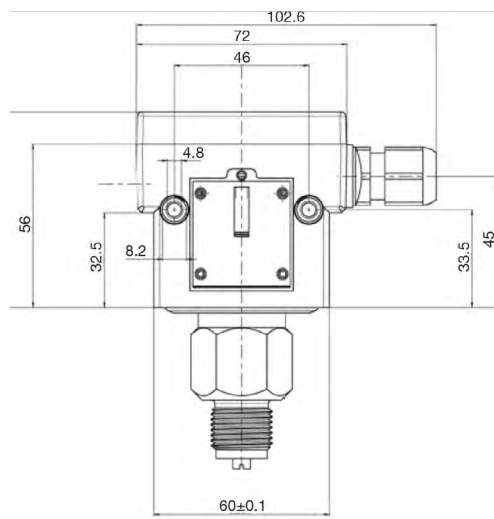


Housing dimensions:

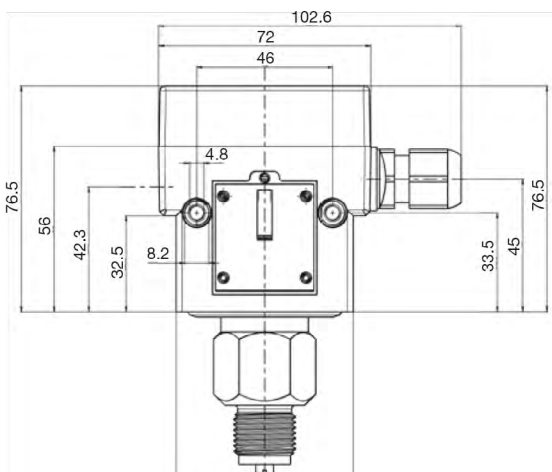
Standard housing with plug connection



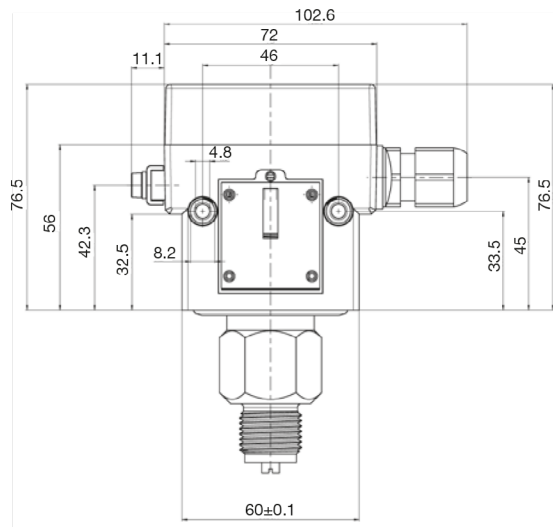
Standard housing with terminal connection (option 5)



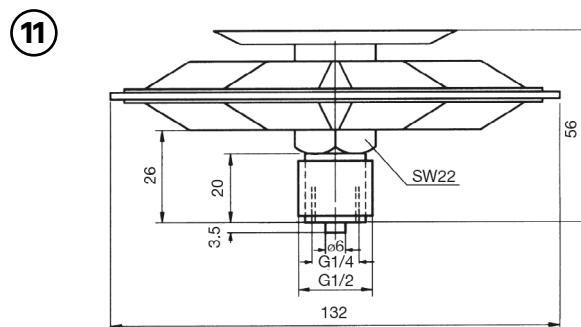
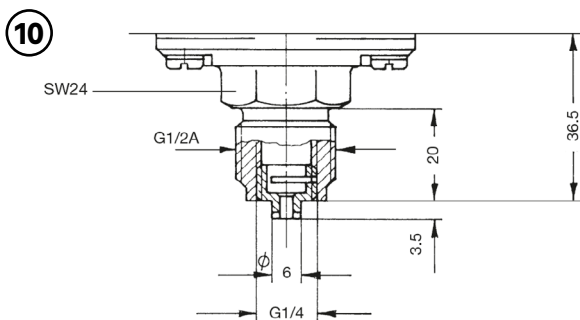
3 Ex-i housing with blue cable gland

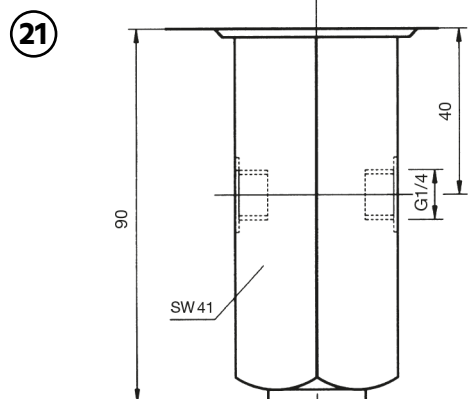
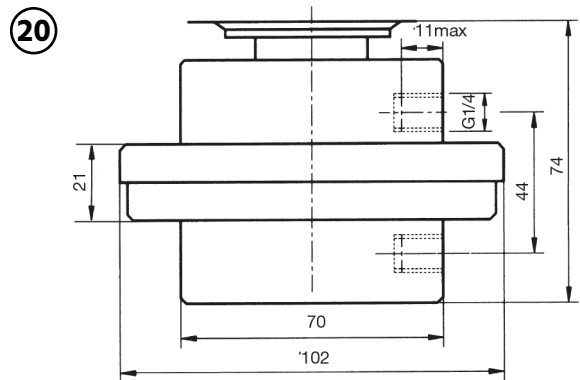
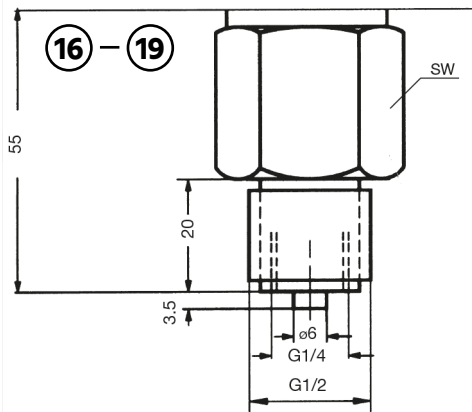
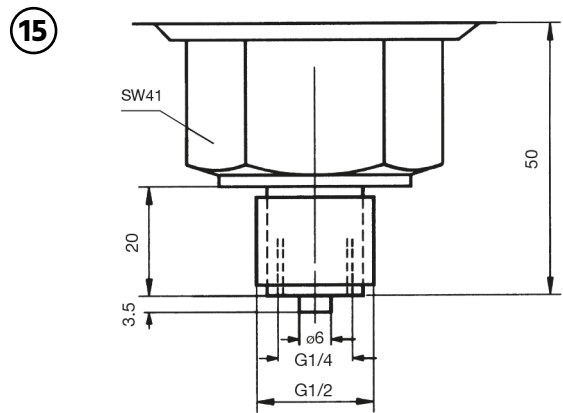
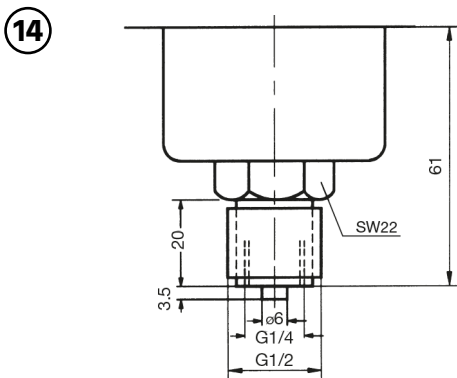
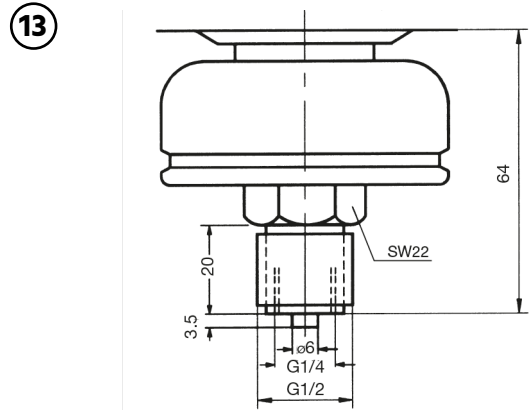
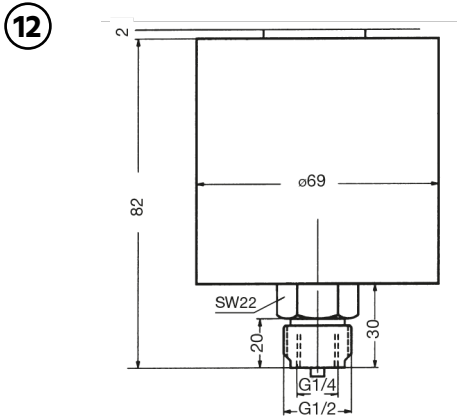


4 Ex-d housing with Ex-d cable gland



Pressure sensor dimensions:





Housing no.	SW
16	22
17	24
18	30
19	32





PDC-2

Vacuum Switch



Features

/ Robust design

/ 6 operating ranges under vacuum

/ Zero point excess deviation

/ Adjustable hysteresis

Description:

The PDC series of mechanical pressure switches is characterized by their extreme resilience. The PDC-2 has a robust housing made of sea-water resistant aluminium pressure casting. Depending on the pressure range, it has a pressure port made of brass or stainless steel and a membrane or a bellows made of Perbunan, Cu Zn or stainless steel and a G1/2"-male and a G1/4"-female thread. Excess pressure changes at the connection act on an internal measuring diaphragm the movements of which are transferred to a high-performance micro-switch through a connecting bridge. The setpoint is set externally by rotating a spindle for nominal value that directly modifies the pre-tension of a spring. In addition, the construction has a counter-pressure spring that ensures a very stable connection even at low set-points. The PDC series of pressure switches can be provided with a terminal housing in IP65 and a blue cable gland, to allow the operation in hazardous areas (in connection with a suitable isolated switch amplifier), or even as an EEx-d version.

Application:

The PDC-2 series of pressure switches is used in applications where high requirements are placed on the switch's life span and mechanical strength. Due to the fact that the pressure-sensing measuring diaphragms are only less loaded – considering their permissible values – the PDC-2 guarantees an excellent long-term stability at minimal setpoint drift. Consequent to its design, the upstroke of the pressure diaphragms is limited by means of a stopper so that high overpressure safety is ensured even in small operating ranges. A number of operating ranges are available of which also a version with adjustable hysteresis can be supplied. In the selection of a range, attention has been paid to cover smaller pressure spans close to the zero point as well as the entire range vacuum. Thanks to its material quality, flexibility of connections and high switching load of the micro-switch, the PDC-2 is predestined for use across all sections of the industry.



Technical Specifications:

Operating range /	see table
Mounting position /	vertically upright and horizontal (operating range A only vertically upright)
max. Pressure /	see table
max. Media temperature /	-25...+70°C (-15...+60°C for range A) short spell up to +85°C. Cooling elements are recommended for higher temperatures
Setpoint /	can be set externally by means of screw-driver on the spindle
Repeatability /	< 1% of working range (at pressure ranges > 1 bar)
Adjustment /	The scales are calibrated for decreasing pressures. The reading corresponds therefore to lower setpoint, the upper setpoint is higher by the hysteresis
Lead sealing /	On request, ex-factory; sealing can also be undertaken later
Vibration /	Up to 4g no significant deviations
Mechanical Life span /	10 x 10 ⁶ for room temperature and sinusoidal pressure impact. Life span depends highly on the sort of pressure impact. This value is therefore just a guide value. For applications with pulsating pressure or pressure surges we recommend the use of a pressure surge reducer.
Electrical Life span /	100,000 switching cycles at nominal current 8 A, 250 VAC
Isolation /	overvoltage category III, pollution degree 3, rated impulse voltage 4000V, fulfills DIN VDE 01 10
Hysteresis /	In PDC-2.1.A to PDC-2.1.F the hysteresis cannot be set. In PDC-2.2.B to PDC-2.2.F the hysteresis can be set as specified in the following tables.

Process connection /	G1/2"-male (pressure gauge connection acc. DIN 16288), G1/4"-female acc. ISO 228 part 1. Using the G1/2"-male the PDC-2 can be directly screwed on to the pressure pipe, alternatively fastening by means of 2 screws (4mm Ø) on a plane surface is also possible.
Housing material /	Aluminium pressure casting GD Al Si 12 (sea-water resistant)
Material of pressure sensor /	refer to following tables
rel. Humidity /	15%...95%, non-condensing

Ordering Codes:

Order number	PDC-2.	1.	D.	0
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PDC-2 Vacuum Switch

Hysteresis /

- 1 = hysteresis cannot be set (A - F)
- 2 = hysteresis can be set (B - F)

Operating range /

- A = -15...+6 mbar
- B = -250...+100 mbar
- C = -1*...+0,1 bar
- D = -0,9...+0,5 bar
- E = -250...+100 mbar (3 bar max.)
- F = -1* to +0,1* bar (6 bar max.)

* In case of high vacuum conditions, close to the theoretically possible low-pressure of -1 bar, use of the switch is subject to restrictions due to extraordinary conditions of vacuum technology. However, the vacuum switch itself will not be damaged at maximum low-pressure.

Options /

- 0 = without
- Exi = gold-plated contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA; media temperature max. 60°C, ignition protection class II 1/2G Ex ia IIC T6 Ga/Gb, II 1/2D Ex ia IIIC T80 °C (1)
- Exd = standard contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 250 VAC, 3 (2) A or 24 VDC, 3 A or 250 VDC, 0.1 A, min. 24 VDC, 2 mA, media temperature max. 60°C, ignition protection class II 2G Ex d e IIC T6 Gb, II 1/2D Ex ta/tb IIIC T80 °C Da/Db (1)
- 2 = gold-plated contacts, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA. And others not available with adjustable switching difference.
- 3 = two microswitches, switching in parallel or in succession, fixed switching interval (1) (with the exception of PDC-2.A)
- 4 = two microswitches, 1 plug, switching in succession, adjustable switching interval (with the exception of PDC-2.A)
- 5 = terminal connection housing, IP65
- 6 = protection class IP65 and switching housing with surface protection (chemical version)

⁽¹⁾ incl. terminal connection housing, IP65



Electrical Specifications:

Connection / plug connection

Protection class / IP54 in vertical mounting

Switching load / 250 VAC, 8A (Ohmic), 5A (inductive)
250 VDC, 0,3A (Ohmic)
24 VDC, 8A (Ohmic)
min. 10 mA, 12 VDC

Contacts / SPDT

Units with fixed hysteresis (PDC-2.1):

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted parts	Sketch Nr.	Manufacturer number
PDC-2.1.A	-15...+6 mbar	2 mbar	1 bar	Sensor housing 1.4301 + diaphragm Perbunan	1 + 11	VCM4156
PDC-2.1.B	-250...+100 mbar	25 mbar	1.5 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 13	VCM301
PDC-2.1.C	-1...+0.1 mbar *	45 mbar	3 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 14	VCM101
PDC-2.1.D	-0,9...+0.5 bar	50 mbar	3 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 14	VCM095
PDC-2.1.E	-250...+100 mbar	45 mbar	3 bar	Sensor housing 1.4104 + bellow 1.4571	1 + 15	VNM301
PDC-2.1.F	-1...+0.1 bar *	50 mbar	6 bar	Sensor housing 1.4104 + bellow 1.4571	1 + 15	VNM111

* In case of high vacuum conditions, close to the theoretically possible low-pressure of -1 bar, use of the switch is subject to restrictions due to extraordinary conditions of vacuum technology. However, the vacuum switch itself will not be damaged at maximum low-pressure.

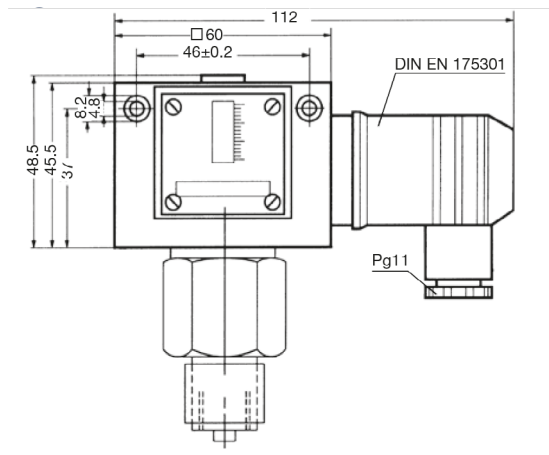
Units with adjustable hysteresis (PDC-2.2):

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted parts	Sketch Nr.	Manufacturer number
PDC-2.2.B	-250...+100 mbar	30...200 mbar	1.5 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 13	VCMV301
PDC-2.2.C	-1...+0.1 mbar	80...350 mbar	3 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 14	VCMV101
PDC-2.2.D	-0.9...+0.5 bar	90...400 mbar	3 bar	Sensor housing 1.4104 + diaphragm CuZn	1 + 14	VCMV095

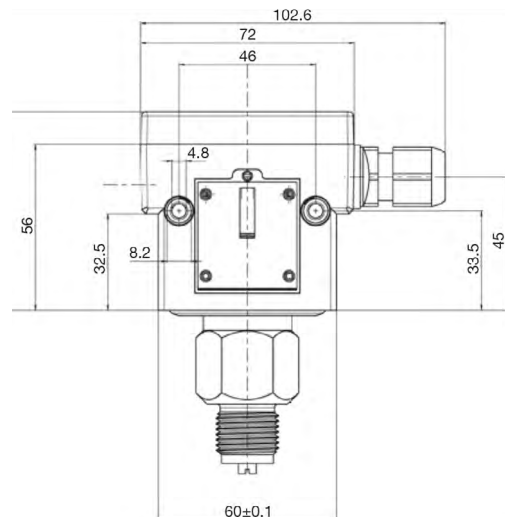
* In case of high vacuum conditions, close to the theoretically possible low-pressure of -1 bar, use of the switch is subject to restrictions due to extraordinary conditions of vacuum technology. However, the vacuum switch itself will not be damaged at maximum low-pressure.

Housing Dimensions:

① Standard housing with plug connection



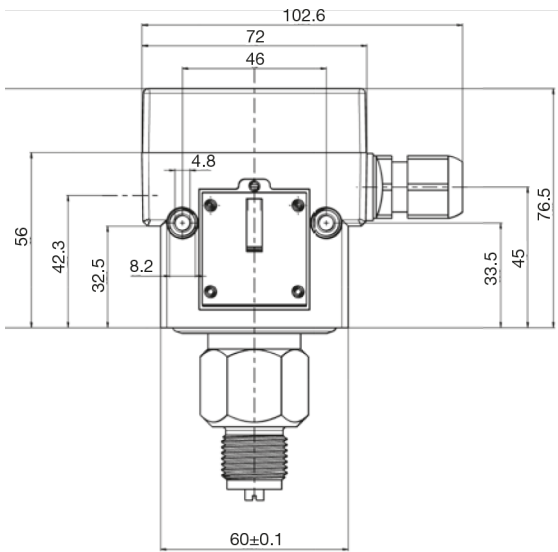
② Standard housing with terminal conn. (Option 5)



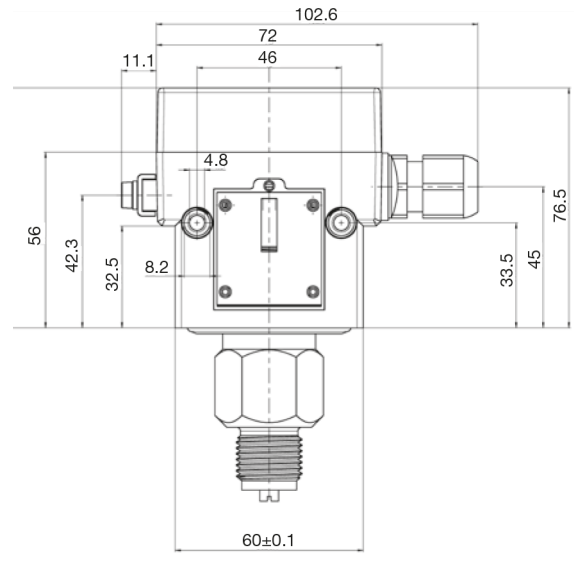


Housing Dimensions:

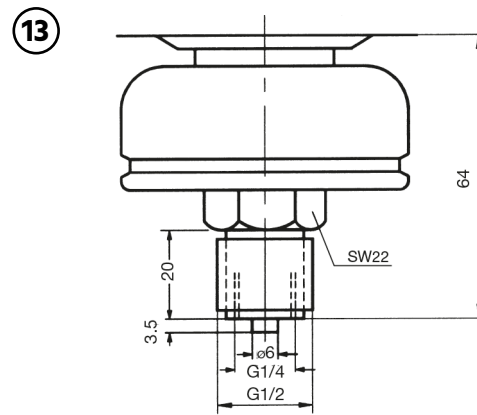
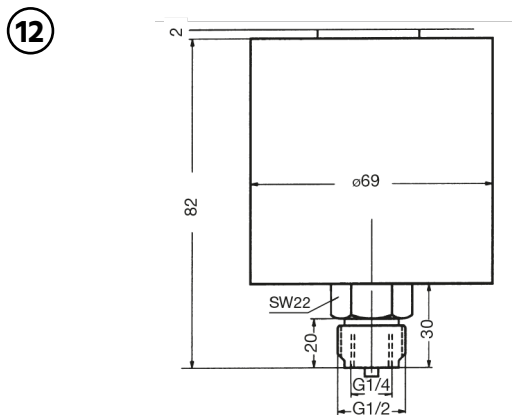
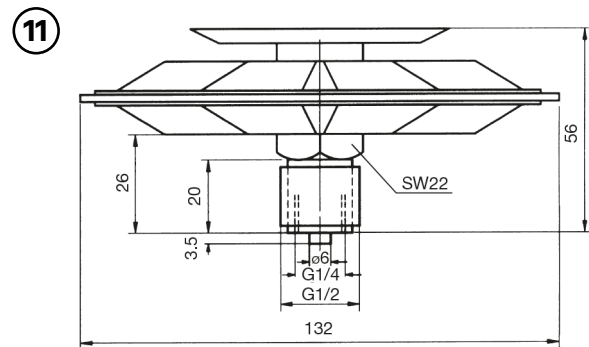
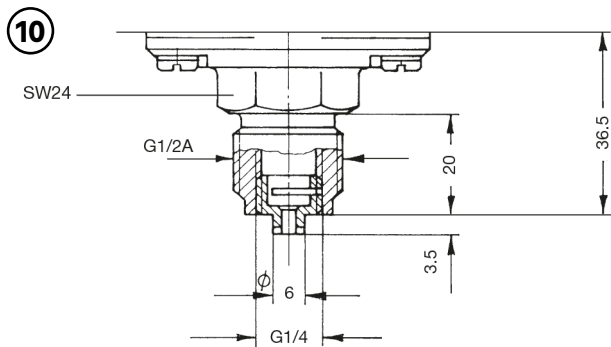
3 Ex-i housing with blue cable gland

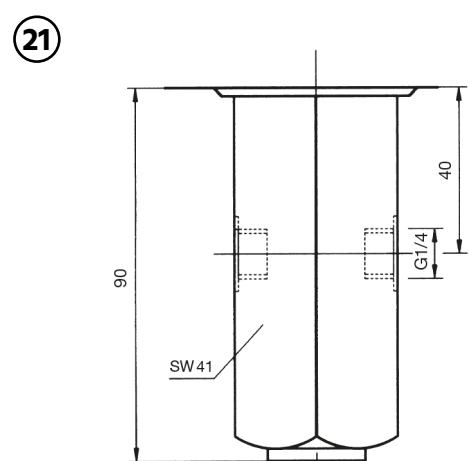
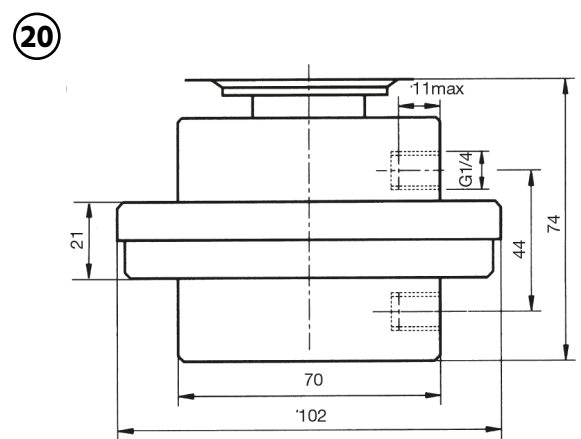
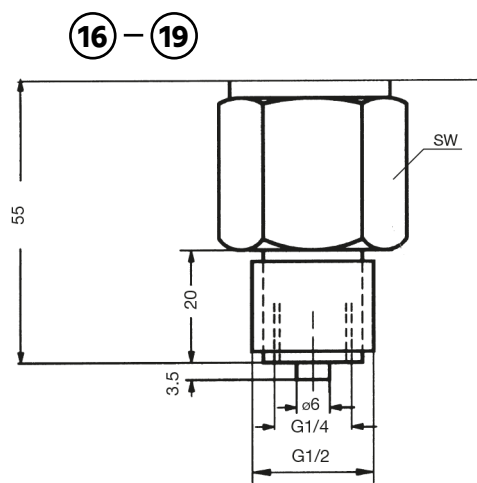
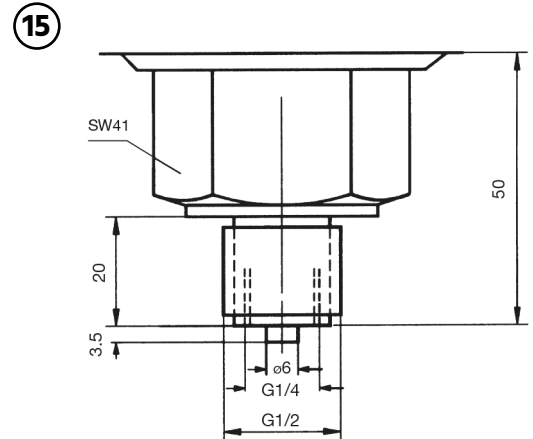
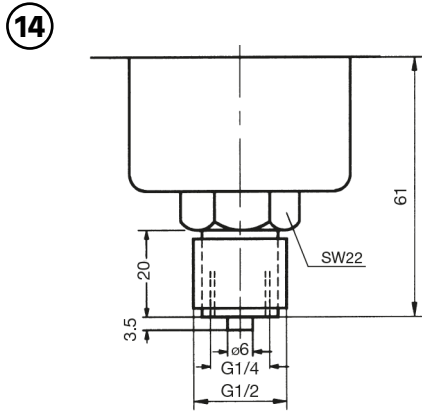


4 Ex-d housing with blue cable gland



Pressure Port Dimensions:





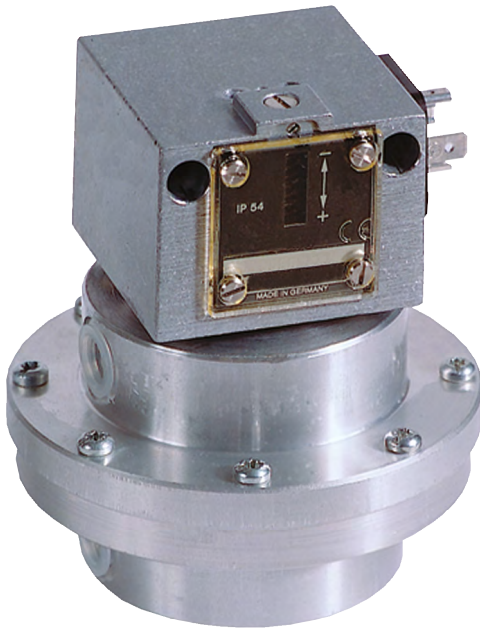
Housing No.	SW
16	22
17	24
18	30
19	32





PDC-3

Differential Pressure Switch



Features

- / Compact
- / Robust design
- / 9 different pressure ranges
- / Various materials
- / Plug connection

Description:

Mechanical pressure switches of the PDC series are characterized by their male mechanical resilience. The PDC-3 has a robust housing made of sea-water resistant aluminium pressure casting and, depending on the pressure range, it has an aluminium or stainless steel 1.4305 connection fitting. Both types of connections are provided with G1/4"-female thread. Excescent pressure changes at the connections act on a double chamber system with stainless steel diaphragm or Perbunan membrane, the movements of which are transferred to a high-performance micro-switch through a connecting bridge. The setpoint is set externally by rotating a spindle for nominal value that directly modifies the pre-tension of a spring. In addition, the construction has a counter-pressure spring that ensures a very stable connection even at low set-points. The PDC series of pressure switches can be provided with a terminal housing in IP65 and a blue cable gland, to allow the operation in hazardous areas (in connection with a suitable isolated switch amplifier) or even as an EEx-d version.

Application:

The PDC-3 series of pressure switches is suited for regulating and monitoring differential pressure from millibar range to 2-digit bar range. Due to the fact that the pressure-sensing measuring diaphragms are only less loaded – considering their permissible values – the PDC-3 guarantees an excellent long-term stability at minimal setpoint drift. Consequent to its design, the upstroke of the pressure diaphragms is limited by means of a stopper so that high overpressure safety is ensured even in small operating ranges. The PDC-3 can be mainly used for monitoring filters or gas and fluid flow across all sections of the industry.



Technical Specifications:

Operating range /	see table
Mounting position /	vertical to the top
max. Pressure /	see table
max. Media temperature /	-25...+70°C short spell up to +85°C, use cooling elements for higher temperatures
Setpoint /	can be set externally by means of screwdriver on the spindle
Repeatability /	< 1 % of working range (for pressure ranges > 1 bar)
Adjustment /	The scales are calibrated for decreasing pressures. The reading corresponds therefore to lower setpoint, the upper setpoint is higher by the hysteresis
Lead sealing /	On request, ex-factory; sealing can also be undertaken later
Vibration /	Up to 4g no significant deviations
mechanical Life span /	10 x 10 ⁶ for room temperature and sinusoidal pressure impact. Life span depends highly on the sort of pressure impact. This value is therefore just a guide value. For applications with pulsating pressure or pressure surges we recommend the use of a pressure surge reducer.
electrical Life span /	100.000 switching cycles at nominal current 8 A, 250 VAC
Isolation /	overvoltage category III, pollution degree 3, rated impulse voltage 4000V, fulfills DIN VDE 01 10
Hysteresis /	The hysteresis cannot be set

Process connection /	2 x G1/4"-female Using G1/4"-female connections the PDC-3 can be directly screwed to the pressure pipe; alternatively fastening by means of 2 screws (4 mm Ø) on a plane surface is also possible. In pressurized tubes note always that P (+) high pressure S (-) low pressure
Housing material /	Aluminium pressure casting GD Al Si 12 (sea-water resistant)
Material of pressure sensor /	refer to switching ranges in table
Scale /	The PDC-3.A...D and PDC-3.G have only a plus-minus scale; setting is performed using a pressure gauge or at factory.
rel. Humidity /	15%...95%, non-condensing

Ordering Codes:

Order number	PDC-3. B. 0
PDC-3 Differential Pressure Switch	
Operating range /	
adjustable range	
A* = 4...25 mbar	
B* = 10...60 mbar	
C* = 20...160 mbar	
D* = 100...600 mbar	
E* = -0.1...+0.4 bar	
F = 0.2...1.6 bar	
G* = 1...4 bar	
H = 0.5...6 bar	
I = 3...16 bar	
* no scale divisions (only +/- scale)	
Options /	
0 = without	
Exi = gold-plated contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA; media temperature max. 60°C, ignition protection class II 1/2G Ex ia IIC T6 Ga/Gb, II 1/2D Ex ia IIIC T80 °C ⁽¹⁾	
Exd = standard contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 250 VAC, 3 (2) A or 24 VDC, 3 A or 250 VDC, 0.1 A, min. 24 VDC, 2 mA, media temperature max. 60°C, ignition protection class II 2G Ex d e IIC T6 Gb, II 1/2D Ex ta/tb IIIC T80 °C Da/Db ⁽¹⁾	
2 = gold-plated contacts, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA. not available with adjustable switching difference.	
3 = two microswitches, switching in parallel or in succession, fixed switching interval ⁽¹⁾ (with the exception of PDC-3.A/B/C/D)	
4 = two microswitches, 1 plug, switching in succession, adjustable switching interval (with the exception of PDC-3.A/B/C/D)	
5 = terminal connection housing, IP65	
6 = protection class IP65 and switching housing with surface protection (chemical version)	

⁽¹⁾ incl. Terminal Connection housing (IP65)



Electrical Specifications:

Connection / plug connection
Prot. class / IP54 in vertical mounting

Switching load / 250 VAC, 8A (Ohmic), 5A (inductive)
 250 VDC, 0,3A (Ohmic)
 24 VDC, 8A (Ohmic)
 min. 10 mA, 12 VDC
Contacts / SPDT

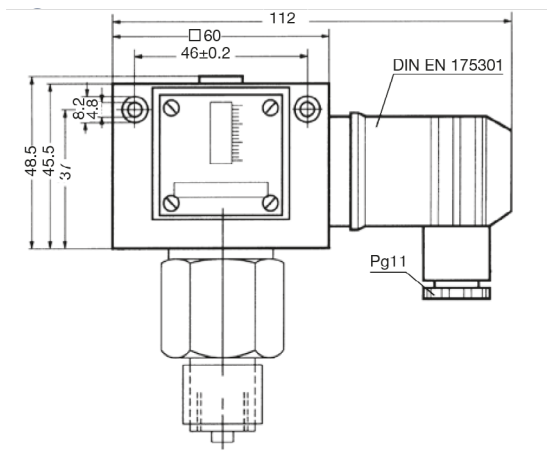
Operating Ranges and Hysteresis:

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted parts	Sketch Nr.	Manufacturer number
PDC-3.A	4...25 mbar	2 mbar	0.5 bar	Sensor housing Aluminium + diaphragm Perbunan	1 + 20	DDCM252*
PDC-3.B	10...60 mbar	15 mbar	1.5 bar	Sensor housing Aluminium + diaphragm Perbunan	1 + 20	DDCM662*
PDC-3.C	20...160 mbar	20 mbar	3 bar	Sensor housing Aluminium + diaphragm Perbunan	1 + 20	DDCM1602*
PDC-3.D	100...600 mbar	35 mbar	3 bar	Sensor housing Aluminium + diaphragm Perbunan	1 + 20	DDCM6002*
PDC-3.E	-0.1...+0.4 bar	0.15 bar	15 bar	Sensor housing 1.4305 + bellow 1.4571	1 + 21	DDCM014
PDC-3.F	0.2...1.6 bar	0.13 bar	15 bar	Sensor housing 1.4305 + bellow 1.4571	1 + 21	DDCM1
PDC-3.G	1...4 bar	0.20 bar	25 bar	Sensor housing 1.4305 + bellow 1.4571	1 + 21	DDCM4*
PDC-3.H	0.5...6 bar	0.20 bar	15 bar	Sensor housing 1.4305 + bellow 1.4571	1 + 21	DDCM6
PDC-3.I	3...16 bar	0.60 bar	25 bar	Sensor housing 1.4305 + bellow 1.4571	1 + 21	DDCM16

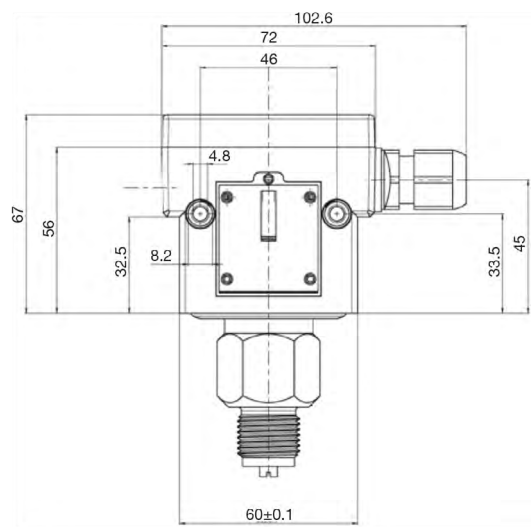
* no „mbar“ or „bar“ scale („±“ scale only)
 ** could even be loaded only at one side

Housing Dimensions:

① Standard housing with plug connection



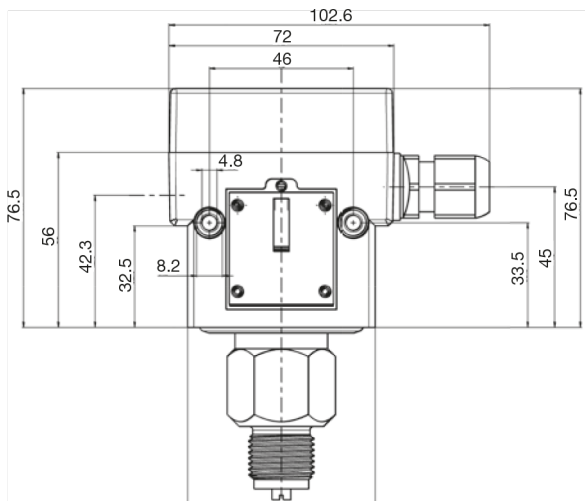
② Standard housing with terminal plug (Option 5)



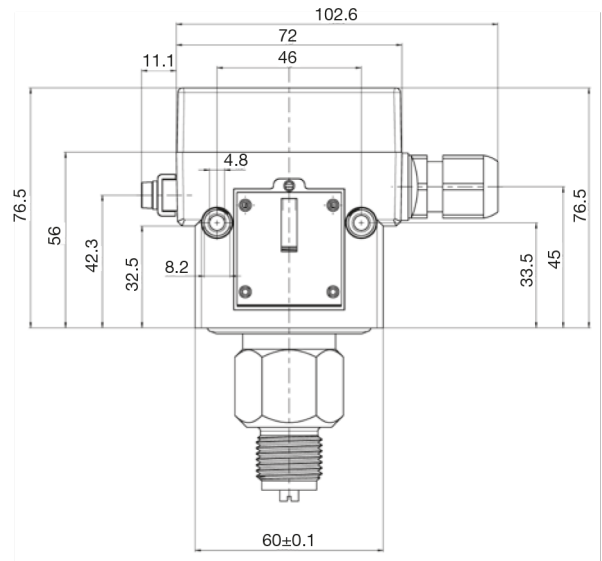


Housing Dimensions:

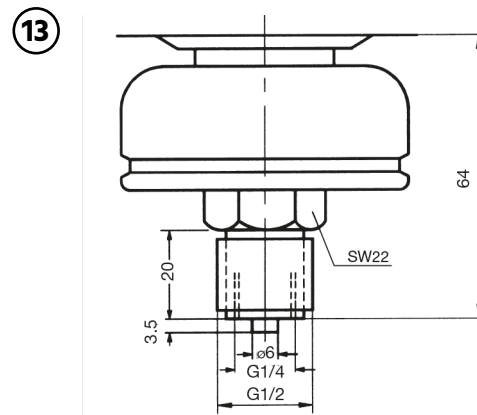
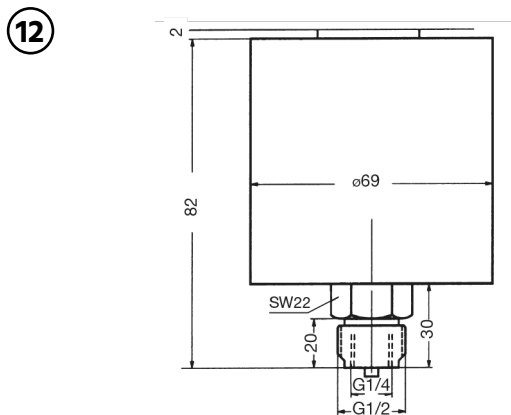
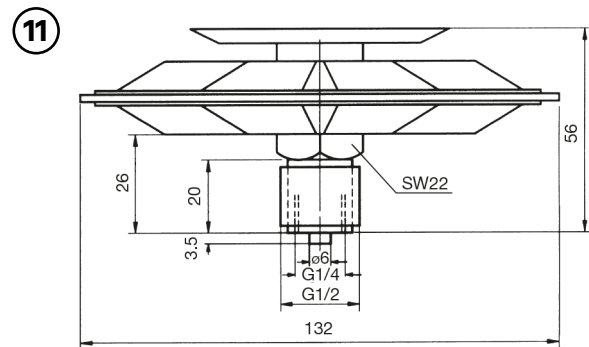
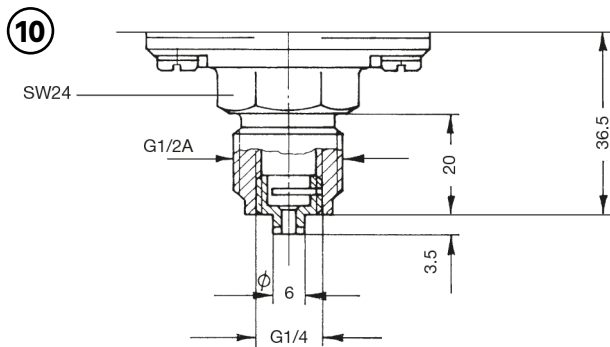
3 Ex-i housing with blue cable gland

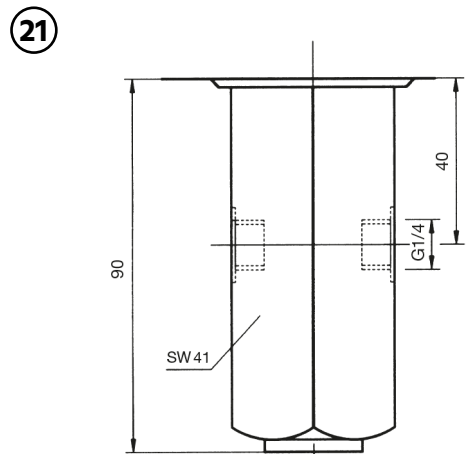
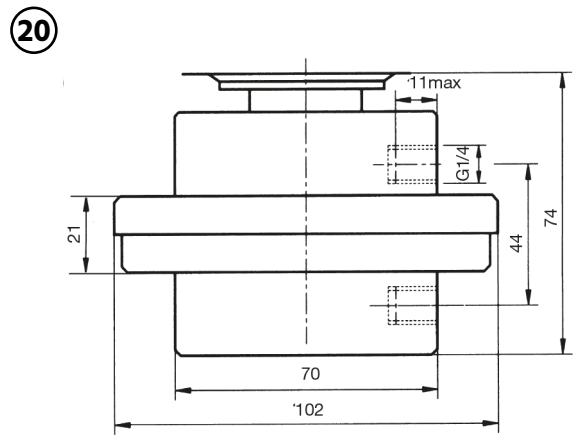
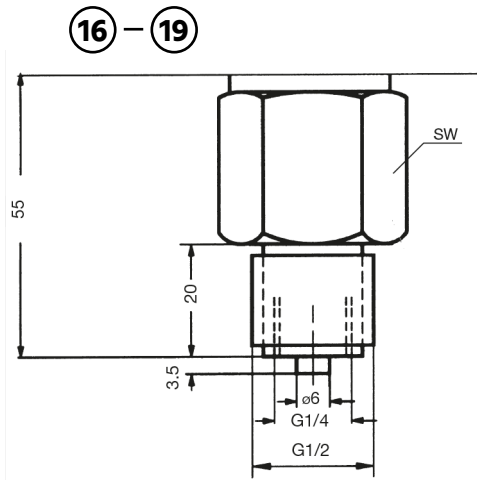
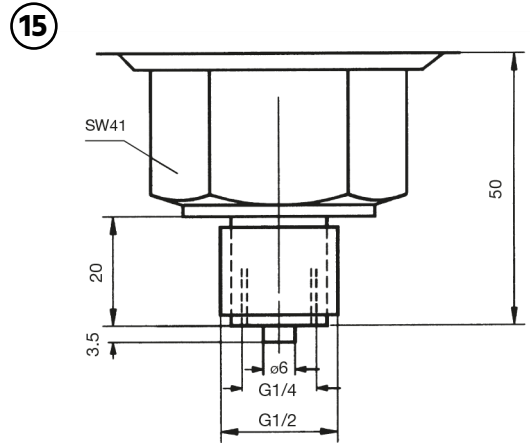
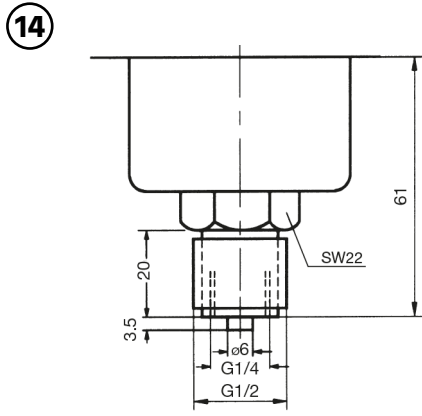


4 Ex-d housing with blue cable gland



Pressure Port Dimensions:





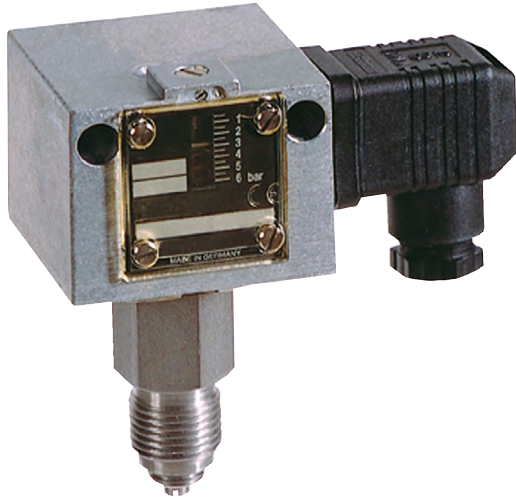
Housing Nr.	SW
16	22
17	24
18	30
19	32





PDC-4

Pressure Switch with Stainless Steel Sensor System



Features

/ Fully stainless steel 1.4571

/ Resistant to hostile media

/ Plug connection

/ Adjustable hysteresis

Description:

The PDC series mechanical pressure switches is characterized by their excellent mechanical strength. The PDC-4 has a robust housing made of sew-water resistant aluminium pressure casting. It has a stainless steel 1.4571 connection fitting provided with a G1/2"-male and a G1/4" female thread. Excesrent pressure changes at the connection act on an internal measuring diaphragm the movements of which are transferred to a high-performance micro-switch through a connecting bridge. The set-point is set externally by rotating a spindle for nominal value that directly modifies the pre-tension of a spring. In addition, the construction has a counter-pressure spring that ensures a very stable connection even at low set-points. The PDC series of pressure switches can be provided with a terminal housing in IP65 and a blue cable gland, to allow the operation in hazardous areas (in connection with a suitable isolated switch amplifier) or even as an EEx-d version.

Application:

The PDC-4 series of pressure switches is used in applications where high requirements are placed on the switch's life span and mechanical strength and where the PDC-1 is ruled out due to its limited resistance to the particular medium. Due to the fact that the pressure-sensing measuring diaphragms are only less loaded – considering their permissible values – the PDC-4 guarantees an excellent long-term stability at minimal setpoint drift. Consequent to its design, the upstroke of the pressure diaphragms is limited by means of a stopper so that high overpressure safety is ensured even in small operating ranges. A number of operating ranges are available of which also a version with adjustable hysteresis can be supplied. This enables the user to accurately control a span of pressures with only a single device. Thanks to its material quality, flexibility of connections and high switching load of the micro-switch, the PDC-4 is predestined for use across all sections of the industry.



Technical Specifications:

Operating range /	see table
Mounting position /	vertical to the top
max. Pressure /	see table
max. Media temperature /	-25...+70°C short spell up to +85°C, use cooling elements for higher temperatures
Setpoint /	can be set externally by means of screwdriver on the spindle
Repeatability /	< 1 % of working range (for pressure ranges > 1 bar)
Adjustment /	The scales are calibrated for decreasing pressures. The reading corresponds therefore to lower setpoint, the upper setpoint is higher by the hysteresis
Lead sealing /	On request, ex-factory; sealing can also be undertaken later
Vacuum /	All PDC-4 besides can be impacted by vacuum; the device will not be damaged
Vibration /	Up to 4g no significant deviations
mechanical Life span /	10 x 10 ⁶ for room temperature and sinusoidal pressure impact. Life span depends highly on the sort of pressure impact. This value is therefore just a guide value. For applications with pulsating pressure or pressure surges we recommend the use of a pressure surge reducer.
electrical Life span /	100.000 switching cycles at nominal current 8 A, 250 VAC
Isolation /	overvoltage category III, pollution degree 3, rated impulse voltage 4000V, fullfills DIN VDE 01 10
Hysteresis /	In PDC-4.1x..A to PDC-4.1.x.I the hysteresis cannot be set. In PDC-4.2.x.B to PDC-4.2.x.D and in PDC-4.2.x.F to PDC-4.2.x.I the hysteresis can be set as specified in the following tables

Process connection /	G1/2"-male (pressure gauge connection acc. DIN 16288), G1/4"-female acc. ISO 228 part 1. Using the G1/2"-male the PDC-4 can be directly screwed on to the pressure pipe, alternatively fastening by means of 2 screws (4mm Ø) on a plane surface is also possible.
Housing material /	Aluminium pressure casting GD Al Si 12 (sea-water resistant)
Material of pressure sensor /	refer to switching ranges in table
rel. Humidity /	15%...95%, non-condensing

Ordering Codes:

Order number	PDC-4.	1.	1.	F.	0
PDC-4 Pressure Switch with Sensor System					
Hysteresis /					
1 = hysteresis cannot be set					
2 = hysteresis can be set					
Housing /					
1 = normal housing					
2 = housing with plastic coating (chemical version) (PDC 4.1. only)					
Operating ranges /					
A = -250...+100 mbar					
B = -1...+0.1 bar					
C = 0.04...0.25 bar					
D = 0.1...0.6 bar					
E = 0.2...1.6 bar (only available with option 6)					
F = 0.2...2.5 bar					
G = 0.5...6 bar					
H = 1...10 bar					
I = 3...16 bar					
Options /					
0 = without					
Exi = gold-plated contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA; media temperature max. 60°C, ignition protection class II 1/2G Ex ia IIC T6 Ga/Gb, II 1/2D Ex ia IIIC T80 °C ⁽¹⁾					
Exd = standard contacts, SPDT, fixed hysteresis, IP65, switching capacity: max. 250 VAC, 3 (2) A or 24 VDC, 3 A or 250 VDC, 0.1 A, min. 24 VDC, 2 mA, media temperature max. 60°C, ignition protection class II 2G Ex d e IIC T6 Gb, II 1/2D Ex ta/tb IIIC T80 °C Da/Db ⁽¹⁾					
2 = gold-plated contacts, SPDT, switching capacity: max. 24 VDC, 100 mA, min. 5 VDC, 2 mA. And others not available with adjustable hysteresis					
3 = two microswitches, switching in parallel or in succession, fixed switching interval ⁽¹⁾ (not for all operating ranges)					
4 = two microswitches, 1 plug, switching in succession, adjustable switching interval (not for all operating ranges)					
5 = terminal connection housing, IP65					
6 = protection class IP65 and switching housing with surface protection (chemical version)					

⁽¹⁾ inkl. Klemmenanschluss-Gehäuse (IP65)



Electrical Specifications:

Connection / plug connection

Prot. class / IP54 in vertical mounting

Switching load / 250 VAC, 8A (Ohmic), 5A (inductive)
250 VDC, 0,3A (Ohmic)
24 VDC, 8A (Ohmic)
min. 10 mA, 12 VDC

Contacts / SPDT

Units with fixed hysteresis (PDC-4.1):

Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted parts	Sketch Nr.	Manufacturer number
PDC-4.1.1.A	-250...+100 mbar	45 mbar	3 bar	1.4571	1 + 15	VNS301-201
PDC-4.1.1.B	-1*...+0.1 bar	50 mbar	6 bar	1.4571	1 + 15	VNS111-201
PDC-4.1.1.C	0.04...0.25 bar	30 mbar	6 bar	1.4571	1 + 15	DNS025-201
PDC-4.1.1.D	0.1...0.6 bar	40 mbar	6 bar	1.4571	1 + 15	DNS06-201
PDC-4.1.1.E	0.2...1.6 bar	60 mbar	6 bar	1.4571	2 + 15	DNS1-201
PDC-4.1.1.F	0.2...2.5 bar	0.1 bar	16 bar	1.4571	1 + 18	DNS3-201
PDC-4.1.1.G	0.5...6 bar	0.15 bar	16 bar	1.4571	1 + 18	DNS6-201
PDC-4.1.1.H	1...10 bar	0.3 bar	16 bar	1.4571	1 + 16	DNS10-201
PDC-4.1.1.I	3...16 bar	0.5 bar	25 bar	1.4571	1 + 16	DNS16-201

* In case of high vacuum conditions, close to the theoretically possible low-pressure of -1 bar, use of the switch is subject to restrictions due to extraordinary conditions of vacuum technology. However, the vacuum switch itself will not be damaged at maximum low-pressure.

Units with adjustable hysteresis (PDC-4.2):

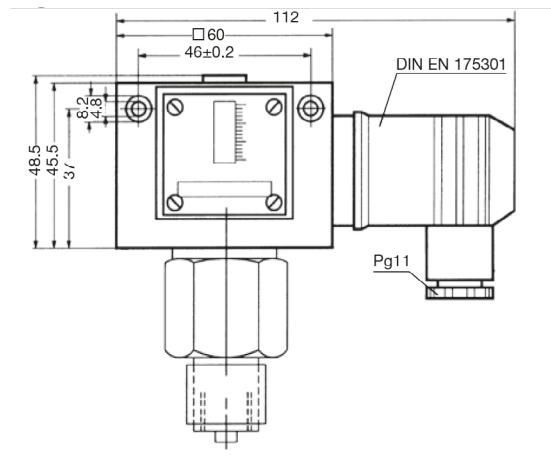
Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted parts	Sketch Nr.	Manufacturer number
PDC-4.2.2.G	0.5...6 bar	0.25...2 bar	16 bar	1.4571	1 + 18	DNS6-203
PDC-4.2.2.H	1...10 bar	0.45...2.5 bar	16 bar	1.4571	1 + 16	DNS10-203
PDC-4.2.2.I	3...16 bar	0.8...3.5 bar	25 bar	1.4571	1 + 16	DNS16-203

* In case of high vacuum conditions, close to the theoretically possible low-pressure of -1 bar, use of the switch is subject to restrictions due to extraordinary conditions of vacuum technology. However, the vacuum switch itself will not be damaged at maximum low-pressure.

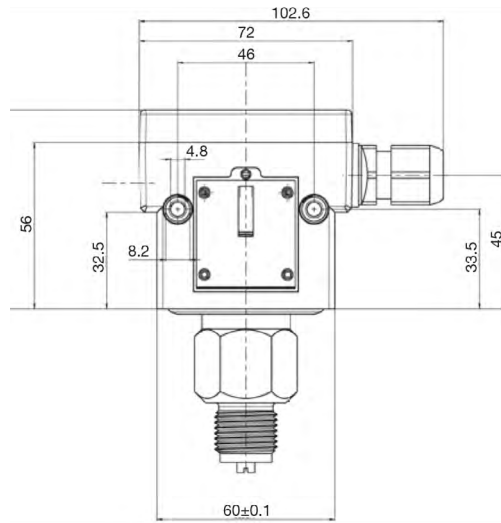


Housing Dimensions:

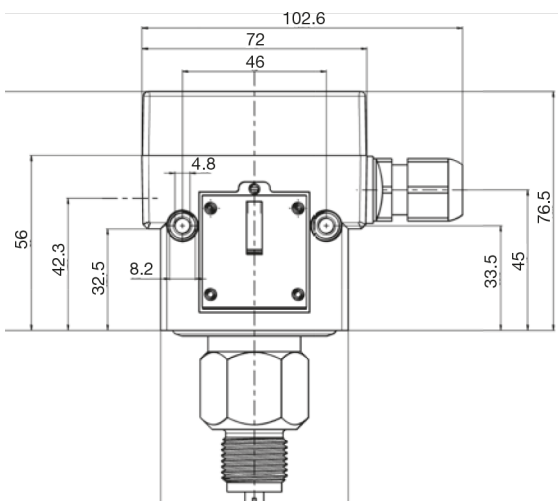
① Standard housing with plug connection



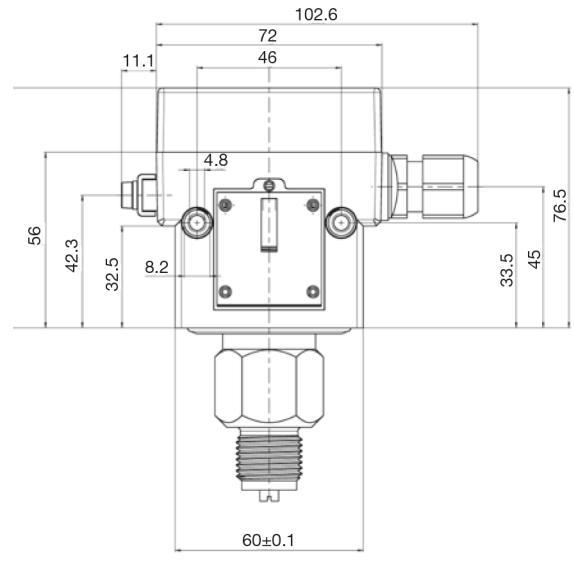
② Standard housing with terminal conn. (Option 5)



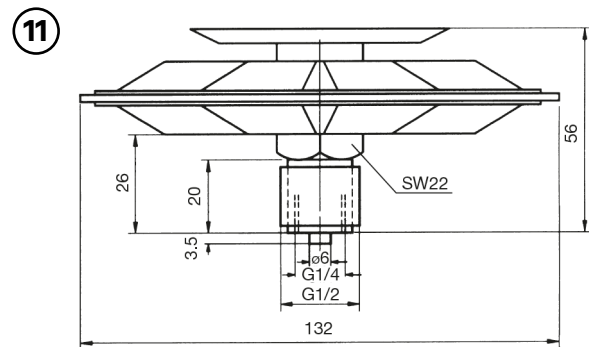
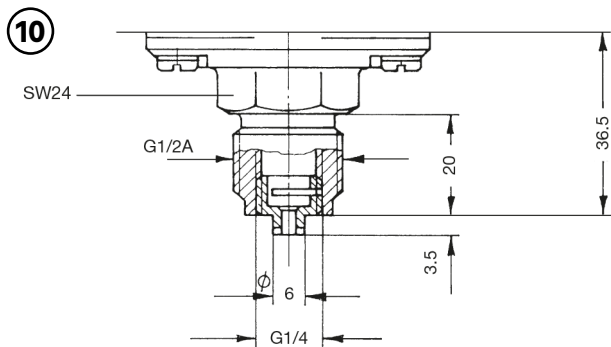
③ Ex-i housing with blue cable gland

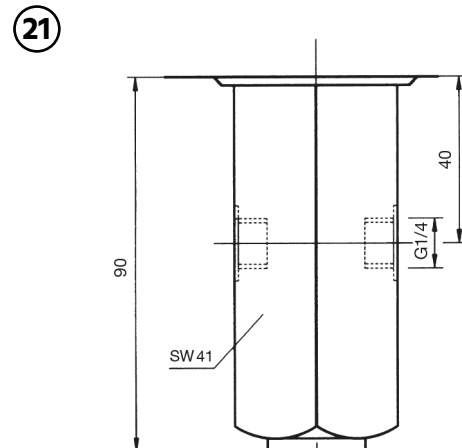
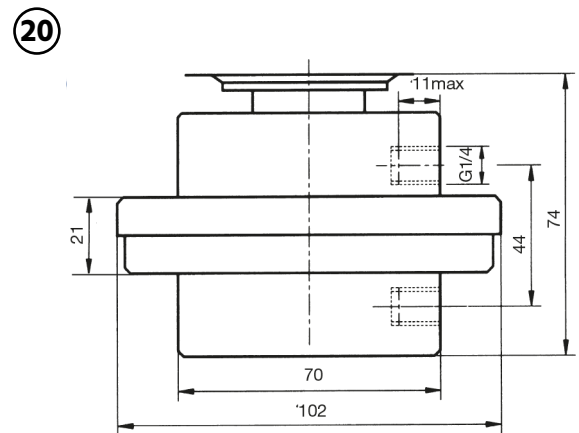
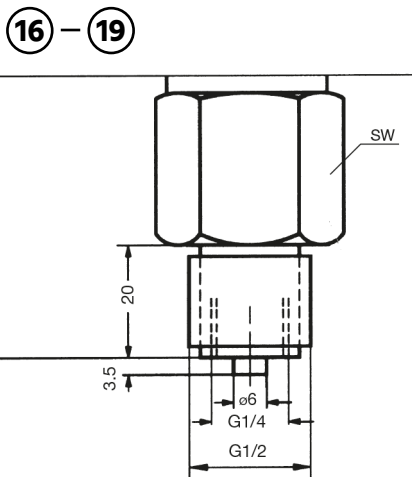
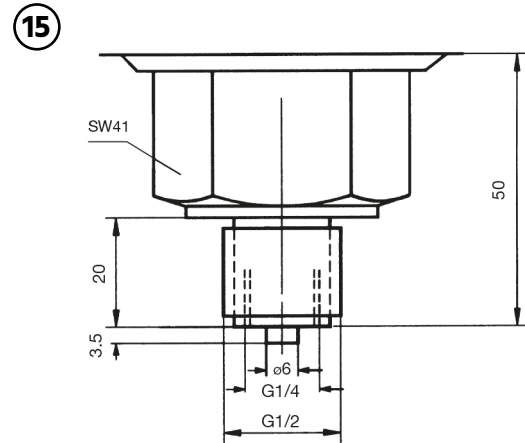
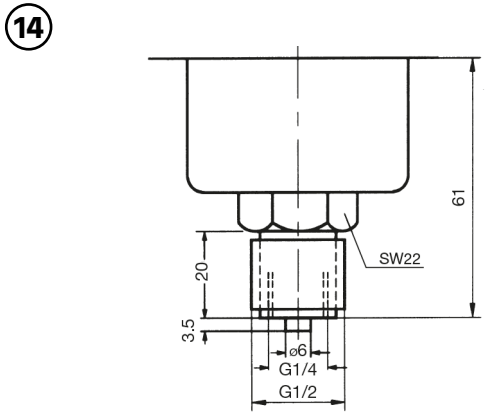
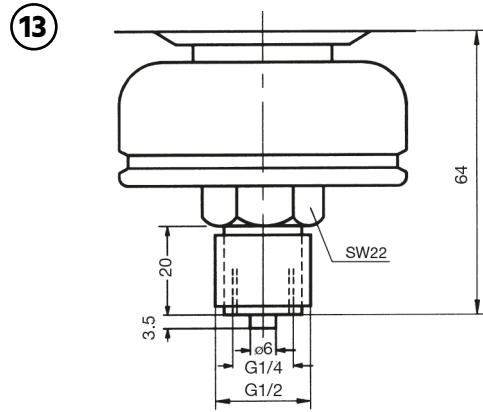
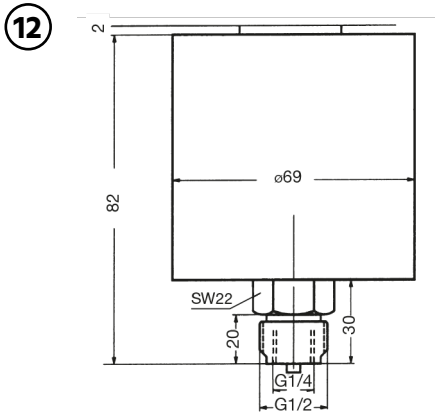


④ Ex-d housing with blue cable gland



Pressure Port Dimensions:





Housing Nr.	SW
16	22
17	24
18	30
19	32





PS-04N

Dual Pressure Switch



Features

- / Stainless steel connection
- / Self-monitoring
- / Two setpoints
- / Analogue output
- / 4-digit 14-segment LED-display
- / Adjustable keypad lock

Description:

The PS-04N dual pressure switch consists of a pressure sensor with downstream electronic component. Built in a compact stainless steel housing, conceived for rough industrial conditions to make it stable against interference and shock and vibration-proof, it offers to the user everything that today's state-of-the-art pressure measurement and monitoring technology demands. The pressure is sensed by a ceramic or a piezoresistive sensor. Its accuracy rating is 0.5% of full scale value and the repeatability better than 0.1% full scale. This meets any requirement. The PS-04N is controlled by a microprocessor and capable of self-monitoring with error output. Its maximum configuration offers 2 transistor limiting contacts with adjustable setpoint, adjustable hysteresis and adjustable time lag. The measured value is legibly displayed on a digital connection display and, additionally, put out through a 4. .20 mA or 0. .10 VDC socket. All parameters can be easily programmed by means of a diaphragm keypad.

Application:

With its pressure range of 0 bar up to 600 bar, the PS-04N dual pressure switch covers a wide spectrum of applications and, therefore, is used across all types of industries. Typical applications are the accumulator charge connection, the locking pressure monitoring and the lubricant control, to name a few. For example, the additional analogous signal can be used for regulating pressure or for reporting functions. Using only one device, the user has simultaneously two setpoints, an onsite display an analogous output for remote transmission, thus replacing a pressure gauge, a mechanical pressure switch and a pressure sensor.



Technical Specifications:

max. Ambient temp. /	-10...+70°C
max. Storage temp. /	-30...+80°C
max. Media temp. /	-25...+100°C
Compensated range /	-10...+70°C
Temperature influence for zero-point /	< ± 0.2% of full scale / 10 K
Temperature influence on Measuring range /	< ± 0.3% of full scale / 10 K
Linearity error /	<± 0.5% of full scale at 25°C
Repeatability /	± 0.1% of full scale
Resolution /	12 Bit (4096 steps per meas. span)
Scan rate /	1000/s
Weight /	ca. 200 g
Dimensions /	110 x 41 mm without counter plug
Operating elements /	3 press keys with perceptible pressure point
Sensor element /	ceramics or piezoresistive
Process connection /	G- or NPT-1/4"-male thread or 1/2"-male thread front flush
Wetted parts /	st. steel 1.4301, brass MS58, FKM or EPDM

Electrical Specifications:

Display /	4-digit 14-segment LED-display, height of digits 9 mm, red
Connection /	plug connector M12 x 1, 4- or 5-wire
Protection class /	IP65, Class III (IP67 on request)
Supply voltage /	15 VDC up to 32 VDC, reverse polarity protected (SELV, PELV)
Power consumption /	ca. 50mA without load
Shock resistance /	50 g (11 ms) as per DIN EN 60028-2-27
Vibration /	20 g (10...2000 Hz) as per DIN EN 60028-2-26
Analogue outputs /	
Power output:	4...20 mA
Voltage output:	0...10 VDC
Load:	max. 10 mA
Adjusting range:	25...100% of full scale
Refreshing rate:	2 ms
PNP-Transistor-Switching-outputs /	
Switching function:	NO / NC, window and diagnostic modes adjustable
Load:	max. 500 mA, short-circuit safe
Adjustability of setpoint and resetpoint:	0...125% of full scale
Delay:	0...50s adjustable
Switching Frequency:	max. 100 Hz
Display:	LED(s) red



Versions:

PS-04N Dual Pressure Switch

Electronic housing:

The electronic housing is made from the materials stainless steel V2A, FKM and PA/PC. The pressure connection is 320° turnable against the housing.

Sealing:

Depending on the media, choice is possible from among: FKM, e.g. for hydraulic oil and EPDM, e.g. for brake fluid.

Operating range:

The ranges from 0...0.2 bar up to 0...600 bar are standard ranges. Special operating ranges are available on request.

Outputs:

The full version of PS-04N provide two PNP transistor outputs and an additional analogue output at standard. Other versions are downgraded in several steps.

Process connection:

The user may choose between G1/4"-male thread, 1/4"-NPT-male thread, G1/2"-front flush diaphragm with male thread connection and 1/2"-NPT-front flush diaphragm with male thread connection. Front flush versions are always equipped with a piezoresistive sensor element. UNF- and CETOP-connections are available on request.

Sensor:

The PS-04N is equipped with a piezoresistive sensor element at standard. Operating ranges from 0...10 bar rel. up to 0...400 bar rel. can also be equipped with a sensor element from ceramics.

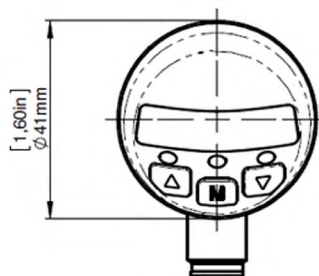
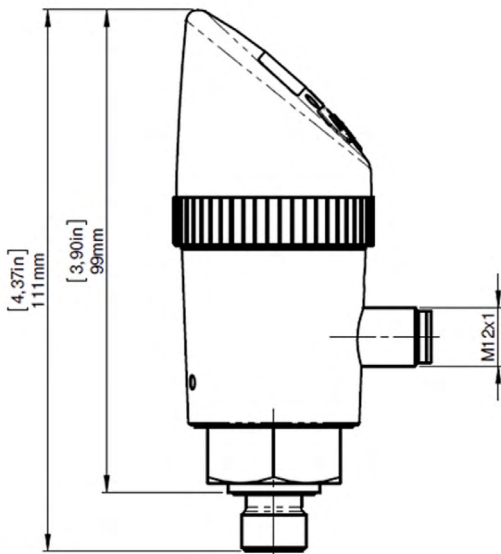
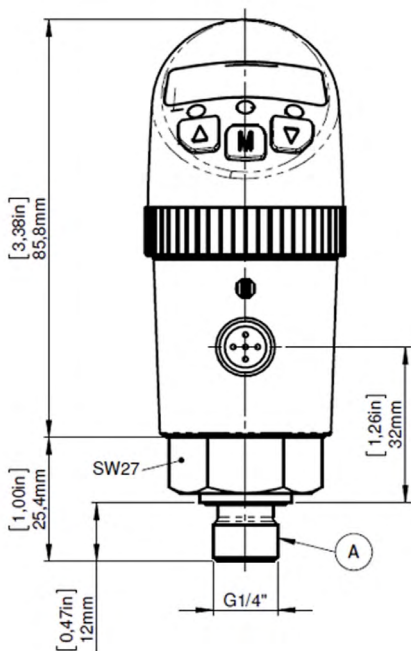
Ordering Codes:

Order no.	PS-04N.	3.	1.	R100.	5.	1.	P
PS-04N Dual Pressure Switch							
Electronic housing / 3 = st. steel							
Sealing / 1 = FKM 3 = EPDM							
Operating range / A01 = 0...1 bar absolut (piezoresistive Sensor) A05 = 0...5 bar absolut (piezoresistive Sensor) A10 = 0...10 bar absolut (piezoresistive Sensor) RP02 = 0...0.2 bar rel. (piezoresistive Sensor) RP05 = 0...0.5 bar rel. (piezoresistive Sensor) R001 = 0...1 bar rel. (piezoresistive Sensor) R002 = 0...2 bar rel. (piezoresistive Sensor) R005 = 0...5 bar rel. (piezoresistive Sensor) R010 = 0...10 bar rel. R050 = 0...50 bar rel. R100 = 0...100 bar rel. R200 = 0...200 bar rel. R400 = 0...400 bar rel. R600 = 0...600 bar rel. (piezoresistive Sensor)							
Outputs / 1 = 2 transistor outputs (PNP) 2 = 1 transistor output (PNP) and 1 analogue output 4...20 mA 3 = 1 transistor output (PNP) and 1 analogue output 0...10 VDC 4 = 2 transistor outputs (PNP) and 1 analogue output 4...20 mA 5 = 2 transistor outputs (PNP) and 1 analogue output 0...10 VDC							
Process connection / 1 = G1/4"-male thread 2 = G1/2"-front flush diaphragm male thread (piezoresistive sensor)** 3 = 1/4"-NPT-male thread 4 = 1/2"-NPT-front flush diaphragm male thread (piezoresistive sensor)**							
Sensor / P = piezoresistive sensor element K = sensor element from ceramics							

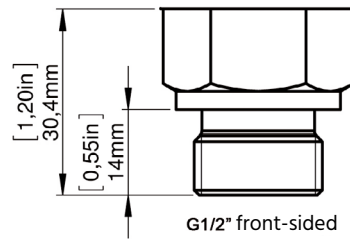
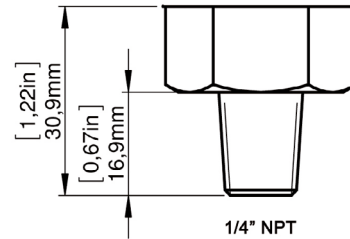
** 10...600 bar only



Dimensions in mm:



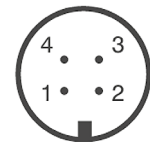
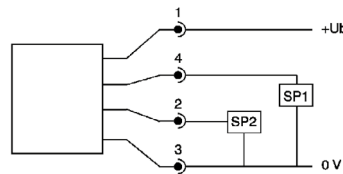
Process connection /



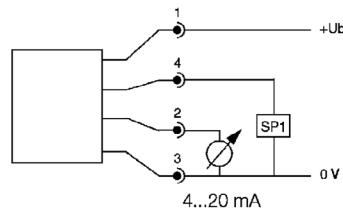
Electrical connection and plug connection /

Version: 2 switching outputs

plug 4-pole

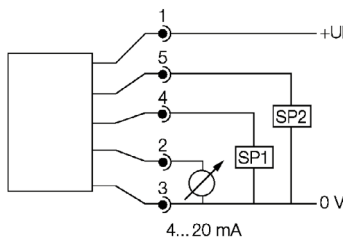


Version: 1 switching output + 1 Analogue



Version: 2 switching outputs + 1 Analogue

plug 5-pole



Plug connector M12x1, 4/5-wire	Version with 1 switching output	Version with 2 switching outputs	Version with 1 switching and 1 analogue output	Version with 2 switching and 1 analogue output
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Pin 1 (brown)	+Ub 15...32 VDC	+Ub 15...32 VDC	+Ub 15...32 VDC	+Ub 15...32 VDC
Pin 2 (white)	not connected	SP2 (0,5A max.)	analogue 4...20 mA or 0...10 VDC	analogue 4...20 mA or 0...10 VDC
Pin 3 (blue)	0V	0V	0V	0V
Pin 4 (black)	SP1 (0,5A max.)	SP1 (0,5A max.)	SP1 (0,5A max.)	SP1 (0,5A max.)
Pin 5 (grey)	not connected	not connected	not connected	SP2 (0,5A max.)



PS-05

Electronic Pressure Switch with Stainless Steel Sensor



Features

/ Display and housing turnable

/ Accuracy up to 0,25%

/ Up to 4 switching outputs

/ Many different process connections

/ 2- or 3-wire

/ 4 digit LED-display

Description:

The PS-05 pressure switch and sensor combines a display with a pressure sensor. Four PNP switching outputs can be used, as well as a current and a voltage output. The switching points can be adjusted easily and completely boundless within the menu, because the display can be rotated in two directions, so virtually any orientation of the display is possible. Further adding to its versatility, a whole lot of different dimensions can be chosen for the PS-05, such as bar, mbar, mWC and so on. While being used in a difficult application, the PS-05 will be protected from the medium by a front-flush-diaphragm. This way, a clogging of the measuring unit will be avoided.

Application:

The PS-05 pressure switch can be used for liquids and gases alike. The pressure connection made from stainless steel makes it compatible with a variety of media. Should the media be very aggressive, thick or have a very high temperature and therefore require different configurations, the transmitters can be outfitted with isolating diaphragms. Especially the flexible display makes the PS-05 useful and versatile device for many areas e.g. for pneumatic, process engineering, environment technology and in general measurement technology.



Technical Specifications:

Inlet sizes:

Switching output /	1 x PNP-output
Optional outputs /	2 x independent PNP-outputs 4 x independent PNP-outputs
Accuracy /	Standard: $P_N < 0,4 \text{ bar}$: $\leq \pm 0,5 \%$, or rather $P_N \geq 0,4 \text{ bar}$: $\leq \pm 0,35 \%$ option for $P_N \geq 0,4 \text{ bar}$: $\leq \pm 0,25 \%$
Repeatability /	$\leq \pm 0.1\% \text{ FSO}$
Switch frequency /	max. 10 Hz
Switching cycles /	$> 100 \times 10^6 \text{ cycles}$
Delay /	0..100 s
Media temp. /	-40..125°C
Ambient temp. /	-40..85°C
Storage temp. /	-40..100°C
Material /	
Pressure connection:	SS 1.4404
Housing:	SS 1.4404
Display housing:	PA 6.6, Polycarbon
Seals:	FKM, weld-on version optional
Membrane:	SS 1.4435

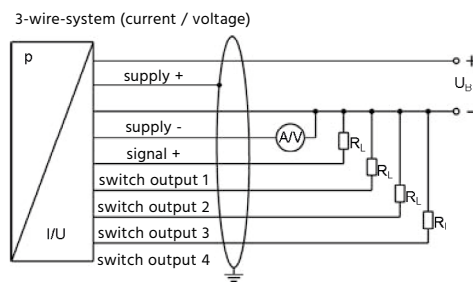
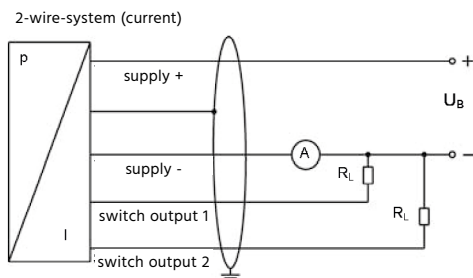
Installation position /	any
Weight /	at least 160g
Mechanical strength /	
Vibration:	10g RMS (25..2000 Hz) from DIN EN 60068-2-6
Shock:	500g / 1 ms from DIN EN 60068-2-27

Temperature errors /			
Nominal pressure PN [bar]	-1..0	< 0.40	≥ 0.40
Error string [% FSO]	$\leq \pm 0.75$	$\leq \pm 1$	$\leq \pm 0.75$
in compensated areas [°C]	-20..85	0..70	-20..85

Vacuum protection /	$P_N \geq 1 \text{ bar}$: infinite $P_N < 1 \text{ bar}$: on request
----------------------------	---

PN gauge	PN abs.	Overload	Burst pressure \approx
-1..0	-	5	7.5
0.10	-	0.5	1.5
0.16	-	1	1.5
0.25	-	1	1.5
0.40	0.40	2	3
0.60	0.60	5	7.5
1	1	5	7.5
1.6	1.6	10	15
2.5	2.5	10	15
4	4	20	25
6	6	40	50
10	10	40	50
16	16	80	120
25	25	80	120
40	40	105	210
60	60	210	420
100	100	210	420
160	160	600	1000
250	250	1000	1250
400	400	1000	1250
600	600	1000	1250

Connections:



Electrical connection	M12x1 plastic (5-pin)	M12x1 metal (5-pin)	M12x1 plastic (8-pin)	ISO 4400	Binder Series 723 (5-pin)	Kabelfarben (IEC 60757)
Supply +	1	1	1	1	1	wh (white)
Supply -	3	3	3	2	3	bn (brown)
Signal + (only for 3-wire)	2	2	2	3	2	gn (green)
Switch output 1	4	4	4	3	4	gy (grey)
Switch output 2	5	5	5	-	5	pk (pink)
Switch output 3	-	-	6	-	-	-
Switch output 4	-	-	7	-	-	-
Shield	over pressure connection	plug housing / pressure connection	over pressure connection	mass contact	plug housing / pressure connection	gnye (green-yellow)



Electrical Specifications:

Analogue output /

- 2-wire current signal 4...20 mA / $U_B = 13...36 V_{DC}$
max. load: $R_{max} = [(U_B - U_{B min}) / 0.02A] \Omega$
setting time: < 10 ms
- 3-wire current signal 4...20 mA / $U_B = 19...30 V_{DC}$ adjustable
(Turn-Down of range to 1:5)
max. load: $R_{max} = 500 \Omega$
setting time: < 3 s
- 3-wire voltage signal 0...10 V / $U_B = 15...36 V_{DC}$
max. load: $R_{min} = 10 k\Omega$
setting time: < 3 ms
- without output $U_B = 15...36 V_{DC}$

max. Current /

- 4...20 mA / 125 mA loadable, short circuit proof;
2- and 3-wire: $U_{Switch} = U_B - 2V$
- 0...10 V / 3-wire: 125 mA loadable, short circuit proof

max. Current (unloaded outputs) /

- 2-wire current: max. 25 mA
- 3-wire current: ca. 45 mA + signal stream
- 3-wire voltage: ca. 45 mA

Display /

4-digit, red 7-segment-LED-display,
digit height 7mm, display range
-1999...+9999; Accuracy $0.1\% \pm 1$ Digit;
digital damping 0.3...30 s (adjustable);
refreshrate 0.0...10 s (adjustable)

CE-Conformity /

EMV-guideline: 2014/30/EU
Pressure Equipment directive: 2014/68/
EU (module A) for devices with max.
over-pressure > 200 bar

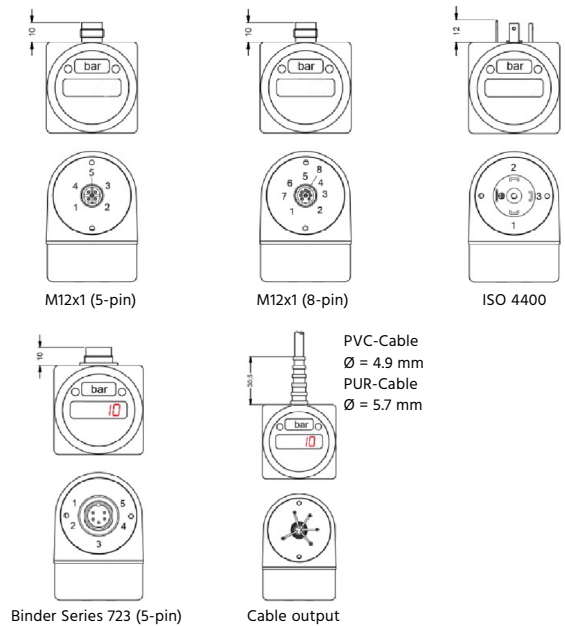
Protection /

- Short circuit proof: permanent
- Pole reversion: no damage, but also no functionality
while reversing poles
- Electromagnetic compatibility: emitted interference and interference
immunity according to EN 61326

Protection class /

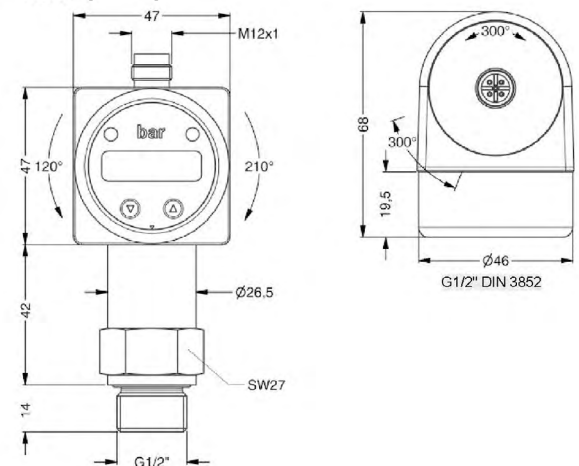
IP 65

Electr. Connections:

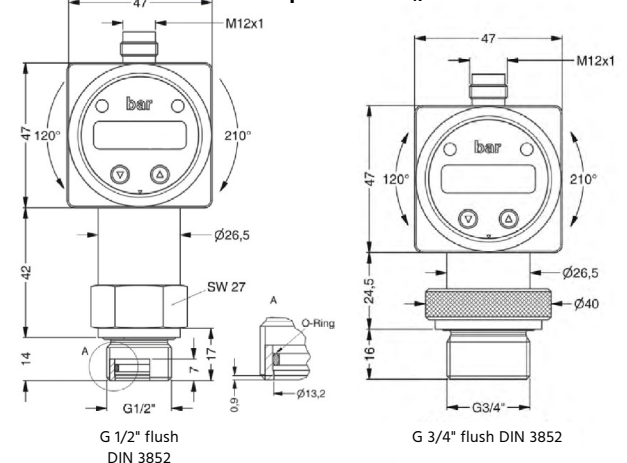


Mech. Connections:

Standard (in mm)



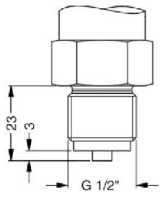
Optional for P_N from 0.1 to 40 bar



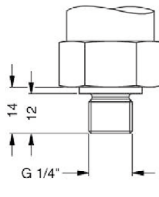


Mech. Connections:

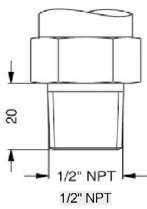
Ordering Codes:



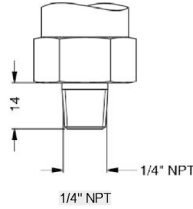
G1/2" EN 837



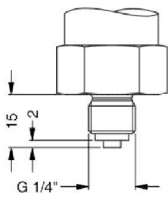
G1/4" DIN 3852



1/2" NPT



1/4" NPT



G1/4" EN 837

Order number

PS-05. 1. 12. 1. B. 1. 5. 3. 0

Electronic Pressure Switch with Stainless Steel Sensor

Measuring unit /

1 = gauge in bar
2 = absolute in bar

Measuring range /

- 1 = 0 .. 0.10 bar
- 2 = 0 .. 0.16 bar
- 3 = 0 .. 0.25 bar
- 4 = 0 .. 0.40 bar
- 5 = 0 .. 0.60 bar
- 6 = 0 .. 1.0 bar
- 7 = 0 .. 1.6 bar
- 8 = 0 .. 2.5 bar
- 9 = 0 .. 4.0 bar
- 10 = 0 .. 6.0 bar
- 11 = 0 .. 10 bar
- 12 = 0 .. 16 bar
- 13 = 0 .. 25 bar
- 14 = 0 .. 40 bar
- 15 = 0 .. 60 bar
- 16 = 0 .. 100 bar
- 17 = 0 .. 160 bar
- 18 = 0 .. 250 bar
- 19 = 0 .. 400 bar
- 20 = 0 .. 600 bar
- 21 = -1 .. 0 bar

Analogue output /

- 1 = none
- 2 = 4 .. 20 mA / 2-wire
- 3 = 0 .. 10 V / 3-wire
- 4 = 4 .. 20 mA / 3-wire, adjustable

Switching output / ¹

- A = 1 switching output
- B = 2 switching outputs
- C = 4 switching outputs

Accuracy /

- 1 = standard: $P_N < 0,4 \text{ bar}$: $\pm 0,5\%$ or rather $P_N \geq 0,4 \text{ bar}$: $\pm 0,35\%$
- 9 = option for $P_N \geq 0,4 \text{ bar}$: $\pm 0,25\%$ instead of $\pm 0,35\%$

Electrical connection /

- 1 = plug M12x1 (5-pin) - plastic
- 2 = plug M12x1 (8-pin) - plastic
- 3 = plug M12x1 (5-pin) - metal
- 4 = plug and cablebox ISO 4400
- 5 = plug Binder Series 723 (5-pin)
- 6 = cable output with PVC-Cable

Mechanical connection /

- 1 = G 1/2" DIN 3852
- 2 = G 1/2" EN 837 ²
- 3 = G 1/4" DIN 3852
- 4 = G 1/4" EN 837 ²
- 5 = G 1/2" DIN 3852 with front flush measuring cell
- 6 = G 3/4" DIN 3852 with front flush measuring cell
- 7 = 1/2" NPT
- 8 = 1/4" NPT

Sealing /

- 0 = standard FKM
- 9 = none (weld version)

¹ max. 1 switching output for 2-wire current signal and ISO-4400-plug as well as for 2-wire current signal with Ex-protection.
No switching output possible for 3-wire with ISO 4400-plug
² Welded version only with pressure ports according to EN 837; possible for nominal pressure ranges $P_N \leq 40 \text{ bar}$



KE-01

Cooling Line for Pressure Metering Points up to 200°C



Features

- / Available in brass, steel or stainless steel
- / Pressure up to 600 bar
- / Temperature up to 200°C
- / Female thread for instrument
- / Gauge connection to measuring point

Description:

The full stainless steel cooling tower KE-01 connects a pressure measuring point, which is due to high media temperatures too hot for a direct connection, to a pressure instrument like a pressure gauge, a pressure switch or a pressure sensor. The cooling tower reduces the temperature of the pressure medium significantly by air circulation and thermal radiation, in order to avoid wrong measuring values or damages of the pressure instrument. It is recommended to use the cooling tower KE-01 at process temperatures in excess of 100°C.

Application:

Too high media temperatures at pressure metering points are frequently restricting the facility to display, measure and evaluate the process pressure accurately, thus pressure instruments are usually calibrated to a specified temperature range or the inaccuracy caused by higher or lower temperatures is compensated. Temperatures out of this range lead to disproportionate imprecision or damage of the internal electronic components. In this case the cooling tower KE-01 offers a priceworthy and practical solution, which increases the measuring accuracy and the lifespan of such instruments.



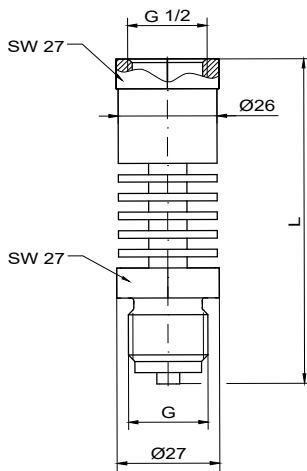
Technical Specifications:

Materials /	brass, steel or stainless steel 316Ti
max. Pressure /	brass: 250 bar steel: 400 bar st. steel: 600 bar
Temperature /	brass: 100°C steel: 155°C st. steel: 200°C
Connecting thread /	
Instrument:	G 1/2"-female
Process:	G 1/2"B-male or G 1/4"B-male
Weight /	
	G1/4"B: 100g G1/2"B: 120g

Ordering Codes:

Order number	KE-01.	1.	2.
KE-01 Cooling Line			
Material /			
1 = brass			
2 = steel			
3 = stainless steel 316Ti			
Process connection /			
1 = G 1/2"B-male			
2 = G 1/4"B-male			

Dimensions in mm:



Version	Thread	mm
KE-01	G	L
KE-01.x.1	G 1/2B	87
KE-01.x.2	G 1/4B	79