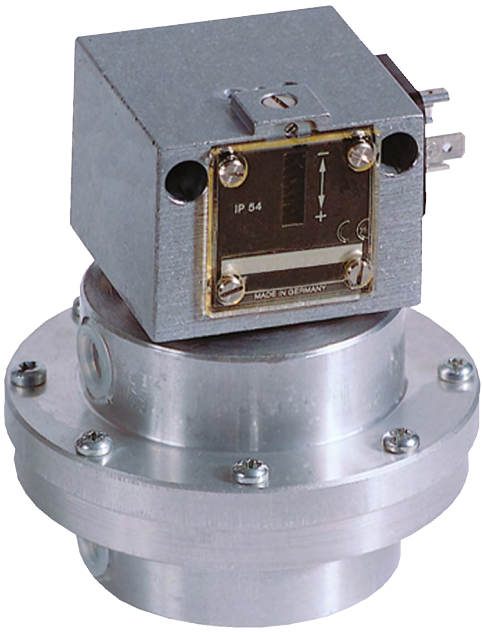
PDC-3

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. Excrescent 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 microswitch 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 pressue 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 / 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 place 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)

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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

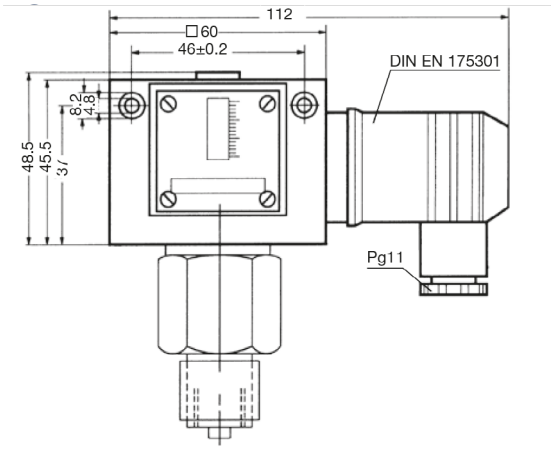
Operating Ranges and Hysteresis:

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

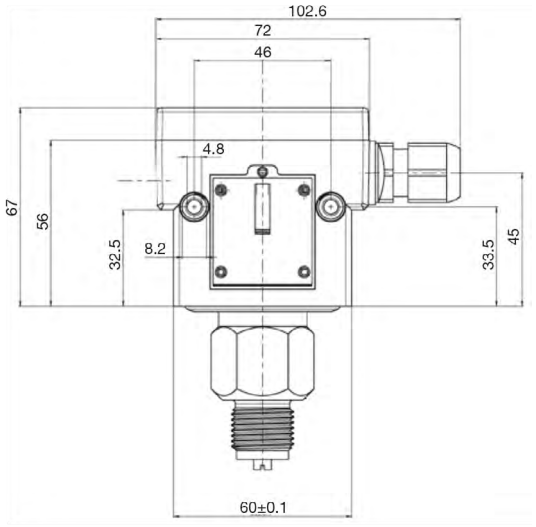
* no „mbar" or „bar" scale („±" scale only)
** could even be loaded only at one side

Housing Dimensions:

(1) Standard housing with plug connection

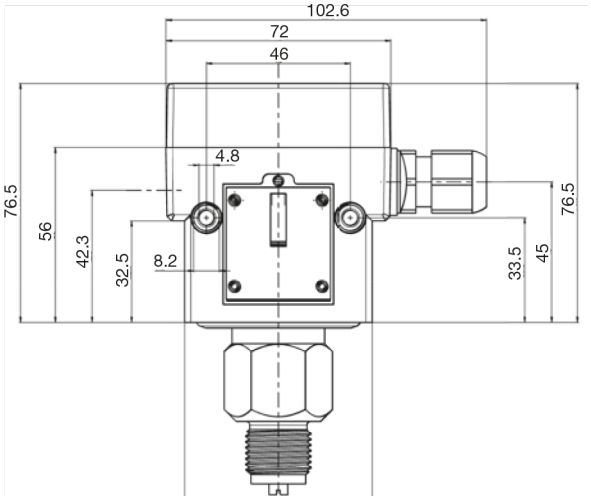


(2) Standard housing with terminal plug (Option 5)

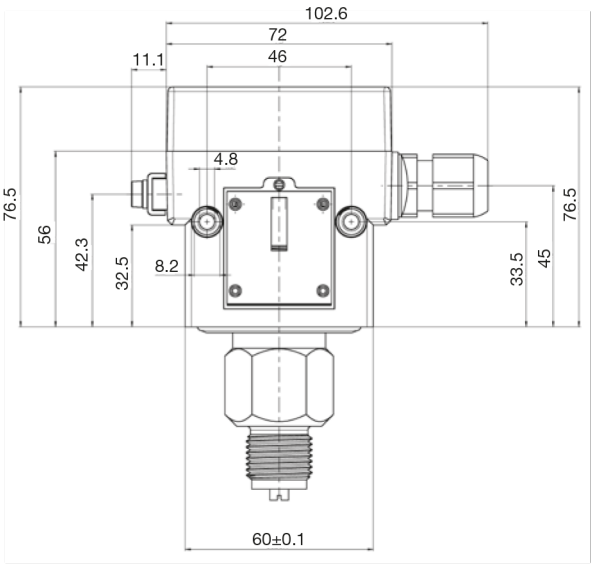


Housing Dimensions:

3 Ex-i housing with blue cable gland



4 Ex-d housing with blue cable gland



Pressure Port Dimensions:

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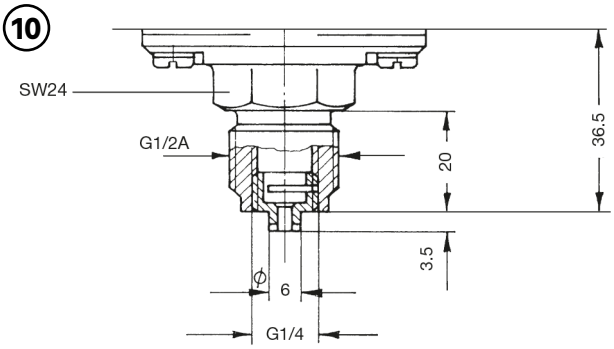

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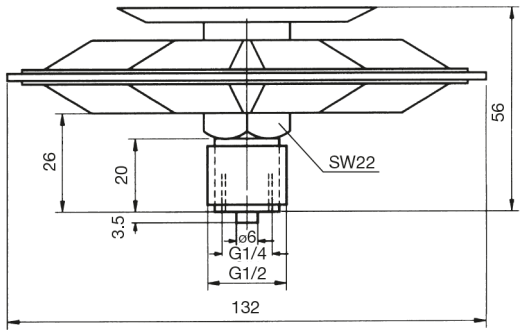

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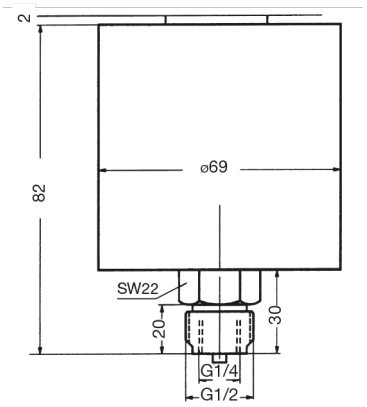

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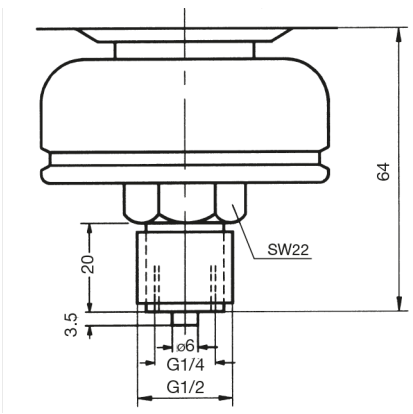

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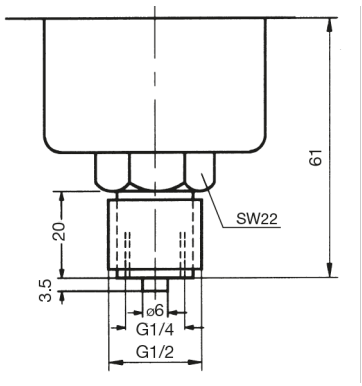

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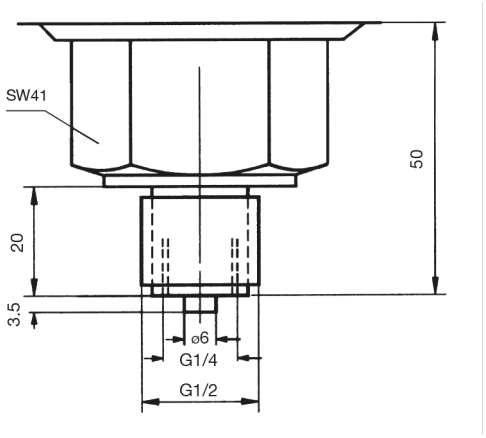

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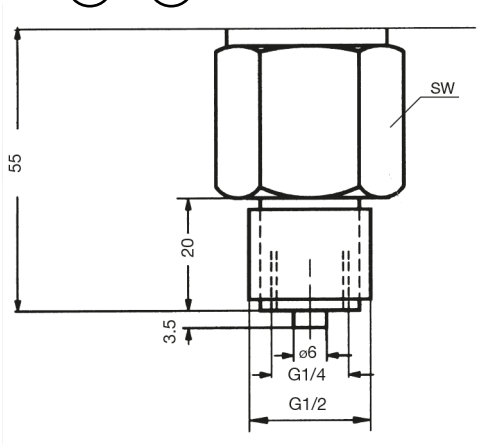

Housing Nr.	SW
16	22
17	24
18	30
19	32

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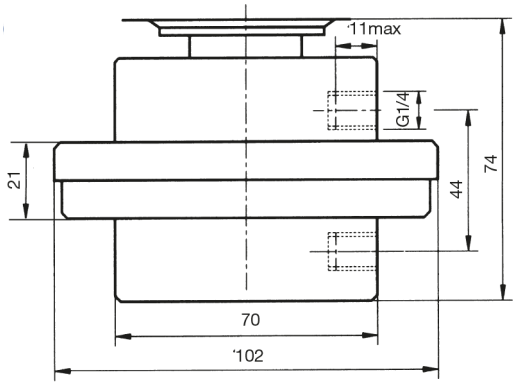

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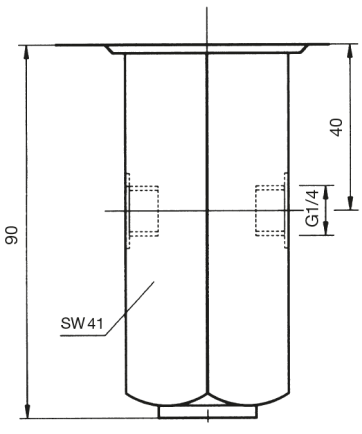

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