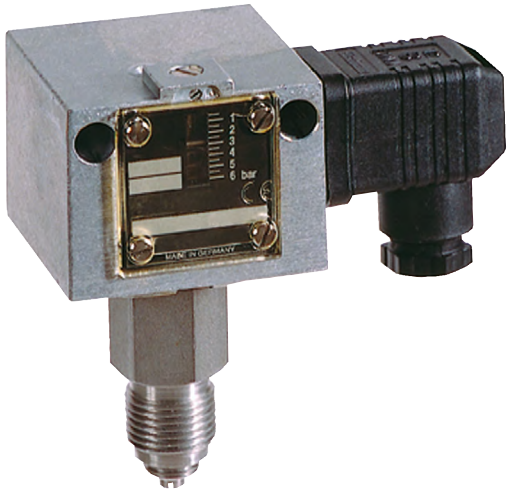
PDC-1

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 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 / 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 to16 bar
HD= 0.5. . .6 bar, overload up to25 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

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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):

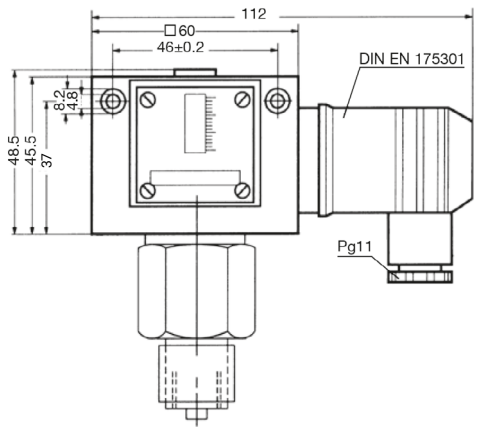
Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted materials	Sketch no.	Manufacturer number
PDC-1.1.A	1. . .16 mbar	2 mbar	1 bar	sensor housing 1.4301 + membrane perbunan	1 + 11	DCM4016
PDC-1.1.B	4. . .25 mbar	2 mbar	1 bar	sensor housing 1.4301 + membrane perbunan	1 + 11	DCM4025
PDC-1.1.C	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):

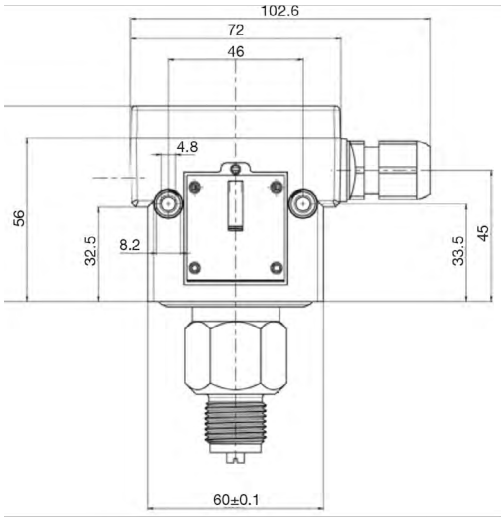
Type	Setpoint range	Hysteresis (average)	max. Pressure	Wetted materials	Sketch no.	Manufacturer number
PDC-1.2.D	0.04. . .0.25 bar	0.03 - 0.4 bar	6 bar	sensor housing copper a. brass + bellow copper	1 + 14	DCMV025
PDC-1.2.E	0.1. . .0.6 bar	0.04 - 0.5 bar	6 bar	sensor housing copper a. brass + bellow 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:

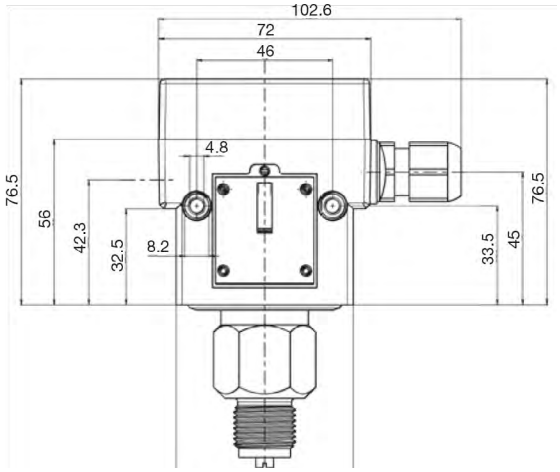
Standard housing with plug connection



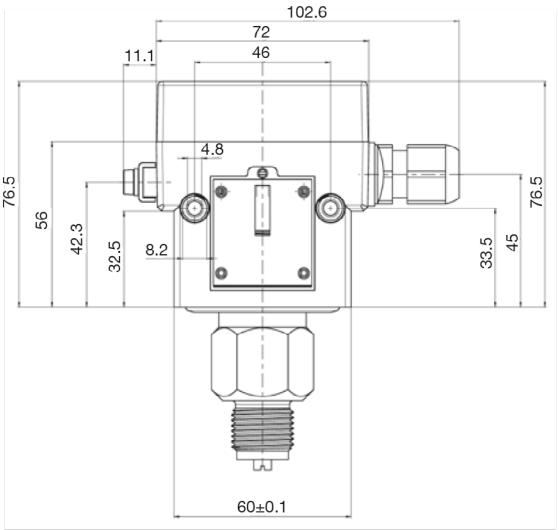
Standard housing with terminal connection (option 5)



③ Ex-i housing with blue cable gland



④ Ex-d housing with Ex-d cable gland



Pressure sensor dimensions:

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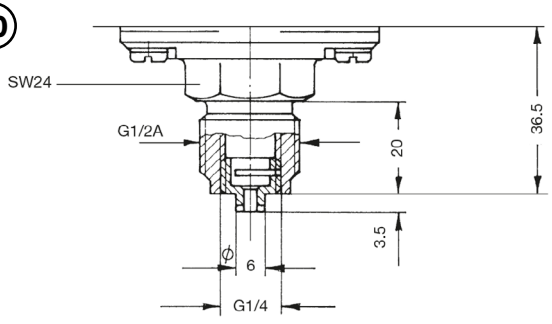

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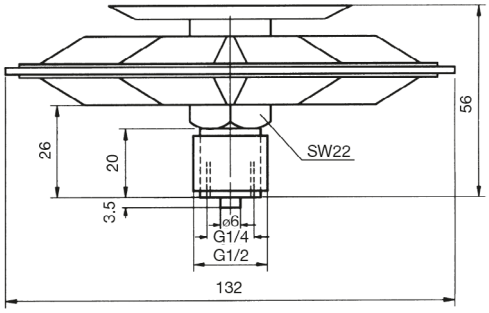

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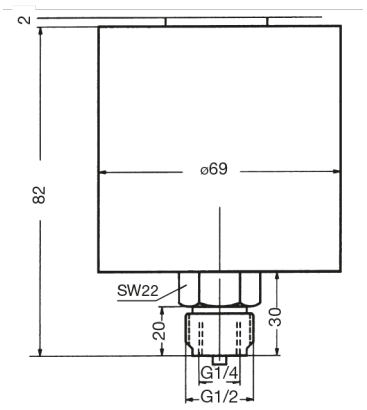

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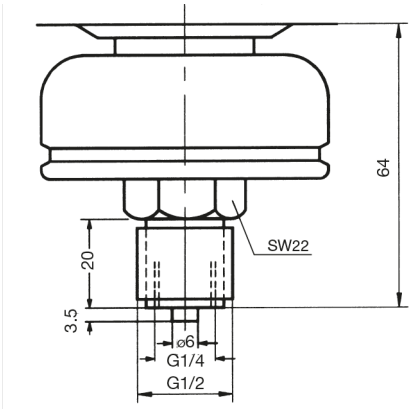

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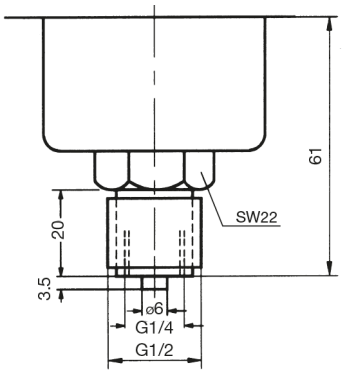

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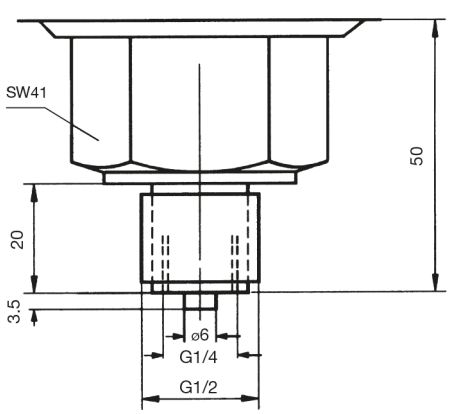

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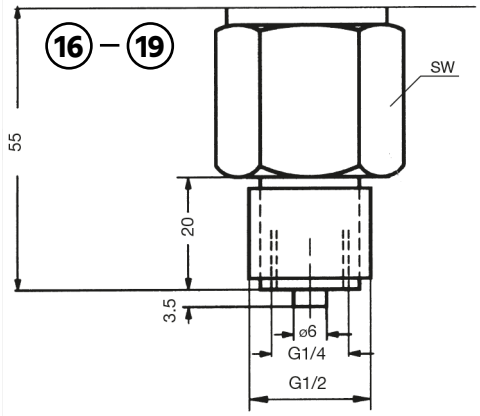

Housing no.	SW
16	22
17	24
18	30
19	32

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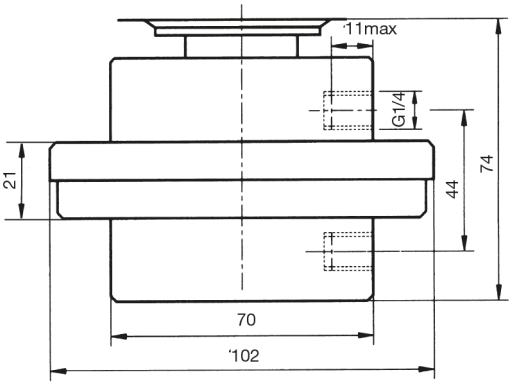

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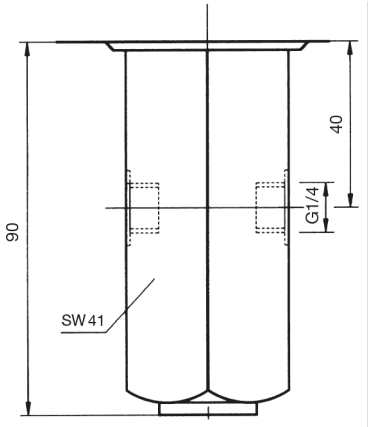

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