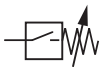
20D Allfluid
Pneumatic pressure switch electromechanical actuated -1...100 bar, G1/2

Microswitch with gold plated contacts

Intrinsically safe operation

Electrical connection: connector acc. to DIN EN 175301-803 (form A) or M20x1,5 (DIN 46320)





Technical features

Medium:
For neutral, aggressive, non-inflammable gases and fluids
Operating pressure:
-1 ... 100 bar
Operating viscosity:
1000 mm^2/s max.
Switching pressure difference:
Optional: fixed or adjustable
Repeatability:
±1% of final value (depending on regulating pressure)

Pulsation:
Not permitted
Switching cycles:
Max. 20/min.
Mounting position:
Optional
Shock-/vibrations (to avoid if possible):
4 g max. (sinusoidal)/5 Hz max.
Sealing:
$\leq 10^{-7}$ mbar • l • s^{-1}

Degree of protection (acc. to DIN 40050):
IP65
Electrical connection:
DIN EN 175301-803 (DIN 43650) form A or Connector M20 x 1,5 (DIN 46320)
Temperature:
Fluid:
-10 ... +100°C
Ambient:
-25 ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C.

Material
Housing: Aluminium diecast
Sensor: Stainless steel
Sealing: Stainless steel-bellows

Fixed switching pressure difference

Symbol	Operating pressure range*1) (bar)	Over pressure *2) (bar)	Switching pressure difference Lower range (bar)	Upper range (bar)	Sensor type	Weight (kg)	Model
	-1 ... 0	10	0,06	0,07	B	0,8	1810115
	-1 ... 1	10	0,08	0,09	B	0,8	1810215
	-1 ... 2,5	10	0,09	0,12	B	1,1	1810415
	0,05 ... 1	10	0,07	0,08	B	0,8	1811115
	0,5 ... 4	20	0,30	0,33	B	0,8	1811415
	0,5 ... 6	20	0,30	0,35	B	0,8	1811515
	0,5 ... 10	20	0,30	0,40	B	0,8	1811615
	1 ... 16	50	0,70	0,80	F	0,8	1811715
	1 ... 25	50	0,70	0,90	F	0,8	1811815
	5 ... 63	85	1,00	2,00	H	1,1	1811915

Adjustable switching pressure difference

Symbol	Switching pressure range *1) (bar)	Over pressure *2) (bar)	Switching pressure difference (bar)	Lower range Min. (bar)	Upper range Max. (bar)	Weight (kg)	Model
	-1 ... 0	10	0,12	0,13	0,70	1,1	1800115
	-1 ... 1	10	0,19	0,21	1,00	1,1	1800215
	-1 ... 2,5	10	0,22	0,24	2,50	1,1	1800415
	0,05 ... 1	10	0,15	0,16	0,70	1,1	1801115
	0,1 ... 2,5	10	0,34	0,40	2,00	1,1	1801315
	0,5 ... 4	20	0,80	0,80	2,50	1,1	1801415
	0,5 ... 6	20	0,80	0,90	5,00	1,1	1801515
	0,5 ... 10	20	0,90	1,90	8,00	0,8	1801615
	1 ... 16	50	1,70	2,00	12,00	0,8	1801715
	1 ... 25	50	1,80	2,80	20,00	1,1	1801815
	5 ... 63	85	3,50	4,50	20,00	1,1	1801915
	5 ... 100	150	4,00	9,00	55,00	1,1	1801015

Connector is not included; special pressure ranges on request

*1) Atmospheric air pressure; *2) Short-term pressure peakes are not allowed to exceed this limit value during operations. Operative utilization of the limit value is not permitted. The limit value corresponds to maximum testing pressure.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.,

Option selector

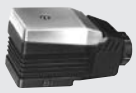
18★ ★★ ★★

Switching pressure difference:	Substitute
Adjustable	0
Fixed	1
Operating pressure range (bar)	**Substitute**
-1 ... 0	01
-1 ... 1	02
-1 ... 2,5	04
0,05 ... 1	11
0,1 ... 2,5	13*
0,5 ... 4	14
0,5 ... 6	15
0,5 ... 10	16
1 ... 16	17
1 ... 25	18
5 ... 63	19
5 ... 100	10*

*only for adjustable switching pressure difference

Sensormaterial	Electrical connection	Substitute
1.4404	DIN EN 175301-803, G1/2	10
1.4404	M20 x 1,5, G1/2	15

Accessories

Connector	Connector	Brackets	Surge damper	Pressure port reducing nipple
				
		Page 5	Page 5	Page 5
0570110	0585418 (with LED, 12 ... 28 V)	0574772 (Steel)	0553258 (G1/4, Stainless steel 14505, AISI 303/304 S)	0553831 (G1/2 & 1/2 NPT, Stainless steel 14505, AISI 303/304 S)
		0553908 (Stainless steel)	0574773 (G1/4, Brass/Steel)	0550083 (G1/4A ... G1/2A, Stainless steel 14505, AISI 303/304 S)
			0551894 (G1/2, Stainless steel 14505, AISI 303/304 S)	0574765 (G1/4 – 1/4 NPT, Brass)

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.,

Switching capacity
Commutator with gold plated contacts

Load level	Current type	Load type*2)	U min [V]	Max. permanent current Imax [A] at U [V] [V] *1 30	48	60	125	250	Contact life
Standard *3) (e.g. contractors,solenoids)	AC	ohmic	12	0,1	0,1	0,1	0,1	0,1	≥ 2 x 10^5 Switching cycles
	AC	inductive, cos φ ≈ 0,7	12	3	3	3	3	3	
	DC	ohmic,	12	5	1,2	0,8	0,4	–	
	DC	inductive, L/R ≈ 10 ms	12	3	0,5	0,35	0,05	–	
Minor *4) (e.g. electronic circuits)	AC	ohmic,	5 *5)	0,1	–	–	–	–	≥ 2 x 10^5 Switching cycles
	DC	inductive, L/R ≈ 10 ms	5 *5)	0,1	0,01	-	-	-	

Reference number: 20/min, Reference temperature: +20°C.

Spark quenching with diode with DC and inductive load:
Imax = 1,5 x Imax of table;
Imin = 1 [mA]

Creepage and air paths correspond to insulation group B according to VDE Reg. 0110 (except contact clearance of microswitch).

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Futhermore additional measuements has to be taken to fulfil the EMV regulation 2004/108/EG by the manufacturer

*2) Spark quenching/overload protection will be necessary using inductive loads.

*3) Gold-plating not required as it would decay.
Max. perm. in-rush current (ca. 30 ms) I AC ein = max. 15A.

*4) Gold-plating required (will not decay).

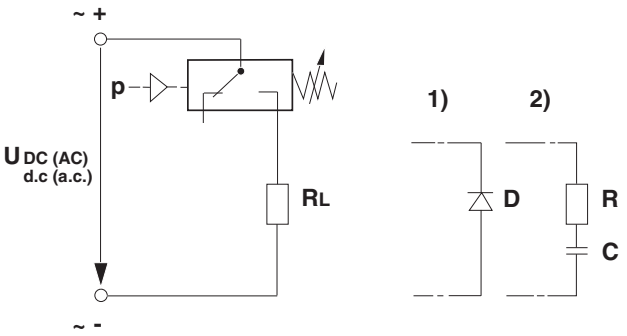
*5) Lower value of critical voltage guarantees sufficient contact safety. Lower voltages permissible under favourable conditions.

Spark quenching with DC voltage

1. Diode D in parallel to inductive load.
   Observance of correct polarity (positive pole to cathode).
   Dimensioning specifications for quenching diode:
   Rated voltage at diode: UD ≥ 1,4 x Us
   Rated current at diode: IN ≥ ILast

   Selection of a quick switching diode (recovery time trr ≤ 200 ms).

2. RC link in parallel to load in parallel to switching contact.
   Suited for DC and AC voltage.
   Dimensioning principles:
   R in Ω ≈ 0,2 x RLast in Ω
   C in [µF] ≈ ILast in [A]



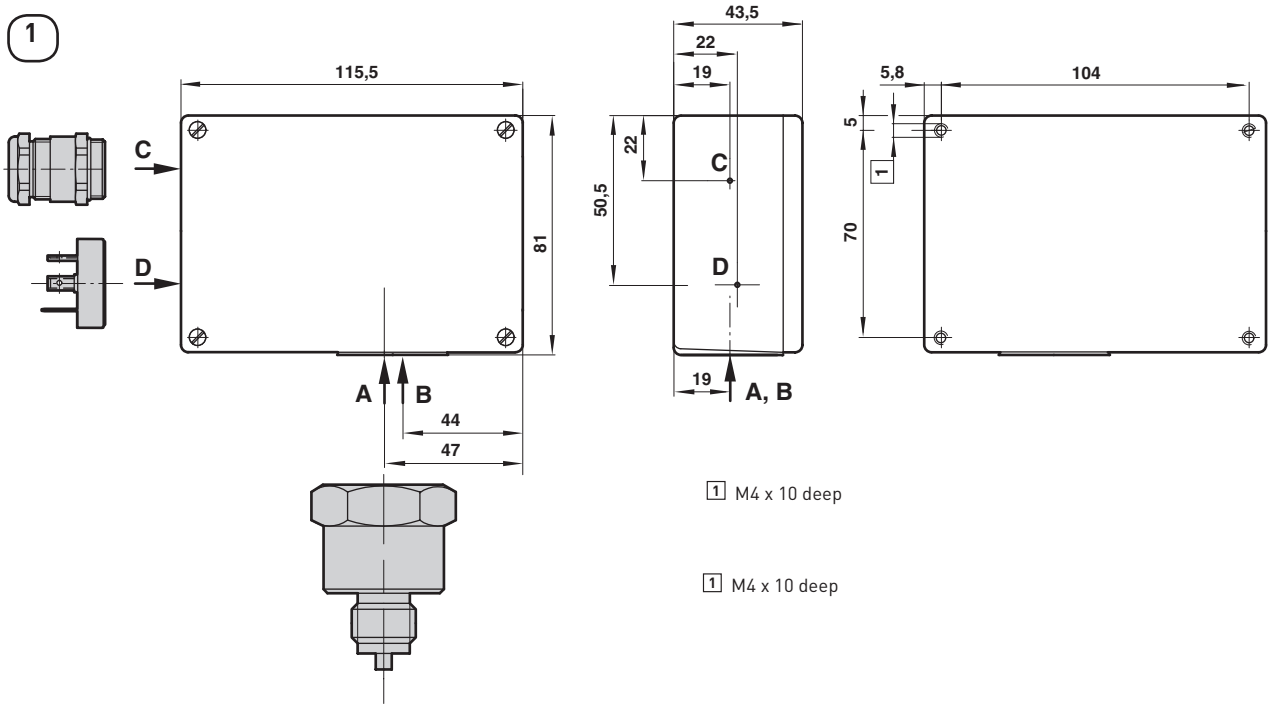
Switching function



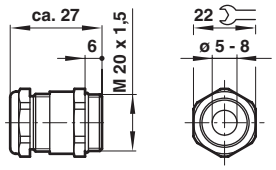
Plug DIN EN 175301-803, form A
Microswitch SPDT
Terminals 1 - 3: Contacts close on rising pressure.
Terminals 1 - 2: Contacts open on rising pressure.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.,

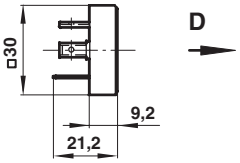
Dimensions



Connector M20 x 1,5
Connector (standard/preference Connector)
acc. to DIN 46320



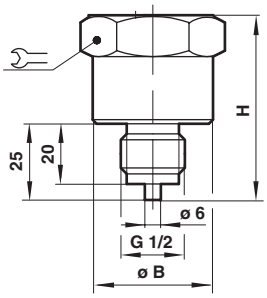
Connector coforms to DIN EN 175301-803, form A



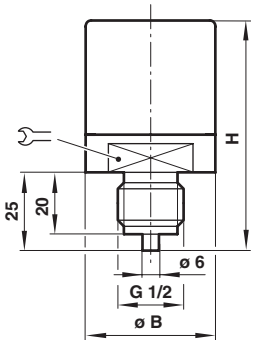
Sensor combination

Operating pressure range Code	Sensortype
01	B
02	B
03	B
04	B
11	B
13	B
14	B
15	B
16	B
17	F
18	F
19	H
10	I

Sensortype
F, H, I



Sensortype
B

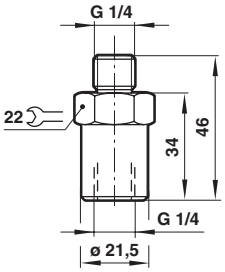


Sensortype	H	B	
B	75	42	32
F	43	37	32
H	53	37	32
I	62	37	32

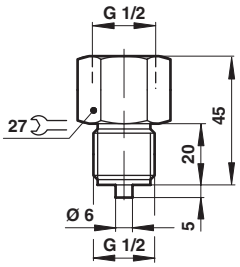
Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.,

Surge damper

Type: 0553258, 0574773

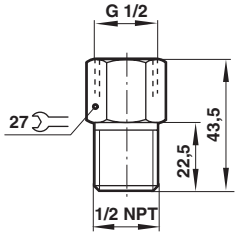


Type: 0551894

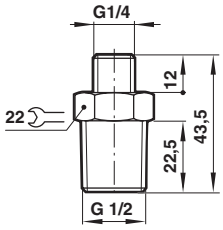


Pressure port/reducing nipple

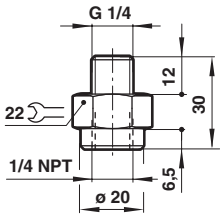
Type: 0553831



Type: 0550083

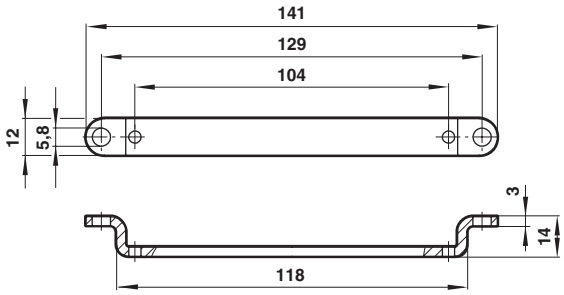


Type: 0574765



Brackets

Type: 0574772, 0553908



Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical features'.
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.,