20D (ATEX)
Allfluid pressure switches electromechanical actuated
-1 ... 63 bar, G1/2

For Ex zones 1 and 2 (gases) as well as Ex zones 21 and 22 (dusts) category II2G, type of protection EEx de IIC T6

Microswitch with gold plated contacts

Electrical connection: connector M20 x 1,5

Robust metal housing in weather-resisting version





Technical features

Medium:
For neutral, non-inflammable gases and fluids
Operation:
Softseal piston
Stainless steel bellow
Fluid/Ambient temperature:
-10 ... +75°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C.

Switching pressure difference:
Optional: fixed or adjustable
Repeatability:
±1% of final value (depending on regulating pressure)
Microswitch:
With gold plated contacts
Degree of protection (acc. to DIN 40050):
IP65

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

Switching cycles:
20/min. max.
Material
Housing: Aluminium diecast
Sensor: Brass or Stainless steel
Sealing: Stainless steel-bellows

20D Allfluid ATEX - fixed switching pressure difference

Symbol	Operating pressure*1) (bar)	Over pressure *2) (bar)	Switching pressure difference (typical) Lower range (bar)	Upper range (bar)	Pressure sensor material	Weight (kg)	Sensor	Model
	-1 ... 0	10	0,20	0,23	1.4404	1,1	B	1840115
	-1 ... 1	10	0,20	0,25	1.4404	1,1	B	1840215
	-1 ... 2,5	10	0,22	0,26	1.4404	1,1	B	1840415
	0,05 ... 1	10	0,16	0,18	1.4404	1,1	B	1841115
	0 ... 1,6	10	0,16	0,20	1.4404	1,1	B	1841215
	0,5 ... 4	20	0,50	0,55	1.4404	1,1	B	1841415
	0,5 ... 6	20	0,60	0,70	1.4404	1,1	B	1841515
	0,5 ... 10	20	0,70	0,90	1.4404	1,1	B	1841615
	1 ... 16	50	1,00	1,40	1.4404	1,1	F	1841715
	1 ... 25	50	1,30	1,80	1.4404	1,1	F	1841815
	5 ... 63	150	2,00	5,00	1.4404	1,1	H	1841915

20D Allfluid ATEX - adjustable switching pressure difference

Symbol	Operating pressure*1) (bar)	Over pressure *2) (bar)	Switching pressure difference (typical) Lower range (bar)	Upper range minimal (bar)	maximal (bar)	Pressure sensor material	Weight (kg)	Sensor	Model
	-1 ... 0	10	0,19	0,25	0,80	1.4404	1,1	B	1850115
	-1 ... 1	10	0,20	0,30	1,00	1.4404	1,1	B	1850215
	-1 ... 2,5	10	0,20	0,28	2,50	1.4404	1,1	B	1850415
	0,05 ... 1	10	0,16	0,18	0,80	1.4404	1,1	B	1851115
	0 ... 1,6	10	0,10	0,16	1,00	1.4404	1,1	B	1851215
	0,1 ... 2,5	10	0,18	0,22	2,00	1.4404	1,1	B	1851315
	0,5 ... 4	20	0,50	0,60	2,50	1.4404	1,1	B	1851415
	0,5 ... 6	20	0,60	0,70	5,00	1.4404	1,1	B	1851515
	0,5 ... 10	20	0,70	0,90	8,00	1.4404	1,1	B	1851615
	1 ... 16	50	1,60	1,90	12,00	1.4404	1,1	F	1851715
	1 ... 25	50	1,60	2,20	20,00	1.4404	1,1	F	1851815
	5 ... 63	150	2,00	5,00	20,00	1.4404	1,1	H	1851915

*1) Atmospheric air pressure.

*2) Short-term pressure peaks are not allowed to exceed this limit value during operation. Operative utilization of the limit value is not permitted. The limit value corresponds to the maximum testing pressure

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Option selector

18 ★ ★★ 15

Switching pressure difference	Substitute
Adjustable	0
Fixed	1

Switching pressure range (bar)	Substitute
-1 ... 0	01
-1 ... 1	02
-1 ... 2,5	04
0,05 ... 1	11
0 ... 1,6	12
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

*only for adjustable switching pressure difference

Accessories

Brackets	Surge damper	Pressure port reducing nipple
		
Page 4	Page 4	Page 4
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)
		0574765 (G1/4 – 1/4 NPT, Brass)

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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).

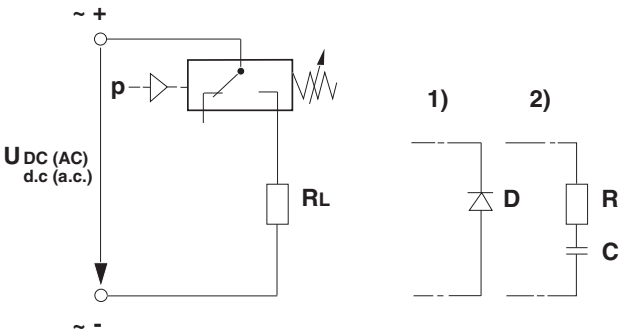
*5) Lower value of critical voltage guarantees sufficient contact safety. Lower voltages permissible under favourable conditions.

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]



Schaltfunktion

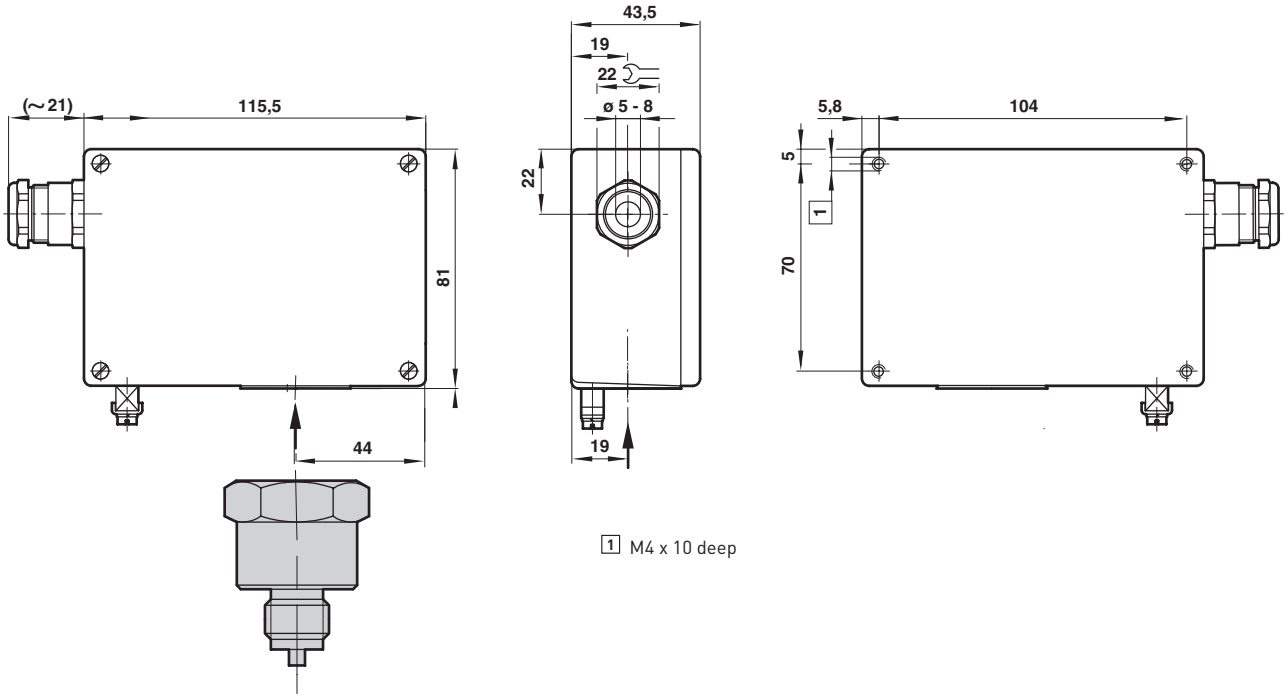


Plug DIN EN 175301-803, form A
Microswitch SPDT
Terminals 1 - 3: Contacts close on rising pressure.
Terminals 1 - 2: Contacts open on rising pressure.

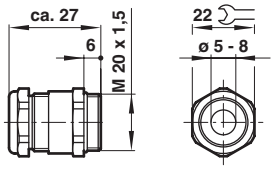
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Dimensions

1



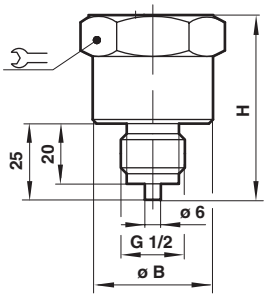
Connector M20 x 1,5
acc. to Ex e (ATEX),
MS nickel-plated for cable Ø 5 to 8 mm (Type: 0588819)



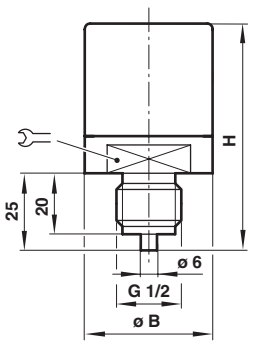
Sensor combination

Operating pressure range (bar) Code	Sensortype
01	B
02	B
04	B
11	B
12	B
13	B
14	B
15	B
16	B
17	F
18	F
19	H

Sensortype F+H



Sensortype B

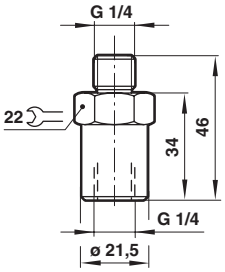


Sensortype	H	B	
B	75	42	32
F	37	32	41
H	53	37	32

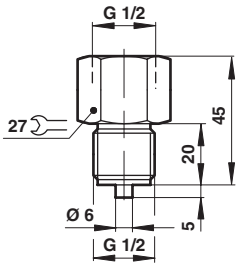
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Surge damper

Type: 0553258, 0574773

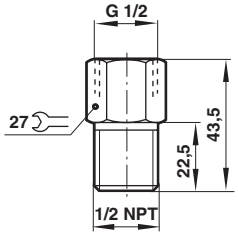


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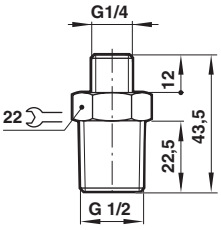


Pressure port/reducing nipple

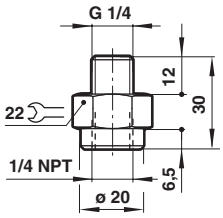
Type: 0553831



Type: 0550083

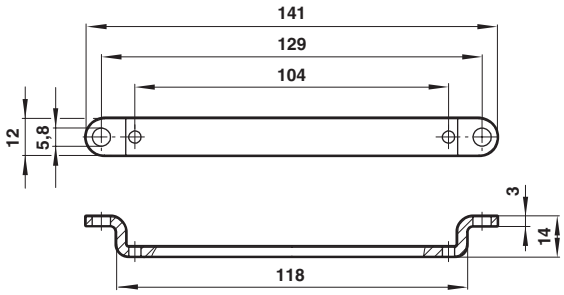


Type: 0574765



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.

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