Pneumatic pressure switch 18D
Standard

-1 to 30 bar

Microswitch with gold plated contacts
High number of switching cycles
Vibration resistant to 15 g
Microswitch approved by UL and CSA
Intrinsically safe operation



Technical data

Medium:
For neutral, gaseous and liquid fluids, non-combustible
(Special versions for water application)

Operation:
Diaphragm

Port size:
G1/4, 1/4 NPT, Flange

Operating pressure range:
-1 to 30 bar

Temperature:

Fluid	Ambient
-10* to +80°C (NBR)	-10* to +80°C (NBR)
0* to +80°C (FKM)	0* to +80°C (FKM)

*Please contact our technical service for use below +2°C.

Temperature at switching element:
+80°C

Operating viscosity:
Up to 1000 mm2/s

Repeatability:
±3%, for vacuum ±4% of final value
(depending on regulating pressure)

Switching element:
Microswitch with gold plated contacts

Degree of protection:
IP65 for DIN EN 175301-803
IP67 (M12 x 1)

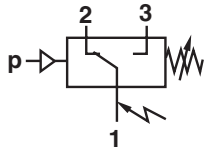
Mounting position:
Optional

Electrical connection:
Acc. to DIN EN 175301-803, form A
Acc. to IEC 947-5-2 (M12 x 1)

Materials:
Housing: aluminium or brass
Sealing: NBR/FKM

Ordering example

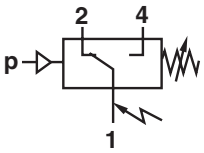
See page 2



Switching function acc. to DIN EN 175301-803, form A: Microswitch SPDT (Commutator)

Terminals 1 - 3:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure



Switching function acc. to IEC 947-5-2, M12 x 1: Microswitch SPDT (Commutator)

Terminals 1 - 4:
Contacts close on rising pressure

Terminals 1 - 2:
Contacts open on rising pressure

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General information
Electrical connection acc. to DIN EN 175301-803, form A

Type	Pressure range *1)	Switching pressure difference		Max. over pressure*2)	Switching cycles	Materials pressure sensor		Port size	Weight	Dimension	Page
		Lower range	Upper range								
	(bar)	(bar)	(bar)	(bar)	(1/min)	Housing	Sealing		(kg)	No.	
0880100	-1 to 0	0,15	0,18	80	100	AL	FKM *3)	G1/4	0,2	1	4
0880110	-1 to +1	0,25	0,35	80	100	AL	FKM *3)	G1/4	0,2	1	4
0880120	-1 to 0	0,15	0,18	80	100	AL	FKM *3)	1/4 NPT	0,2	1	4
0880126 *4) *6)	-1 to 0	0,15	0,18	80	100	AL	FKM *3)	G1/4	0,2	1	4
0881100	-1 to 0	0,15	0,18	80	100	AL	FKM *3)	Flange	0,2	3	4
0880200	0,2 to 2	0,20	0,35	80	100	AL	FKM *3)	G1/4	0,2	1	4
0880220	0,2 to 2	0,20	0,35	80	100	AL	FKM	1/4 NPT	0,2	1	4
0880226 *4) *6)	0,2 to 4	0,20	0,35	80	100	AL	FKM	G1/4	0,2	1	4
0881200	0,2 to 2	0,20	0,35	80	100	AL	NBR	Flange	0,2	3	4
0880300	0,5 to 8	0,35	0,85	80	100	AL	NBR	G1/4	0,2	2	4
0880320	0,5 to 8	0,35	0,85	80	100	AL	NBR	1/4 NPT	0,2	2	4
0880326 *4) *6)	0,5 to 8	0,35	0,85	80	100	AL	FKM	G1/4	0,2	2	4
0881300	0,5 to 8	0,35	0,85	80	100	AL	NBR	Flange	0,2	3	4
0880400	1 to 16	0,40	1,20	80	100	AL	NBR	G1/4	0,2	2	4
0880420	1 to 16	0,40	1,20	80	100	AL	NBR	1/4 NPT	0,2	2	4
0880426 *4) *6)	1 to 16	0,40	1,20	80	100	AL	FKM	G1/4	0,2	2	4
0881400	1 to 16	0,40	1,20	80	100	AL	NBR	Flange	0,2	3	4
0880600	1 to 30	1,0	5,00	80	100	AL	NBR	G1/4	0,2	2	4
0880620	1 to 30	1,0	5,00	80	100	AL	NBR	1/4 NPT	0,2	2	4

Connector is included

Electrical connection M12 x 1 acc. to IEC 947-5-2
max. allowable voltage 30 V, M 12 plug not included

Type	Pressure range *1)	Switching pressure difference		Max. over pressure*2)	Switching cycles	Materials pressure sensor		Port size	Weight	Dimension	Page
		Lower range	Upper range								
	(bar)	(bar)	(bar)	(bar)	(1/min)	Housing	Sealing		(kg)	No.	
0880149 *4)*5)	-1 to 0	0,15	0,18	80	100	AL	FKM	G1/4	0,2	1	4
0880160 *4)	-1 to 0	0,15	0,18	80	100	AL	FKM	G1/4	0,2	1	4
0880260 *4)	0,2 to 2	0,20	0,35	80	100	AL	FKM	G1/4	0,2	1	4
0880360 *4)	0,5 to 8	0,35	0,85	80	100	AL	FKM	G1/4	0,2	2	4
0880460 *4)	1 to 16	0,40	1,20	80	100	AL	FKM	G1/4	0,2	2	4
0880660 *4)	1 to 30	1,00	5,00	80	100	AL	FKM	G1/4	0,3	2	4
0881160 *4)	-1 to 0	0,15	0,18	80	100	AL	FKM	Flange	0,2	3	4
0881260 *4)	0,2 to 2	0,20	0,35	80	100	AL	FKM	Flange	0,2	3	4
0881360 *4)	0,5 to 8	0,35	0,85	80	100	AL	FKM	Flange	0,2	3	4
0881460 *4)	1 to 16	0,40	1,20	80	100	AL	FKM	Flange	0,2	3	4

Electrical connection acc. to DIN EN 175301-803, form A
(Versions for water applications)

Type	Pressure range *1)	Switching pressure difference		Max. over pressure*2)	Switching cycles	Materials pressure sensor		Port size	Weight	Dimension	Page
		Lower range	Upper range								
	(bar)	(bar)	(bar)	(bar)	(1/min)	Housing	Sealing		(kg)	No.	
0880219	0,2 to 2	0,20	0,35	80	100	brass	FKM	G1/4	0,2	1	4
0880240	0,2 to 2	0,20	0,35	80	100	brass	FKM	1/4 NPT	0,2	1	4
0880323	0,5 to 8	0,35	0,85	80	100	brass	FKM	G1/4	0,2	2	4
0880340	0,5 to 8	0,35	0,85	80	100	brass	FKM	1/4 NPT	0,2	2	4

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.
Switching pressure must not exceed the indicated values.
*2) Max. values
*3) Static seal: O-ring (NBR)
*4) LABS free
*5) Switching function reversed
*6) Plug 0570110 not included, please order separately.
Al: aluminium
NBR: Perbunan
FKM: Viton

Ordering example

Pressure switch, port size G1/4,
switching pressure range -1 to 0 bar
Type: 0880100

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Accessories

Pressure port Reducing nipple	Surge damper	Cover (via adjustment screw)	Connector	Connector M 12 x 1 90°		Connector M 12 x 1 gerade	
							
See page 4	See page 4	See page 4					
0574767 (brass)	0574773 (brass)	0554737	0570110	0523058 (2 m cable,4-core)	0523056 (90° without cable)	0523057 (2 m cable, 4-core)	0523055 (without cable)
0550083 (stainless steel)	0553258 (stainless steel)			0523053 (5 m cable, 4-core)		0523052 (5 m cable, 4-core)	

Switching capacity
Commutator with gold plated contacts

Load level	Current type	Load type	Umin [V]	Max. permanent current Imax [A] at U [V] 30 M 12x1	48	60	125	250	Contact life
Standard *3)	AC	ohmic	12	5	5	5	5	5	$\geqslant 10^7$ switching cycles
(z.B. contractors, solenoids)	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)	AC	ohmic	5 *6)	0,34	0,2	0,17	0,08	0,04	$\geqslant 10^7$ switching cycles
(z.B. electronic circuits)	DC	inductive, L/R ≈ 10 ms	5 *6)	0,1	0,01	–	–	–	

Reference number: 30/min, Reference temperature: +30°C
Spark quenching with diode with DC and inductive load:
I max = 1,5 x I max of table
I min = 1 (mA)
Creepage and air paths correspond to insulation group B according to VDE Reg. 0110 (except contact clearance of microswitch).

*3) Gold-plating not required as it would decay.
Max. perm. in-rush current (appr. 30 ms) I AC = max. 15 A
*4) Gold-plating required (will not decay).
*6) 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).

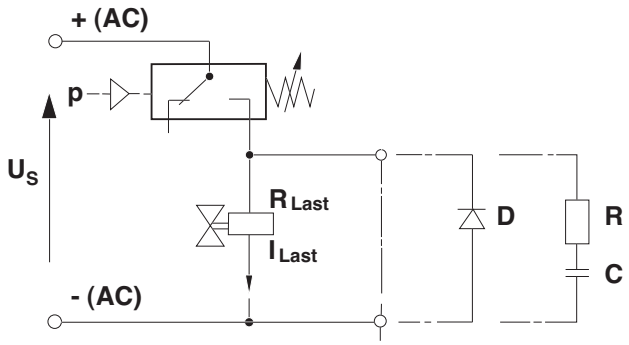
   Dimensioning specifications for quenching diode:
   Rated voltage at diode: UD $\geqslant$ 1,4 x Us

   Rated current at diode: $I_N \geqslant I_{Last}$

   Selection of a quick switching diode (recovery time trr $\leqslant$ 200 [ms]).

2. RC link in parallel to load in parallel to switching contact.
   Suited for DC and AC voltage.

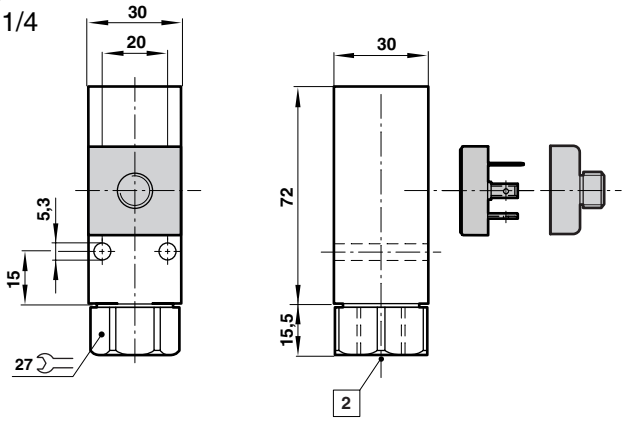
   Dimensioning principles:
   R in Ω $\approx$ 0,2 x R_{Load} in Ω
   C in [µF] $\approx$ I_{Load} in [A]



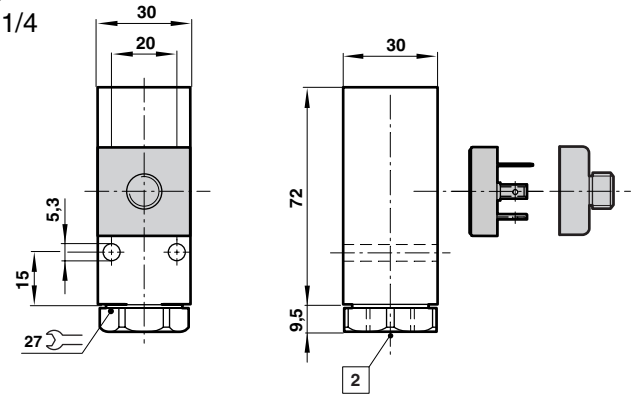
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Dimensions

① G 1/4

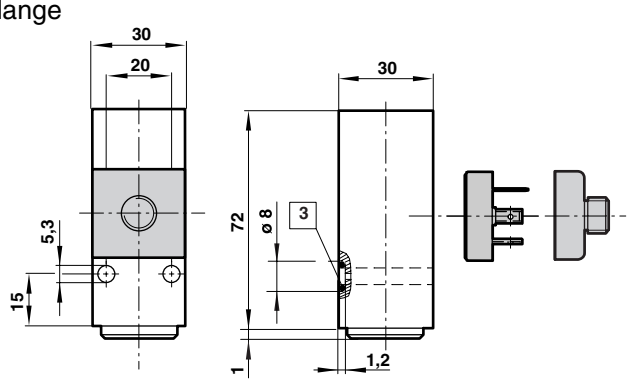


② G 1/4



2	1/4 NPT on request

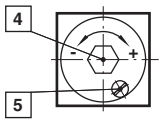
③ Flange



3	O-ring 5 x 1,5

Adjustable switch point

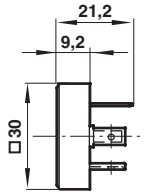
After releasing the locking screw
Clockwise rotation = encreasing switch point
Anti-clockwise rotation = decreasing the switch point



4	Switch point screw
5	Locking screw

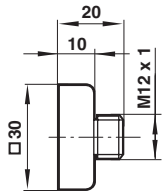
Electrical connection

for plug according to
DIN EN 175301-803, form A



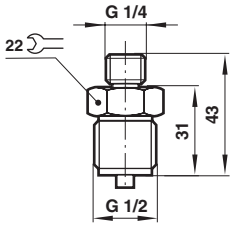
Electrical connection

M12 x 1

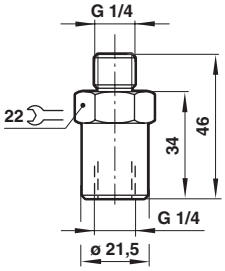


Accessories

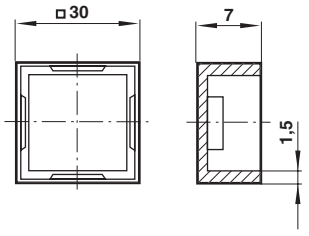
Pressure port/Reducing nipple
Material: brass
Type: **0574767**



Surge damper
Material: brass
Type: **0574773**



Cover
Type: **0554737**



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 Data**'.

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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