

18D Pneumatic pressure switch electromechanically actuated -1 ... 30 bar, G1/4, 1/4 NPT and flange

- Microswitch with gold plated contacts
- High number of switching cycles
- Vibration resistant to 15 g
- Conforms to Low Voltage Directive 2006/95/EG
- Intrinsically safe operation



Technical features

Medium:

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

Operation:

Diaphragm

Operating pressure range:

-1 ... 30 bar

Operating viscosity:

Up to 1000 mm²/s

Switching pressure difference:

Fixed

Repeatability:

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

Switching element:

Microswitch with gold plated contacts

Mounting position:

Optional

Degree of protection:

IP65 for DIN EN 175301-803
(DIN 43650) form A
IP67 for M12 x 1

Electrical connection:

DIN EN 175301-803 (DIN 43650) form A or M12 x 1 IEC 947-5-2

Fluid-/Ambient temperature:

-10 ... +85°C (NBR)

0 ... +80°C (FPM)


Air supply must be dry enough to avoid ice formation at temperatures below +2°C.

Materials:

Housing: aluminium (brass)
Sealing: NBR/FPM

Technical data

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

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

*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

*6) Plug 0570110 not included, please order separately.

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

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

*4) LABS free

*5) Switching function reversed

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

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

*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

Accessories

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

Switching capacity

Commutator with gold plated contacts

Current type	Load type *2)	U min [V]	Max. permanent current I _{max} [A] at U *1)					Contact life
			M 12x1 30 V	DIN EN 175301-803, form A				
			30 V	48 V	125 V	250 V		
AC	ohmic, inductive	6	0,1	0,1	0,1	0,1	≥ 2 x 10 ⁶ switching cycles	
DC	ohmic, inductive	6	0,1	—	—	—		

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

I_{min} = 1 mA at 24 V DC or 5 mA at 6 V DC

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Furthermore additional measurements 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.

Recommended circuit

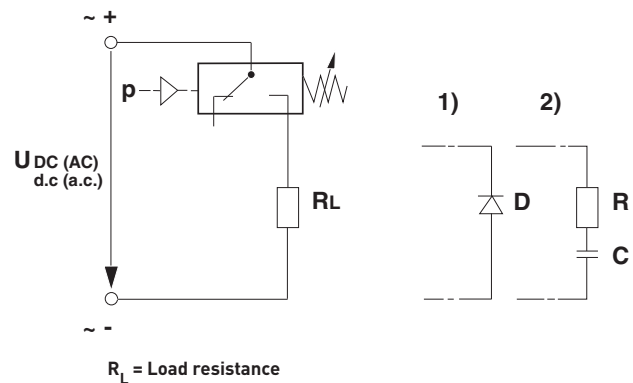
Spark quenching and EMV intrinsically safe

- Quick diode (D) with $t_v \leq 200$ ns, parallel to inductive load.
- RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

$$R_L \text{ in } \Omega \approx 0,2 \times R_{\text{Load in } \Omega}$$

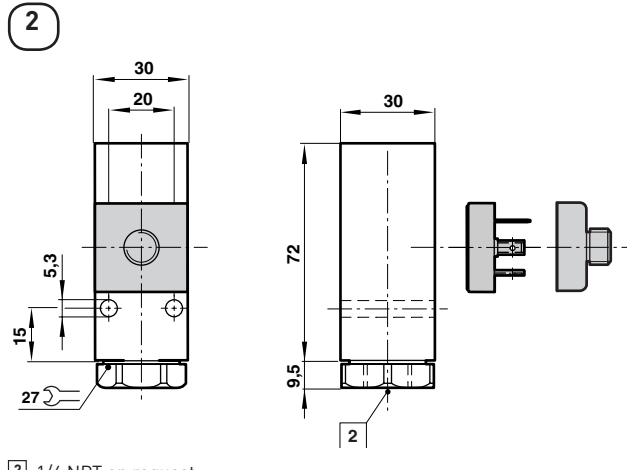
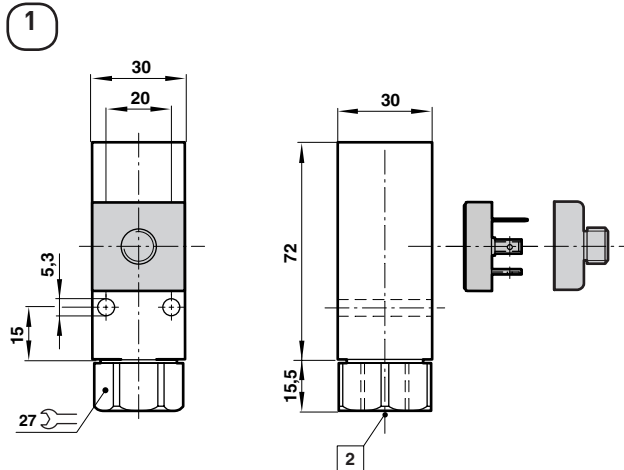
$$C \text{ in } [\mu\text{F}] \approx I_{\text{Load in [A]}}$$



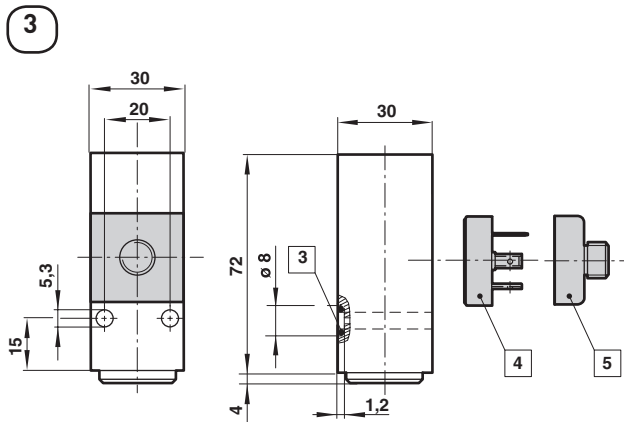
Switching function

	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.		Switching function IEC 947-5-2, M12 x 1: Microswitch SPDT Terminals 1 - 4: Contacts close on rising pressure. Terminals 1 - 2: Contacts open on rising pressure.
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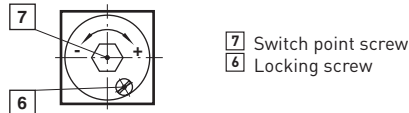
Dimensions



2 1/4 NPT on request



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



- 3 O-ring 5 x 1,5
- 4 Electrical connection to DIN EN 175301-803, form A
- 5 Electrical connection M12 x 1

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

Electrical connection
 M12 x 1

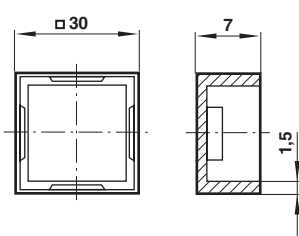
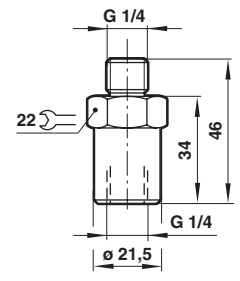
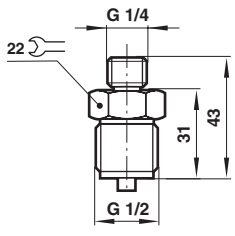


Accessories

Pressure port/Reducing nipple
 Material: brass
 Model: 0574767

Surge damper
 Material: brass
 Model: 0574773

Cover
 Material: Plastic
 Model: 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 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.