

Datasheet

RS Pro Pneumatic Pressure Switch 18D

RS Pro: 136-6275, 136-6276, 136-6277



Specifications

Medium: For neutral, gaseous and liquid fluids, non-combustible Operation:
Diaphragm

Port Size: G1/4, Flange

Operating Pressure Range: -1 to 30bar

Approvals: TUV (technical inspection agency) approval: EX 8 03 01 11122 007

Zone 2 Category: Ex II 3 G Eex NA/C IIC T6

Zone 22 Category: EX II 3 D IP 65 T 80°C

Temperature: Fluid: 0* to +80°C(FKM); Ambient: 0* to +80°C(FKM)

Operating Viscosity: Up to 1000 mm²/s

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

Switching Element: Microswitch with gold plated contacts

Degree of Protection: IP65 for DIN EN 175301-803, IP67 (M12x1)

Mounting Position: Optional

Electrical Connection: Acc. to DIN EN 175301-803, form A; Acc. to IEC 947-5-2 (M12x1)

Materials:

Housing: Aluminium

Sealing: Viton/Brass

O-Ring: NBR

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

The Ex approval refers to the pressure switch in combination with the supplied device plug-in facility

Type	Pressure range *1) (bar)	Switching pressure difference		Max. over pressure*2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension No.	Page
		Lower range (bar)	Upper range (bar)			Housing	Sealing				
0880180	-1 to 0	0,15	0,18	80	100	AL	FKM/MS/NBR	G1/4	0,2	2	4
0880280	0,2 to 2	0,20	0,35	80	100	AL	FKM/MS/NBR	G1/4	0,2	2	4
0880380	0,5 to 8	0,35	0,85	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0880480	1 to 16	0,40	1,20	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0880680	1 to 30	1	5	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0881180	-1 to 0	0,15	0,18	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881280	0,2 to 2	0,20	0,35	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881380	0,5 to 8	0,35	0,85	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881480	1 to 16	0,40	1,20	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881680	1 to 30	1	5	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4

**Electrical connection M12x1
max. allowable voltage 30 V**

Wire socket see page 4! Wire socket are not in delivery, please order seperately.

The pressure switch will loose the Ex approval when using othe wire sockets than those listed in the data sheet.

Type	Pressure range *1) (bar)	Switching pressure difference		Max. over pressure*2) (bar)	Switching cycles (1/min)	Materials pressure sensor		Port size	Weight (kg)	Dimension No.	Page
		Lower range (bar)	Upper range (bar)			Housing	Sealing				
0880181	-1 to 0	0,15	0,18	80	100	AL	FKM/MS/NBR	G1/4	0,2	2	4
0880281	0,2 to 2	0,20	0,35	80	100	AL	FKM/MS/NBR	G1/4	0,2	2	4
0880381	0,5 to 8	0,35	0,85	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0880481	1 to 16	0,40	1,20	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0880681	1 to 30	1	5	80	100	AL	FKM/MS/NBR	G1/4	0,2	1	4
0881181	-1 to 0	0,15	0,18	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881281	0,2 to 2	0,20	0,35	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881381	0,5 to 8	0,35	0,85	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881481	1 to 16	0,40	1,20	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4
0881681	1 to 30	1	5	80	100	AL	FKM/MS/NBR	Flansch	0,2	3	4

*1) Reference pressure is the atmospheric air pressure

*2) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.

Switching pressure must not exceed the indicated values

AL = aluminium

FKM = viton

MS = brass

NBR = nitrile

Option selector

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Version	Substitute
Thread	0
Flange	1

Switching pressure range	Substitute
-1 to 0	1
0,2 to 2	2
0,5 to 8	3
1 to 16	4
1 to 30	6

Electrical connection	Substitute
DIN EN 175301-803 (form A)	0
M 12 x 1	1

Switching capacity Commutator with gold plated contacts

Load level	Current type	Load type	U _{min} [V]	Max. permanent current I _{max} [A] at U [V]				Contact life	
				30 M 12x1	48	60	125		250
Standard *3) (z.B. contractors, solenoids)	AC	ohmic	12	5	5	5	5	5	≥ 10 ⁷ 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) (z.B. electronic circuits)	AC	ohmic	5 *6)	0,34	0,2	0,17	0,08	0,04	≥ 10 ⁷ switching cycles
	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: U_D ≥ 1,4 x U_s

Rated current at diode: I_N ≥ I_{Last}

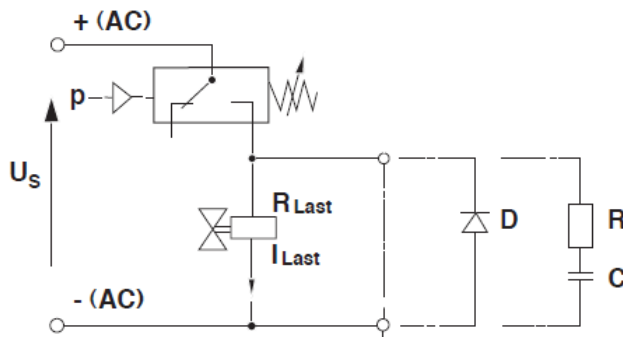
Selection of a quick switching diode (recovery time t_{rr} ≤ 200 [ms]).

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

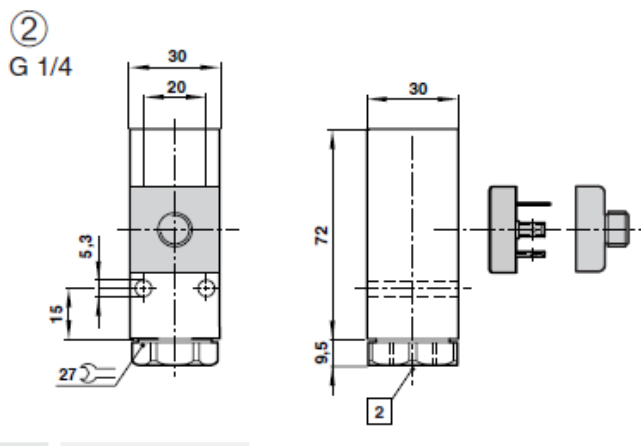
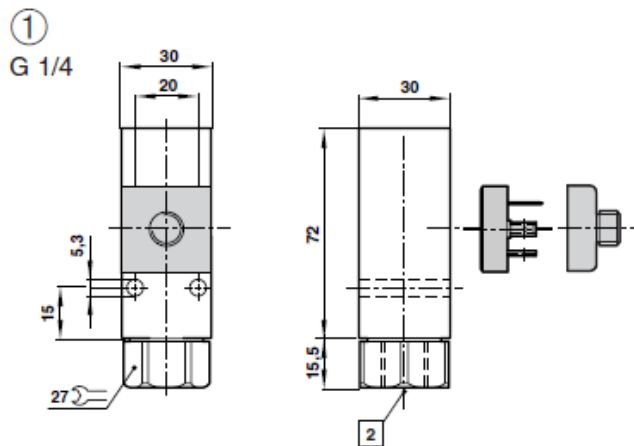
Dimensioning principles:

R in Ω ≈ 0,2 x R_{Load} in Ω

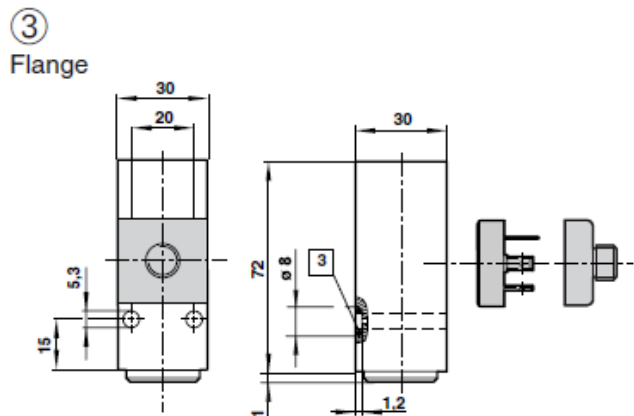
C in [μF] ≈ I_{Load} in [A]



Dimensions



2 1/4 NPT on request



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

Elektrical connection
M12 x 1

