

For Ex applications conforming to ATEX 100a:

Zone 2 category ATEX 3G (gases)

Zone 22 category ATEX 3D (dusts)

TÜV approval: EX 8 03 01 11122 007

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, self lubricating fluids,
e.g. hydraulic oil, lube oil, light fuel oil

Operation:

Softseal piston

Port size:

G1/4, Flange

Operating pressure range:

5 to 420 bar

Approvals:

TÜV (technical inspection agency): 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	Umgebung
0* to +80°C (FKM)	0* to +80°C

*Please contact our technical service for use below +2°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 für DIN EN 175301-803, form A
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)

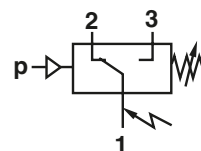
Materials:

Housing: aluminium/steel

Sealing: teflon/perbunan

Ordering example

See page 2



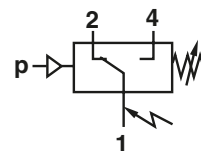
Switching function acc. to
DIN EN 175301-803, form A:
Microswitch SPDT
(commutator)

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

General information

Electrical connection acc. to DIN EN 175301-803

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				
0882180	5 to 70	10,5	15	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882280	10 to 160	11	17	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882380	25 to 250	13	21	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882480	40 to 420	17	38	600	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0883180	5 to 70	10,5	15	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883280	10 to 160	11	17	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883380	25 to 250	13	21	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883480	40 to 420	17	38	600	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4

Electrical connection M12x1 max. allowable voltage 30 V max.

Connectors see page 4! Connectors are not included in delivery, please order separately.

The pressure switch will loose the Ex approval when using other connectors 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				
0882181	5 to 70	10,5	15	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882281	10 to 160	11	17	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882381	25 to 250	13	21	400	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0882481	40 to 420	17	38	600	100	AL/Stahl	PTFE/NBR	G1/4	0,2	2	4
0883181	5 to 70	10,5	15	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883281	10 to 160	11	17	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883381	25 to 250	13	21	400	100	AL/Stahl	PTFE/NBR	Flange	0,2	3	4
0883481	40 to 420	17	38	600	100	AL/Stahl	PTFE/NBR	Flange	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
NBR = perbunan
PTFE = teflon

Option selection

088★★8★

Version	Substitute
Thread	2
Flange	3





Switching pressure range	Substitute
5 to 70	1
10 to 160	2
25 to 250	3
40 to 420	4

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

Ordering example

Pressure switch, port size G 1/4,
electrical connection acc. to DIN EN 175301-803,
switching pressure range 5 to 70 bar
Type: 0882180

Accessories

Pressure port Reducing nipple	Surge damper	Cover (via adjustment screw)	Connector M12 x 1 90°
			
See page 4	See page 4	See page 4	
0574767 (brass)	0574773 (brass)	0554737	0523058 (2 m cable, 4-core)
0550083 (stainless steel)	0553258 (stainless steel)		0523056 (90°without cable)
			0523053 (5 m cable, 4-core)

Switching capacity
Commutator with gold plated contacts

Load level	Current type	Load type	Umin [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) (e.g. 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).

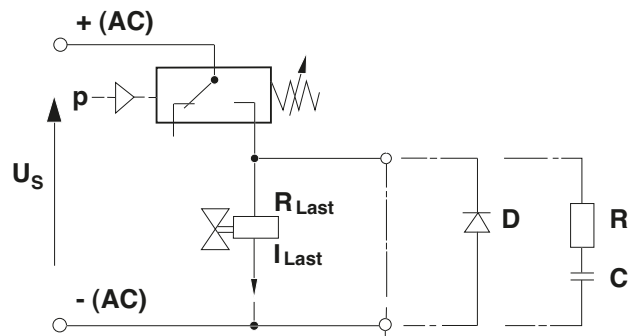
Dimensioning specifications for quenching diode:
Rated voltage at diode: U_D ≥ 1,4 x U_s

Rated current at diode: I_N ≥ I_{Last}

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

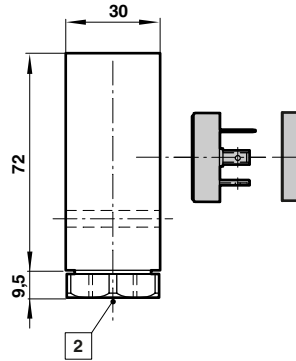
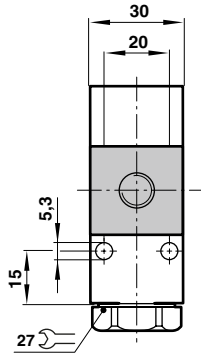
2. RC link in parallel to load in parallel to switching contact.
Suited for DC and AC voltage.

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

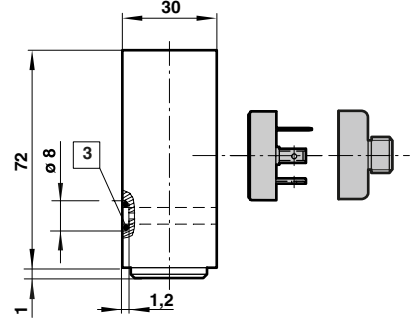
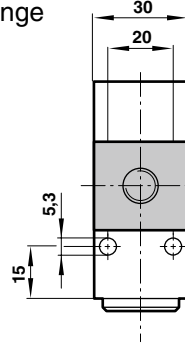


Dimensions

②
G 1/4



③
Flange

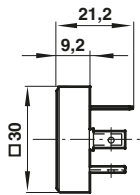


2 1/4 NPT on request

3 O-ring 5 x 1,5

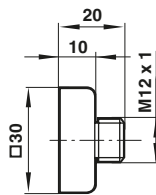
Electrical connection

Acc. to
DIN EN 175301-803, form A



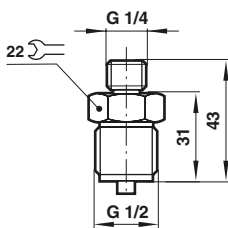
Electrical connection

M12 x 1

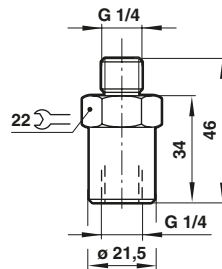


Accessories

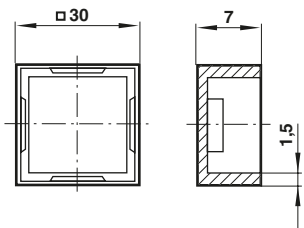
Pressure port/Reducing nipple
Material: brass
Type: **0574767**



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.