

**Pressure Switches Series 18D
Hydraulic Pressure Switches
G 1/4, 7/16-20 UNF (SAE 4), 1/4 NPT
Flange**

- Gold-plated contacts in microswitch**
- High number of switching cycles**
- Vibration resistant to 15g**
- Microswitch approved by UL and CSA**
- Intrinsically safe operation**



Technical Data

Fluid:
Hydraulic, lubricating and light fuel oils
Soft seal for neutral self lubricating fluids

Operation:
Piston type sensor system

Port sizes:
G 1/4 (BSP), 7/16-20 UNF (SAE-4), 1/4 NPT, Flange

Operating pressure ranges:
5-420 bar

Ambient temperature:
-10 to +80°C

Fluid Temperature:
-10 to +80°C

Maximum temperature at switching element:
+80°C

Operating Viscosity:
Up to 1000 mm²/s (±450ssu)

Repeatability:
±3%

Electrical Connection:
- Acc. to DIN 43650 A
- Acc. to IEC 947-5-2 (M 12 x 1)

Switching Element:
Microswitch (gold plated contacts)

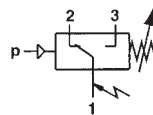
Degree of Protection:
IP 65 for conn. DIN 43650
IP 67 for conn. M 12 x 1

Mounting:
Optional

Material:
Sensor and seal see table overleaf

Ordering information

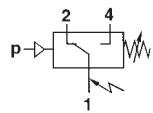
To order, quote part number from table overleaf, e.g. a G 1/4" ported switch with a pressure range of 5-70 bar is **0882100**.



Switching function:
Microswitch SPDT

Terminals 1-3:
Contacts close on rising pressure.

Terminals 1-2:
Contacts open on rising pressure.



Switching function M 12 x 1:
Microswitch SPDT

Terminals 1-4:
Contacts close on rising pressure.

Terminals 1-2:
Contacts open on rising pressure.

Pressure Switches Series 18D

General Information

18 D variations with electrical connection DIN 43650 A

Part Number	Pressure Range (bar) [†]	Switching Pressure Difference ** (bar)		Maximum Over Pressure* (bar)	Switching (Cycles per min)	Pressure Sensor Materials		Fluid Connection		Weight (kg)	Dimension Drawing No.
		Lower Range	Upper Range			Housing Piston	Seal Dyn./Static	Type	Size		
0882100	5-70	10.5	15	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	01
0883100	5-70	10.5	15	400	100	AL/Steel	PTFE/NBR	P	-	0.2	02
0882119	5-70	10.5	15	400	100	AL/Steel	PTFE/NBR	I	7/16-20 UNF	0.2	01
0882120	5-70	10.5	15	400	100	AL/Steel	PTFE/NBR	I	1/4 NPT	0.2	01
0871200	10-100	8	16	250	100	CN/Steel	NBR	P	-	0.3	03
0882200	10-160	11	17	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	01
0883200	10-160	11	17	400	100	AL/Steel	PTFE/NBR	P	-	0.2	02
0882219	10-160	11	17	400	100	AL/Steel	PTFE/NBR	I	7/16-20 UNF	0.2	01
0882220	10-160	11	17	400	100	AL/Steel	PTFE/NBR	I	1/4 NPT	0.2	01
0871300	12-160	8	16	250	100	CN/Steel	NBR	P	-	0.3	03
0870400	15-250	7	20	500	100	CN/Steel	PU	P	-	0.3	03
0870500	20-350	6	25	500	100	CN	POM	P	-	0.3	03
0882300	25-250	11	17	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	01
0883300	25-250	11	17	400	100	AL/Steel	PTFE/NBR	P	-	0.2	02
0882319	25-250	11	17	400	100	AL/Steel	PTFE/NBR	I	7/16-20 UNF	0.2	01
0882320	25-250	11	17	400	100	AL/Steel	PTFE/NBR	I	1/4 NPT	0.2	01
0882400	40-420	17	38	600	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	01
0883400	40-420	17	38	600	100	AL/Steel	PTFE/NBR	P	-	0.2	03
0882419	40-420	17	38	600	100	AL/Steel	PTFE/NBR	I	7/16-20 UNF	0.2	01
0882420	40-420	17	38	600	100	CN/Brass	PTFE/NBR	I	1/4 NPT	0.2	01

18 D variations with electrical connection M 12 x 1 (max allowable voltage 30 V) ***

Part Number	Pressure Range (bar) [†]	Switching Pressure Difference ** (bar)		Maximum Over Pressure* (bar)	Switching (Cycles per min)	Pressure Sensor Materials		Fluid Connection		Weight (kg)	Dimension Drawing No.
		Lower Range	Upper Range			Housing Piston	Seal Dyn./Static	Type	Size		
0882160	5-70	10.5	15	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	04
0882260	10-160	11	17	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	04
0882360	25-250	11	17	400	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	06
0882460	40-420	17	35	600	100	AL/Steel	PTFE/NBR	I	G 1/4	0.2	06
0883160	5-70	10.5	15	400	100	CN/Steel	PTFE/NBR	P	-	0.3	05
0883260	10-160	11	17	400	100	AL/Steel	PTFE/NBR	P	-	0.2	05
0883360	25-250	11	17	400	100	AL/Steel	PTFE/NBR	P	-	0.2	05
0883460	40-420	17	35	600	100	AL/Steel	PTFE/NBR	P	-	0.2	05

* Observe switching range. Do not subject switch to max. allowable pressure during normal operation. Even short pressure peaks must not exceed this value.

** Max. values.

*** M 12 plug not included. If required, please order separately. Table on page 3.

† 1 bar = 14.503 psi.

AL = Aluminium

NBR = Perbunan

PTFE = Teflon

CN = Zinc die cast

PU = Polyurethane

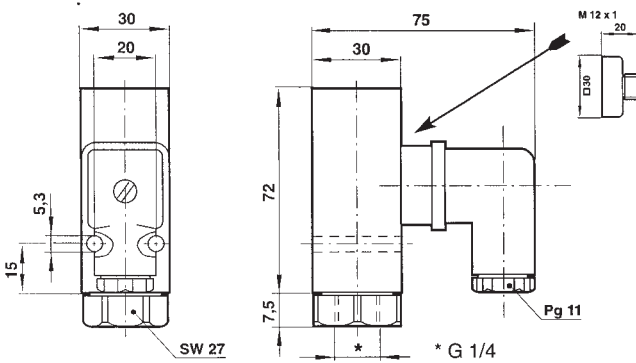
POM = Delrin

I: Female

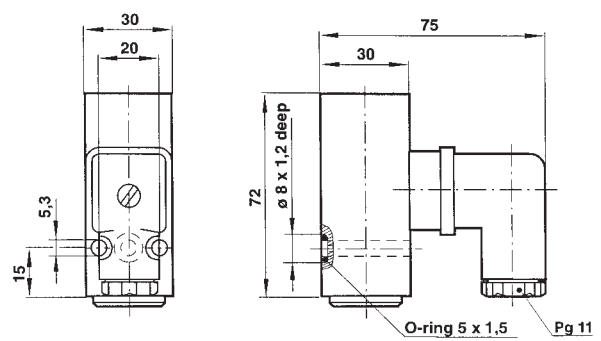
P: Flange

Dimensional drawing

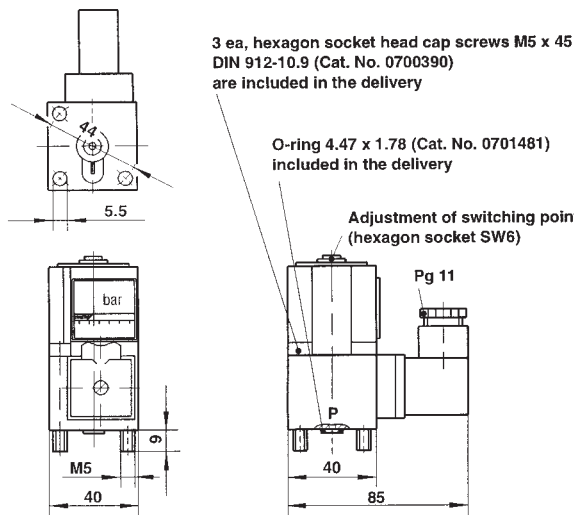
Dimensional drawing 01



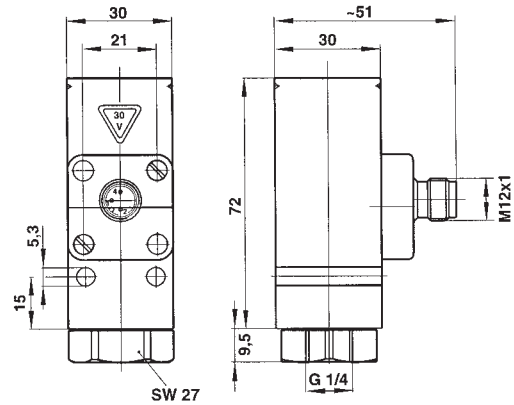
Dimensional drawing 02



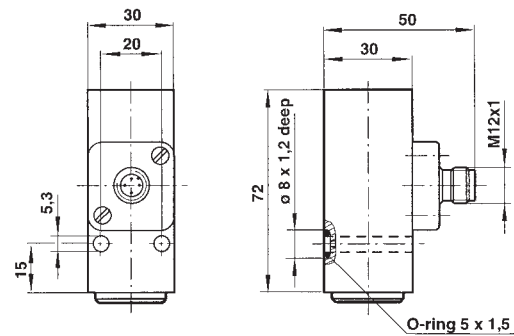
Dimensional drawing 03



Dimensional drawing 04



Dimensional drawing 05



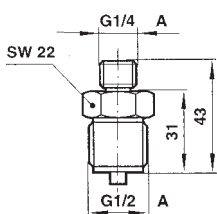
Connector M 12 x 1

- Type 0523056 90° without cable,
- Type 0523053 90° 5 m cable, 4-core

Accessories

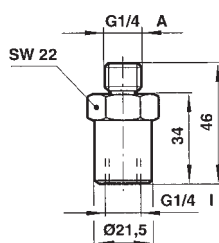
Reducer G 1/2 to G 1/4, external thread

Part No. 0574767



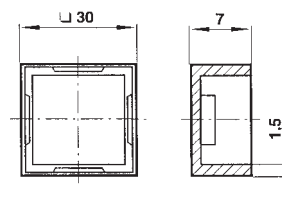
Snubber G 1/4

Part No. 0574773



Cover

Part No. 0554737

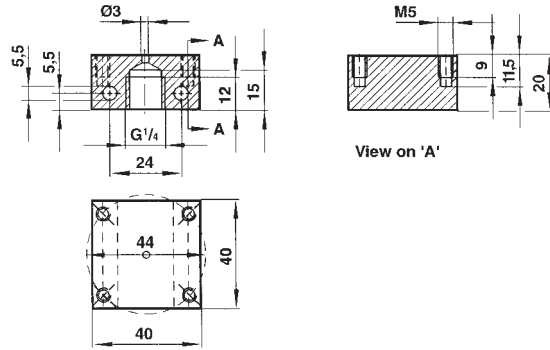


Accessories

Subplate G 1/4

Part No. 0522259
Material 3.1645
(aluminium)
for max. 400 bar

Part No. 0522233
Material 1.4301
(stainless steel)
for max. 1200 bar



Making and/or breaking capacity

Change-over switch with gold-plated contacts

M 12 x 1
only

Load Level	Type of Current	Type of Load	Umin [V]	Maximum Permanent Current Imax [A] at U [V]					Contact life
				30	48	60	125	250	
Standard * (e.g. contractors, solenoids)	AC	Resistive load	12	5	5	5	5	5	≥ 10 ⁷ switching cycles
	AC	Inductive load, cos φ = 0.7	12	3	3	3	3	3	
	DC	Resistive load	12	5	1.2	0.8	0.4	-	
	DC	Inductive load, L/R ≈ 10 ms	12	3	0.5	0.35	0.05	-	
Low ** (e.g. electronic circuits)	AC	Resistive load	5†	0.34	0.2	0.17	0.08	0.04	≥ 10 ⁷ switching cycles
	DC	Inductive load, L/R ≈ 10 ms	5†	0.1	0.01	-	-	-	

Reference number of switchings: 30/min.
Reference temperature: +30°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).

* Gold-plating not required as it would decay.
Max. perm. in-rush current (appr. 30 ms)
ACmake = max. 15A.

** Gold-plating required (will not decay).

† Lower value of critical voltage guarantees sufficient contact safety.
Lower voltages permissible under favourable conditions.

Spark quenching with DC voltage (proposal)

- 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 Uv.

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

Rated current at diode: ID ≥ ILoad

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

Ratings:

R in Ω ≈ 0.2 x RLoad in Ω
C in µF ≈ ILoad in A

