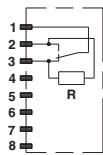


# Electro-mechanical allfluid pressure switches

20D Allfluid power plant -1 ... 100 bar  
G1/2 (male)



**Switching function:**  
1-pin microswitch  
(commutator)

Terminal 1- 2: with rising  
control value contact closing

Terminals 1 – 3: with rising  
control value contact closing

Special design to meet the needs of Power  
plants

Low leak rate (better 10-7 mbar · l · s<sup>-1</sup>)

High switching precision  
(with pressure regulation variation < 1%)

Gold plated contacts microswitch

Robust electrical connection:  
Pin-and-socket connector HAN 7 D

(Crimp contacts gold plated) with  
strain relief

Wire breakage monitoring resistance  
R = 47 kΩ

## TECHNICAL DATA

### Medium:

Neutral, aggressive, non-combustible gases  
and liquids

### Temperature:

Fluid	Ambient
-20°C ... +100°C	-10°C ... +80°C
at switching element	
+80°C max.	

### Media viscosity:

Up to 1000 mm<sup>2</sup>/s

### Switching pressure difference/hysteresis:

Fixed - option

Adjustable - option

### Mounting position:

Optional

### Resistance to shocks and vibrations (avoid if possible):

±6,5 g max. (sinusoidal) / 5-100 Hz  
max. temporary (x, y, z)

### Reproducibility:

±1% of switching pressure range

### Protection rating:

IP65 (conforming to DIN 40050)

## MATERIALS

Housing: die-cast aluminium

Sealing: stainless steel - bellow

Pressure sensor: all parts made of  
stainless steel 1.4301 or 1.4404  
wetted parts.

## 20D Allfluid power plant - fixed switching pressure difference

Switching pressure * <sup>1</sup> (bar)	Switching pressure difference typical value		Over pressure * <sup>2</sup> (bar)	Switching cycles (1/min)	MODELS
-1 ... 0	0,08	0,09	10	max. 20	1810112
-1 ... 1	0,07	0,08	10	max. 20	1810212
-1 ... 2,5	0,09	0,12	10	max. 20	1810412
0,05 ... 1	0,09	0,11	10	max. 20	1811112
0,1 ... 2,5	0,11	0,15	10	max. 20	1811312
0,5 ... 4	0,3	0,33	20	max. 20	1811412
0,5 ... 6	0,3	0,35	20	max. 20	1811512
0,5 ... 10	0,3	0,4	20	max. 20	1811612
1,0 ... 16	0,7	0,8	50	max. 20	1811712
1,0 ... 25	0,7	0,9	50	max. 20	1811812
5,0 ... 63	1,0	2,0	85	max. 20	1811912
5,0 ... 100	3,0	7,0	150	max. 20	1811012

## 20D - Allfluid power plant - adjustable switching pressure difference

Switching pressure * <sup>1</sup> (bar)	Switching pressure difference typical value		Over pressure * <sup>2</sup> (bar)	Switching cycles (1/min)	MODELS
-1 ... 0	0,12 ... 0,13	0,7	10	max. 20	1800112
-1 ... 1	0,19 ... 0,21	1,0	10	max. 20	1800212
-1 ... 2,5	0,22 ... 0,24	2,5	10	max. 20	1800412
0,05 ... 1	0,15 ... 0,16	0,7	10	max. 20	1801112
0,1 ... 2,5	0,20 ... 0,25	2,0	10	max. 20	1801312
0,5 ... 4	0,8 ... 0,8	2,5	20	max. 20	1801412
0,5 ... 6	0,8 ... 0,9	5,0	20	max. 20	1801512
0,5 ... 10	0,9 ... 1,9	8,0	20	max. 20	1801612
1,0 ... 16	1,7 ... 1,9	12,0	50	max. 20	1801712
1,0 ... 25	1,8 ... 2,8	20,0	50	max. 20	1801812
5,0 ... 63	2,3 ... 3,5	20,0	85	max. 20	1801912
5,0 ... 100	4,0 ... 9,0	55,0	150	max. 20	1801012

\*<sup>1</sup> Atmospheric air pressure.

\*<sup>2</sup> Short term pressure peaks should not exceed this value. Normal operation should be within switching pressure range.

Over pressure equals maximum test pressure.

Note: The switching point on vacuum applications may be effected by atmospheric air pressure variations and external vibration.

For further information



[www.norgren.com/info/en5-030](http://www.norgren.com/info/en5-030)

## ACCESSORIES

Surge dampers



0551894

Bracket



0574772

## Switching capacity – Microswitch with gold plated contacts

Current type current I [A]	Load type	Switching voltage US max. 24 V	Switching 48 V
a.c.	ohmic	10	10
a.c.	inductive, $\cos \varphi \approx 0,7$	4	2,5
a.c.	inductive, spark extinction with RC element	6	4
d.c.	ohmic	2	0,9
d.c.	inductive $L/R \approx 10 \text{ ms}$	1	0,3
d.c.	inductive, spart extinction with diode	1,5	0,7

## Microswitch with gold plated contacts

Umin and Imin no limits,  
useful upper limit:

Umax approx.. 48 V, Imax approx. 20 mA;

Operating the pressure switch with  $U > 48 \text{ V d.c.}$   
and/or  $I > 20 \text{ mA}$  the gold layer the contacts will be damaged. The  
pressure switch can only be utilized for currents exceeding 20 mA.

The switching capacity with the remaining silver jump contacts is  
indicated in the table.

Reference switching number: 60/min

Reference temperature: + 30 °C

(with + 70 °C max. switching current 50% of the table values).

### Contact durability

referred to max. switching current  $\approx 1 \times 10^6$  switchings  
(with 50% of the max. switching current approximately 3-times longer  
durability)

The creep and air distance as per VDE 0110 of the insulation group B  
(except the contact distance of the micro switch).

Recommended Circuit - Spark quenching / Intrinsically safe operation  
with d.c. voltage

1. Diode D in parallel to inductive load.  
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for erasing diode:

Nominal voltage of the diode  $UD \geq 1,4 \times Us$

Nominal current of the diode  $IN \geq I_{Load}$

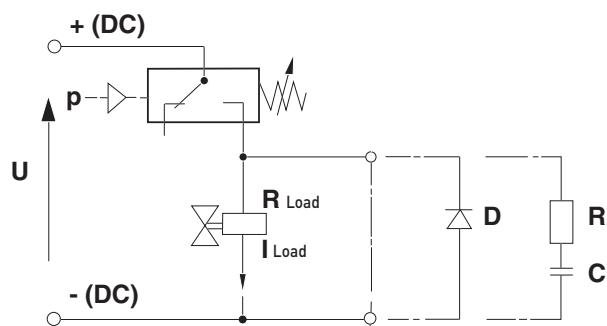
Select fast switching diodes  
(blocking recovery time  $trr \leq 200 \text{ ms}$ )

2. RC element parallel to the load  
(or parallel to the switching contact).  
Suitable for direct voltage and alternating voltage.

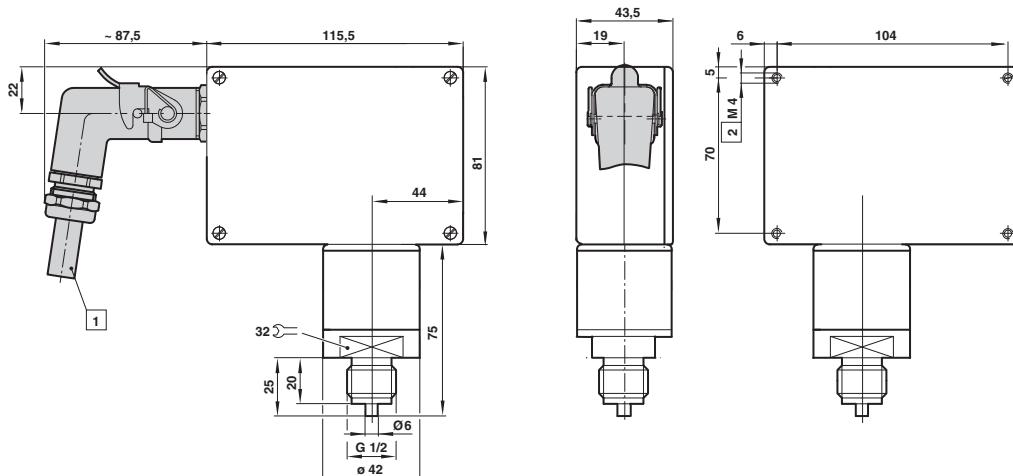
Dimensioning principles:

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

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



## BASIC DIMENSIONS



1 75° offset  
2 x 10 deep