

0180/0181

Diaphragm / piston pressure switches 250 V

- Zinc-plated steel body (CrVI-free)
- With changeover switch and silver contacts
- Overpressure safe up to 100 / 300 / 600 bar ¹⁾
- Hysteresis adjustable at works



p _{max.} in bar	Adjustment range in bar	Tolerance at room temperature	Thread	Order number:
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0180 Diaphragm pressure switch with spade terminals

100 ¹⁾	0.3 – 1.5	± 0.2	M 10x1 con.	0180	457	01	X	001
			M 12x1.5	0180	457	02	X	002
			G 1/4	0180	457	03	X	003
			NPT 1/8	0180	457	04	X	318
			NPT 1/4	0180	457	09	X	314
			7/16-20 UNF	0180	457	20	X	301
			9/16-18 UNF	0180	457	21	X	302

	1 – 10	± 0.5	M 10x1 con.	0180	458	01	X	040
			M 12x1.5	0180	458	02	X	041
			G 1/4	0180	458	03	X	042
			NPT 1/8	0180	458	04	X	343
			NPT 1/4	0180	458	09	X	340
			7/16-20 UNF	0180	458	20	X	341
			9/16-18 UNF	0180	458	21	X	342

300 ¹⁾	10 – 50	± 3.0	M 10x1 con.	0180	459	01	X	007
			M 12x1.5	0180	459	02	X	008
			G 1/4	0180	459	03	X	009
			NPT 1/8	0180	459	04	X	320
			NPT 1/4	0180	459	09	X	311
			7/16-20 UNF	0180	459	20	X	305
			9/16-18 UNF	0180	459	21	X	306

	10 – 100	± 3.0 – 5.0	M 10x1 con.	0180	461	01	X	010
			M 12x1.5	0180	461	02	X	011
			G 1/4	0180	461	03	X	012
			NPT 1/8	0180	461	04	X	321
			NPT 1/4	0180	461	09	X	312
			7/16-20 UNF	0180	461	20	X	307
			9/16-18 UNF	0180	461	21	X	308

0181 Piston pressure switch with spade terminals

600 ¹⁾	50 – 200	± 5.0	M 10x1 con.	0181	460	01	X	001
			M 12x1.5	0181	460	02	X	002
			G 1/4	0181	460	03	X	003
			NPT 1/8	0181	460	04	X	304
			NPT 1/4	0181	460	09	X	303
			7/16-20 UNF	0181	460	20	X	301
			9/16-18 UNF	0181	460	21	X	302

Diaphragm / seal material – areas of application

NBR	Hydraulic / machine oil, heating oil, air, nitrogen etc.	1
EPDM	Brake fluid, ozone, acetylene, hydrogen etc.	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline etc.	3

Temperature ranges of diaphragm / seal materials see page 26

Order number:	018X - XXX XX - X-XXX
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Piston pressure switches are only to a limited extent suitable for use with gases.
See explanation on page 9.

¹⁾ Static pressure, dynamic pressures should be 30 to 50% lower. These values refer to the hydraulic or pneumatic part of the pressure switch.

With male thread



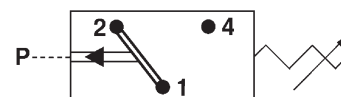
■ Our pressure switches are also available with factory pre-set switching points.

■ Ready-wired versions can be found starting on page 38 following.

■ We offer other body materials and connecting threads upon request.

■ Other diaphragm- / seal materials are available on request, e.g. HNBR or silicone for diaphragm pressure switches.

■ For further technical data see page 26/27.



Accessories see page 28

Pressure switch hex 27

Changeover switch with silver or gold contacts



Technical data

- **Easily adjustable switching point.**
- **Factory adjustable hysteresis (except type 0140/0141) ¹⁾.**
- **High overpressure safety and long life even under harsh operating conditions.**
- **Ready-wired versions with your desired connectors (see p. 38).**
- **Deliverable with socket device or protective cap according to IP65.**

Temperature stability for diaphragm / seal materials:	NBR	-40°C – +100°C
	EPDM	-30°C – +120°C
	FKM	-5°C – +120°C
	Silicone	-40°C – +120°C
	HNBR	-30°C – +120°C
Switching frequency:	200 / min.	
Mechanical life expectancy:	10 ⁶ cycles (life expectancy of diaphragm pressure switches only for pressures up to max. 50 bar)	
Pressure rise rate:	≤ 1 bar / ms	
Hysteresis (Only preset at factory):	adjustable average value 10-30% depending on type Type 0140/0141 not adjustable	
Vibration resistance:	10 g / 5 – 200 Hz sine-wave	
Shock resistance:	294 m / s ² ; 14 ms half-sine-wave	
Degree of protection:	IP65 with suitable connector installed terminals IP00	
Weight in grams:	0140 / 0141 0170 / 0171, 0180 / 0181, 0183, 0186, 0187, 0190 / 0191, 0196, 0197	approx. 100 g
	0184 / 0185, 0194 / 0195	approx. 130 g

¹⁾ Our pre-set switches are sealed with lacquer paint and the set pressure is embossed on the body.

Pressure switch hex 27

Technical data

Electrical values

Rated operating voltage U_e	Rated operational current I_e	Utilisation category ²
250 Volt AC 50 / 60 Hz	4 Ampere (2 Ampere) ¹	AC 12
250 Volt AC 50 / 60 Hz	1 Ampere	AC 14
24 Volt DC	4 / 2 Ampere (2 / 1 Ampere) ¹	DC 12 / DC 13
50 Volt DC	2 / 1 Ampere (1 / 0.5 Ampere) ¹	DC 12 / DC 13
75 Volt DC	1 / 0.5 Ampere (0.5 / 0.25 Ampere) ¹	DC 12 / DC 13
125 Volt DC	0.3 / 0.2 Ampere (0.2 / 0.1 Ampere) ¹	DC 12 / DC 13
250 Volt DC	0.25 / 0.2 Ampere (0.15 / 0.1 Ampere) ¹	DC 12 / DC 13
Rated insulation voltage U_i :	300 Volt	
Rated operating current I_{imp} :	2.5 kV (4 kV) ¹	
Rated thermal current I_{the} :	5 Ampere	
Switching overvoltage:	< 2.5 kV	
Rated frequency:	DC and 50 / 60 Hz	
Short circuit current rating of the device:	to 5 Ampere (to 3.5 Ampere) ¹	
Rated short-circuit current:	< 350 Ampere	
IP class of protection according to EN60529:1991+A1:1999:	IP65 with socket device	
Tightening torque of terminal screws:	< 0.35 Nm (concerns only type 0140 / 0141, 0184 / 0185, 0194 / 0195)	
Cable diameter:	0.5 – 1.5 mm ²	

¹⁾ Figures in brackets for series 0140 / 0141

²⁾ Explanations see page 9



CE marking

SUCO pressure switches rated with an operating limit of 250 V are covered by the Low Voltage Directive 73/23/EC.

An EC Declaration of Conformity has been issued for these pressure switches and is on file at our offices. The corresponding switches bear the CE mark in our catalogue.

Degree of protection IPXX

The type approval does not apply without restriction to all environmental conditions. It is the responsibility of the user to check whether the electrical connection complies with regulations other than those stated and whether it can be used for special applications which could not be foreseen by us.

Oxygen warning!

When using oxygen, the relevant safety regulations must be observed. In addition, we recommend that a maximum operating pressure of 10 bar (50 bar for stainless steel enclosures) must not be exceeded.

Switching performance and materials overview

Type	0140	0141	0170	0171	0180	0181	0183	0184	0185	0186	0187	0190	0191	0194	0195	0196	0197
24 V												■	■	■	■	■	■
42 V			■	■													
250 V	■	■			■	■	■	■	■	■	■						
50 mA												■	■	■	■	■	■
2 A	■	■															
4 A			■	■	■	■	■	■	■	■	■						
Gold contacts												■	■	■	■	■	■
Silver contacts	■	■	■	■	■	■	■	■	■	■	■						
Adjustable hysteresis			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Zinc-plated steel (CrVI-free)	■	■	■	■	■	■	■	■	■			■	■	■	■		
Stainless steel 1.4305										■	■					■	■
DIN-socket device								■	■					■	■		

Pressure switch hex 27

Accessories and applications



- Socket device IP65 or rubber capped IP54 for increased protection
- Easy installation with mountable socket device
- Thread adapters for special threads

hex 27 accessories

				
	Rubber protective cap with two cable feeds for 1.7 to 2.3 mm diameter cable When rubber cap attached IP54 Suitable for voltages up to 42 V	Socket device Threaded connection Pg9 (Tightening range 6 - 9 mm) When attached to socket device IP65 Suitable for voltages up to 250 V	Socket device with indicator light According to DIN EN 175301- 803-A (DIN 43650) Threaded connection Pg9 (Tightening range 6 - 9 mm) When attached to socket device IP65 Suitable for 24 V or 250 V	Thread adapter for special threads from G1/4-DIN3852-E to R1/4 acc. to DIN 2999 including FKM seals
0170 / 0171	■	■		■
0180 / 0181	■ (Up to max 42 V)	■		■
0183	■ (Up to max 42 V)	■		
0184 / 0185			■ 24 V or 250 V (upon request) see also page 33	■
0190 / 0191	■	■		■
0194 / 0195			■ (24 V on request) also see page 35	■
0186 / 0187	■ (Up to max 42 V)	■		■
0196 / 0197	■	■		■
Order number:	1-1-70-621-007	1-1-80-652-002	24 VDC: 1-1-84-652-011 250 VAC: 1-1-84-652-010	1-1-00-420-009