

Diaphragm/piston pressure switches 250 V

Zinc-plated steel body, with push-on terminals

With changeover switch and silver contacts

Overpressure safe to 100 / 300 / 600 bar^{*)}

- See page 7 for electrical properties

0180 Diaphragm pressure switches

Adjustment range in bar	Tolerance in bar (RT)	Thread	Order number			p _{max.} in bar
0.3 - 1.5	± 0.2	M10x1 taper	0180 457 01		001	100 ^{*)}
		M 12x1.5	0180 457 02		002	
		G 1/4"	0180 457 03		003	
1 - 10	± 0.5	M10x1 taper	0180 458 01		004	100 ^{*)}
		M 12x1.5	0180 458 02		005	
		G 1/4"	0180 458 03		006	
1 - 10	± 0.5 - 1.0	M10x1 taper	0180 458 01		040	300 ^{*)}
		M 12x1.5	0180 458 02		041	
		G 1/4"	0180 458 03		042	
10 - 50	± 3.0	M10x1 taper	0180 459 01		007	300 ^{*)}
		M 12x1.5	0180 459 02		008	
		G 1/4"	0180 459 03		009	
10 - 100	± 3.0 - 5.0	M10x1 taper	0180 461 01		010	300 ^{*)}
		M 12x1.5	0180 461 02		011	
		G 1/4"	0180 461 03		012	

0181 Piston pressure switches

Adjustment range in bar	Tolerance in bar (RT)	Thread	Order number			p _{max.} in bar
50 - 200	± 5.0	M10x1 taper	0181 460 01		001	600 ^{*)}
		M 12x1.5	0181 460 02		002	
		G 1/4"	0181 460 03		003	

- ! Order number
- Add figure for diaphragm/seal material

018X XXX XX **X** XXX

NBR	Hydraulic / machine oil, turpentine, heating oil, air etc.	=	1
EPDM	Hydrogen, acetylene, ozone, brake fluid etc.	=	2
FKM	Hydraulic fluids (HFA, HFB, HFC, HFD), petrol/gasoline etc.	=	3
See page 21 for temperature ranges of diaphragm materials			

Warning!

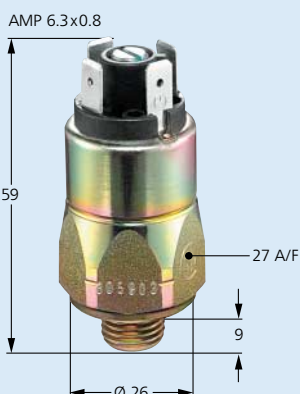
When using with oxygen, the relevant accident-prevention regulations must be observed. In addition, we recommend that a maximum operating pressure of 10 bar is not exceeded.

Piston-type pressure switches are only to a limited extent suitable for use with gases and oxygen. See explanation on page 5.

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

Degree of protection IP65

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

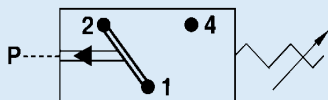


With external thread

- Also available with switching point preset in our works.
- For ready-wired variants, see page 30 onwards.
- Other body materials and connection threads on request.



- Accessories: see page 29



- For further technical data, see page 21.

Pressure Switches

27 A/F

Changeover contacts
With silver or gold contacts



- High-quality micro-switch for reliable switching
- Switching point easy to adjust ¹⁾
- Hysteresis can be set in our works ²⁾
- Self-cleaning contacts for a long working life (only 250 V versions)
- High overpressure safety
- Long working life under harsh operating conditions
- Connection plug or protective cap to protect against moisture and dirt, and thus easy replacement on site by service personnel
- Various thread connections available to suit your installation
- Ready-wired variants - see pages 30-33
- A choice of zinc-plated steel or stainless steel as body material and a selection of diaphragm materials ensure high resistance to media

¹⁾ Switches we have preset are secured with sealing paint and have the switching pressure stamped on their body.

²⁾ Except for Series 0140/0141

TECHNICAL DATA



	Voltage			Max. current			Body material					
	24 V	42 V	250 V	50 mA	2 A	4 A	Gold contacts	Silver contacts	Adjustable hysteresis	Zinc-plated steel	Stainless steel 1.4305	DIN valve connector
0140 ^{*)}			•		•			•		•		
0141 ^{*)}			•		•			•		•		
0170		•				•		•	•	•		
0171		•				•		•	•	•		
0180 ^{*)}			•			•		•	•	•		
0181 ^{*)}			•			•		•	•	•		
0184 ^{*)}			•			•		•	•	•		•
0185 ^{*)}			•			•		•	•	•		•
0186 ^{*)}			•			•		•	•		•	
0187 ^{*)}			•			•		•	•		•	
0190	•			•			•		•	•		
0191	•			•			•		•	•		
0196	•			•			•		•		•	
0197	•			•			•		•		•	

^{*)} For further details of switching performance, see page 7

TECHNICAL DATA

Degree of protection:	IP 65 with valve connector installed Terminals IP 00	
Switching frequency:	200 / min.	
Temperature stability:	NBR	-30° ... +100°C
	EPDM	-30° ... +120°C
	FKM	-5° ... +120°C
Mechanical life expectancy:	10 ⁶ cycles (at pressures up to 50 bar)	
Vibration resistance:	10 g / 5-200 Hz Sinus	
Shock resistance:	294 m/s ² ; 14 ms half-sine-wave	
Switching performance:	see page 7	

CE Marking

Directives of the European Council

**Machinery Directive,
EMC Directive
Low Voltage Directive
ATEX Directive**

Equipment that falls under these directives must have a declaration of conformity and carry the CE marking.

SUCO pressure switches are electrical equipment and therefore fall under the Low Voltage Directive 73/23/EC.

A EC Declaration of Conformity has been prepared for all products that fall under these directives and is kept on our premises. The catalogue pages for the relevant switches carry the CE marking.

Rated operating voltage U_e	Rated operating current I_e	Utilisation category	Model ranges:
250 volt AC 50 / 60 Hz	4 amp (2 amp)*	AC 12	0140 0141 0180 0181 0184 0185 0186 0187
250 volt AC 50 / 60 Hz	1 amp	AC 14	
24 volt DC	4 / 4 amp (2 / 1 amp)*	DC 12 / DC 13	
50 volt DC	2 / 1 amp (1 / 0.5 amp)*	DC 12 / DC 13	
75 volt DC	1 / 0.5 amp (0.5 / 0.25 amp)*	DC 12 / DC 13	
125 volt DC	0.3 / 0.2 amp (0.2 / 0.1 amp)*	DC 12 / DC 13	
250 volt DC	0.25 / 0.2 amp (0.15 / 0.1 amp)*	DC 12 / DC 13	
Rated insulation voltage U_i :	300 Volt		
Rated surge capacity U_{imp} :	2.5 kV (4 kV)*		
Rated thermal current I_{the} :	5 amp		
Switching overvoltage:	< 2.5 kV		
Rated frequency:	DC und 50 / 60 Hz		
Rated current of short-circuit protection:	Up to 5 amp (up to 3.5 amp)*		
Conditional short-circuit current:	< 350 amp		
IP degree of protection to EN60529:1991+A1:1999:	IP 65	With plug	<i>* Figures in brackets apply to Types 0140 und 0141</i>
Tightening torque of terminal screws:	< 0.35 Nm		
Conductor cross-section:	0.5 – 1.5 mm ²		
Rated operating voltage U_e	Rated operating current I_e	Utilisation category	Model ranges:
250 volt AC 50 / 60 Hz	5 amp	AC 12	0150 0161 0162 0175
250 volt AC 50 / 60 Hz	1 amp	AC 14	
30 volt DC	3.5 / 3.5 amp	DC 12 / DC 13	
50 volt DC	2 / 1 amp	DC 12 / DC 13	
75 volt DC	1 / 0.5 amp	DC 12 / DC 13	
125 volt DC	0.3 / 0.2 amp	DC 12 / DC 13	
250 volt DC	0.35 / 0.2 amp	DC 12 / DC 13	
Rated insulation voltage U_i :	300 volt		
Rated surge capacity U_{imp} :	2.5 kV		
Rated thermal current I_{the} :	6 amp		
Switching overvoltage:	< 2.5 kV		
Rated frequency:	DC und 50 / 60 Hz		
Rated current of short-circuit protection:	Up to 6,3 amp		
Conditional short-circuit current:	< 350 amp		
IP degree of protection to EN60529:1991+A1:1999:	IP 65	With plug	
Tightening torque of terminal screws:	< 0.35 Nm		
Conductor cross-section:	0.5 – 1.5 mm ²		
Rated operating voltage U_e	Rated operating current I_e	Utilisation category	Model ranges:
250 volt AC 50 / 60 Hz	2.5 amp	AC 12	0158 0159 0188
250 volt AC 50 / 60 Hz	1 amp	AC 14	
30 volt DC	2 / 2 amp	DC 12 / DC 13	
50 volt DC	1 / 0.5 amp	DC 12 / DC 13	
75 volt DC	0.75 / 0.4 amp	DC 12 / DC 13	
125 volt DC	0.3 / 0.2 amp	DC 12 / DC 13	
250 Volt DC	0.3 / 0.2 amp	DC 12 / DC 13	
Rated insulation voltage U_i :	300 Volt		
Rated surge capacity U_{imp} :	2.5 kV		
Rated thermal current I_{the} :	6 amp		
Switching overvoltage:	< 2.5 kV		
Rated frequency:	DC and 50 / 60 Hz		
Rated current of short-circuit protection:	Up to 2.5 amp		
Conditional short-circuit current:	< 350 amp		
IP degree of protection to EN60529:1991+A1:1999:	IP 65	With plug	
Tightening torque of terminal screws:	< 0.5 Nm		
Conductor cross-section:	0.5 – 1.5 mm ²		



Accessories

For 27 A/F pressure switches

Protective cap

With two cable entries
for 1.7 - 2.3 mm cable diameter
Not suitable for voltages above 42 V !

Order No.: 1-1-70-621-007



Connection plug

Cable gland Pg9
(clamping range 6 - 9 mm)

Order No.: 1-1-80-652-002



Application matrix for accessories

Pressure-switch range	Protective cap 1-1-70-621-007	Connector plug 1-1-80-652-002	Connector plug with indicator light to DIN 43650
0140 / 0141			
0170 / 0171	•	•	
0180 / 0181	• (up to max. 42V)	•	
0184 / 0185			• (for 24V and 250V on request) see also page 25
0190 / 0191	•	•	
0186 / 0187	• (up to max. 42V)	•	
0196 / 0197	•	•	