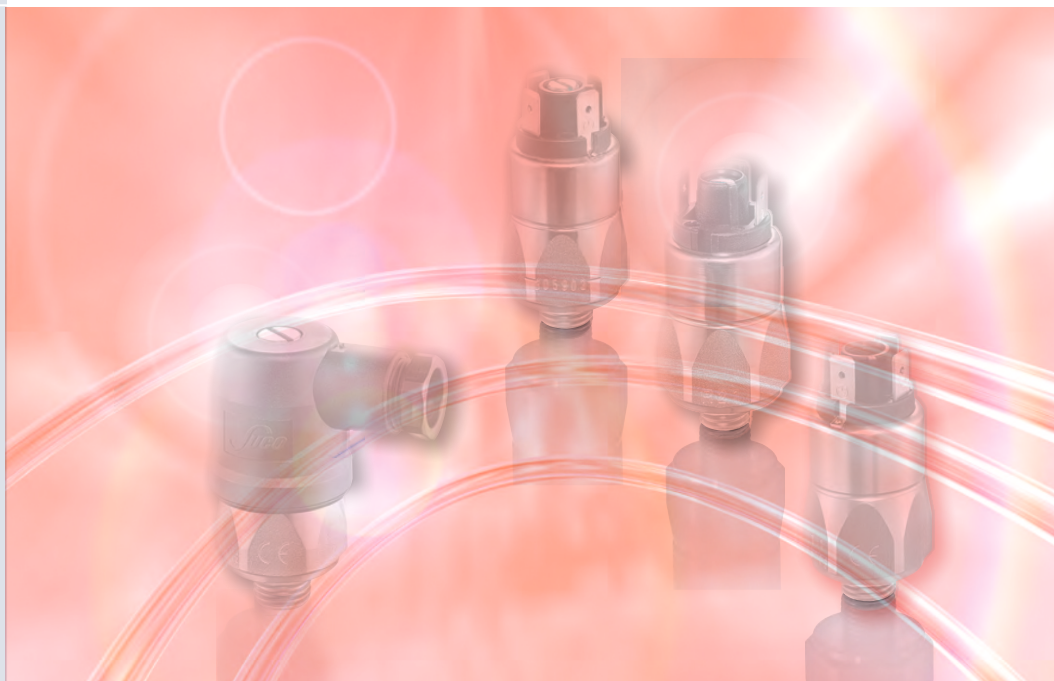


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Changeover with silver or gold contacts



- Switching point can be adjusted when fitted on site¹⁾
- Factory adjustable hysteresis (except types 0140 and 0141)
- High overpressure safety and long service life under harsh conditions
- Operating voltage up to 250 V
- Series 0140 / 0141 with protective insulation[□]
- For ready-wired customized versions refer to chapter M.5, starting at page 62
- For pressure switches with integrated connectors refer to chapter M.2, starting at page 32

¹⁾ Pressure switches can also be supplied preset at factory.
Our preset switches are sealed with lacquer paint, set points are embossed on the housing.

Pressure switches hex 27

Technical data

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Temperature resistance of sealing materials:	NBR (max. overpressure up to 100 bar) -30°C ... +100°C
	NBR (max. overpressure up to 300 bar) -40°C ... +100°C
	EPDM -30°C ... +120°C
	EPDM-W270 (in diaphragm pressure switch) -20°C ... +100°C
	FKM (in diaphragm pressure switch) -5°C ... +120°C
	FKM (in piston pressure switch) -15°C ... +120°C
	Silicone (in diaphragm pressure switch) -40°C ... +120°C
	HNBR -30°C ... +120°C
Switching frequency:	200/ min.
Mechanical life expectancy:	1,000,000 cycles (for diaphragm pressure switches, life expectancy value only applies for switching pressures to max. 50 bar)
Pressure rise rate:	≤ 1 bar/ ms
Hysteresis (only adjustable at factory):	Adjustable average value 10 ... 30 % depending on type Types 0140 and 0141 cannot be adjusted
Vibration resistance:	10g; 5 ... 200Hz sine wave; DIN EN 60068-2-6
Shock resistance:	294m/ s ² ; 14ms half sine wave; DIN EN 60068-2-6, DIN EN 60068-2-29
Protection class:	IP65 with socket device, terminals IP00
Weight:	approx. 10g

Switching performance and materials overview

Type	0140	0141	0170	0171	0180	0181	0183	0186	0187	0190	0191	0196	0197
5 ... 24 VDC										•	•	•	•
10 ... 42 VAC/DC			•	•									
10 ... 250 VAC/DC	•	•			•	•	•	•	•				
3 ... 50 mA										•	•	•	•
10 mA ... 2 A	•	•											
10 mA ... 4 A			•	•	•	•	•	•	•				
Gold contacts										•	•	•	•
Silver contacts	•	•	•	•	•	•	•	•	•				
Adjustable hysteresis			•	•	•	•	•	•	•	•	•	•	•
Zinc-plated steel (CrVI-free)	•	•	•	•	•	•	•			•	•		
Stainless steel 1.4305								•	•			•	•



Pressure switches hex 27

Electrical values

0140 / 0141		
Rated working voltage _e U	Rated working current _r I	Usage category ¹⁾
250 VAC 50 / 60 Hz	2 A	AC 12
24 VDC	2/1 A	DC 12 / DC 13
50 VDC	1/0.5 A	DC 12 / DC 13
75 VDC	0.5/0.25 A	DC 12 / DC 13
125 VDC	0.2/0.1 A	DC 12 / DC 13
250 VDC	0.15/0.1 A	DC 12 / DC 13
Rated insulation voltage _i U	300 V	
Rated impulse withstand voltage _{imp} U _i	4 kV	
Conventional thermal current _{th} I _{th}	5 A	
Switching overvoltage:	< 2.5kV	
Rated frequency:	DC and 50/60Hz	
Nominal current of short-circuit mechanism:	to 3.5 A	
Rated short-circuit current:	< 350 A	
IP class of protection according to EN60529:1991+A1:1999:	IP65 with connector	
Tightening torque of terminal screws:	< 0.35 Nm	
Connector cross-section:	0.5 – 1.5 mm ²	

0170 / 0171 / 0180 / 0181 / 0183 / 0186 / 0187 / 0190 / 0191 / 0196 / 0197		
Rated working voltage _e U	Rated working current _r I	Usage category ¹⁾
250 VAC 50 / 60 Hz	4 A	AC 12
250 VAC 50 / 60 Hz	1 A	AC 14
24 VDC	4/2 A	DC 12 / DC 13
50 VDC	2/1 A	DC 12 / DC 13
75 VDC	1/0.5 A	DC 12 / DC 13
125 VDC	0.3/0.2 A	DC 12 / DC 13
250 VDC	0.25/0.2 A	DC 12 / DC 13
Rated insulation voltage _i U	300 V	
Rated impulse withstand voltage _{imp} U _i	2.5kV	
Conventional thermal current _{th} I _{th}	5 A	
Switching overvoltage:	< 2.5kV	
Rated frequency:	DC and 50/60Hz	
Nominal current of short-circuit mechanism:	to 5 A	
Rated short-circuit current:	< 350 A	
IP-Protection class nach EN60529:1991+A1:1999:	IP65 with connector	

¹⁾ For technical explanations refer to page 9

0186/ 0187

Diaphragm / piston pressure switches up to 250 V with stainless steel housing

- Stainless steel housing (1.4305 / AISI 303)
- Changeover with silver contacts
- Overpressure safety up to 300 / 600 bar (EPDM-W270 and silicone diaphragm up to 35 bar)
- Hysteresis adjustable at factory

p _{max.} in bar	Adjustment range in bar	Tolerance in bar at room temperature	Male thread	Order number
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0186 Diaphragm pressure switches with spade terminal

300 ¹⁾ +2)	0.5 – 5	± 0.3	G 1/4	0186– 457 03– X – 003
	1 – 10	± 0.5		0186– 458 03– X – 006
	10 – 50	± 3.0		0186– 459 03– X – 009
	10 – 100	± 3.0 – 5.0		0186– 461 03– X – 012

0187 Piston pressure switch with spade terminal

600 ¹⁾	50 – 200	± 5.0	G 1/4	0187– 460 03– X – 003
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Seal material – Application areas

Seal material	Application areas	Code
NBR	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-W270	Drinking water (only in diaphragm, p _{max} ≤ 35 bar)	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
Silicone	Water, food products, air, etc. (only in diaphragm, p _{max} ≤ 35 bar)	8
HNBR	Hydraulic/machine oil, ester-based bio-oils	9

Refer to page 53 for the temperature range and application thresholds of sealing materials.

Your order number: 018X – XXX 03 – X – XXX

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¹⁾ Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.

²⁾ Overpressure safety of diaphragm pressure switch up to 300 bar. Functional reliability only up to 35 bar with diaphragm materials EPDM-W270 and silicone.

