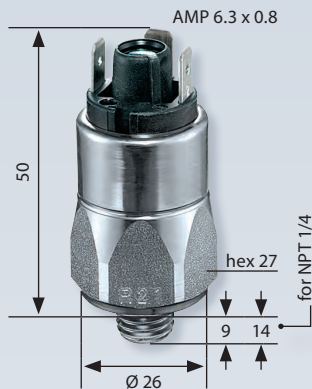


M.4

hex 27

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0170 / 0171

Diaphragm / piston pressure switches up to 42 V

- Zinc-plated steel (CrVI-free)
- Changeover with silver contacts
- Overpressure safety up to 100/300/600 bar¹⁾
- 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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0170 Diaphragm pressure switches with spade terminal

100 ¹⁾	0.3 – 1.5	± 0.2	G 1/4	0170 – 457 03 – X – 003
			M 10x1 con.	0170 – 457 01 – X – 001
			M 12x1.5 cyl.	0170 – 457 02 – X – 002
			NPT 1/8	0170 – 457 04 – X – 318
			NPT 1/4	0170 – 457 09 – X – 314
			7/16-20 UNF	0170 – 457 20 – X – 301
			9/16-18 UNF	0170 – 457 21 – X – 302
	1 – 10	± 0.5	G 1/4	0170 – 458 03 – X – 042
			M 10x1 con.	0170 – 458 01 – X – 040
			M 12x1.5 cyl.	0170 – 458 02 – X – 041
			NPT 1/8	0170 – 458 04 – X – 343
			NPT 1/4	0170 – 458 09 – X – 340
			7/16-20 UNF	0170 – 458 20 – X – 341
			9/16-18 UNF	0170 – 458 21 – X – 342
300 ¹⁾	10 – 50	± 3.0	G 1/4	0170 – 459 03 – X – 009
			M 10x1 con.	0170 – 459 01 – X – 007
			M 12x1.5 cyl.	0170 – 459 02 – X – 008
			NPT 1/8	0170 – 459 04 – X – 320
			NPT 1/4	0170 – 459 09 – X – 316
			7/16-20 UNF	0170 – 459 20 – X – 305
			9/16-18 UNF	0170 – 459 21 – X – 306
	10 – 100	± 3.0 – 5.0	G 1/4	0170 – 461 03 – X – 012
			M 10x1 con.	0170 – 461 01 – X – 010
			M 12x1.5 cyl.	0170 – 461 02 – X – 011
			NPT 1/8	0170 – 461 04 – X – 321
			NPT 1/4	0170 – 461 09 – X – 317
			7/16-20 UNF	0170 – 461 20 – X – 307
			9/16-18 UNF	0170 – 461 21 – X – 308

0171 Piston pressure switches with spade terminal

600 ¹⁾	50 – 200	± 5.0	G 1/4	0171 – 460 03 – X – 003
			M 10x1 con.	0171 – 460 01 – X – 001
			M 12x1.5 cyl.	0171 – 460 02 – X – 002
			NPT 1/8	0171 – 460 04 – X – 304
			NPT 1/4	0171 – 460 09 – X – 303
			7/16-20 UNF	0171 – 460 20 – X – 301
			9/16-18 UNF	0171 – 460 21 – X – 302

Seal material – Application areas

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

017X – XXX XX – X – XXX



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

Pressure switches hex 27

Changeover with silver or gold contacts



- Switching point can be adjusted when fitted on site ¹⁾
- 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

M.4

hex 27



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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:	294 m/s ² ; 14 ms half sine wave; DIN EN 60068-2-6, DIN EN 60068-2-29	
Protection class:	IP65 with socket device, terminals IP00	
Weight:	approx. 100g	

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								●	●			●	●

M

Pressure switches hex 27

Electrical values

0140 / 0141		
Rated working voltage U_e	Rated working current I_e	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 U_i :	300 V	
Rated impulse withstand voltage U_{imp} :	4 kV	
Conventional thermal current I_{the} :	5 A	
Switching overvoltage:	< 2.5 kV	
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 U_e	Rated working current I_e	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 U_i :	300 V	
Rated impulse withstand voltage U_{imp} :	2.5 kV	
Conventional thermal current I_{the} :	5 A	
Switching overvoltage:	< 2.5 kV	
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