

0140 / 0141

Diaphragm / piston pressure switches 250 V

- Protection class 2, protective insulation
- Zinc-plated steel (CrVI-free)
- Changeover with silver contacts
- Overpressure safety up to 300 / 600 bar¹⁾
- Includes polyamide cap, protection class IP65

p _{max.} in bar	Adjustment range in bar	Tolerance in bar at room temperature	Male thread	Order number
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0140 Diaphragm pressure switches with screw terminals

p _{max.} in bar	Adjustment range in bar	Tolerance in bar at room temperature	Male thread	Order number
300 ¹⁾	0.3 – 1.5	± 0.2	G 1/4	0140 – 457 03 – X – 003
			NPT 1/8	0140 – 457 04 – X – 300
			NPT 1/4	0140 – 457 09 – X – 305
			7/16-20 UNF	0140 – 457 20 – X – 310
			9/16-18 UNF	0140 – 457 21 – X – 315
	1 – 10	± 0.5	G 1/4	0140 – 458 03 – X – 006
			NPT 1/8	0140 – 458 04 – X – 301
			NPT 1/4	0140 – 458 09 – X – 306
			7/16-20 UNF	0140 – 458 20 – X – 311
			9/16-18 UNF	0140 – 458 21 – X – 316
	10 – 20	± 1.0	G 1/4	0140 – 459 03 – X – 009
			NPT 1/8	0140 – 459 04 – X – 302
			NPT 1/4	0140 – 459 09 – X – 307
			7/16-20 UNF	0140 – 459 20 – X – 312
			9/16-18 UNF	0140 – 459 21 – X – 317
	20 – 50	± 2.0	G 1/4	0140 – 461 03 – X – 012
NPT 1/8			0140 – 461 04 – X – 303	
NPT 1/4			0140 – 461 09 – X – 308	
7/16-20 UNF			0140 – 461 20 – X – 313	
9/16-18 UNF			0140 – 461 21 – X – 318	

0141 Piston pressure switches with screw terminals

p _{max.} in bar	Adjustment range in bar	Tolerance in bar at room temperature	Male thread	Order number
600 ¹⁾	50 – 150	± 5.0	G 1/4	0141 – 460 03 – X – 003
			NPT 1/8	0141 – 460 04 – X – 304
			NPT 1/4	0141 – 460 09 – X – 309
			7/16-20 UNF	0141 – 460 20 – X – 314
			9/16-18 UNF	0141 – 460 21 – X – 319

Seal material – Application areas

Seal material	Application areas	Order number
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: **014X – XXX XX – 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.

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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.

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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:	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								●	●			●	●

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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