

# Pressure switches hex 27

Changeover with silver or gold contacts



- Switching point can be adjusted when fitted on site<sup>1)</sup>
- 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

<sup>1)</sup> 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 details

M.4  
hex 27



Temperature resistance of sealing materials	NBR (diaphragm pressure switches, $p_{max} = 300 / 400$ bar)	-40 °C ... +100 °C
	NBR (diaphragm pressure switch, $p_{max} = 100$ bar) (piston pressure switch)	-30 °C ... +100 °C
	EPDM	-30 °C ... +120 °C
	EPDM-TW (diaphragm pressure switch)	-20 °C ... +100 °C
	FKM (diaphragm pressure switch)	-5 °C ... +120 °C
	FKM (piston pressure switch)	-15 °C ... +120 °C
	FFKM	-20 °C ... +120 °C
	Silicone (diaphragm pressure switch)	-40 °C ... +120 °C
HNBR	-30 °C ... +120 °C	
Burst pressure (diaphragm pressure switch, overpressure resistance 100 bar)	200 bar	
Burst Pressure (diaphragm pressure switch, overpressure resistance 400 bar)	700 bar (for threads M10, G 1/8, R 1/8, NPT 1/8 and type 0140 up to max. 600 bar)	
Burst pressure (Piston pressure switch)	1,000 bar (for threads M10, G 1/8, R 1/8, NPT 1/8 and type 0140 up to max. 600 bar)	
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	≤ 1,000 bar/s	
Hysteresis (only adjustable at factory) <sup>1)</sup>	Adjustable average value 10 ... 30 % depending on type Types 0140 and 0141 cannot be adjusted	
Vibration resistance	10 g; 5 ... 200 Hz sine wave; DIN EN 60068-2-6	
Shock resistance	294 m/s <sup>2</sup> ; 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. 100 g	

### Switching performance and materials overview

Type	0140	0141	0170	0171	0180	0181	0183	0186	0187	0190	0191	0196	0197
5 ... 24 V DC										●	●	●	●
10 ... 42 V AC/DC			●	●									
10 ... 250 V AC/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								●	●			●	●

<sup>1)</sup> see notes on hysteresis in the technical explanations (page 15-16)



# Pressure switches hex 27

## Electrical values

<b>0140 / 0141</b>		
Rated working voltage $U_e$ :	Rated working current $I_e$	Usage category <sup>1)</sup>
250 VAC 50 / 60 Hz	2 A	AC12
24 VDC	2 / 1 A	DC12 / DC13
50 VDC	1 / 0.5 A	DC12 / DC13
75 VDC	0.5 / 0.25 A	DC12 / DC13
125 VDC	0.2 / 0.1 A	DC12 / DC13
250 VDC	0.15 / 0.1 A	DC12 / DC13
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 / 60 Hz	
Nominal current of short-circuit mechanism:	to 3.5 A	
Rated short-circuit current:	< 350 A	
IP class of protection according to DIN EN 60529:1991+A1:1999:	IP65 with socket device, terminals IP00	
Tightening torque of terminal screws:	< 0.35 Nm	
Connector cross-section:	0.5 - 1.5 mm <sup>2</sup>	

<b>0170 / 0171 / 0180 / 0181 / 0183 / 0186 / 0187 / 0190 / 0191 / 0196 / 0197</b>		
Rated working voltage $U_e$ :	Rated working current $I_e$	Usage category <sup>1)</sup>
250 VAC 50 / 60 Hz	4 A	AC12
250 VAC 50 / 60 Hz	1 A	AC14
24 VDC	4 / 2 A	DC12 / DC13
50 VDC	2 / 1 A	DC12 / DC13
75 VDC	1 / 0.5 A	DC12 / DC13
125 VDC	0.3 / 0.2 A	DC12 / DC13
250 VDC	0.25 / 0.2 A	DC12 / DC13
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 / 60 Hz	
Nominal current of short-circuit mechanism:	to 5 A	
Rated short-circuit current:	< 350 A	
IP class of protection according to DIN EN 60529:1991+A1:1999:	IP65 with socket device, terminals IP00	

# 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 bar<sup>1)</sup>
- Includes polyamide cap, protection class IP65

p <sub>max</sub> in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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### 0140 Diaphragm pressure switches with screw terminals

p <sub>max</sub> in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
300 <sup>1)</sup>	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 <sub>max</sub> in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
600 <sup>1)</sup>	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	Code
NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Brake fluid, hydrogen, oxygen, acetylene, etc.	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	6
HNBR	Hydraulic/machine oil, ester-based bio-oils	9

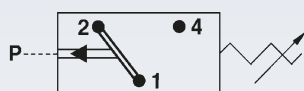
Refer to page 53 for the temperature range and application thresholds of sealing materials.

Article number: **014X - XXX XX - X - XXX**

M.4  
hex 27



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



## 0170 / 0171

### Diaphragm / piston pressure switches up to 42 V

- Zinc-plated steel (CrVI-free)
- Changeover with silver contacts
- Overpressure safety up to 100 / 400 / 700 bar<sup>1)</sup>
- Hysteresis adjustable at factory

$p_{max}$ in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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#### 0170 Diaphragm pressure switches with spade terminal

100 <sup>1)</sup>	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			

400 <sup>1)</sup>	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			

400 <sup>1)</sup>	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			

400 <sup>1)</sup>	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

700 <sup>1) 2)</sup>	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 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

<b>NBR</b>	Hydraulic/machine oil, air, nitrogen, etc.	<b>1</b>
<b>EPDM</b>	Brake fluid, hydrogen, oxygen, acetylene, etc.	<b>2</b>
<b>FKM</b>	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	<b>3</b>
<b>FFKM</b>	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	<b>6</b>
<b>HNBR<sup>3)</sup></b>	Hydraulic/machine oil, ester-based bio-oils	<b>9</b>

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



Article number: **017X - XXX XX - X - XXX**

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

<sup>2)</sup> Excluding the thread sizes G 1/8, R 1/8, NPT 1/8 and M 10x1 cylindrical/conical.

<sup>3)</sup> HNBR diaphragm not available for pressure ranges between 0.3 - 1.5 bar.

# 0180 / 0181

## Diaphragm / piston pressure switches up to 250 V

- Zinc-plated steel (CrVI-free)
- Changeover with silver contacts
- Overpressure safety up to 100 / 400 / 700 bar<sup>1)</sup>
- Hysteresis adjustable at factory

$p_{max}$ in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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### 0180 Diaphragm pressure switches with spade terminal

100 <sup>1)</sup>	0.3 - 1.5	± 0.2	G 1/4	0180 - 457 03 - X - 003
			M 10x1 con.	0180 - 457 01 - X - 001
			M 12x1.5 cyl.	0180 - 457 02 - X - 002
			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
400 <sup>1)</sup>	1 - 10	± 0.5	G 1/4	0180 - 458 03 - X - 042
			M 10x1 con.	0180 - 458 01 - X - 040
			M 12x1.5 cyl.	0180 - 458 02 - X - 041
			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
	10 - 50	± 3.0	G 1/4	0180 - 459 03 - X - 009
			M 10x1 con.	0180 - 459 01 - X - 007
			M 12x1.5 cyl.	0180 - 459 02 - X - 008
			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	G 1/4	0180 - 461 03 - X - 012	
		M 10x1 con.	0180 - 461 01 - X - 010	
		M 12x1.5 cyl.	0180 - 461 02 - X - 011	
		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 switches with spade terminal

700 <sup>1)2)</sup>	50 - 200	± 5.0	G 1/4	0181 - 460 03 - X - 003
			M 10x1 con.	0181 - 460 01 - X - 001
			M 12x1.5 cyl.	0181 - 460 02 - X - 002
			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

### Seal material – Application areas

NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Brake fluid, hydrogen, oxygen, acetylene, etc.	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	6
HNBR <sup>3)</sup>	Hydraulic/machine oil, ester-based bio-oils	9

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

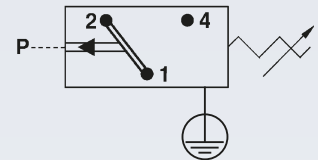
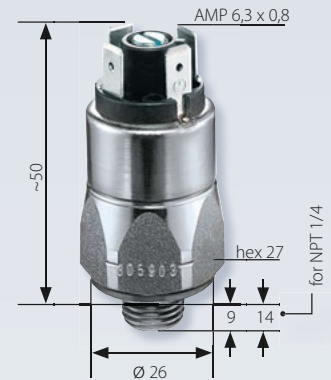
Article number: **018X - XXX XX - X - XXX**

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

<sup>2)</sup> Excluding the thread sizes G 1/8, R 1/8, NPT 1/8 and M 10x1 cylindrical/conical.

<sup>3)</sup> HNBR diaphragm not available for pressure ranges between 0.3 - 1.5 bar.

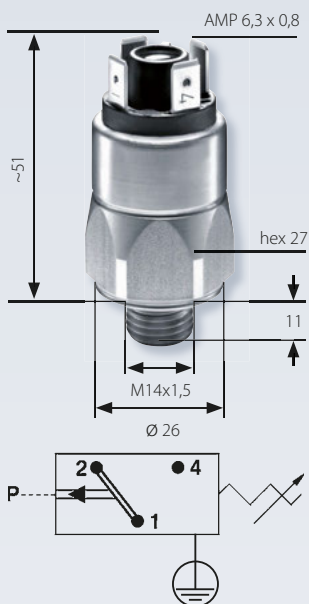
M.4  
hex 27



# M.4

hex 27

Thread similar to ISO 6149-3  
(including O-ring for sealing)



# 0183

## Piston pressure switches up to 250 V

- Zinc-plated steel (CrVI-free)
- Changeover with silver contacts
- Overpressure safety up to 600 bar<sup>1)</sup>, Hysteresis adjustable at factory
- Adjustment range: 100 – 400 bar
- Height only 51 mm

$p_{max}$ in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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### 0183 Piston pressure switches with spade terminal

600 <sup>1)</sup>	100 - 300	± 10.0	M 14x1.5	0183 - 462 45 - X - 051
	200 - 400		DIN 6149-3	0183 - 463 45 - X - 061

### Seal material – Application areas

NBR	Hydraulic/machine 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.

Article number: **0183 - 46X 45 - X - XXX**

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

### Accessory ▶

Not included in the delivery.  
Please order separately.

Article number ▶

### Thread adapters

from M14 x 1.5		
to <b>G 1/4</b>	to <b>M12 x 1.5</b>	to <b>NPT 1/8</b>
<b>1-1-83-420-006</b>	<b>1-1-83-420-007</b>	<b>1-1-83-420-008</b>

# 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 100 / 400 / 600 / 700 bar<sup>1)</sup>  
EPDM-TW and silicone diaphragm up to max. 35 bar<sup>2)</sup>
- Hysteresis adjustable at factory

p <sub>max</sub> in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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## 0186 Diaphragm pressure switches with spade terminal

100 <sup>1)</sup>	0.3 - 1.5	± 0.2	G 1/4 DIN 3852-2-A	0186 - 446 60 - X - 001
	1 - 10	± 0.5		0186 - 458 60 - X - 050

400 <sup>1)</sup>	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 switches with spade terminal

700 <sup>1)</sup>	50 - 200	± 5.0	G 1/4	0187 - 460 03 - X - 003
600 <sup>1) 3)</sup>			NPT 1/8	0187 - 460 04 - X - 304

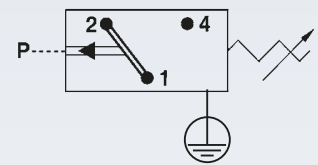
## Seal material – Application areas

NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Brake fluid, water, hydrogen, oxygen, acetylene, etc.	2
EPDM-TW <sup>2)</sup>	Drinking water (p <sub>max</sub> ≤ 35 bar)	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	6
Silicone <sup>2)</sup>	Water, food products, air, etc. (p <sub>max</sub> ≤ 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.

Article number: **018X - XXX 03 - X - XXX**

M.4  
hex 27



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

<sup>2)</sup> Functional safety and reliability only up to max. 35 bar with EPDM-TW and silicone diaphragm.

<sup>3)</sup> Including the thread sizes G 1/8, R 1/8 and M 10x1 cylindrical/conical.





# 0190 / 0191

Diaphragm / piston pressure switches up to 24 V with gold contacts

- Zinc-plated steel (CrVI-free), with spade terminal
- Changeover with gold contacts
- Overpressure safety up to 100 / 400 / 700 bar<sup>1)</sup>
- Hysteresis adjustable at factory



$p_{max}$ in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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## 0190 Diaphragm pressure switches with spade terminal

100 <sup>1)</sup>	0.3 - 1.5	± 0.2	G 1/4	0190 - 457 03 - X - 003
			M 10x1 con.	0190 - 457 01 - X - 001
			M 12x1.5 cyl.	0190 - 457 02 - X - 002
			NPT 1/8	0190 - 457 04 - X - 318
			NPT 1/4	0190 - 457 09 - X - 314
			7/16-20 UNF	0190 - 457 20 - X - 301
9/16-18 UNF	0190 - 457 21 - X - 302			
400 <sup>1)</sup>	1 - 10	± 0.5	G 1/4	0190 - 458 03 - X - 042
			M 10x1 con.	0190 - 458 01 - X - 040
			M 12x1.5 cyl.	0190 - 458 02 - X - 041
			NPT 1/8	0190 - 458 04 - X - 343
			NPT 1/4	0190 - 458 09 - X - 340
			7/16-20 UNF	0190 - 458 20 - X - 341
	9/16-18 UNF	0190 - 458 21 - X - 342		
	10 - 50	± 3.0	G 1/4	0190 - 459 03 - X - 009
			M 10x1 con.	0190 - 459 01 - X - 007
			M 12x1.5 cyl.	0190 - 459 02 - X - 008
			NPT 1/8	0190 - 459 04 - X - 320
			NPT 1/4	0190 - 459 09 - X - 316
7/16-20 UNF			0190 - 459 20 - X - 305	
9/16-18 UNF	0190 - 459 21 - X - 306			
10 - 100	± 3.0 - 5.0	G 1/4	0190 - 461 03 - X - 012	
		M 10x1 con.	0190 - 461 01 - X - 010	
		M 12x1.5 cyl.	0190 - 461 02 - X - 011	
		NPT 1/8	0190 - 461 04 - X - 321	
		NPT 1/4	0190 - 461 09 - X - 317	
		7/16-20 UNF	0190 - 461 20 - X - 307	
9/16-18 UNF	0190 - 461 21 - X - 308			

## 0191 Piston pressure switches with spade terminal

700 <sup>2)</sup>	50 - 200	± 5.0	G 1/4	0191 - 460 03 - X - 003
			M 10x1 con.	0191 - 460 01 - X - 001
			M 12x1.5 cyl.	0191 - 460 02 - X - 002
			NPT 1/4	0191 - 460 09 - X - 303
			7/16-20 UNF	0191 - 460 20 - X - 301
			9/16-18 UNF	0191 - 460 21 - X - 302

### Seal material – Application areas

NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Brake fluid, water, hydrogen, oxygen, acetylene, etc.	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, ester's, alcohols	6
HNBR <sup>3)</sup>	Hydraulic/machine oil, ester-based bio-oils	9

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



Article number: **019X – XXX XX – X – XXX**

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

<sup>2)</sup> Excluding the thread sizes G 1/8, R 1/8, NPT 1/8 and M 10x1 cylindrical/conical.

<sup>3)</sup> HNBR diaphragm not available for pressure ranges between 0.3 - 1.5 bar.

# 0196 / 0197

Diaphragm / piston pressure switches up to 24 V with stainless steel housing

- Stainless steel housing (1.4305 / AISI 303)
- Fitted with changeover contact and gold contacts
- Overpressure safety up to 100 / 400 / 600 / 700 bar<sup>1)</sup>  
EPDM-TW and silicone diaphragm up to max. 35 bar<sup>2)</sup>
- Hysteresis adjustable at factory

$p_{max}$ in bar	Adjustment range in bar	Tolerance at room temperature in bar	Male thread	Article number
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## 0196 Diaphragm pressure switches with spade terminal

100 <sup>1)</sup>	0.3 - 1.5	$\pm 0.2$	G 1/4 DIN 3852-2-A	0196 - 446 60 - X - 001
	1 - 10	$\pm 0.5$		0196 - 458 60 - X - 050

400 <sup>1)</sup>	0.5 - 5	$\pm 0.3$	G 1/4	0196 - 457 03 - X - 003
	1 - 10	$\pm 0.5$		0196 - 458 03 - X - 006
	10 - 50	$\pm 3.0$		0196 - 459 03 - X - 009
	10 - 100	$\pm 3.0 - 5.0$		0196 - 461 03 - X - 012

## 0197 Piston pressure switches with spade terminal

700 <sup>1)</sup>	50 - 200	$\pm 5.0$	G 1/4	0197 - 460 03 - X - 003
600 <sup>1) 3)</sup>			NPT 1/8	0197 - 460 04 - X - 304

## Seal material – Application areas

NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-TW <sup>2)</sup>	Drinking water ( $p_{max} \leq 35$ bar)	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, ester's, alcohols	6
Silicone <sup>2)</sup>	Water, food products, air, etc. ( $p_{max} \leq 35$ 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.

Article number: **019X - XXX 03 - X - XXX**

M.4  
hex 27



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

<sup>2)</sup> Functional safety and reliability only up to max. 35 bar with EPDM-TW and silicone diaphragm.

<sup>3)</sup> Including the thread sizes G 1/8, R 1/8 and M 10x1 cylindrical/conical.

