

# M.3

hex 24



# 0168

Diaphragm pressure switches up to 42 V

- Made of zinc-plated steel (CrVI-free)
- Spade or M3 screw terminal
- Overpressure safety up to 4,351 psi (300 bar)<sup>1)</sup> Burst pressure safety up to 5,800 psi (400 bar)
- With female thread with compression-type fitting to DIN EN ISO 8434-1 (former DIN 2353)

Adjustment range tolerance at room temperature	Female thread	Order number NO →  :	Order number NC → :
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### 0168 Diaphragm pressure switches with M3 screw terminal

1.45 – 14.5 ±2.90 psi (0.1 – 1 ±0.2 bar)	M 12x1.5 female DIN 2353	0168 – 401 16 -X - 001	0168 – 402 16 -X - 002
7.25 – 43.5 ±4.35 psi (0.5 – 3 ±0.3 bar)		0168 – 421 16 -X - 070	0168 – 422 16 -X - 070
14.5 – 145 ±7.25 psi (1 – 10 ±0.5 bar)		0168 – 405 16 -X - 005	0168 – 406 16 -X - 006
145 – 290 ±14.5 psi (10 – 20 ±1.0 bar)		0168 – 409 16 -X - 009	0168 – 410 16 -X - 010
290 – 725 ±29.0 psi (20 – 50 ±2.0 bar)		0168 – 413 16 -X - 013	0168 – 414 16 -X - 014

### 0168 Diaphragm pressure switches with spade terminal

1.45 – 14.5 ±2.90 psi (0.1 – 1 ±0.2 bar)	M 12x1.5 female DIN 2353	0168 – 403 16 -X - 003	0168 – 404 16 -X - 004
7.25 – 43.5 ±4.35 psi (0.5 – 3 ±0.3 bar)		0168 – 423 16 -X - 070	0168 – 424 16 -X - 070
14.5 – 145 ±7.25 psi (1 – 10 ±0.5 bar)		0168 – 407 16 -X - 007	0168 – 408 16 -X - 008
145 – 290 ±14.5 psi (10 – 20 ±1.0 bar)		0168 – 411 16 -X - 011	0168 – 412 16 -X - 012
290 – 725 ±29.0 psi (20 – 50 ±2.0 bar)		0168 – 415 16 -X - 015	0168 – 416 16 -X - 016

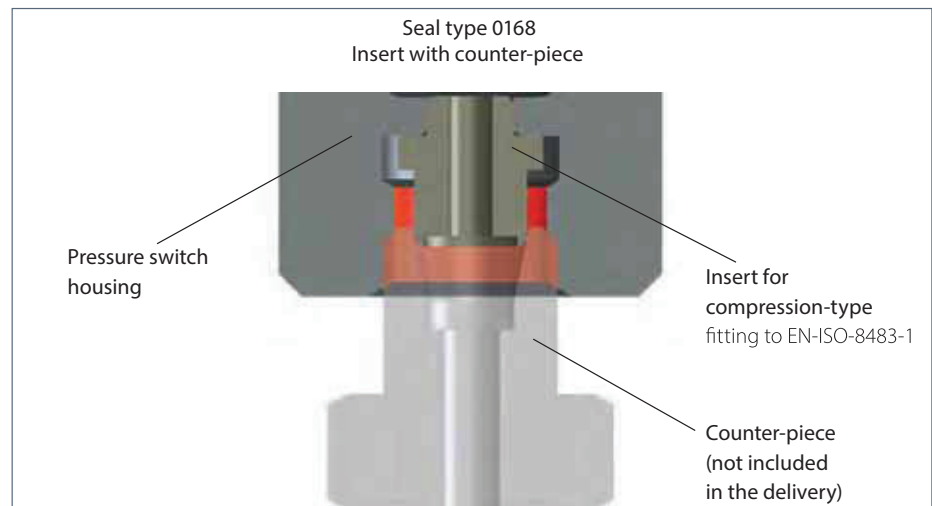
### Seal material – Application areas

NBR (BunaN)	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Brake fluid, hydrogen, oxygen, acetylene, etc.	2
FKM (Viton®)	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 41 for the temperature range and application thresholds of sealing materials.



Your order number: 0168 – 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.

# Pressure switches hex 24

## Technical data

# M.3

## hex 24



Rated working voltage:	10 ... 42 VAC/DC	
Rated current range (resistive load, DC12 / AC12):	10 mA ... 4 A	
Switching power DC12 / AC12:	100 W / 100 VA	
Temperature resistance of sealing materials:	NBR (BunaN)	-40 °F ... +212 °F (-40 °C ... +100 °C)
	NBR (in piston pressure switch)	-22 °F ... +212 °F (-30 °C ... +100 °C)
	EPDM	-22 °F ... +248 °F (-30 °C ... +120 °C)
	EPDM-W270, diaphragm	-4 °F ... +212 °F (-20 °C ... +100 °C)
	FKM (Viton®) (in diaphragm pressure switch)	+23 °F ... +248 °F (-5 °C ... +120 °C)
	FKM (Viton®) (in piston pressure switch)	+5 °F ... +248 °F (-15 °C ... +120 °C)
	FFKM	-4 °F ... +248 °F (-20 °C ... +120 °C)
	Silicone, diaphragm	-40 °F ... +248 °F (-40 °C ... +120 °C)
HNBR	-22 °F ... +248 °F (-30 °C ... +120 °C)	
Burst pressure (diaphragm pressure switch):	5,800 psi (400 bar)	
Burst pressure (piston pressure switch):	10,150 psi (700 bar) (for threads M10, G 1/8, R 1/8 and NPT 1/8 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. 725 psi / 50 bar)	
Pressure rise rate:	≤ 14.5 psi/ms (1 bar/ms)	
Differential:	Average value 5 – 30 % depending on type, not adjustable	
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 60068-2-27	
Protection class:	IP65 with socket device, terminals IP00	
Weight:	approx. 3.17 oz (90 g)	

Type:		0163	0164	0166	0167	0168	0169
Material:	Zinc-plated steel (CrVI-free)	●		●		●	●
	Stainless steel		●				
	Brass				●		
Overpressure safety up to:	35 bar				●		
	300 bar			●		●	
	600 bar	●	●				●



M

# Socket devices and protective caps

- IP65 socket devices or IP54 rubber protective caps for increased protection
- Simple installation with plug-in socket devices

<p><b>Rubber protective cap</b></p> <p>With central cable feed-through for 1.5 - 5 mm cable diameter</p> <p><b>With rubber protective cap fitted: IP54</b></p> <p>Suitable for voltages up to 42 V</p>	<p><b>Rubber protective cap</b></p> <p>With two cable feed-throughs for 1.7 - 2,2 mm cable diameter</p> <p><b>With rubber protective cap fitted: IP54</b></p> <p>Suitable for voltages up to 42 V</p>	<p><b>Rubber protective cap</b></p> <p>With two cable feed-throughs for 1.7 - 2,3 mm cable diameter</p> <p><b>With rubber protective cap fitted: IP54</b></p> <p>Suitable for voltages up to 42 V</p>	<p><b>Socket device</b></p> <p>cCSAus approval Housing: Polyamide PG9 screw fitting (tightening range 6 - 9 mm)</p> <p><b>With socket device fitted: IP65</b></p> <p>Suitable for voltages up to 250 V</p>
<p>suitable for series <b>0151 / 0163 / 0164 / 0166 0167 / 0168 / 0169</b></p>	<p>suitable for series <b>0151 / 0163 / 0164 / 0166 0167 / 0168 / 0169</b></p>	<p>suitable for series <b>0170 / 0171 / 0180* / 0181* / 0183* / 0186* / 0187* 0190 / 0191 / 0196 / 0197</b> (*up to 42 V)</p>	<p>suitable for series <b>0170 / 0171 / 0180 / 0181 0183 / 0186 / 0187 0190 / 0191 / 0196 / 0197</b></p>
<p>Article number: <b>1-1-66-621-010</b></p>	<p>Article number: <b>1-1-66-621-003</b></p>	<p>Article number: <b>1-1-70-621-007</b></p>	<p>Article number: <b>1-1-80-652-002</b></p>

## Pressure switches hex 24

NC or NO, maximum voltage 42 V



- Most cost-effective solution for mechanical pressure monitoring
- Stable switching point even after long use and high load
- Switching point can be adjusted when fitted on site<sup>1)</sup>
- High pressure resistance, compact, small switches, available as normally closed (NC) or normally open (NO)
- For solutions with integrated connectors, please refer to chapter M.1, starting at page 22
- For customized and ready-wired pressure switches, please refer to chapter M.5

<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.