

## M.3

hex 24

# 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

<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 24

## Technical data

M.3

hex 24



Rated working voltage:	10 ... 42 VAC/DC	
Rated current range (resistive load, 12 DC and 12 AC):	10 mA ... 4 A	
Switching power DC12 / AC12:	100 W / 100 VA	
Temperature resistance of sealing materials:	NBR	-40 °C ... +100 °C
	EPDM	-30 °C ... +120 °C
	EPDM-W270, diaphragm	-20 °C ... +100 °C
	FKM (in diaphragm pressure switch)	-5 °C ... +120 °C
	FKM (in piston pressure switch)	-10 °C ... +120 °C
	Silicone, diaphragm	-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:	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 Terminals IP00	
Weight:	approx. 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

# M.3

hex 24

# 0163

Diaphragm pressure switches up to 42 V with M3 screw terminal

- Made of zinc-plated steel (CrVI-free)
- M3 screw terminal
- Overpressure safety up to 600 bar<sup>1)</sup>



Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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### 0163 Diaphragm pressure switches with M3 screw terminal

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
0.1 – 1 (±0.2) bar	G 1/4	0163 – 401 03 – X – 003	0163 – 402 03 – X – 007
	G 1/8	0163 – 401 28 – X – 601	0163 – 402 28 – X – 602
	M 10x1 cyl.	0163 – 401 13 – X – 001	0163 – 402 13 – X – 002
	M 10x1 con.	0163 – 401 01 – X – 001	0163 – 402 01 – X – 005
	M 12x1.5 cyl.	0163 – 401 02 – X – 002	0163 – 402 02 – X – 006
	NPT 1/8	0163 – 401 04 – X – 004	0163 – 402 04 – X – 008
0.5 – 3 (±0.3) bar	G 1/4	0163 – 421 03 – X – 070	0163 – 422 03 – X – 070
	G 1/8	0163 – 421 28 – X – 070	0163 – 422 28 – X – 070
	M 10x1 cyl.	0163 – 421 13 – X – 070	0163 – 422 13 – X – 070
	M 10x1 con.	0163 – 421 01 – X – 070	0163 – 422 01 – X – 070
	M 12x1.5 cyl.	0163 – 421 02 – X – 070	0163 – 422 02 – X – 070
	NPT 1/8	0163 – 421 04 – X – 070	0163 – 422 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0163 – 405 03 – X – 019	0163 – 406 03 – X – 023
	G 1/8	0163 – 405 28 – X – 605	0163 – 406 28 – X – 606
	M 10x1 cyl.	0163 – 405 13 – X – 005	0163 – 406 13 – X – 006
	M 10x1 con.	0163 – 405 01 – X – 017	0163 – 406 01 – X – 021
	M 12x1.5 cyl.	0163 – 405 02 – X – 018	0163 – 406 02 – X – 022
	NPT 1/8	0163 – 405 04 – X – 020	0163 – 406 04 – X – 024
10 – 20 (±1) bar	G 1/4	0163 – 409 03 – X – 035	0163 – 410 03 – X – 039
	G 1/8	0163 – 409 28 – X – 609	0163 – 410 28 – X – 610
	M 10x1 cyl.	0163 – 409 13 – X – 009	0163 – 410 13 – X – 010
	M 10x1 con.	0163 – 409 01 – X – 033	0163 – 410 01 – X – 037
	M 12x1.5 cyl.	0163 – 409 02 – X – 034	0163 – 410 02 – X – 038
	NPT 1/8	0163 – 409 04 – X – 036	0163 – 410 04 – X – 040
20 – 50 (±2) bar	G 1/4	0163 – 413 03 – X – 051	0163 – 414 03 – X – 055
	G 1/8	0163 – 413 28 – X – 613	0163 – 414 28 – X – 614
	M 10x1 cyl.	0163 – 413 13 – X – 013	0163 – 414 13 – X – 014
	M 10x1 con.	0163 – 413 01 – X – 049	0163 – 414 01 – X – 053
	M 12x1.5 cyl.	0163 – 413 02 – X – 050	0163 – 414 02 – X – 054
	NPT 1/8	0163 – 413 04 – X – 052	0163 – 414 04 – X – 056

### 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 41 for the temperature range and application thresholds of sealing materials.



**Your order number:** 0163 – 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.

# 0163

## Diaphragm pressure switches up to 42 V with spade terminal

- Made of zinc-plated steel (CrVI-free)
- Spade terminal
- Overpressure safety up to 600 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO → :	Order number NC → :
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### 0163 Diaphragm pressure switches with spade terminal

0.1 – 1 (±0.2) bar	G 1/4	0163 – 403 03 – X – 011	0163 – 404 03 – X – 015
	G 1/8	0163 – 403 28 – X – 603	0163 – 404 28 – X – 604
	M 10x1 cyl.	0163 – 403 13 – X – 003	0163 – 404 13 – X – 004
	M 10x1 con.	0163 – 403 01 – X – 009	0163 – 404 01 – X – 013
	M 12x1.5 cyl.	0163 – 403 02 – X – 010	0163 – 404 02 – X – 014
	NPT 1/8	0163 – 403 04 – X – 012	0163 – 404 04 – X – 016
0.5 – 3 (±0.3) bar	G 1/4	0163 – 423 03 – X – 070	0163 – 424 03 – X – 070
	G 1/8	0163 – 423 28 – X – 070	0163 – 424 28 – X – 070
	M 10x1 cyl.	0163 – 423 13 – X – 070	0163 – 424 13 – X – 070
	M 10x1 con.	0163 – 423 01 – X – 070	0163 – 424 01 – X – 070
	M 12x1.5 cyl.	0163 – 423 02 – X – 070	0163 – 424 02 – X – 070
	NPT 1/8	0163 – 423 04 – X – 070	0163 – 424 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0163 – 407 03 – X – 027	0163 – 408 03 – X – 031
	G 1/8	0163 – 407 28 – X – 607	0163 – 408 28 – X – 608
	M 10x1 cyl.	0163 – 407 13 – X – 007	0163 – 408 13 – X – 008
	M 10x1 con.	0163 – 407 01 – X – 025	0163 – 408 01 – X – 029
	M 12x1.5 cyl.	0163 – 407 02 – X – 026	0163 – 408 02 – X – 030
	NPT 1/8	0163 – 407 04 – X – 028	0163 – 408 04 – X – 032
10 – 20 (±1) bar	G 1/4	0163 – 411 03 – X – 043	0163 – 412 03 – X – 047
	G 1/8	0163 – 411 28 – X – 611	0163 – 412 28 – X – 612
	M 10x1 cyl.	0163 – 411 13 – X – 011	0163 – 412 13 – X – 012
	M 10x1 con.	0163 – 411 01 – X – 041	0163 – 412 01 – X – 045
	M 12x1.5 cyl.	0163 – 411 02 – X – 042	0163 – 412 02 – X – 046
	NPT 1/8	0163 – 411 04 – X – 044	0163 – 412 04 – X – 048
20 – 50 (±2) bar	G 1/4	0163 – 415 03 – X – 059	0163 – 416 03 – X – 063
	G 1/8	0163 – 415 28 – X – 615	0163 – 416 28 – X – 616
	M 10x1 cyl.	0163 – 415 13 – X – 015	0163 – 416 13 – X – 016
	M 10x1 con.	0163 – 415 01 – X – 057	0163 – 416 01 – X – 061
	M 12x1.5 cyl.	0163 – 415 02 – X – 058	0163 – 416 02 – X – 062
	NPT 1/8	0163 – 415 04 – X – 060	0163 – 416 04 – X – 064

### 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

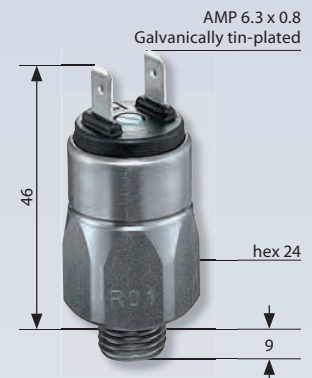
Refer to page 41 for the temperature range and application thresholds of sealing materials.



Your order number: **0163 – XXX XX – X – XXX**

# M.3

hex 24



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

# M.3

hex 24



# 0166

Diaphragm pressure switches up to 42 V with M3 screw terminal

- Made of zinc-plated steel (CrVI-free)
- M3 screw terminal
- Overpressure safety up to 300 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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### 0166 Diaphragm pressure switches with M3 screw terminal

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
0.1 – 1 (±0.2) bar	G 1/4	0166 – 401 03 – X – 003	0166 – 402 03 – X – 007
	G 1/8	0166 – 401 28 – X – 601	0166 – 402 28 – X – 602
	M 10x1 cyl.	0166 – 401 13 – X – 001	0166 – 402 13 – X – 002
	M 10x1 con.	0166 – 401 01 – X – 001	0166 – 402 01 – X – 005
	M 12x1.5 cyl.	0166 – 401 02 – X – 002	0166 – 402 02 – X – 006
	NPT 1/8	0166 – 401 04 – X – 004	0166 – 402 04 – X – 008
0.5 – 3 (±0.3) bar	G 1/4	0166 – 421 03 – X – 070	0166 – 422 03 – X – 070
	G 1/8	0166 – 421 28 – X – 070	0166 – 422 28 – X – 070
	M 10x1 cyl.	0166 – 421 13 – X – 070	0166 – 422 13 – X – 070
	M 10x1 con.	0166 – 421 01 – X – 070	0166 – 422 01 – X – 070
	M 12x1.5 cyl.	0166 – 421 02 – X – 070	0166 – 422 02 – X – 070
	NPT 1/8	0166 – 421 04 – X – 070	0166 – 422 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0166 – 405 03 – X – 019	0166 – 406 03 – X – 023
	G 1/8	0166 – 405 28 – X – 605	0166 – 406 28 – X – 606
	M 10x1 cyl.	0166 – 405 13 – X – 005	0166 – 406 13 – X – 006
	M 10x1 con.	0166 – 405 01 – X – 017	0166 – 406 01 – X – 021
	M 12x1.5 cyl.	0166 – 405 02 – X – 018	0166 – 406 02 – X – 022
	NPT 1/8	0166 – 405 04 – X – 020	0166 – 406 04 – X – 024
10 – 20 (±1) bar	G 1/4	0166 – 409 03 – X – 035	0166 – 410 03 – X – 039
	G 1/8	0166 – 409 28 – X – 609	0166 – 410 28 – X – 610
	M 10x1 cyl.	0166 – 409 13 – X – 009	0166 – 410 13 – X – 010
	M 10x1 con.	0166 – 409 01 – X – 033	0166 – 410 01 – X – 037
	M 12x1.5 cyl.	0166 – 409 02 – X – 034	0166 – 410 02 – X – 038
	NPT 1/8	0166 – 409 04 – X – 036	0166 – 410 04 – X – 040
20 – 50 (±2) bar	G 1/4	0166 – 413 03 – X – 051	0166 – 414 03 – X – 055
	G 1/8	0166 – 413 28 – X – 613	0166 – 414 28 – X – 614
	M 10x1 cyl.	0166 – 413 13 – X – 013	0166 – 414 13 – X – 014
	M 10x1 con.	0166 – 413 01 – X – 049	0166 – 414 01 – X – 053
	M 12x1.5 cyl.	0166 – 413 02 – X – 050	0166 – 414 02 – X – 054
	NPT 1/8	0166 – 413 04 – X – 052	0166 – 414 04 – X – 056

### 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 41 for the temperature range and application thresholds of sealing materials.



Your order number:

0166 – 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.

# 0166

## Diaphragm pressure switches up to 42 V with spade terminal

- Made of zinc-plated steel (CrVI-free)
- Spade terminal
- Overpressure safety up to 300 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO → :	Order number NC → :
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### 0166 Diaphragm pressure switches with spade terminal

0.1 – 1 (±0.2) bar	G 1/4	0166 – 403 03 – X – 011	0166 – 404 03 – X – 015
	G 1/8	0166 – 403 28 – X – 603	0166 – 404 28 – X – 604
	M 10x1 cyl.	0166 – 403 13 – X – 003	0166 – 404 13 – X – 004
	M 10x1 con.	0166 – 403 01 – X – 009	0166 – 404 01 – X – 013
	M 12x1.5 cyl.	0166 – 403 02 – X – 010	0166 – 404 02 – X – 014
	NPT 1/8	0166 – 403 04 – X – 012	0166 – 404 04 – X – 016
0.5 – 3 (±0.3) bar	G 1/4	0166 – 423 03 – X – 070	0166 – 424 03 – X – 070
	G 1/8	0166 – 423 28 – X – 070	0166 – 424 28 – X – 070
	M 10x1 cyl.	0166 – 423 13 – X – 070	0166 – 424 13 – X – 070
	M 10x1 con.	0166 – 423 01 – X – 070	0166 – 424 01 – X – 070
	M 12x1.5 cyl.	0166 – 423 02 – X – 070	0166 – 424 02 – X – 070
	NPT 1/8	0166 – 423 04 – X – 070	0166 – 424 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0166 – 407 03 – X – 027	0166 – 408 03 – X – 031
	G 1/8	0166 – 407 28 – X – 607	0166 – 408 28 – X – 608
	M 10x1 cyl.	0166 – 407 13 – X – 007	0166 – 408 13 – X – 008
	M 10x1 con.	0166 – 407 01 – X – 025	0166 – 408 01 – X – 029
	M 12x1.5 cyl.	0166 – 407 02 – X – 026	0166 – 408 02 – X – 030
	NPT 1/8	0166 – 407 04 – X – 028	0166 – 408 04 – X – 032
10 – 20 (±1) bar	G 1/4	0166 – 411 03 – X – 043	0166 – 412 03 – X – 047
	G 1/8	0166 – 411 28 – X – 611	0166 – 412 28 – X – 612
	M 10x1 cyl.	0166 – 411 13 – X – 011	0166 – 412 13 – X – 012
	M 10x1 con.	0166 – 411 01 – X – 041	0166 – 412 01 – X – 045
	M 12x1.5 cyl.	0166 – 411 02 – X – 042	0166 – 412 02 – X – 046
	NPT 1/8	0166 – 411 04 – X – 044	0166 – 412 04 – X – 048
20 – 50 (±2) bar	G 1/4	0166 – 415 03 – X – 059	0166 – 416 03 – X – 063
	G 1/8	0166 – 415 28 – X – 615	0166 – 416 28 – X – 616
	M 10x1 cyl.	0166 – 415 13 – X – 015	0166 – 416 13 – X – 016
	M 10x1 con.	0166 – 415 01 – X – 057	0166 – 416 01 – X – 061
	M 12x1.5 cyl.	0166 – 415 02 – X – 058	0166 – 416 02 – X – 062
	NPT 1/8	0166 – 415 04 – X – 060	0166 – 416 04 – X – 064

### Seal material – Application areas

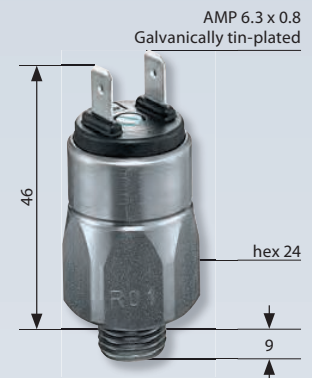
NBR	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Brake fluid, hydrogen, oxygen, acetylene, etc.	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
HNBR	Hydraulic/machine oil, ester-based bio-oils	9

Refer to page 41 for the temperature range and application thresholds of sealing materials.

Your order number: **0166 – XXX XX – X – XXX**

# M.3

hex 24



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

# 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 300 bar<sup>1)</sup>
- With female thread for compression-type fitting to 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

0.1 – 1 (±0.2) bar	M 12x1.5 female DIN 2353	0168 – 401 16 – X – 001	0168 – 402 16 – X – 002
0.5 – 3 (±0.3) bar		0168 – 421 16 – X – 070	0168 – 422 16 – X – 070
1 – 10 (±0.5) bar		0168 – 405 16 – X – 005	0168 – 406 16 – X – 006
10 – 20 (±1) bar		0168 – 409 16 – X – 009	0168 – 410 16 – X – 010
20 – 50 (±2) bar		0168 – 413 16 – X – 013	0168 – 414 16 – X – 014

### 0168 Diaphragm pressure switches with spade terminal

0.1 – 1 (±0.2) bar	M 12x1.5 female DIN 2353	0168 – 403 16 – X – 003	0168 – 404 16 – X – 004
0.5 – 3 (±0.3) bar		0168 – 423 16 – X – 070	0168 – 424 16 – X – 070
1 – 10 (±0.5) bar		0168 – 407 16 – X – 007	0168 – 408 16 – X – 008
10 – 20 (±1) bar		0168 – 411 16 – X – 011	0168 – 412 16 – X – 012
20 – 50 (±2) bar		0168 – 415 16 – X – 015	0168 – 416 16 – X – 016

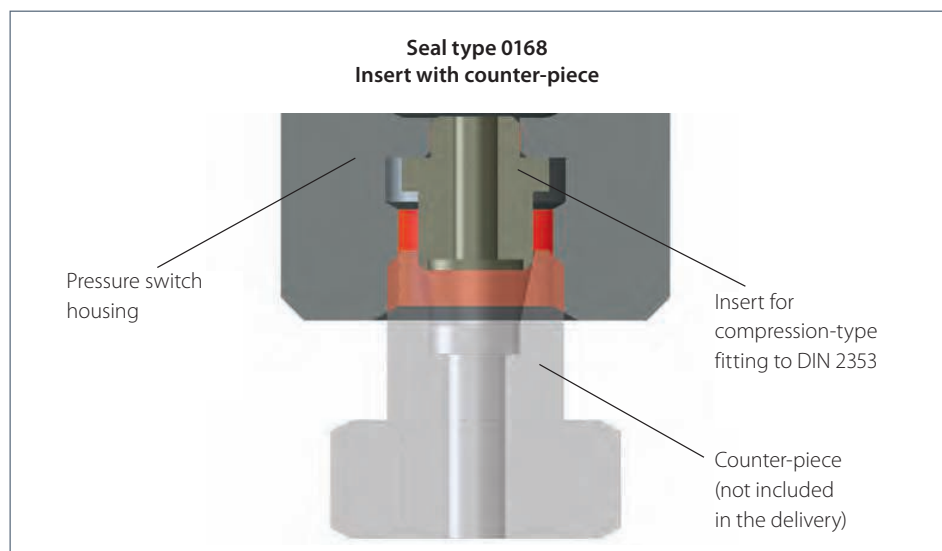
### Seal material – Application areas

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 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.

# 0169

Piston pressure switches up to 42 V

- Made of zinc-plated steel (CrVI-free)
- Spade or M3 screw terminal
- Overpressure safety up to 600 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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## 0169 Piston pressure switches with M3 screw terminal

50 – 150 (±5) bar	G 1/4	0169 – 417 03 – X – 003	0169 – 418 03 – X – 007
	G 1/8	0169 – 417 28 – X – 601	0169 – 418 28 – X – 602
	M 10x1 cyl.	0169 – 417 13 – X – 001	0169 – 418 13 – X – 002
	M 10x1 con.	0169 – 417 01 – X – 001	0169 – 418 01 – X – 005
	M 12x1.5 cyl.	0169 – 417 02 – X – 002	0169 – 418 02 – X – 006
	NPT 1/8	0169 – 417 04 – X – 004	0169 – 418 04 – X – 008

## 0169 Piston pressure switches with spade terminal

50 – 150 (±5) bar	G 1/4	0169 – 419 03 – X – 011	0169 – 420 03 – X – 015
	G 1/8	0169 – 419 28 – X – 603	0169 – 420 28 – X – 604
	M 10x1 cyl.	0169 – 419 13 – X – 003	0169 – 420 13 – X – 004
	M 10x1 con.	0169 – 419 01 – X – 009	0169 – 420 01 – X – 013
	M 12x1.5 cyl.	0169 – 419 02 – X – 010	0169 – 420 02 – X – 014
	NPT 1/8	0169 – 419 04 – X – 012	0169 – 420 04 – X – 016

## 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 41 for the temperature range and application thresholds of sealing materials.

Your order number: **0169 – XXX XX – X – XXX**

# M.3

hex 24



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





# M.3

hex 24



# 0164

Diaphragm pressure switches up to 42 V with stainless steel housing

- Stainless steel housing (1.4305 / AISI 303)
- Spade or M3 screw terminal
- Overpressure safety up to 600 bar<sup>1)</sup>  
(EPDM-W270 and silicone diaphragm up to 35 bar<sup>2)</sup>)

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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### 0164 Diaphragm pressure switches with M3 screw terminal

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
0.1 – 1 (±0.2) bar	G 1/4-E	0164 – 401 41 – X – 001	0164 – 402 41 – X – 002
	R 1/8	0164 – 401 12 – X – 001	0164 – 402 12 – X – 002
	R 1/4	0164 – 401 46 – X – 001	0164 – 402 46 – X – 002
0.5 – 3 (±0.3) bar	G 1/4-E	0164 – 421 41 – X – 070	0164 – 422 41 – X – 070
	R 1/8	0164 – 421 12 – X – 070	0164 – 422 12 – X – 070
	R 1/4	0164 – 421 46 – X – 070	0164 – 422 46 – X – 070
1 – 10 (±0.5) bar	G 1/4-E	0164 – 405 41 – X – 005	0164 – 406 41 – X – 006
	R 1/8	0164 – 405 12 – X – 005	0164 – 406 12 – X – 006
	R 1/4	0164 – 405 46 – X – 005	0164 – 406 46 – X – 006
10 – 20 (±1) bar	G 1/4-E	0164 – 409 41 – X – 009	0164 – 410 41 – X – 010
	R 1/8	0164 – 409 12 – X – 009	0164 – 410 12 – X – 010
	R 1/4	0164 – 409 46 – X – 009	0164 – 410 46 – X – 010
20 – 50 (±2) bar	G 1/4-E	0164 – 413 41 – X – 013	0164 – 414 41 – X – 014
	R 1/8	0164 – 413 12 – X – 013	0164 – 414 12 – X – 014
	R 1/4	0164 – 413 46 – X – 013	0164 – 414 46 – X – 014

### Seal material – Application areas

NBR	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-W270	Drinking water ( $p_{max} \leq 35$ bar)	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
Silicone	Water, food products, air, etc. ( $p_{max} \leq 35$ bar)	8
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:** 0164 – 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> Overpressure safety of pressure switch up to 600 bar. Functional reliability only up to 35 bar with diaphragm materials EPDM-W270 and silicone.

# 0164

Diaphragm pressure switches up to 42 V with stainless steel housing

- Stainless steel housing (1.4305 / AISI 303)
- Spade or M3 screw terminal
- Overpressure safety up to 600 bar<sup>1)</sup>  
(EPDM-W270 and silicone diaphragm up to 35 bar<sup>2)</sup>)

Adjustment range tolerance at room temperature	Male thread	Order number NO → :	Order number NC → :
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## 0164 Diaphragm pressure switches with spade terminal

0.1 – 1 (±0.2) bar	G 1/4-E	0164 – 403 41 – X – 003	0164 – 404 41 – X – 004
	R 1/8	0164 – 403 12 – X – 003	0164 – 404 12 – X – 004
	R 1/4	0164 – 403 46 – X – 003	0164 – 404 46 – X – 004
0.5 – 3 (±0.3) bar	G 1/4-E	0164 – 423 41 – X – 070	0164 – 424 41 – X – 070
	R 1/8	0164 – 423 12 – X – 070	0164 – 424 12 – X – 070
	R 1/4	0164 – 423 46 – X – 070	0164 – 424 46 – X – 070
1 – 10 (±0.5) bar	G 1/4-E	0164 – 407 41 – X – 007	0164 – 408 41 – X – 008
	R 1/8	0164 – 407 12 – X – 007	0164 – 408 12 – X – 008
	R 1/4	0164 – 407 46 – X – 007	0164 – 408 46 – X – 008
10 – 20 (±1) bar	G 1/4-E	0164 – 411 41 – X – 011	0164 – 412 41 – X – 012
	R 1/8	0164 – 411 12 – X – 011	0164 – 412 12 – X – 012
	R 1/4	0164 – 411 46 – X – 011	0164 – 412 46 – X – 012
20 – 50 (±2) bar	G 1/4-E	0164 – 415 41 – X – 015	0164 – 416 41 – X – 016
	R 1/8	0164 – 415 12 – X – 015	0164 – 416 12 – X – 016
	R 1/4	0164 – 415 46 – X – 015	0164 – 416 46 – X – 016

## Seal material – Application areas

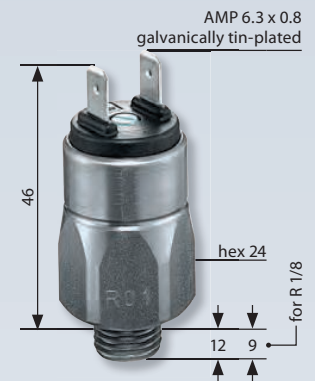
NBR	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-W270	Drinking water ( $p_{max} \leq 35$ bar)	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
Silicone	Water, food products, air, etc. ( $p_{max} \leq 35$ bar)	8
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:** 0164 – XXX XX – X – XXX

# M.3

hex 24



<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> Overpressure safety of pressure switch up to 600 bar. Functional reliability only up to 35 bar with diaphragm materials EPDM-W270 and silicone.



# M.3

hex 24



## 0167

Diaphragm pressure switches up to 42 V with brass housing

- Brass housing
- M3 screw terminal
- Overpressure safety up to 35 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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### 0167 Diaphragm pressure switches with M3 screw terminal

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
0.1 – 1 (±0.2) bar	G 1/4	0167 – 401 03 – X – 037	0167 – 402 03 – X – 038
	G 1/8	0167 – 401 28 – X – 001	0167 – 402 28 – X – 002
	R 1/8	0167 – 401 12 – X – 002	0167 – 402 12 – X – 005
	R 1/2	0167 – 401 07 – X – 003	0167 – 402 07 – X – 006
	M 10x1 con.	0167 – 401 01 – X – 001	0167 – 402 01 – X – 004
	NPT 1/8	0167 – 401 04 – X – 004	0167 – 402 04 – X – 008
0.5 – 3 (±0.3) bar	G 1/4	0167 – 421 03 – X – 070	0167 – 422 03 – X – 070
	G 1/8	0167 – 421 28 – X – 070	0167 – 422 28 – X – 070
	R 1/8	0167 – 421 12 – X – 070	0167 – 422 12 – X – 070
	R 1/2	0167 – 421 07 – X – 070	0167 – 422 07 – X – 070
	M 10x1 con.	0167 – 421 01 – X – 070	0167 – 422 01 – X – 070
	NPT 1/8	0167 – 421 04 – X – 070	0167 – 422 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0167 – 405 03 – X – 041	0167 – 406 03 – X – 042
	G 1/8	0167 – 405 28 – X – 005	0167 – 406 28 – X – 006
	R 1/8	0167 – 405 12 – X – 014	0167 – 406 12 – X – 017
	R 1/2	0167 – 405 07 – X – 015	0167 – 406 07 – X – 018
	M 10x1 con.	0167 – 405 01 – X – 013	0167 – 406 01 – X – 016
	NPT 1/8	0167 – 405 04 – X – 020	0167 – 406 04 – X – 024
10 – 20 (±1) bar	G 1/4	0167 – 409 03 – X – 045	0167 – 410 03 – X – 046
	G 1/8	0167 – 409 28 – X – 009	0167 – 410 28 – X – 010
	R 1/8	0167 – 409 12 – X – 026	0167 – 410 12 – X – 029
	R 1/2	0167 – 409 07 – X – 027	0167 – 410 07 – X – 030
	M 10x1 con.	0167 – 409 01 – X – 025	0167 – 410 01 – X – 028
	NPT 1/8	0167 – 409 04 – X – 036	0167 – 410 04 – X – 040

### Seal material – Application areas

NBR	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-W270	Drinking water	5
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	5
Silicone	Water, food products, air, etc.	8

Refer to page 41 for the temperature range and application thresholds of sealing materials.



**Your order number:** 0167 – 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.

# 0167

Diaphragm pressure switches up to 42 V with brass housing

- Brass housing
- Spade terminal
- Overpressure safety up to 35 bar<sup>1)</sup>

Adjustment range tolerance at room temperature	Male thread	Order number NO →  :	Order number NC → :
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## 0167 Diaphragm pressure switches with spade terminal

0.1 – 1 (±0.2) bar	G 1/4	0167 – 403 03 – X – 039	0167 – 404 03 – X – 040
	G 1/8	0167 – 403 28 – X – 003	0167 – 404 28 – X – 004
	R 1/8	0167 – 403 12 – X – 008	0167 – 404 12 – X – 011
	R 1/2	0167 – 403 07 – X – 009	0167 – 404 07 – X – 012
	M 10x1 con.	0167 – 403 01 – X – 007	0167 – 404 01 – X – 010
	NPT 1/8	0167 – 403 04 – X – 012	0167 – 404 04 – X – 016
0.5 – 3 (±0.3) bar	G 1/4	0167 – 423 03 – X – 070	0167 – 424 03 – X – 070
	G 1/8	0167 – 423 28 – X – 070	0167 – 424 28 – X – 070
	R 1/8	0167 – 423 12 – X – 070	0167 – 424 12 – X – 070
	R 1/2	0167 – 423 07 – X – 070	0167 – 424 07 – X – 070
	M 10x1 con.	0167 – 423 01 – X – 070	0167 – 424 01 – X – 070
	NPT 1/8	0167 – 423 04 – X – 070	0167 – 424 04 – X – 070
1 – 10 (±0.5) bar	G 1/4	0167 – 407 03 – X – 043	0167 – 408 03 – X – 044
	G 1/8	0167 – 407 28 – X – 007	0167 – 408 28 – X – 008
	R 1/8	0167 – 407 12 – X – 020	0167 – 408 12 – X – 023
	R 1/2	0167 – 407 07 – X – 021	0167 – 408 07 – X – 024
	M 10x1 con.	0167 – 407 01 – X – 019	0167 – 408 01 – X – 022
	NPT 1/8	0167 – 407 04 – X – 028	0167 – 408 04 – X – 032
10 – 20 (±1) bar	G 1/4	0167 – 411 03 – X – 047	0167 – 412 03 – X – 048
	G 1/8	0167 – 411 28 – X – 011	0167 – 412 28 – X – 012
	R 1/8	0167 – 411 12 – X – 032	0167 – 412 12 – X – 035
	R 1/2	0167 – 411 07 – X – 033	0167 – 412 07 – X – 036
	M 10x1 con.	0167 – 411 01 – X – 031	0167 – 412 01 – X – 034
	NPT 1/8	0167 – 411 04 – X – 044	0167 – 412 04 – X – 048

## Seal material – Application areas

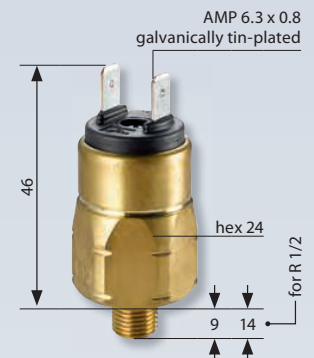
<b>NBR</b>	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	<b>1</b>
<b>EPDM</b>	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	<b>2</b>
<b>EPDM-W270</b>	Drinking water	<b>5</b>
<b>FKM</b>	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	<b>5</b>
<b>Silicone</b>	Water, food products, air, etc.	<b>8</b>

Refer to page 41 for the temperature range and application thresholds of sealing materials.



**Your order number:** 0167 – XXX XX – X – XXX

M.3  
hex 24



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