0164

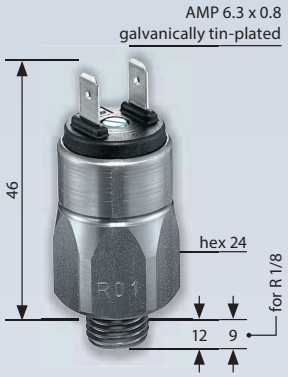
Diaphragm pressure switches up to 42 V with stainless steel housing

- Stainless steel housing (AISI 303 / 1.4305)
- Spade or M3 screw terminal
- Overpressure safety up to 8,700 psi (600 bar) [1] Burst pressure safety up 10,153 psi (700 bar) [1]
  (EPDM-W270 and silicone diaphragm up to 500 psi (35 bar))[2]

Adjustment range tolerance at room temperature	Male thread	Order number NO —› |:	Order number NC —› :|

0164 Diaphragm pressure swit ches with sp ade terminal

1.45 - 14.5 ±2.90 psi (0.1 – 1 ± 0.2 bar)	1/4" BSPP-E	0164 – 403 41 – X – 003	0164 – 404 41 – X – 004
	1/8" BSPT	0164 – 403 12 – X – 003	0164 – 404 12 – X – 004
	1/4" BSPT	0164 – 403 46 – X – 003	0164 – 404 46 – X – 004
	1/8" NPT	0164 – 403 04 – X – 003	0164 – 404 04 – X – 004
7.25 - 43.5 ±4.35 psi (0.5 - 3 ± 0.3 bar)	1/4" BSPP-E	0164 – 423 41 – X – 070	0164 – 424 41 – X – 070
	1/8" BSPT	0164 – 423 12 – X – 070	0164 – 424 12 – X – 070
	1/4" BSPT	0164 – 423 46 – X – 070	0164 – 424 46 – X – 070
	1/8" NPT	0164 – 423 04– X – 070	0164 – 424 04 – X – 070
14.5 - 145 ±7.25 psi (1 – 10 ± 0.5 bar)	1/4" BSPP-E	0164 – 407 41 – X – 007	0164 – 408 41 – X – 008
	1/8" BSPT	0164 – 407 12 – X – 007	0164 – 408 12 – X – 008
	1/4" BSPT	0164 – 407 46 – X – 007	0164 – 408 46 – X – 008
	1/8" NPT	0164 – 407 04– X – 007	0164 – 408 04 – X – 008
145 - 290 ±14.5 psi (10 – 20 ± 1 bar)	1/4" BSPP-E	0164 – 411 41 – X – 011	0164 – 412 41 – X – 012
	1/8" BSPT	0164 – 411 12 – X – 011	0164 – 412 12 – X – 012
	1/4" BSPT	0164 – 411 46 – X – 011	0164 – 412 46 – X – 012
	1/8" NPT	0164 – 411 04– X – 011	0164 – 412 04 – X – 012
290 - 725 ±29.0 psi (20 – 50 ± 2 bar)	1/4" BSPP-E	0164 – 415 41 – X – 015	0164 – 416 41 – X – 016
	1/8" BSPT	0164 – 415 12 – X – 015	0164 – 416 12 – X – 016
	1/4" BSPT	0164 – 415 46 – X – 015	0164 – 416 46 – X – 016
	1/8" NPT	0164 – 415 04 – X – 015	0164 – 416 04 – X – 016



Seal material – Application areas

NBR (BunaN)	Hydraulic/machine oil, heating oil, air, nitrogen, etc.	1
EPDM	Water, Brake fluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-W270	Drinking water (p_{max} ≤ 500 psi / 35 bar)	5
FKM (Viton®)	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	6
Silicone	Water, food products, air, etc. (p_{max} ≤ 500 psi / 35 bar)	8
HNBR	Hydraulic/machine oil, ester-based bio-oils	9

Your order number:	0164 – XXX XX – X –XXX

[1] Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.
[2] Overpressure safety of pressure switch up to 600 bar. Functional reliability only up to 35 bar with diaphragm materials EPDM-TW and silicone.
[3] The G1/4-E thread has an EPDM sealing ring if the silicone membrane is selected.

0164

Diaphragm pressure switches up to 42 V with stainless steel housing

- Stainless steel housing (1.4305 / AISI 303)
- M3 screw terminal
- Overpressure safety up to 8,700 psi (600 bar) [1]
  EPDM-TW and silicone diaphragm up to max. 35 bar [2]

Adjustment range (Tolerance at room temperature)	Male thread	Article number NO —› |:	Article number NC —› :|
0164 Diaphragm pressure switches with screw terminal M3			
1.45 - 14.5 ±2.90 psi 0.1 - 1 (± 0.2) bar	1/4 BSPP-E	0164 - 401 41 - X - 001	0164 - 402 41 - X - 002
	1/8" BSPT	0164 - 401 12 - X - 001	0164 - 402 12 - X - 002
	1/4" BSPT	0164 - 401 46 - X - 001	0164 - 402 46 - X - 002
	1/8" NPT	0164 - 401 04 - X - 001	0164 - 402 04 - X - 002
7.25 - 43.5 ±4.35 psi 0.5 - 3 (± 0.3) bar	1/4 BSPP-E	0164 - 421 41 - X - 070	0164 - 422 41 - X - 070
	1/8" BSPT	0164 - 421 12 - X - 070	0164 - 422 12 - X - 070
	1/4" BSPT	0164 - 421 46 - X - 070	0164 - 422 46 - X - 070
	1/8" NPT	0164 - 421 04 - X - 070	0164 - 422 04 - X - 070
14.5 - 145 ±7.25 psi 1 - 10 (± 0.5) bar	1/4 BSPP-E	0164 - 405 41 - X - 005	0164 - 406 41 - X - 006
	1/8" BSPT	0164 - 405 12 - X - 005	0164 - 406 12 - X - 006
	1/4" BSPT	0164 - 405 46 - X - 005	0164 - 406 46 - X - 006
	1/8" NPT	0164 - 405 04 - X - 005	0164 - 406 04 - X - 006
145 - 290 ±14.5 psi 10 - 20 (± 1) bar	1/4 BSPP-E	0164 - 409 41 - X - 009	0164 - 410 41 - X - 010
	1/8" BSPT	0164 - 409 12 - X - 009	0164 - 410 12 - X - 010
	1/4" BSPT	0164 - 409 46 - X - 009	0164 - 410 46 - X - 010
	1/8" NPT	0164 - 409 04 - X - 009	0164 - 410 04 - X - 010
290 - 725 ±29.0 psi 20 - 50 (± 2) bar	1/4 BSPP-E	0164 - 413 41 - X - 013	0164 - 414 41 - X - 014
	1/8" BSPT	0164 - 413 12 - X - 013	0164 - 414 12 - X - 014
	1/4" BSPT	0164 - 413 46 - X - 013	0164 - 414 46 - X - 014
	1/8" NPT	0164 - 413 04 - X - 013	0164 - 414 04 - X - 014



Seal material – Application areas

NBR	Hydraulic/machine oil, air, nitrogen, etc.	1
EPDM	Water, Brakefluid, hydrogen, oxygen, acetylene, etc.	2
EPDM-TW[2]	Drinking water (p_{max} ≤ 35 bar)	5
FKM	Hydraulicfluids (HFA, HFB, HFD), petrol/gasoline, etc.	3
FFKM	Hot water, chemical acids, diluted alkalis, ketones, esters, alcohols	6
Silicone[2)3]	Water, food products, air, etc. (p_{max} ≤ 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.

Article number:	0164 – XXX XX – X – XXX

[1] Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.
[2] Functional safety and reliability only up to max. 35 bar with EPDM-TW and silicone diaphragm.
[3] The G 1/4-E thread has an EPDM sealing ring if the silicone membrane is selected.

Pressure switches hex 24

Technical data

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/s²; 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	●	●				●

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[1)]
- 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 cutomized and ready-wired pressure switches, please refer to chapter M.5

[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.