

M.8

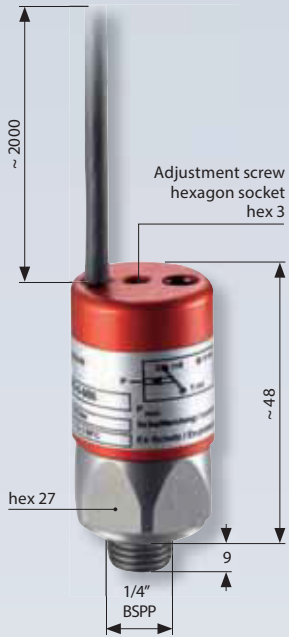
ATEX

0340 / 0341

Diaphragm / piston pressure switches up to 250 V

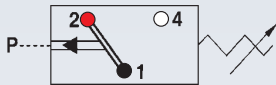
ATEX CE II 3D IP65 T90°C (dust protection zone 22)

- Zinc-plated steel housing (CrVI-free), with anodised aluminium protective cap
- Snap action with silver contacts
- Operation voltage up to 250 V, protection class 2, protective insulation
- Overpressure safety up to 4,350 / 8,700 psi (300 / 600 bar)¹⁾



Contact assignment:

- 1 = black
- 2 = red
- 4 = white



P _{max.} in psi (bar)	Adjustment range in psi (bar)	Tolerance in psi (bar) at room temperature	Thread	Order number
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0340 Diaphragm pressure switches

P _{max.} in psi (bar)	Adjustment range in psi (bar)	Tolerance in psi (bar) at room temperature	Thread	Order number
4,350 psi ¹⁾ (300 bar) ¹⁾	4.35 - 21.75 psi (0.3 - 1.5 bar)	± 2.90 psi (± 0.2 bar)	1/4" BSPP	0340 - 457 03 - X - 003
	14.5 - 145 psi (1 - 10 bar)	± 7.25 - 14.5 psi (± 0.5 - 1.0 bar)		0340 - 458 03 - X - 006
	145 - 290 psi (10 - 20 bar)	± 14.5 psi (± 1.0 bar)		0340 - 459 03 - X - 009
	290 - 725 psi (20 - 50 bar)	± 29 psi (± 2.0 bar)		0340 - 461 03 - X - 012

0341 Piston pressure switches

P _{max.} in psi (bar)	Adjustment range in psi (bar)	Tolerance in psi (bar) at room temperature	Thread	Order number
8,700 psi ¹⁾ (600 bar) ¹⁾	725 - 2,175 psi (50 - 150 bar)	± 72.5 psi (± 5.0 bar)	1/4" BSPP	0341 - 460 03 - X - 003

Seal material – Application areas

Seal material	Application areas	Order number
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 ²⁾	Hot water, chemical acids, diluted alkalis, ketones, ester's, alcohols	6
HNBR	Hydraulic/machine oil, ester-based bio-oils	9

Refer to page 82 for the temperature range and application thresholds of sealing materials.



Article number: 034X - XXX 03 - X - XXX

Piston pressure switches only have limited suitability for use with gases (refer to Page 17 for explanations).



1) Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.
2) Only suitable for diaphragm pressure switches (Type 0340).

Explosion-protected pressure switches

Technical details

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ATEX



Technical explanations

Explosion-protected pressure switches are classified according to the respective combustible material-type. This division is:

Gases and vapours 0165, 0342 / 0343	Dusts 0340 / 0341, 0342 / 0343	Methane / coal dust 0342 / 0343
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ATEX/IECEx marking for pressure switches

Our pressure switches are designed for gases and vapours (G), dust (D) and methane / coal dust (M) in mining:

Series	Flammable materials	Ex zones	Ex marking acc. to 2014/34/EU
0165	Gases and vapours	1 + 2	⊕ II 2G Ex d II C T6/T5 X
0340 / 0341	Dusts	22	⊕ II 3D Ex tc IIIC T90°C Dc
0342 / 0343	Gases and vapours	1 + 2	⊕ II 2G Ex db IIC T6 / T5 Gb
	Dusts	21 + 22	⊕ II 2D Ex tb IIIC T80°C/ T100°C Db
	Methane / coal dust	M2 (Mining)	⊕ I M2 Ex db I Mb

The following table shows an overview of the explosion protection zones, device groups and categories. The applications covered by our pressure switches (according to Ex zones) are highlighted in colour.

Conditions in potentially explosive atmosphere

Com-bustible materials	Temporary behaviour of com-bustible materials in potentially explosive area	Categori-sation of potentially explosive areas	Marking required on equipment to be used	
			Equipment group	Equipment category
Gases Vapours	are present continually, frequently or for long periods	Zone 0	II	1G
	occur occasionally	Zone 1	II	2G
	are unlikely to occur, and if so, are then only seldom or for short periods	Zone 2	II	2G
Dusts	are present continually, frequently or for long periods	Zone 20	III	1D
	occur occasionally	Zone 21	III	2D
	occur if accumulated dust is whirled up, and then only seldom or for short periods	Zone 22	III	3D or 2D
Methane / Coal dust	operation where there is a risk of explosions	-	I	M1
	disconnection where there is a risk of explosion	-	I	M2 or M1



Explosion-protected pressure switches

Technical details

Type	0165	0340 / 0341	0342 / 0343		
Ex zones:	1 + 2	22	1 + 2	21 + 22	Mining
Flammable materials:	Gases and vapours	Dusts	Gases and vapours	Dusts	Methan / coal dust
Temperature resistance:	NBR		-4 °F... +176 °F (-20 °C ... +80 °C)		
	EPDM		-4 °F... +176 °F (-20 °C ... +80 °C)		
	FKM (Diaphragm pressure switch)		41 °F... +176 °C (-5 °C ... +80 °C)		
	FKM (Piston pressure switch)		5 °F... +176 °C (-15 °C ... +80 °C)		
	FFKM (0340 + 0342 only)		-4 °F... +176 °F (-20 °C ... +80 °C)		
	HNBR		-4 °F... +176 °F (-20 °C ... +80 °C)		
Switching frequency:	200 / min				
Mechanical life expectancy:	1.000.000 cycles				
Pressure rise rate:	≤14,500 psi/s (≤ 1.000 bar/s)				
Hysteresis:	10 ... 30 % (depending on type, non-adjustable)				
Vibration resistance:	10 g; 5 ... 200 Hz sine wave; DIN EN 60068-2-6				
Shock resistance:	294 m/s ² 14 ms half sine wave; DIN EN 60068-2-27				
Cable length:	Standard length approx. 2m with wire end sleeve, also available in lengths of approx. 5m as well as customer-specific lengths				
Protection class:	IP65				
Cable cross-section:	3 x 0,75 mm ²	3 x 0,5 mm ²			
Housing material:	Aluminium	Zinc-plated steel (CrVI-free), anodised aluminium			
Weight:	approx. 380 g	approx. 230 g			

Elektrische Werte

Rated working voltage U_e (usage category)	Rated working current I_e :	
250 VAC 50 / 60 Hz, AC 12	2 A	5 A
250 VAC 50 / 60 Hz, AC 14	1 A	1 A
24 VDC, DC 12 / DC 13	2 / 1 A	3,5 / 3,5 A
50 VDC, DC 12 / DC 13	1 / 0,5 A	2 / 1 A
75 VDC, DC 12 / DC 13	0,5 / 0,25 A	1 / 0,5 A
125 VDC, DC 12 / DC 13	0,2 / 0,1 A	0,3 / 0,2 A
250 VDC, DC 12 / DC 13	0,15 / 0,1 A	0,25 / 0,2 A
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 und 50 / 60 Hz	
Nominal current of short-circuit mechanism:	bis 3,5 A	
Conditional short-circuit current:	< 350 A	

Explosion-protected pressure switches

according to ATEX directive 2014/34/EU and IECEx scheme



- ATEX certification for the Ex-protected zones:
 - 1 + 2 (Gases and vapours)
 - 21 + 22 (Dust)
 - M2 Mining (Methane / coal dust)
- Types 0342/0343 are certified according to IECEx scheme
- Switching point can be easily adjusted by the user while system in operation
- Compact design
- Excellent price-performance ratio