Explosion-protected pressure switches

To ATEX standard

- ATEX-certification for use in potentially explosive areas
- Switching point can be easily adjusted by the user whilst system is in operation
- Compact design
- Excellent price/performance ratio

Explosion-protected pressure switches

Technical data

Technical explanations

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

Gases and vapours	Dusts	Methane dust
0165	0340 / 0341	not suitable

Our pressure switches are generally designed for use with gases, vapours or dust.

Our explosion-protected pressure switches are not approved for use with methane dust (mining applications).

The table provides an overview of the zone divisions, equipment groups and equipment categories.

Conditions in potentially explosive atmosphere

Combustible materials	Temporary behaviour of combustible materials in potentially explosive area	Categorisation 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 or 1G
	are unlikely to occur, and if so, are then only seldom or for short periods	Zone 2	II	3G or 2G or 1G
Dusts	are present continually, frequently or for long periods	Zone 20	II	1D
	occur occasionally	Zone 21	II	2D or 1D
	occur if accumulated dust is whirled up, and then only seldom or for short periods	Zone 22	II	3D or 2D or 1D
Methane dust	–	Mining industry	I	M1
	–	Mining industry	I	M1 or M2

Explosion-protected pressure switches

Technical data

Type:	**0165**		**0340 / 0341**
ATEX protection zone:	1 and 2		22
Combustible Material:	Gases and vapours		Dusts
Rated working voltage:	10 … 250 VAC	10 … 250 VDC	10 … 250 VAC
Rated working current:	10 mA … 1 A	10 mA … 250 mA	10 mA … 2 A
Temperature resistance:	NBR	-20 °C … +80 °C	
	EPDM	-20 °C … +80 °C	
	FKM (in diaphragm pressure switch)	-5 °C … +80 °C	
	FKM (in piston pressure switch)	-15 °C … +80 °C	
Switching frequency:	200 / min.		
Mechanical life expectancy:	1,000,000 cycles		
Pressure rise rate:	≤ 1 bar/ms		
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.		
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
Protection class:	IP65		
Weight:	approx. 380 g		approx. 230 g

0165

Diaphragm / piston pressure switches up to 250 V

ATEX 0102 CE II 2G Ex d II C T6 / T5 X (gas-protected zones 1 and 2)

- Aluminium housing
- Changeover with silver contacts
- Operating voltage up to 250 V
- Overpressure safety up to 200 / 600 bar[1)]

$p_{max.}$ in bar	Adjustment range in bar	Tolerance in bar at room temperature	Thread	Order number
0165 Diaphragm pressure switches				
200[1)]	1 – 6	± 0.5	G 1/4 female	0165 – 448 14 – X – 001
	5 – 50	± 3.0		0165 – 449 14 – X – 001
0165 Piston pressure switches				
600[1)]	20 – 100	± 3.0 – 5.0	G 1/4 female	0165 – 450 14 – X – 001
	25 – 250	± 5.0 – 7.0		0165 – 452 14 – X – 001
	100 – 400	± 5.0 – 9.0		0165 – 451 14 – X – 001

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

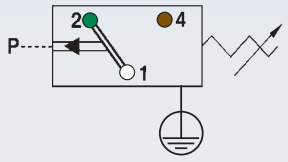
Refer to page 82 for the temperature range and application thresholds of sealing materials

Your order number:	0165 – XXX 14 – X – 001

Piston pressure switches only have limited suitability for use with gases (refer to Page 14 for explanations).

Contact assignment:

- ○ 1 = white
- ● 2 = green
- ● 4 = brown



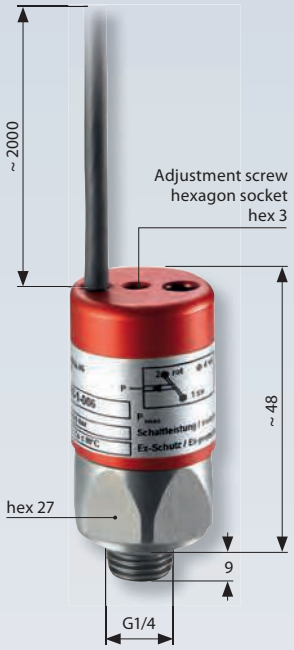
[1)] Static value. Dynamic value is 30-50 % lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.

0340 / 0341

Diaphragm / piston pressure switches up to 250 V

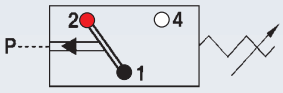
ATEX CE II 3D IP65 T90°C (dust protection zone 22)

- Zinc-plated steel housing (CrVI-free), with anodised aluminium protective cap
- Changeover with silver contacts
- Operation voltage up to 250 V, protection class 2, protective insulation ⧈
- Overpressure safety up to 300 / 600 bar[1)]



Contact assignment:

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



$p_{max.}$ in bar	Adjustment range in bar	Tolerance in bar at room temperature	Thread	Order number
0340 Diaphragm pressure switches				
300[1)]	0.3 – 1.5	± 0.2	G 1/4	0340 – 457 03 – X – 003
	1 – 10	± 0.5 – 1.0		0340 – 458 03 – X – 006
	10 – 20	± 1.0		0340 – 459 03 – X – 009
	20 – 50	± 2.0		0341 – 461 03 – X – 012
0341 Piston pressure switches				
600[1)]	50 – 150	± 5.0	G 1/4	0341 – 460 03 – X – 003

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

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

Your order number:	034X – XXX 03 – X – XXX

Piston pressure switches only have limited suitability for use with gases (refer to Page 14 for explanations).

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