

Pressure monitoring & Transmission technology



Technical details

Explosion-proof pressure switches

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



As of 03/2025

A SUCO Group company

Introduction

Explosion-proof pressure switches are ATEX-certified (Atmosphère Explosible) and approved for use in the Ex-protected zones.

The design of the pressure switch is intended to prevent the pressure switch from becoming a source of ignition and thus from igniting an explosive gas or dust mixture in the vicinity of the pressure switch.

SUCO offers pressure switches with four different types of ignition protection to meet various requirements in the field of explosion protection.

ATEX substance group

ATEX-protection covers various environmental hazards, which are differentiated between gases and vapors, dusts, or methane/coal dust.

Suco offers pressure switches suitable for every type of substance.

METHANE/COAL DUST, MINING	GASES AND VAPORS	HYDROGEN	DUSTS
			
			0340/0341
0344/0345	0344/0345	0H44/0H45	0344/0345
	0165		
0390/0391/0393	0390/0391/0393		0390/0391/0393
0396/0397	0396/0397		0396/0397
	0386-N / 0387-N		

Types of ignition protection



Ex d



Pressure-resistant encapsulation

Pressure switches with pressure-resistant encapsulation can withstand the pressure of an explosion of an explosive mixture inside and thus prevent the explosion from spreading to the outside. This type of protection offers a high level of ATEX-protection that is easy to implement in the application. The pressure switches with pressure-resistant encapsulation can also be operated without an intrinsically safe circuit. SUCO pressure switches with pressure-resistant encapsulation are suitable for Zones 1 and 2 for gases and vapors.



Ex t



Protection through housing

For use in explosive dust atmospheres, SUCO offers pressure switches with dust-tight housings and explosion protection for Zones 21 and 22.



Ex i



Protection through intrinsic safety

If the pressure switch is operated in intrinsically safe circuits, SUCO offers pressure switches with Ex i ignition protection for use in all Zones 0, 1 and 2 as well as 20, 21, and 22.

The current and voltage in the circuit must be limited to values that prevent the ignition of explosive mixtures. SUCO Ex i pressure switches are equipped with gold contacts for safe operation in intrinsically safe circuits. SUCO pressure switches with Ex i are cost-effective pressure switches with high coverage of all zones.

However, the operator must ensure the intrinsic safety of their circuit themselves.



Ex n



Ignition protection type

If an ignitable mixture is only present extremely rarely and for a short time in the event of technical faults, ignition protection type n can be a good value for money alternative to higher protection types.



Explosion-proof pressure switches

Type	0390/0391/0393	0396/0397
Protection class	Ex i	Ex i
Gas Zone	0, 1, 2	0, 1, 2
Dust Zone	20, 21, 22	20, 21, 22
Mining	–	–
Housing material	Galvanized steel	1.4305 stainless steel
Temperature resistance	NBR -20 °C ... +70 °C	
	EPDM -20 °C ... +70 °C	
	EPDM TW (Diaphragm switch) -20 °C ... +70 °C	
	FKM (Diaphragm pressure switch) -5 °C ... +70 °C	
	FKM (Piston pressure switch) -15 °C ... +70 °C	
	HNBR -20°C ... +70 °C	
Switching frequency	200 / min	
Mechanical life expectancy	1.000.000 cycles	
Pressure rise rate	≤ 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	
Weight	ca. 230 g	ca. 230 g
Electric connection	Device socket	Device socket
Protection class	IP65 (when assembled)	
Electrical values	The microswitch is designed for a max. of 24V, 50 mA, 0,5 VA	
Microswitch	Only permitted in intrinsically safe circuits	



0390 / 0391 / 0393



Ex i

Pressure switch for intrinsically safe circuits

ATEX CE  II 1G Ex ia IIC T6 Ga (Gases und vapors, Zones 0, 1 + 2)ATEX CE  II 1D Ex ia IIIC T135°C (Dusts, Zones 20, 21 + 22)ATEX CE  IM1 Ex ia I Ma (Mining)

- Intrinsic safety
- Hysteresis adjustable at the factory
- Max. voltage 24 V, changeover, gold contacts
- Galvanized steel housing

P _{max} in bar	Adjustment range in bar	Tolerance at room temperature in bar	Thread	Article number
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0390 Diaphragm pressure switch with plug connection

100 ⁽¹⁾	0,3 – 1,5	± 0,2	G 1/4	0390 - 457 03 - X - 003
			NPT 1/4	0390 - 457 09 - X - 314
400 ⁽¹⁾	1 – 10	± 0,5	G 1/4	0390 - 458 03 - X - 042
			NPT 1/4	0390 - 458 09 - X - 340
	10 – 50	± 3,0	G 1/4	0390 - 459 03 - X - 009
			NPT 1/4	0390 - 459 09 - X - 316
	10 – 100	± 3,0 - 5,0	G 1/4	0390 - 461 03 - X - 012
			NPT 1/4	0390 - 461 04 - X - 321

0391 Piston pressure switch with plug connection

700 ⁽¹⁾	50 – 200	± 5,0	G 1/4	0391 - 460 03 - X - 003
			NPT 1/4	0391 - 460 09 - X - 303

0393 Piston pressure switch with plug connection

600 ⁽¹⁾	100 – 300	± 10,0	M 14x1,5 DIN 6149-3	0393 - 462 45 - X - 051
	200 – 400			0393 - 463 45 - X - 061

Seal material – Application areas

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

Article number:	039X - 4XX XX - X - XXX
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⁽¹⁾ Static value. Dynamic value is 30-50% lower. Values pertain to the hydraulic/pneumatic part of the pressure switch.

