511

OEM Relativ- und Absolut-Druckschalter

OEM relative and absolute pressure switch

OEM Pressostat de pression relative et absolue

-1 ... 0 - 600 bar





FEINE MESSIDEEN FÜR DRUCK UND STRÖMUNG FOR FINE PRESSURE AND FLOW MEASUREMENT LA FINESSE DES MESURES DE PRESSION ET DE DEBIT

Techniscal overview

These compact OEM pressure switchs type series 511 meet the highest specification for mechanical stress, EMC compatibility, and operational reliability, which means that this range is particulary suitable for all demanding industrial applications.

Switching loads up to 150 mA resp. 500 mA are possible because of an electronic semiconductor switch. The upper and lower switching point ist free eligible between 5 and 100% fs in function N/C and N/O.

This sensor utilises a ceramic technology, developed by Huba Control and for the last 10 years, in millions of applications, used in combination with unique integrated electronic design, means that the type 511 series have a high degree of accuracy for all temperature ranges. These units are available in small or production quantities, with an excellent price to performance ratio.



Legend to cross-section drawing

- 1 Pressure connection
- 2 Protection of media leakage
- 3 Sealing
- 4 Ceramic cell
- 5 Electronic with EMC-protection
- 6 Electrical connection (example Quickon)

The distinct advantages

- Compact, rugged construction for highest operational reliability
- Protection IP 67 standard
- No media egress when exceeding rupture pressure (patented)
- Negligible temperature influence on accuracy
- Excellent EMC-capacity
- Saving time by quick cable mounting by the customer with Quickon-System

Medium

Liquids and neutral gases

Pressure ranges

Absolute	0 25 bar
Relative	-1 0 - 600 bar
Other pressure ranges	on request

Overload

3.0 x full scale at	-1 4 bar
2.5 x full scale at	6 600 bar
but as a maximum	900 bar
Higher overload on request	

Rupture pressure

3.0 x full scale at	-1 4 bar
2.5 x full scale at	6 600 bar
but as a maximum	900 bar
Higher rupture pressure of	on request

Media stop system

Patented to prevent media egress when exeeding rupture pressure range $(\geq 40 \text{ bar nominal value})$

Materials in contact with the medium

Ceramic Al₂O₂ / Stainless steel 1.4305 Media stopper: PPS Sealing material: option FPM, NBR, others on request

Housing material

Casing stainless steel 1.4305 (AISI 303)

Application temperature

Vedium temperature with sealing:					
PM	-15 +125 °C				
NBR	-25 +85 °C				
PM spec.	-40 +150 °C				

Ambient temperature: Ratiometric output with connnector AMP max. 125 °C for all other versions max. 85 °C (Versions up to 150 °C on request)

Power supply

8 ... 33 VDC

Output Semiconductor (open collector)

Switchcontact High-Side Switch (PNP) N/C contact or N/O contact Low-Side Switch (NPN) N/C contact or N/O contact

Switch last High-Side Switch (PNP) Low-Side Switch (NPN)

Adjustment of switching points

Factory set	
Upper switching point	8 100% fs
Lower switching point	5 97% fs
Min. hysteresis	3% fs

Current consumption

< 4 mA

Dynamic response

dynamic
< 2 ms, 1 ms typ.
< 100 hz

Protection

Quickon, M12x1, Cable, AMP JPT	IP 67
Connector DIN EN 175301-803-C	IP 65

Installation arrangement unrestricted

Insulation voltage Standard 500 VDC / 350 VAC Optional 1000 VDC / 700 VAC

Tests / Admissions

Shock acc. IEC 68-2-27 100 G, 11 ms half sine wave, all 6 directions. Free fall from 2 m on concrete (6x).

Constant shock acc. IEC 68-2-29 40 G for 6 ms, 1000 x all 3 directions.

Vibration acc. IEC 68-2-6 20 G, 9 ... 2000 Hz, 2 ... 9 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load.

approx. 85 g

approx. 95 g

UL according to standard 873

Weight

Version inside thread Version outside thread

Packaging

Please state on order

Single packaging in cardboard, accessories integrated

Multiple packaging in cardboard (25 pcs)

max. 500 mA max. 100 mA



Order code selection	on table				511.	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Relative pressure						9									
Absolute pressure						8									
Pressure ranges ¹⁾	-1 + 0 har					9	0	0							
Tressure runges	0 + 1 har						1	1							
	0 + 16 bar						1	2							
	0 + 25 bar						1	2 4							
	0 + 4 har						1	5							
	0 + 6 har						1	7							
	$\frac{0 \dots 1}{0} \pm 10 \text{ bar}$						3	,							
	0 + 10 bar = 0						3	1							
	0 + 75 bar						3	2							
	0+20 bar					0	3	2						2.4	-
	0 + 60 bar					a	1	0						2,4	<u> </u>
	$0 \pm 100 \text{bar}$					a	1	1						2,4	
	0 + 160 bar					9	4	2						2,4	
	0 + 250 bar	not free of oil and o	nrease				9	4	3					2,7	
	$\frac{0.11}{0} + 250 \text{ bar}$	free of pil and grea		FPM spec_seal on	lv	9	4	4	6					4	
	$\frac{0}{0} + 400 \text{ bar}$	free of pil and grea	se ²⁾	EPM spec seal on	lv	9	5	3	6					4	
	$\frac{0.11}{0} + 400 \text{ bar}$	not free of oil and o	orease	FPM spec, seal on	lv	9	5	4	6					2	
	$\frac{0.00}{0} + 600$ bar	not free of pil and c	nrease	FPM spec, seal on	lv	9	5	5	6					2	
	■ Full sc	ale signale at these pre	ssures	in mapee. sear on	· y			5	Ŭ					-	
Sealing materials 3)	FPM Fluoro-elastor	ner		-15 + 125 °	°C				0						
<u> </u>	NBR Butadiene Ac	rvlonitrile		-25 + 85 °	°C				2						
	FPM Fluoro-elastor	ner spec.		-40 + 150 °	Ċ				6						
Switching contact	Contact N/O	Highside-Switch	PNP							2	L				
-	Contact N/C	Highside-Switch	PNP							2	Μ				
	Contact N/O	Lowside-Switch	NPN							2	Ν				
	Contact N/C	Lowside-Switch	NPN							2	Р				
Electrical connections	Cable 1.5 m			IP 67 max. 85 °	C							0			
	Quickon including c	able screwing		IP 67 max. 85 °	C							1			
	Connector AMP (wi	thout female connecto	or)	IP 67 max. 125 °	C							2			
	Connector M12x1 (without female connec	tor)	IP 67 max. 85 °	C							5			
Pressure connections ⁴⁾	Inside thread	G ¼ with O-ring sea	aling										1		
	Outside thread	G ¹ / ₄ sealed at back,	, DIN 3852/E										4		
	Outside thread	1/4-18 NPT											3		
	Outside thread	R ¹ /4, DIN 2999											7		
	Outside thread	M12x1.5 sealed at	back, DIN 3852/	Έ									5		
	Outside thread	M14x1.5 sealed at	back, DIN 3852/	Έ									6		
rocess connections without pressure tip orifice										1					
	with pressure tip orifice (standard from \geq 40 bar on)											2			
	without pressure tip orifice, free of oil and grease,														
	only seal FPM, not compound filled, up to 160 bar						6					3			
with pressure tip orifice (standard from \geq 40 bar on), free of oil and grease,															
	only seal FPM, not o	ompound filled, up to	160 bar						6					4	
Switching points 4)	Indicate W and state	e switching points on c	order												W

Acessories

		Order number
Female connector for connector M12x1	(not included in delivery)	106975
Female connector AMP (Junior Power Timer) 2-wire	(not included in delivery)	110442
Female connector AMP (Junior Power Timer) 3-wire	(not included in delivery)	108767
Quickon cable screwing	(included in delivery)	107359

Other pressure ranges on request
Until 85°C Medium and Ambient temperature only
According to ISO standard R 1629, other sealing materials on request

⁴⁾ Other pressure connections and materials on request
⁵⁾ Switching points factory-set in psi on request



N/C contact: When pressure is applied ($p_0 \rightarrow p_{max}$) the switch will disconnect the applied load as soon as the upper switching point is reached. As the pressure falls ($p_{max} \rightarrow p_0$) the switch will connect the load as soon as the lower switching point is reached.

N/O contact: When pressure is applied ($p_0 \rightarrow p_{max}$) the switch will connect the applied load as soon as the upper switching point is reached. With a fall in pressure($p_{max} \rightarrow p_0$) the switch will disconnect the load as soon as the lower switching point is reached.



Electrical connections

Dimensions in mm



12 bar

8 bar

Electromagnetic compatibility CE conformity (EMC) by application of harmonised standards: EN 61000-6-2, EN 61000-6-3 und EN 61326-1.