

SPM 402

Piezoresistive Silicon Pressure Sensor for medium pressure ranges



- Calibrated and compensated
- With media separation
- Excellent chemical resistance
- O- ring mounting
- Pressure ranges: 5 to 500 psi

Applications

- Industrial
- Pneumatic and hydraulic components (e.g. valves, pumps)
- Level measuring (e.g. environmental technology)
- Process industry

Specifications

All parameters are measured at supply current 1 mA at reference conditions unless otherwise specified.

Standard Pressure Ranges													
PSI ¹⁾	bar	Output signal (Offset) [mV]			Output signal (Span) [mV]			Proof pressure [PSI ¹⁾ /bar]		Negative pressure [PSI ¹⁾ /bar]		Burst pressure [PSI ¹⁾ /bar]	
		min.	typ.	max.	min.	typ.	max.						
5	0.35 ²⁾	-2	0	2	50	75	100	30	2	--	--	45	≥ 3
15	1				100	145	210	75	5	--	--	112	≥ 7.5
30	2				95	150	200	150	10	--	--	225	≥ 15
50	3.5				80	125	180	250	17.5	--	--	375	≥ 25
100	7				100	150	210	500	35	-15	-1	750	≥ 50
300	20				95	150	200	1200	80	-15	-1	1800	≥ 120
500	35				120	175	240	1500	105	-15	-1	3150	≥ 210

Supply / Performance				
		min.	typ.	max.
Supply current	[mA]	-	1	3
Supply voltage	[V]	-	-	10
Linearity	[% FSO BFSL]	- 0.25	± 0.1	0.25
Hysteresis	[%FSO]	- 0.05	± 0.03	0.05
Input impedance	[kΩ]	4.0 to 6.0		
Output impedance	[kΩ]	4.0 to 6.0		
Insulation resistance	[MΩ]	50 (between housing and sensor chip) @ 50 V _{DC}		

¹⁾ PSI values around rounded and for reference only

²⁾ 5 psi / 350 mbar only gauge

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Stainless steel pressure sensor

Specifications

Thermal errors				
		min.	typ.	max.
TC Offset	[% FS0/10K]	-0.7	-0.1	0.7
TC Span	[% FS0/10K]	-2.4	-1.9	-1.6
TC resistance	[%/10K]	2.4	2.75	3.3

All parameters are measured in the temperature range of 0 to 70 °C (32 to 158 °F)

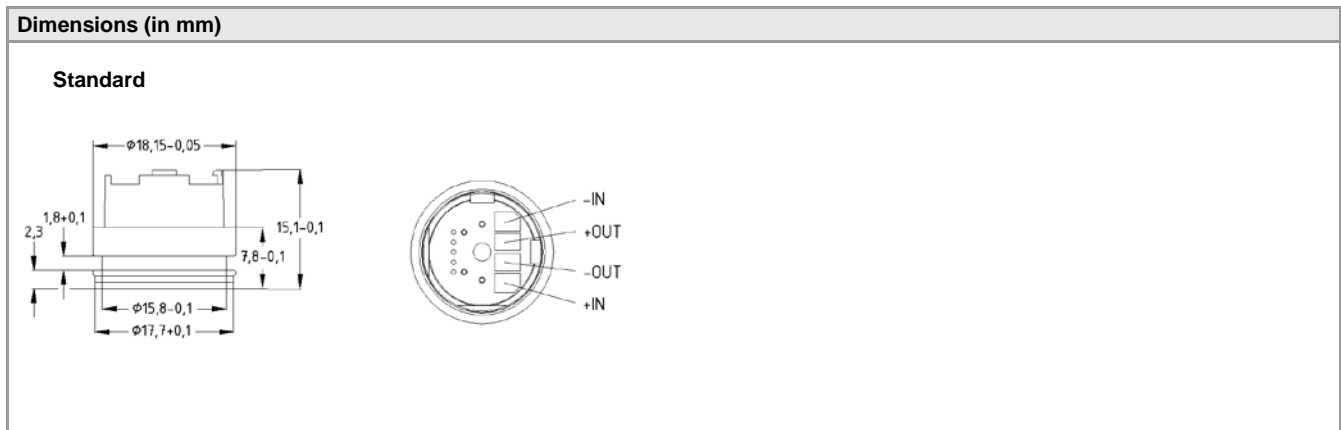
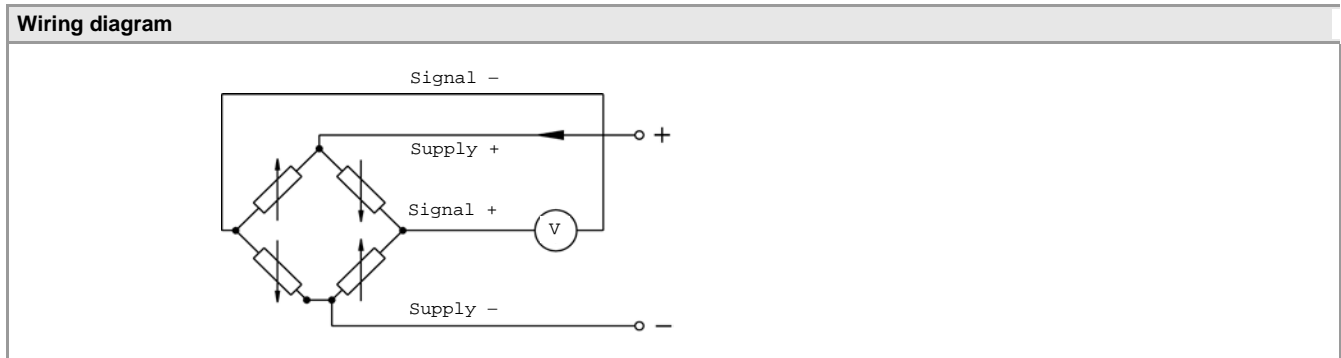
Operating temperature ranges	
Media	-40 to 125 °C (-40 to 257 °F)
Storage	-40 to 125 °C (-40 to 257 °F)

Mechanical stability	
Vibration	10 g RMS (20 to 2000 Hz)
Schock	100 g / 11 ms

Electrical conditions	
Standard	4 solder pads pitch 2.54

Materials	
Housing	Stainless steel 316L (1.4404)
Diaphragm	Stainless steel 316L (1.4435)
Media wetted parts	Housing, diaphragm

Miscellaneous	
Installation position	any ³⁾
Protection class	IP 00
Weight	Standard: approx. 10 g
Sealing	O-Ring 15.5 x 1.5 (material: FKM)



³⁾ The sensors are calibrated with the face down diaphragm. By changing the mounting position the offset can shift a little for pressure ranges $p_r \leq 15$ psi.

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Ordering Codes

SPM402 -

Type of pressure											
gauge	G										
absolute	A										
Pressure range											
5 psi / 350 mbar	G	P	0	0	5						
15 psi / 1 bar		P	0	1	5						
30 psi / 2 bar		P	0	3	0						
50 psi / 3.5 bar		P	0	5	0						
100 psi / 7 bar		P	1	0	0						
300 psi / 20 bar		P	3	0	0						
500 psi / 35 bar		P	5	0	0						
Special pressure ranges		9	9	9	9						
Electrical connection											
Solder pads						0	P	0			
others						9	9	9			
Housing material											
Stainless steel 316L (1.4404)										8	
others										9	
Diaphragm material											
Stainless steel 316L (1.4435)										1	
others										9	
Sealing											
FKM										1	
others										9	
Transfer media											
Silicone oil										1	
others										9	
Design											
Standard									0	1	
venting tube									0	5	
others									9	9	
Specail versions											
Standard									0	0	0
others									9	9	9

Subject to change without advance notice