



SPA 401

Piezoresistive Silicon Pressure Sensor Module

- Calibrated and compensated
- With media separation
- Vacuum resistant
- O - ring mounting

Applications

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

Specifications

All parameters are measured at supply voltage 5V reference conditions unless otherwise specified

Standard Pressure Ranges											
PSI ¹⁾	bar	Output signal (Offset)		Output signal (FSO)		Proof pressure [PSI ¹⁾ /bar]		Negative pressure [PSI ¹⁾ /bar]		Burst pressure [PSI ¹⁾ /bar]	
			@ V _s = 5 V		@ V _s = 5 V						
1.5	0.1	10 % V _s	0.5 V	90% V _s	4.5 V	15	1	-15	-1	22	≥ 1.5
3	0.2					30	2	-15	-1	45	≥ 3
5	0.35					30	2	-15	-1	45	≥ 3
15	1					75	5	-15	-1	112	≥ 7.5
30	2					150	10	-15	-1	225	≥ 15
50	3.5					250	17.5	-15	-1	375	≥ 25
100	7					500	35	-15	-1	750	≥ 50
Supply / Performance											
Supply voltage V _s [V]		min.		typ.		max.					
		2.7		5.0		5.5					
Current consumption [mA]		2.5 max.									
Linearity [% FSO BFSL]		- 0.25		± 0.1		0.25					
Hysteresis [%FSO]		- 0.1		± 0.05		0.1					
Output load resistance [kΩ]		≥ 5									
Insulation resistance [MΩ]		50 (between housing and sensor chip) @ 50 V _{DC}									

¹⁾ PSI values around rounded and for reference only

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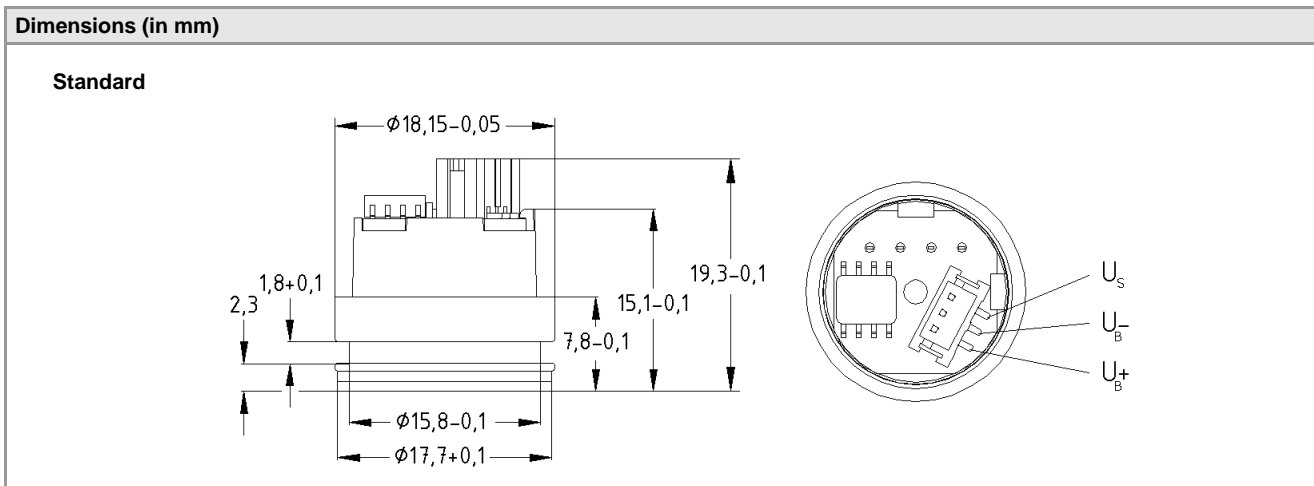
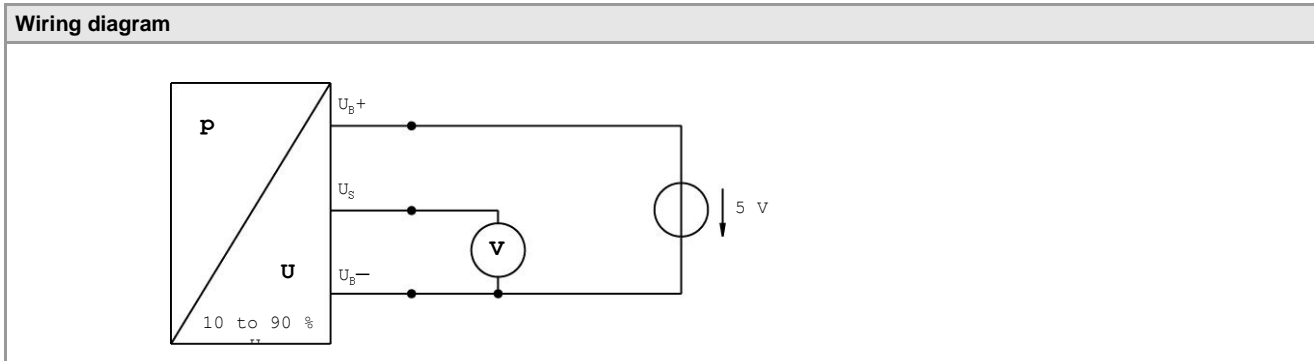
Specifications

Thermal errors		
		$p_n \leq 5 \text{ psi}$
Thermal error offset ³⁾ [% FSO]		$\leq \pm 1.0$
Thermal error span ³⁾ [% FSO]		$\leq \pm 1.0$
		0 to 70 °C (32 to 158 °F)
		0 to 85 °C (32 to 185 °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 connections	
Standard	JST connector

Materials / Filling fluids	
Housing	Stainless steel 316L (1.4404)
Diaphragm	Stainless steel 316L (1.4435)
Media wetted parts	Housing, diaphragm
Filling liquid	Silicone oil

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



²⁾ error band within the compensated temperature range

³⁾ The sensors are calibrated with the face down diaphragm. By changing the mounting position the offset can shift a little for pressure ranges $p_n \leq 5 \text{ psi}$.

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Specifications

Ordering Codes

SPA 401 -

Type of pressure													
gauge G													
Pressure range													
1.5 psi / 100 mbar		P	L	1	5								
3 psi / 200 mbar		P	0	0	3								
5 psi / 350 mbar		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								
Special pressure ranges		9	9	9	9								
Electrical connection													
JST connector						Y	M	E					
others						9	9	9					
Housing material													
Stainless steel 1.4404									8				
others									9				
Diaphragm material													
Stainless steel 1.4435									1				
others									9				
Sealing													
FKM									1				
others									9				
Filling liquid													
Silicone oil									1				
others									9				
Design													
Standard									0	1			
others									9	9			
Special versions													
Standard										0	0	0	
others										9	9	9	

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