



## SPM 401

### Piezoresistive Silicon Pressure Sensor

- > Calibrated and compensated
- > With media separation
- > Vacuum resistant
- > O- ring mounting
- > Pressure ranges: 1.5 to 100 psi

#### 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 current of 1 mA reference conditions unless otherwise specified

Standard Pressure Ranges													
PSI <sup>1)</sup>	bar	Output signal (Offset) [mV]			Output signal (Span) [mV]			Proof pressure [PSI <sup>1)</sup> /bar]		Negative pressure [PSI <sup>1)</sup> /bar]		Burst pressure [PSI <sup>1)</sup> /bar]	
		min.	typ.	max.	min.	typ.	max.						
1.5	0.1	-2	0	2	14	33	60	15	1	-15	-1	22	≥ 1.5
3	0.2							30	2	-15	-1	45	≥ 3
5	0.35	-2	0	2	50	75	100	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				
		min.	typ.	max.
Supply current	[mA]	-	1	3
Supply voltage	[V]	-	-	10
Linearity	[% FSO BFLS]	- 0.25	± 0.1	0.25
Hysteresis	[%FSO]	- 0.05	± 0.02	0.05
Input impedance	[kΩ]	p <sub>n</sub> ≤ 3 psi : 2.7 to 4.0		p <sub>n</sub> > 3 psi: 4.0 to 6.0
Output impedance	[kΩ]	p <sub>n</sub> ≤ 3 psi: 2.7 to 4.0		p <sub>n</sub> > 3 psi: 4.0 to 6.0
Insulation resistance	[MΩ]	50 (between housing and sensor chip) @ 50 V <sub>DC</sub>		
Rise time (10 to 90 %)	[ms]	≤ 0.1		

<sup>1)</sup> PSI values around rounded and for reference only

# SPM-401

Piezoresistive silicon pressure sensor

Specifications

Thermal errors			
		$p_n \leq 5 \text{ psi}$	$p_n > 5 \text{ psi}$
Thermal error offset <sup>2)</sup>	[% FSO]	$\leq \pm 1.0$	$\leq \pm 0.75$
Thermal error span <sup>2)</sup>	[% FSO]	$\leq \pm 1.0$	$\leq \pm 0.75$
		0 to 70 °C (32 to 158 °F)	0 to 85 °C (32 to 185 °F)

Operating temperature ranges		
Medium	-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

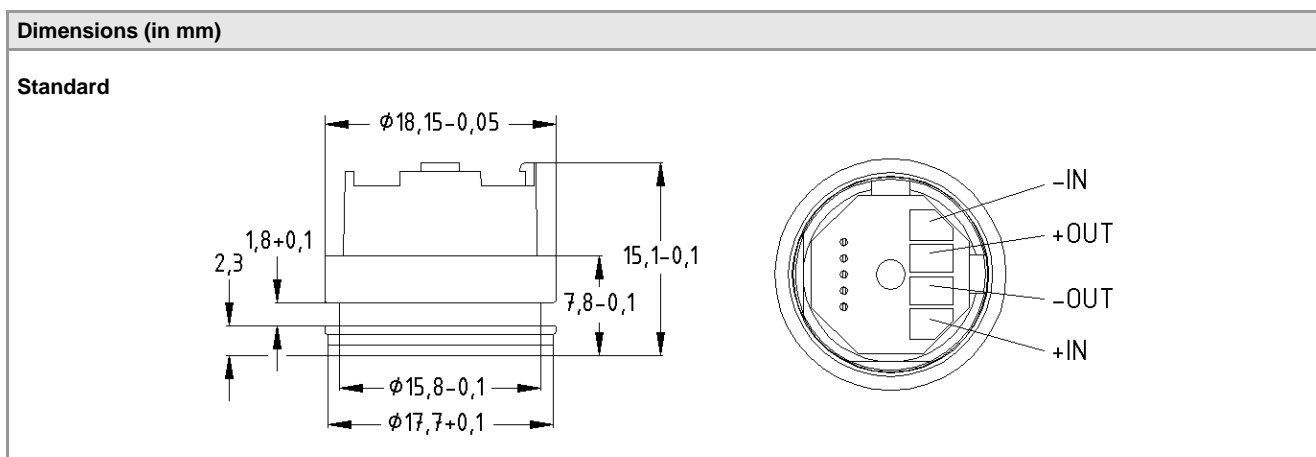
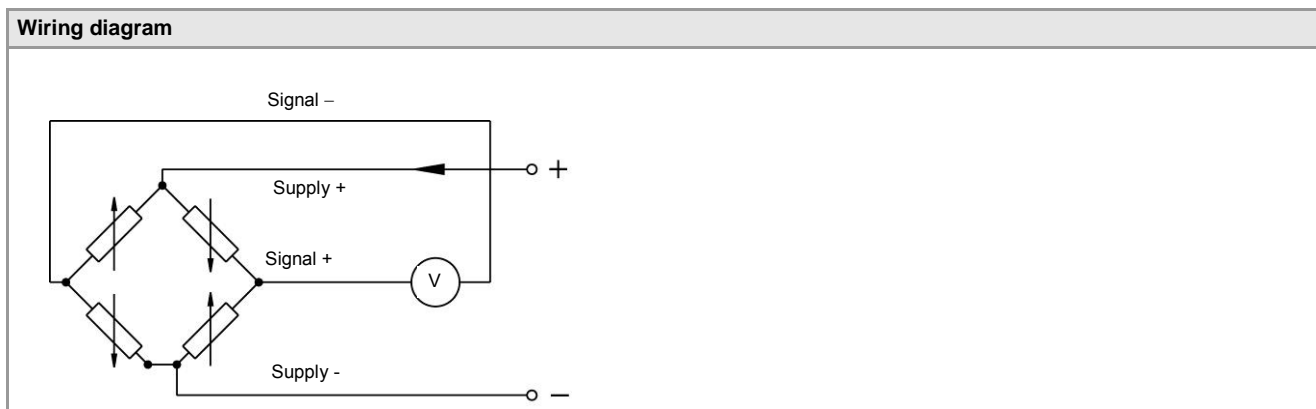
  

Electrical connections	
Standard	4 Solder pads pitch 2.54

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 <sup>3)</sup>
Protection class	IP 00
Weight	Standard: approx. . 10 g
Sealing	O-Ring 15,5 x 1,5 (material: FKM)



<sup>2)</sup> error band within the compensated temperature range

<sup>3)</sup> The sensors are calibrated with the face down diaphragm. By changing the mounting position the offset can shift a little for pressure ranges  $p_n \leq 15 \text{ psi}$ .

This data sheet contains product specification, properties are not guaranteed. Subject to be changed without notice.

