

PSD18-410-P

Piezoresistive Silicon Pressure Sensor for low pressure



- ▶ Passive calibrated (offset) and compensated
- ▶ With media separation
- ▶ Vacuum resistant
- ▶ For o-ring mounting
- ▶ Nominal pressure ranges from 0 ... 100 mbar to 0 ... 7 bar and -1 ... 0 bar gauge

Applications

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

Specifications according to DIN 16086

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

Input / Output signal								
Nominal pressure range gauge	Output signal (Offset) [mV]			Output signal (Span) [mV]			Overload / negative pressure [bar]	Burst pressure [bar]
	min.	typ.	max.	min.	typ.	max.		
100 mbar	-2	0	2	10	30	50	1 bar	≥ 1,5 bar
200 mbar				15	45	75	2 bar	≥ 3 bar
350 mbar				35	50	70	2 bar	≥ 3 bar
1 bar				35	50	140	5 bar	≥ 7,5 bar
2 bar				35	50	140	10 bar	≥ 15 bar
3.5 bar				35	50	140	17,5 bar	≥ 25 bar
7 bar				35	50	140	35 bar	≥ 50 bar
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]								
$p_n \leq 200$ mbar		- 0,1		± 0,05		0,1		
$p_n > 200$ mbar		- 0,05		± 0,05		0,05		
Input impedance [kΩ]	$p_n \leq 200$ mbar : 2,7 ... 4,0			$p_n > 200$ mbar: 3,0 ... 6,0				
Output impedance [kΩ]	$p_n \leq 200$ mbar : 2,7 ... 4,0			$p_n > 200$ mbar: 3,0 ... 6,0				
Insulation resistance [MΩ]	50 (between housing and sensor chip) @ 50 VDC							

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Specifications

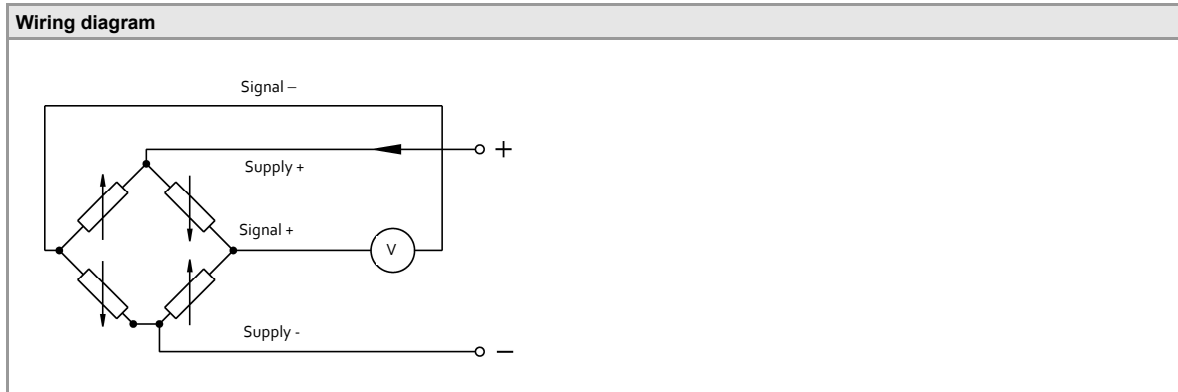
Thermal errors			
		$p_n \leq 350 \text{ mbar}$	$p_n > 350 \text{ mbar}$
Thermal error offset ¹⁾	[% FSO]	$\leq \pm 1,0$	$\leq \pm 0,75$
Thermal error span ¹⁾	[% FSO]	$\leq \pm 1,0$	error band $\leq 1,4$
¹⁾ within the temperature range (related to 25 °C)		0 ... 70 °C	0 ... 85 °C
Permissible temperature ranges			
Medium	-40 ... 125 °C	(food compliant oil: -10 ... 125 °C)	
Storage	-40 ... 125 °C	(food compliant oil: -10 ... 125 °C)	

Mechanical stability	
Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 5 ms
Electrical connections	
Standard	4 solder pads , for ranges $\leq 1 \text{ bar}$ solder pads are pre-tinned

Materials / Filling fluids	
Housing	Stainless steel 1.4571
Diaphragm	Stainless steel 1.4435
Media wetted parts	Housing, diaphragm
Filling liquid	Standard: Silicone oil Optional: Food compliant oil (with FDA approval); others on request

Miscellaneous	
Installation position	any ²⁾
Protection class	IP 00
Weight	Standard: approx. 10 g
Available accessories	O-ring 15,5 x 1,5 (material: FKM; others on request)

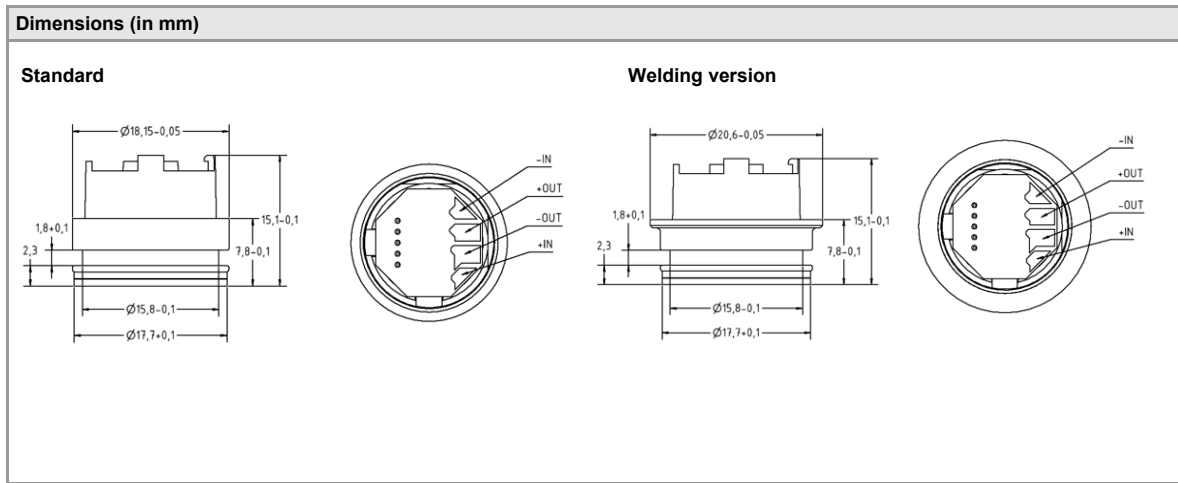
²⁾ The sensors are calibrated with the face down diaphragm. By changing the mounting position the offset can shift a little for pressure ranges $p_n \leq 1 \text{ bar}$.



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Specifications



Ordering Codes

PDS18-410-P -		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Type of pressure		gauge	G												
Pressure range		100 mbar	1	0	0	0									
		200 mbar	2	0	0	0									
		350 mbar	3	5	0	0									
		1 bar	1	0	0	1									
		2 bar	2	0	0	1									
		3,5 bar	3	5	0	1									
		7 bar	7	0	0	1									
Special pressure ranges			9	9	9	9									
Electrical connection		Solder pads				0	P	0							
		Wires 60 mm				0	1	5							
		others				9	9	9							
Housing material		Stainless steel 1.4571							1						
		others							9						
Separating diaphragm		Stainless steel 1.4435								1					
		others								9					
Sealing		Standard: Without sealing									0				
		Option: FKM									1				
		EPDM									3				
		FFKM									7				
		others									9				
Filling liquid		Silicone oil										1			
		Food compliant oil										2			
		others										9			
Design		Standard											0	1	
		Standard with venting tube											0	5	
		others											9	9	
Special versions		Standard												0	0
		others												9	9

Subject to change without advance notice.

We are here for you. Addresses and Contacts.

Headquarter Switzerland:

Angst+Pfister Sensors and Power AG
Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
sensorsandpower@angst-pfister.com

Office Germany:

Angst+Pfister Sensors and Power Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87 00
sensorsandpower.de@angst-pfister.com

Scan here and get an overview of personal contacts!



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