

DSP 411K

Piezoresistive Silicon Pressure Sensor for medium pressure



- ▶ Passive compensated
- ▶ With media separation
- ▶ For o-ring mounting (welding version optional)
- ▶ Nominal pressure ranges from 0 ... 350 mbar to 0 ... 200 bar

Applications

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

Specifications according DIN 16086

Input / Outputsignal								
Nominal pressure ranges gauge / absolute	Outputsignal (Offset) [mV]			Outputsignal (Span) [mV]			Overload / negative pressure	Burst pressure
	min.	typ.	max.	min.	typ.	max.		
350 mbar ¹⁾	-50	0	50	62	75	88	3 x	5 x
1 bar				115	145	175		
2 bar				120	150	180		
3,5 bar (on request)				100	125	150		
7 bar				125	150	175		
20 bar				120	150	180		
35 bar				150	175	200		
70 bar				125	150	175		
¹⁾ 350 mbar only gauge								
Supply / Performance								
	min.		typ.		max.			
Supply current [mA]	-		1		3			
Supply voltage [V]			5		10			
Linearity [% FSO]								
$P_N \leq 20$ bar	- 0,2		$\pm 0,05$		0,2			
$P_N > 20$ bar	- 0,15		$\pm 0,05$		0,15			
Hysteresis [% FSO]	- 0,1		$\pm 0,05$		0,1			
Input impedance	$P_N \leq 7$ bar : 4,0 ... 6,0		$P_N > 7$ bar : 2,7 ... 3,3					
Output impedance	$P_N \leq 7$ bar : 4,0 ... 6,0		$P_N > 7$ bar : 2,7 ... 3,3					
Insulation resistance	50 M Ω (between housing and sensor chip) @ 50 VDC							

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Specifications

Thermal errors		
	$P_N \leq 350$ mbar	$P_N > 350$ mbar
TC offset ¹⁾ [% FSO]	$\leq \pm 1,0$	$\leq \pm 0,75$
TC span ¹⁾ [% FSO]	$\leq \pm 1,0$	$\leq \pm 0,50$
Compensated temperature range	0 ... 50 °C	-20 ... 85 °C

¹⁾ within the compensated temperature range related to 25°C

Permissible temperature ranges	
Media	-25... 125 °C
Storage	-40 ... 100 °C

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

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

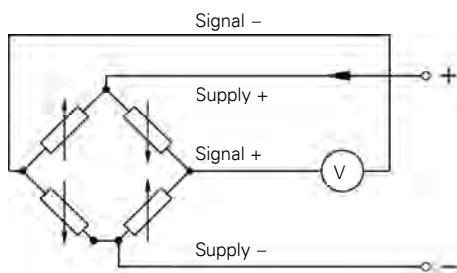
Electrical conditions	
Standard	4 solder pads

Materials / Filling fluids	
Housing	Stainless steel 1.4404
Diaphragm	Stainless steel 1.4435
Media wetted parts	Housing, diaphragm
Filling liquid	Standard: Silicone oil (others on request)

Miscellaneous	
Installation position	any ²⁾
Protection class	IP 00
Weight	Standard: approx. 10 g Welding version : approx. 15 g
Available accessories	O-Ring 15,6 x 1,78 (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 $p_r \leq 1$ bar.

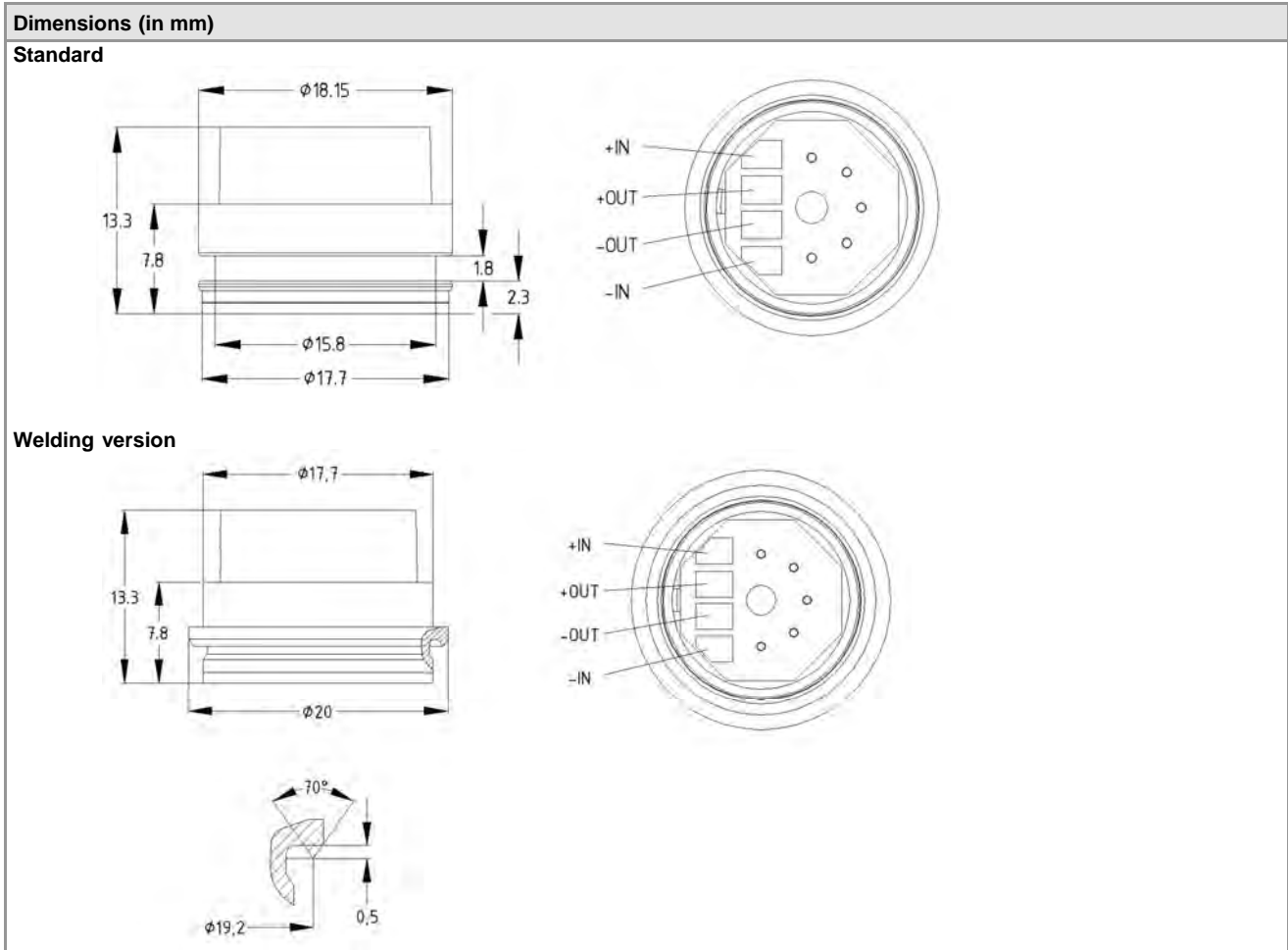
Wiring diagram



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Specifications



Ordering code

DSP 411K		□	- □ □ □	- □ □	- □ □
Type of pressure					
	gauge	G			
	absolute	A			
Pressure range					
	350 mbar	3	5	0	
	1 bar	1	0	1	
	2 bar	2	0	1	
	(3,5 bar)	3	5	1	
	7 bar	7	0	1	
	20 bar	2	0	2	
	35 bar	3	5	2	
	70 bar	7	0	2	
	200 bar	2	0	3	
Electrical connection					
	Solder pads pretinned			1	1
	Silicone wires 50,8 mm			2	1
	Others on request			9	9
Options					
	O-ring version			0	1
	Welding version			1	1
	Others on request			9	9

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