

ICS-NH

INDUSTRIAL CONSULTING & SALES

High Precision Pressure Sensors

Thin Film Technology on stainless steel

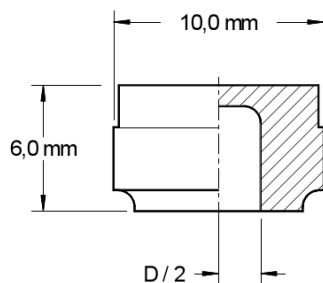
Type C10

Features:

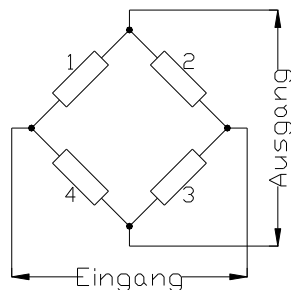
- Designed for static and dynamic measurement
- Strain gauge processed in thin film technology on stainless steel
- High precision resistors are connected to a full Wheatstone Bridge
- Basic sensor without any active amplification or compensation
- No bond creeping effects
- Best protection against environmental influences



10mm Cup Type:

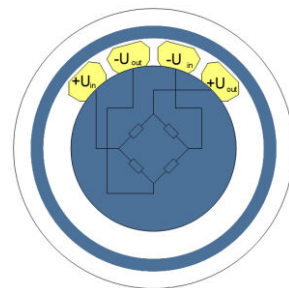


Schematic:



- Value of resistors: 5 k Ω

Contact layout (example)

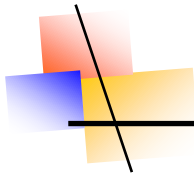


- Pads for soldering technology



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Technical data (standard parts):

Feature	Unit	Temperature range				
Type		S1	S2	S3	S4	S5
Nominal Operation Temperature Range	°C	-65 ... +70	-65 ... +125	-65 ... +175	-65 ... +200	-65 ... +260
Diaphragm diameter	mm	4/*6	4/*6	4/*6	4/*6	4/*6/*6.5
Cup diameter	mm	10	10	10	10	10
Measurement range FS (Standard is highlighted)	bar	1.6, 2.5, 4, 6,10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000, 1600, 2000, 2500	1.6, 2.5, 4, 6,10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000, 1600, 2000, 2500	1.6, 2.5, 4, 6,10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000, 1600, 2000, 2500	1.6, 2.5, 4, 6,10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000, 1600, 2000, 2500	1.6, 2.5, 4, 6,10, 16, 25, 40, 60, 100, 160, 250, 400, 600, 1000, 1600, 2000, 2500
Cup height	mm	6	6	6	6	6
Bridge resistance	Ω	5k ± 20%,	5k ± 20%,	5k ± 20%,	5k ± 20%,	5k ± 20%
TCR (resistors)	ppm/K	< ± 25	< ± 25	< ± 25	< ± 25	< ± 25
Zero point	mV/V	< ± 0.2	< ± 0.2	< ± 0.2	< ± 0.2	< ± 0.2
TC of zero @ 2mV/V FS	%FS/K	< ± 0.035	< ± 0.035	< ± 0.035	< ± 0.035	< ± 0.035
Isolating resistance (100 V DC)	Ω	> 10 ⁹	> 10 ⁹	> 10 ⁹	> 10 ⁹	> 10 ⁹
Nominal span	mV/V	2	2	2	2	2
Range of span	mV/V	1.5 ... 2.5	1.5 ... 2.5	1.5 ... 2.5	1.5 ... 2.5	1.5 ... 2.5
TC of span	%/ K	0.01 ... 0.03	0.01 ... 0.03	0.01 ... 0.03	0.01 ... 0.03	0.01 ... 0.03
Linearity	% FS	<0.5	<0.5	<0.5	<0.5	<0.5
Hysteresis	% FS	< ± 0.2	< ± 0.2	< ± 0.2	< ± 0.2	< ± 0.2
Repeatability	% FS	< ± 0.05	< ± 0.05	< ± 0.05	< ± 0.05	< ± 0.05
Long term stability 60°C, 120 h 150 °C, 1000 h 175 °C, 1000 h 200°C, 1000h 260°C, 1000h 100% overload	μV/V	< 3.0 < ±2	 < ±10 < ±2	 < ±20 < ±2	 < ±20 < ±2	 < ±20 < ±2
Supply voltage range ¹	(UB) V	5 (0.5 ... 10)	5 (0.5 ... 10)	5 (0.5 ... 10)	5 (0.5 ... 10)	5 (0.5 ... 10)
Overload (non destructive)		2 x FS (2000bar x1,5)	2 x FS (2000bar x1,5)	2 x FS (2000bar x1,5)	2 x FS (2000bar x1,5)	2 x FS (2000bar x1,5)
Burst pressure		> 5 x FS (2000bar x2)	> 5 x FS (2000bar x2)	> 5 x FS (2000bar x2)	> 5 x FS (2000bar x2)	> 5 x FS (2000bar x2)
Connection		See table below				



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Material		17-4PH (1.4548)
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¹ Higher supply voltages can give thermal effects, like drifts, until the sensor has a balanced temperature.
Data is on request available.

Available Isolating Voltages:

Voltage	Ordering Code
125 VAC	V1
250 VAC	V2
500 VAC	V3
750VAC ²	V4

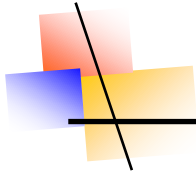
Ordering Information:

	Ordering Code				
Type	C10				
Pressure range					
1.6 bar		P01			
2.5 bar		P02			
4bar		P04			
6bar		P06			
10bar		P10			
16bar		P16			
25 bar		P25			
40 bar		P40			
60 bar		P60			
100 bar		P100			
250 bar		P250			
400 bar		P400			
600 bar		P600			
1000bar		P1000			
1600bar		P1600			
2000bar		P2000			
Temperature °C ³					
-20 ... +70			S1		
-40 ... +125			S2		
-40 ... +175			S3		
-40 ... +200			S4		
-40 (-55) ... +260			S5		
Isolating Voltage					
125 VAC				V1	
250 VAC				V2	



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500 VAC				V3	
750VAC ²				V4	

²The isolating voltage of 750VAC requires an excellent cleaning process after soldering and an additional coating at the solder joints on the sensor side if client solders wires on the sensor. Please request further information.

³ -40°C units are available for -65°C on request

Connection					
Pre soldered pads ⁴					J0
Flex jumper ⁵					
0.5"					J1
0.75"					J2
1"					J3
1.5"					J4
2"					J5
Single Wires (PTFE or silicone)					J6

⁴ If pre soldered pads are required, the client has to care for an excellent cleaning process and an additional coating for humidity protection. Please request recommendations

⁵ Flex jumper materials will be selected by ICS-NH according to the required temperature range. Standard materials are:

Temperature Range	Recommended Jumper Material	
S1	NOMEX	
S2	NOMEX	
S3	PTFE	
S4	PTFE	
S5	PTFE	

Other Options: (examples)

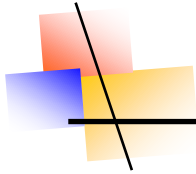
- Temperature Sensor on diaphragm
- Bare wires for electrical connection
- Single wires for electrical connection
- Open Bridge configuration
- Additional TC Span compensation

The data sheet above is for the bare sensor. Pressure ports will be manufactured according to client's specification. There are many pressure ports designed by ICS-NH in use. Drawings are available on request.



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Selection of Pressure Ports:



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