

General description

Pressure transducer HPSD 9000 is designed in compact and robust hermetically sealed metal housing with connector which ensures that the transducer can be used in harsh environments.

Ceramic measuring cell with piezoresistive measuring principle, programmable (ASIC) temperature compensation and calibration provides high total accuracy over compensated temperature range and long run stability.

High performance and accuracy provide maximum freedom for many types of application with dry air or non-corrosive gases or liquids.

Applications

- HVAC
- Process control
- Pneumatics control
- Industrial
- Automation

Features

- Supply voltage: 5V or 7-30V
- Standard analog output: 0,5 to 4,5 V
- **Total accuracy down to 1%FS** over 0 to 70°C, all effects included (maximum)
- Protection class IP65, IP67 with connector
- Pressure ranges **from 1 bar to 100 bar**
- Standard Packard electrical connector
- Standard pneumatic connection
- Gage configuration



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Available types overview

$T_{AMB}=25^{\circ}C$, $V_{CC}=5V$ unless otherwise noted.

Pressure range	1 bar	10 bar	20 bar	50 bar	100 bar
ID group	HPSD 9000-001B	HPSD 9000-010B	HPSD 9000-020B	HPSD 9000-050B	HPSD 9000-100B
Pressure type	gage	gage	gage	gage	gage
VOUT	0,5 to 4,5 V	0,5 to 4,5 V	0,5 to 4,5 V	0,5 to 4,5 V	0,5 to 4,5 V
Temperature ranges	Operating: -25 to 85°C, Compensated: 0 to 70°C, Storage: -40 to 125°C				
Over Pressure ¹⁾	2 bar	20 bar	40 bar	100 bar	200 bar
Burst pressure ²⁾	3 bar	30 bar	60 bar	150 bar	300 bar

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Performance characteristics
T_{AMB}=25°C, V_s = 5V, unless otherwise noted.

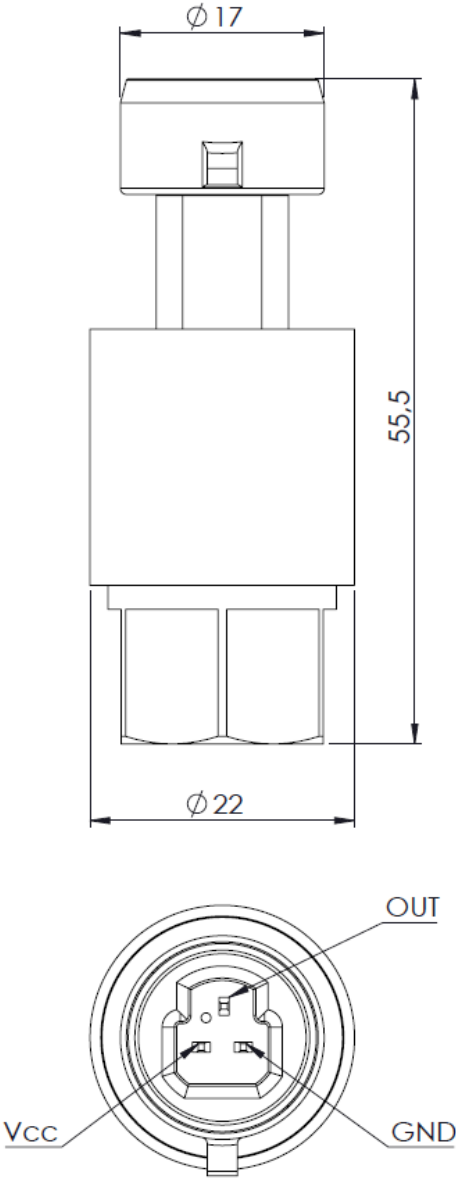
Parameter	Symbol	Min.	Type	Max.	Unit
Power supply					
Supply voltage	V _s	4,75	5	5,25	V
Current consumption	I _{CC}		2,5	5	mA
Analog output (pressure) ³⁾					
Offset voltage ⁴⁾	V _O		0,50		V
Full scale output (FSO) ⁵⁾	V _{FS}		4,50		V
Full scale span (FSS) ⁶⁾	V _{FSS}		4,00		V
Accuracy (pressure) @ 25°C ⁸⁾					
	E _a		0,5	±1,5	%FSS
Total accuracy (pressure) @ 0 to 70°C ⁹⁾					
	E _{ta}		1	±2	%FSS
Response time	E _{rt}		1,5		ms
Repeatability ¹⁰⁾	E _r		±0,05		% FSS
Nonlinearity & pressure hysteresis (BFSL) ¹¹⁾	E _l		±0,1	±0,3	% FSS
Load resistance	R _L	10		∞	kΩ
Media compatibility			see spec. note ¹²⁾		
Weight	W		50		g

Specification notes

- 1) Over pressure is the maximum pressure which may be applied without causing damage to the sensing element.
- 2) Burst pressure is the maximum pressure which may be applied without causing leakage damage to the sensing element.
- 3) Analog output signal is ratiometric to power supply V_{cc}, digital signal is not ratiometric to the power supply.
- 4) Offset voltage is the voltage output at zero pressure.
- 5) Full scale output is the voltage output at full pressure range.
- 6) Full scale span is the algebraic difference between the output at full scale pressure range and offset.
- 7) Digital output signal (temperature) is not ratiometric to power supply V_{cc}. Temperature data are read directly on the sensing element.
- 8) Accuracy includes all effects (offset, span, nonlinearity, pressure hysteresis and repeatability) at room temperature and represents maximum deviation of transducer signal from ideal characteristic.
- 9) Total accuracy includes all effects (offset, span, nonlinearity, pressure hysteresis and repeatability) included with all temperature effects of offset and span. It describes overall error and represents maximum deviation of transducer signal from ideal characteristic in compensated temperature range from 0 to 70°C.
- 10) Repeatability is defined as typical deviation of the output signal after 10 pressure cycles.
- 11) Nonlinearity is defined as the BFSL (best fit straight line) across entire pressure range.
- 12) Media compatibility: clean, dry, and noncorrosive gases and liquids to NBR, EPDM, silicon, ceramics Al2O3, brass.

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Outline dimensions & Pinout



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Ordering guide

Transducer type	Pressure range	Supply	Thread	Housing material	Connector
HPSD 9000	1B	L	F	B	D
	10B	H			
	20B				
	50B				
	100B				

Pressure range	
001B	1 bar
010B	10 bar
020B	20 bar
050B	50 bar
100B	100 bar

Thread	
F	G7/16"-20UNF, Female

Connector	
D	Metri-pack 150 (Packard)

Supply	
L	5 V
H	7 – 30 V

Housing material	
B	Brass

Other configurations possible on special request!

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