



- ▶ **Single 5 V supply voltage**
- ▶ **Easy to use package**
- ▶ **Wide compensated range**
- ▶ **High-Performance OEM applications**
- ▶ **RoHS compliant**

The Pressure Transducer model HPD 4000 is an OEM pressure sensing device. Signal conditioning consists of complete temperature compensation and adjusted amplifier in single, programmable ASIC.

High performance and accuracy enables use of this transducer in many applications with dry air or non-corrosive gases and liquids.

This Transducer can for example be used in the following applications:

Leak detection

Process control

Air flow monitoring

HVAC

Altimeters

Medical instrumentation

Respirators

Low pressure range

Pressure range	10 mbar (0.15 psi)	20 mbar (0,3 psi)	50 mbar (0,8 psi)	100 mbar (1,5 psi)
Pressure types	differential / bidirectional differential			
V _{out}	0.5 to 4.5 V			
Operating Temp	-25 to 85° C			
Compensated Temp.	0 to 70° C			
Storage Temp	-40 to 125° C			
Over pressure	100 mbar	200 mbar	500 mbar	1 bar
Burst pressure	150 mbar	300 mbar	750 mbar	1.5 bar

High pressure range

Pressure range	350 mbar (5 psi)	1 bar (15 psi)	2 bar (30 psi)	4 bar (60 psi)	7 bar (100 psi)
Pressure types	differential / bidirectional differential	differential / bidirectional differential / absolute			
V _{out}	0.5 to 4.5 V				
Operating Temp	-25 to 85° C				
Compensated Temp.	0 to 70° C				
Storage Temp	-40 to 125° C				
Over pressure	1 bar	3 bar	6 bar	8 bar	14 bar
Burst pressure	1.7 bar	5 bar	10 bar	12 bar	21 bar



Parameter	Unit	Min.	Typ.	Max.
Power supply Supply voltage V_{cc} Current consumption I_{cc}	V mA	4.75	4	5.25 6.5
Analog output (pressure) Offset voltage V_O Full scale output (FSO) V_{FS} Full scale span (FSS) V_{FSO} Offset voltage (bidirectional devices) V_O	V V V V		0.50 4.50 4.00 2.50	
Digital output (pressure), 15 bits Offset voltage V_O Full scale output (FSO) V_{FS} Full scale span (FSS) V_{FSO} Offset voltage (bidirectional devices) V_O	counts counts counts counts		3277 29491 26214 16384	
Digital output (temperature), 15 bits Temperature output @ 0° C Temperature output @ 70° C	counts counts		8192 24576	
Accuracy (pressure) @ 25°C Low pressure (10 mbar FS) Low pressure (20 to 100 mbar) Standard pressure (all other)	%FSO %FSO %FSO		0.3 0.2 0.1	±0.5 ±0.4 ±0.3
Total accuracy (pressure) @ 0 to 70° C Low pressure (10 mbar FS) Low pressure (20 to 100 mbar) Standard pressure (all other)	%FSO %FSO %FSO		0.5 0.3 0.2	±1 ±0.5 ±0.5
Resolution A/D converter D/A converter	bit		11	15
Response time	ms		1.5	
Repeatability	%FSO		±0.05	
Nonlinearity / pressure hysteresis (BFSL)	%FSO		±0.1	±0.3
Load resistance	k	2		∞
Media compatibility	see spec. note			
Weight	g		9	

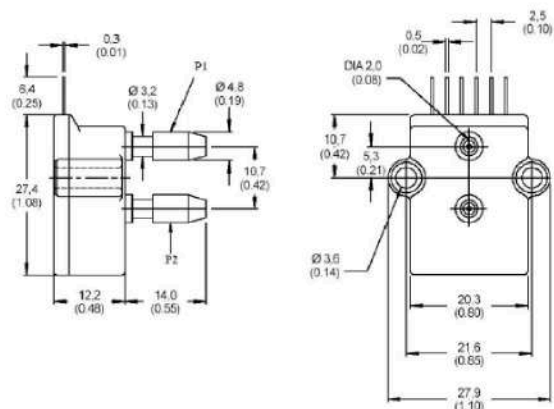
Specification notes

- 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: on pressure port P1: clean, dry and noncorrosive gases to silicone, RTV, ceramics, Al₂O₃, Pyrex, LCP gold, epoxy, polymer.
- 13) Media compatibility: on pressure port P2: noncorrosive gases or liquids to RTV, ceramics Al₂O₃, epoxy, polymer.

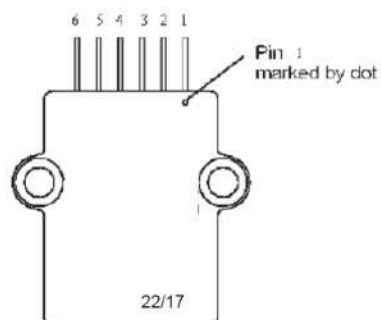
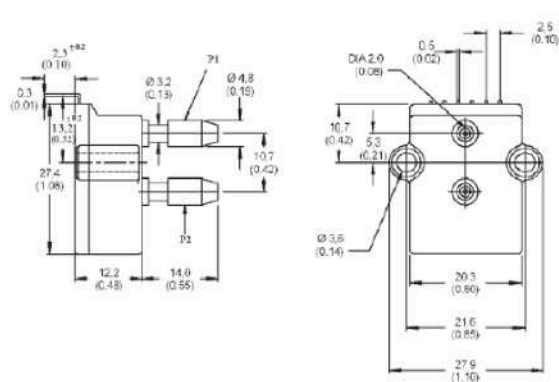


Dimensions

1) PINS STRAIGHT:



2) PINS CURVED:



Pin number	Output
1	GND
2	SDA
3	SCL
4	OUT
5	N/C ¹
6	IN

¹– Pin 5 must be left unconnected

Ordering information

(Please use the characters in the chart below to create your product code)

Sample Code	HPSD4000	-	020M	-	D	-	B	-	P	-	S
Pressure range											
See table below*											
Pressure Type											
D differential											
A absolute (for p≤ 1 bar)											
Pressure direction											
0 0 to press range											
B bidirectional											
Pressure Port											
P Positive Pressure on P1											
N Positive Pressure on P2											
Contact Pins											
S Straight											
C Curved											

Pressure Range									
mBar	10	20	50	100	350	1000	2000	4000	7000
Order Code	010M	020M	050M	100M	350M	001B	002B	004B	007B

If you require a customized solution for your program contact our sales team.