EUROSENSOR PITCH TECHNOLOGIES

HPSD 2000 PRESSURE TRANSDUCER

- **Single 5 V supply constant current excitation**
- **Easy to use package**
- **Wide compensated range**
- **High-Performance OEM applications**
- **Integrated EMC protection**
- **RoHS compliant**

The Pressure Transducer model HPSD 2000 is a pressure sensing device with high performance and accuracy that enables use of this transducer in many applications with dry air or non-corrosive gases and liquids. The HPSD 2000 is constructed on 1 mm thick ceramic substrate attached inside a standard metal 19 mm housing with O-ring groove. Input pressure is sensed with silicone piezoresistive bridge.

Applications:

Industrial process control
Air flow monitoring
Process control
Leak detection

Specifications									
Pressure range	20 mbar (0,3 psi)	50 mbar (0,8 psi)	100 mbar (1,5 psi)	350mbar (5 psi)	1 bar (15 psi)	2 bar (30 psi)	4 bar (60 psi)	7 bar (100 psi)	-1 to 0 bar
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	200 mbar	500 mbar	1 bar	1 bar	3 bar	6 bar	8 bar	14 bar	3 bar
Burst pressure	300 mbar	750 mbar	1.5 bar	1.7 bar	5 bar	10 bar	12 bar	21 bar	5 bar

Performance characteristics

TAMB = 25° C Vcc = 5 V, unless otherwise noted

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 VO 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 to 100 mbar devices) Standard pressure	 %FSO %FSO		 0.3 0.2	 ±0.5 ±0.4
Total accuracy (pressure) @ 0 to 70° C Low pressure (50 to 100 mbar FS devices) Standard pressure (all other devices)	 %FSO %FSO		 0.5 0.3	 ±1 ±0.5
Resolution A/D converter D/A converter			 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 Vcc, 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 Vcc. 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 to pyrex, silicone, RTV, ceramics Al2O3, epoxy, stainless steel.

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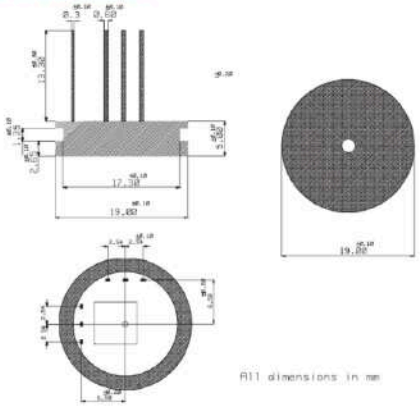
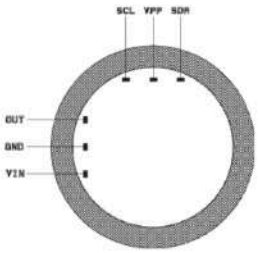
Dimensions

Outline dimensions



Pinout



Ordering information

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

Sample Code HPSD2000 - 020M - G - B

Pressure range

See table below*

Pressure Type

G gauge pressure

Pressure direction

0 0 to pressure range

B bidirectional

Pressure Range									
mBar	20	50	100	350	1000	2000	4000	7000	-1 to 0 bar
Order Code	020M	050M	100M	350M	001B	002B	004B	007B	000B

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