DS A1000/C

Datasheet

March, 2012

HPSA 1000 Pressure Transducer

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General description

Pressure transducer model HPSA 1000 is a SMT pressure sensing device with close bridge configuration for mounting on PCB board or other substrate.

High performance and accuracy enables use of this transducer in many applications, and with its compact and handy design is very suitable for users. This transducer is suitable for any type of application with dry air or non-corrosive gases.

The model HPSA 1000 family consists of pressure ranges from 50 mbar up to 7 bar.

Applications

- Medical instrumentation
- Respirators
- Air flow monitoring
- Process control
- Leak detection
- Pneumatic controls
- Altimeters

Features

- Low cost
- Easy to use package – SMD (surface mount device)
- Compact and light weight
- High sensitivity
- High-performance, stable silicon chip and package
- Industrial temperature operating range (-25 to 85°C)
- Gage and absolute configurations

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Types overview

T_{AMB} = 25°C
V_{CC} = 5 V, unless otherwise noted

Pressure range	50 mbar (0,8 psi)	100 mbar (1,5 psi)
ID group	HPSA 1000-050M	HPSA 1000-100M
V_{OUT}	30 to 130 mV	30 to 130 mV
$V_{OFS(MAX)}$	-100 mV +40 mV	-100 mV +40 mV
Temp. ranges	Operating: -25 to 85°C Storage : -40 to 125°C	
Over pressure	500 mbar	1 bar
Burst pressure	750 mbar	1,5 bar

Pressure range	350 mbar (5 psi)	1 bar (15 psi)	2 bar (30 psi)	4 bar (60 psi)	7 bar (100 psi)
ID group	HPSA 1000-350M	HPSA 1000-001B	HPSA 1000-002B	HPSA 1000-004B	HPSA 1000-007B
V_{OUT}	75 to 200 mV	100 to 200 mV	100 to 200 mV	100 to 200 mV	100 to 200 mV
$V_{OFS(MAX)}$	±50 mV	±50 mV	±50 mV	±50 mV	±50 mV
Temp. range	Operating: -25 to 85°C Storage: -40 to 125°C				
Over pressure [1)]	1 bar	3 bar	6 bar	8 bar	14 bar
Burst pressure [2)]	1,7 bar	5 bar	10 bar	12 bar	21 bar

Performance characteristics

T_{AMB} = 25°C
V_{CC} = 5 V, unless otherwise noted

Parameter	Min.	Type	Max.	Unit
Excitation current		1	3	mA
Excitation voltage		5	10	V
Bridge resistance	2		6	kΩ
TC Span (0 to 70°C)		-0,20		%FS/°C
TC Offset (0 to 70°C)		-0,01		%FS/°C
TC Resistance (0 to 70°C)		0,27		%FS/°C
Pressure hysteresis & nonlinearity		0,2	0,5	%FS
Media compatibility	See spec. note [6)]			

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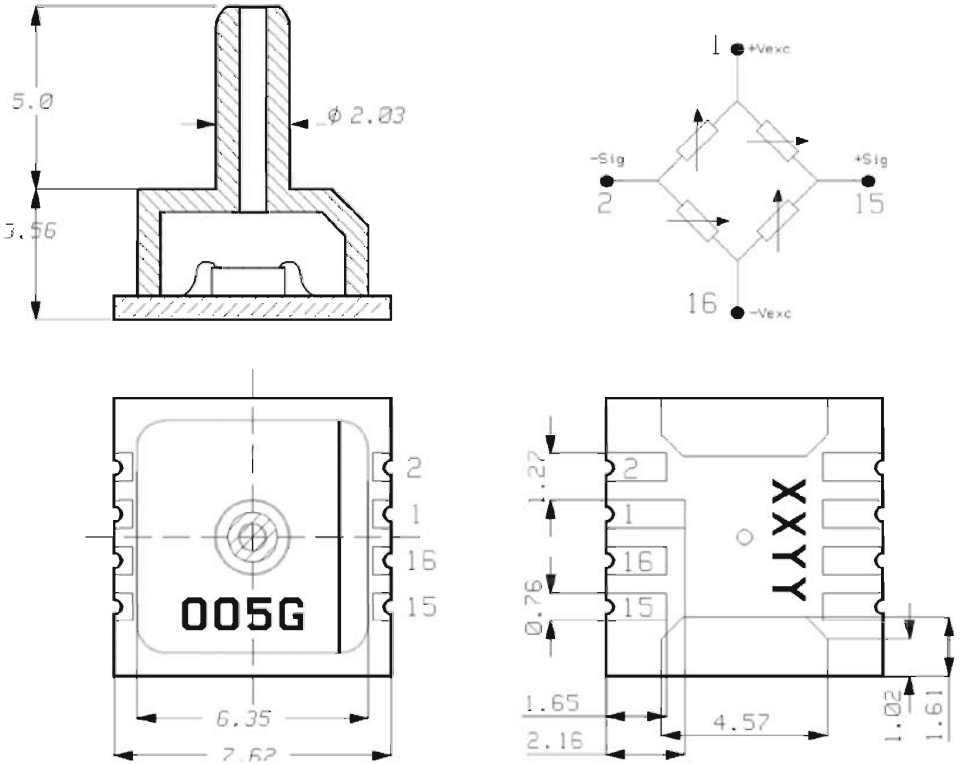
Specification notes

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}.
4) Offset voltage is the voltage output at zero pressure.
5) Nonlinearity is defined as the BFSL (best fit straight line) across entire pressure range.
6) All noncorrosive gases to silicon, RTV, gold, ceramics Al_2O_3, polymer.

Outline dimensions and pinout



Note: Output polarity is defined for positive pressure on pressure port.

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Ordering guide

Transducer type	Pressure range	Pressure type	Port type
HPSA 1000	050M	A	T
	100M	G	H
	350M		
	001B		
	002B		
	004B		
	007B		

Pressure range	
050M	50 mbar
100M	100 mbar
350M	350 mbar
001B	1 bar
002B	2 bar
004B	4 bar
007B	7 bar

Pressure type	
A	Absolute (for p≥1 bar)
G	Gage

Port type	
T	Tube
H	Hole (without pressure tube)

Other configurations possible on special request.

Headquarter Switzerland:
Angst+Pfister Sensors and Power AG

Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
sensorsandpower@angst-pfister.com

Office Germany:
Angst+Pfister Sensors and Power
Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87 0
sensorsandpower.de@angst-pfister.com

Angst+Pfister
Sensors and Power

We are here for you. Addresses and Contacts.

Sales Germany & Austria

Geometrical sensors
Other products

Kurt Stritzelberger
Phone +49 89 374 288 87 22
kurt.stritzelberger@angst-pfister.com

Pressure sensors
Other products

Gerhard Vetter
Phone +49 89 374 288 87 26
gerhard.vetter@angst-pfister.com

Gas sensors and modules

Peter Felder
Phone +41 44 877 35 05
peter.felder@angst-pfister.com

Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei
Phone +41 44 877 35 18
basil.frei@angst-pfister.com

Postcode 1000 – 2999

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@angst-pfister.com

Sales International Key Accounts

Peter Felder
Phone +41 44 877 35 05
peter.felder@angst-pfister.com

Sales Other Countries / Product Management

Pressure Sensors
Load Cells

Philipp Kistler
Phone +41 44 877 35 03
philipp.kistler@angst-pfister.com

Power supplies

Sebastiano Leggio
Phone +41 44 877 35 06
sebastiano.leggio@angst-pfister.com

Drive technology
CH Postcode 5000 – 9999 / DE

Roman Homa
Phone +41 76 444 00 86
roman.homa@angst-pfister.com

Gas sensors
Gas sensor modules

Dr. Thomas Clausen
Phone +49 89 374 288 87 24
thomas.clausen@angst-pfister.com

Linear position sensors
Angle sensors

Eric Letsch
Phone +41 44 877 35 14
eric.letsch@angst-pfister.com

Drive technology
CH Postcode 1000 – 4999 / AT / IT / FR

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@angst-pfister.com

Flow / Level / Medical products

Dr. Adriano Pittarelli
Phone +49 89 374 288 87 67
adriano.pittarelli@angst-pfister.com

Accelerometers
Sensor elements

Christoph Kleye
Phone +49 89 374 288 87 61
christoph.kleye@angst-pfister.com

Harald Thomas
Phone +49 89 374 288 87 23
harald.thomas@angst-pfister.com