Datasheet

HPSAV 4000 Pressure Transducer

General description

Pressure transducer HPSAV 4000 is an OEM pressure sensing device with temperature compensated and calibrated output.

This transducer was specially designed to provide stable output signal (offset and span) over wide temperature range from 0 to 70°C. Thick film resistors printed on substrate are individually laser trimmed to provide temperature compensation, zero and span calibration. Additional two pins provide temperature signal for external temperature measurement if required. Pressure transducer is intended for use with non-corrosive gases and fluids.

HPSAV 4000 is designed for constant voltage excitation for pressure ranges from 4" H_2O to 150 psi (10 mbar up to 10bar).

Features

- Constant voltage excitation
- Easy to use DIP package
- Wide compensated range (0 to 70°C)
- Zero and span calibration
- Differential and absolute configurations
- Pressure range from 4" H_2O to 150 psi
- Outstanding long term stability

Applications

- Medical instrumentation
- Respirators
- HVAC
- Process control
- Leak detection
- Pneumatic controls
- Altimeters

RoHS COMPLIANT

HYB sensors and applications

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Available types overview

Pressure range	4 H_2O (10mbar)	0,3 psi (20mbar)	0,8 psi (50 mbar)	1 psi (70mbar)
ID group	HPSAV 4000-004H	HPSAV 4000-0P3P	HPSAV 4000-0P8P	HPSAV 4000-001P
V_{OUT} [3]	40±0,3mV	40±0,3mV	40±0,3 mV	18±0,15 mV
$V_{OFS(MAX)}$, 25°C	±0,5 mV	±0,5 mV	±0,5 mV	±0,5 mV
Temp. ranges	Operating: -25 to 85°C Compensated: 0 to 70°C Storage: -40 to 125°C			
Over pressure [1]	1 psi	3 psi	5 psi	10 psi
Burst pressure [2]	3 psi	5 psi	10 psi	20 psi

Pressure range	5 psi (350 mbar)	15 psi (1 bar)	30 psi (2bar)	100 psi (7 bar)	150 psi (10 bar)
ID group	HPSAV 4000-005P	HPSAV 4000-015P	HPSAV 4000-030P	HPSAV 4000-100P	HPSAV 4000-150P
V_{OUT} [3]	60±0,5 mV	90±0,5 mV	90±0,5 mV	90±1,0 mV	90±1,0 mV
$V_{OFS(MAX)}$, 25°C	±0,5 mV	±0,5 mV	±0,5 mV	±0,5 mV	±0,5 mV
Temp. ranges	Operating: -25 to 85°C Compensated: 0 to 70°C Storage: -40 to 125°C				
Over pressure [1]	25 psi	60 psi	90 psi	200 psi	200 psi
Burst pressure [2]	50 psi	120 bar	150 psi	250 psi	250 psi

T_{AMB} = 25°C.
V_{CC} = 12 V, unless otherwise noted.

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Performance characteristics

Parameter	Min.	Typ.	Max.	Unit
Input voltage		12	20	V
Bridge resistance	2		4	kΩ
Thermal error of span (0 to 70°C) [5), 6)]		±0,2	±1	%FS
Thermal error of offset (0 to 70°C) [4), 6)]		±0,2	±0,5	mV
Combined linearity and hysteresis [8)]		±0,2	±0,5	%FS
Input impedance	4		25	kΩ
Output impedance	2		4	kΩ
Repeatability [7)]		±0,05		%FSO
Long term stability of offset and span		±0,1		mV
Media compatibility	See spec. note [9),10)]			
Weigth		7		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 input supply voltage V_{cc}.
4) Offset voltage is the voltage output at zero pressure.
5) Span is the algebraic difference between the output at full scale pressure range and offset.
6) Thermal error of span and offset represents the maximum deviation of transducer signal (span and offset) through whole compensated temperature range from 0 to 70°C in compare to value at 25°C.
7) Repeatability is defined as typical deviation of the output signal after 10 pressure cycles.
8) Nonlinearity is defined as the BFSL (best fit straight line) across entire pressure range.
9) Media compatibility on pressure port P1: clean, dry and noncorrosive gases to silicon, RTV, ceramics Al_2O_3, gold, epoxy, polymer.
10) Media compatibility on pressure port P2: clean, dry and noncorrosive gases to RTV, ceramics Al_2O_3, epoxy, polymer.

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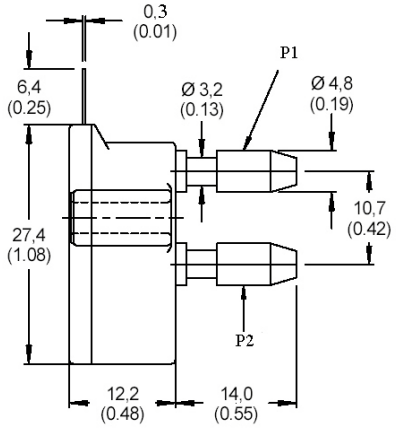
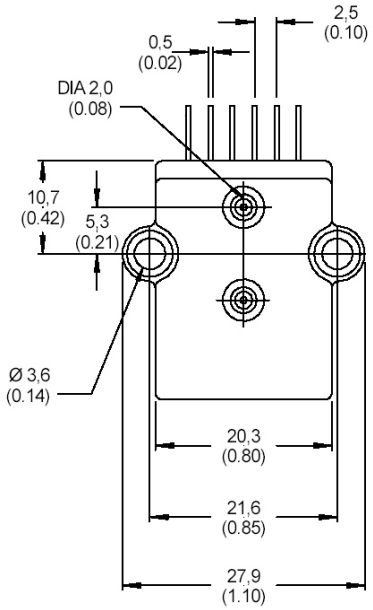
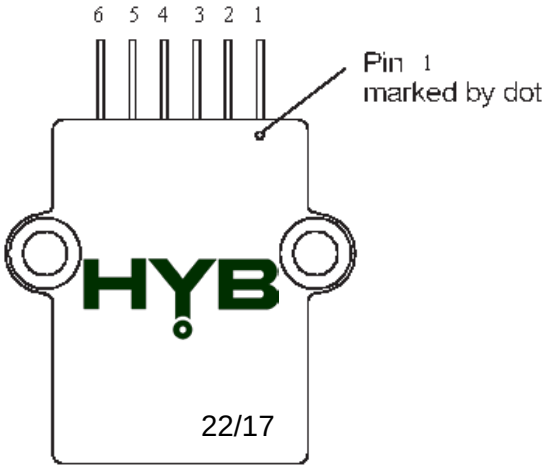
Outline dimensions and pinout







Pin number	Output
1	Temp out+
2	Vs
3	+OUT
4	GND
5	-OUT
6	Temp out-

Note: Output polarity is defined for positive pressure on port P1

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Ordering guide

Transducer type	Pressure range	Pressure type
HPSAV 4000	004H	D
	0P3P	A
	0P8P	
	001P	
	005P	
	015P	
	030P	
	100P	
	150P	

Pressure range	
004H	4 " H_2O
0P3P	0,3 psi
0P8P	0,8 psi
001P	1 psi
005P	5 psi
015P	15 psi
030P	30 psi
100P	100 psi
150P	150 psi

Pressure type	
D	Differential
A	Absolute (for p≥1 bar)

Other configurations possible on special request.

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