

## 1230 UltraStable™

### SPECIFICATIONS

- PC Board Mountable Pressure Sensor
- 0-100 mV Output
- Current Excitation
- Gage, Differential, and Absolute
- Temperature Compensated

### FEATURES

- Dual-in-Line Package
- -20°C to +85°C Compensated
- Temperature Range
- ±0.1% Non Linearity
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

### APPLICATIONS

- Medical Instruments
- Altitude Measurement
- Process Control
- Factory Automation
- Handheld Calibrators
- Environmental Control

The 1230 is a high-performance temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration. It uses Measurement Specialties' proprietary UltraStable™ die to provide excellent performance and long-term stability over wide temperatures.

Integral temperature compensation is provided over a range of -20°C to +85°C using laser-trimmed resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations by programming the gain of an external differential amplifier. This provides sensitivity interchangeability of ±1%. Absolute, differential and gage pressure ranges from 0-15 to 0-100 psi are available. Multiple lead and tube configurations are available for different applications.

Please refer to the 1210 and 1220 for information on products with operating pressures less than 0-15 psi. For voltage excitation, please refer to the Model 1240.

## STANDARD RANGES

Range	psia	psid	psig
0 to 2		•	•
0 to 5		•	•
0 to 15	•	•	•
0 to 30	•	•	•
0 to 50	•	•	•
0 to 100	•	•	•

## PERFORMANCE SPECIFICATIONS

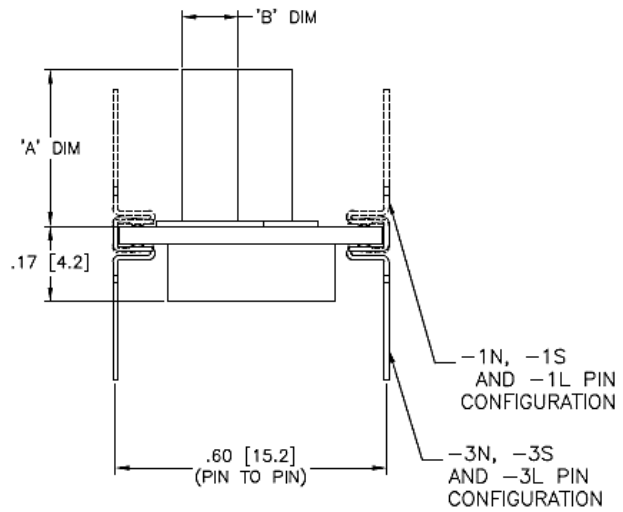
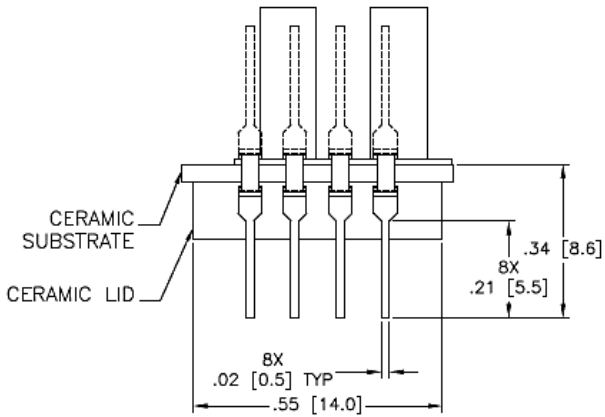
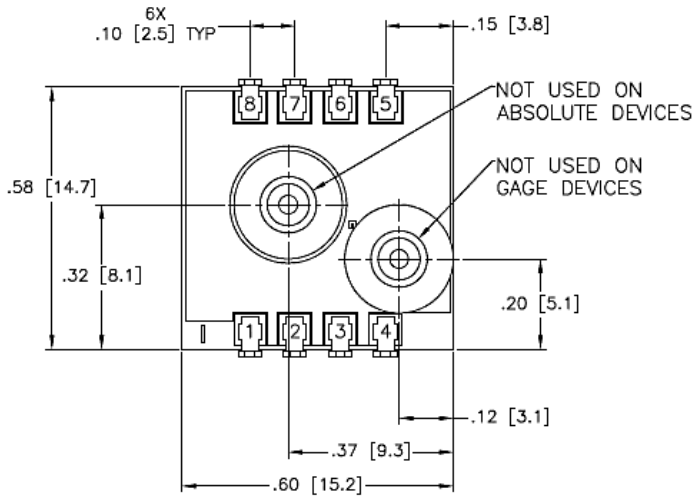
Unless otherwise specified: Supply Current: 1.5 mA, Ambient Temperature: 25°C

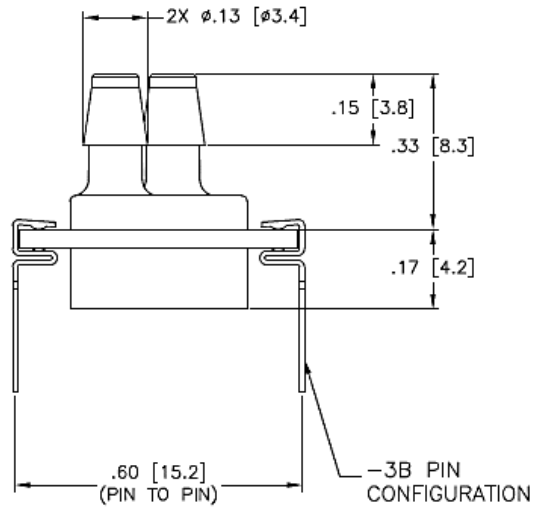
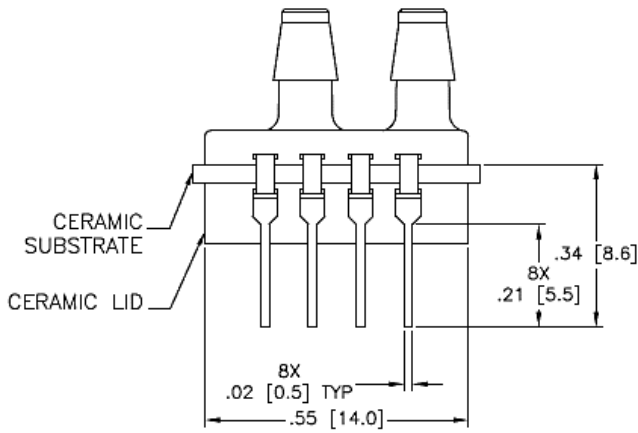
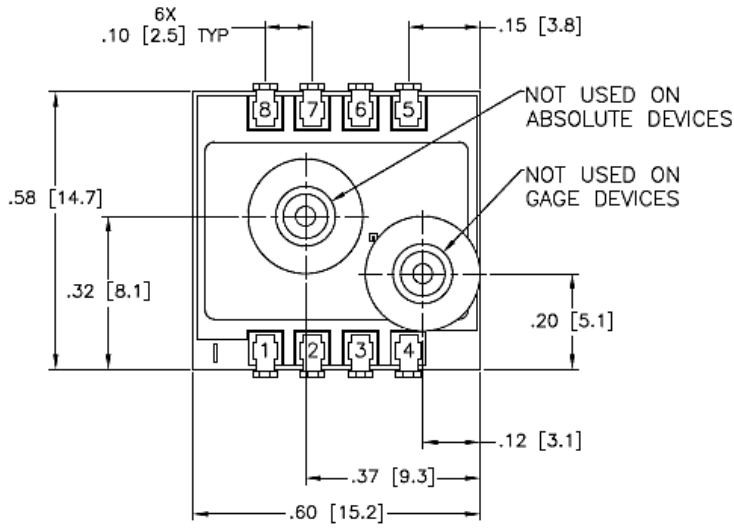
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-2		2	mV	
Pressure Non Linearity	-0.1	±0.05	0.1	%Span	2
Pressure Hysteresis	-0.1	±0.01	0.1	%Span	
Input Resistance	2200	4000	5800	Ω	
Output Resistance		4200		Ω	
Temperature Error – Span	-0.5	±0.3	0.5	%Span	3
Temperature Error – Zero	-0.5	±0.1	0.5	%Span	3
Temperature Coefficient – Resistance		0.15		%/°C	3
Thermal Hysteresis – Zero		±0.05		%Span	3
Short Term Stability (Offset & Span)		±0.05		%Span	4
Long Term Stability (Offset & Span)		±0.1		%Span	5
Supply Current	0.5	1.5	2.0	mA	
Response Time (10% to 90%)		1.0		ms	6
Output Noise (10Hz to 1kHz)		1.0		μV p-p	
Pressure Overload			3X	Rated	7
Compensated Temperature	-20		+85	°C	8
Operating Temperature	-40		+125	°C	
Storage Temperature	-50		+150	°C	
Weight			3	grams	
Solder Temperature	250°C Max 5 Sec.				
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Ceramic, Nickel, and Aluminum				

### Notes

1. Ratiometric to supply current. Span for 2PSI is 30 to 60mV.
2. Best fit straight line. Non Linearity for 2 PSI is ±0.2% and 5 PSI is ± 0.5%.
3. Maximum temperature error between -20°C and +85°C with respect to 25°C.
4. Short term stability over 7 days with constant current and temperature.
5. Long term stability over a one year period with constant current and temperature.
6. For a zero-to-full scale pressure step change.
7. 2X maximum for 100 psi device.
8. For pressures ranges below 15 psi, compensated temperature range is 0°C to 50°C and thermal error of offset is ±1%.

## DIMENSIONS





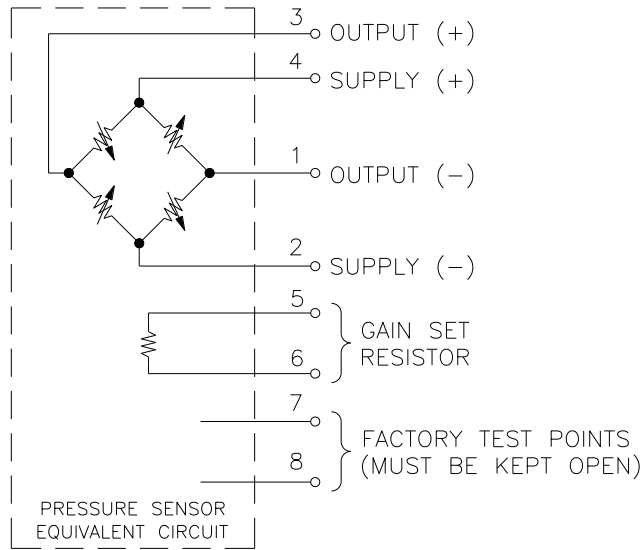
**Sensor Pinout**

Pin No.	Function
1	-OUT
2	-EX
3	+OUT
4	+EX
5,6	GAIN
7,8	TEST

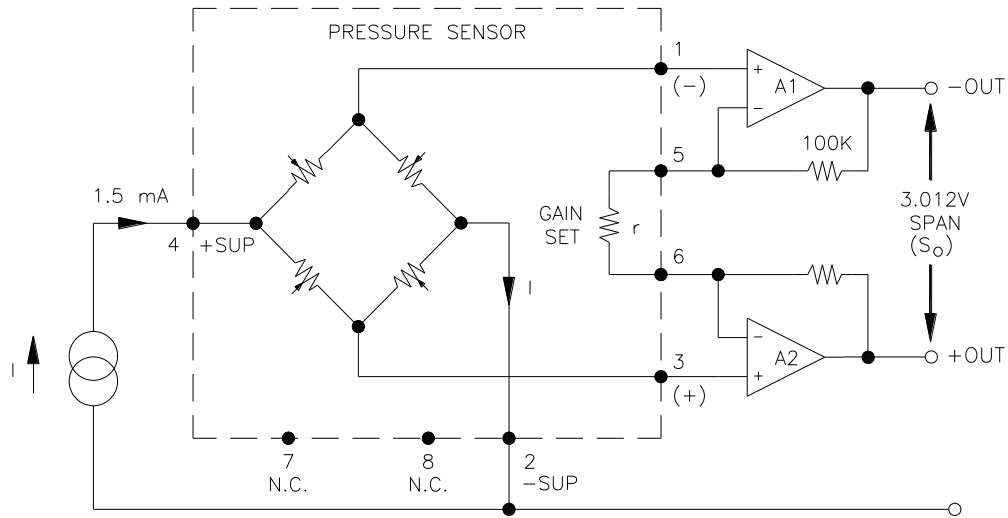
**Vent Tube Dimensions**

Model	'A' Dim	'B' Dim
1N / 3N	N/A	N/A
1L / 3L	.490±.005 [12.45±0.13]	Ø.127±.005 [ø3.23±.13]
1S / 3S	.325±.005 [8.26±0.13]	Ø.125±.005 [ø.3.18±0.13]

## CONNECTIONS



## APPLICATION SCHEMATIC



APPLICATION SCHEMATIC

## ORDERING INFORMATION

1230 - 030 A - 3 N

Pressure Range [psi]	
	002
	005
	015
	030
	050
	100

Pressure Type	
<b>G</b>	Gage
<b>A</b>	Absolute
<b>D</b>	Differential

Vent Type	
<b>L</b>	Long Tube
<b>S</b>	Short Tube
<b>N</b>	No Tube
<b>B</b>	Barb

Lead Configuration	
<b>1</b>	Same Side as Vent Tube
<b>3</b>	Opposite Side as Vent Tube



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