

## 1230

### UltraStable™ SPECIFICATIONS

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

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  $\pm 1\%$ . 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.

## 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

## 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

Supply Current: 1.5 mA

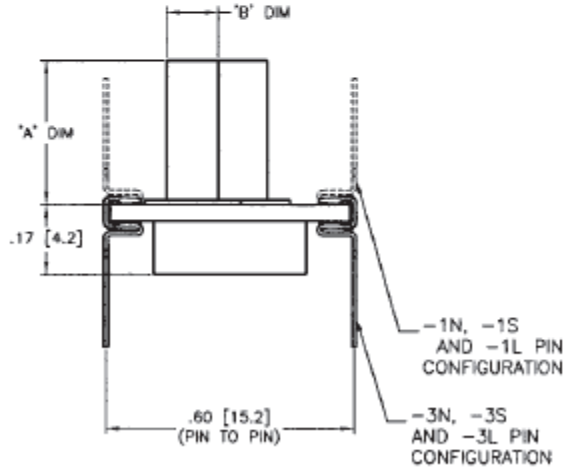
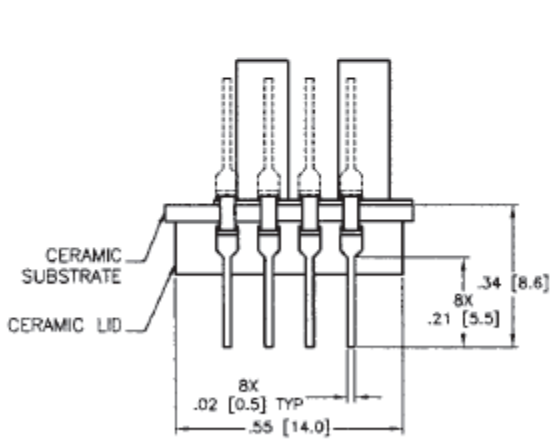
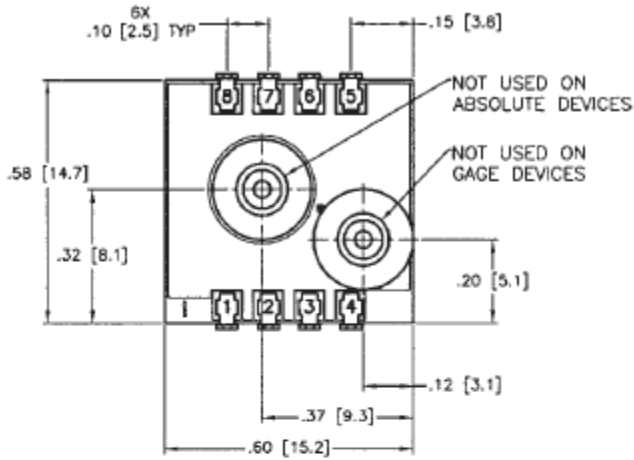
Ambient Temperature: 25°C (unless otherwise specified)

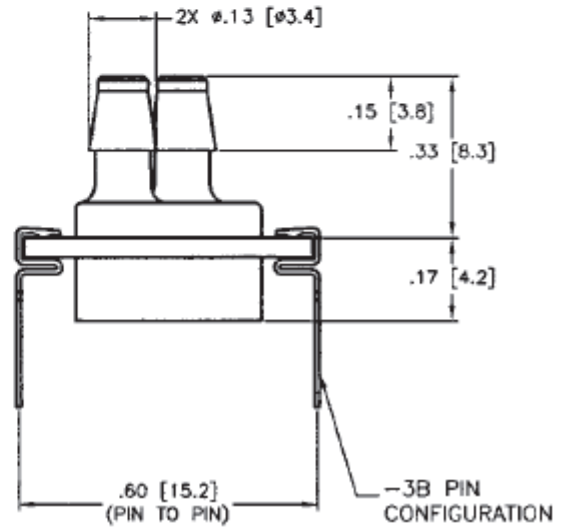
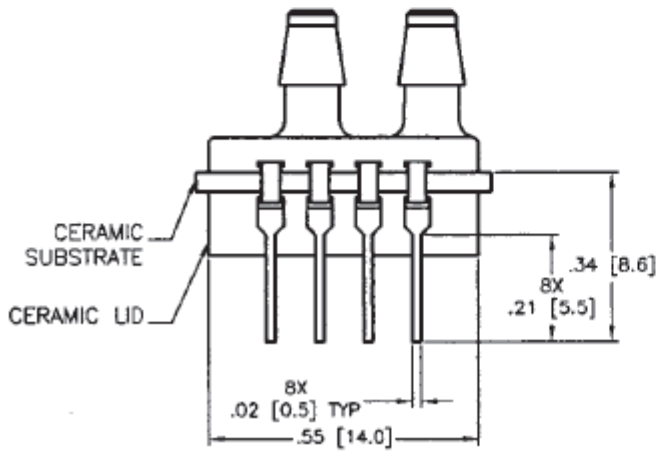
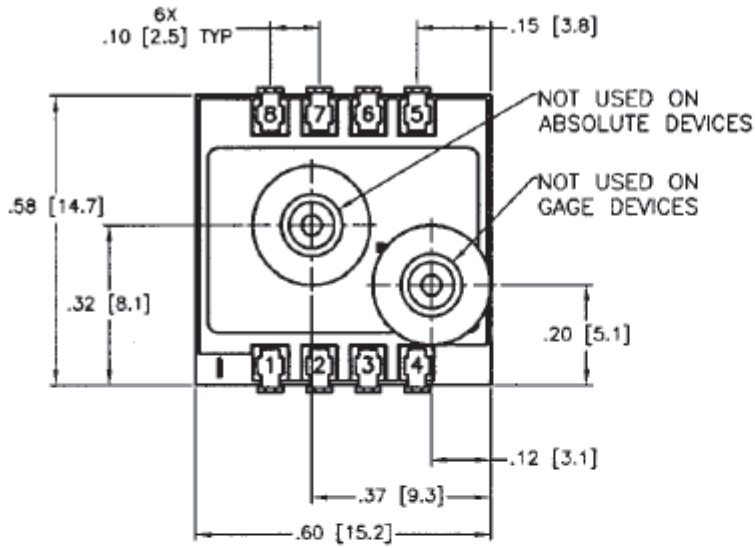
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-2		2	mV	
Pressure Non Linearity	-0.1	±0.05	0.1	%Span	2
Pressure Hysteresis	-0.1	±0.01	0.1	%Span	
Input Resistance	2200	4000	5800	Ω	
Output Resistance		4200		Ω	
Temperature Error – Span	-0.5	±0.3	0.5	%Span	3
Temperature Error – 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

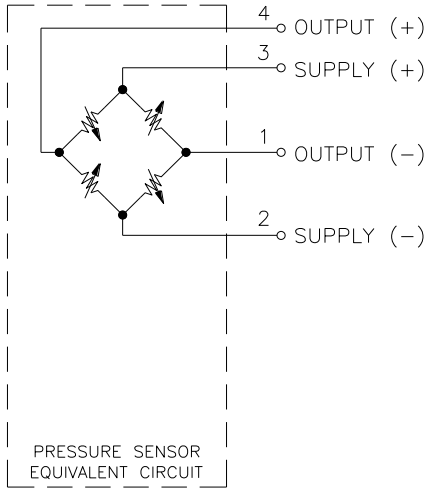




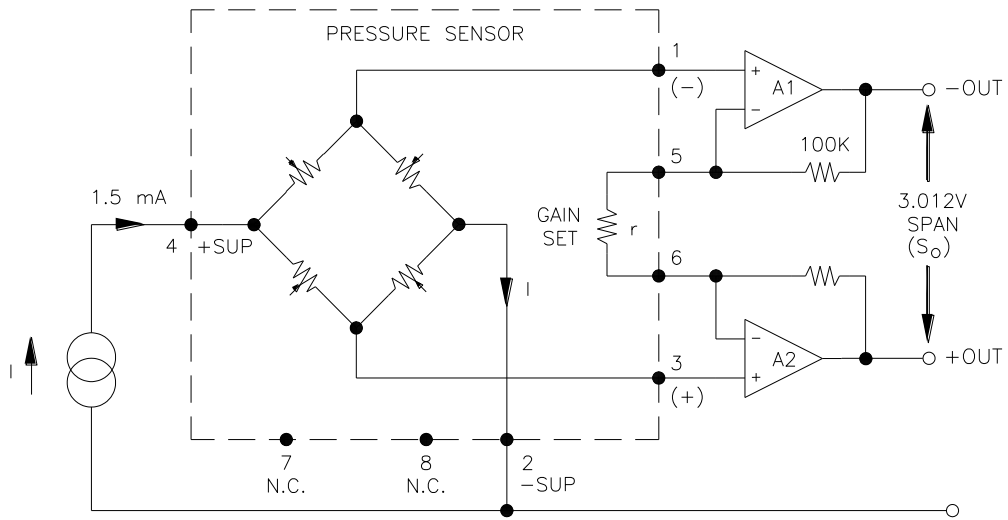
Sensor Pinout	
Pin No.	Function
1	-OUT
2	-EX
3	+OUT
4	+EX
5,6	GAIN
7,8	TEST

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 [ø3.18±0.13]

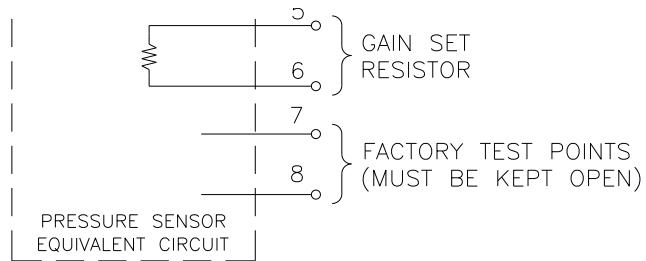
## CONNECTIONS



## APPLICATION SCHEMATIC



APPLICATION SCHEMATIC



ORDERING INFORMATION

<b>1230</b>		-	<b>030</b>	<b>A</b>	-	<b>3</b>	<b>B</b>
<b>Model Name</b>							
<b>Pressure range [psi]</b>							
002	015		030				
005	050		100				
<b>Pressure Type</b>							
A = Absolute		G=Gage					
D=Differential							
<b>Lead Configuration</b>							
1=Same side as Vent Tube							
3=Opposite Side as vent tube							
<b>Vent Type</b>							
L=Long Tube		N=No Tube					
S=Short Tube		B=Barb					

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