

# MODEL 1230 Ultrastable



**PC Board Mountable Pressure Sensor**

**0-100 mV Output**

**Absolute, Differential and Gage**

**Wide Temperature Range**

## DESCRIPTION

The **Model 1230** is a high performance temperature compensated, piezoresistive silicon pressure sensor packaged in a dual-in-line configuration. It is intended for cost sensitive applications where excellent performance and long-term stability are required.

Integral temperature compensation is provided over a range of  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  using laser-trimmed thick film resistors. An additional laser-trimmed resistor is included to normalize pressure sensitivity variations, for interchangeability of  $\pm 1\%$ , by programming the gain of an external differential amplifier.

Absolute, Differential and gage pressure ranges from 0-15 PSI 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 a compensated sensor using a current set resistor as opposed to a gain set resistor, please refer to the Model 1240.

## FEATURES

- ◆ Dual-in-line Package
- ◆  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  Compensated Temperature Range
- ◆  $\pm 0.1\%$  Non-linearity
- ◆  $\pm 0.5\%$  Temperature Performance
- ◆ 1.0% Interchangeable Span (provided by gain set resistor)
- ◆ Solid State Reliability
- ◆ Low Power

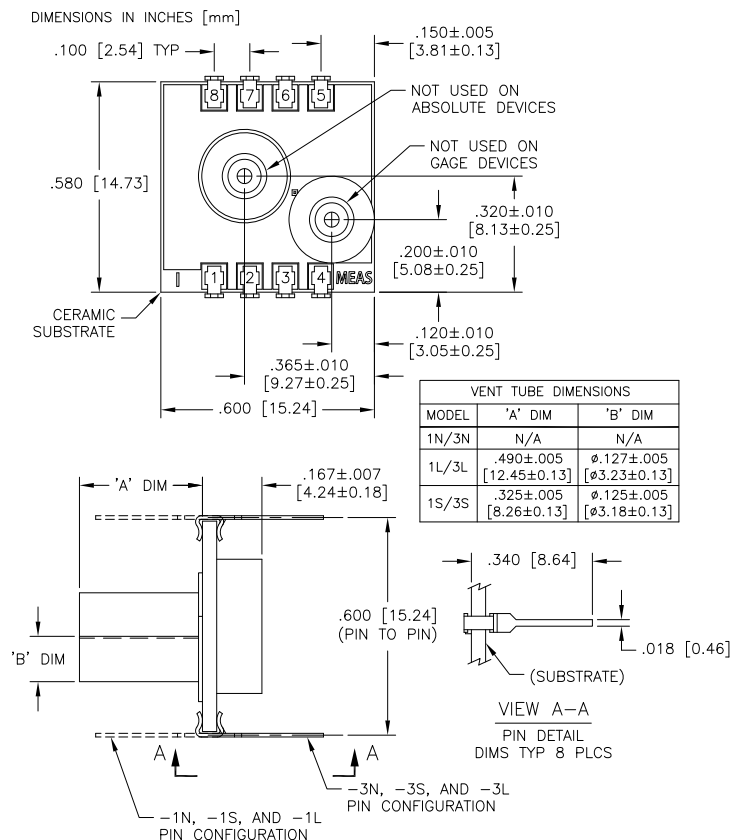
## APPLICATIONS

- ◆ Medical Instrumentation
- ◆ Calibration
- ◆ Process Control
- ◆ Factory Automation
- ◆ Air Flow Management
- ◆ Leak Detection

## Standard Ranges

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

## Dimensions



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## performance specifications

Supply Current: 1.5mA

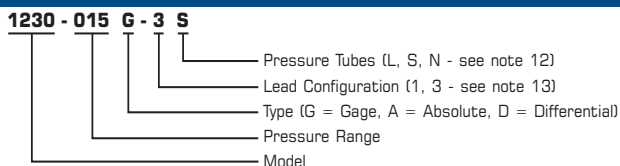
Ambient Temperature: 25°C (Unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	75	100	150	mV	1
Zero Pressure Output			2	±mV	3
Pressure Non-linearity		0.05	0.1	±% Span	2
Pressure Hysteresis		0.01	0.1	±% Span	
Input Resistance	3800	4400	5800	Ω	
Output Resistance		4200		Ω	
Temperature Error - Span		0.3	0.5	±% Span	3,4
Temperature Error - Zero		0.1	0.5	±% Span	3,4
Temperature Coefficient - Resistant		0.145		%/°C	4
Thermal Hysteresis - Zero		0.05		±% Span	4
Short Term Stability of Offset		0.05		±% Span	13
Short Term Stability of Span		0.05		±% Span	13
Long Term Stability of Offset		0.1		±% Span	14
Long Term Stability of Span		0.1		±% Span	14
Supply Current	0.5	1.5	2.0	mA	
Response Time (10% to 90%)		1.0		msec	5
Output Noise		1.0		μV p-p	6
Output Load Resistance	2			MΩ	7
Insulation Resistance (50 VDC)	50			MΩ	
Pressure Overload			3X	Rated	8
Operating Temperature	-40°C to +125°C				
Storage Temperature	-50°C to +150°C				
Media	Non-Corrosive Gases Compatible with Wetted Materials				9
Weight	3 Grams				

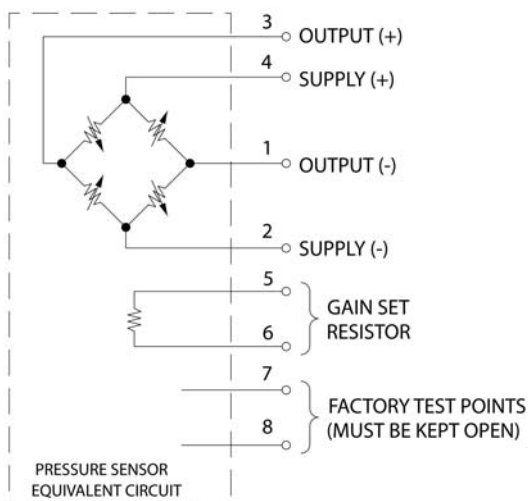
### Notes

- Output span of unamplified sensor.
- Best Fit Straight Line.
- For Model 1230, compensation resistors are an integral part of the sensor package; no additional external resistors are required. Pins 7 and 8 must be kept open.
- Temperature range: -20°C to +85°C in reference to 25°C.
- For a zero-to-full scale pressure step change.
- 10 Hz to 1kHz.
- Prevents increase of TC-Span due to output loading.
- 3X or 200 psi maximum, whichever is less. 20 psi for 2 psi and 5 psi versions.
- Wetted materials are glass, ceramic, silicon, RTV, nickel, gold, and aluminum.
- Soldering of lead pins: 250°C for 5 seconds, maximum.
- Tube length: L=490 ± 5 mil, S=325 ± 5 mil, N=no tube.
- Lead pins can either be in the same or the opposite direction as the pressure tube. See Connections/Dimensions drawing for lead configurations.
- Normalized offset bridge voltage: 7 days.
- 1 year.

### Ordering Information



### Connections



### Application Schematic

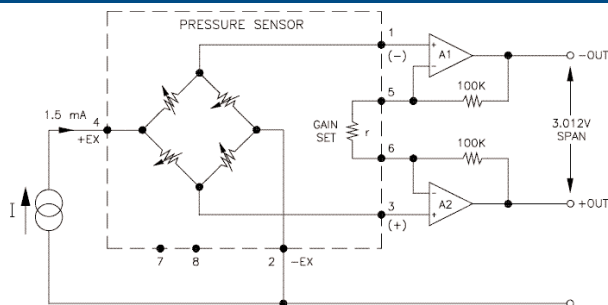


FIGURE 1: GAIN SET CIRCUIT

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