

27



37

RoHS

27 AND 37

UltraStable™

SPECIFICATIONS

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

The 27 and 37 UltraStable™ are high performance, temperature compensated, piezoresistive silicon pressure sensors packaged in a TO-8 configurations. It uses Measurement Specialties' proprietary UltraStable™ die to provide excellent performance and long-term stability over wide temperatures.

Gage and differential pressure ranges from 0-15 to 0-250 psi are available. Integral temperature compensation is provided over a range of -20ºC to +85ºC 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%.

Please refer to Models 23 and 33 for information on products with operating pressures less than 0-15 psi.

FEATURES

TO-8 Package
-20ºC to +85ºC Compensated
Temperature Range
±0.1% Non Linearity
1.0% Interchangeable Span
(provided by gain set resistor)
Solid State Reliability

APPLICATIONS

Medical Instruments
Process Control
Factory Automation
Handheld Calibrators
Environmental Control

STANDARD RANGES

	27	37
Range	**psig**	**psid**
0 to 15	♠	♠
0 to 30	♠	♠
0 to 50	♠	♠
0 to 100	♠	♠
0 to 250		♠

PERFORMANCE SPECIFICATIONS

Supply Current: 1.5 mA
Ambient Temperature: 25°C (unless otherwise specified)

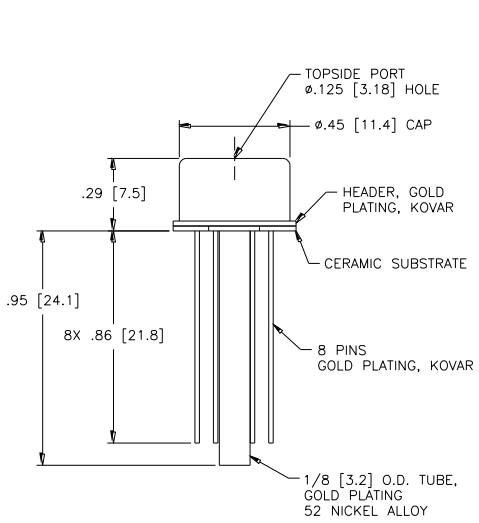
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-2		2	mV	
Pressure Non Linearity	-0.1	±0.05	0.1	%Span	2
Pressure Hysteresis	-0.1	±0.01	0.1	%Span	
Input Resistance	2200	4000	5800	Ω	
Output Resistance		4200		Ω	
Temperature Error – Span	-0.5	±0.3	0.5	%Span	3
Temperature Error – Zero	-0.5	±0.1	0.5	%Span	3
Temperature Coefficient – Resistance		0.15		%/ºC	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	
Operating Temperature	-40		+125	°C	
Storage Temperature	-50		+150	°C	
Weight			3	grams	
Solder Temperature	250ºC Max 5 Sec.				
Media	Non-Corrosive Dry Gases Compatible with Silicon, Pyrex, RTV, Gold, Nickel, and Aluminum				

Notes

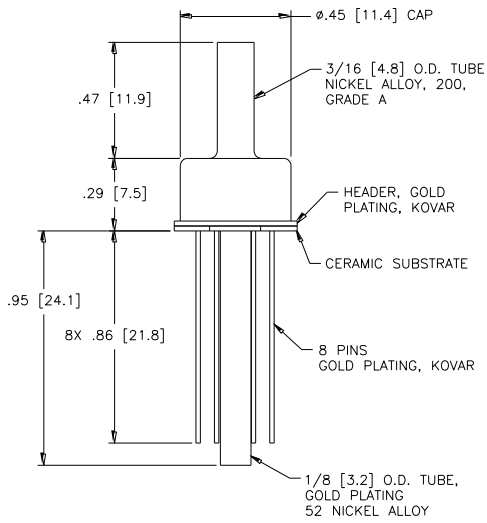
1. Ratiometric to supply current. For 250 psi devices, the minimum span value is 62 mV.
2. Best fit straight line.
3. Maximum temperature error between -20°C and +85°C with respect to 25°C.
4. Short term stability over 7 days with constant current and temperature.
5. Long term stability over a one year period with constant current and temperature.
6. For a zero-to-full scale pressure step change.
7. For topside applications, 2X maximum for 250 psi device. For backside applications, 3X not to exceed 100 psi on all ranges

DIMENSIONS

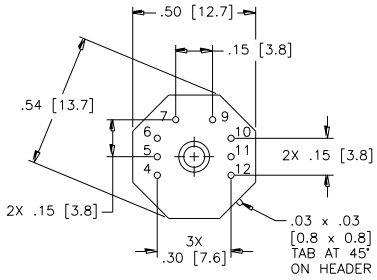
DIMENSIONS ARE IN INCHES [mm]



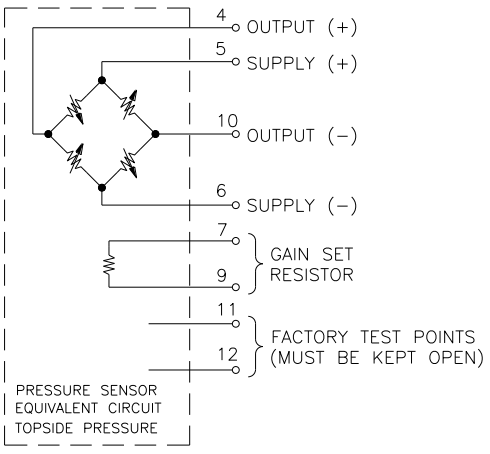
MODEL 27

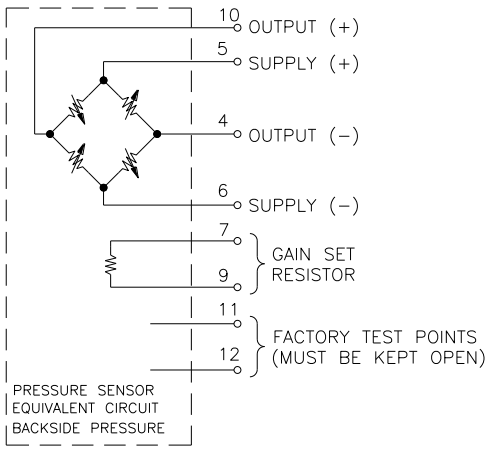


MODEL 37

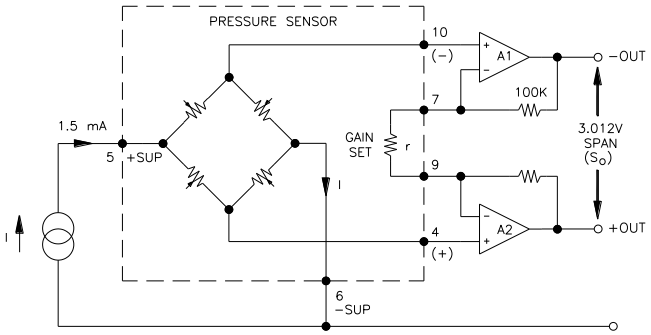


CONNECTIONS

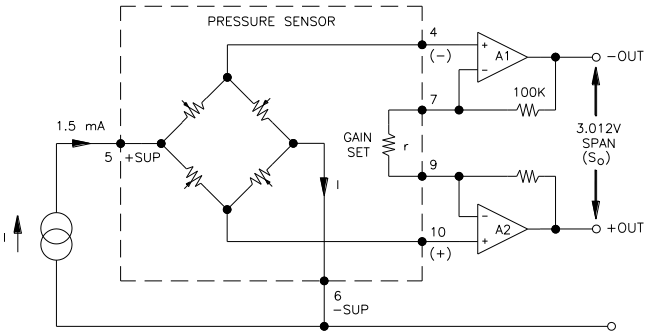




APPLICATION SCHEMATIC

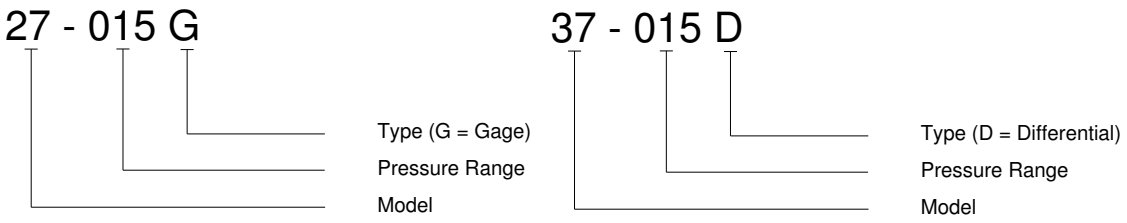


TOPSIDE PRESSURE



BACKSIDE PRESSURE

ORDERING INFORMATION



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