

## 17 and 47 UltraStable™



17



47

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



### DESCRIPTION

The 17 and 47 UltraStable™ are high performance, temperature compensated, piezoresistive silicon pressure sensors packaged in a TO-8 configuration. It uses Measurement Specialties' proprietary UltraStable™ die to provide excellent performance and long-term stability over wide temperatures.

Gage and absolute pressure ranges from 0-15 to 0-250 psi are available. 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%.

Please refer to 13 and 43 for information on products with operating pressures less than 0-15 psi.

### FEATURES

- TO-8 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
- Process Control
- Factory Automation
- Altitude Measurement
- Vacuum Measurement
- Handheld Calibrators

### STANDARD RANGES

Range	psig	psia
0 to 15	•	•
0 to 30	•	•
0 to 50	•	•
0 to 100	•	•
0 to 250	•	•

# 17 and 47 UltraStable™

## 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	
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, Nickel, and Aluminum				

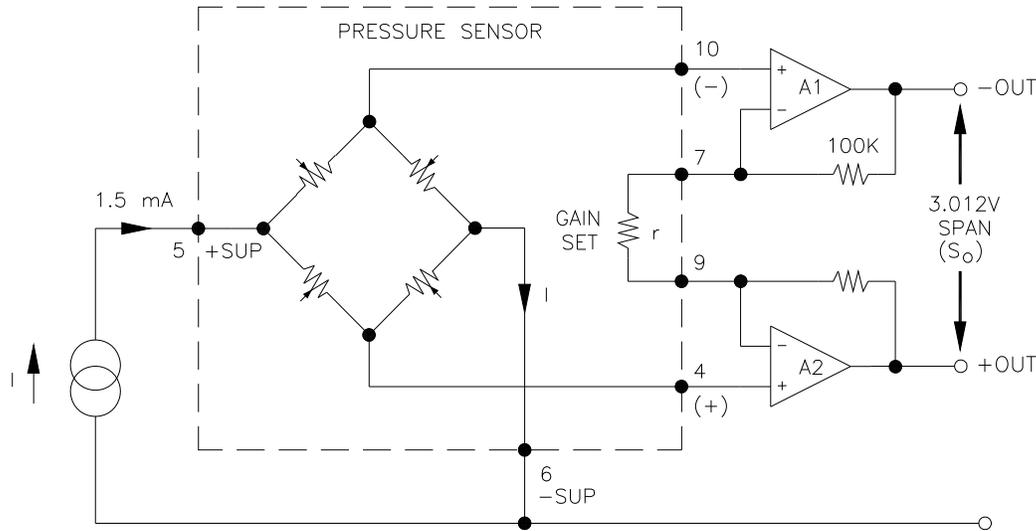
### Notes

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. 2X maximum for 250 psi device.



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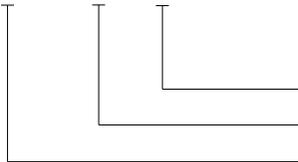
## APPLICATION SCHEMATIC



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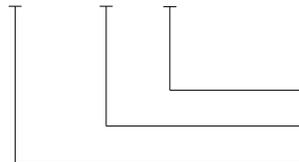
## ORDERING INFORMATION

17 - 015 G



Type (G = Gage, A = Absolute)  
Pressure Range  
Model

47 - 015 G



Type (G = Gage, A = Absolute)  
Pressure Range  
Model

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