Model 33 Medium Pressure

PC Board Mountable Pressure Sensor
0-100 mV Output
Differential Pressure
Temperature Compensated

- Medical Instrumentation
- HVAC
- Process Control
- Vacuum Measurement
- Air Flow Management

FEATURES

- TO-8 Package
- ±0.1% Non-linearity
- ±0.5% Temperature Performance
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability
- Low Power

STANDARD RANGES

Range	psid
0 to 2	●
0 to 5	●
0 to 10	●
0 to 15	●
0 to 30	●
0 to 50	●
0 to 100	●
0 to 250	●

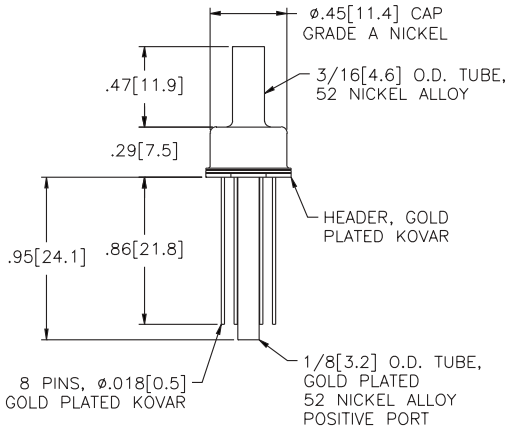
DESCRIPTION

The Model 33 is a temperature compensated, piezoresistive silicon pressure sensor packaged in TO-8 configurations. It provides excellent performance and long-term stability.

Differential pressure ranges from 0-2 PSI to 0-250 PSI are available. Integral temperature compensation is provided over a range of 0-50°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 the low pressure section for information on products with operating pressures less than 0-2 PSI. An uncompensated sensor (Model 30) is also available. For sensors in a dual-in-line package please refer to the Models 1210 and 1220. Please contact the factory for additional information.

DIMENSIONS



DIMENSIONS ARE IN INCHES [mm]

PERFORMANCE SPECIFICATIONS

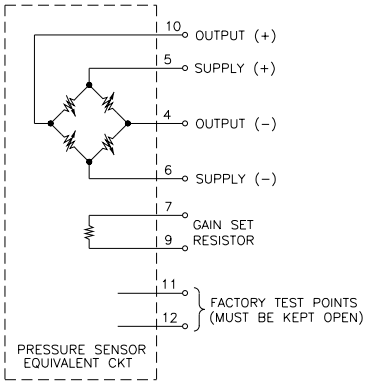
Supply Current: 1.5mA
Ambient Temperature: 25°C (Unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Full Scale Output Span	75	100	150	mV	
Full Scale Output Span (2 psi version)	30		60	mV	
Zero Pressure Output			2	±mV	
Pressure Non-linearity		0.05	0.10	±% Span	1
Pressure Hysteresis		0.01	0.05	±% Span	
Input & Output Resistance	2500	4400	6000	Ω	
Temperature Error – Span		0.3	0.5	±% Span	2
Temperature Error – Zero		0.1	0.5	±% Span	1, 2
Thermal Hysteresis – Span		0.1		±% Span	2
Thermal Hysteresis – Zero		0.1		±% Span	2
Supply Current		1.5	2.0	mA	3
Response Time		1.0		msec	4
Output Noise		1.0		μV p-p	5
Output Load Resistance	2			MΩ	
Insulation Resistance (50 VDC)	50			MΩ	6
Pressure Overload			3X	Rated	7, 9
Operating Temperature	–40°C to +125°C				
Storage Temperature	–50°C to +150°C				
Acceleration	50g Max				
Shock	1000g Peak for 0.5 mS				
Vibration	20g Peak at 10 to 2000 Hz				
Media	Non-Corrosive Gases				8
Weight	3 Grams				

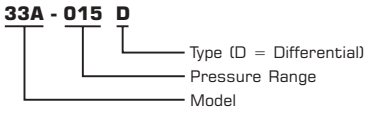
Notes

1. Best Fit Straight Line. For 2 psi output span is 30-60 mV and TC zero temperature error is ±1.25%.
2. Temperature range 0-50°C in reference to 25°C.
3. Guarantees input/output ratiometricity.
4. For a zero-to-full scale pressure step change.
5. 10 Hz to 1kHz.
6. Between case and sensing element.
7. For top side application, 3X not to exceed 500 psi on ranges: 0-10 psi to 0-250 psi, 20 psi for 2 psi and 5 psi versions.
8. For top entry versions, wetted materials are silicon, aluminum, gold, RTV, glass, and nickel. For bottom entry versions, wetted materials are silicon, RTV, gold, and glass.
9. For backside application, 3X not to exceed 100 psi on all ranges.

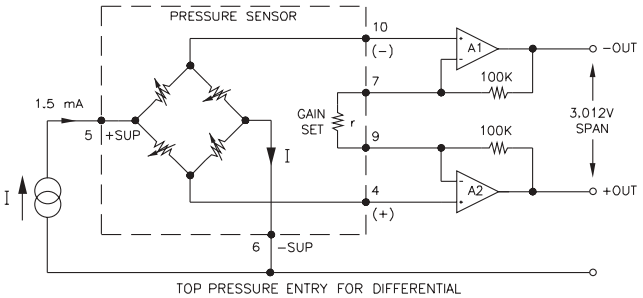
CONNECTIONS



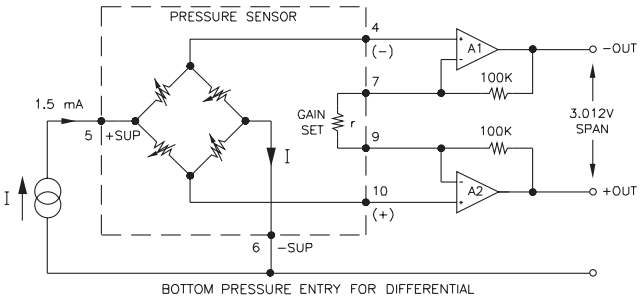
ORDERING INFORMATION



APPLICATION SCHEMATIC



TOP PRESSURE ENTRY FOR DIFFERENTIAL



BOTTOM PRESSURE ENTRY FOR DIFFERENTIAL

June 2001

Feel free to contact customer service with any questions at
Toll free 1(800)745-8008; Phone (757)766-1500; Fax (757)766-4297