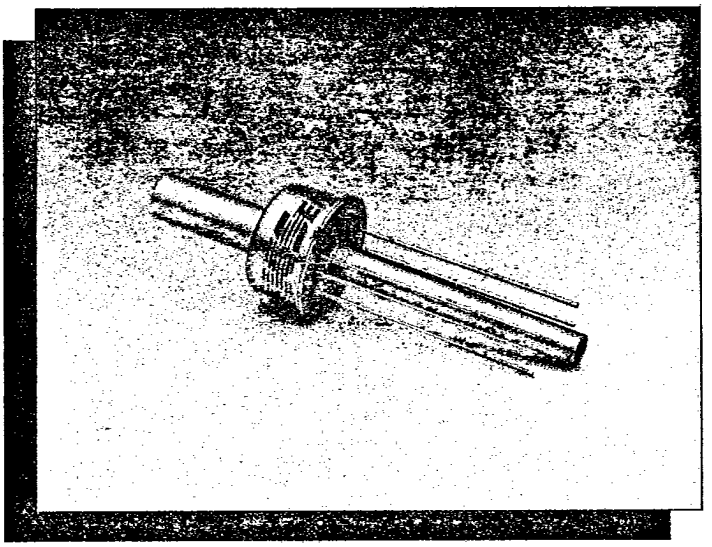
OEM Pressure Sensor Differential PC Board Mountable Serialized



Features

- Solid State Reliability
- 100 mV Output Span
- Ratiometric
- Infinite Resolution
- Low Noise
- ±0.1% Accuracy
- Low Power
- Humidity Resistant
- Low Cost
- Performance Graded

Typical Applications

- Medical
- Process Control
- Airspeed
- Flow Measurement
- Environmental Control
- Robotics
- Refrigeration
- Industrial Controls
- Water Pressure
- Pollution Control

Standard Ranges

0	to	5 psid
0	to	10 psid
0	to	15 psid
0	to	30 psid
0	to	50 psid
0	to	100 psid
0	to	250 psid

Description

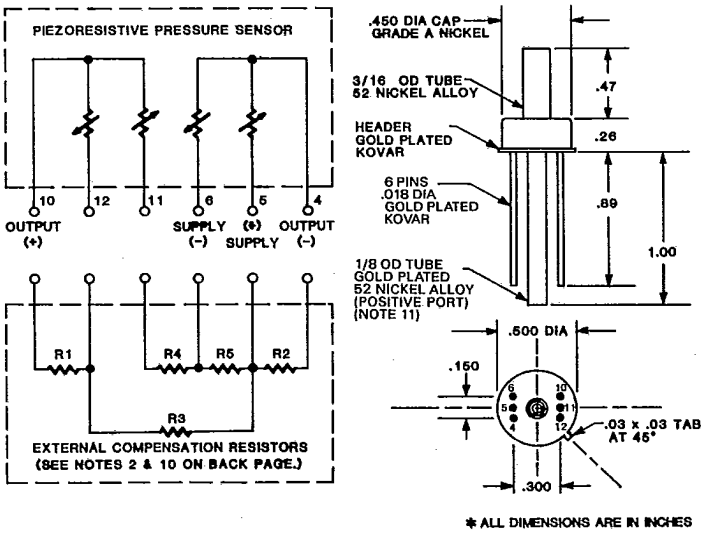
The Model 30 is a bi-directional, solid state, piezoresistive pressure sensor that is packaged in a TO-8 configuration and is intended for use with corrosive or non-corrosive media on the bottom port and non-corrosive media on the top port where excellent long-term stability is also required. Each sensor is individually serialized.

Temperature compensation and calibration over 0-50°C is accomplished with the addition of only 3 external resistors, the values of which are included with each sensor.

Three performance grades are available in differential pressure from 0-5 psi to 0-250 psi for the Model 30 and 0-5 psi to 0-15 psi for the Model 30N.

For limited temperature range and auto-zero applications where external resistor compensation data is not required, a fourth grade, the Model 31, is also available and is similar to the Model 30C at 25°C.

Connections/Dimensions



Performance Specifications

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

PARAMETER	GRADE A MIN	A TYP	A MAX	B MIN	B TYP	B MAX	C MIN	C TYP	C MAX	UNITS	NOTES
Full-Scale Output Span	75	100	150	75	100	150	50			mV	2
Zero Pressure Output			5			5			5	±mV	2, 10
Linearity		0.05	0.10			0.25			0.50	±% Span	3
Pressure Hysteresis		0.01	0.05			0.10			0.15	±% Span	
Input & Output Resistance	4000	5000	6000		5000	6000		5000		Ω	
Temperature Coefficient-Span		0.3	0.5			1.0			2.0	±% Span	1, 2, 10
Temperature Coefficient-Zero		0.1	0.5			1.0			2.0	±% Span	1, 2
Temperature Coefficient-Resistance		.22			.22			.22		%/°C	1, 2
Thermal Hysteresis-Span		0.1			0.2			0.3		±% Span	1
Thermal Hysteresis-Zero		0.1			0.2			0.3		±% Span	1
Supply Current		1.5	2.0		1.5	2.0		1.5	2.0	mA	4
Response Time (10% to 90%)		1.0			1.0			1.0		mS	5
Output Noise		1.0			2.0			5.0		μV p-p	6
Output Load Resistance	2			2			2			MΩ	7
Insulation Resistance (50VDC)	50			50			50			MΩ	
Long Term Stability		0.2			0.5			1.0		±% Span/year	
Pressure Overload			3X			3X			3X	Rated	8
Operating Temperature	−40°C to +125°C										
Storage Temperature	−55°C to +150°C										
Acceleration	50g Max										
Shock	1000g Peak for 0.5 mS										
Vibration	20g Peak at 10 to 2000 Hz										
Media	Liquids and Gases compatible with wetted materials										9
Weight	3 grams										

Notes

1. Temperature range: 0-50°C in reference to 25°C.
2. With external resistors (R_1 or R_2), (R_3 or R_4) and R_5 included in circuit on Front Page. If R_1 is required then R_2 is left open ($R_2 = \infty$) and vice versa. If R_3 is required then R_4 is a short ($R_4 = 0$) and vice versa. See Application Note TN-002.
3. Best fit straight line.
4. Guarantees output/input ratiometricity.
5. For a zero-to-full scale pressure step change.
6. 10Hz to 1kHz.
7. Prevents increase of TC-Span due to output loading.
8. 3X or 500 psi maximum, whichever is less.
9. Wetted materials are gold, RTV (30N only), silicon and glass on the bottom port (corrosive or non-corrosive media) and nickel and silicone gel on the top port (non-corrosive media). Model 30N is available in 5, 10 and 15 psi ranges only.
10. External Compensation Resistors
    a. Model 30: A computer printout is supplied with each sensor detailing the values of the 3 required external resistors along with open and short information for the other two locations.
    b. Model 31: Basic sensor. Specifications at 25°C are equivalent to Model 30C. No temperature testing is performed. Customer determines necessary external resistor values.
    c. Models 32 & 33 (See Data Sheets): Compensation resistors are an integral part of the sensor package. No additional external resistors are required. Also, Model 33 is interchangeable; see Application Note TN-003.
11. Soldering of bottom tube: 250°C for 5 seconds maximum. Heat-sink tube while soldering.

Ordering Information

30 N B—005 G
- G — Type (G=Gage)
- 005 — psi Range
- B — Grade
- N — See Note 9
- 30 — Model

Represented By

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