

OEM Pressure Sensor Gage and Absolute Temperature Compensated Serialized

Features

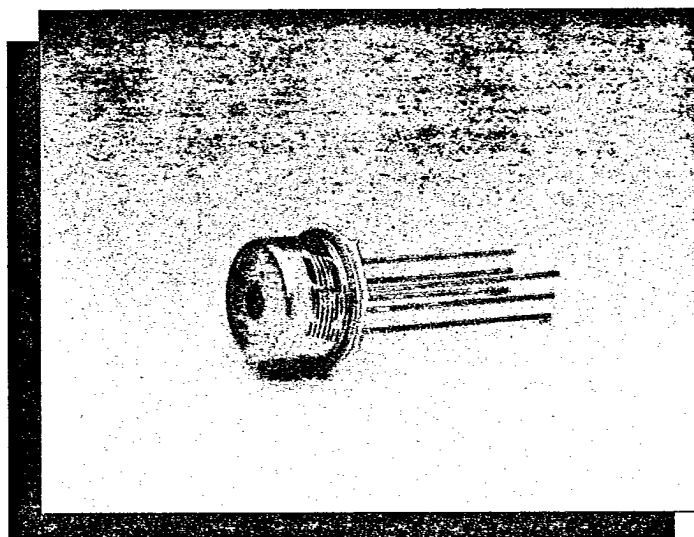
- Solid State Reliability
- $\pm 1\text{mV}$ Zero Output
- Infinite Resolution
- 100 mV Output Span
- Ratiometric
- $\pm 0.1\%$ Accuracy
- Low Noise
- Humidity Resistant
- Low Power
- Performance Graded

Typical Applications

- Medical
- Computer Peripherals
- Robotics
- Vacuum Measurement
- Avionics
- Automotive
- Industrial Controls
- Barometric Sensing
- Leak Detection
- Environmental Control

Standard Ranges

0 to 5 psig	0 to 5 psia
0 to 10 psig	0 to 10 psia
0 to 15 psig	0 to 15 psia
0 to 30 psig	0 to 30 psia
0 to 50 psig	0 to 50 psia
0 to 100 psig	0 to 100 psia
0 to 250 psig	0 to 250 psia



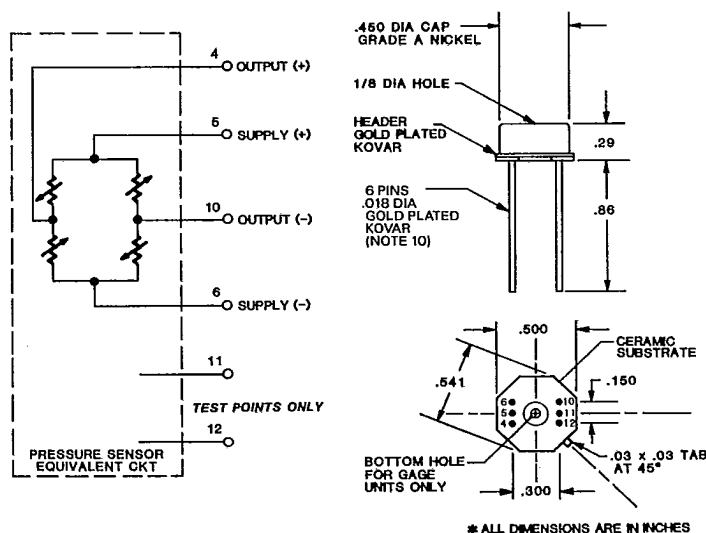
Description

The Model 42 is a compact, solid state, piezoresistive pressure sensor that is packaged in a TO-8 configuration and is intended for use with non-corrosive gaseous media where minimal package size and excellent long-term stability are both required. Each sensor is individually serialized. If a top pressure port is preferred see the Model 10 series.

Integral temperature compensation is provided along with zero balancing over 0-50°C with laser trimmed resistors. No external resistors are required.

Three performance grades are available in both gage and absolute pressure from 0-5 psi to 0-250 psi.

Connections/Dimensions



Model 42

4677375 I C SENSORS INC

83D 00078 D

Performance Specifications

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

T-65-13

PARAMETER	GRADE									UNITS	NOTES
	A			B			C				
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
Full-Scale Output Span	75	100	150	75	100	150	50			mV	
Zero Pressure Output			1			2			5	±mV	2
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	2500	4400	6000		4400	6000		4400		Ω	
Temperature Coefficient-Span		0.3	0.5			1.0			2.0	±% Span	1, 2
Temperature Coefficient-Zero		0.1	0.5			1.0			2.0	±% Span	1, 2
Temperature Coefficient-Resistance		.22			.22			.22		%/°C	1
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	Non-corrosive Gases										9
Weight	3 grams										

Notes

1. Temperature range: 0-50°C in reference to 25°C.
2. Compensation resistors are an integral part of the sensor package; no additional external resistors are required. Pins 11 and 12 must be kept open. For interchangeable part see Model 43 Data Sheet and Application Note TN-003.
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 nickel and silicone gel. See Model 20 Series for corrosive and conductive media applications.
10. Soldering of lead pins: 250°C for 5 seconds maximum.

Ordering Information

42 B-005 G
 Type (G=Gage, A=Absolute)
 psi Range
 Grade
 Model

Represented By

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