

PC Board Mountable Pressure Sensor

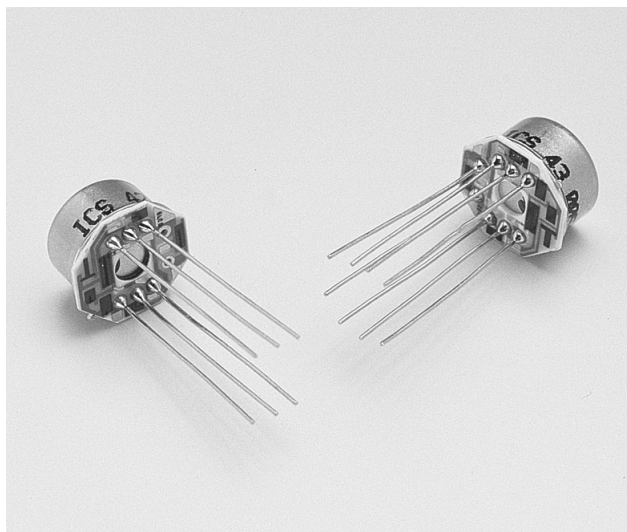
0-10" H₂O to 0-1 PSI

0-100 mV Output

Low Cost

Temperature Compensated

- ▶ Medical Instrumentation
- ▶ HVAC
- ▶ Factory Automation
- ▶ Process Control
- ▶ Avionics
- ▶ Air Flow Management



FEATURES

- ▶ Solid State Reliability
- ▶ 100mV Output Span
- ▶ Interchangeable
- ▶ Temperature Compensated
- ▶ Low Power

STANDARD RANGES

Range	psi	in H ₂ O
0 to 1	●	
0 to 10		●

DESCRIPTION

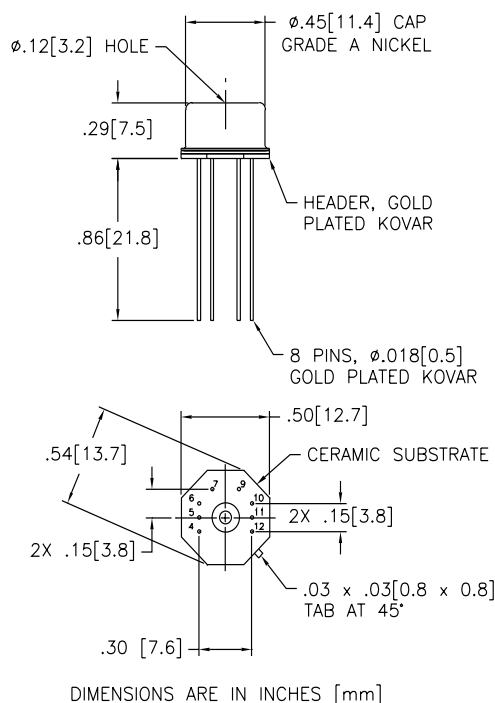
The Models 42 and 43 are temperature compensated, piezoresistive silicon pressure sensors packaged in TO-8 configurations. They provide excellent performance and long-term stability.

Integral temperature compensation is provided over a range of 0-50°C using a laser-trimmed ceramic compensation board. An additional laser-trimmed resistor is included in the Model 43 which can be used to adjust the gain of an external differential amplifier and provide sensitivity interchangeability of $\pm 1\%$.

The sensing element used in low pressure Models 42 and 43 has a double bossed design that produces a high sensor output of 100 mV (typical) at 1 PSI.

The Models 42 and 43 are also available in ranges up to 0-250 PSI. For sensors in a dual-in-line package please refer to the Models 1210 and 1220. For additional information regarding uncompensated sensors, please contact the factory.

DIMENSIONS



PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

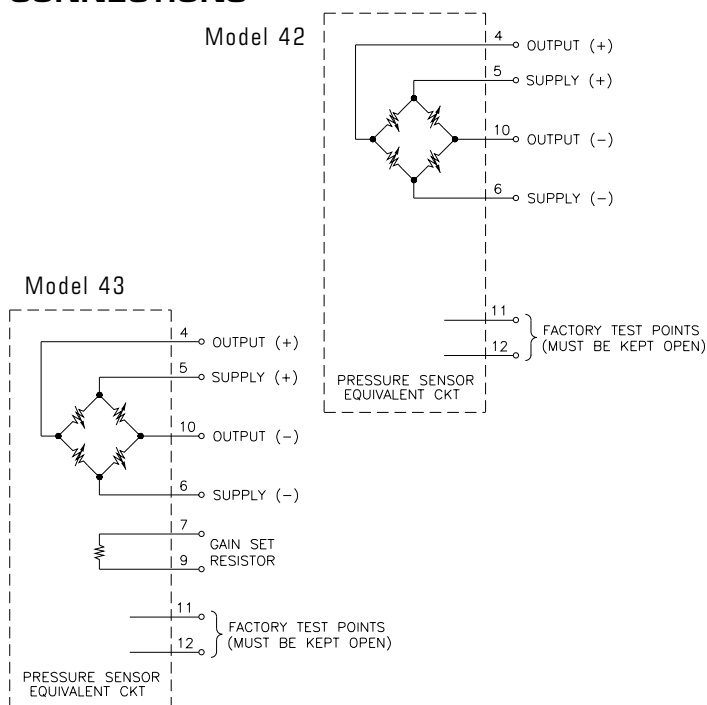
Ambient Temperature: 25°C (Unless otherwise specified)

PARAMETERS	PRESSURE RANGE						UNITS	NOTES
	0 - 1 psi			0 - 10 in H ₂ O (Note 8)				
	MIN	TYP	MAX	MIN	TYP	MAX		
Full Scale Output Span	75	100	150	25	35	50	mV	1
Zero Pressure Output			2			2	±mV	2
Pressure Non-linearity		0.1	0.25		0.05	0.1	±% Span	3
Pressure Hysteresis		0.01	0.05		0.01	0.1	±% Span	
Input & Output Resistance	2500	4400	6000	2500	4400	6000	Ω	
Temperature Error – Span		0.5	1.0		0.5	1.0	±% Span	4, 5
Temperature Error – Zero		0.5	1.0		1.0	3.0	±% Span	4, 5
Thermal Hysteresis – Zero		0.1			0.2		±% Span	4
Supply Current		1.5	2.0		1.5	2.0	mA	
Response Time (10% TO 90%)		1.0			1.0		mS	5
Output Noise		1.0			1.0		μV p-p	6
Output Load Resistance	2			2			MΩ	
Insulation Resistance (50 VDC)	50			50			MΩ	7
Long Term Stability		0.2			0.5		±% Span/yr	
Pressure Overload			20			20	psi	
Operating Temperature	-40°C to +125°C							
Storage Temperature	-50°C to +150°C							
Media	Non-corrosive Gases Compatible with Wetted Materials							9
Weight	3 Grams							

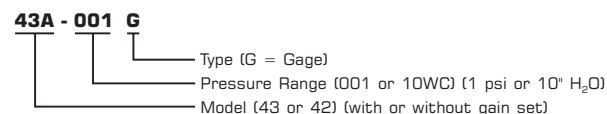
Notes

- Output span of unamplified sensor.
- For most models, compensation resistors are in an integral part of the sensor package; no additional external resistors are required. Test pins must be kept open.
- Best Fit Straight Line.
- Temperature range: 0-50°C in reference to 25°C.
- For a zero-to-full scale pressure step change.
- 10 Hz to 1 kHz.
- Between case and sensing element.
- 0-10" Water column performance is based on testing at 1 psi full scale pressure.
- Wetted materials are silicon, aluminum, gold, RTV, glass, and nickel.

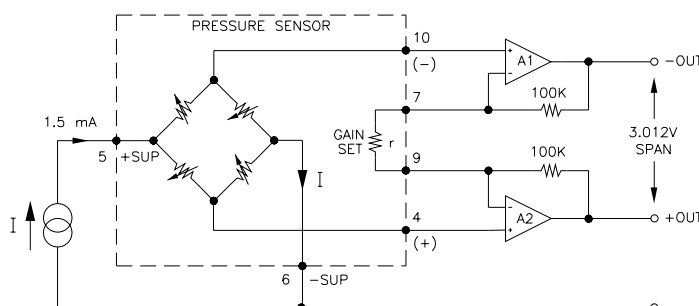
CONNECTIONS



ORDERING INFORMATION



APPLICATION SCHEMATIC



April 2000

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