86
Compensated

SPECIFICATIONS

- **316L SS Pressure Sensor**
- **Small Profile**
- **0 - 100mV Output**
- **Absolute and Gage**
- **Temperature Compensated**

The 86 compensated is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 86 compensated is designed for o-ring mounting and OEM applications where compatibility with corrosive media is required.

The sensing package utilizes silicon oil to transfer pressure from the 316L stainless steel diaphragm to the sensing element. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensation and offset correction. An additional laser trimmed resistor is included which can be used to adjust an external differential amplifier and provide span interchangeability to within ±1%.

Please refer to the 86 uncompensated and constant voltage datasheets for more information on different features of the 86.

FEATURES

- O-Ring Mount
- -40ºC to +125ºC Operating Temperature Range
- ±0.2% Pressure Non Linearity
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

APPLICATIONS

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Partial Vacuum Gas Measurement
- Pressure Transmitters
- Tank Level Systems (RV & Industrial)

STANDARD RANGES

Range	psig	psia
0 to 5	•	•
0 to 15	•	•
0 to 30	•	•
0 to 50	•	•
0 to 100	•	•
0 to 300	•	•
0 to 500	•	•

PERFORMANCE SPECIFICATIONS

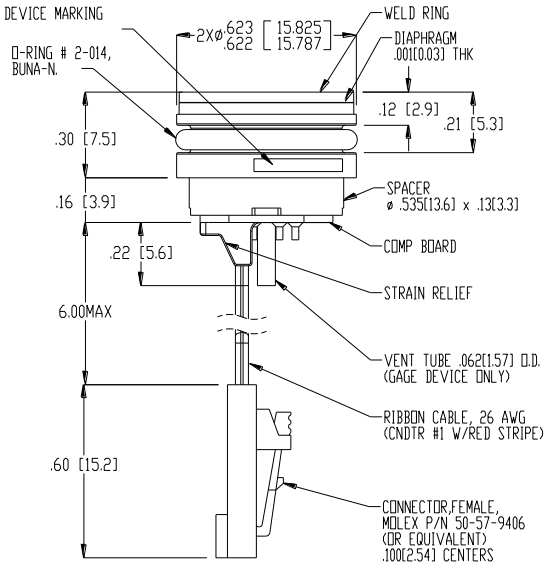
Supply Current: 1.5mA
Ambient Temperature: 25°C (unless otherwise specified)

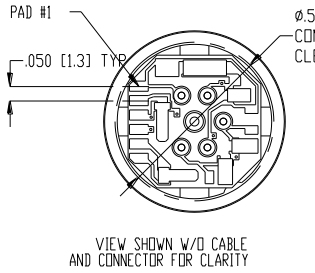
PARAMETERS	005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span	50	100	150	75	100	150	mV	1
Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	2
Pressure Non Linearity	-0.2		0.2	-0.1		0.1	%Span	3
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02		%Span	
Input Resistance	2.5K	5.0K	6.5K	2.0K	3.5K	5.8K	Ω	
Output Resistance	4.0K		7.0K	4.0K		6.0K	Ω	
Temperature Error – Span	-1.0		1.0	-0.75		0.75	%Span	4
Temperature Error – Offset	-1.5		1.5	-0.50		0.50	%Span	4, 5
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Long Term Stability – Span		±0.10			±0.10		%Span/Year	
Long Term Stability – Offset		±0.25			±0.10		%Span/Year	
Supply Current	0.5	1.5	2.0	0.5	1.5	2.0	mA	6
Output Load Resistance	5M			5M			Ω	7
Insulation Resistance (50Vdc)	50M			50M			Ω	8
Output Noise (10Hz to 1KHz)		1.0			1.0		uV p-p	
Response Time (10% to 90%)		0.1			0.1		ms	
Pressure Overload			3X			3X	Rated	
Pressure Burst			4X			4X	Rated	9
Compensated Temperature	0		50	-20		+85	°C	
Operating Temperature	-20		+70	-40		+125	ºC	10
Storage Temperature	-50		+125	-50		+125	ºC	10
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel							
Media – Reference Port	Compatible with Silicon, Pyrex, Gold, Fluorosilicone Rubber, and 316/316L Stainless Steel							

Notes

1. For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
2. Measured at vacuum for absolute (A) and at ambient for gage (G).
3. Best fit straight line.
4. Over the compensated temperature range with respect to 25°C.
5. 15-psi range sensors have a temperature error of °0.75% (max) of zero from -20°C to +85°C.
6. Guarantees output/input ratiometricity.
7. Load resistance to reduce measurement errors due to output loading.
8. Between case and sensing element.
9. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
10. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

DIMENSIONS

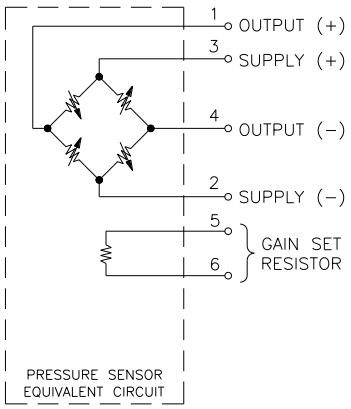




PAD NO	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	

DIMENSIONS ARE IN INCHES [mm]

CONNECTIONS



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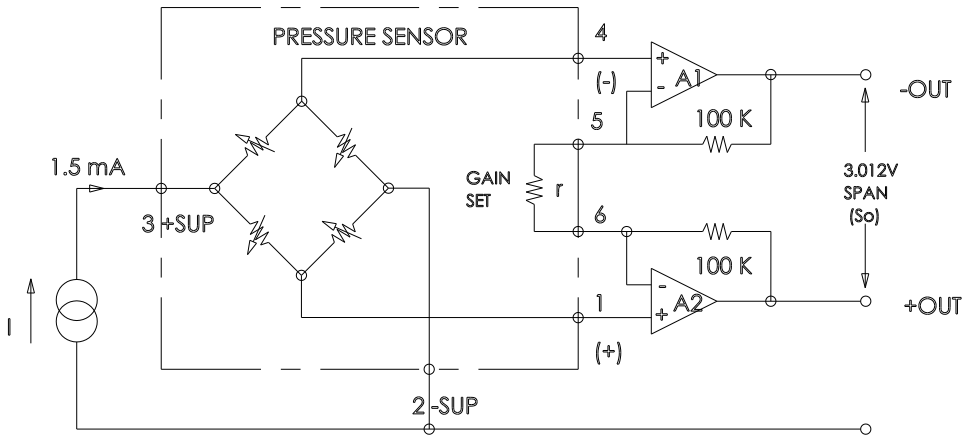
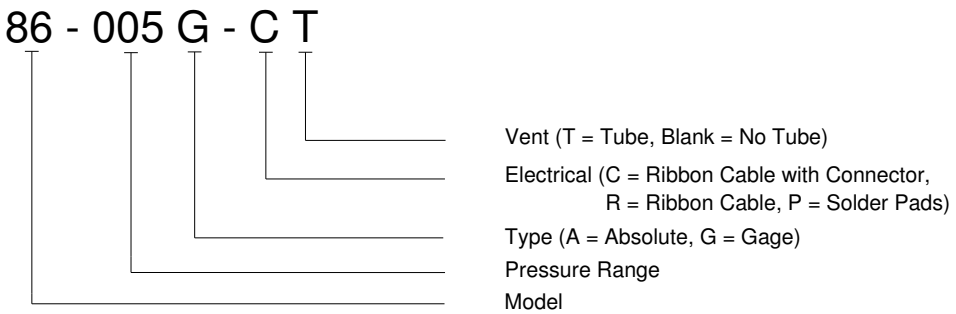
APPLICATION SCHEMATIC



ORDERING INFORMATION



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