

## 86 Constant Voltage



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

### DESCRIPTION

The 86 constant voltage is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 86 constant voltage 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.

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

### FEATURES

- O-Ring Mount
- -40°C to +125°C Operating Temperature Range
- Up to  $\pm 0.1\%$  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	•	•

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### PERFORMANCE SPECIFICATIONS

Supply Voltage: 10Vdc

Ambient Temperature: 25°C (unless otherwise specified)

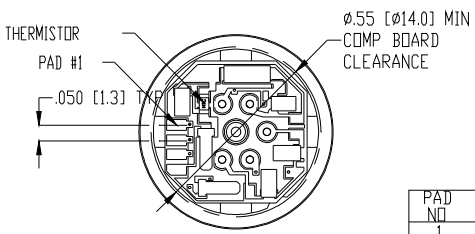
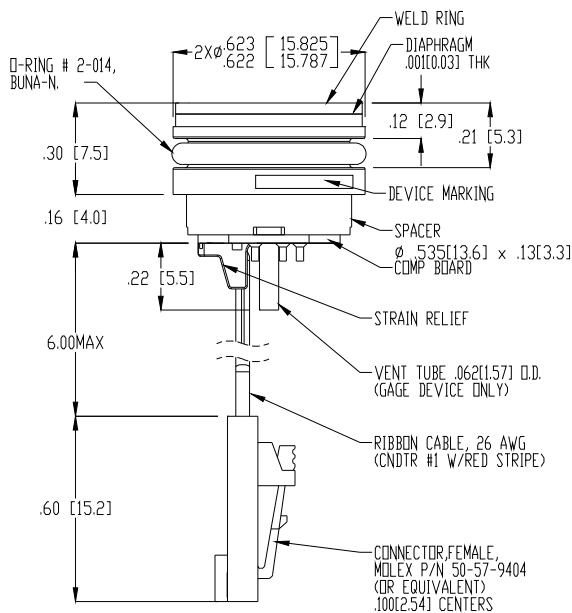
PARAMETERS	005PSI			≥2015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span	98	100	102	99	100	101	mV	
Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	1
Pressure Non Linearity	-0.2		0.2	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02		%Span	
Input Resistance	5.5K	9.0K	12.5K	5.5K	9.0K	12.5K	Ω	
Output Resistance	4.0K		7.0K	4.0K		6.0K	Ω	
Temperature Error – Span	-1.0		1.0	-1.0		1.0	%Span	3
Temperature Error – Offset	-1.5		1.5	-1.0		1.0	%Span	3
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	3
Long Term Stability – Span		±0.10			±0.10		%Span/Year	
Long Term Stability – Offset		±0.25			±0.10		%Span/Year	
Supply Voltage		10	14		10	14	Vdc	4
Output Load Resistance	5M			5M			Ω	5
Insulation Resistance (50Vdc)	50M			50M			Ω	6
Output Noise (10Hz to 1KHz)		1.0			1.0		μV p-p	
Response Time (10% to 90%)		0.1			0.1		ms	
Pressure Overload			3X			3X	Rated	
Pressure Burst			4X			4X	Rated	7
Compensated Temperature	0		50	-20		+85	°C	
Operating Temperature	-20		+70	-40		+125	°C	8
Storage Temperature	-40		+125	-40		+125	°C	8
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. Measured at vacuum for absolute (A) and at ambient for gage (G).
2. Best fit straight line.
3. Over the compensated temperature range with respect to 25°C.
4. Guarantees output/input ratiometricity.
5. Load resistance to reduce measurement errors due to output loading.
6. Between case and sensing element.
7. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
8. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

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## DIMENSIONS

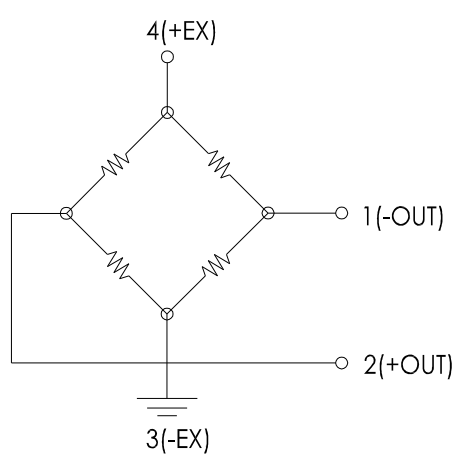


VIEW SHOWN W/O CABLE AND CONNECTOR FOR CLARITY

PAD NO	FUNCTION
1	-OUT
2	+OUT
3	-EX
4	+EX

DIMENSIONS ARE IN INCHES [mm]

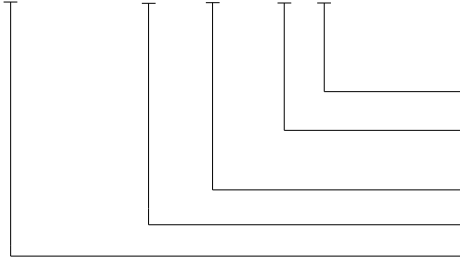
## APPLICATION SCHEMATIC



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### ORDERING INFORMATION

86CV - 005 G - C T



Vent (T = Tube, Blank = No Tube)

Electrical (C = Ribbon Cable with Connector,  
R = Ribbon Cable)

Type (A = Absolute, G = Gage)

Pressure Range

Model

#### NORTH AMERICA

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