

86 Vacuum Gage (Compensated)



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

DESCRIPTION

The 86 vacuum gage is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 86 vacuum gage 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 $\pm 1\%$.

Please refer to the 86 uncompensated, compensated and constant voltage 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	psiv
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 Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

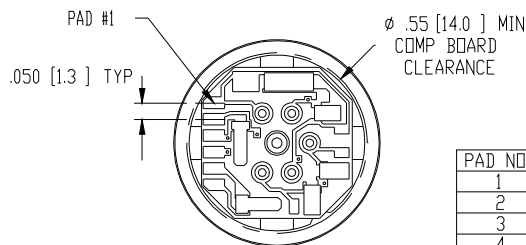
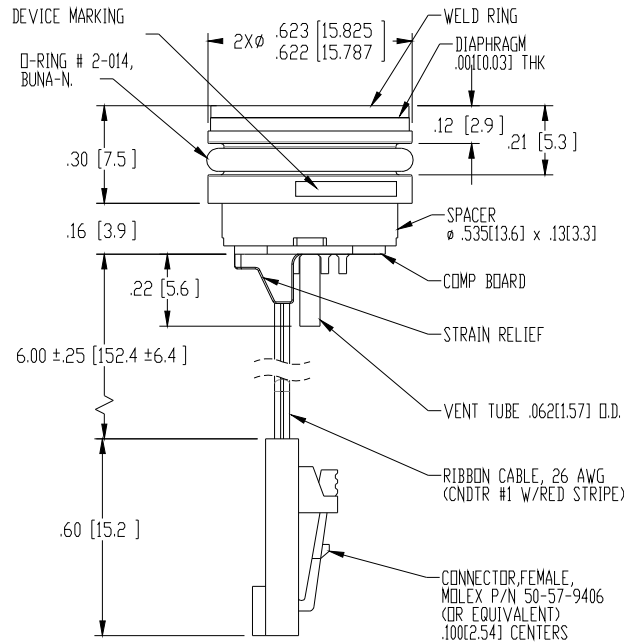
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-1.0	0	1.0	mV	2
Pressure Non Linearity	-0.20		0.20	%Span	3
Pressure Hysteresis	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02		%Span	
Input Resistance	2000	3500	5800	Ω	
Output Resistance	4000		6000	Ω	
Temperature Error – Span	-1.0		1.0	%Span	4
Temperature Error – Offset	-1.0		1.0	%Span	4
Thermal Hysteresis – Span	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	%Span	4
Long Term Stability – Span		±0.10		%Span/year	
Long Term Stability – Offset		±0.10		%Span/year	
Supply Current	0.5	1.5	2.0	mA	5
Output Load Resistance	5			MΩ	6
Insulation Resistance (50Vdc)	50			MΩ	7
Output Noise (10Hz to 1KHz)		1.0		uV p-p	
Response Time (10% to 90%)		0.1		ms	
Pressure Overload			3X	Rated	
Pressure Burst			4X	Rated	8
Compensated Temperature	-20		+85	°C	
Operating Temperature	-40		+125	°C	9
Storage Temperature	-50		+125	°C	9
Media – Pressure Port	Liquids and Gases compatible with 316L Stainless Steel				

Notes

1. For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
2. Measured at ambient for vacuum gage (V).
3. Best fit straight line. For pressure range 15 - 100psi, PNL is ±0.1% Span.
4. Over the compensated temperature range with respect to 25°C.
5. Guarantees output/input ratiometricity.
6. Load resistance to reduce measurement errors due to output loading.
7. Between case and sensing element.
8. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
9. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

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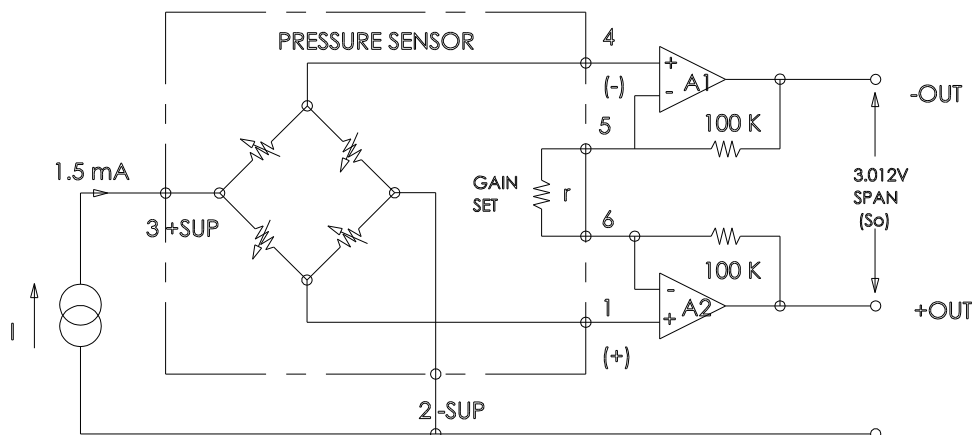
DIMENSIONS



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

VIEW SHOWN W/O CABLE AND CONNECTOR FOR CLARITY
 DIMENSIONS ARE IN INCHES [mm]

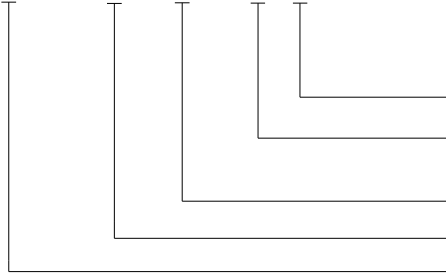
APPLICATION SCHEMATIC



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ORDERING INFORMATION

86 - 015 V - C T



Vent (T = Tube, Blank = No Tube)
 Electrical (C = Ribbon Cable with Connector,
 R = Ribbon Cable, P = Solder Pads)
 Type (V = Vacuum Gage)
 Pressure Range
 Model

NORTH AMERICA

Measurement Specialties
 45738 Northport Loop West
 Fremont, CA 94538
 Tel: 1-800-767-1888
 Fax: 1-510-498-1578
 Sales: pfg.cs.amer@meas-spec.com

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 Shenzhen High-Tech Park (North)
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