



## 86VC

### Vacuum Gage, Compensated

#### SPECIFICATIONS

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

#### 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	psi
0 to 15	•
0 to 30	•
0 to 50	•
0 to 100	•
0 to 300	•
0 to 500	•

Model 86VC is a compensated, micro-machined, piezoresistive silicon pressure sensor designed for vacuum gage applications, packaged in a 316L Stainless Steel housing.

The product features O-ring mounting and is designed for 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  $\pm 1\%$ .

For additional Model 86 products designed for vacuum gage applications, a datasheet for the Uncompensated configuration is available.

## PERFORMANCE SPECIFICATIONS

Unless otherwise specified, all parameters are measured at 1.5mA Drive and 25°C

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	-0.10		0.10	%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		μV p-p	
Response Time (10% to 90%)		0.1		ms	
Pressure Overload			3X	Rated	8
Pressure Burst			4X	Rated	9
Compensated Temperature	-20		+85	°C	
Operating Temperature	-40		+125	°C	10
Storage Temperature	-50		+125	°C	10

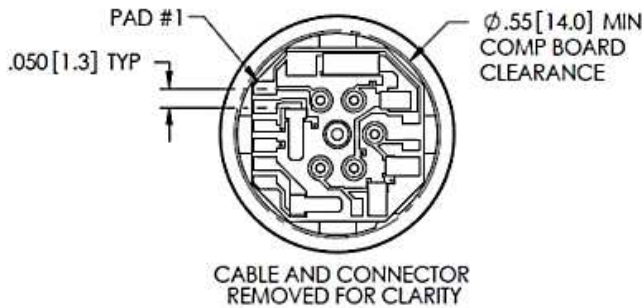
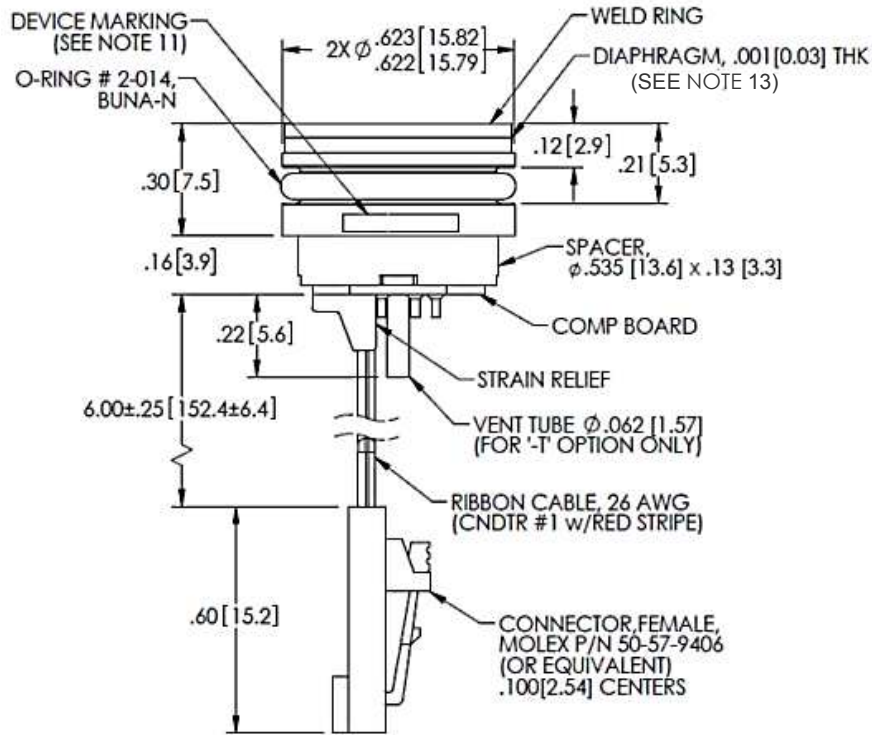
Media – Pressure Port

Liquids and Gases compatible with 316L Stainless Steel

### Notes

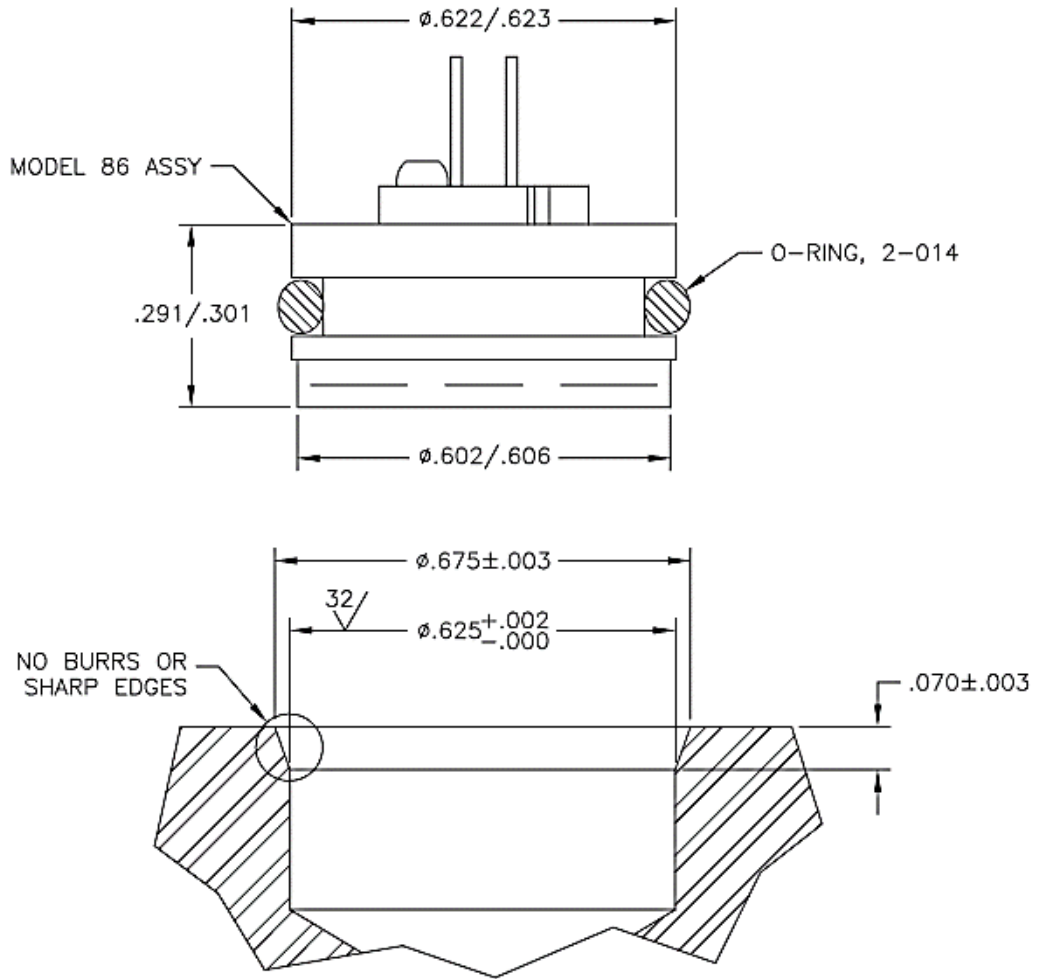
- For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
- Measured at Ambient Pressure
- Best fit straight line.
- Over the compensated temperature range with respect to 25°C.
- Guarantees output/input ratiometricity.
- Load resistance to reduce measurement errors due to output loading.
- Between case and sensing element.
- The maximum pressure that can be applied without changing the transducer's performance or accuracy.
- The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
- Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
- Device Marking:  
Each part is identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
- Shipping/Packaging:  
The Stainless Steel diaphragm is protected by a static dissipative cap. Each unit is packaged individually in a plastic vial with anti-static foam.
- Direct mechanical contact with diaphragm is prohibited. Diaphragm surface must remain free of defects (scratches, punctures, dents, fingerprints, etc) for device to operate properly. Caution is advised when handling parts with exposed diaphragms. Use protective cap whenever devices are not in use.

DIMENSIONS

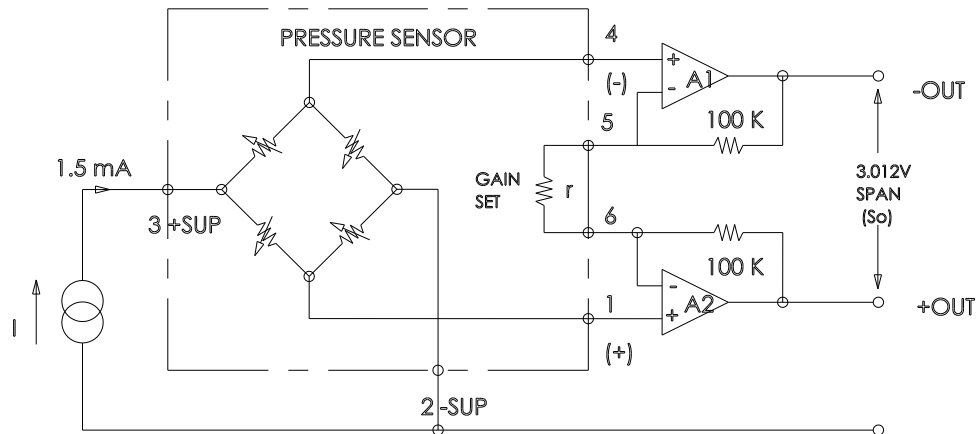


SENSOR PINOUT	
PAD NO	FUNCTION
1	+OUT
2	-EX
3	+EX
4	-OUT
5	GAIN
6	

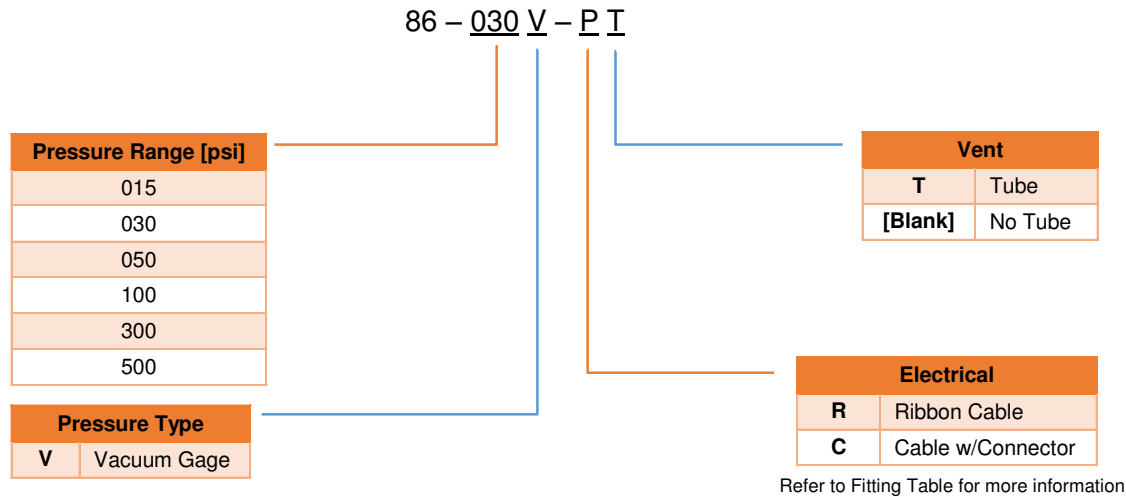
## RECOMMENDED MOUNTING DIMENSIONS



## APPLICATION SCHEMATIC



## ORDERING INFORMATION



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