



## 82VU

### Vacuum Gage, Uncompensated

#### SPECIFICATIONS

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

The 82VU is an uncompensated, micro-machined, piezoresistive silicon pressure sensor designed for vacuum gage applications, packaged in a 316L Stainless Steel housing. The pressure sensor is offered in a standard O-ring mountable configuration or with a variety of threaded fittings such as 1/4NPT, 1/8NPT and 1/4BSP. Custom fittings may be available upon request.

This product 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.

For additional Model 82 products designed for vacuum gage applications, a datasheet for the Compensated configuration is available.

#### FEATURES

- O-Ring Mount/Threaded Process Fittings
- -40°C to +125°C Operating Temperature
- Up to  $\pm 0.1\%$  Pressure Non-Linearity
- 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	•

## PERFORMANCE SPECIFICATIONS

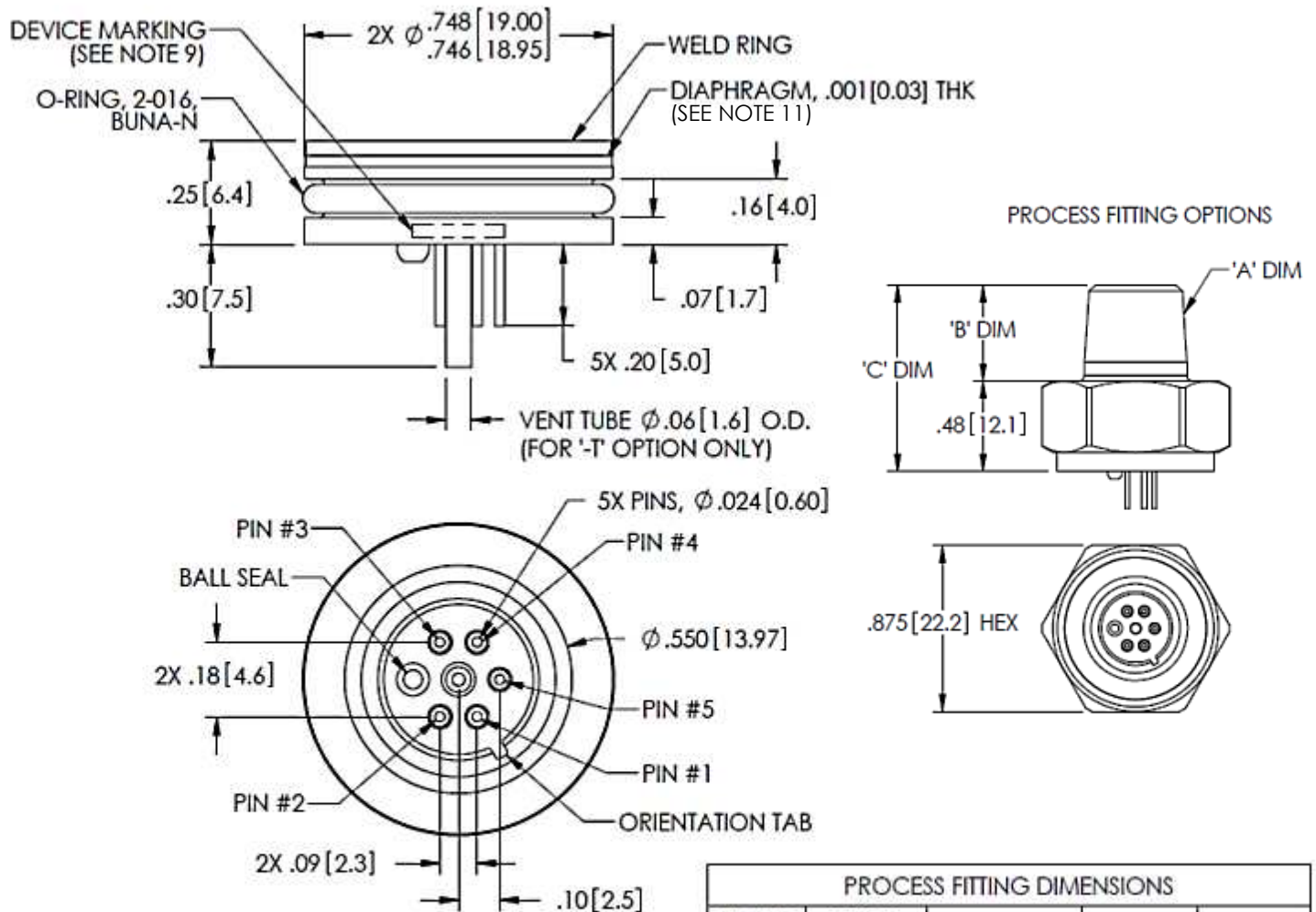
Unless otherwise specified: Supply Current: 1.5mA, Ambient Temperature: 25°C

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Sensitivity	12		27	mV/V @Span	
Zero Pressure Output	-6.0		8.0	mV/V	1
Pressure Non Linearity	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.05		0.05	%Span	
Repeatability		±0.02		%Span	
Bridge Resistance	3.8K		5.8K	Ω	3
Thermal Hysteresis – Span	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	%Span	4
Temperature Coefficient – Resistance	1.30K	1.51K	1.75K	PPM/°C	4
Temperature Coefficient – Span	-1.65K	-1.25K	-1.0K	PPM/°C	4
Temperature Coefficient – Offset	-30		30	μV/V/°C	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	
Supply Voltage		5	9.5	V	
Output Noise (10Hz to 1kHz)		1.0		μV p-p	
Response Time (10% to 90%)		0.1		ms	
Insulation Resistance (50V <sub>DC</sub> )	50M			Ω	5
Pressure Overload			3X	Rated	6
Pressure Burst			4X	Rated	7
Operating Temperature	-40		+125	°C	
Storage Temperature	-50		+125	°C	
Media – Pressure Port	Liquids and Gases compatible with 316/316L Stainless Steel				

### Notes

1. Measured at ambient.
2. Best fit straight line.
3. Bridge resistance is measured with both –E pins shorted together.
4. TC values are first order coefficients to a quadratic fit over a temperature range of -20 to +85°C.
5. Between case and sensing element.
6. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
7. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
8. Testing:
  - 8.1 Units are not tested over temperature or pressure
  - 8.2 A final electrical test (@ 1.5mA) is performed to verify parts are electrically alive.
  - 8.3 All units are subjected to 100% drift test.
9. Marking  
Each part is identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
10. Shipping/Packaging  
The stainless steel diaphragm is protected by a static dissipative cap (no fitting option only). Each unit is packaged individually in a plastic vial with anti-static foam
11. 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.

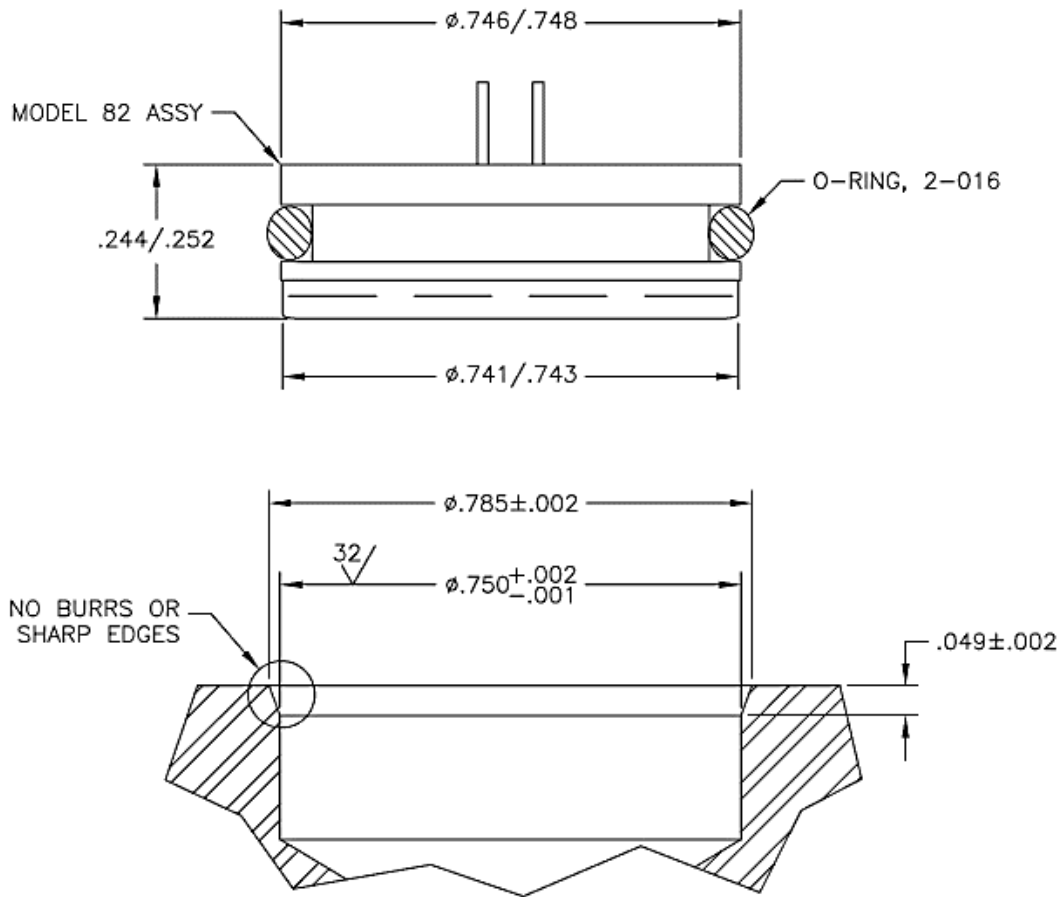
DIMENSIONS



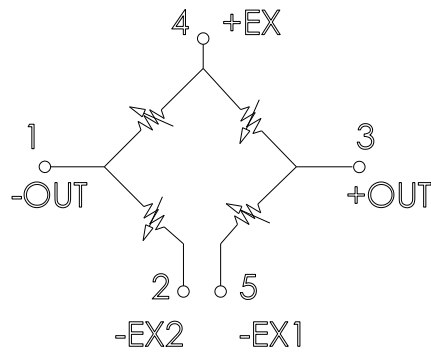
SENSOR PINOUT	
PIN NO	FUNCTION
1	-OUT
2	-EX2
3	+OUT
4	+EX
5	-EX1

PROCESS FITTING DIMENSIONS				
FITTING TYPE	MEMS P/N	'A' DIM	'B' DIM	'C' DIM
1	IC-7152	1/4-18 NPT	.50 [12.7]	.98 [24.9]
2	IC-D00510	1/8-27 NPT	.47 [11.9]	.95 [24.1]
3	IC-D00511	7/16-20 UNF	.33 [8.4]	.80 [20.3]
9	IC-D00512	1/4-19 BSP	.45 [11.4]	.93 [23.3]
NOTE: FITTING TYPE '1' ASSEMBLY SHOWN ALL DIMS ARE FOR REFERENCE.				

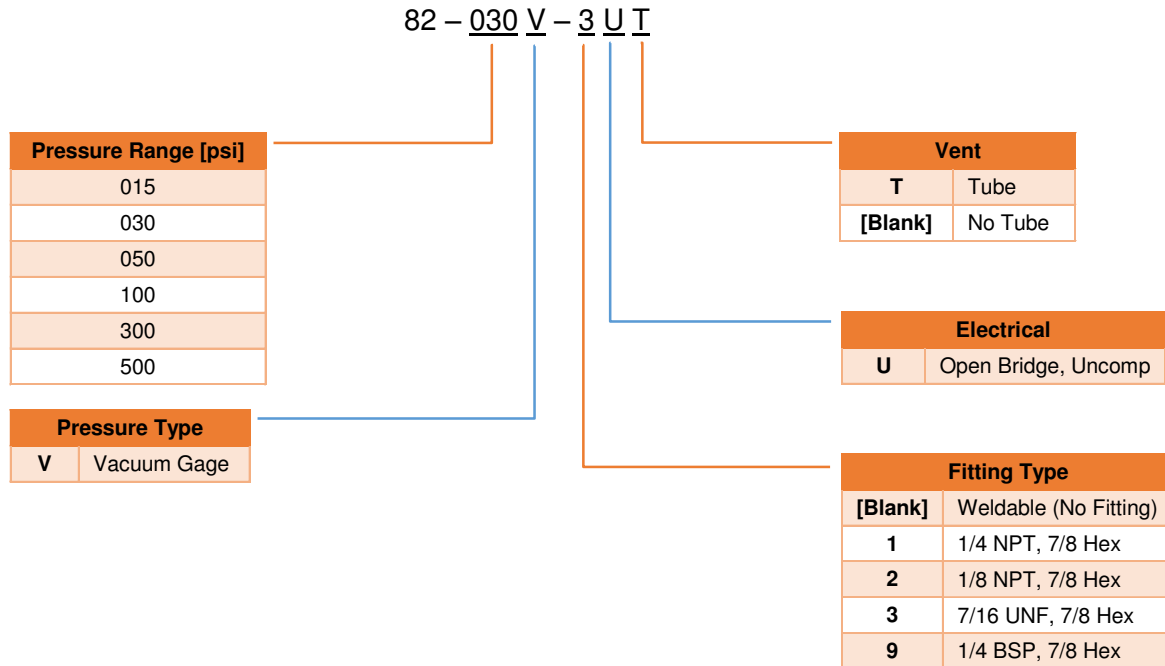
## RECOMMENDED MOUNTING DIMENSIONS



## CONNECTIONS



## ORDERING INFORMATION



Refer to Fitting Table for more information

### NORTH AMERICA

Measurement Specialties, Inc.,  
a TE Connectivity Company  
Tel: +1 800-522-6752  
Email: [customercare.frm@te.com](mailto:customercare.frm@te.com)

### EUROPE

Measurement Specialties (Europe), Ltd.,  
a TE Connectivity Company  
Tel: +31 73 624 6999  
Email: [customercare.lcsb@te.com](mailto:customercare.lcsb@te.com)

### ASIA

Measurement Specialties (China), Ltd.,  
a TE Connectivity Company  
Tel: +86 0400-820-6015  
Email: [customercare.shzn@te.com](mailto:customercare.shzn@te.com)

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