

## Model 82 UltraStable™



- 316L SS Pressure Sensor
- 19mm Diameter Package
- 0 - 100mV Output
- Absolute and Gage
- Temperature Compensated

### DESCRIPTION

The Model 82 UltraStable™ is a 19mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The Model 82 UltraStable™ is designed for o-ring mounting and OEM applications where compatibility with corrosive media is required.

The sensing package utilizes silicone 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 Model 82 Low Pressure datasheet for information on products with operating pressures less than 15 psi.

### FEATURES

- O-Ring Mount
- -20°C to +85°C Compensated Temperature Range
- $\pm 0.1\%$  Pressure Non Linearity
- 1.0% Interchangeable Span (provided by gain set resistor)
- Solid State Reliability

### APPLICATIONS

- Medical Instruments
- Process Control
- Fresh & Waste Water Measurements
- Refrigeration/Compressors
- Pressure Transmitters
- Hydraulic Controls

### STANDARD RANGES

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

# Model 82 UltraStable™

## PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

Parameters are specified for the compensated versions only

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	75	100	150	mV	1
Zero Pressure Output	-1		1	mV	
Pressure Non Linearity	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02		%Span	
Input Resistance	2500	4000	5800	Ω	
Output Resistance	3000		25k	Ω	
Temperature Error – Span	-0.75		0.75	%Span	3
Temperature Error – Offset	-0.5		0.5	%Span	3
Thermal Hysteresis – Span	-0.25	±0.05	0.25	%Span	3
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	%Span	3
Long Term Stability – Span		±0.1		%Span	4
Long Term Stability – Offset		±0.1		%Span	4
Supply Current	0.5	1.5	2.0	mA	
Insulation Resistance (50Vdc)	50			MΩ	5
Pressure Overload			3X	Rated	
Compensated Temperature	-20		+85	°C	
Operating Temperature	-40		+125	°C	6
Storage Temperature	-50		+125	°C	6
Weight			24	grams	
Media – Pressure Port	Liquids and Gases compatible with 316L Stainless Steel and Buna-N				7
Media – Reference Port	Compatible with Silicon, Pyrex, Gold, Fluorosilicone RTV and 316L Stainless Steel				

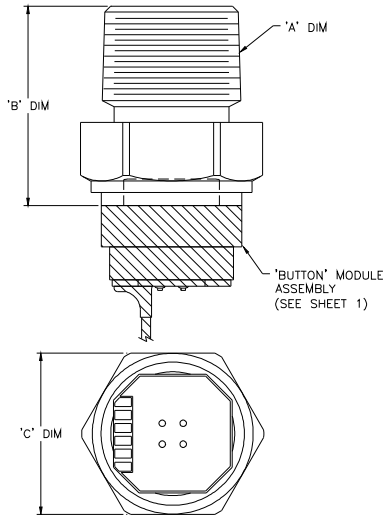
### Notes

1. Ratiometric to supply current.
2. Best fit straight line.
3. Maximum temperature error between -20°C and +85°C with respect to 25°C.
4. Long term stability over a one year period with constant current and temperature.
5. Minimum resistance between case and pins.
6. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
7. Gage units not recommended for high vacuum applications. For high vacuum applications consult factory.

# Model 82 UltraStable™

## DIMENSIONS

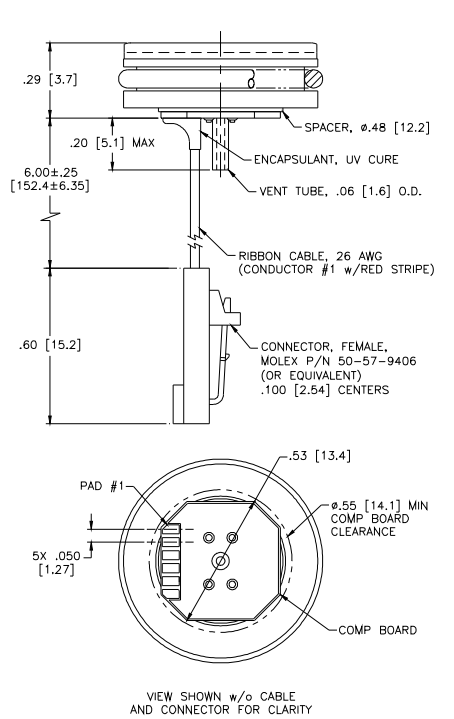
w/PROCESS FITTING OPTIONS



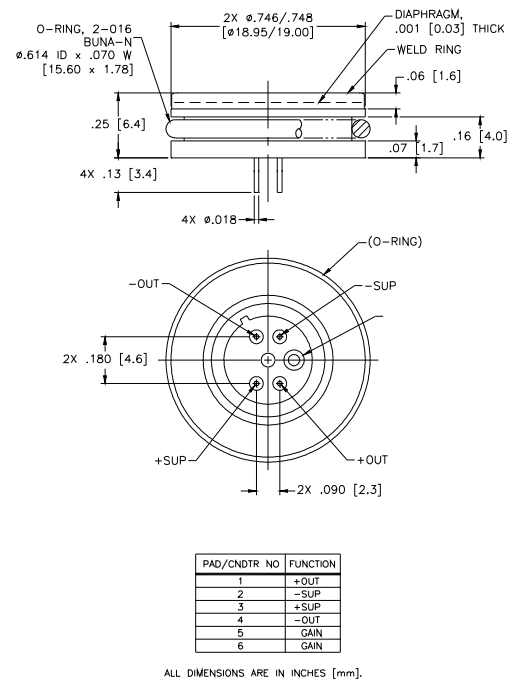
FITTING DIMENSIONS			
FTG TYPE	'A' DIM	'B' DIM	'C' DIM
1	1/4-18 NPT	1.00 [25.4]	7/8 [22.2] HEX
2	1/8-27 NPT	.99 [25.0]	7/8 [22.2] HEX
3	7/16-20 UNF	.84 [19.4]	7/8 [22.2] HEX
4	1/4-18 NPT	.77 [19.6]	5/8 [15.9] HEX
5	1/4-19 BSP	.82 [20.8]	3/4 [19.0] HEX
8	1/8-27 NPT	.64 [16.3]	5/8 [15.9] HEX
9	1/4-19 BSP	.96 [24.4]	7/8 [22.2] HEX

NOTE: FTG TYPE '4' ASSEMBLY SHOWN  
ALL DIMS ARE FOR REFERENCE ONLY

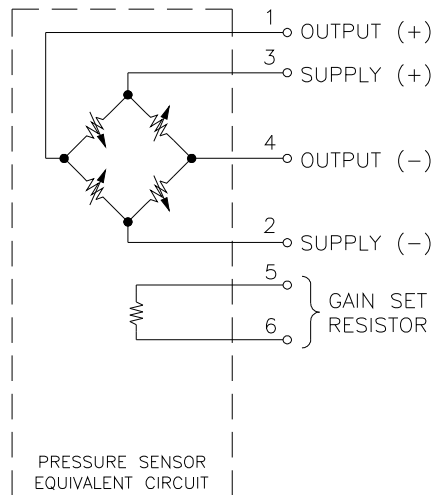
w/BACK END OPTIONS



BASIC SENSING ELEMENT

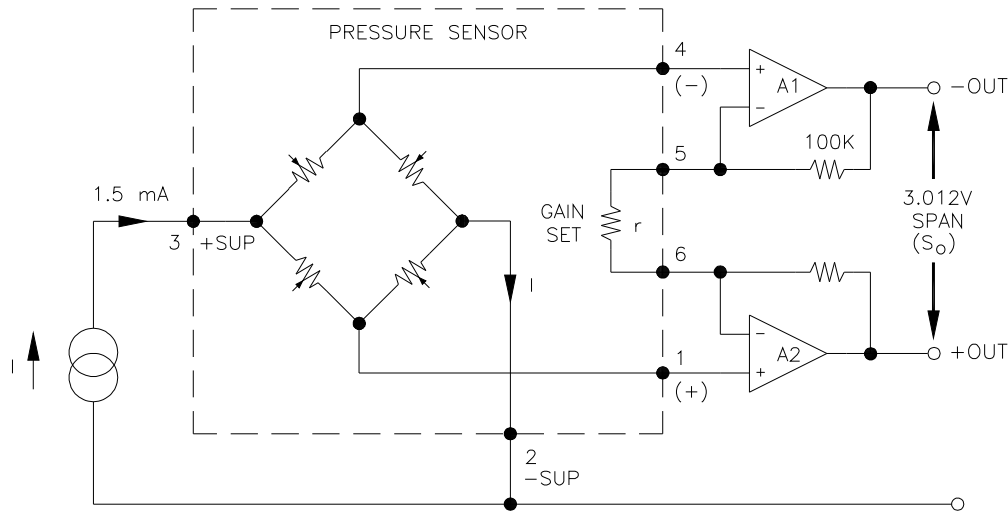


## CONNECTIONS



# Model 82 UltraStable™

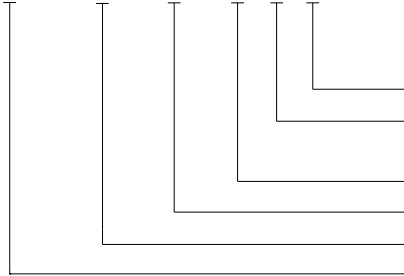
## APPLICATION SCHEMATIC



APPLICATION SCHEMATIC

## ORDERING INFORMATION

82 - 050 G - 0 C T



Vent (T = Tube, Blank = No Tube)  
 Electrical (C = Ribbon Cable with Connector, R = Ribbon Cable, P = Solder Pads, L = Leads, Uncompensated)  
 Fitting Type (0 = Weldable)  
 Type (A = Absolute, G = 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](mailto:pfg.cs.amer@meas-spec.com)

### EUROPE

Measurement Specialties  
 (Europe), Ltd.  
 26 Rue des Dames  
 78340 Les Clayes-sous-Bois, France  
 Tel: +33 (0) 130 79 33 00  
 Fax: +33 (0) 134 81 03 59  
 Sales: [pfg.cs.emea@meas-spec.com](mailto:pfg.cs.emea@meas-spec.com)

### ASIA

Measurement Specialties  
 (China), Ltd.  
 No. 26 Langshan Road  
 Shenzhen High-Tech Park (North)  
 Nanshan District, Shenzhen 518107  
 China  
 Tel: +86 755 3330 5088  
 Fax: +86 755 3330 5099  
 Sales: [pfg.cs.asia@meas-spec.com](mailto:pfg.cs.asia@meas-spec.com)

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