



## 82

### Compensated

#### SPECIFICATIONS

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

#### FEATURES

- O-Ring Mount/Threaded Process Fittings
- -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)

The 82 compensated is a 19 mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The 82 compensated can be configured for o-ring mounting or threaded process fittings and is designed for 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 82 uncompensated and constant voltage datasheets for more information on different features of the 82.

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## SPECIFICATIONS

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

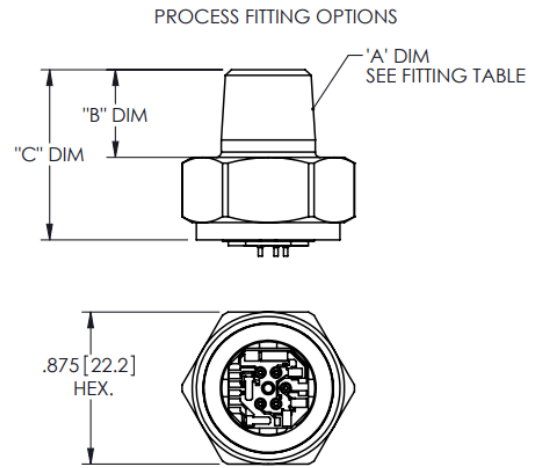
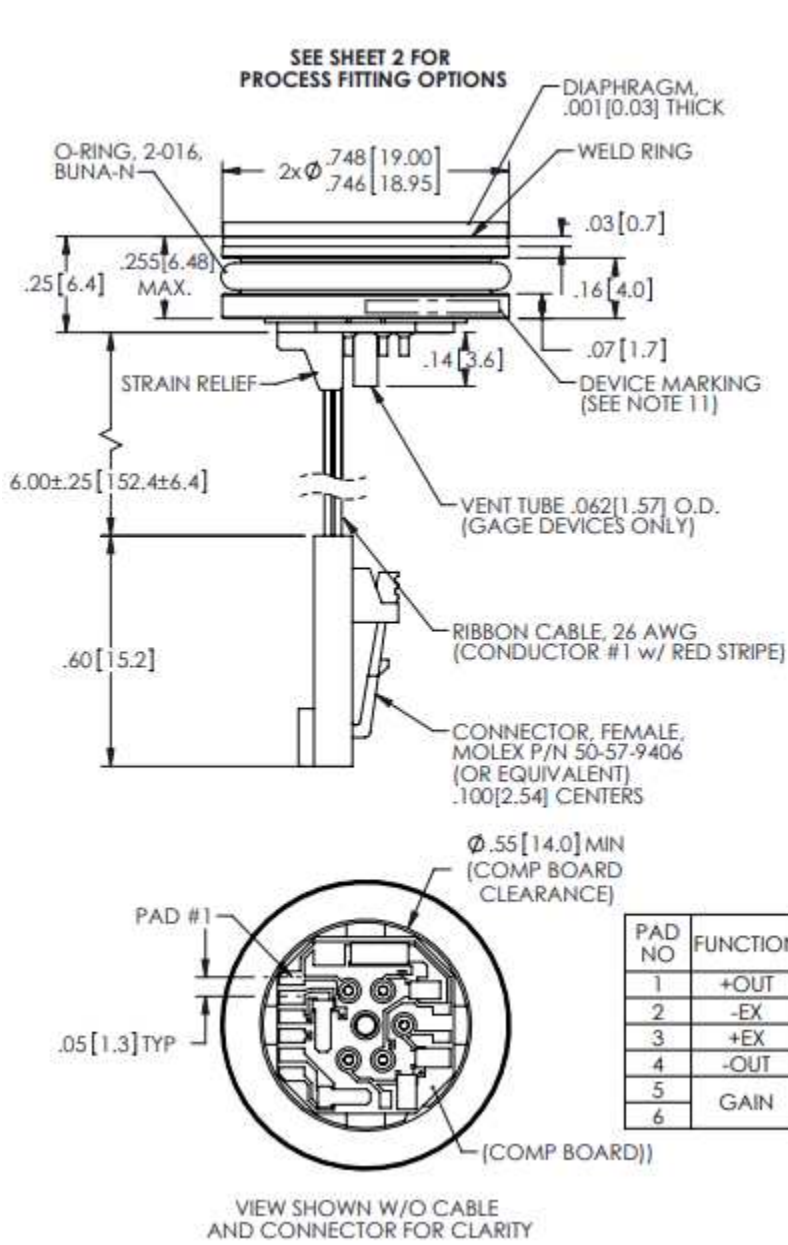
PARAMETERS	≤005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX		
Span	50	100	150	75	100	150	mV	1
Zero Pressure Output	-2.0	0	2.0	-1.0	0	1.0	mV	2
Pressure Non Linearity	1psi:-0.30 TO +0.30 5psi:-0.20 TO +0.20			-0.10	-	0.10	%Span	3
Pressure Hysteresis	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability	-	±0.02	-	-	±0.02	-	%Span	
Input Resistance	2.5	5.0	6.5	2.0	3.5	5.8	KΩ	
Output Resistance	4.0	-	7.0	4.0	-	6.0	KΩ	
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	%Span	4
Temperature Error – Span	-1.0	-	1.0	-0.75	-	0.75	%Span	4
Temperature Error – Offset	-1.0	-	1.0	15psi:-0.75 TO +0.75 >15psi:-0.50 TO +0.5			%Span	4
Long Term Stability – Span	-	±0.10	-	-	±0.10	-	%Span	
Long Term Stability – Offset	-	±0.25	-	-	±0.10	-	%Span	
Supply Current	0.5	1.5	2.0	0.5	1.5	2.0	mA	5
Insulation Resistance (50Vdc)	50	-	-	50	-	-	MΩ	7
Output Load Resistance	5	-	-	5	-	-	KΩ	6
Output Noise (10Hz to 1KHz)	-	1.0	-	-	1.0	-	uV p-p	
Response Time (10% to 90%)	-	0.1	-	-	0.1	-	ms	
Pressure Overload	1psi:10x MAX 5psi:3x MAX			-	-	3X	Rated	
Pressure Burst	1psi:12x MAX 5psi:4x MAX			-	-	4X	Rated	8
Operating Temperature	-20	-	70	-40	-	125	°C	9
Compensated Temperature	1psi:0°C TO 50°C 5psi:0°C TO 70°C			-20	-	85	°C	
Storage Temperature	-50	-	125	-50	-	125	°C	9
Media – Pressure Port	Liquids and Gases compatible with 316L Stainless Steel and Buna-N							

## Notes

- For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
- Measured at vacuum for absolute (A), ambient for gage (G).
- 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 to a transducer without rupture of either the sensing element or transducer.
- Maximum temperature range for product with standard cable and connector is -20 to +105°C.
- Standard Gage Units are not recommended for vacuum applications. For vacuum applications below 1/2 atmosphere, consult factory.
- Device marking:  
Each part shall be identified with Model Number, Pressure Range, Type, Lot Number, Serial Number and Date Code.
- Shipping/packaging requirements:  
The stainless steel diaphragm is protected by a plastic CAP. Each unit will be package 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

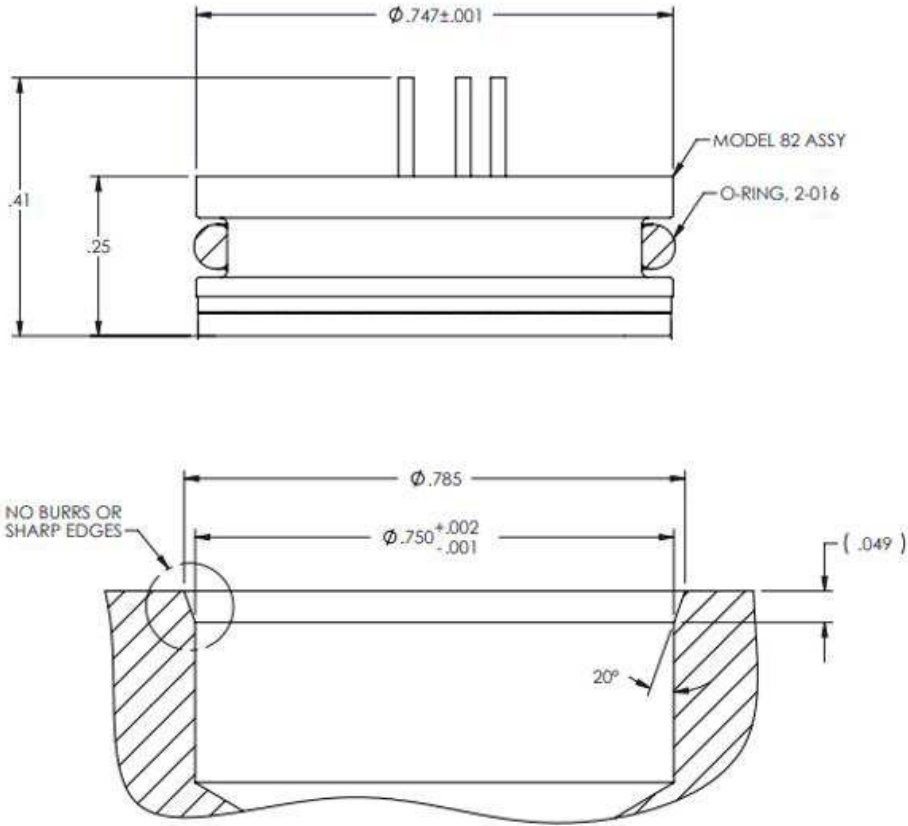
Dimensions are in inches [mm]



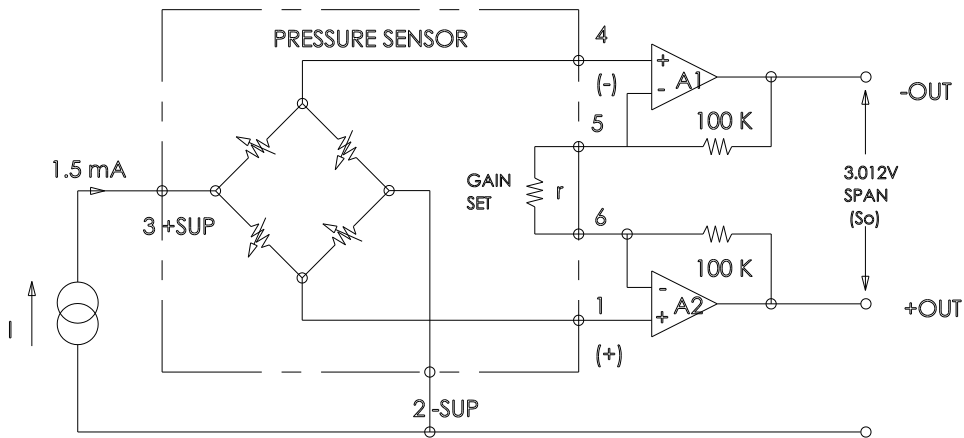
FITTING TABLE			
FITTING TYPE	'A' DIM	'B' DIM	'C' DIM
1	1/4-18 NPT	.50 [12.7]	.98 [24.9]
2	1/8-27 NPT	.47 [11.9]	.95 [24.1]
3	7/16-20 UNF	.33 [8.4]	.80 [20.3]
9	1/4-19 BSP	.45 [11.4]	.93 [23.3]
NOTE: FITTING TYPE '1' ASSEMBLY SHOWN ALL DIMS ARE FOR REFERENCE.			

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

RECOMMENDED MOUNTING DIMENSIONS



APPLICATION SCHEMATIC



ORDERING INFORMATION

**Part Number**  
82 – 030 G – 3 C T

Pressure Range [psi]	
001	(Gage Only)
005	
015	
030	
050	
100	
300	
500	

Pressure Type	
G	Gage
A	Absolute

Vent	
T	Tube
[Blank]	No Tube

Electrical	
P	Solder Pads
R	Ribbon cable
C	Cable w/ Connector

Fitting Type	
[Blank]	No Fitting, Weldable
1	1/4-18 NPT
2	1/8-27 NPT
3	7/16-20 UNF
9	1/4-19 BSP

Refer to Fitting Table for more information

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Version A7 02/2021



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