82

Compensated

SPECIFICATIONS

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

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 ±1%.

Please refer to the 82 uncompensated and constant voltage datasheets for more information on different features of the 82.

FEATURES

- O-Ring Mount/Threaded Process Fittings
- -40ºC to +125ºC Operating Temperature Range
- ±0.2% 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	psia	psig
0 to 1		♠
0 to 5	♠	♠
0 to 15	♠	♠
0 to 30	♠	♠
0 to 50	♠	♠
0 to 100	♠	♠
0 to 300	♠	♠
0 to 500	♠	♠

PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA
Ambient Temperature: 25°C (unless otherwise specified)

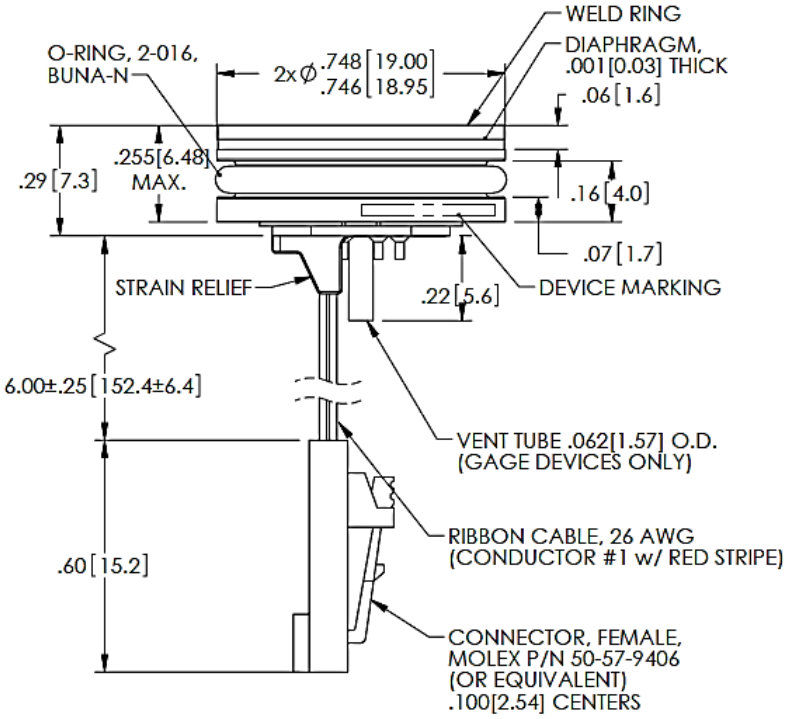
PARAMETERS	001PSI			005PSI			≥015PSI			UNITS	NOTES
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
Span	50	100	150	50	100	150	75	100	150	mV	1
Zero Pressure Output	-2	0	2	-2	0	2	-1	0	1	mV	
Pressure Non Linearity	-0.3		0.3	-0.2		+0.2	-0.1		0.1	%Span	2
Pressure Hysteresis	-0.10	±0.02	0.10	-0.10	±0.02	0.10	-0.05	±0.02	0.05	%Span	
Repeatability		±0.02			±0.02			±0.02		%Span	
Input Resistance	2.5	5.0	6.5	2.5	5.0	6.5	3.8		5.8	KΩ	
Output Resistance	4.0		7.0	4.0		7.0	4.0		6.0	KΩ	
Thermal Hysteresis – Span	-0.25	±0.05	0.25	-0.25	±0.05	0.25	-0.25	±0.05	+0.25	%Span	3
Thermal Hysteresis – Offset	-0.25	±0.05	0.25	-0.25	±0.05	0.25	-0.25	±0.05	+0.25	%Span	3
Temperature Error – Span	-1.0		1.0	-1.0		1.0	-0.75		0.75	%Span	3
Temperature Error – Offset	-1.0		1.0	-1.0		1.0	-0.5		0.5	%Span	3, 9
Long Term Stability – Span		±0.10			±0.10			±0.10		%Span	4
Long Term Stability – Offset		±0.25			±0.25			±0.10		%Span	4
Supply Current	0.5	1.5	2.0	0.5	1.5	2.0	0.5	1.5	2.0	mA	
Insulation Resistance (50Vdc)	50			50			50			MΩ	5
Output Noise (10Hz to 1KHz)		1			1			1		uV p-p	
Response Time (10% to 90%)		0.1			0.1			0.1		ms	
Pressure Overload			10x			3x			3x	Rated	6
Pressure Burst			12x			4x			4x	Rated	
Operating Temperature	-20		+70	-20		+70	-40		+125	ºC	
Compensated Temperature	0		+50	0		+70	-20		+85	°C	
Storage Temperature	-50		+125	-50		+125	-50		+125	ºC	7
Media – Pressure Port	Liquids and Gases compatible with 316L Stainless Steel and Buna-N										8
Media – Reference Port	Compatible with Silicon, Pyrex, Gold, Fluorosilicone RTV and 316L Stainless Steel										

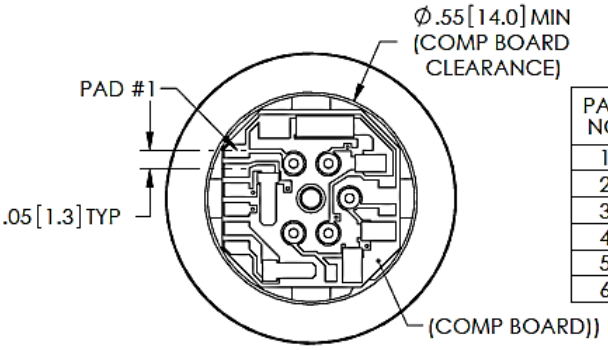
Notes

1. Ratiometric to supply current.
2. Best fit straight line.
3. Maximum temperature error within the compensated temperature range 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. 10 psi maximum for 1 psi devices.
7. Maximum temperature range for product with standard cable and connector is -20°C to +105°C.
8. Gage units not recommended for high vacuum applications. For high vacuum applications consult factory.
9. Temperature Error – Offset for 15psi is -0.75 to 0.75 and >15psi is -0.5 to 0.5.

DIMENSIONS

Dimensions are in inches [mm]

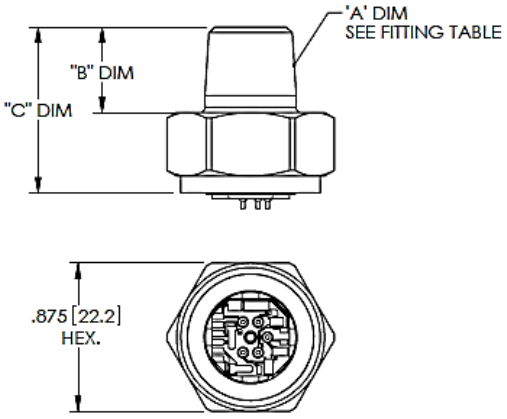




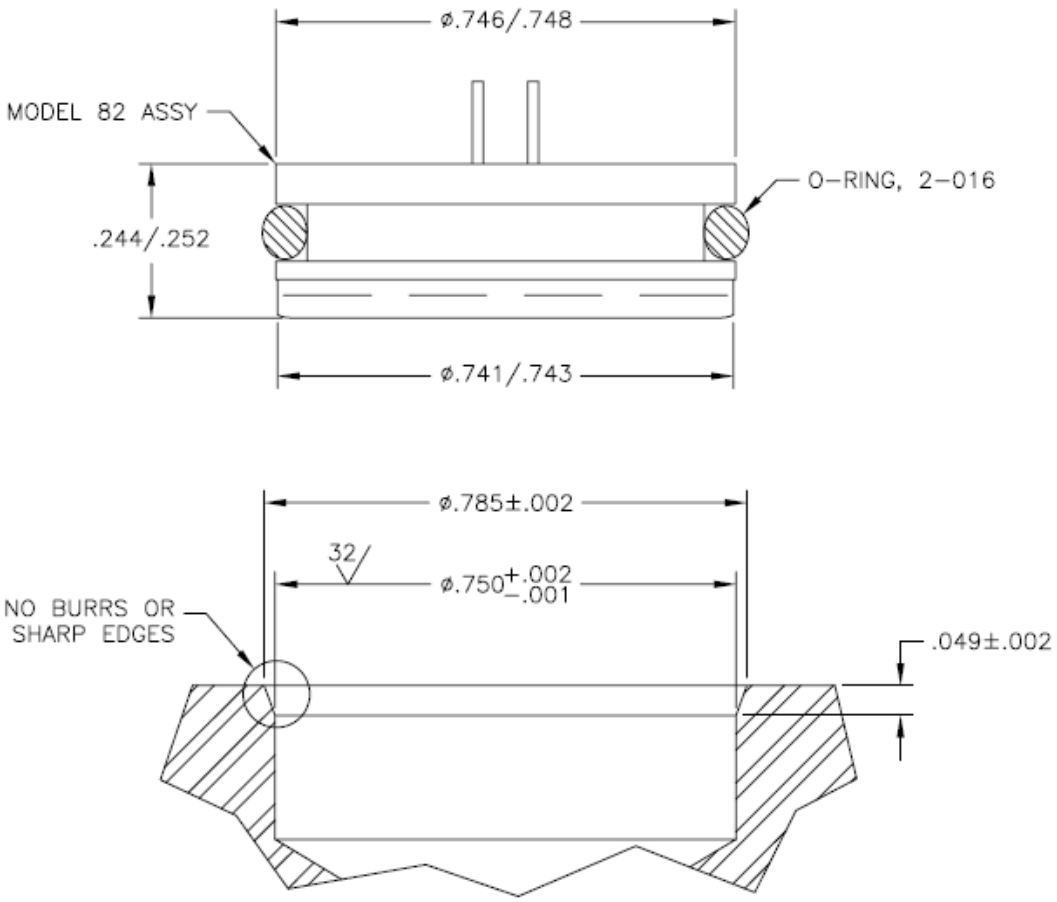
VIEW SHOWN W/O CABLE AND CONNECTOR FOR CLARITY

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

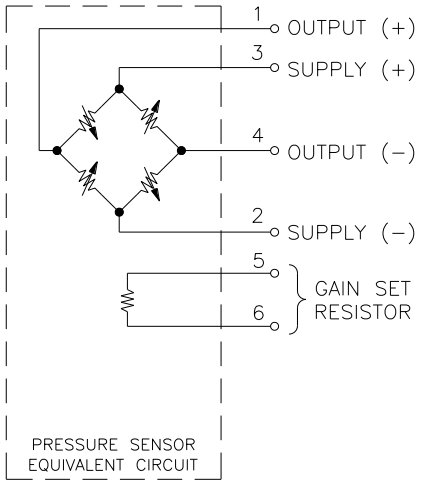
PROCESS FITTING OPTIONS



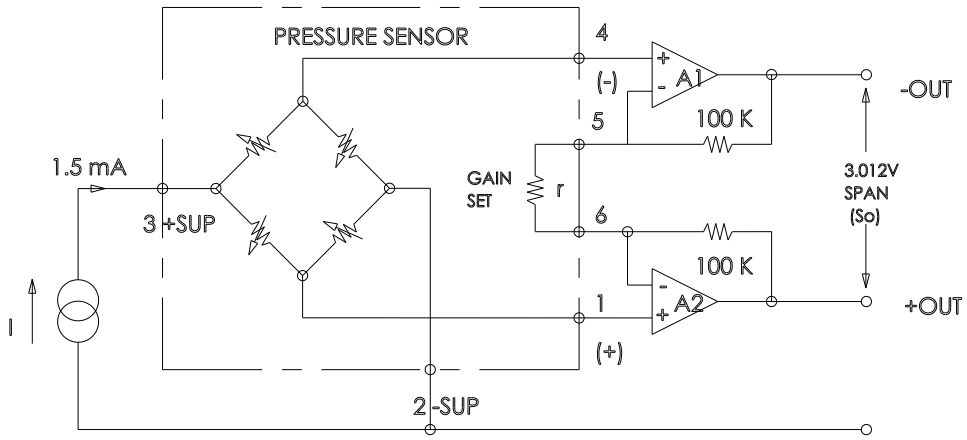
FITTING TABLE				
FITTING TYPE	MEMS P/N	'A' DIM	'B' DIM	'C' DIM
1	IC-7152	1/4-18 NPT	.50[12.7]	.98[24.9]
2	IC-D00510	1/8-27 NPT	.47[11.9]	.95[24.1]
3	IC-D00511	7/16-20 UNF	.33[8.4]	.80[20.3]
9	IC-D00512	1/4-19 BSP	.45[11.4]	.93[23.3]
NOTE: FITTING TYPE '1' ASSEMBLT SHOWN ALL DIMS ARE FOR REFERENCE.				



CONNECTIONS



APPLICATION SCHEMATIC



ORDERING INFORMATION

82 – 030 A – 3 B 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
3	7/16-20 UNF
1	1/4-18 NPT
2	1/8-27 NPT
9	1/4-19 BSP

Refer to Fitting Table for more information

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