



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.

[CLICK HERE >](#)
CONNECT WITH A SPECIALIST

SPECIFICATIONS

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

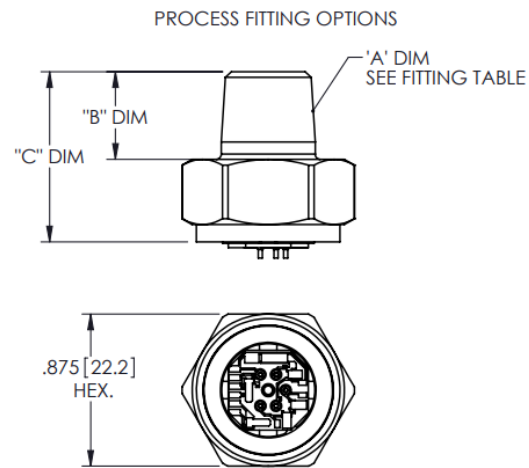
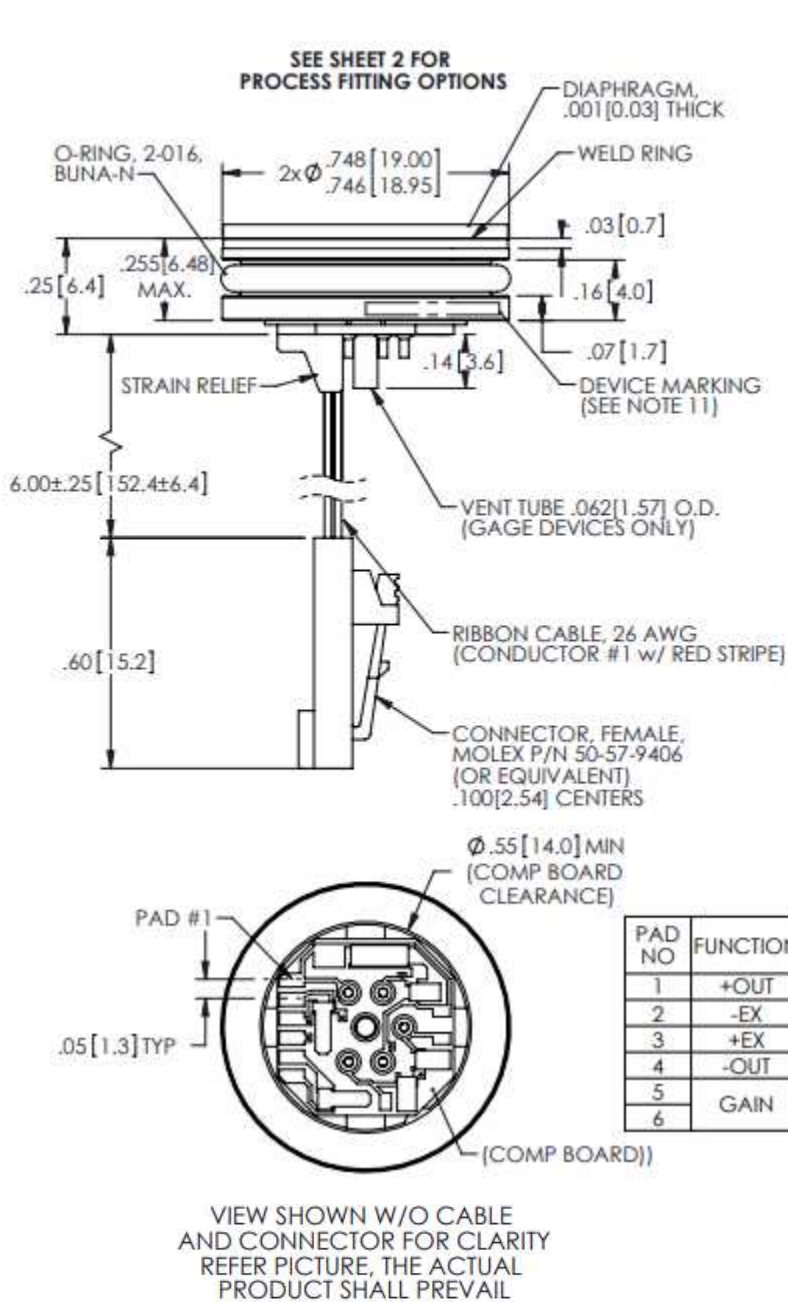
| PARAMETERS | ≤005PSI | | | ≥015PSI | | | UNITS | NOTES |
|-------------------------------|---|-------|------|--|-------|------|--------|-------|
| | MIN | TYP | MAX | MIN | TYP | MAX | | |
| Span | 50 | 100 | 150 | 75 | 100 | 150 | mV | 1 |
| Zero Pressure Output | -2.0 | 0 | 2.0 | -1.0 | 0 | 1.0 | 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 | 2.0 | - | 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 | 1psi: -1.5 to 1.5 5psi: -1.0 to 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 | - | μV 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

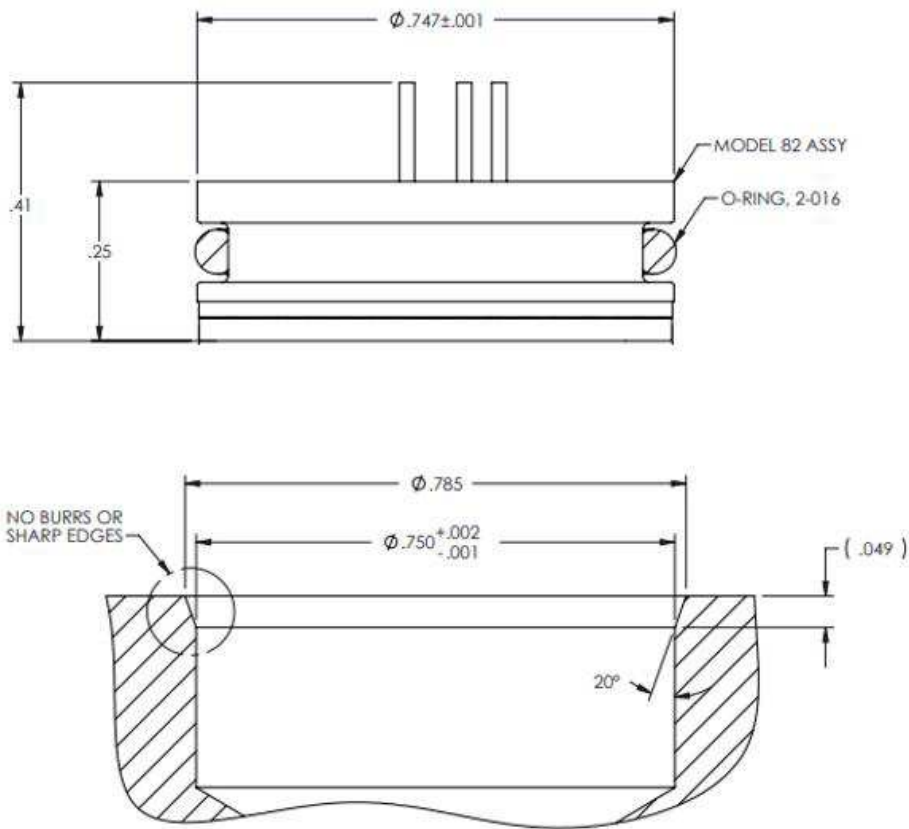
Dimensions are in inches [mm]



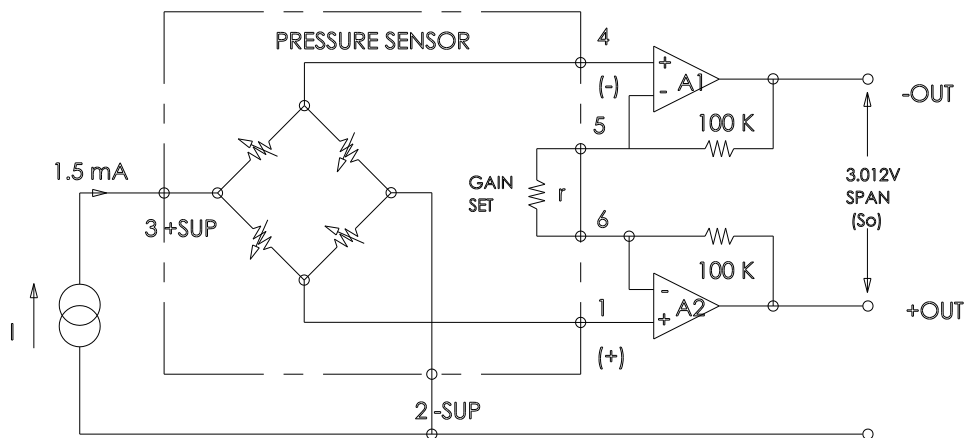
| FITTING TABLE | | | |
|--|-------------|------------|------------|
| FITTING TYPE | 'A' DIM | 'B' DIM | 'C' DIM |
| 1 | 1/4-18 NPT | .50 [12.7] | .98 [24.9] |
| 2 | 1/8-27 NPT | .47 [11.9] | .95 [24.1] |
| 3 | 7/16-20 UNF | .33 [8.4] | .80 [20.3] |
| 9 | 1/4-19 BSP | .45 [11.4] | .93 [23.3] |
| NOTE: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