

Model 85 UltraStable™



- 316L SS Pressure Sensor
- Small Profile
- 0 - 100mV Output
- Absolute and Gage
- Temperature Compensated

DESCRIPTION

The Model 85 UltraStable™ is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The Model 85 UltraStable™ is offered in a weldable package or with a variety of threaded fittings such as 1/4 and 1/8NPT, 1/4BSP as well as custom process fittings.

The Model 85 UltraStable™ 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. 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 85 5 psi datasheet for low pressure applications.

FEATURES

- Weldable and Threaded Process Fittings
- -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 85 UltraStable™

PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)

Parameters are specified for the compensated versions only

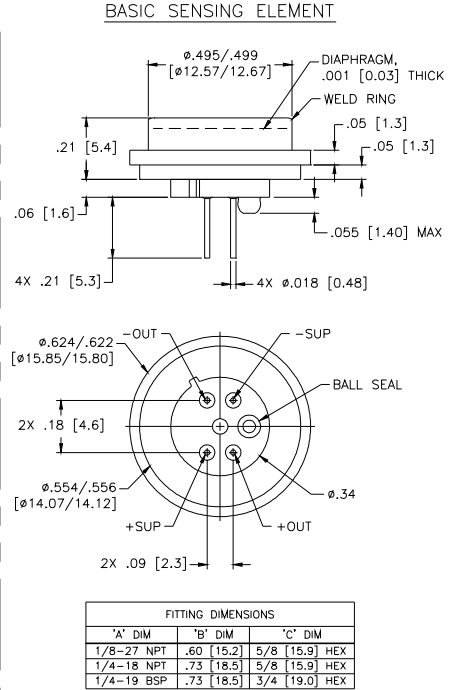
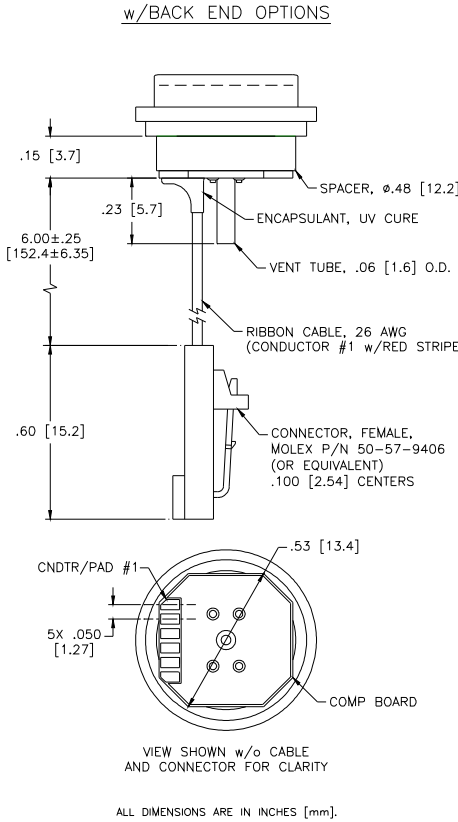
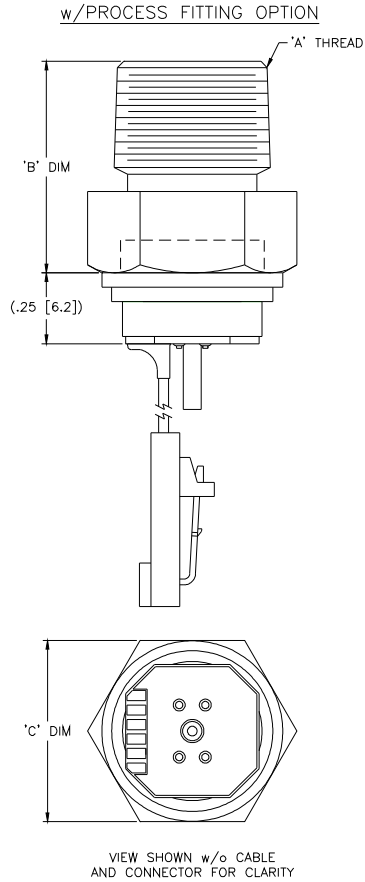
| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|-------------------------------|---|-------|------|-------|-------|
| Span | 75 | 100 | 150 | mV | 1 |
| Zero Pressure Output | -1 | | 1 | mV | |
| Pressure Non Linearity | -0.1 | | 0.1 | %Span | 2 |
| Pressure Hysteresis | -0.05 | ±0.02 | 0.05 | %Span | |
| 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 | | | | 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.

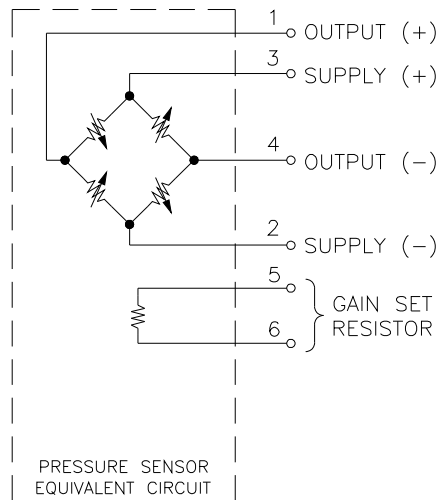
Model 85 UltraStable™

DIMENSIONS



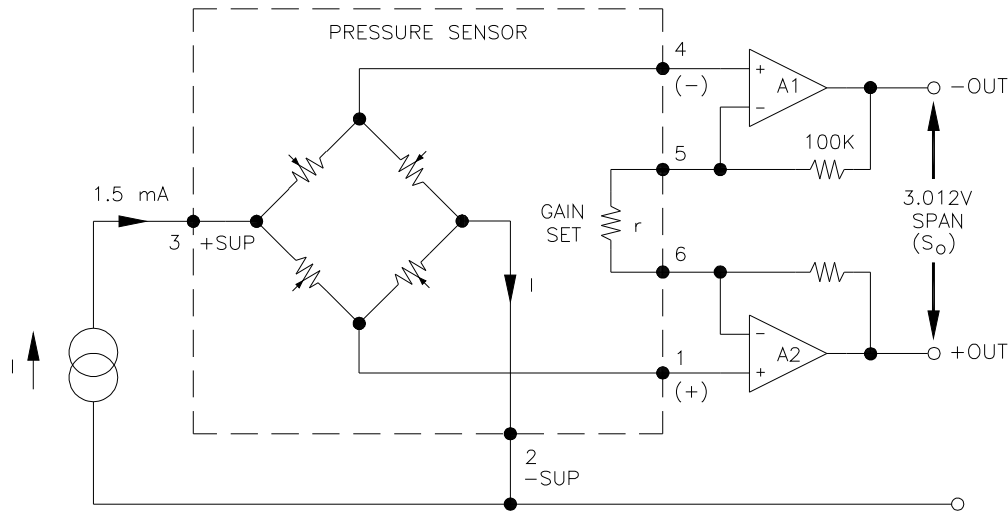
| PAD/CNDR NO | FUNCTION |
|-------------|----------|
| 1 | +OUT |
| 2 | -SUP |
| 3 | +SUP |
| 4 | -OUT |
| 5 | GAIN |
| 6 | GAIN |

CONNECTIONS



Model 85 UltraStable™

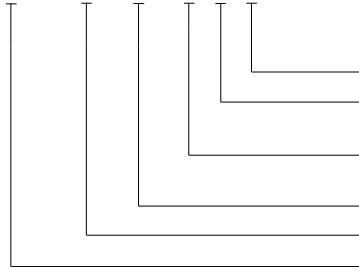
APPLICATION SCHEMATIC



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ORDERING INFORMATION

85 - 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)

Pressure Port (0 = Weldable, No Thread, 4 = 1/4 - 18 NPT, 5 = 1/4 - 19 BSP, 8 = 1/8 - 27 NPT)

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

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

ASIA

Measurement Specialties
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Nanshan District, Shenzhen 518107
China
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Fax: +86 755 3330 5099
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