



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

DESCRIPTION

The Model 86 UltraStable™ is a small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel housing. The Model 86 UltraStable™ is designed for o-ring mounting and 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 ±1%.

Please refer to the Model 86 5 psi datasheet for low pressure applications.

FEATURES

- O-Ring Mount
- -20°C to +85°C Compensated Temperature Range
- ±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 | • | • |





PERFORMANCE SPECIFICATIONS

Supply Current: 1.5mA

Ambient Temperature: 25°C (unless otherwise specified)
Parameters are specified for the compensated versions only

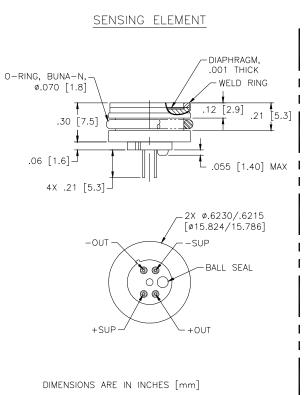
| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|-------------------------------|------------------------------------|---|------|-------|-------|
| Span | 75 | 100 | 150 | mV | 1 |
| Zero Pressure Output | -1 | | 1 | mV | |
| Pressure Non Linearity | -0.1 | | 0.1 | %Span | 2 |
| Pressure Hysteresis | -0.05 | ±0.02 | 0.05 | %Span | |
| Repeatability | | ±0.02 | | %Span | |
| Input Resistance | 2000 | 3500 | 5800 | Ω | |
| Output Resistance | 4000 | | 6000 | 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 | | | ΜΩ | 5 |
| Pressure Overload | | | 3X | Rated | |
| Compensated Temperature | -20 | | +85 | °C | |
| Operating Temperature | -40 | | +125 | °C | 6 |
| Storage Temperature | -50 | | +125 | °C | 6 |
| Weight | | | 13 | grams | |
| Media – Pressure Port | Liquids and Gas | Liquids and Gases compatible with 316L Stainless Steel and Buna-N 7 | | | 7 |
| Media – Reference Port | Compatible with Stainless Steel | Compatible with Silicon, Pyrex, Gold, Fluorosilicone RTV and 316L Stainless Steel | | | |

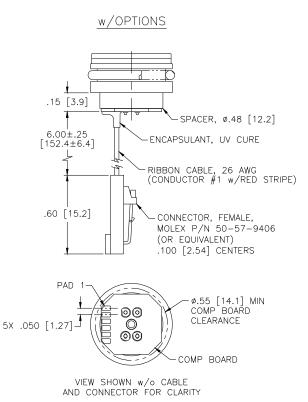
Notes

- 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.



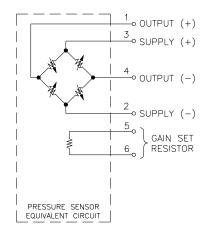
DIMENSIONS





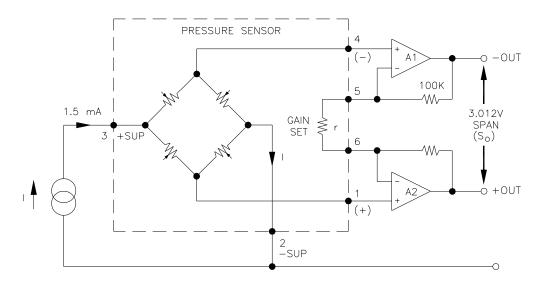
| PAD/CNDTR NO | FUNCTION | |
|--------------|----------|--|
| 1 | +OUT | |
| 2 | -SUP | |
| 3 | +SUP | |
| 4 | -OUT | |
| 5 | GAIN | |
| 6 | GAIN | |

CONNECTIONS



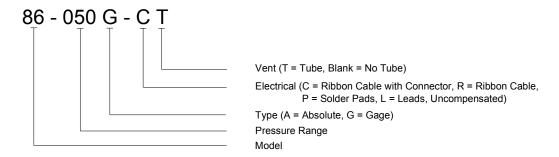


APPLICATION SCHEMATIC



APPLICATION SCHEMATIC

ORDERING INFORMATION



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 (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

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