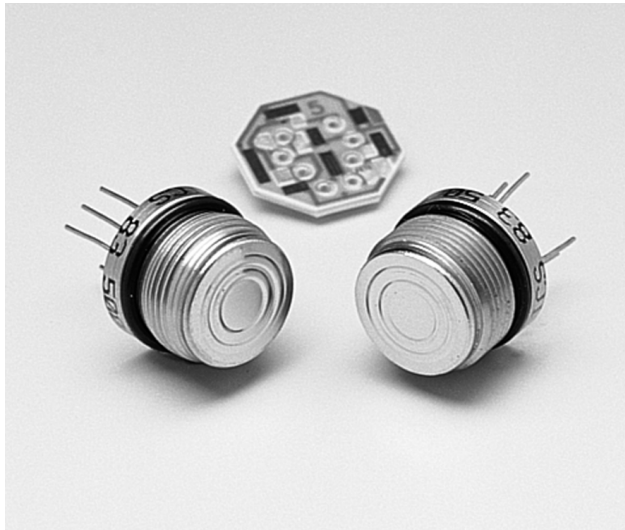


## 316 SS Pressure Sensor 0-100 mV Output Absolute and Sealed Gage Temperature Compensated

- ▶ Hydraulics
- ▶ Medical Instruments
- ▶ Process Control
- ▶ Robotics
- ▶ Refrigeration/Compressors
- ▶ Pressure Transmitters



### FEATURES

- ▶ Weldable
- ▶  $\pm 0.5\%$  Pressure Non-linearity
- ▶  $\pm 1.0\%$  Temperature Performance
- ▶ Compensated or Uncompensated Versions
- ▶ 1.0% Interchangeable Span (provided by gain set resistor)
- ▶ Solid State Reliability
- ▶ Low Power

### STANDARD RANGES

| Range     | psia | psis |
|-----------|------|------|
| 0 to 300  | ●    | ●    |
| 0 to 500  | ●    | ●    |
| 0 to 1000 | ●    | ●    |
| 0 to 3000 | ●    | ●    |
| 0 to 5000 | ●    | ●    |

### DESCRIPTION

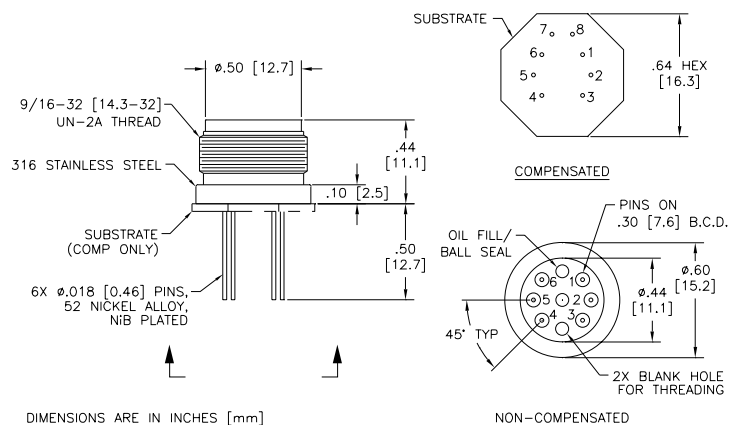
The Model 83 is a media compatible, piezoresistive silicon pressure sensor packaged in a 316 stainless steel housing. The sensing package utilizes silicone oil to transfer pressure from the 316 stainless steel diaphragm to the sensing element.

The Model 83 is designed for high pressure applications and is intended to be welded in place. A ceramic compensation board is included which can be added to the sensor after installation. The compensation board corrects for temperature errors, offset and provides a gain set resistor which can be used to adjust an external differential amplifier and provide span interchangeability to within  $\pm 1\%$ .

For a low pressure, flush sensor, please refer to the Model 154. For a 316 stainless steel sensor with a  $\frac{1}{4}$  NPT fitting please refer to the Model 87 or 97. An uncompensated version of the Model 83 is also available. Please contact the factory for more information.

Higher performance sensors are also available. Please refer to the Models 85, 86 and 87 for flush mount applications and the Models 96 and 97 for sensors with threaded fittings.

### DIMENSIONS



PERFORMANCE SPECIFICATIONS

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

| PARAMETERS                     | Models 80 and 83                    |      |      |         | NOTES |
|--------------------------------|-------------------------------------|------|------|---------|-------|
|                                | MIN                                 | TYP  | MAX  | UNITS   |       |
| Full Scale Output Span         | 50                                  | 100  | 200  | mV      |       |
| Zero Pressure Output           |                                     |      | 5    | mV      | 1,2   |
| Static Accuracy                |                                     |      | 0.5  | ±% Span | 3     |
| Input & Output Resistance      | 4000                                | 4500 | 6000 | Ω       |       |
| Temperature Error – Span       |                                     |      | 1.0  | ±% Span | 1, 4  |
| Temperature Error – Zero       |                                     |      | 1.0  | ±% Span | 1,4   |
| Supply Current                 |                                     | 1.5  | 2.0  | mA      | 5     |
| Output Load Resistance         | 5                                   |      |      | MΩ      |       |
| Insulation Resistance (50 VDC) | 50                                  |      |      | MΩ      | 6     |
| Pressure Overload              |                                     |      | 3X   | Rated   | 7     |
| Operating Temperature          | -20°C to +85°C                      |      |      |         |       |
| Storage Temperature            | -40°C to +125°C                     |      |      |         |       |
| Media                          | Compatible with 316 Stainless Steel |      |      |         |       |
| Weight                         | 12 Grams                            |      |      |         |       |

- Notes
1. The Model 83 has a thick film ceramic substrate that contains the specific external resistors, trimmed to the correct value for compensation, and fits directly over the 6 electrical pins for customer soldering. Two additional pins can be connected by the user to the ceramic substrate for use of the gain set resistor.

2. Measured at vacuum for absolute (A) and one atmosphere for sealed gage (S).

3. Includes repeatability, pressure hysteresis, and pressure non-linearity (best fit straight line).

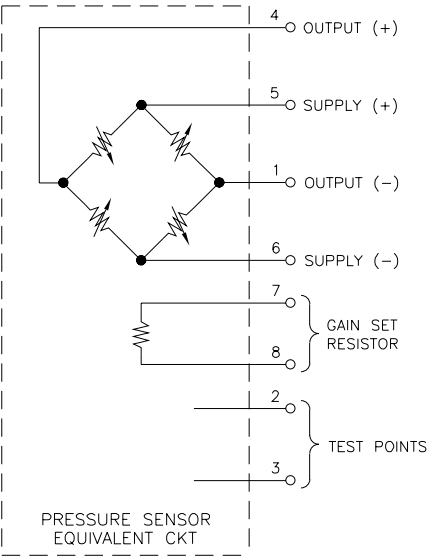
4. Temperature range: 0-50°C in reference to 25°C.

5. Guarantees output/input ratiometricity.

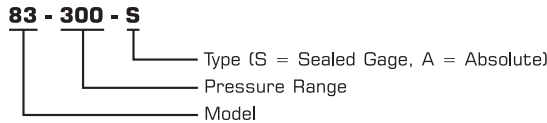
6. Between case and sensing element.

7. 3X or 7,500 psi maximum, whichever is less.

CONNECTIONS



ORDERING INFORMATION



APPLICATION SCHEMATIC

