DESCRIPTION

The PPT86 is a pressure transducer manufactured for a high operating temperature range for the most challenging of applications. This thin film based transducer was designed for industrial, Oil/Gas, Aerospace, and commercial applications. The stainless steel design and high temperature analog component selection allows the sensor to be used in high temperature and high pressure applications.

The PPT86 series utilizes thin film sensors manufactured to Phoenix Sensors precise specifications in a single piece of 316SS housing to ensure long term stability and accuracy (+/-2% Linearity).

The design is simple, cost effective, and proves reliable for OEM customers. Please contact us for Custom design availability.

APPLICATIONS

• Mil/Aero
• Industrial Automation
• HVAC
• Automotive Engine
• Oil/Gas
• Hydraulic

Maximum Environmental Ratings

Operating Temperature .................. -40°C to 125°C
Storage Temperature Range .............. -50°C to 130°C
Proof pressure ......................... 3x full scale pressure (or 15kPSI)
Burst pressure ......................... 5x full scale pressure (or 15kPSI)
PPT86 Operational Characteristics

\[ V_+ = 5V, V_- = 0V, \text{ Temperature} = 25^\circ C \]

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitation Voltage</td>
<td>( V_{EX} )</td>
<td>4.75</td>
<td>5.0</td>
<td>12</td>
<td>V</td>
</tr>
<tr>
<td>Excitation Current</td>
<td>( I_{EX} )</td>
<td>1.5</td>
<td>2.0</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Input Impedance</td>
<td></td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>k\Omega</td>
</tr>
<tr>
<td>Output Impedance</td>
<td></td>
<td>3.5</td>
<td>5</td>
<td>6</td>
<td>k\Omega</td>
</tr>
<tr>
<td>Hysteresis</td>
<td></td>
<td>.05</td>
<td>.08</td>
<td></td>
<td>%FS</td>
</tr>
<tr>
<td>Zero Pressure Output (note 1)</td>
<td>( V_{OS} )</td>
<td></td>
<td>+/- 12</td>
<td></td>
<td>mV</td>
</tr>
<tr>
<td>Linearity (note 2)</td>
<td></td>
<td>-0.2</td>
<td>0.2</td>
<td></td>
<td>%FS</td>
</tr>
<tr>
<td>Repeatability</td>
<td></td>
<td>+/- .05</td>
<td></td>
<td></td>
<td>%FS</td>
</tr>
<tr>
<td>Full Scale Output (10V Input)</td>
<td></td>
<td>45</td>
<td>55</td>
<td>65</td>
<td>mV</td>
</tr>
<tr>
<td>Temperature Error (Span/Offset @ 35C)</td>
<td></td>
<td>.75</td>
<td>1</td>
<td></td>
<td>%FS</td>
</tr>
<tr>
<td>Overpressure (note 4)</td>
<td></td>
<td></td>
<td>20</td>
<td></td>
<td>KPSI</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td></td>
<td>-40</td>
<td>200</td>
<td></td>
<td>C</td>
</tr>
</tbody>
</table>

Notes:
1) Measured with Supply Voltage at 5V. Output is ratiometric.
2) Defined as best straight line
3) Measured from 0°C to 85°C
4) 1.5X Operating Pressure (Maximum of 20KPSI)

Application Information

**Package**

The one piece body design is made of stainless steel (SS316L), which allows for easy manufacturability and long term stability. Automotive grade vibration proof design for engine mount. 1M output cable. Other cable lengths available at request for OEM customers.

**Stability**

The thin film based pressure sensor element is precision welded to a 316L SS base and sealed into the SS housing. The selection of themally capability materials reduce the mechanical stress on the sensor resulting in greater stability over time and temperature.

Additional stability is gained from factory stabilization of all sensors.

**Pressure port**

1/8” -18NPT, ¼”-20 NPT, and 7/16-20UNF threads are standard SS fittings. Other port fittings such as metric sizes, and ¼” BSP are available for OEM customers.

**Media**

The pressure port is tolerant to most media including but not limited to oil, air, gas, some corrosive media, and salt water.

**Wetted parts**

When checking media capability, the wetted surface is composed of only stainless steel (316).

**Pressure ranges**

Standard pressure ranges are 500, 1000, 3000, 5000, 10,000 and 15,000 psi in gauge. Custom pressure ranges are available for OEM customers.
### Mechanical Dimensions (inches)

- **1M Cable**
- **0.89 in**
- **0.94 in**
- **0.60 in**

- **1/4" NPT Male Thread**

### Part Number Configuration

**PPT86-0 - 3KG 1-3**

- **Model**: 0=0-100mV, 1=.5-4.5V
- **Pressure Range**: 3k=3000PSI, 500=500PSI
- **Cable Length**: 1=1M, 3=3M, 5=5M
- **1=1/4" NPT Male**, **2=1/8" NPT Male**, **3=7/16-20 UNF-3A**, **4=Custom**
- **Type (G=Gauge)**

### Standard Part Numbers

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure Range PSI</th>
<th>Type</th>
<th>Max Over Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPT86-0-1KG1</td>
<td>1000</td>
<td>Gauge</td>
<td>3000</td>
</tr>
<tr>
<td>PPT86-0-3KG1</td>
<td>3000</td>
<td>Gauge</td>
<td>9000</td>
</tr>
<tr>
<td>PPT86-0-5KG1</td>
<td>5000</td>
<td>Gauge</td>
<td>10000</td>
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