High Pressure, Wide Temperature Range

The 700 Series Linear Position Sensors are designed to operate reliably in extreme environments such as “down hole” oil well applications at temperatures between -40° and over 200°C and pressures of up to 35,000 psi. Containing a conductive plastic resistive element, the 700 Series has a longer operating life and resolution than traditional wire-wound units. Offered in miniature diameters for space-saving advantages, the 700 Series is also designed to meet a wide variety of interface and mounting requirements making it ideal for applications requiring accurate performance in high temperature and high pressure environments with limited space.

Electrical Specifications

- **Electrical Travel:** 1 in. min to 6 in. max
- **Total Resistance:** 1.23 kΩ per inch
- **Resistance Tolerance:** ±25%
- **Accuracy over useable range:**
  - (Ind. Lin. See Note 2) STD: ± 0.020 inch
  - Best: ± 0.005 inch

- **Power Rating:** @ 175°C: 0.25 Watt per inch
- **Derated to 0.10 Watts @ 250°C**
- **Output smoothness:** 0.1%
- **Insulation resistance @250 VDC:** 1000 Megohms
- **Dielectric strength:** 250 VRMS
- **Operating Temperature Range:** -40° to +200°C
- **Storage Temperature Range:** -40° to +250°C

Mechanical Specifications

- **Mechanical Travel:** Elect travel + 0.2 in. min
- **Actuation Force:** 2 oz. max
- **Repeatability:** within 0.001 inch
- **Life:** 5 x 10⁵ cycles

Dimensions

- **Max. Case Length:** (Electrical Travel + 1.63”)
- **Fully Extended:** (Mechanical Travel + 0.5) + 0.03”
- **Retracted:** 0.25”
- **4-40 UNC-2A Thread**
- **.125 Dia**
- **.06 Dia**
- **.12 Dia Thru**

Notes

1. Dimensions are in inches. Tolerance: ±0.010
2. Most specifications may be altered to meet specific requirements.
   Special Feature Examples:
   - Vent holes for immersion in fluids.
   - Mounting: Threaded bushing front/rear.
   - Leads: Jacketed/Shielded cable.
   - Shaft End Options: (Figure 1)

Figure 1