

TCP-84 temperature Sensor

Indian Space Research Organisation (ISRO) at its Liquid Propulsion Systems Centre has developed a novel TCP-84 Temperature sensor, which will find wide industrial and commercial applications.

Principle of Operation

Accurate and reliable measurement of temperatures in high pressure gaseous and liquid media requires dedicated and specialized thermocouple probes. The Thermocouple probe TCP-84, developed at ISRO, is qualified for measuring temperature under severe environmental conditions posed by the propellants high pressure and corrosive nature. The sensors have been tested for the temperature range of 0°C to 1100°C. The sensors have a heritage of 25 years in ISRO launch vehicle programmes.

The sensor uses basic elements like Chromel / Alumel with sheath and thermo well materials like S.S

Specifications

Temperature Range	0 To 800°C
Thermo Couple	K Type (Chromel-Alumel)
Junction	Ungrounded (Φ 1.0)
Pressure (Max)	350 Bar
Time Constant	≤ 0.3 s
Material Of Sheath	AISI 304 L or Equivalent
Insulating Material	MgO
Sensitivity	41μ V/ °C
Accuracy	0 to 400 °C ± 3 °C > 400 °C ± 0.75% of Reading
Mass	
Electrical interface	Multi-pin hermetically sealed connector.

AISI 304/316/Inconel. The sensor uses unique construction techniques to obtain noise immunity and high response.

Advantages & Salient Features

- Fast response
- Wide Temperature ranges
- Less Weight
- Shock & Vibration resistant

Application

- Space application
- Process Industries
- R&D Laboratories
- Defense
- Commercial
- Oil & Gas Industries

