

HLP-85 Temperature Sensor

Indian Space Research Organisation (ISRO) at its Liquid Propulsion Systems Centre has developed a novel HLP-85 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 HLP-85, developed at ISRO, is qualified for measuring temperature under severe environmental conditions posed by the propellants high pressure and corrosive nature. The sensor has 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 5.5 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 resistance
- Highly linear

Application

- Space application
- Process Industries
- R&D Laboratories
- Defence Application
- Atomic
- Commercial Application
- Oil & Gas Industries



Specifications

Temperature Range	-196 °C To +250 °C
Thermo Couple	K Type (0.5 Φ) Chromel-Alumel
Junction	Ungrounded
Pressure (Max)	350 Bar
Time Constant	≤ 0.3 s
Material Of Sheath	AISI 304 L/Z2 CN 18-10 (SS)
Insulating Material	MgO
Sensitivity	41μV/ °C
Accuracy	0 to 100 °C ±3 °C; 0 to -196 °C ±7 °C
Mass	
Electrical interface	Multi pin hermetically sealed connector.

Technology Transfer from ISRO

ISRO is willing to offer the knowhow of this technology to suitable entrepreneurs / industries in India. Capable manufacturing industries interested in acquiring this knowhow may write with details of their present activities, requirements and plans for implementation, infrastructure and technical expertise available with them, their own market assessment, if any, and plans for diversification to the address given below: