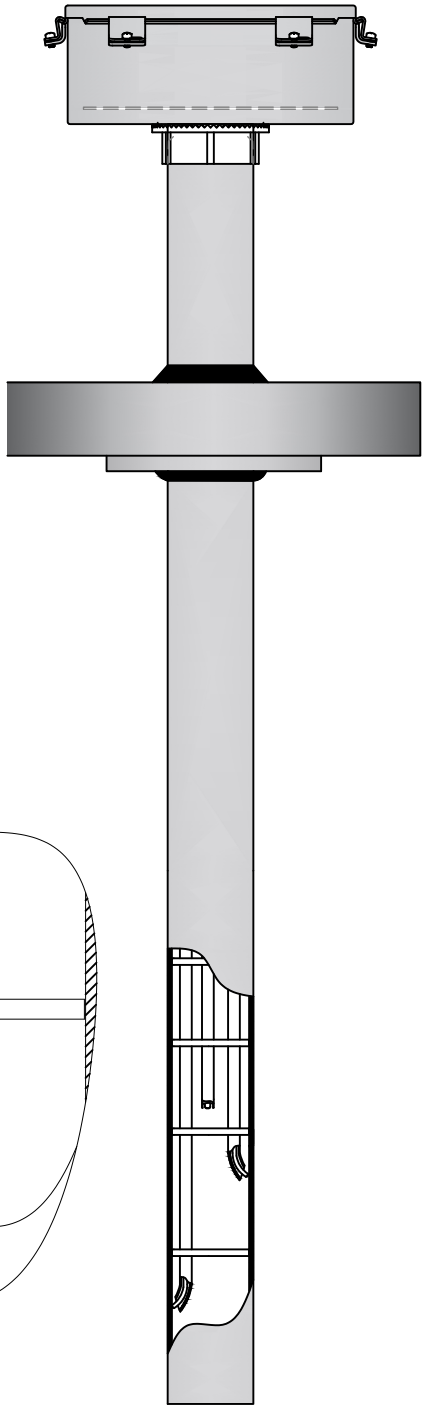
MPTC-04 Multipoint Temperature Sensor with Guide Tube

TEMPERATURE SENSOR

Temperature is a critical parameter in all systems, regardless of the process. In every heating or cooling system, variations occur throughout the medium—temperature gradients always exist. In many applications, measuring temperature at a single point is sufficient, as minor variations often have little impact. However, in certain applications, uniform temperature measurement is essential to ensure product quality.

TempoTech **Guided tube Multipoint** temperature sensors provide accurate measurements at multiple points along a single sensor assembly. Guide Tube design is easy to handle and maintain on site as thermocouples are installed inside the guide tubes. Guide tubes are placed using separator inside the outer protection tube and thermocouples are inserted inside the guide tubes for direct contact with outer sheath of the protection tube. They are widely used in complex processes where precise temperature control is necessary such as Distillation and Separation Processes, Heat exchanger temperature profiling , Polymerization and Chemical Process, Reactor Temperature, Distillation Columns,Crude Oil Desalting, Fluidized Catalytic Cracking, Visbreaking Units and many more. These sensors are specifically designed for applications that require high-precision temperature monitoring across a wide temperature range.

Multipoint sensors are constructed using MGO-PAC thermocouples housed within protective tubes, with sensing elements placed at different points inside the tube. TempoTech offers multipoint sensors in a variety of materials to meet diverse process requirements.



Key Feature:

- Available in Thermocouple Type K, J, T, N,
- Wide range for diameter for sensing elemnt from 0.020" to 1/8".
- A wide selection of sheath material to suit application requirement, 304ss, 316ss, 321ss, Inconel® 600, Incolloy 800, Monel, Pyrosil D etc.
- Grounded and Ungrounded junction to suite application requirement.
- Available with Aluminum, Stainless Steel, Cast Iron Enlcosures
- NEMA 4X and IP68 rated enclosure for continous use in out door environments.
- Available in IEC 60584 & ANSI MC 96.1 standard tolerances
- CRN Available on request for end users in Canada.

Temperature Accuracy As per
ASTM E608/608M/ IEC 60584 & ANSI MC 96.1 standard tolerances
Standard Limits and Special Limits of Errors
Class 2 and Class 1

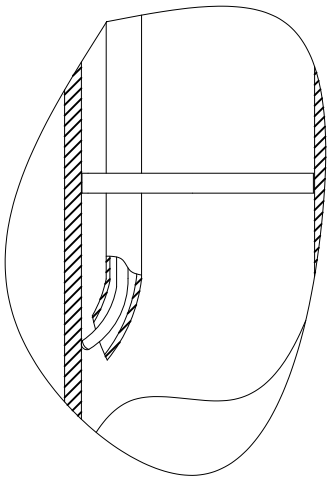
Thermocouple Junction options for MPTC-02

Grounded Junction: In grounded junction thermocouple wires and sheath of the mineral insulated cable is welded together to form a junction. Thermocouple wires and sheath becomes an integral part of the junction. Thus, the wire is grounded to the sheath.

Key Benefits:
- Slower response than Exposed junction, but offers rugged construction.
- Can hold higher pressure than exposed junction and Ungrounded junction.

Ungrounded Junction: Junction is similar to grounded junction except wires are fuse welded, which is then insulated with Mgo powder and formed cap by welding without incorporating thermocouple wires. Thus, the junction is called the ungrounded junction.

Key Benefits :
· Wires are protected from any mechanical damage
· Offers rugged construction, the same as the grounded junction.
· Strain due to differential expansion between wire and sheath is minimized with insulated wires.



Testing and Calibration

- Temperature Calibration NIST traceable upto 1200°C
- CSA/ATEX/FM Explosion proof enclosures for use in hazardous locations.
- Radiographic . Pressure Test, NDT testing available on request,