Littelfuse offers a broad range of thermistors, resistance temperature detectors (RTDs), probes and assemblies for demanding temperature sensing applications worldwide. Recognized for their accuracy and long-term reliability, Littelfuse thermistors and RTDs are the sensor of choice for diverse markets such as industrial controls and equipment, HVAC/R, renewable energy, energy storage and power conversion, food service, appliances, and transportation.

**Thermistor Probes and Assemblies**

Littelfuse probe assemblies are invaluable for sensing temperature in a variety of industries. Standard and customized probe assemblies offer very precise and extremely reliable thermal monitoring in the most demanding applications.

**Capabilities**

- Custom probe assemblies
- High precision thermistors
- R-T curve matching
- Moisture resistant sensors
- Prototyping
- Extensive quality testing
  - Salt water immersion
  - Freeze/thaw temperature cycling
  - Thermal shock
  - Sinusoidal vibration

**NTC and PTC Thermistors**

Littelfuse leaded thermistor options include the highly accurate precision interchangeable thermistors as well as high temperature axial leaded glass encapsulated thermistors and glass coated radial leaded chip thermistors.

**Chip and MELF Style Thermistors**

Littelfuse surface mount thermistors are manufactured using the most advanced equipment and technology available. They are available in a variety of sizes and configurations suitable for mounting using solder, wire bond or epoxy.

**RTD Elements and Probe Assemblies**

Littelfuse RTDs exhibit a nearly linear temperature-resistance curve as well as high accuracy over a very wide temperature range. Their unique characteristics result in a device especially suitable for use in extreme environmental conditions.

**Key Considerations**

- Operating temperature
- Operating environment
- Base resistance value
- Tolerance/accuracy
- Interchangeability
- Thermal response time
- R-T characteristics
- Beta

---

**Are You Sensing Temperature?**

- What is your application?
- Are you currently using a temperature sensor?
- Do you have a drawing or part number to cross?
- What style part do you require (SMT, Leaded, Probe)?
- What type of environment will the sensor be exposed to?
- What is the operating temperature range of your application?
- What base resistance does the application require?
- What accuracy and tolerance does the application need?
## Temperature Sensing Solutions

### Thermistors, RTDs, Probe Assemblies

#### Selection Information

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<th>Characteristics</th>
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<td>NTC Thermistors</td>
<td>Exhibit a decrease in electrical resistance when subjected to an increase in their body temperature</td>
<td>-80 °C to +300 °C</td>
<td>10Ω up to 5MΩ @ 25 °C</td>
<td>±0.10 °C to ± 1.0 °C over wide temperature ranges</td>
<td>Leaded: • Glass-encapsulated axial leads • Epoxy-coated radial leads • Glass-coated radial leads • Encapsulated in a probe assembly</td>
<td>Cost-efficient • Excellent long-term stability • Fast thermal response • Wide-range of styles available • Metal oxide ceramic compounds</td>
</tr>
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<td>Pt-RTDs</td>
<td>Exhibit a positive, predictable and nearly linear change in resistance when subjected to a corresponding change in their body temperature</td>
<td>-50 °C to +500 °C</td>
<td>100Ω, 500Ω, 1000Ω @ 0 °C</td>
<td>±0.06 % to ±0.24 % at 0 °C</td>
<td>• Radial-led • SMT • Encapsulated in a probe assembly</td>
<td>Nearly linear output • High accuracy • High temperature capability</td>
</tr>
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#### Typical Applications

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<td>• Instant Water Heaters</td>
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<td>• Patient Warming</td>
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</tbody>
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www.littelfuse.com/tempsensors