



The ETS BMD Tip is a robust, multi-use thermocouple sensor designed for repeated temperature measurements in molten metal applications. It is ideal for foundries (Iron, Copper, Brass, Bronze, Gold, Silver, Aluminum), Steel plants, and metal processing industries, offering extended usability while maintaining high precision. Available in multiple thermocouple types (S, R, B, and K), it provides flexibility for different industrial requirements.

Key Features:

 Multi-Use Design

 Durable Ceramic Protection

 Versatile Compatibility

 High-Temperature Accuracy

 Fast Response Time



ETS BMD (Big Multi Dip) Tip



SPECIFICATIONS

Measurement



Connector Type: Female

Supporter Type: Plastic and Ceramic

Ceramic Tube Dimensions: 21 x 30 x 75 MM

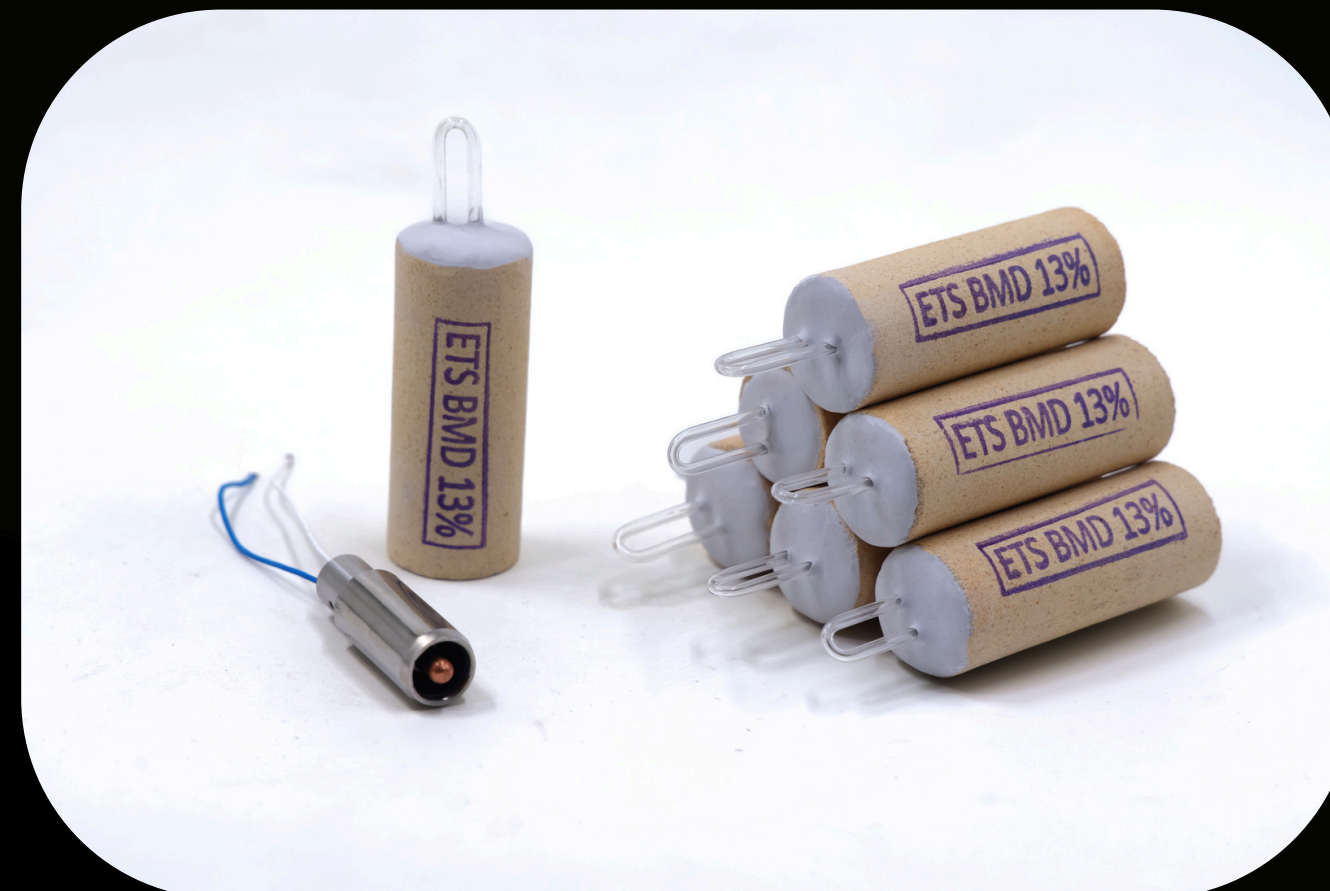
Usage: Multi-use (Slag-free conditions only)

Thermocouple Types:

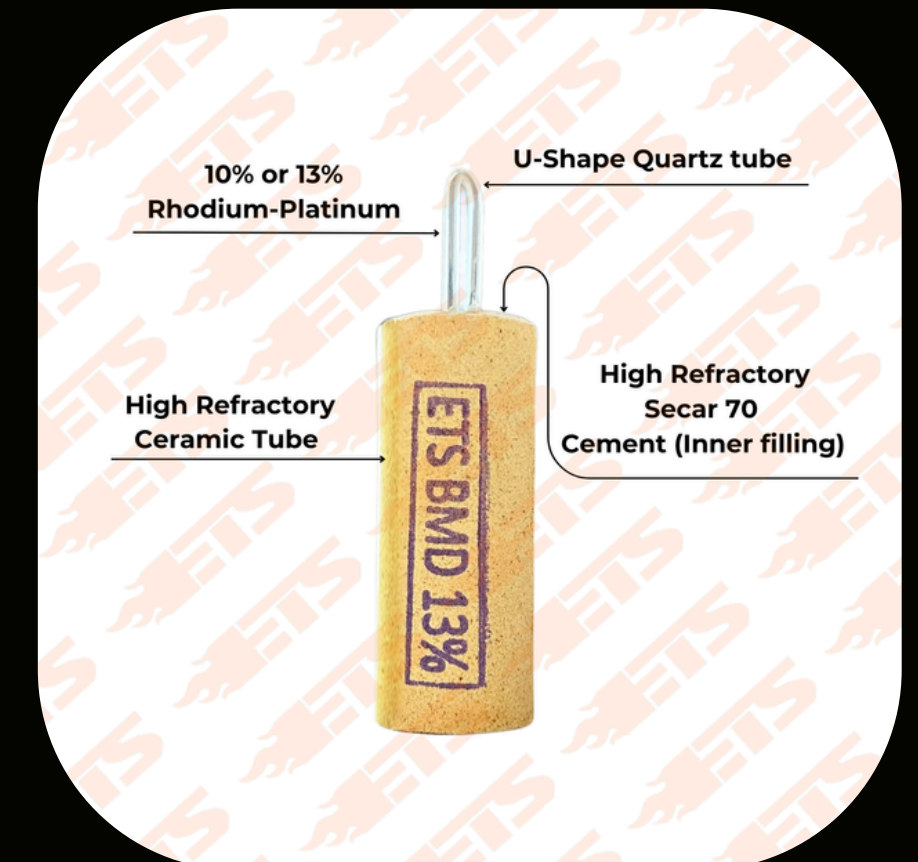
- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)
- Type K (Nickel-Chromium/Nickel-Aluminum)

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C
- Type K: Up to 1350°C



Material



Accuracy: $\pm 1^\circ\text{C}$

Sheath Material: High-quality ceramic for thermal stability.

Application Areas: Foundries, steel plants, and continuous metal processing.



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MTR (Multi-Time Reusable) Tip



The ETS MTR Tip is a high-performance, reusable thermocouple sensor designed for extended use in molten metal applications. Its rugged design allows for multiple temperature measurements, reducing operational costs while maintaining accuracy. Available in Type S, R, and B, it is widely used in high-temperature metal processing.



Key Features:

 Reusable Design

 High-Temperature
Durability

 Optimized for Industrial
Application

 Fast and Reliable Response

 Slag-Resistant Construction



ETS MTR (Multi-Time Reusable) Tip



SPECIFICATIONS

Measurement



Connector Type: Female

Supporter Type: Plastic supporter ensures stability during measurement.

Paper Tube Dimensions:

- Inner Diameter (ID): 18 mm
- Outer Diameter (OD): 30 mm

Accuracy: $\pm 1^\circ\text{C}$

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6% Rhodium-Platinum)

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

Paper Tube Lengths: 300 mm to 400 mm, depending on furnace capacity

Usage: Multi-use (Slag-free conditions only)



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations



Mark III Thermocouple Tip



The ETS Mark III Thermocouple Tip Sensor is a highly reliable and accurate temperature measurement device designed for molten metal applications. It is widely used in steel, iron, and non-ferrous metal industries to ensure precise temperature measurement during melting, refining, and casting processes.

Key Features:

 **High-Accuracy Measurement**

 **Secure Connection**

 **Durable Build**

 **Fast Response Time**

 **Slag Resistance**

 **Versatile Use**





SPECIFICATIONS

Measurement



Connector Type: Male

Supporter Type: Plastic supporter ensures stability during measurement.

Paper Tube Dimensions:

- Inner Diameter (ID): 28 mm
- Outer Diameter (OD): 40-42 mm

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

Paper Tube Lengths: 300 mm to 1500 mm, depending on furnace capacity.

Usage: Single-use

Accuracy: $\pm 1^\circ\text{C}$



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations



Mark IV Thermocouple Tip



The ETS Mark IV thermocouple tip is a specialized temperature sensor commonly used in the foundry, steel and metal industries for measuring high temperatures in molten metal furnace & baths, such as steel, iron, and other foundry applications.

Key Features:

-  **High-Temperature Accuracy**
-  **Robust Construction**
-  **Enhanced Slag Resistance**
-  **Secure Male Connector**
-  **Fast and Reliable Measurement**
-  **Widely Used in Industrial Applications**



ETS Mark IV Thermocouple Tip

SPECIFICATIONS



Measurement



Connector Type: Male connector ensures a secure fit.

Supporter Type: Plastic supporter provides stability.

Paper Tube Dimensions:

- Inner Diameter (ID): 18 mm
- Outer Diameter (OD): 30 mm

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)

Paper Tube Lengths: 300 mm to 1800 mm, customizable based on furnace capacity.

Usage: Single-use

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

Accuracy: $\pm 1^\circ\text{C}$



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations



Mark VII Thermocouple Tip (Nylon)



The ETS Mark VII Thermocouple Tip with a nylon sheath is a high-performance temperature sensor designed for molten metal applications where durability and electrical insulation are critical. The nylon sheath provides impact resistance, rapid response time, and protection against environmental factors, making it suitable for high-speed temperature measurements in foundries, steel plants, and continuous casting processes.

Key Features:

-  Nylon Sheath Protection
-  Lightweight and Robust
-  Slag & Contaminant Resistance
-  Resistant to Mechanical Damage

-  High-Temperature Accuracy
-  Secure Connection Interface
-  Fast Response Time



ETS Mark VII Thermocouple Tip (Nylon)



SPECIFICATIONS

Measurement



Connector Type: Female connector for secure attachment.

Supporter Type: Plastic supporter ensures durability.

Paper Tube Dimensions:

- Inner Diameter (ID): 18 mm
- Outer Diameter (OD): 30 mm

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

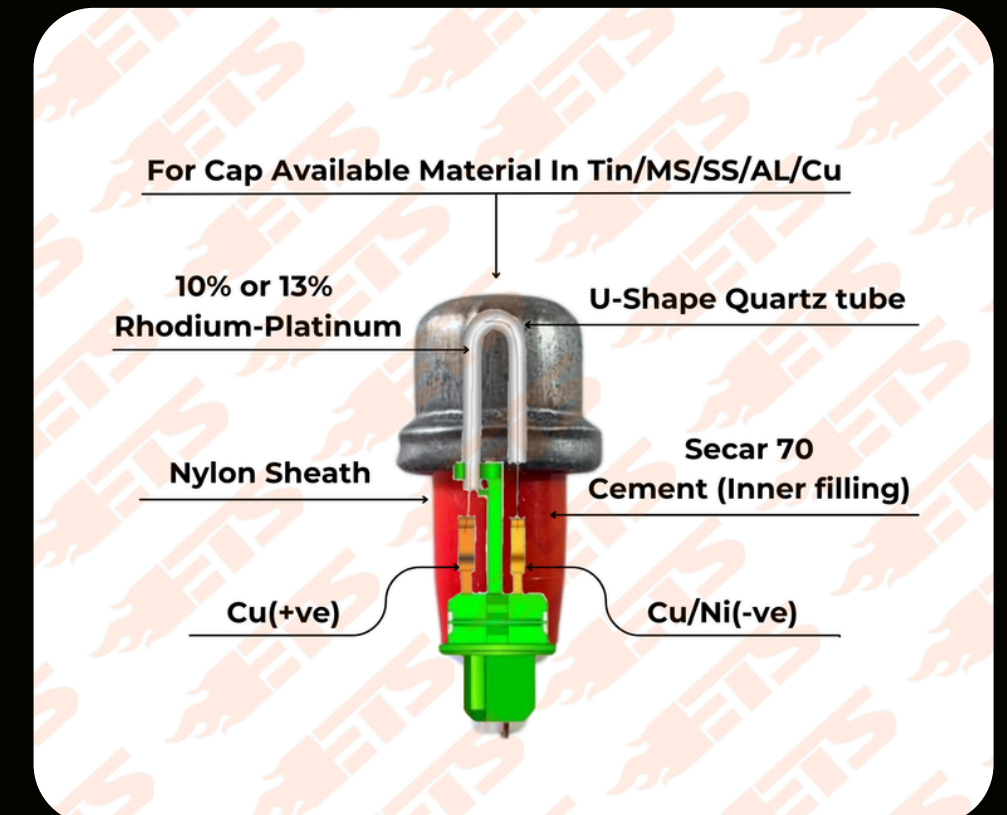
Paper Tube Lengths: 300 mm, 600 mm, 900 mm, 1200 mm.

Usage: Single-use

Accuracy: $\pm 1^\circ\text{C}$



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations



Mark VII Thermocouple Tip (Ceramic)



The ETS Mark VII Thermocouple Tip with a ceramic sheath is a precision-engineered sensor designed for extreme temperature environments. The ceramic sheath provides superior heat resistance, excellent thermal insulation, and protection against molten metal slag, ensuring long-lasting performance and accurate readings in harsh industrial conditions. It is widely used in applications requiring high-temperature stability and minimal contamination.

Key Features:

-  Ceramic Sheath Protection
-  Durable and Heat-Resistant Construction
-  Chemical and Slag Resistance
-  Ideal for High-Temperature Industrial Applications

-  Accurate and Reliable Measurements
-  Secure Male-Female Connector
-  Fast Response Time



ETS Mark VII Thermocouple Tip (Ceramic)



SPECIFICATIONS

Measurement



Connector Type: Male-Female configuration

Supporter Type: Ceramic

Sheath Material: High-purity ceramic for maximum heat resistance

Paper Tube Dimensions:

- Inner Diameter (ID): 18 mm
- Outer Diameter (OD): 30 mm

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)

Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

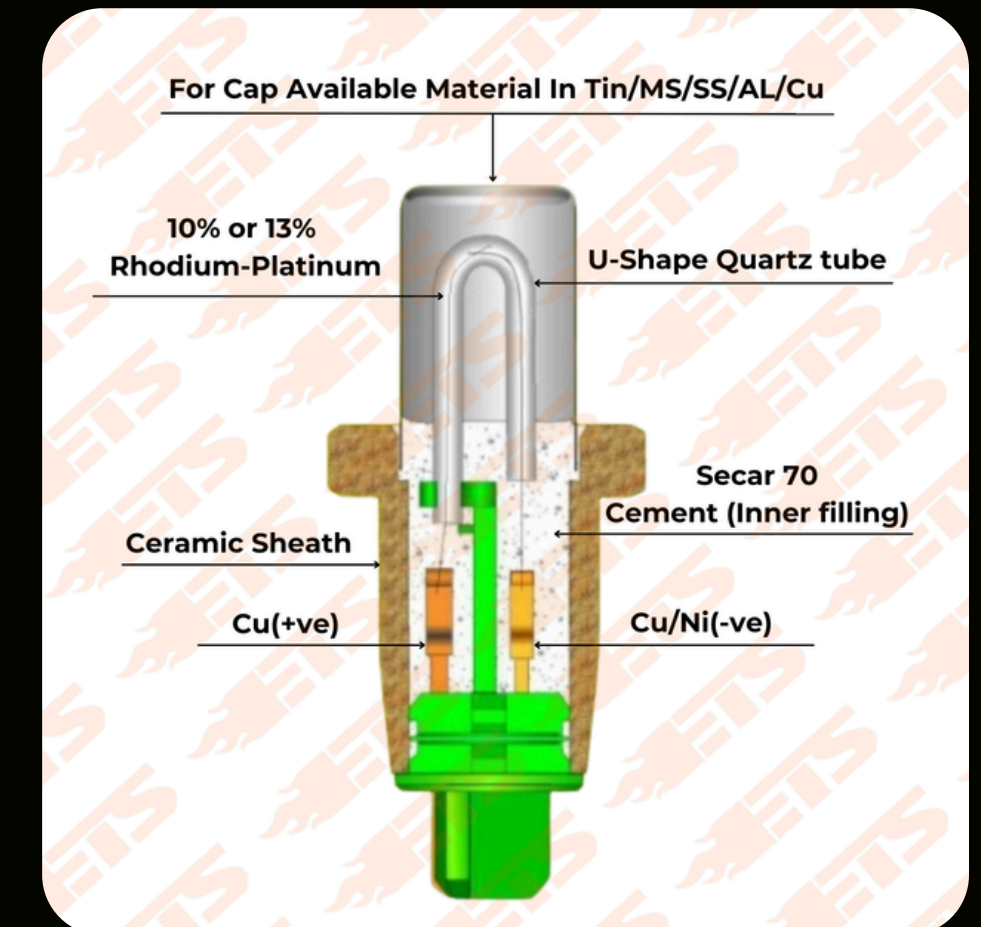
Paper Tube Lengths: 300 MM to 1800 MM (customizable based on furnace capacity)

Usage: Single-use or reusable depending on process conditions

Accuracy: $\pm 1^\circ\text{C}$



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations

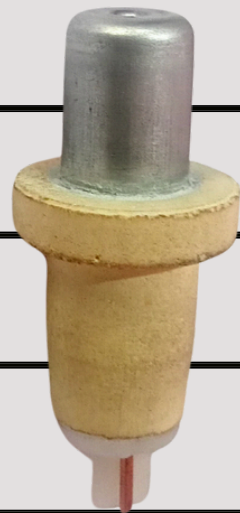




Comparison of Mark VII Thermocouple Tips: Nylon Sheath vs. Ceramic Sheath.



Mark VII Types	Mark VII Thermocouple Tip (Nylon Sheath)	Mark VII Thermocouple Tip (Ceramic Sheath)
Sheath Material	High-strength nylon	High-purity ceramic
Durability	Good mechanical strength, impact-resistant	Fragile but highly heat-resistant
Temperature Resistance	Up to 1750°C	Up to 1800°C
Thermal Insulation	Moderate	Excellent
Resistance to Molten Metal Slag	Moderate	High
Electrical Insulation	Excellent	Excellent
Response Time	Fast response due to lightweight material	Slightly slower due to thermal mass
Usage	Single-use or reusable	Typically reusable
Application Areas	Foundries, steel plants, industrial metal processing	Steel plants, high-temperature metal production
Best For	General molten metal applications where durability and insulation are needed	Extreme temperature applications requiring high slag resistance and thermal stability



Safe Tip (Anti Splash) Thermocouple Tip



The ETS Safe Tip (Anti Splash) Thermocouple Tip is a high-performance temperature sensor designed to enhance safety and accuracy in molten metal measurement applications. Its advanced anti-splash technology minimizes metal splatter, protecting operators from Metal Spirting and equipment while ensuring precise temperature readings. Built with durable, heat-resistant materials, this thermocouple tip provides fast response times and reliable performance in extreme industrial environments such as steel plants, foundries, and metal processing plants.

Key Features:



Anti-Splash Coating



Durable Construction



Versatile Compatibility



Optimized for Industrial Use



High-Temperature Precision



Secure Connection



Fast Response Time





Safe Tip (Anti Splash) Thermocouple Tip



Measurement



Connector Type: Mini / Mark IV (Male) and Mark VII (Female)

Supporter Type: Plastic and Ceramic

Sheath Material: Heat-resistant ceramic with anti-splash protection.

Paper Tube Dimensions:

- Inner Diameter (ID): 18 mm
- Outer Diameter (OD): 30 mm

SPECIFICATIONS

Thermocouple Types:

- Type S (10% Rhodium-Platinum)
- Type R (13% Rhodium-Platinum)
- Type B (6/30% Rhodium-Platinum)

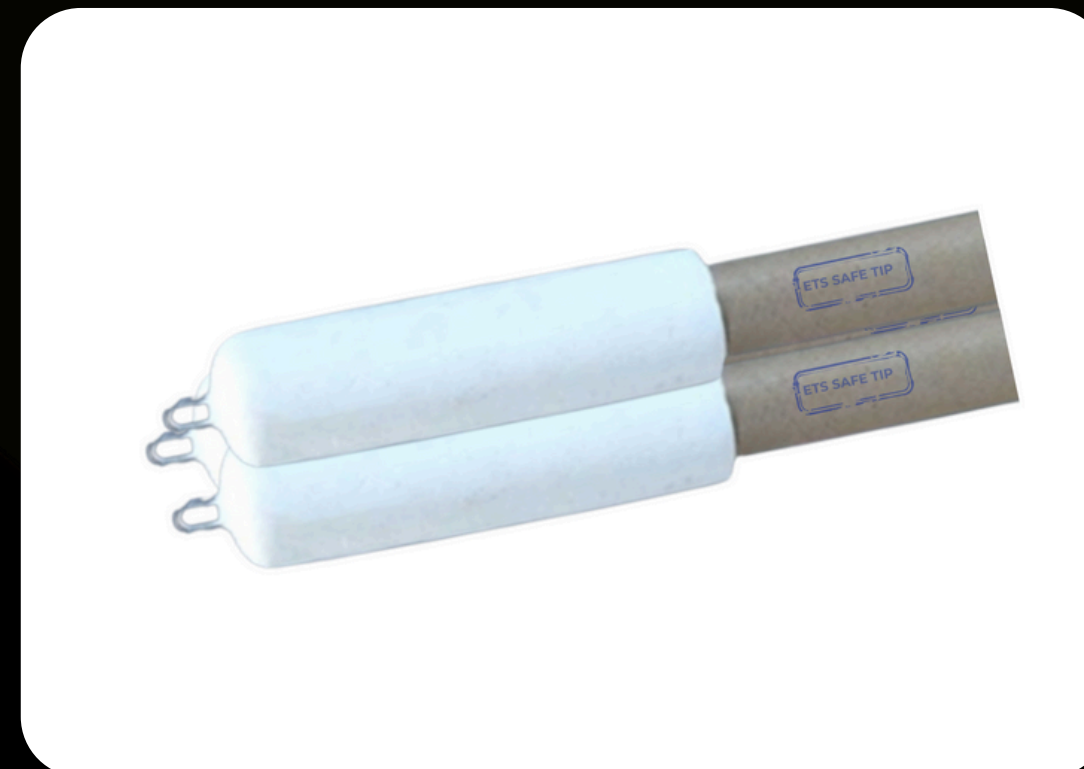
Temperature Range:

- Type S/R: Up to 1767°C
- Type B: Up to 1820°C

Paper Tube Lengths: 300 MM to 1200 MM (customizable based on furnace capacity)

Usage: Multi-use (Slag-free conditions, prevents spurting and splashing)

Accuracy: $\pm 1^\circ\text{C}$



Material



Application Areas:

- Foundries, Steel manufacturing and refining processes
- Ladle and tundish temperature measurements
- Continuous casting operations



Thermocouple Samplers (Round & Oval)



The ETS Thermocouple samplers (Round & Oval) are essential tools for high-temperature metal processing, enabling simultaneous temperature measurement and molten metal sample collection. Designed for precision and reliability, these samplers ensure accurate chemical composition analysis while withstanding extreme industrial conditions. The round sampler is ideal for standard applications, while the oval sampler provides a larger sample size for enhanced analysis. Built from high-quality refractory materials, these samplers offer durability, efficiency, and compatibility with various thermocouple measurement systems, making them a crucial component in foundries, steel plants, and metal refining processes.

Key Features:



Anti-Splash Coating



Durable Construction



Optimized Shapes:
Oval Sampler & Round Sampler



High-Temperature Resistance



Minimized Contamination Risk



Fast and Reliable Sampling



Thermocouple Samplers (Round & Oval)



SPECIFICATIONS

Measurement



Material



Usage: Single-use

Shape Options: Round / Oval

Supporter Type: Resin Coated High Temperature Resistant Sand along with Metal Spoon & Quartz Tube

Sheath Material: High-quality refractory-coated steel body

De-oxidants: Aluminum / Zirconium / Plain

Paper Tube Lengths: 600mm / 900mm length with may varying up to 1500mm (customizable based on furnace capacity)

Sampler Types:

- Aliminum
- Zirconium
- Plain

Temperature Range:

- Up to 1800°C (depending on molten metal type)

Paper Tube Dimensions [Round]:

- Inner Diameter (ID): 39 mm
- Outer Diameter (OD): 49 mm

Paper Tube Dimensions [Oval]:

- Inner Diameter (ID): 40 mm
- Outer Diameter (OD): 50 mm

Sampling Volume:

- Round Sampler: Typically 3-6 mL
- Oval Sampler: Typically 6-10 mL

Application Areas:

- Foundries, Steel manufacturing and refining processes

