

## Accurate Thermocouple For Molten Iron with 500mm Protection Tube Length and 6mm Probe Diameter

### Our Product Introduction

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#### Basic Information

- Place of Origin: China
- Brand Name: Huarui
- Model Number: Cf2501



#### Product Specification

- Features: High Temperature Resistance, Fast Response Time, Durable And Reliable
- Probe Diameter: 6mm
- Probe Length: 300mm
- Type: Type K
- Thermocouple Wire Length: 2m
- Connection Type: Fixed Thread
- Protection Tube Length: 500mm
- Protection Tube Material: Ceramic
- Highlight: molten iron thermocouple with protection tube, 500mm thermocouple for molten iron, 6mm probe diameter molten iron thermocouple

## Product Description

### Product Description:

In the fiercely competitive landscape of modern foundries and steel mills, knowledge is power, and timing is everything. Among the most critical pieces of knowledge is the exact temperature of your molten iron. This single data point dictates the success of every subsequent operation—from inoculation and alloying to tapping and pouring. An inaccurate reading can lead to catastrophic consequences: cold shuts, misruns, gas porosity, weakened mechanical properties, and ultimately, massive scrap rates.

The Huarui Robust Immersion Thermocouple is engineered to be the unfailing pulse-taker of your molten metal process. We understand that measuring temperatures exceeding 1300°C in an aggressive, abrasive, and thermally shocking environment is one of the most challenging tasks in industrial sensing. Therefore, our HR-TC-MI Series is not just a sensor; it is a sophisticated, disposable system designed for one purpose: to deliver speed, accuracy, and reliability when it matters most, safeguarding your product quality and your bottom line.

### Features:

**A superior thermocouple is a synergy of advanced materials and precision engineering. Every component of the HR-TC-MI is optimized for the harsh reality of the foundry floor.**

#### 2.1. The Sensing Element: The Heart of Accuracy

*Type S (Platinum-Rhodium) Excellence:* For the most demanding applications and highest accuracy requirements, we offer Type S (Platinum/Platinum-10% Rhodium) elements. These provide exceptional stability and precision for critical iron and steel processing.

*Robust Type B & R Options:* For even higher temperature ranges found in steel production, Type B (Platinum-30% Rhodium/Platinum-6% Rhodium) elements are available, offering superior longevity and resistance to degradation.

*Metallurgical Purity:* Our noble metal wires are of the highest purity, ensuring a stable and consistent Electromotive Force (EMF) output, which is the foundation of a precise temperature reading.

#### 2.2. The Protective Sheath: The First Line of Defense

*The sheath is the component that bears the full brunt of the molten metal's chemical and thermal assault.*

*High-Zirconia Ceramic (ZrO<sub>2</sub>):* Our standard for excellence. Zirconia sheaths offer outstanding resistance to molten iron erosion and slag attack. They possess exceptional thermal shock resistance, surviving the rapid temperature change from room temperature to 1600°C+ in seconds without cracking.

*Fused Quartz (SiO<sub>2</sub>):* A cost-effective alternative for certain iron applications, providing good thermal shock resistance and non-wettability against molten iron.

*Alumina (Al<sub>2</sub>O<sub>3</sub>):* For ultra-high temperatures and environments requiring extreme mechanical strength and chemical inertness.

*Multi-Layer Protection:* Key models feature a multi-layered construction, often with an inner insulator and an outer protective tube, to maximize safety and signal integrity.

#### 2.3. The Paper Tube & Connecting Head: Seamless Integration and Safety

*Steel-Wire Reinforced Paper Tube:* The sturdy paper tube provides structural integrity for safe immersion. It is often reinforced with steel wires to prevent bending or breaking during handling. Its combustible nature is a safety feature, ensuring it burns away cleanly without contaminating the metal.

*Standardized Quick-Connect Plug:* The industrial-standard ceramic or plastic connector head ensures a foolproof, secure connection to your temperature display unit or automated temperature measurement system. This eliminates signal noise and connection failures.

#### 2.4. The Moistening Agent: Ensuring a Clean Measurement

The tip of the thermocouple is often coated with a special moistening agent. This coating serves a vital function: it promotes immediate wetting of the sheath by the molten metal, preventing slag adhesion and ensuring a rapid thermal transfer for a faster, more representative reading.

### Technical Parameters:

Core Product Advantages: Why Huarui is the Uncompromising Choice

**Blazing Fast Response Time:** < 4 Seconds. Our thin-walled, optimally designed sheaths transfer heat with incredible speed, capturing the true temperature of the metal before the bath can cool or the thermocouple can degrade. This allows for quicker decisions and higher throughput.

**Unwavering Measurement Accuracy:** ±0.2%~0.5% of Reading. Precision-engineered sensing elements and high-quality materials ensure that the temperature you see is the temperature you have, giving you the confidence to make perfect metallurgical calls.

**Exceptional Thermal & Mechanical Shock Resistance:** The proprietary material composition and manufacturing process of our sheaths create a component that can withstand repeated, rapid immersion without failure, ensuring reliability across every heat.

**Superior Slag & Erosion Resistance:** The dense, non-porous microstructure of our ceramic sheaths minimizes erosion from the abrasive molten metal and resists penetration by corrosive slags, leading to a longer usable life and consistent performance.

**Operational Safety & Ease of Use:** From the easy-grip paper tube to the unambiguous quick-connect plug, every aspect is designed for operator safety, efficiency, and to minimize human error in high-stress environments.

### Applications:

The **HR-TC-MI Series** plays a vital role throughout the entire workflow of molten metal processing:

**Furnace or Ladle Tapping:** It is crucial to determine the exact tapping temperature with precision to guarantee that the metal falls within the optimal range for subsequent treatment and pouring.

**In-Ladle Treatment Stations:** These stations are essential for monitoring temperatures during processes such as inoculation and alloying, given the high sensitivity of these procedures to temperature variations.

**Pre-Pour Assessment in the Transfer Ladle:** This step serves as the final inspection before the metal is poured into the mold, verifying that it has not cooled beyond the critical fluidity threshold.

**Continuous Temperature Monitoring in Channel Furnaces:** Specific models within the series are tailored for extended immersion

durations or frequent dipping, providing continuous temperature monitoring for these applications.

## Customization:

Customize your Huarui Cf2501 Thermocouple For Molten Iron with the following options:

- Brand Name: Huarui
- Model Number: Cf2501
- Place of Origin: China
- Probe Length: 300mm
- Application: Measurement Of Molten Iron Temperature In Foundry Industry
- Temperature Range: 0-1800°C
- Type: Type K
- Connection Size: M20x1.5

Enhance your product with J Type Thermocouple Cable, J Type Thermocouple Cable, and Cast Iron Thermocouple Protection Tube options.

## Support and Services:

The Thermocouple For Molten Iron product offers comprehensive Product Technical Support and Services to ensure optimal performance and customer satisfaction. Our team of experts is dedicated to assisting customers with any inquiries or issues related to the thermocouple, including installation guidance, troubleshooting, and maintenance tips.

Our technical support services cover a wide range of areas, including product specifications, compatibility with various systems, calibration procedures, and more. We strive to deliver prompt and effective solutions to help customers maximize the efficiency and reliability of their thermocouple in molten iron applications.

## Packing and Shipping:

Product Name: Thermocouple For Molten Iron

Description: High-quality thermocouple designed specifically for measuring temperature in molten iron applications.

Packaging: The thermocouple will be carefully packaged in a sturdy box with protective cushioning to ensure safe transportation.

Shipping: We offer reliable shipping services to ensure the product reaches you in a timely manner. The thermocouple will be securely packed and shipped with care to prevent any damage during transit.

## FAQ:

**Q: What is the brand name of this thermocouple for molten iron?**

A: The brand name is Huarui.

**Q: What is the model number of this thermocouple?**

A: The model number is Cf2501.

**Q: Where is this thermocouple for molten iron manufactured?**

A: This product is manufactured in China.

**Q: Can this thermocouple be used for other metals besides molten iron?**

A: While it is specifically designed for molten iron, it may also be suitable for other high-temperature applications.

**Q: Is this thermocouple suitable for industrial use?**

A: Yes, this thermocouple is suitable for industrial use in high-temperature environments.



**Shandong Huarui Electric Furnace Co., Ltd.**



+86 13235363441



sales@huarui-furnace.com



melt-furnaces.com

Mount Taishan Street, Anqiu Economic Development Zone, Weifang, Shandong, China