

## Ceramic Thermocouple For Molten Iron M20x1.5 Connection Size 12mm Protection Tube Diameter for Performance

### Our Product Introduction

for more products please visit us on [melt-furnaces.com](http://melt-furnaces.com)

#### Basic Information

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



#### Product Specification

- Protection Tube Diameter: 12mm
- Probe Material: Platinum/Rhodium
- Connection Type: Fixed Thread
- Protection Tube Material: Ceramic
- Accuracy:  $\pm 1.5^{\circ}\text{C}$  Or  $\pm 0.4\%$
- Type: Type K
- Thermocouple Wire Length: 2m
- Application: Measurement Of Molten Iron Temperature In Foundry Industry
- Highlight: Ceramic thermocouple for molten iron, M20x1.5 thermocouple connection,

## 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 is Essential in Molten Metal Operations

The HR-TC-MI Series is an essential tool throughout the entire molten metal processing workflow. Its capabilities are indispensable in various stages:

**Furnace or Ladle Tapping:** This equipment is used to determine the precise tapping temperature, ensuring that the metal falls within the

optimal range for subsequent treatment and pouring.

**In-Ladle Treatment Stations:** These stations play a critical role in monitoring temperature during processes such as inoculation and alloying. Given the high temperature-sensitivity of these procedures, accurate temperature measurements are crucial.

**Pre-Pour Assessment in the Transfer Ladle:** Prior to pouring the metal into the mold, a final check is conducted with the HR-TC-MI Series to verify that the metal has not cooled below the necessary fluidity threshold.

**Continuous Temperature Monitoring in Channel Furnaces:** Specific models within the HR-TC-MI Series are tailored for longer-term immersion or frequent dipping applications in channel furnaces.

## Customization:

Customize your Thermocouple For Molten Iron from Huarui with the following specifications:

Brand Name: Huarui

Model Number: Cf2501

Place of Origin: China

Features: High Temperature Resistance, Fast Response Time, Durable And Reliable

Protection Tube Length: 500mm

Protection Tube Diameter: 12mm

Probe Diameter: 6mm

Application: Measurement Of Molten Iron Temperature In Foundry Industry

## Support and Services:

The Thermocouple For Molten Iron product comes with comprehensive Product Technical Support and Services to ensure optimal performance and customer satisfaction. Our team of experts is available to provide technical assistance, troubleshooting guidance, and product recommendations to meet your specific needs. Additionally, we offer training and consultation services to help you maximize the efficiency and longevity of your thermocouple. Our commitment to quality extends beyond the product itself, as we strive to deliver a seamless support experience for all our customers.

## Packing and Shipping:

Product Name: Thermocouple For Molten Iron

Description: This thermocouple is designed specifically for measuring high temperatures in molten iron applications, ensuring accurate and reliable temperature readings.

Packaging: The thermocouple will be securely packaged in a protective case to prevent any damage during transportation.

Shipping: The product will be shipped using a reliable courier service to ensure safe and timely delivery to your specified address.

## 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 measuring high temperatures in molten iron?**

**A: Yes, this thermocouple is designed for measuring high temperatures in molten iron.**

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

**A: Yes, this thermocouple is suitable for industrial applications due to its robust design and accuracy.**



**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