Immersion Thermocouple



Product Overview

DKKI Immersion Thermocouple is a high-precision, disposable probe engineered for molten metal temperature measurement in steelmaking. It utilizes platinum-rhodium alloys (Types R, S, B) based on the Seebeck principle. Type S and R thermocouples measure molten temperatures up to 1760°C, while Type B extends to 1820°C, with an accuracy of ±1°C and a response time of under 6 seconds. Manufactured in compliance with IEC 60584 and ASTM E230 standards under an ISO 9001:2015 quality management system, each thermocouple undergoes rigorous quality control to ensure material integrity and operational consistency. Customizable paper tube lengths from 250 to 1700 mm, along with protective caps specific to the molten metal type (steel, cast iron, copper, brass, etc.), ensure adaptability to various furnace and ladle capacities and a wide range of melts. The product is offered in three main models to address diverse operational requirements:

1. Standard Disposable Thermocouple: For temperature measurement in molten steel, cast iron, and non-ferrous metals. (This model is also produced for use with automated lances.)
2. Splash-Resistant Thermocouple: Equipped with a sintered sand splash-resistant sleeve for enhanced operator safety in foundries and small furnaces.
3. Multi-Use Thermocouple: Designed for repeated use in small-scale, slag-free units.

This configuration enables seamless integration with standard equipment, manual and automated lances, and process control systems. It guarantees real-time data accuracy and enhances production efficiency and temperature measurement repeatability in the most demanding steelmaking conditions.

Key Features

- High Accuracy ±1.0°C tolerance
- Ultra-Fast Response ≤6-second readout
- Robust Construction Slag-resistant protection caps
- Customizable tube lengths and cap material
- Plug-and-Play Quick-connect contact blocks

Why DKKI

- Proven success for over three decades
- ISO 9001:2015 certified quality
- In-house testing under real operating conditions
- Free expert support and comprehensive training
- On-site consulting and troubleshooting
- Fast order processing with flexible logistics
- Standard products, customizable options
- Transparent partnerships that build trust
- Proactive customer engagement

Application Areas

- Steelmaking in induction and electric arc furnaces
- Secondary metallurgy processes in ladle refining
- Continuous casting in tundish and casting machines
- Production of alloy steels and stainless steels
- Melting and casting of non-ferrous metals such as copper, brass, etc.
- Cast iron melting and casting processes across various industries

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Technical Specifications

Parameter	Details
Wire Types (Composition) (Applications)	Temperature
Type S (PtRh10-Pt) (steel/iron and non-ferrous metals)	up to 1760°C
Type R (PtRh13-Pt) (steel/iron and non-ferrous metals)	up to 1760°C
Type B (PtRh30-PtRh6) (high-purity alloys)	up to 1820°C
Accuracy	±1.0°C
Response Time (immersion-to-readout)	≤6 seconds
Protection Cap Material: According to melts material	Steel/Aluminum/ Copper/Brass
Slag Protection Material	Reinforced paper
foundry operator protection Option	Anti Splash Coating
Signal Output for Standard Thermometers	Micro volts (μV)
Connectors	Quick-connect connectors for manual and automatic lances
Tube Length	250 mm to 1700 mm (ladle / tundish / furnace)
Internal Tube Diameter	3/8” for 16 mm and 3/4” for 28mm lance holders
Compliance and Certifications	ISO 9001:2015 ASTM E230 IEC 60584 IT S90
Storage Conditions	Dry environment avoid direct sunlight or corrosive fumes
Shelf Life	2 years under proper storage conditions

Packaging Information

Length [mm]	Qty per Pack	Packs in Pallet	Pallet Dimensions	Pallet Weight [kg]
300	100	40	120 x 80 x 140	293
400	50	50	120 x 80 x 115	338
600	50	40	120 x 80 x 140	436
900	50	20	120 x 80 x 115	384
1200	50	20	120 x 105 x115	432
1500	50	20	150 x 105 x 115	530
1700	50	20	165 x 100 x 115	714
1500 ML	20	25	150 x 105 x 140	458

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