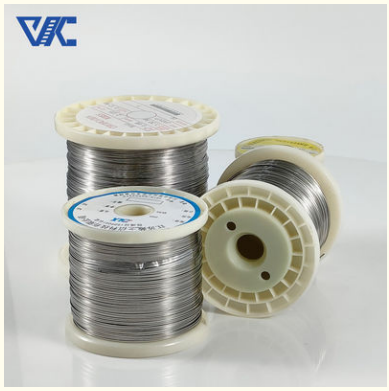
Type J Thermocouple Bare Wire Iron Constantan Alloy For Metal Smelting

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Victory
- Certification: CE,ROHS,ISO 9001
- Model Number: Type J
- Minimum Order Quantity: 5 Kg
- Price: Negotiable
- Packaging Details: Thermocouple wire are rolled on ABS white spool and packed with plastic film,in cartoon boxes.
  Special packaging requirements can also be accommodated.
  OEM is also acceptable
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 300 tons per month



Product Specification

- Product Name: Thermocouple Wire Type J
- Temperature Range: -210~1200°C
- EMF Tolerance: +/- 2.2C Or +/- .75%
- Diameter: 0.12-8mm
- Grade: IEC854-1/3
- Positive: Iron
- Negative: Cu-Ni
- Special Limits Of Error: +/- 1.1C Or 0.4%
- Color: Bright
- Application: Cable & Wire
- Highlight: **Type J Thermocouple Bare Wire**, **Thermocouple Bare Wire NP**, **Metal Smelting thermocouple wire**

More Images

Our Product Introduction

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Product Description

Introduction:

J-type thermocouple bare wire is one of the commonly used thermocouple temperature measurement devices in the metal smelting process. It is composed of iron-copper alloy wire and copper-nickel alloy wire, and measures temperature changes through the thermoelectric effect.
The structure of the J-type thermocouple bare wire is relatively simple and consists of two alloy wires. One end of the two wires is connected together to form a measurement point, and the other end is connected to a temperature transmitter or data acquisition system. The measuring point is exposed to the environment to be measured, and temperature changes will cause a slight potential difference between the alloy wires. By measuring this potential difference, the temperature of the environment can be accurately calculated.
Iron-copper-nickel thermocouple (J-type thermocouple) is also called iron-constantan thermocouple. The nominal chemical composition of its positive electrode (JP) is pure iron.
The negative electrode (JN) is a copper-nickel alloy, often vaguely called constantan. Its nominal chemical composition is 55% copper and 45% nickel, as well as a small but very important amount of cobalt, iron, manganese and other elements. Although it is called Constantan, but is different from nickel-chromium-constantan and copper-constantan, so it cannot be replaced by EN or TN.
Iron-Constantan thermocouples cover the measurement temperature range from -210 to 1200°C, but are typically used in the temperature range 0-750°C.
J-type thermocouple bare wire is widely used in metal smelting and is suitable for temperature monitoring and control in high-temperature environments. It is usually able to measure the temperature range from 0 degrees Celsius to 750 degrees Celsius, with high accuracy and stability.

Application:

Metal smelting is the process of heating ore or waste to high temperatures to melt it and extract the desired metal. In this complex process, temperature monitoring and control are crucial to ensure the efficiency and quality of the smelting process, and J-type thermocouple bare wire is one of the widely used temperature measurement tools.

1. Melting process monitoring:
J-type thermocouple bare wire is used to monitor the melting temperature during metal smelting. By inserting J-type thermocouple bare wire into the smelting furnace or smelting equipment, the temperature of the metal molten pool can be measured in real time. Accurate temperature measurement helps control heating and cooling rates during the smelting process, ensuring metal smelting reaches the required temperature range and time.

2. Temperature control and regulation:
The temperature measurement results of J-type thermocouple bare wire can be used to control the heating and cooling system during the melting process. By monitoring temperature changes in real time and comparing with the set temperature target, the heating power or cooling rate can be automatically adjusted to keep the melting temperature within the required range. This helps improve the stability and consistency of the smelting process.

3. Alloy composition control:
Temperature measurements from J-type thermocouple bare wires can also be used to control the composition of metal alloys. During the metal smelting process, the composition of the alloy is critical to the performance and quality of the final product. By measuring the temperature changes during the smelting process, the composition of the metal alloy can be inferred based on the thermoelectric potential output of the thermocouple, and the necessary alloy ingredients and adjustments can be made.

Advantage:

J-type thermocouple bare wire has many advantages when used in metal smelting. First of all, it has good adaptability to oxidizing atmospheres and high-temperature environments, and can work stably and reliably in the metal smelting process. Secondly, J-type thermocouple bare wire has high measurement accuracy and can accurately monitor temperature changes during the metal smelting process. In addition, J-type thermocouple bare wire has a fast response speed and is suitable for metal smelting control that requires real-time performance.

In short, J-type thermocouple bare wire plays an important role in the metal smelting process and is used to monitor and control the temperature during the smelting process. Accurate temperature measurements can help control heating and cooling systems during the smelting process, ensuring that metal smelting reaches the required temperature range and time. In addition, temperature measurements can be used to control alloy composition to ensure the performance and quality of the final product. The application of J-type thermocouple bare wire in metal smelting helps to improve the efficiency, stability and consistency of the smelting process.

Relevant specific parameters:

- Temperature range: -40°C to 750°C (-40°F to 1382°F)
- Thermoemf output: Varies based on temperature changes, usually in the microvolt (μV) level.
- Linear characteristics: has good linear characteristics.
- Sensitivity: Varies based on specific model and manufacturer.

Code	Wire Component of the thermocouple	
	+Positive leg	- Negative Leg
N	Ni-Cr-Si(NP)	Ni-Si-magnesium (NN)
K	Ni-Cr(KP)	Ni-Al(Si) (KN)
E	Ni-Cr(EP)	Cu-Ni (EN)
J	Iron (JP)	Cu-Ni (JN)

T	Copper (TP)	Cu-Ni (TN)
B	Platinum Rhodium-30%	Platinum Rhodium -6%
R	Platinum Rhodium-13%	Platinum
S	Platinum Rhodium -10%	Platinum

- **Standards**

ASTM	ANSI	IEC	DIN	BS	NF	JIS	GOST
(American Society for Testing and Materials) E 230	(American National Standard Institute) MC 96.1	(European Standard by the International Electrotechnical Commission 584)-1/2/3	(Deutsche Industrie Normen) EN 60584 - 1/2	(British Standards) 4937.1041, EN 60584 - 1/2	(Norme Française) EN 60584 - 1/2 - NFC 42323 - NFC 42324	(Japanese Industrial Standards) C 1602 - C 1610	(Unification of the Russian Specifications) 3044

Using Occastion of Different Thermocouple			
Thermocouple Type		Working Atmosphere	Working Temperature
Type K	KP	Oxidizing	-200 to +1200℃
	KN	Inert	
Type N	NP	Oxidizing	-200 to +1200℃
	NN	Oxidizing	
Type E	EP	Oxidizing	-200 to +900℃
	EN	Oxidizing	
Type J	JP	Oxidizing(use in high temp)	-40 to +750℃
	JN	Reducing, Inert, Vacuum	
Type T	TP	Oxidizing,Vacuum	-200 to +350℃
	TN	Reducing, Vacuum	

- **Working temperature:**

Diameter/mm	Long time Working temperature/℃	Short period Working temperature/℃
0.3,0.5	300	400
0.8,1.0,1.2	400	500
1.6,2.0	500	600
2.5,3.2	600	750

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Oem service:
Welcome customized size
We are experience factory for OEM&ODM service

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