Customized Metal Mineral Insulated Heating Cable Thermocouple Cable

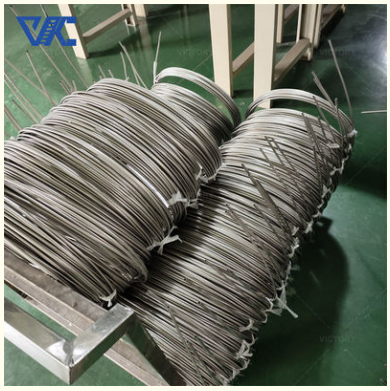
Our Product Introduction

Basic Information

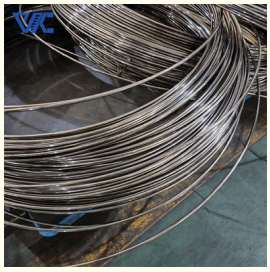
- Place of Origin: China
- Brand Name: Victory
- Certification: CE,ROHS,ISO 9001
- Model Number: K,N,E,J,T,B,R,S Types
- Minimum Order Quantity: 5 Kg
- Price: Negotiable
- Packaging Details: in coils, carton and wooden case.
- Delivery Time: 5-21 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 50 - 999 meters $2.88

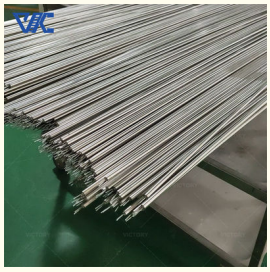
Product Specification

- Product Name: MI Thermocouple Cable
- Warranty: 1 Year
- Conductor Material: NiCr-NiSi,NiCrSi-NiSi, NiCr-Konstantan, Fe-Konstantan, Cu-Kon
- Sheath Material: SS304,SS321, SS316, SS310, INCL600,601, Nicrobell,SS446
- Dia(mm): 0.25mm To 12.7mm
- Insulator: 99.6% High Purity MgO
- Temperature Range: 0~1100(℃)
- Application: Indoor Temperature Control, Power Equipment Monitoring
- Highlight: **Mineral Insulated Heating Cable**, **Metal Mineral Thermocouple Cable**, **Customized insulated heating cable**



More Images





Product Description

Our Product Introduction

for more products please visit us on victory-alloy.com

Introduction:

Armored thermocouples are sensor devices commonly used for ambient temperature monitoring and control. It consists of a filament-shaped heat-sensitive element and a protective shell, which is usually composed of a metal sleeve and insulating material. Armored thermocouples are reliable, high-precision sensor devices suitable for monitoring and controlling ambient temperature. It converts temperature changes into electrical signals through the thermoelectric effect and provides a reliable working environment through the protection of the shell. In a variety of industrial and laboratory applications, armored thermocouples play an important role in helping achieve precise temperature measurement and control.

The working principle of armored thermocouples is based on the thermoelectric effect. When a thermal element comes into contact with the environment, it senses temperature changes in the environment. According to the principle of thermoelectric effect, the thermal sensitive element generates a small voltage signal, which is proportional to the ambient temperature. This voltage signal can be transmitted to a temperature measuring instrument or control system through a connecting line for processing and analysis.

The outer shell of an armored thermocouple protects the heat-sensitive element while also providing mechanical strength and corrosion resistance. The housing usually uses a metal casing, such as a stainless steel casing, to protect the heat-sensitive element from physical damage and environmental influences. Insulating materials are used for electrical isolation and protection to ensure the accuracy and stability of the measurement signal.

Armored thermocouples offer many advantages that make them a widely used choice for ambient temperature monitoring and control. It has high precision and stability to provide accurate temperature measurement results. In addition, armored thermocouples have a wide temperature measurement range and can be adapted to different application needs. It also has fast response speed and good linear characteristics, allowing temperature changes to be detected and recorded in time.

Product Features:

High temperature measurement range: Armored thermocouples are suitable for a wide range of temperature measurement ranges, typically covering temperatures from -200 degrees Celsius to up to 1200 degrees Celsius.
High-precision measurement: Armored thermocouples can provide high temperature measurement accuracy, typically reaching an accuracy level of 0.5 degrees Celsius in industrial applications.
Strong corrosion resistance: The outer sheath of the armored thermocouple is usually made of corrosion-resistant materials, such as stainless steel or nickel alloy, which can resist the erosion of chemical substances and ensure the stability and reliability of the sensor.

Advantage:

Fast response: Armored thermocouples have a fast response to temperature changes and can sense changes in ambient temperature in real time and provide timely feedback.
High temperature resistance: Armored thermocouples can work in high temperature environments and maintain stable performance, and are suitable for temperature monitoring and control in high temperature industrial scenarios.
High strength: The outer sheath of armored thermocouples is usually made of high-strength materials, which has good mechanical strength and can resist external pressure and impact.

Specific applications:

Industrial temperature measurement and control: Armored thermocouples are widely used in temperature measurement and control in industrial production processes, such as furnace temperature monitoring, smelting process control, etc.
Ambient temperature monitoring: Armored thermocouples can be used for temperature monitoring in buildings, offices, warehouses and other environments to achieve comfortable indoor temperature control.
Power industry applications: Armored thermocouples can be used for temperature monitoring of power equipment, such as transformers, motors, generators, etc., to ensure the safe operation of the equipment.

Other relevant knowledge:

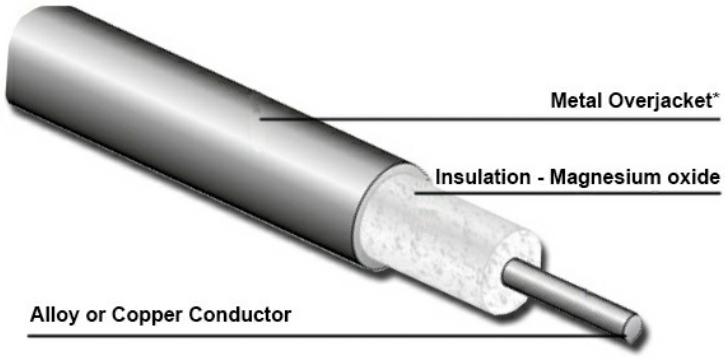
Working principle of armored thermocouples: Armored thermocouples work according to the principle of thermoelectric effect. They are composed of wires of two different metals. When the temperatures at both ends are different, a weak voltage signal will be generated. By measuring this voltage signal, the temperature change can be calculated.
Selection of thermocouples: According to specific application requirements and environmental conditions, select the appropriate thermocouple type and material, such as K-type thermocouple, J-type thermocouple, S-type thermocouple, etc.
Precautions for installation and use: When installing and using armored thermocouples, attention must be paid to protecting the outer sheath to avoid mechanical damage and corrosion, and to regularly calibrate and check the performance of the sensor.

Parameter:

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

Material	Type	Grade	Working temperature (deg)		Tolerance	Standard
			Long Term	Short Term		
NiCr-NiSi	K	1	-40~1100	-40~1300	±1.5 deg	GB/T 2614-1998
		2			±2.5 deg	
NiCr-CuNi	E	1	-40~800	-40~900	±1.5 deg	GB/T 4993-1998
		2			±2.5 deg	
Fe-Constantan	J	1	-40~600	-40~800	±1.5 deg	GB/T 4994-1998
		2			±2.5 deg	
Cu-CuNi	T	1	-200~300	-200~400	±0.5 deg	GB/T 2903-1998

Outer Sheath(mm)		core wire Dia.(mm)		Outer Sheath(mm)o core wire Dia.(mm)				Length(m)
Out Dia	Wall Thickness	K,N,E,J,T Types	S,R,B Types	K,N Types	E,J,T Types	S,R Types	B Types	
0.5	0.05-0.10	0.08-0.12	...	SS304, SS321, SS316, SS310, INCL600	SS30, SS32, SS316	INCL60, INCL800	INCL60, INCL800	500
1.0	0.10-0.20	0.15-0.20	...					300
1.5	0.15-0.25	0.23-0.30	...					200
1.6	0.16-0.26	0.26-0.36	...					200
2.0	0.25-0.35	0.40-0.50	0.25-.030					180
3.0	0.38-0.48	0.50-0.60	0.30-0.40					80
3.2	0.48-0.58	0.58-0.68	0.30-0.40					75
4.0	0.52-0.62	0.60-0.70	0.35-0.40					70
4.8	0.73-0.83	0.75-0.85	0.40-0.45					40
5.0	0.78-0.88	0.80-0.90	0.40-0.45					40
6.0	0.98-1.08	0.90-1.10	0.45-0.50					30
6.4	1..05-1.15	1.02-1.12	0.45-0.50					30
8.0	1.30-1.44	1.30-1.40	0.45-0.50					20
12.7	1.75-1.90	1.95-2.05	...					10



Calibration	Tolerance		
	Special Limits (Grade I)	Standard Limits (Grade II)	Temperature Range (°C)
K (Chromel vs Alumel)	±1.5°C or ±0.4%	±2.5°C or ±0.75%	-40~1000
J (Iron vs Constantan)			-40~750
E (Chromel vs Constantan)			-40~800
T (Copper vs Constantan)		±1°C or ±0.75%	-40~350

Q&A:

Q: What high-temperature industrial scenarios are armored thermocouples suitable for?
Answer: Armored thermocouples are suitable for many high-temperature industrial scenarios, such as metallurgy, chemical industry, electric power, glass manufacturing, etc. They can be used for high-temperature furnace temperature monitoring, smelting process control, high-temperature reactor temperature measurement, etc.

Q: What are the advantages of armored thermocouples over other temperature sensors?
Answer: Compared with other temperature sensors, armored thermocouples have higher high temperature resistance and fast response capabilities. They are suitable for a wider temperature range, especially in high-temperature environments, and can

provide high measurement accuracy.

Q: What is the sheath material of armored thermocouples?
Answer: The sheath of armored thermocouples is usually made of corrosion-resistant materials, such as stainless steel or nickel alloy. These materials have good corrosion resistance and mechanical strength, can protect the internal wires of the thermocouple, and can adapt to various harsh environments.

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