

Sensor Control...

Access Control...

Thermocouple sensor

For extreme environment temperature monitoring



Applications with extreme environment monitoring:

- Plastics industry
- Manufacturing industries
- Cryogenics fields
- Scientific Research

Overview

Different thermocouple types (e.g. K, T, N, J, etc) are made from different combinations of metals. For example, a J Type is made from Iron and another slightly different copper-nickel alloy and the K Type thermocouple has a Nickel-Chromium positive conductor and a Nickel-Aluminum negative conductor. The AKCP J and K Type thermocouple adapters are specially designed for not only connecting the AKCP K Type Thermocouple temperature sensor to the securityProbe and securityProbe 5E base units, but also allow you to integrate other J and K Type thermocouple sensors into these base units. When the AKCP Thermocouple sensor, or any other J or K type sensor is plugged into either type adapter and the RJ-45 LAN.

Thermocouple Sensors Explained

A thermocouple is a temperature measuring device consisting of two conductors of dissimilar metals or alloys that are connected only at the ends. When the ends are at different temperatures, a small voltage is produced in the wire that can be related directly to the temperature difference between the ends. If the temperature at one end is known, the temperature at the other end can be determined.

Thermocouple wire or extension grade wire is used to connect the thermocouple to the sensing or control instrumentation. The conditions of measurement determine the type of thermocouple wire and insulation to be used. Temperature range, environment, insulation requirements, response, and service life should be considered when selecting a wire type. Different thermocouple types (e.g. K, T, N, J, etc) are made from different combinations of metals. There are two common types of thermocouple wire, Type J and Type K. The J Type is made from Iron and another slightly different copper-nickel alloy and the K Type thermocouple has a Nickel-Chromium positive conductor and a Nickel-Aluminum negative conductor

Which thermocouple sensor type should be used?

Different thermocouple types (e.g. K, T, N, J, etc) are made from different combinations of metals. There are two common types of thermocouple wire, Type J and Type K. The J Type is made from Iron and another slightly different copper-nickel alloy and the K Type thermocouple has a Nickel-Chromium positive conductor and a Nickel-Aluminum negative conductor.

Type K thermocouples are used in oxidizing, inert or dry reducing atmospheres. Exposure to vacuum is limited to short time periods. Must be protected from sulfurous and marginally oxidizing atmospheres. Reliable and accurate at high temperatures

The AKCP J and K Type thermocouple temperature sensors can be connected to the securityProbe and securityProbe 5E base units, and can also let you integrate other J and K Type thermocouple sensors into these base units using the AKCP thermocouple adaptors. When the AKCP Thermocouple sensor or any other J or K type sensor is plugged into either type adaptor and the RJ-45 LAN cable is connected to the Intelligent Sensor port on the securityProbe base unit or the E-sensor8 expansion module, the base unit will auto detect the sensor. A built-in graph option is included on all securityProbes for graphing temperature variations over a period of time.

Features

- Retractable cable with superior memory
- Subminiature Connector for Use with handheld Thermometers
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- 300, 450 and 600 mm (12', 18 and 24') Lengths
- Companion RTD Probe, Type PR-16 304, 310, 316, 321 SS, Inconel N and Super XL Sheaths

Specifications

- Measurement rate: one reading every second
- Accepts all standard size male connectors for Thermocouple Types J and K
- Designed to work with the securityProbe and securityProbe 5E and E-sensor8 expansion modules only

J&K Thermocouple Adapters

There are two common types of thermocouple wire, Type J and Type K and AKCP have created two adapters to enable you to connect directly to the specified AKCP units.



Features

- Comes with a 5 foot CAT5 cable. User can use a customized cable up to 100 feet
- RJ-45 connection for easy and simple installation
- Full autosense including disconnect alarm
- Power source: powered by the sensorProbe. No additional power needed.
- Power Consumption: Typical 7.80 mWatt, 1.56mA
- They are "simple", rugged, need no batteries
- Can measure over very wide temperature ranges and more

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