

Cold joint instrument

Learn about the theory behind cold junction compensation in thermocouples using the Seebeck voltage, reference tables, and by finding the hot junction temperature.

In this article different types of cold junction compensation are reviewed. Discover common practices when accurate thermocouple measurements are required.

Q: What is electronic Cold Junction Compensation (CJC)? A: It is when the readout measures the temperature of the cold junction and compensates for its difference from 0 °C, by adding or ...

The point where the thermocouple is connected to the copper connections of an instrument is the cold junction. Either a precision RTD or thermistor is used to measure the ...

Cold junction temperature measurements can be achieved using a local diode, RTD, thermistor, or device-based temperature sensors. RTDs and thermistors require excitation sources and additional ...

Thermocouples are one of the most widely used temperature-measurement devices because of their ruggedness, repeatability, and fast response time. This application note discusses ...

The first step is to measure the actual thermocouple output voltage. Next, measure the temperature of the cold junction (T COLD) and use the appropriate thermocouple reference table for your ...

Historically, the Ice Point Reference method (Seebeck effect) was the first to be used for cold solder joint compensation. The method is relatively simple, requiring only an ice bath to maintain ...

A thermocouple measurement always needs information from joined wire end (hot junction) and open wire end (cold junction). The cold junction is also called reference point. Variations of reference point ...

When a thermocouple or its extension wires are connected to the terminals of a device like a thermocouple transmitter the cold junction is at the room temperature T_1 °C.

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