Thermocouples

thermometricscorp.com/thermocouple.html

General Purpose Thermocouple

Thermocouple assembly, types E, J, K, N & T with general purpose conduit head and metal sheath with mounting threads

Bayonet Mount Thermocouples

Universal design allows for quick Thermocouple or RTD installation into existing twist-lock adapters.

Thermocouples With Plug

Accurate thermocouple types E, J, K, N & T with standard size connectors attached with metal sheaths (sizes from 1/16 inch to 1/4 inch diameter).

Thermocouple With Connection Head

Protection Head Probes are typically utilized in an industrial environment to help protect the probe from harsh conditions.

Armored Thermocouple

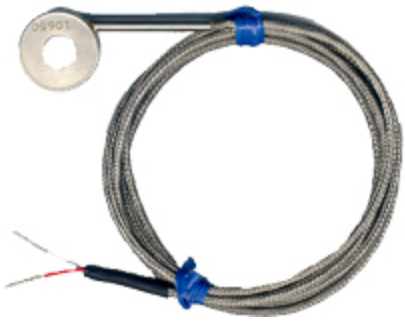
Armor cable protects the leads of Thermocouples types E, J, K, N & T. Metal sheaths made to your required length.

Handheld Thermocouple

Handheld meter for various Thermocouples inputs. Rugged design, dual scale with loads of functionality

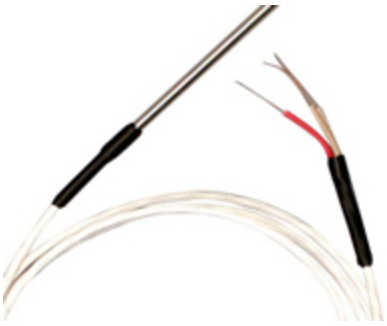
High-Temperature Thermocouple

Ultra-high temperatures to over 4,200°F with conduit head attached available in various sheath materials.



Surface Mount Thermocouple

Surface thermocouple probes normally feature a flat Thermocouples element that is designed to make good contact with rigid surface.



Transition Joint Thermocouple

Transition Joint Thermocouples are typically made up of a metal sheathed thermocouple of a given diameter which "transitions" to a lead wire via a slightly larger cylindrical barrel

Bare Lead Thermocouple

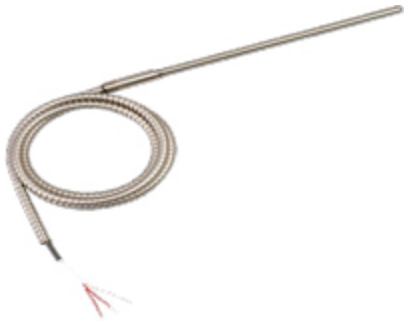
Bare Lead Mineral Insulated Thermocouple Probes can be used as replacement probes for plant operations or as an OEM component to build temperature sensors.

Overbraided Thermocouple

Incorporate high temperature ceramic insulation with inconel overbraid thermocouple wires to create a flexible, abrasion resistant thermocouple.

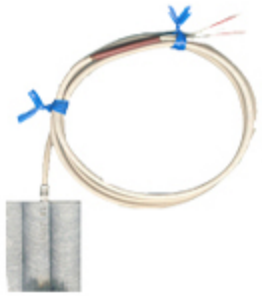
Multi-Point Thermocouple

probes consist of several smaller diameter thermocouples placed inside a single outer sheath. They are best suited for profiling the temperature at various points along a single axis.



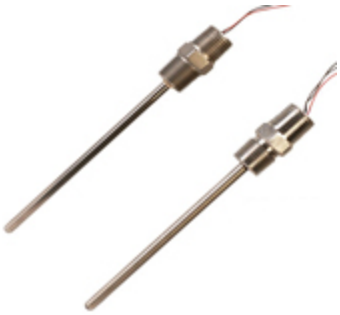
Autoclave Thermocouple

Autoclave thermocouples are designed to withstand the harsh environment of an autoclave. They are ideally suited for food applications where steam wash down is necessary.



Magnet Mount Thermocouple

Magnet Mount Thermocouples can be utilized on any ferrous metals as an easy means to measure surface temperature of an object.



Replacement Thermocouple

The Flexible lead wire (NB1) replacement probe is ideal for field installation with existing protection heads or for extending leads to remote locations. Flexible leads prevent breakage in hard to wire situations.

Spring Loaded Thermocouple

spring-loaded thermocouple is designed for threaded blind-hole measurements, surfaces subject to vibration/oscillation and any application where positive contact for good measurement is required.

Bearing Thermocouple Sensor

These bearing sensors are designed for use in bearing shoes and will give reliable indication as to the bearing condition. This may provide an early warning of oil film breakdown.

Tube Skin/Weld Pad Thermocouple

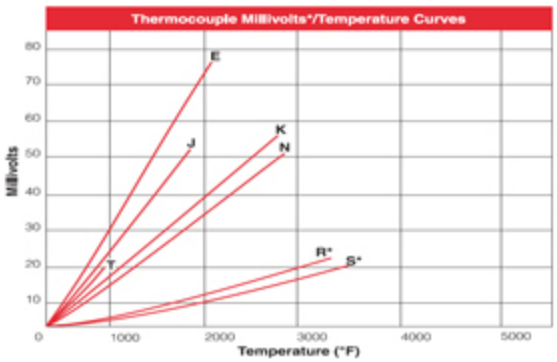
Commonly used in Petro-Chemical industries. The sensors are welded or clamped to measure process temperature.

Penetration Thermocouple

Penetration Thermocouple probes are utilized when an application requires insertion into a soft, medium, or semi-solid media to allow for best possible internal temperature response.

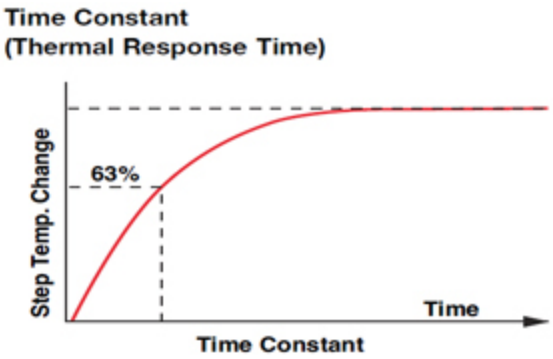
Screw In Thermocouple

Screw in thermocouples are ideal for vessel applications, pressurized containers and applications requiring mounting in a NPT orifice for fixed readings.



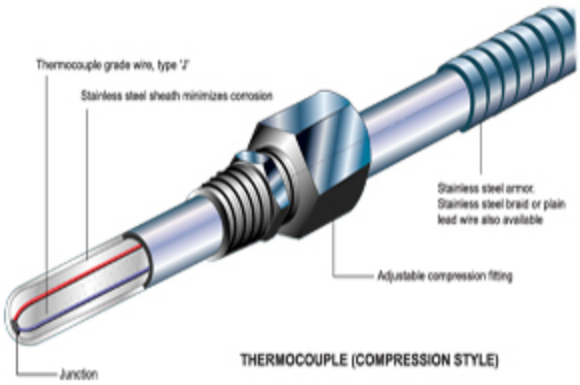
Thermocouple Millivolts/ Temperature Curves

Also,calibration types are designed to deliver as close to a straight line voltage curve inside their temperature application range as possible. This makes it easier for an instrument or temperature controller to correctly correlate the received voltage to a particular temperature.



Thermocouple Response Time

The smaller the diameter,the faster the thermocouple responds. Grounding the junction also improves response time by approximately 50 percent based on the sensor achieving 63.2 percent of the final reading or to the first time constant. It takes approximately five time constants to obtain steady state readings.



Thermocouple Theory

A thermocouple circuit has at least two junctions: the measurement junction and a reference junction. Typically, the reference junction is created where the two wires connect to the measuring device. This second junction it is really two junctions: one for each of the two wires, but because they are assumed to be at the same temperature (isothermal) they are considered as one (thermal) junction.

Thermopile Multi-Sensor

A thermopile is a thermoelectric device that consists of an array of thermocouples connected in series. It is widely used in non-contact temperature measurement applications and temperature monitoring systems. Thermopiles detect the temperature of an object by absorbing the infared (IR) radiation that emits from the object's surface. Most of the thermopile detectors are equipped with a black body surface for effectively absorbing the IR radiation.