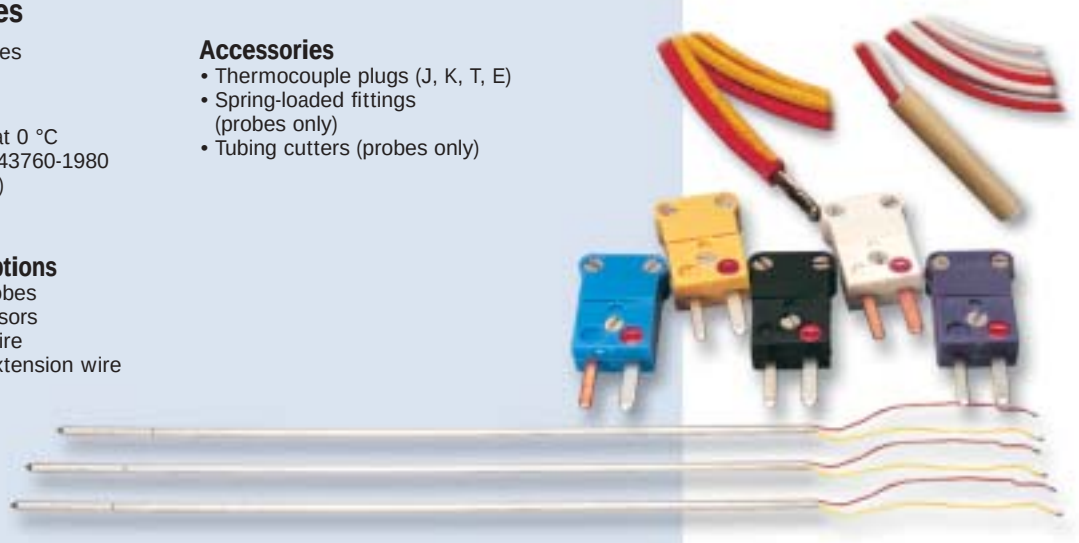
Thermocouple and RTD Sensors

Thermocouples
- J, K, T, and E types

RTDs
- Platinum 100 Ω at 0 °C
- Conform to DIN 43760-1980 (alpha = 0.00385)
- 3-wire

Configuration Options
- Field-cuttable probes
- Ready-made sensors
- Thermocouple wire
- Thermocouple extension wire

Accessories
- Thermocouple plugs (J, K, T, E)
- Spring-loaded fittings (probes only)
- Tubing cutters (probes only)



Overview
NI offers thermocouples and RTDs for your measurement and automation systems. These sensors are available in versatile configurations – field-cuttable probes and ready-made sensors. NI also offers spools of thermocouple wire and extension wire.

Thermocouples
Thermocouples are the most popular temperature measurement transducers available. Because of their low cost and wide temperature acceptance range, you can use thermocouples for a wide variety of applications in all industries. All NI thermocouples and extension wires are available in J, K, T, and E types and follow ANSI color coding specifications.

Field-Cuttable Thermocouples
NI field-cuttable thermocouples suit a wide variety of temperature applications. With field-cuttable thermocouples, you can cut the metal sheathed probe to the desired length – from 8.9 to 61 cm (3.5 to 24 in.)

Ready-Made Thermocouples
For cost-sensitive applications, NI offers ready-made thermocouples – individual packets of thermocouple wire with the measuring junction provided at one end. Ready-made thermocouples are ideal for starter or educational applications.

Thermocouple and Extension Wire
For large-scale or custom temperature measurement applications, NI offers spools of thermocouple and extension wire. You are responsible for making the thermocouple junction.

INFO CODES
For more information, or to order products online visit *ni.com/info* and enter:

tempsensors

BUY ONLINE!

Thermocouple Miniconnector Plugs
For applications requiring fast, easy connection and disconnection of thermocouples, we suggest thermocouple miniconnectors. These plugs work with any standard thermocouple miniconnector jack, including those available with the TC-2095, SCXI-1112, SC-2311, SC-2345, and CA-1000 Series connector panelettes. Thermocouple miniconnector plugs come in quantities of 10, and are available for J, K, T, and E types.

RTDs
RTDs are popular for high-accuracy temperature measurement applications. NI offers 3-wire, 100 Ω platinum RTDs that conform to the DIN 43760-1980 (European) standard curve (a = 0.00385). These RTDs are available as field-cuttable metal sheathed probes and ready-made element configurations.

Field-Cuttable RTDs
NI field-cuttable RTDs are ideal for a wide variety of temperature applications. With field-cuttable RTDs, you can cut the metal sheathed probe to the desired length – from 8.9 to 61 cm (3.5 to 24 in.).

Ready-Made RTDs
Ready-made RTDs offer solutions for cost-sensitive temperature measurement applications. Each RTD element is sealed in an Alumina tube, with three Teflon-coated leads, and can measure up to 204 °C (400 °F).

Thermocouple and RTD Sensors

Ordering Information

Field-Cuttable Thermocouples

J-type
- Grounded 745685-J01
- Ungrounded 745685-J02

K-type
- Grounded 745685-K01
- Ungrounded 745685-K02

T-type
- Grounded 745685-T01
- Ungrounded 745685-T02

E-type
- Grounded 745685-E01
- Ungrounded 745685-E02

Ready-Made Thermocouples

J-type
- 1 m 745690-J001
- 2 m 745690-J002

K-type
- 1 m 745690-K001
- 2 m 745690-K002

T-type
- 1 m 745690-T001
- 2 m 745690-T002

E-type
- 1 m 745690-E001
- 2 m 745690-E002

Thermocouple Wire

J-type
- 30 m 745687-J030
- 300 m 745687-J300

K-type
- 30 m 745687-K030
- 300 m 745687-K300

T-type
- 30 m 745687-T030
- 300 m 745687-T300

E-type
- 30 m 745687-E030
- 300 m 745687-E300

Thermocouple Extension Wire

Jx-type
- 30 m 745689-J030
- 300 m 745689-J300

Kx-type
- 30 m 745689-K030
- 300 m 745689-K300

Tx-type
- 30 m 745689-T030
- 300 m 745689-T300

Ex-type
- 30 m 745689-E030
- 300 m 745689-E300

Accessories

Thermocouple Miniconnector Plugs (Quantity 10)
- J type 745688-J10
- K type 745688-K10
- T type 745688-T10
- E type 745688-E10

Uncompensated 745688-U10
Spring-loaded fitting 745688-32
Tubing cutter 745688-37

RTDs

Field-Cuttable RTD
- 100 Ω, Pt, 3-wire 745686-01

Ready-Made RTDs
- 1 m 745691-01
- 2 m 745691-02

Specifications

Thermocouple Characteristics

Extension Wire
Temperature range ..... -20 to 221 °F (-6.7 to 105 °C)

RTD Characteristics
Type ..... Platinum
Resistance ..... 100 Ω at 0 °C
Probe range ..... -58 to 900 °F (-50 to 482 °C)
Ready-made range ..... -58 to 400 °F (-50 to 204 °C)
Calibration ..... DIN 43760-1980 (European) Standard Curve (a = 0.00385)
Accuracy ..... ±(0.3+0.005 |t|) °C (where t is the absolute valueof the temperature being measured in °C)
Configuration 3-wire

Calibration	Conductor		Temp. Range	Limits of Error[1] (whichever is greater)
	Positive	Negative		
J-type	Iron (White)	Constantan (Red)	32 to 900 °F (0 to 482 °C)	±2.2 °C (4.0 °F) or ±0.75%
K-type	Chromel (Yellow)	Alumael (Red)	32 to 900 °F (0 to 482 °C)	±2.2 °C (4.0 °F) or ±0.75%
T-type (probe only)	Copper (Blue)	Constantan (Red)	-328 to 32 °F (-200 to 0 °C)	±2.2 °C (4.0 °F) or ±0.75%
			32 to 500 °F (0 to 260 °C)	±1.0 °C (2.0 °F) or ±0.75%
T-type (ready-made only)	Copper (Blue)	Constantan (Red)	32 to 500 °F (0 to 260 °C)	±1.0 °C (2.0 °F) or ±0.75%
E-type	Chromel (Purple)	Constantan (Red)	32 to 900 °F (0 to 482 °C)	±1.7 °C (2.0 °F) or ±0.75%

Probe and Ready-Made Thermocouple Calibrations
[1]Where error is given in percent, the percentage applies to the temperature being measured, not the range.