



PhoenixTM
Phoenix Temperature Measurement

Where experience counts!!

High Temperature Thermocouples

Mineral Insulated Thermocouples 1000 to 1350 °C



All PhoenixTM thermocouples are manufactured to the highest quality standards and conform to the ANSI MC96.1 special limits specification or IEC 60584 class 1. The thermocouple construction is designed to withstand rough handling, and the insulation material and plug terminations are colour coded to conform to IEC 60584. For high temperature applications (up to 1300°C) PhoenixTM supply a range of sheathed, mineral insulated, thermocouples terminated with a high temperature plug.

For temperatures above 1000 °C the thermocouple sheath recommended is an Ultra-High Temperature alloy (UHT Alloy). The alloy is a nickel-chromium with 1.4% silicon which provides inert high oxidation resistance and strength at temperatures up to 1250 °C. Thermocouples with 1.6 mm and 2.0 mm diameter wire are available with the option to include AMS2750E and CQI-9 compliant calibration certificate.

For temperatures up to 1000 °C and diameters of 1 mm or 0.5 mm the thermocouple sheath is a high temperature nickel-chromium-iron alloy (HT Alloy - Inconel®) providing resistance to corrosion and heat along with high strength and good workability.

These thermocouples have an insulated hot junction (HJ) to ensure maximum protection against electrical interference from heating elements within the furnace. The thermocouple can be supplied in different MI diameters (0.5 to 3.0 mm – standard 1.6 mm) to suit the application needs, handling requirements and response characteristics. Thermocouple design options allow either standard termination in the thermocouple plug or with a PTFE tail which is helpful when managing installation of high numbers of thermocouples in thermal barriers such as the TS06 & TS07 (Aluminium Solution and Steel Reheat Applications).



Thermocouple code	Image	Description	Construction	Temperature Max (°C)
TC22-100-K		Ultra-High Temperature type K standard 1.6 mm mineral insulated thermocouple. Specification: ANSI	1.6 mm UHT sheathed mineral insulated thermocouple with insulated HJ. Fitted with miniature plug.	1200 °C
TC28-100-K	As above TC22	High Temperature type K 1.0 mm mineral insulated thermocouple. Specification: IEC	1.0 mm HT sheathed (Inconel®) mineral insulated thermocouple with insulated HJ. Fitted with miniature plug.	1000 °C
TC24-100-N		Ultra-High Temperature type N 2.0 mm mineral insulated thermocouple. Specification: ANSI	2.0 mm UHT sheathed mineral insulated thermocouple with insulated HJ. Fitted with miniature plug.	1200 °C
TC32-100-K	As above TC22 but 3.0 mm	Ultra-High Temperature type K heavy duty 3.0 mm mineral insulated thermocouple. Specification: ANSI	3.0 mm UHT sheathed mineral insulated thermocouple with insulated HJ. Fitted with standard 'large' plug.	1350 °C
TC34-XXX-100-K		Ultra-High Temperature type K heavy duty 3.0 mm mineral insulated thermocouple fitted with PTFE tail. Specification: ANSI	3.0 mm UHT sheathed mineral insulated thermocouple with insulated HJ. Fitted with miniature plug on flexible PTFE tail.	1350 °C
TC26-XXX-100-K		Ultra-High Temperature type K 1.6 mm mineral insulated thermocouple fitted with PTFE tail for use in 20 channel TS06 barrier. Specification: ANSI	1.6 mm UHT sheathed mineral insulated thermocouple with HJ. Fitted with miniature plug on flexible PTFE tail.	1200 °C
TC25-100-K	As above TC22 with sheath 	Ultra-High Temperature type K 1.6 mm mineral insulated thermocouple with Nextel sheath for plasma nitriding. Specification: ANSI (Supplied with 5 ceramic tube insulators)	1.6 mm UHT Nextel Sheathed mineral insulated thermocouple with insulated HJ. Fitted with miniature plug.	1200 °C
TC20-030-K	As above TC22 with fine wire	Type K fine wire mineral insulated thermocouple for small products and fast response characteristics. (Catalytic converters or Contact firing applications) Specification: IEC	0.5 mm HT sheathed ((Inconel®) mineral insulated thermocouple with insulated HJ. Fitted with miniature plug.	Up to 1000 °C
AC40-002		Thermocouple forming jig. To help routing of thermocouple out of barrier. For use with thermal barriers with TS00-500 & TB00-513 heat sinks.	10 mm thick machined aluminium	N/A

Thermocouple Part Numbering System: TC26-BBB-CCC-D-X-A or TC34-BBB-CCC-D-X-A

TC26 / TC34 = Thermocouple type style code / BBB = Length of PTFE cable if fitted with flexible PTFE Tail in cm

CCC = Length of main MI thermocouple in cm / X = Thermocouple provided with 9-point AMS2750E / CQI-9 compliant calibration certificate (Option not standard)

D = Thermocouple type (K, N etc) A = Thermocouple issue letter

Note: All Products are continually improved, specifications may be changed without prior notice.

Ref: PhoenixTM_Datasheet_HiTemp MI Thermocouple_10.1_UK 20190918

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