

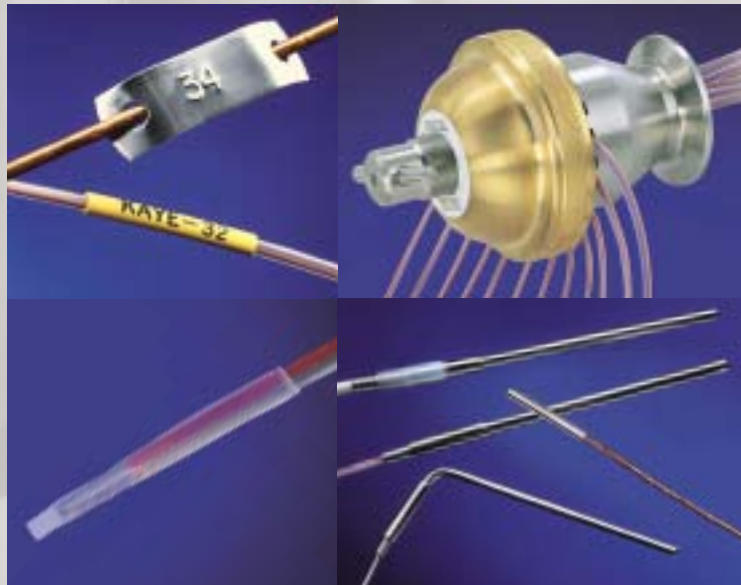
# Accessories for Thermal Validation

High-Accuracy Thermocouple Wire

Custom Thermocouples and Probes

Stainless Steel Feedthru Fittings

Labels and Tags



GE Kaye

## Accessories for Thermal Validation



Finished thermocouple of Kaye Ultra Premium Type "T" wire

### High-Accuracy Type "T" Thermocouple Wire

As an integral component of high-accuracy measurement systems, thermocouple wire is subject to severe conditions and, oftentimes, not-so-delicate handling. Repeated bending, or cold working, of a thermocouple can generate stress and distortion of the material crystalline structure, resulting in significant potential for measurement error. Kaye thermocouple wire is a multi-strand construction using wire of the highest purity and uniformity available, thus minimizing, if not eliminating, measurement error resulting from cold working and raw material inconsistencies.

Other commercially available copper/constantan thermocouple wires carry a standard grade accuracy rating of 0.75% at 121° C. For critical process validation applications, Kaye Ultra-Premium wire is the proven standard, delivering 0.21% accuracy (almost four times more accurate than standard wire). For monitoring applications and as extension wire, Kaye's Premium grade wire, at 0.38% accuracy, is nearly twice as accurate as standard wire. Of course, each spool of Kaye wire includes a Certificate of Conformance verifying that it meets the intended accuracy speci-

fications. Kaye thermocouple wire is available in three- and seven-strand configurations with clear Teflon® insulation. The 3-strand wire is intended for applications where space is limited, or where the wire must be fed through very narrow openings. The Teflon coated thermocouple wire is rated for continuous use at 200° C with a peak rating of 260° C, while our Kapton® insulated wire will withstand service to 350° C.

For the utmost accuracy and confidence be sure to specify Kaye Ultra-Premium or Premium grade thermocouple wire.

### Teflon Tips Extend Thermocouple Life

Encapsulating the sensor tip with dual shrink Teflon tubing will extend the life of your thermocouple. A sealed tip guards against moisture being pulled along the wire, thus minimizing oxidation and doubling the life of your probe (saving you the cost and time of buying and calibrating replacement sensors). In addition, the Teflon coating prevents potential errors due to grounding should the bare tip touch a conductive surface.

Unfinished and sealed thermocouple tips



#### GE Kaye Thermocouple Wire Specifications

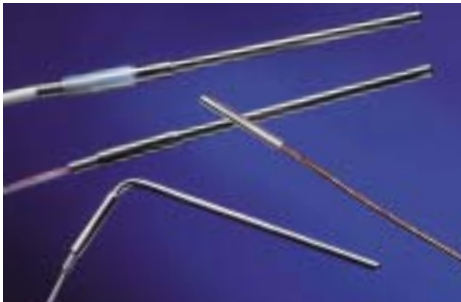
WIRE GRADE	ULTRA - PREMIUM			PREMIUM	
	3 - STRAND	7 - STRAND	7 - STRAND KAPTON®	3 - STRAND	7 - STRAND
Model	K0258	K0255	K0250	K0253	K0254
Gauge	27 AWG	22 AWG	22 AWG	27 AWG	22 AWG
Accuracy @ 40° C @ 121° C @ 300° C	±0.1° C ±0.3° C	±0.1° C ±0.25° C		±0.25° C ±0.5° C	±0.25° C ±0.5° C
Maximum variation within group for all wire @ 40° C @ 121° C @ 300° C	±0.05° C maximum; ±0.03° C typical ±0.1° C maximum; ±0.05° C typical ±0.3° C maximum; ±0.15° C typical				
Size	3-strand 0.042" (1.07 mm) minor 7-strand 0.095" (2.41 mm) minor		0.074" (1.88 mm) major 0.120" (3.03 mm) major		

Kaye offers tip kits for our 3- and 7-strand wire. Each kit includes materials (dual shrink Teflon tubing and FEP) to make from 45 to 60 sensor tips, instructions and welding/heating tool recommendations.

### Custom Thermocouples and Probes

Kaye offers type "T" thermocouples and probes custom built to your needs. Simply specify the wire type, finished length, insulation (Teflon, Kapton or Silicone), and optional numbered labels and we will provide finished thermocouples made to our exacting standards.

#### Custom thermocouple probes



For special applications we can add a stainless steel tip to your thermocouples. The stainless steel probes are available in straight or right angle configurations with rounded or pointed tips, and are available in any length with diameters of 3.2 or 4.8 mm ( $\frac{1}{8}$  or  $\frac{3}{16}$ "). Kaye probes are constructed of one continuous length of our Ultra-Premium wire, providing superior accuracy and eliminating errors inherent in other probes which have a wire transition between the stainless steel stem and the thermocouple extension.

### Stainless Steel Feedthru Fittings

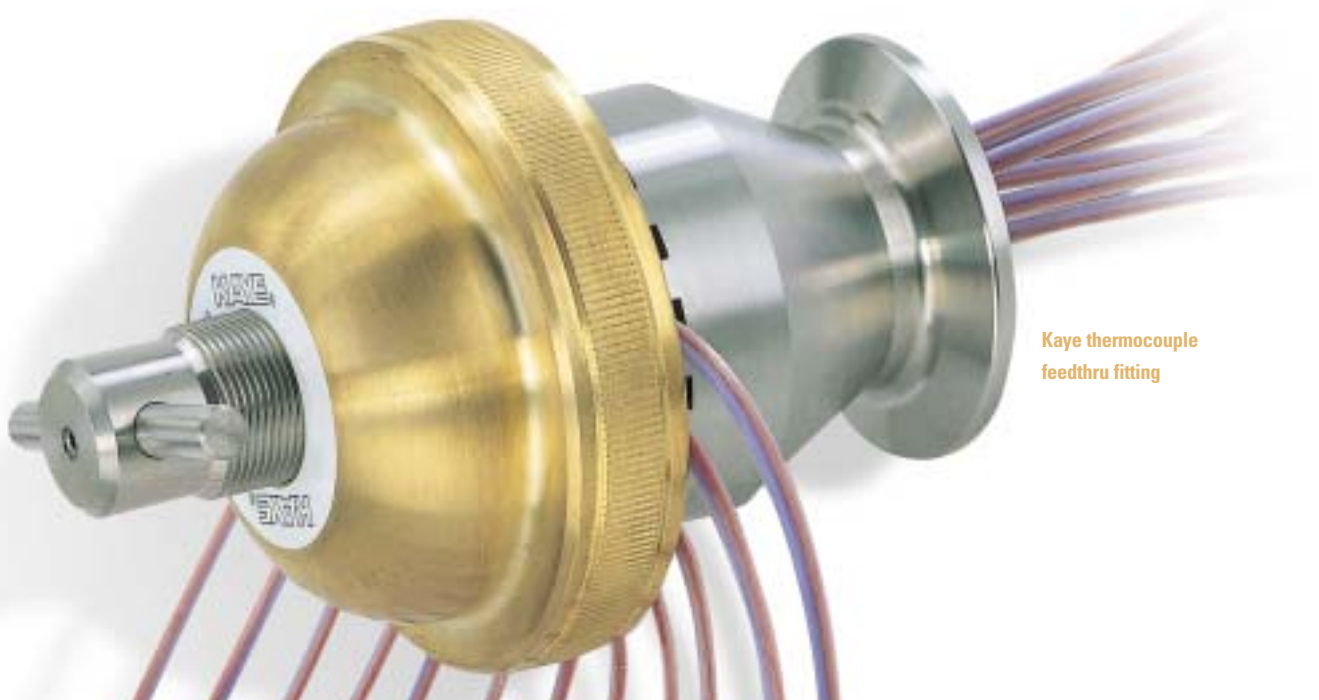
Feedthru fittings allow Kaye thermocouples to be introduced into pressure vessels such as steam or gas sterilizers, dry heat ovens and lyophilizers. Kaye feedthrus are manufactured from Stainless Steel with silicon rubber sealing gaskets. Individual feedthrus accommodate up to 18 thermocouples, or they can be easily paired through a Y-adapter for capacity up to 36 thermocouples. Our TUV certified feedthrus are designed with no wire damaging threads or sharp edges and are easily installed using standard 1½" tri-clamp fittings.



Numbered thermocouple tags

### Labels and Tags

Labeling thermocouples simply makes life easier. Kaye offers pre-numbered heat shrink label sets (1-36) for 3- and 7-strand Teflon thermocouple applications. We also offer numbered stainless steel thermocouple tags (again, 1-36) for high-temperature applications where Kapton wire is required.



Kaye thermocouple feedthru fitting

## About GE Kaye

For over forty years GE Kaye Instruments has been at the forefront of high-accuracy process measurement. For applications from thermal process validation and environmental monitoring, to sensor calibration and gas turbine testing, GE Kaye technology provides the most accurate and user-friendly measuring systems available in the market today. With thousands of installations worldwide, GE Kaye equipment has become the standard for helping customers increase process efficiency and document the results.



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