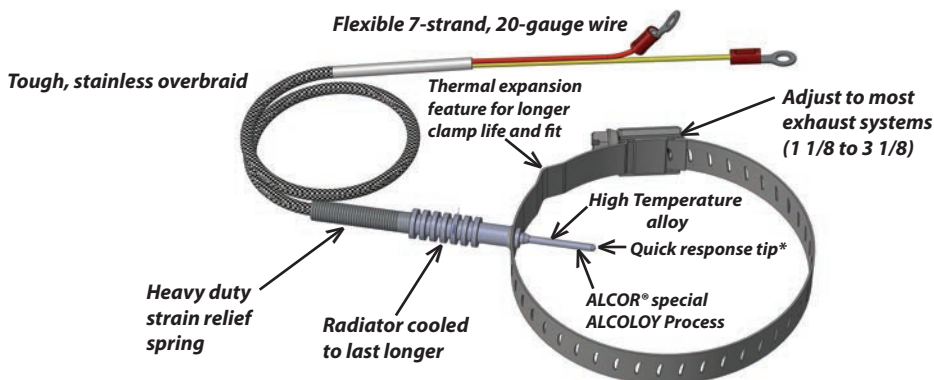




Alcor® Thermocouple Probes

With over 50 years of aviation manufacturing experience, Alcor® makes the highest quality, longest lasting and fastest responding probes.

- Best warranty in the industry (5 year on grounded probes, 1 year on ungrounded probes)
- Improved design features
- Designed, manufactured and supported in the USA
- Alcor probe tips are the smallest in the industry for the fastest response time



Thermocouple Types: What's the difference?

A thermocouple is formed by the junction between two dissimilar metals. When the junction is heated, a very small voltage measured in millivolts (1/1000V) is generated. The higher the temperature, the higher the voltage. Each metal combination is best suited for a specific temperature range. The type of thermocouple indicates the metal combination.

Three types are used in aviation EGT, CHT and TIT applications:

Type	Wires			Description
	Color	Polarity	Material	
J	Yellow	-	Constantan	Very sensitive. Limited to lower temps. Not for EGT or TIT probes. Standard for CHT probes. Required for all Alcor CHT gauges.
	Black	+	Iron	
K	Red	-	Alumel	Sensitive over a broad range of temps. Standard for EGT and TIT probes and some amplified or digital CHT gauges from other companies.
	Yellow	+	Chromel	
E	Red	-	Constantan	Used in older EGT systems. Alcor still supplies a limited supply of probes, but not supply leads. If new probe or leads are required, it is a good time to upgrade to a Type K system. Brown wire may look tan or silver.
	Brown	+	Chromel	

The type of thermocouple must match the type of gauge and lead.

Grounded vs Ungrounded:

Grounded probes have the thermocouple junction welded directly to the probe shaft. They have faster response time, longer life and lower cost, but since they have continuity with the engine ground, they are susceptible to more electrical noise. This noise does not affect Alcor® gauges, but can cause problems with some amplified or digital gauges from other manufacturers. All Alcor® gauges can use grounded thermocouples, although some airframe manufacturers require ungrounded probes.

Ungrounded probes have the thermocouple junction isolated from the probe shaft so there is no continuity between the thermocouple and the engine ground resulting in less electrical noise. They are required for some amplified or digital gauges from other manufacturers and by some airframe manufacturers.

Connectors:

Most probes have ring terminal connectors, however some have an Omega style male plug connector. Omega style plugs are now available for converting an existing ring terminal installation.

Ring Terminals:



Omega Connectors:



P/N 23931 Male Type K
P/N 23932 Male Type J
P/N 23955 Female Type K

Stagger:

The two different color probe wires are typically different lengths to ensure the correct polarity when reattaching them to the lead into the gauge. Stagger refers to which color wire is longer. Normal and reverse stagger probes are all completely compatible; however, having the correct stagger ensures a neat and correct polarity.

P/N 42523 EGT Lead Stagger Adapter is available to convert a normal stagger to a reverse stagger.



For Type K probes, two options are available:



Normal: yellow probe wire is longer Reverse: yellow probe wire is shorter

Alcor® probes are designed, manufactured and supported in the U.S.A.