



T5.4 Individual Exhaust Gas Thermocouple and Cable System

For LM2500, LM2500+ and LM5000 Gas Turbines

AMETEK Power Instruments' EGT Probe System, AMETEK P/N 8TC34BAG1, GE P/N L44830P01 and AMETEK P/N 8TC37ABJ1, GE P/N L44830P03, are designed for use on the LM2500 and LM5000 family of gas turbines. Exhaust gas temperatures are measured using a combination of individual thermocouples mated to a flexible harness assembly, eliminating the need for rigid harness systems. Operators and overhaul facilities can replace a single probe without removing a full harness quadrant or affecting other serviceable system components. This results in lower component and maintenance costs and shorter turbine downtime cycles.

The Individual EGT System incorporates a combination of AMETEK Power Instruments thermocouple designs that are currently qualified and operating on production gas turbines. Our probe design is identical to the design presently operating on production LM2500 and LM5000 turbines, while its junction box is identical to that utilized on other industrial and aerospace turbine thermocouples.

AMETEK Power Instruments can provide either averaging or individual mating cables. The averaging cables mimic the output of the rigid harness system whereas the individual cables provide a separate output for each of the 11 thermocouples. This flexibility enables the operator to select the measurement that best captures turbine performance.

Since October 1993, AMETEK Power Instruments' individual Probe Systems have entered field service at numerous operator sites. The system has accumulated over 1 million hours of trouble-free operation, and it continues to demonstrate the quality and performance of the AMETEK Power Instruments' design.

FEATURES AND BENEFITS

1

Utilizes AMETEK Power Instruments' designs presently operating on LM2500, LM2500+ and LM5000 gas turbines

2

OEM Qualified through GE, P/N L44830P01, L44830P03

3

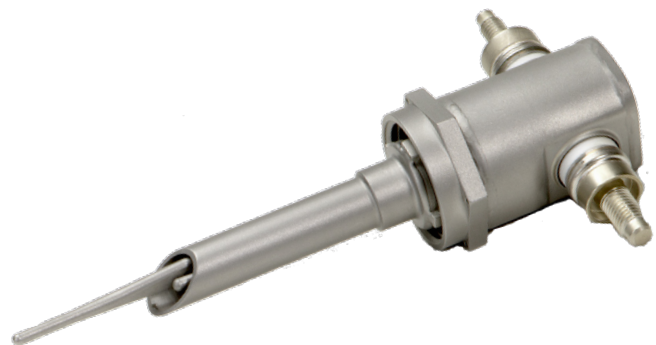
Eliminates the need for rigid thermocouple quadrants

4

Replacement of single probes results in lower component and maintenance costs and shorter turbine downtime cycles

5

Reduction in needed spare parts to support your engine



SPECIFICATIONS

THERMOCOUPLE PROBE ASSEMBLY

TEMPERATURE RANGE

- -65° to 1,875° F (-54° to 1,023° C)

ACCURACY

- $\pm 4^\circ$ to 530° F (2.2° to 277° C);
- 0.75% above 530° F (277° C)

TIME RESPONSE

- < 4 sec. for temperature change from 1,400° to 1,500° F (760° to 816° C) at 6 lb./sec./sq. ft.

OUTPUT

- Type K (millivolts)

VIBRATION

- 12 Gs

LEAK-PROOF

- Hermetically sealed

FLEXIBLE CABLE ASSEMBLY

CONDUCTOR

- 17 gage thermocouple grade material, Type K (+ and -)

OUTER JACKET

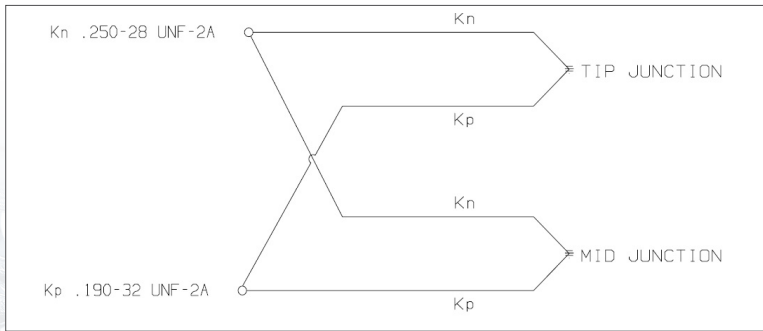
- 34 gauge stainless steel braid

OPERATING TEMPERATURE

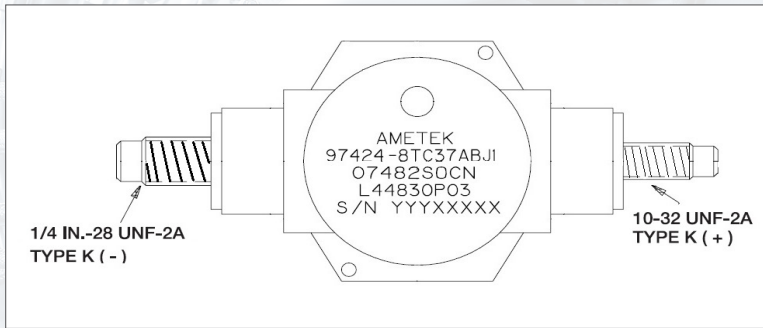
- To 1,000° F (538° C)

INSULATION

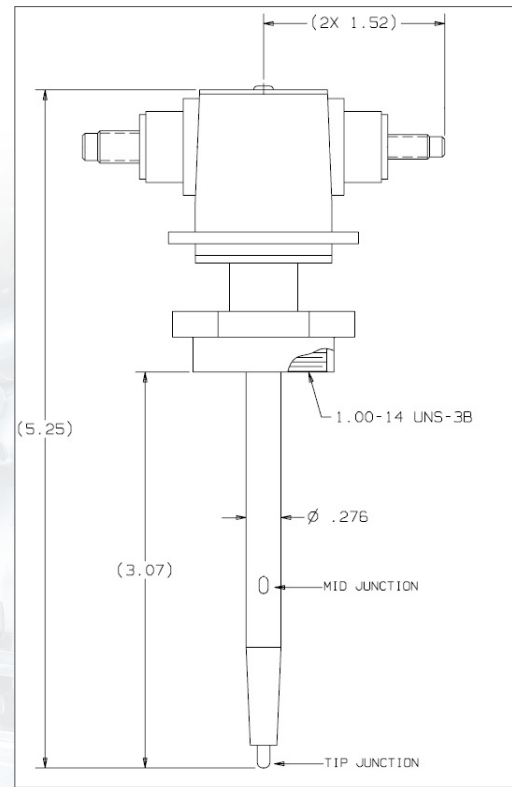
- Multi-Layer System:
 - Primary Insulation: Mica Tape
 - Secondary Insulation: Refrasil Braid, E Type Fiberglass



Wiring Diagram



Probe Connections



Overall Dimensions of 8TC37ABJ1

AMETEK Power Instruments manufactures a full line of thermocouples, RTD's, cables and sensors for gas turbine applications. We are proud to work with OEMs to solve their challenging applications and look forward to working with you to help you address your temperature measurement needs. For more information, please visit our website at www.ametekpower.com or contact us directly at pi.marketing@ametek.com.

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