



SOUTHWEST RESEARCH INSTITUTE™

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Institute Quality Systems
Institute Calibration Laboratory
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Certificate #

0972-01

Certificate of Calibration

Submitted By: DIV20
Address: B57
Contact: BRADLEY WERLING
Manufacturer Model: FLUKE Type K
Description: THERMOCOUPLE
Serial No: 10639
Asset No: 010639
Procedure: TEMPERATURE, MAR/03

Work Order: 444057090
Date Issued: Jan 29, 2004
Calibration Date: Jan 28, 2004
****Calibration Due:** Jan 28, 2005
Calibration Location: Bldg. 64
Environment: Temp. 75.0°F Hum. 30 %RH
***As Found:** IN TOLERANCE
***As Left:** IN TOLERANCE

This certificate documents traceability to the National Institute of Standards and Technology (NIST) and the International System of Units (SI). The Laboratory quality system conforms to ISO/IEC 17025, 1999 and ANSI/NCCL Z540-1-1994 which are equivalent to relevant requirements of the ISO 9000-1994 series of standards. This certificate may not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. The results of this calibration relate only to the individual instrument described above. This certificate shall not be used to claim product endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government

Uncertainty evaluation includes the item under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor of k=2 to approximate a 95% confidence level. The calibration process provides a Test Uncertainty Ratio (TUR) of less than or equal to 25% (4:1) of the test limit unless otherwise stated in remarks or an attachment

*The client has sole responsibility for determination of in/out of tolerance or compliance/noncompliance. An in/out of tolerance opinion is provided for your convenience based only on the Test Instrument (TI) reading(s) and limits as reported. The reported uncertainty relates only to the results at the time of calibration and does not imply any short or long term stability of the TI.

**Calibration interval is determined by the client and does not assure the instrument will remain within tolerance until this date. Any number of factors may cause the instrument to be out of tolerance before the next calibration date.

Remarks: Verified at ambient temp only.

Standards Used

Asset	Manufacturer	Model	Description	Cal Due
005325	XITRON TECHNOLOGIES	2000M	V/A/T CALIBRATOR	Nov 13, 04
004965	ERTCO	1005-FC	THERMOMETER	Jun 25, 04

Approved by: Walt Hill
Metrology Group Leader
m:\a2la1.rpt Rev date 15, August 02

Measurements by: Mark Romero
Metrology Technician

Southwest Research Institute
Calibration Laboratory
Calibration Report

Work Order:	444057090	Mfr.	Fluke	Technician	Mark Romero
Asset No:	010639	Model	Type K		
Serial No:	10639	Type	Thermocouple	Cal Date	28-Jan-04
Remarks: Limits taken from ASTM E230-02 and are based on brand new unused thermocouples. Verified at ambient temperature only; per customer.					

Function/Range	Test Point	TI Read	Difference	+/-Limit	+/-Uncertainty	Found/Left
	Deg C	Deg C	Deg C	Deg C	Deg C	Result
Ambient Temperature	24.05	23.86	0.19	2.20	0.03	Pass
END OF REPORT						