



# SOUTHWEST RESEARCH INSTITUTE®

6220 Culebra Road, P.O. Drawer 28510  
Institute Quality Systems  
Institute Calibration Laboratory  
Phone: 210-522-5215 Fax 210-522-4834



Certificate #

0972-01

## Certificate of Calibration

**Submitted By:** DIV20

**Address:** B57

**Contact:** DARRELL DUNN

**Manufacturer Model:** DURO-SENSE TYPE K

**Description:** THERMOCOUPLE

**Serial No:** 0003

**Asset No:** 011659

**Procedure:** THERMOCOUPLE-GENERAL, JAN/03

**Work Order:** 303064334

**Date Issued:** May 19, 2005

**Calibration Date:** May 19, 2005

**\*Calibration Due:** Nov 18, 2005

**Calibration Location:** Bldg. 64

**Environment:** Temp. 74.0°F Hum. 50 %RH

**\*\*Data Type:** FOUND-LEFT

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, ANSI/NCSL Z540-1-1994 and relevant requirements of the ISO 9000-2000 standard. This certificate shall not be reproduced, except in full, without the written approval of the Southwest Research Institute Calibration Laboratory. This certificate shall not be used to claim product endorsement by Southwest Research Institute, American Association for Laboratory Accreditation (A2LA) or any agency of the U. S. Government. Results of this calibration relate only to the instrument described above at the time of calibration and does not imply any long term stability of the instrument.

\*Determined by the customer, does not imply the instrument will remain within tolerance as any number of factors may cause an out-of-tolerance condition before this date. \*\*Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The client has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance. See Remarks or attached Measurement Report with the same Work Order number for data.

Reported uncertainty calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM) and represents an expanded uncertainty with a coverage factor of  $k=2$  to approximate a 95% confidence level.

**Remarks:** Calibrated at 0 and 150 degrees C per customer request.

### Standards Used

Asset No.	Serial No.	Manufacturer	Model	Description	Cal Due
009137	A21208	HART SCIENTIFIC	1575	THERMOMETER	May 21, 05
010281	0421	HART SCIENTIFIC	5628	SPRT	Jun 24, 08
010329	7949003	FLUKE	525A	TEMPERATURE/PRESSURE	Sep 24, 05

Approved by: Walt Hill

Manager

m:\a2la1.rpt Rev date March 6, 2005

Measurements by: Joe Greagrey  
Metrology Technician

Page 1 of 1

Southwest Research Institute  
Calibration Laboratory  
Measurement Report

Work Order:	303064334	Mfr.	DURO-SENSE	Technician	JRG
Asset No:	011659	Model	Type K		
Serial No:	0003	Type	Thermocouple	Cal Date	19-May-05
Remarks: Limits taken from ASTM E230-02 and are based on brand new unused thermocouples.					
Limited Cal - tested at 0.0 and 150 C					

Function/Range	Test Point	TI Read	Difference	+/-Limit	+/-Uncertainty	Found/Left
	° C	° C	° C	° C	° C	Result
	0.125	0.01	0.12	2.2	0.19	Pass
	149.95	150.91	-0.96	2.2	0.30	Pass
END OF REPORT						