

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 of Calibration



Cost Center / Customer: DIV20 / DON BANNON Mail Stop: B57 Manufacturer/Model: DURO-SENSE / TYPE K Description: THERMOCOUPLE Serial Number: 012147 Asset Number: 012147 Procedure: TEMPERATURE PROBES - 5 JUN 06 Work Order: 303103243 Date Issued: 19-Aug-2011 Date Calibrated: 19-Aug-2011 * Date Due : 19-Aug-2012 ** Results: FOUND-LEFT Temperature: 73.3 °F Humidity: 52 %RH Barometer: N/A

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, 2005, 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. **Data type found in this certificate or attached measurement report must be interpreted as: Found-left - adjustment and/or repair was not performed, As-found - data is before unit is adjusted and/or repaired, As-left - data is after adjusted and/or repaired was performed. The customer has sole responsibility for determination of in-/out-of-tolerance or compliance/noncompliance.

Measurement uncertainty calculated in accordance with the method described in the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM), for a confidence level of approximately 95 percent using a coverage factor of k=2.

Remarks: CAL 0 °C and 150 °C

Standards Used

<u>Asset #</u>	<u>Manufacturer</u>	Model	Description	<u>Cal Date</u>	Due Date
009137	HART SCIENTIFIC	1575	SUPER THERMOMETER	11-Jul-2011	11-Jan-2012
013908	HART SCIENTIFIC	5628	SPRT	3-Feb-2011	3-Feb-2012
015240	HART SCIENTIFIC	2566	TC SCANNER, 12-CHANNEL MODULE	29-Nov-2010	29-Nov-2011

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Laboratory Manager m:\\A2LA OCT_08.rpt

Mark Romero Metrology Technician

Southwest Research Institute Calibration Laboratory Measurement Report

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Work Order: Asset No. Serial No.	der: 303103243 Mfr. Duro-Sense . 012147 Model Type K . 012147 Type Thermocouple			Technician: Type Data: Cal Date:	Mark Romero Found-left 19-Aug-11		
Remarks:		1.16					
Function/Range	Test Point	TI Reading	Difference	+/- Limit	+/- Uncertainty	Result	% Limit
Temperature	°C		°C	°C	°C		
	0.1	0.6	0.4	2.2	0.5	Pass	20%
	150.0	151.5	1.5	2.2	0.5	Pass	68%
		END	OF REPORT				