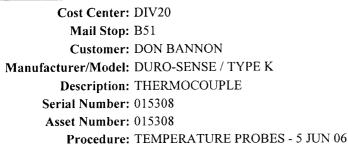


SOUTHWEST RESEARCH INSTITUTE®

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

Certificate of Calibration



Work Order: 303085035 Date Issued: 29-Dec-2008 Date Calibrated: 29-Dec-2008 *Date Due: 29-Dec-2009 **Results: FOUND-LEFT Temperature: 74°F Humidity: 40 %

CCREDITED

Calibration Laboratory

Certificate #0972-01

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. **Found/Left = adjustment and/or repair was not required, As Left = adjusted and/or repaired was required. The customer 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 Cal at (20°, 40°, 60°, 80°, 100°C)

Standards Used

| <u>Asset #</u> | <u>Manufacturer</u> | Model | Description | <u>Cal Date</u> | Due Date |
|----------------|---------------------|-------|-------------------------------|-----------------|-------------|
| 009137 | HART SCIENTIFIC | 1575 | SUPER THERMOMETER | 18-Nov-2008 | 18-May-2009 |
| 013908 | HART SCIENTIFIC | 5628 | SPRT | 20-Feb-2008 | 20-Feb-2010 |
| 015240 | HART SCIENTIFIC | 2566 | TC SCANNER, 12-CHANNEL MODULE | 10-Dec-2008 | 10-Dec-2009 |

Reviewed By: () srk () mar () wg Laboratory Quality Manager m:W2LA OCT_08.rpt Calibrated By: Bob Trollinger

Metrology Technician

Page 1 of 1

Southwest Research Institute Calibration Laboratory Measurement Report

| Work Order: | 303085035 | Mfr: | Duro-Sense | | Technician: | blt | | |
|----------------|---------------------------------------------------------------------------------|--------------|----------------|------------|----------------|----------------|--|--|
| Asset No: | 015308 | Model: | Туре К | | | | | |
| Serial No: | 015308 | Type: | Thermocouple | | Cal Date: | 29-Dec-08 | | |
| Remarks: | Limits taken from ASTM E230-02 and are based on brand new unused thermocouples. | | | | | | | |
| | | | | | | <u> </u> | | |
| Function/Range | Test Point | TI Read | Difference | +/-Limit | +/-Uncertainty | Found/Left | | |
| | 0 | 0 | | | | | | |
| Temperature | °C | °C | °C | °C | °C | Result | | |
| Temperature | ° C 20.12 | ° C 20.1 | °C -0.02 | ° C 2.2 | °C 0.47 | Result Pass | | |
| Temperature | • | • | • | - | - | | | |
| Temperature | 20.12 | 20.1 | -0.02 | 2.2 | 0.47 | Pass | | |
| Temperature | 20.12 40.05 | 20.1 40.0 | -0.02 -0.05 | 2.2 2.2 | 0.47 0.47 | Pass Pass | | |

END OF REPORT

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