



Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

27 August 1996

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: ERTCO 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992

Environmental Conditions

Temperature: 78.0

Humidity: 38%

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NC SL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

Calibration Date: 26 Aug 96

Calibration Procedure: WI-9-30-TH03

Interval: 6 months

Accuracy: MFGR

Next Calibration Due: 26 Feb 97

Received: In Tolerance

Remarks:

Certificate # 22439

Signed: 

LAST PAGE OF REPORT
Total Pages Printed: 1



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San Antonio, TX 78238
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Calibration Laboratory

Certificate of Calibration

21 February 1997

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: ERTCO 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992

Environmental Conditions

Temperature: 81.0 Deg. F Humidity: 32%

Calibration Information

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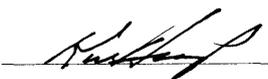
Calibration Date: 20 Feb 97 Calibration Procedure: WI-9-30-TH03
Interval: 6 months Accuracy: MFGR
Next Calibration Due: 20 Aug 97 Received: In Tolerance

Remarks:

Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
000219	AZONI	A1011	RTD THERMOMETER	T1587-2078	12 Mar 97
000328	AZONI	A12001	RTD TEMPERATURE PROB	351477	12 Mar 97

Certificate # 24336

Signed: 



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6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

4 September 1997

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHERBRAND/ERTCO 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992

Environmental Conditions

Temperature: 81.0 Deg. F Humidity: 34%

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

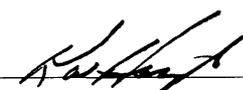
Calibration Date: 3 Sep 97 Calibration Procedure: WI-9-30-TH03
Interval: 6 months Accuracy: +/-1 DEG.C
Next Calibration Due: 3 Mar 98 Received: In Tolerance

Remarks:

Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
000219	AZONIX	A1011	RTD THERMOMETER	T1587-2078	24 Mar 98
000328	AZONIX	A12001	RTD TEMPERATURE PROB	351477	3 Apr 98

Certificate # 26585

Signed: 

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Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
Department of Quality Assurance
Calibration Laboratory

Certificate of Calibration

10 March 1998

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHERBRAND/ERTCO 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992

Environmental Conditions

Temperature: 66.00 Deg. F Humidity: 26 % RH

Calibration Information

Calibration was in accordance with requirements of MIL-STD-45662A and ANSI/NC SL Z540-1-1994. Measurements are traceable to the National Institute of Standards and Technology (NIST). This report may not be reproduced except in full without written approval of the originator. Inspection and test data are on file and available for inspection.

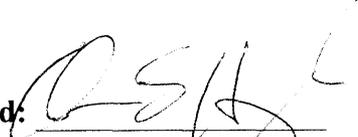
The uncertainty of the calibration was sufficient to determine that the instrument met the manufacturer's specifications.

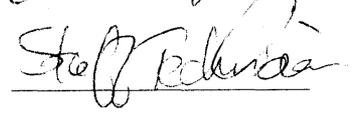
Calibration Date: 10 Mar 98 Calibration Procedure: WI 9-30-TH03
Interval: 6 months
Next Calibration Due: 10 Sep 98 Received: In Tolerance

Remarks:

Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
000219	AZONIX	A1011	RTD THERMOMETER	T1587-2078	24 Mar 98
000328	AZONIX	A12001	RTD TEMPERATURE PROBE	351477	3 Apr 98

Signed: 

Title: 

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Total Pages Printed: 1

Certificate # 28925



Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
(210) 522-5215
Department of Quality Assurance
Calibration Laboratory



Certificate #
0972-01

Certificate of Calibration

6 May 1999

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NCSL Z540-1-1994. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results of this calibration certificate were determined in accordance with the terms of accreditation unless stated otherwise below.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: Temperature: 75.0 Degrees Fahrenheit Humidity: 57 % RH

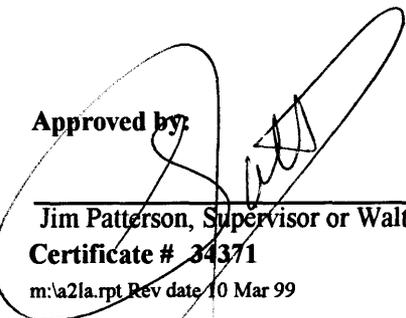
Calibration Date: 5 May 99 **Calibration Procedure:** TO33K5-4-42-1 APR97

Condition as Received: IN TOLERANCE

Condition as Released: IN TOLERANCE

Remarks:

Approved by:

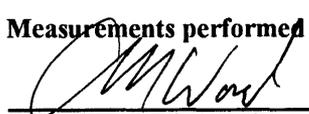


Jim Patterson, Supervisor or Walt Hill, Metrologist

Certificate # 34371

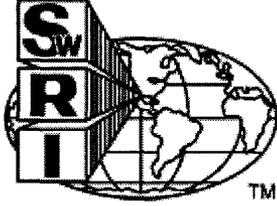
m:\a2la.rpt Rev date 10 Mar 99

Measurements performed by:



Mack Wood, Technician

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Southwest Research Institute
6220 Culebra Road
San Antonio, TX 78238
(210) 522-5215
Department of Quality Assurance
Calibration Laboratory

REMOVED FROM
CALIBRATION RECALL
LIST

CONFIRMED 10/17/03

Daniel D

Certificate of Calibration

18 June 2002

Issued to: DARRELL DUNN DIV20 B57
Manufacturer/Model: FISHER SCIENTIFIC 15-166A
Description: THERMOMETER
Serial Number: C96-727
Asset Number: 004992
Work Order Number: 444049037

This certifies the above item was calibrated in compliance with MIL-STD-45662A and ANSI/NC SL Z540-1-1994. Standards used in this calibration, described in the referenced calibration procedure with associated uncertainties or tolerances, are traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to traceability is on file and is available for examination upon request. This certificate is not to be reproduced, except in full, without the written approval of the Southwest Research Institute Department of Quality Assurance Calibration Laboratory.

The uncertainty of the calibration was sufficient to determine that the item met the manufacturer's published specifications unless stated otherwise below.

Ambient Conditions: Temperature: 74.0 Degrees Fahrenheit Humidity: 54 % RH

Calibration Date: 18 Jun 02 **Calibration Procedure:** CL-9, MAY99

Condition as Received: SEE ATTACHED DATA

Condition as Returned: SEE ATTACHED DATA

Remarks:

Approved by:

Walt Hill

Walt Hill, Metrology Group Leader
Institute Calibration Laboratory

Measurements performed by:

Roger Dykstra

Roger Dykstra, Technician

Southwest Research Institute
Calibration Laboratory
Calibration Data Sheet

Workorder 444049037
Asset #: 004992
Serial #: C96-727

Mfr. Fisher Scientific
Model 15-166A
Type Thermometer

Technician R Dykstra
Procedure CL-9, 5/99
Cal Date 6/17/02

Ambient Conditions:

Temperature 74 Degree F
Humidity 54 % R.H.
Baro. Pressure N/A PSIA

Data sheet Revision:

Revision 0 2/21/02

Standards used:

Asset #	Due Date	Nomenclature
009137	12010/02	Hart Super Thermometer
008920	12/07/02	RTD probe

Is statement of compliance to a specification requested. Yes
(if statement is required, print yes otherwise leave blank)

Tolerance 1.00 Degree C Range -20 to 150 Degree C
(if not required leave blank)

Degree C	Degree C	Degree C	Degree C	Degree C	
	As Found				
Std Reading	TI Reading	Error	Test Limits	Uncertainty	Results
-19.80	-20.6	-0.80	1	0.35	
0.09	-0.6	-0.69	1	0.35	
49.99	49.2	-0.79	1	0.35	
99.98	99.2	-0.78	1	0.35	
149.94	150.4	0.46	1	0.35	Pass

Remarks:

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, which provides a level of confidence of approximately 95%.

If compliance testing to a specification is requested. The results can be pass, fail, or if blank "Not determinable". If results are not determinable it is to end user to determine if results meet thier needs.

If compliance testing to a specification is not requested, only data and uncertainty will be given on data sheet.