

S O U T H W E S T     R E S E A R C H     I N S T I T U T E

Department of Quality Assurance  
Calibration Laboratory

CERTIFICATE OF CALIBRATION

Issued to: DIV20 B168 SWRI

Device No: 2042

Manufacturer: FISHER

Model: 14-983-10B

Nomenclature: THERMOMETER

Serial Number: 0323004

SwRI No: NONE

Remarks

Accuracy: MFGR

Procedure: MFGR

ENVIRONMENT

Temperature: 80     Humidity: 56     Location: BLDG. 145 SWRI

CONCLUSION

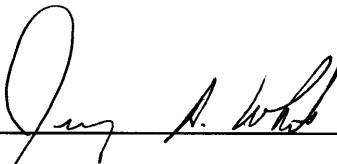
Tolerance/Remarks: Received into the system, introduced or reactivated

Temperature checked in bath using standard as reference.

Reference:	Thermometer:
0	0
20	20
40	40
80	80
100	100.5

Calibration was in accord with requirements of MIL-STD-45662A. Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.

Signed



Calibration Date: 02/02/93

Record Number: 00010601

Next Calibration Due: 02/02/94

S O U T H W E S T   R E S E A R C H   I N S T I T U T E

Department of Quality Assurance  
Calibration Laboratory

Device Serial No: 0323004

Calibration Date: 02/02/93

STANDARDS

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Standard No: 159    Manufacturer: FISHER

Model: 15-041B

Nomenclature: THERMOMETER

Serial No: 891-2261

Cal.Due: 02/02/94

Cal.Rec.No: 00010626

S O U T H W E S T     R E S E A R C H     I N S T I T U T E

Department of Quality Assurance  
Calibration Laboratory

CERTIFICATE OF CALIBRATION

Issued to: DIV20 B57 NARASI SRIDHAR

Device No: 2042

Manufacturer: FISHER

Model: 14-983-10B

Nomenclature: THERMOMETER

Serial Number: 0323004

SwRI No: NONE

Cal interval 12 Mo.

Remarks

Accuracy: MFGR

Procedure: MFGR

ENVIRONMENT

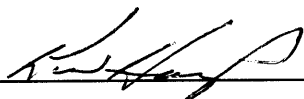
Temperature: 76     Humidity: 40     Location: SWRI DIV04 BLDG. 145

CONCLUSION

Tolerance/Remarks:     Received in tolerance, no adjustments made

Calibration was in accord with requirements of MIL-STD-45662A. Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.

Signed



Calibration Date: 03/21/94

Cal interval: 12 Months

Record Number: 00013660

Next Calibration Due: 03/21/95

S O U T H W E S T   R E S E A R C H   I N S T I T U T E

Department of Quality Assurance  
Calibration Laboratory

Device Serial No: 0323004

Calibration Date: 03/21/94

STANDARDS  
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Standard No: 219	Manufacturer: AZONIX	Model: A1011
Nomenclature: RTD THERMOMETER		
Serial No: T1587-2078	Cal.Due: 03/10/95	Cal.Rec.No: 00013377
Standard No: 328	Manufacturer: AZONIX	Model: A12001
Nomenclature: RTD TEMPERATURE PROBE		
Serial No: 351477	Cal.Due: 03/10/95	Cal.Rec.No: 00013378

**SOUTHWEST RESEARCH INSTITUTE**  
**Department of Quality Assurance**  
**Calibration Laboratory**

**CERTIFICATE OF CALIBRATION**  
**03/29/95**

Issued to: DARRELL DUNN      DIV20      ,B57  
Manufacturer: FISHE  
Nomenclature: THERMOMETER  
Serial Number: 0323004

Asset Number: 002042  
Model Number: 14-983-10B  
  
SwRI/Div. I.D. #: NONE

**ENVIRONMENTAL CONDITIONS**

Temperature: 70.0F

Relative Humidity: 45%

**CALIBRATION INFORMATION**

Procedure Number: WI-9-30-TH03  
Remarks:

Accuracy: MFGR SPECS  
Received IN Tolerance

**Calibration was in accordance with requirements of MIL-STD-45662A.**  
**Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.**

**STANDARDS USED FOR CERTIFICATION**

Asset #	Serial #	Mfg	Model #	Nomenclature	Cal Date	Int.	Cal Due
000219	T1587-2078	AZONI	A1011	RTD THERMOMETER	03/06/95	12	03/06/96
000328	351477	AZONI	A12001	RTD TEMPERATURE PROBE	03/06/95	12	03/06/96

Certified by : \_\_\_\_\_

Calibration Date: 03/29/95  
Interval: 12 months  
Next Calibration Due: 03/29/96

Certificate#: 16825

**SOUTHWEST RESEARCH INSTITUTE**  
**Department of Quality Assurance**  
**Calibration Laboratory**  
**CERTIFICATE OF CALIBRATION**  
**04/01/96**

Issued to: DARRELL DUNN DIV20 ,B57  
Manufacturer/Model: FISHE/14-983-10B  
Nomenclature: THERMOMETER  
Serial Number: 0323004  
Asset Number: 002042  
Notes:

**ENVIRONMENTAL CONDITIONS**

Temperature: 74.0F

Relative Humidity: 28%

**CALIBRATION INFORMATION**

Procedure Number: WI-9-30-TH03  
Remarks:

Accuracy: MFGR SPECS  
Received IN Tolerance

**Calibration was in accordance with requirements of MIL-STD-45662A.**  
**Measurements are traceable to the National Institute of Standards and Technology. Inspection and test data are on file and available for inspection.**

**STANDARDS USED FOR CERTIFICATION**

Asset #	Serial #	Mfg	Model #	Nomenclature	Cal Date	Int. Cal Due
000159	891-2261	FISHE	15-041B	THERMOMETER	02/19/96	12 02/19/97

Certified by :



Certificate#: 20805

Calibration Date: 04/01/96  
Interval: 12 months  
Next Calibration Due: 04/01/97



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

## Certificate of Calibration

15 April 1997

Issued to: DARRELL DUNN                      DIV20                      B57  
Manufacturer/Model: FISHERBRAND 14-983-10B  
Description: THERMOMETER  
Serial Number: 0323004  
Asset Number: 002042

### Environmental Conditions

Temperature: 70.0 Deg. F

Humidity: 40%

### 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: 15 Apr 97

Calibration Procedure: WI-9-30-TH03

Interval: 12 months

Accuracy: MFGR SPECS

Next Calibration Due: 15 Apr 98

Received: In Tolerance

Remarks:

### Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
000106	FLUKE	8506A	THERMAL RMS DIGITAL M	4180021	31 Jan 98
005174	AZONIX	A12001	PRECISION RTD TEMPERA	438295	11 Nov 97

Certificate # 25038

Signed: 

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



# Certificate of Calibration

11 May 1998

Issued to: DARRELL DUNN DIV20 B57  
Manufacturer/Model: FISHERBRAND 14-983-10B  
Description: THERMOMETER  
Serial Number: 0323004  
Asset Number: 002042

## Environmental Conditions

Temperature: 80.00 Deg. F

Humidity: 33 % 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: 11 May 98

Calibration Procedure: ASTM E77-89

Interval: 12 months

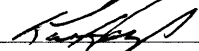
Next Calibration Due: 11 May 99


Received: In Tolerance

Remarks:

## Standards Used

Asset	MFR	Model	Description	Serial No.	Due Cal
000328	AZONIX	A12001	RTD TEMPERATURE PROBE	351477	27 Apr 99
000219	AZONIX	A1011	RTD THERMOMETER	T1587-2078	16 Apr 99

Signed: 

Title: 

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Certificate # 29649



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

7 May 1999

**Issued to:** DARRELL DUNN DIV20 B57  
**Manufacturer/Model:** FISHER SCIENTIFIC 14-983-10B  
**Description:** THERMOMETER  
**Serial Number:** 0323004  
**Asset Number:** 002042

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: 76.0 Degrees Fahrenheit Humidity: 33 % RH

**Calibration Date:** 7 May 99 **Calibration Procedure:** T.O.33K5-4-42-1, APR97

**Condition as Received:** IN TOLERANCE

**Condition as Released:** IN TOLERANCE

**Remarks:**

**Approved by:**

Jim Patterson, Supervisor or Walt Hill, Metrologist

**Certificate #** 34378

m:\a2la.rpt Rev date 10 Mar 99

**Measurements performed by:**

Ken Harp, Technician

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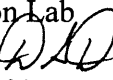


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## MEMORANDUM

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**To:** SwRI Calibration Lab  
**From:** Darrell S. Dunn   
**Date:** September 4, 2001  
**Subject:** Broken Thermometers

The following thermometers are broken in service and need to be removed from the calibration recall list. A copy of this memorandum will be placed in the Division 20 calibration records for these thermometers.

Kessler	ASTM 82C	Serial Number 32922	Asset Number 003778
Kessler	ASTM 82C	Serial Number 9243196	Asset Number 002310
Kessler	ASTM 1C	Serial Number 115814	Asset Number 003248
Fisher Scientific	14-983-10B	Serial Number 183302	Asset Number 002468
Fisher Scientific	14-983-10B	Serial Number 0323004	Asset Number 002042
Fisher Scientific	15-166A	Serial Number C96-784	Asset Number 004994
Fisher Scientific	15-166A	Serial Number C96-616	Asset Number 004987
Fisher Scientific	15-166A	Serial Number H98-180	Asset Number 007300

Please contact me at extension 6090 if you have any questions.

**SOUTHWEST****RESEARCH****INSTITUTE**

6220 CULEBRA ROAD • POST OFFICE DRAWER 28510 • SAN ANTONIO, TEXAS, 78228-0510 • TEL (210) 522-5215 • FAX (210) 522-3692

**To:** Darrell Dunn, Div.20, Bldg. 57**From:** Walt Hill, Metrology Group Leader  
Institute Calibration Laboratory**Date:** Oct. 29, 2002**Subject:** Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

When the as-found results are near the specification limit, +/- a margin less than the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. It is the Institute Calibration Laboratory policy that the client is made aware of this situation because the end-user is taking some of the risk that the instrument listed below may not meet the end-user measurement requirements.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

**Manufacturer:** Fisher Scientific **Model:** 14-983-10B**Description:** Thermometer **Serial Number:** 0323004**Asset Number:** 2042 **User ID Number:** None**Last Calibration:** Oct. 31, 2001**Date Received for Service:** Oct. 09, 2002 **Work Order Number:** 444050661**Service Requested:** Scheduled calibration**Remarks:** Failed at 105deg.C., see attached data sheet, Per customer request thermometer will be removed current recall.

Southwest Research Institute  
Calibration laboratory  
Calibration Sheet.

Work Order:	444050661	Mfr.	FISHER SCIENTIFIC	Technician	V MORALES
Asset No.	2042	Model	14-983-10B	Procedure	CL-9 5/99
Serial No.	0323004	Type.	THERMOMETER	Cal Date.	22-Oct-02
Remarks:					

Function/Range	Test Point	TI Reading	Difference	Test Limits+/-	Uncertainty	Found/Left
Temperature	Deg C	Deg C	Deg C	Deg C	Deg C	Results
-10	-9.80	-9.40	0.4	1.0	1.2	Pass
0	0.01	0.30	0.3	1.0	1.2	Pass
30	30.03	30.20	0.2	1.0	1.2	Pass
70	69.97	70.20	0.2	1.0	1.2	Pass
105	104.98	106.20	1.2	1.0	1.2	Fail

**To:** Darrell Dunn, Div.20, Bldg. 57

**From:** Walt Hill, Metrology Group Leader  
Institute Calibration Laboratory

**Date:** Oct. 29, 2002

**Subject:** Out-of-tolerance Notice

The purpose of this notice is to alert you of a condition, which may have caused erroneous measurements affecting safety or the quality of products or services your organization provides. The attached as-found readings are provided for your evaluation to determine if the instrument listed below had an impact and if further action is required.

When the as-found results are near the specification limit, +/- a margin less than the measurement uncertainty, it is not possible to state in-tolerance or out-of-tolerance with a 95% level of confidence. It is the Institute Calibration Laboratory policy that the client is made aware of this situation because the end-user is taking some of the risk that the instrument listed below may not meet the end-user measurement requirements.

Your review/evaluation should be conducted in accordance with your organizational quality policy and procedural requirements. If we can be of further assistance, please contact the Calibration Laboratory at 522-5215.

**Manufacturer:** Fisher Scientific **Model:** 14-983-10B

**Description:** Thermometer **Serial Number:** 0323004

**Asset Number:** 2042 **User ID Number:** None

**Last Calibration:** Oct. 31, 2001

**Date Received for Service:** Oct. 09, 2002 **Work Order Number:** 444050661

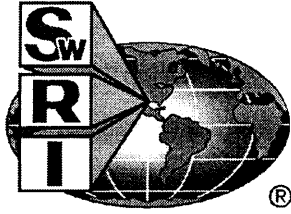
**Service Requested:** Scheduled calibration

**Remarks:** Failed at 105deg.C., see attached data sheet, Per customer request thermometer will be removed current recall.

Southwest Research Institute  
Calibration laboratory  
Calibration Sheet.

Work Order:	444050661	Mfr.	FISHER SCIENTIFIC	Technician	V MORALES
Asset No.	2042	Model	14-983-10B	Procedure	CL-9 5/99
Serial No.	0323004	Type.	THERMOMETER	Cal Date.	22-Oct-02
Remarks:					

Function/Range	Test Point	TI Reading	Difference	Test Limits+/-	Uncertainty	Found/Left
Temperature	Deg C	Deg C	Deg C	Deg C	Deg C	Results
-10	-9.80	-9.40	0.4	1.0	1.2	Pass
0	0.01	0.30	0.3	1.0	1.2	Pass
30	30.03	30.20	0.2	1.0	1.2	Pass
70	69.97	70.20	0.2	1.0	1.2	Pass
105	104.98	106.20	1.2	1.0	1.2	Fail



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## MEMORANDUM

---

**To:** SwRI Calibration Lab  
**From:** Darrell S. Dunn *D.S.D.*  
**Date:** April 7, 2003  
**Subject:** Removal of Equipment from the Calibration Recall List

The following equipment are no longer within tolerance and need to be removed from the calibration recall list. A copy of this memorandum will be placed in the Division 20 calibration records.

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Asset Number</u>
Unknown	25 x 0.01 mm	20-M-1	002186
Proto	6103	#2	001443
Proto	6104	918697	010126
Fisher	14-983-10B	0323004	002042

Please contact me at extension 6090 if you have any questions.