CERTIFICATE OF CALIBRATION

ISSUED BY: LAMBDA CALIBRATION LTD

DATE OF ISSUE: 24 February 2016 CERTIFICATE No: 385909



Page 1

Units 11 - 13

Stump Lane, Chorley

Chorley Central Business Park

APPROVED SIGNATORY

of

3

A Kelly D Pilkington

D Whalley C Reed R Armitage



Lancashire PR6 0BL
Tel: 0845 2411533
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Customer:

DJB Labcare Ltd

Address:

20 Howard Way, Interchange Park,

Milton Keynes

MK16 9QS

Item Number:

13010005 (4046)

Description:

Digital Thermometer

Model/Range:

TMD-56

Manufacturer:

Amprobe

Date of Cal:

24 Feb 2016

Calibrated by:

Mohammed Abid

Procedure Name:

Amprobe, Digital Thermometer, TMD-56 (DJB Labcare)

Rev/Basis:

03:E-650, Based on BS EN 60584.1

Temp/Humidity:

20.0°C ± 2°C <80%rh

The Results on the following pages are: As Found

All Measurements are Traceable to National Standards.

Note 1: The unit under test was calibrated using a multifunction calibrator.

Note 2: Where the reported value lies within the specified tolerances then this will be indicated by the word "PASS", if outside then by the word "FAIL".

Note 3: Values quoted in the "UUT Indicated Value" column are not necessarily quoted to the same resolution as the actual displayed value on the UUT.

Note 4: Any supplied test leads have been checked as part of the Visual/Operational test but have not been used during calibration.

Note 5: Temperature indicating instruments that contain an internal reference junction for use with thermocouples are calibrated with the reference junction enabled.

Engineers' Notes:

Standard(s) Used:

LMMC-02 / LMMC-04 / LMMC-10 / LMMC-14

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Page 2 of 3

Parameter	UUT Range	UUT Indicated Value	Applied Value	Acceptanc Low	e Limits High	Pass/ Fail	
Visual/Opera Result of	tional Tes Operator E					PASS	
Measurement	of Thermoo	ouples (Electrical	Simulation)				
Channel T1							
Type T		-190.0°C -80.0°C -50.0°C -50.0°C -30.0°C -10.0°C 0.0°C 4.0°C 37.0°C 50.0°C 100.0°C 150.0°C 200.0°C 250.0°C 390.0°C 390.0°C	-190.5 -80.3 -50.2 -30.2 -10.3 -0.2 3.8 36.9 49.9 99.9 149.9 199.9 149.9 199.9 249.9 299.9 390.0 99.9	-190.8 -80.3 -50.3 -30.3 -10.3 -0.3 3.7 36.7 49.7 99.7 149.6 199.6 249.6 299.6 389.5 99.3	-189.2 -79.7 -49.7 -29.7 -9.7 0.3 4.3 37.3 50.3 100.3 150.4 200.4 250.4 300.4 390.5 100.7	PASS PASS PASS PASS PASS PASS PASS PASS	
Type J		0.0°C 500.0°C 1000.0°C	-0.2 499.9 999.8	-0.3 499.4 999.2	0.3 500.6 1000.8	PASS PASS PASS	
Type E		1100.0°C 20.0°C 900.0°C	1099.9 19.7 899.9	1099.2 19.7 899.3	1100.8 20.3 900.8	PASS PASS PASS	
Type N		20.0°C 1100.0°C	19.9	19.6 1099.1	20.4	PASS PASS	
Type R Type S		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	PASS PASS	
-15		500.0°C 1100.0°C	500.0 1100.0	497.8 1097.5	502.3 1102.6	PASS PASS	

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Page 3 of 3

	UUT	UUT Indicated	Applied	Acceptano	ce Limits	Pass/
Parameter	Range	Value	Value	Low	High	Fail
Channel T2						
Type T						
		-190.0°C	-190.6	-190.8	-189.2	PASS
		-80.0°C	-80.3	-80.3	-79.7	PASS
		-50.0°C	-50.2	-50.3	-49.7	PASS
		-30.0°C	-30.2	-30.3	-29.7	PASS
		-10.0°C	-10.2	-10.3	-9.7	PASS
		0.0°C	-0.2	-0.3	0.3	PASS
		4.0°C	3.7	3.7	4.3	PASS
		37.0°C	36.8	36.7	37.3	PASS
		50.0°C	49.8	49.7	50.3	PASS
		100.0°C	100.0	99.7	100.3	PASS
		150.0°C	149.8	149.6	150.4	PASS
		200.0°C	199.9	199.6	200.4	PASS
		250.0°C	249.9	249.6	250.4	PASS
		300.0°C	299.9	299.6	300.4	PASS
		390.0°C	390.0	389.5	390.5	PASS
Trme V		100.0°F	99.9	99.3	100.7	PASS
Type K		0.0°C	0 1	0 0	0 0	
		500.0°C	-0.1	-0.3	0.3	PASS
		1000.0°C	500.0 999.8	499.4 999.2	500.6	PASS
Type J		1000.0 C	999.0	999.2	1000.8	PASS
Type o		20.0°C	19.9	19.7	20.3	DAGG
		1100.0°C	1099.9	1099.2	1100.8	PASS PASS
Type E		1100.0 C	1099.9	1099.2	1100.0	PASS
1100 2		20.0°C	19.7	19.7	20.3	PASS
		900.0°C	899.8	899.3	900.8	PASS
Type N		300.0	033.0	055.5	500.0	IAGG
		20.0°C	19.6	19.6	20.4	PASS
		1100.0°C	1100.1	1099.1	1101.0	PASS
Type R				1000.1	1101.0	22100
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS
Type S				1057.0	1102.0	11100
		500.0°C	500.0	497.8	502.3	PASS
		1100.0°C	1100.0	1097.5	1102.6	PASS
				1000	1102.0	11100

End of Calibration Data

Estimated Uncertainty of Measurement:

Electrical Simulation of Thermocouples

						-		
Type:	В	+500°C	to	+1820°C	±(0.56°C	+	2	LSD)
Type:	C	+0°C	to	+2320°C	±(0.42°C	+	2	LSD)
Type:	E	-250°C	to	+1000°C	±(0.46°C	+	2	LSD)
Type:	J	-210°C	to	+1200°C	±(0.27°C	+	2	LSD)
Type:	K	-200°C	to	-250°C	±(0.58°C	+	2	LSD)
Type:	K	-200°C	to	+1300°C	±(0.29°C	+	2	LSD)
Type:	L	-200°C	to	+900°C	±(0.28°C	+	2	LSD)
Type:	N	-200°C	to	+1300°C	±(0.34°C	+	2	LSD)
Type:	R	+0°C	to	+1767°C	±(0.53°C	+	2	LSD)
Type:	S	+0°C	to	+1767°C	±(0.50°C	+	2	LSD)
Type:	T	-250°C	to	-200°C	±(0.60°C	+	2	LSD)
Type:	T	-200°C	to	+400°C	±(0.29°C			