SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

PROTEMP MECHANICAL, INC.
3350 Scott Blvd, Bldg. #3
Santa Clara, CA 95054
Martin L. Reich Phone: 408 244 9821

CALIBRATION

Valid To: August 31, 2012 Certificate Number: 2058.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2] (±)	Comments
DC Voltage[3] – Generate	(0 to 15) V	0.2 mV	Fluke 741B
DC Voltage[3] – Measure	(0 to 110) mV 110 mV to 1.1 V (1.1 to 11) V (11 to 110) V	0.051 mV 0.39 mV 3.8 mV 64 mV	Fluke 741B
DC Current[3] – Generate	(2 to 22) mA	6.3 µA	Fluke 741B
DC Current[3] – Measure	(1 to 30) mA	6.7 µA	Fluke 741B
Resistance[3] – Generate	(0 to 11) Ω (11 to 110) Ω (0.11 to 1.1) kΩ	0.023 Ω 0.03 Ω 0.37 Ω	Fluke 741B
Resistance[3] – Measure	(0 to 11) Ω (11 to 110) Ω (0.11 to 1.1) kΩ	0.057 Ω 0.07 Ω 0.7 Ω	Fluke 741B

5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

Parameter/Equipment	Range	CMC[2] (±)	Comments
Electrical Calibration of Thermocouple Indicators, n Simulation[3] –			
Type B	(800 to 1820) °C	1.1 °C	Fluke 741B
Type E	(-200 to 1000) °C	0.62 °C	
Type J	(-100 to 1200) °C	0.57 °C	
Type K	(-100 to 1372) °C	0.62 °C	
Type R	(0 to 1768) °C	1.3 °C	
Type S	(0 to 1768) °C	0.45 °C	
Type T	(-200 to 400) °C	0.69 °C	
Electrical Calibration of RTD Indicators[3] –			
Pt 385, 100 Ω, 200 Ω, 500 Ω, 1000 Ω	(-200 to 400) °C	0.74 °C	Fluke 741B
Pt 3926, 100 Ω	(-200 to 630) °C	0.74 °C	
Pt 3916, 100 Ω	(-190 to 360) °C	0.74 °C	

II. Mechanical

Parameter/Equipment	Range	CMC[2] (±)	Comments
Pressure[3] – Measure	(0 to 100) psia	0.09 psia	Fluke 700PA6 w/ Fluke 741B

III. Thermodynamics

Parameter/Equipment	Range	CMC[2] (±)	Comments
Relative Humidity[3] – Measure	10 % to < 90 % RH 90 % to 100 % RH	1.5 % RH 2.6 % RH	Vaisala HMP 77B

Parameter/Equipment	Range	CMC[2] (±)	Comments
Relative Humidity[3] – Measuring Equipment	10 % RH 35 % RH 50 % RH 80 % RH 95 % RH	0.60 % RH 0.69 % RH 1.1 % RH 1.3 % RH 1.3 % RH	ASTM E104, salt solutions
Temperature – Measure[3, 4]			
For Uniformity of Ovens, Freezers, Furnaces, and Environmental Test Chambers	(-100 to 350) °C (350 to 750) °C	0.85 °C 3.7 °C	ASTM E145, Fluke Hydra data logger, uncertainty based per point
Chamber/Oven Single Point Measure	(-200 to 400) °C	0.09 °C	Hart 5627/5623A PRT with Hart 1502A readout
	(400 to 600) °C (600 to 1000) °C	3.6 °C 5.2 °C	Thermocouple or RTDs with indicator
RTD Calibration[3]	(-75 to 200) °C	0.72 °C	Environmental chamber / oven with Hart PRT 5623A / 5627
Thermocouple Calibration[3] –			
Type J Type K Type T	(-75 to 200) °C	0.53 °C	Environmental chamber / oven with Hart PRT 5623A / 5627

[1] This laboratory offers commercial calibration service and field calibration service.

[2] Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. Calibration and Measurement Capabilities represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

[3] Field calibration service is available for this calibration and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

[4] This laboratory offers only field calibration service for this parameter.

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited Laboratory

A2LA has accredited

PROTEMP MECHANICAL, INC.

Santa Clara, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 28th day of May 2010.

President & CEO
For the Accreditation Council
Certificate Number 2058.01
Valid to August 31, 2012

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.