



CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Electronic & Mechanical
188 Hartness Road
Sutton, MA 01590

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field(s) of

CALIBRATION

Refer to the accompanying Scope(s) of Accreditation for information regarding the types of calibrations to which this accreditation applies.

AC-1242

Certificate Number

ANAB Approval

Certificate Valid To: 09/05/2017
Version No. 001 Issued: 08/13/2015



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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 January 2009*).



ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Electronic & Mechanical

188 Hartness Road, Sutton, MA 01590

Paul O'Malley Phone: 508-865-1125

www.electronicmechanical.com eandmcal@msn.com

CALIBRATION

Valid to: September 5, 2017

Certificate Number: AC-1242

I. Thermodynamic

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Uniformity Survey Type J Type K	(-17 to 871) °C (-17 to 1370)°C	0.59 °C 0.82°C	Yokogawa MV-2000 Data Logger	E&M 064 Manufacturers Specifications
Process Controllers	(400 to 800)°C (0 to 400)°C (-200 to 0)°C	0.95°C 0.62°C 0.41°C	Fluke 744/741B Calibrator with RTD Pt 385 (100 Ω)	E&M 059 Manufacturers Specifications
Process Controllers	(400 to 630)°C (0 to 400)°C (-200 to 0)°C	0.95°C 0.61°C 0.4°C	Fluke 744/741B Calibrator with RTD Pt 385 (200 Ω)	E&M 059 Manufacturers Specifications
Process Controllers	(-200 to 0)°C (0 to 400)°C (400 to 630)°C	0.4°C 0.61°C 0.95°C	Fluke 744/741B Calibrator with RTD Pt 385 (500 Ω)	E&M 059 Manufacturers Specifications
Process Controllers	(600 to 800)°C (800 to 1000)°C (1000 to 1820)°C	1.6°C 1.2°C 1.1°C	Fluke 744/741B Process Calibrator with Type B Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(0 to 800)°C (800 to 1200)°C (1200 to 1800)°C (1800 to 2316)°C	0.72°C 0.94°C 1.3°C 2.3°C	Fluke 744/741B Process Calibrator with Type C Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(-250 to -200)°C (-200 to -100)°C (600 to 1000)°C	1.6°C 0.6°C 0.49°C	Fluke 744/741B Process Calibrator with Type E Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(-210 to -100)°C (-100 to 800)°C (800 to 1200)°C	0.72°C 0.39°C 0.6°C	Fluke 744/741B Process Calibrator with Type J Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(1200 to 1372)°C (400 to 1200)°C (-100 to 400)°C (-200 to -100)°C	0.83°C 0.6°C 0.39°C 0.83°C	Fluke 744/741B Process Calibrator with Type K Thermocouple	E&M 059 Manufacturers Specifications



PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Process Controllers	(-200 to -100)°C (-100 to 800)°C (800 to 900)°C	0.72°C 0.39°C 0.6°C	Fluke 744/741B Process Calibrator with Type L Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(900 to 1300)°C (-100 to 900)°C (-200 to -100)°C	0.72°C 0.6°C 1.2°C	Fluke 744/741B Process Calibrator with Type N Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(-20 to 0)°C (100 to 1767)°C (0 to 100)°C	2.7°C 1.2°C 1.8°C	Fluke 744/741B Process Calibrator with Type R Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(1400 to 1767)°C (200 to 1400)°C (0 to 200)°C (-20 to 0)°C	1.3°C 1.1°C 1.8°C 2.7°C	Fluke 744/741B Process Calibrator with Type S Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(-250 to -200)°C (-200 to 0)°C (0 to 400)°C	2.0°C 0.72°C 0.39°C	Fluke 744/741B Process Calibrator with Type T Thermocouple	E&M 059 Manufacturers Specifications
Process Controllers	(0 to 600)°C (-200 to 0)°C	0.39°C 0.72°C	Fluke 744/741B Process Calibrator with Type U Thermocouple	E&M 059 Manufacturers Specifications

II. Mechanical

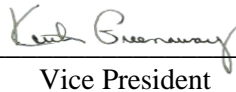
PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(±)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Pressure	Up to 300 psi	0.35 psi	Druck DPI 705	E&M 065 Manufacturers Specifications
Vacuum	(0 to -30) in Hg	0.21" in Hg	Druck DPI 705	E&M 065 Manufacturers Specifications
Timer	(0 to 30) minutes	0.94 seconds	Gralab	E&M 055 Manufacturers Specifications

III. Dimensional

PARAMETER / EQUIPMENT	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(\pm)]	REFERENCE STANDARD OR EQUIPMENT	METHOD(S)
Micrometers	Up to 12 in	720 μ in	Gage Blocks	E&M 053 Manufacturers Specifications
Calipers	Up to 12 in	(750 + 16L) μ in	Gage Blocks	E&M 050 Manufacturers Specifications

Notes:

1. Calibration and Measurement Capabilities (Expanded Uncertainties) are based on approximately a 95% confidence interval, using a coverage of $k=2$.
2. This laboratory offers on-site calibration service.
3. The uncertainty term (L) represents Length in inches.
4. This scope is formatted as part of a single document including the Certificate of Accreditation No. AC-1242.


Vice President

