SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

CONSOLIDATED CONTROLS
3620 Busch Dr. SW
Grandville, MI 49418
Scott Dykstra Phone: 616 361 9090

CALIBRATION

Valid To: July 31, 2020 Certificate Number: 1375.01

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	Range	CMC[2] (±)	Comments
DC Voltage – Generate[3]	(-99.900 to 99.900) mV	0.02 mV	Yokogawa 7651, Altek 422
	(-30.00 to 30.00) V	0.031 V	Yokogawa 7651
Electrical Calibration of Temperature Indicating Systems[3] –			
Type J T/C	(-50 to 1400) °F	0.41 °F	Yokogawa 7651
Type K	(-50 to 2400) °F	0.51 °F	
Type E	(-50 to 1000) °F	0.41 °F	
Type N	(-50 to 1800) °F	0.52 °F	
Type R	(100 to 3100) °F	1.2 °F	
Type S	(100 to 3100) °F	1.4 °F	
Type T	(-50 to 700) °F	0.42 °F	

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Parameter	Range	CMC[2] (±)	Comments
Temperature – Measure[3]			
Type J	(32 to 1400) ºF	1.8 °F	Altek 422 and standard thermocouples
Type K	(32 to 2400) ºF	1.8 °F	
Type N	(32 to 1800) ºF	1.8 °F	
Type R	(100 to 3100) ºF	2.3 °F	
Type T	(32 to 700) ºF	1.8 °F	
Other Probe Types	(32 to 2000) ºF	2.3 ºF	

II. Mechanical

Parameter	Range	CMC[2] (±)	Comments
Pressure – Hydraulic Gage[3]	(0 to 5000) psi	1.5 psig	Druck gage, UPS 3000AAA

III. Thermodynamics

Parameter	Range	CMC[2] (±)	Comments
Relative Humidity	(20 to 80) % RH	2.6 % RH	Chamber

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

[2] Calibration and Measurement Capability Uncertainty (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. CMCs 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.

Accredited Laboratory

A2LA has accredited

CONSOLIDATED CONTROLS

Grandville, MI

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSLI Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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 April 2017*).

Presented this 18th day of June 2018.

President and CEO
For the Accreditation Council
Certificate Number 1375.01
Valid to July 31, 2020
Revised June 26, 2018

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