

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc., has assessed the Laboratory of:

***Precision Measurements
20 Hagerty Road, Suite 1
West Chester, PA 19382***

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025: 2005

This accreditation demonstrated technical competence for the following scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated June 18, 2005):

***Calibration of Electrical and Pressure Measuring and Test Equipment
(As detailed in the supplement)***

Such testing and/or calibration services shall only be offered at or from the address given above. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

The validity of this certificate is mandated through ongoing surveillance.

President/Operations Manager

Perry Johnson Laboratory
Accreditation, Inc. (PJLA)
26555 Evergreen, Suite 1325
Southfield, Michigan 48076

Initial Accreditation Date:

June 26, 2008

Issue Date:

June 26, 2008

Expiration Date:

June 25, 2010

Accreditation No.:

62582

Certificate No.:

L08-42

Page No.:

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Certificate of Accreditation: Supplement

Precision Measurements

20 Hagerty Road, Suite 1
West Chester, PA 19382

Accreditation is granted to this facility to perform the following calibrations:

CALIBRATION FIELD	MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)
Electrical	DC Voltage – Generate Fluke 5520A/6	1 mV to 100 mV	13 μ V/V
		100 mV to 1.0 V	16 μ V/V
		1.0 V to 10 V	170 μ V/V
		10 V to 100 V	2.2 mV/V
		100 V to 1 000 V	22 mV/V
	DC Current – Generate Fluke 5520A/6 w/ 34330 A	10 μ A to 1 A	0.02%
		1 A to 20.5 A	0.18%
	Resistance – Generate Fluke 5520A/6	0 Ω to 10 Ω	450 $\mu\Omega/\Omega + 0.001 \Omega$
		10 Ω to 100 Ω	3.3 m $\Omega/\Omega + 0.001 4 \Omega$
		100 Ω to 1 k Ω	30 m $\Omega/\Omega + 0.002 \Omega$
		1 k Ω to 10 k Ω	0.3 $\Omega/\Omega + 0.02 \Omega$
		10 k Ω to 100 k Ω	3 $\Omega/\Omega + 0.2 \Omega$
		100 k Ω to 1 000 k Ω	0.037% + 2 Ω
		1 M Ω to 10 M Ω	0.015% + 50 Ω
	AC Voltage – Generate 45 Hz to 10 kHz Fluke 5520A/6	1 mV to 330 mV	0.026%
		330 mV to 3.3 V	0.054%
		3.3 V to 33 V	0.026%
		33 V to 330 V	0.042%
		330 V to 1 000 V	0.033%
	AC Current – Generate 45 Hz to 5 kHz Fluke 5520A/6	29 μ A to 330 μ A	0.36%
		330 μ A to 33 mA	0.088%
		33 mA to 330 mA	0.12%
		330 mA to 1 A	0.038%
		1 A to 3 A	0.63%
	AC Current – Generate 45 Hz to 1 kHz Fluke 5520A/6	3 A to 11A	0.21%
		11 A to 20.5 A	0.25%

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CALIBRATION FIELD	MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	BEST MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)
Thermodynamic	Electrical Simulation of Thermocouple Indicators Type J Fluke 5520A/6	-210°C to 1 200°C	0.34°C
	Electrical Simulation of Thermocouple Indicators Type K Fluke 5520A/6	-200°C to 1 372°C	0.49°C
	Electrical Simulation of Thermocouple Indicators Type T Fluke 5520A/6	-250°C to 400°C	0.74°C
Mechanical	Pressure Ruska 7250	2.068 427 MN/m ² to 13.789 514 MN/m ² (300 psig to 2 000 psig)	572.26 N/m ² (0.083 psig)
		-96 526.601 N/m ² to 2.068 427 MN/m ² (-14 psig to 300 psig)	510.21 N/m ² (0.074 psig)
	Pressure Pressurements 3114-3	13.789 514 MN/m ² to 68.947 572 MN/m ² (2 000 psig to 10 000 psig)	6 067.38 N/m ² (0.88 psig)

1. Laboratory offers commercial calibration services.
2. Best uncertainties represent expanded uncertainties expressed at approximately the 95% level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.
3. Best uncertainties are expressed measurands stated are generated with the Fluke 5520A/6, Ruska 7250 or Pressurements 3114-3 where noted. The capability is suitable for the calibration of the devices intended to measure the stated measurand in the ranges indicated. Best measurement uncertainty is read as output plus one-year floor specifications where defined. Proper warm-up, correct cabling and laboratory environment recommended by the manufacturer was adhered to.
4. Pressure calibrations are stated for in-house calibration only. The uncertainties achievable on a customer's site will be much larger than the best measurement capabilities (BMC) that the laboratory can attain.