



INTERNATIONAL
ACCREDITATION
SERVICE®

CERTIFICATE OF ACCREDITATION

This is to attest

CATIIS BAHRAIN W.L.L

PO BOX 26765, BUILDING 666, ROAD 3419

MAHOOZ 334, MANAMA, BAHRAIN

SATELLITE FACILITY: CATIIS COMPANY FOR INSPECTION, PO BOX 54, AL KHOBAR, SAUDI ARABIA

Calibration Laboratory CL-243

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiration Date April 1, 2026

Effective Date May 27, 2025



International Accreditation Service
Issued under the authority of IAS management

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

CATIIS BAHRAIN W.L.L

www.catiisonline.com

Accredited to ISO/IEC 17025:2017

Effective Date May 27, 2025

Location	Address	Contact Name	Contact Phone	Scope Pages
Main	PO Box 26765, Building 666, Road 3419, Mahooz 334, Manama, Bahrain	Surabhi V	+973-32200455	2-8
Satellite	PO Box 54, Al Khobar, Saudi Arabia	Surabhi V	+966-532952066	8-14

Main

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Vernier Caliper	Up to 300 mm	7.3 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-16(M))
Micrometers	0 mm to 25 mm 0 mm to 50 mm 50 mm to 250 mm	0.25 µm 2.3 µm 6.4 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-17(M))
Height Gauge	Up to 300 mm	7.7 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-18(M))
Dial Indicators (Plunger	Up to 25 mm	5.8 µm	Using gauge block set & Comparison Stand by comparison method (Procedure no. CAT-CP-19(M))
Mechanical			
Pressure Gauge/Indicator, Transmitter with or without indicator, recorder, switch	0 bar to 40 bar 0 bar to 700 bar	0.026 % 0.028 %	Using Digital pressure gauge & Pressure Pump by comparison method

* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.



SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
			(Procedure no. CAT-CP-23(M))
Vacuum Gauge/Indicator, Transmitter with or without indicator, recorder, switch	-0.85 bar to 0 bar	0.002 bar	Using Digital pressure gauge & Pressure Pump by comparison method (Procedure no. CAT-CP-23(M))
Mass – Standard Weights (Classes F1& Lower class)	1 mg to 500 mg 1 g to 5 g 10 g 20 g 50 g 100 g 200 g	0.01 mg 0.014 mg 0.017 mg 0.022 mg 0.029 mg 0.084 mg 0.16 mg	Using E2 Class weights & weighing balance by comparison method (Procedure no. CAT-CP-21(M))
Mass – Standard Weights (Classes F2 & Lower Class)	500 g to 2 kg 5 kg 10 kg 20 kg	8.3 mg 10 mg 84 mg 84 mg	Using F1 Class weights & weighing balances by comparison method (Procedure no. CAT-CP-21(M))
Weighing Balance ⁵	0.01 mg to 80 g 0.0001 g to 220 g 0.001 g to 500 g	0.065 mg 0.15 mg 1.2 mg	Using E2 Class weights by comparison method (Procedure no. CAT-CP-22(M))
	0.01 g to 600 g	0.02 g	Using E2 & F1 Class weights by comparison method (Procedure no. CAT-CP-22(M))
	0.1 g to 24000 g	0.2 g	Using F1 Class weights by comparison method (Procedure no. CAT-CP-22(M))
	0.01 kg to 150 kg	33 g	Using F1 & M1 Class weights by comparison method (Procedure no. CAT-CP-22(M))
Compression Testing Machine	10 kN to 3000 kN	0.45 %	Using Load Cell with Indicator by direct method (Procedure no. CAT-CP-20(M))
Tensile Testing Machine	5 kN to 70 kN	0.21 kN	Using Load Cell with Indicator by direct method

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
			(Procedure no. CAT-CP-20(M))
Volumetric – Micropipette / Syringes/ Pipette and Burette (Graduated / Non-graduated), Volumetric Cylinder, Beaker, Flask, etc.	10 µL to 100 µL 100 µL to 1 mL 1 mL to 10 mL 10 mL to 20 mL 20 mL to 100 ml	0.45 µL 0.60 µL 2.5 µL 8 µL 36 µL	Using Weighing balance and Distilled Water by Gravimetric method (Procedure no. CAT-CP-30 (M))
Flow Measurement (Liquid)	55 L/min to 445 L/min	0.36 %	Using Clamp-on Ultrasonic Flow meter by direct method. (Procedure no. CAT-CP-47 (M))
Hardness Tester (Rockwell)	92.6 HRB	0.82 HRB	Using Reference Hardness Block by direct Method (Procedure no. CAT-CP-48 (M))
Thermal			
Indicator of Oven (single point calibration)/ Incubator/Water Bath/ Temperature Sources & Calibrator /Chiller/Freezer	-40 °C to 20 °C 20 °C to 50 °C 50 °C to 400 °C	0.11 °C 0.13 °C 0.12 °C	Using (i) Using a PRT temperature probe by comparison method (ii) Class-A 4 wire RTD Sensor with High precision Digital Thermometer by comparison method (Procedure no. CAT-CP-27 (T))
Digital Thermometers, Temperature Sensor, Transmitter (RTD/ Thermocouple) with or Without Indicator	Fixed Point: -196 °C	0.058 °C	Temp sensors with indicator by comparison method (Procedure no. CAT-CP-25 & 26 (T))
	-20 °C to 120 °C 120 °C to 600 °C 600 °C to 800 °C	0.21 °C 0.75 °C 1.3 °C	Dry block Temperature Calibrator by direct method (Procedure no. CAT-CP-25 & 26 (T))
Relative Humidity Meter	20 %RH to 85 %RH (@ 25 °C)	1.7 %	Humidity Chamber by direct method (Procedure no. CAT-CP-29(T))
Electrical – DC/LF			
DC Voltage Generate ³	0 mV to 200 mV 0.2 V to 20 V 20 V to 200 V 200 V to 1000 V	0.005 % + 5 µV 0.008 % + 0.05 mV 0.006 % + 1.8 mV 0.006 % + 14 mV	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-01 (E))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
DC Current Generate ³	0 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 20 A 20 A to 1000 A	0.01 % + 0.03 µA 0.015 % 0.045 % + 0.24 mA 0.6 % + 0.25 A	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-02 (E))
DC Resistance Generate ³ (Fixed Values)	0.189 Ω 10.198 Ω 100.2180 Ω 1.00287 kΩ 9.99976 kΩ 100.0007 kΩ 1.000018 MΩ 9.99899 MΩ 100.0320 MΩ	5.2 mΩ 4.5 mΩ 4.6 mΩ 8.7 mΩ 0.12 Ω 2.6 Ω 0.015 kΩ 0.24 kΩ 0.03 MΩ	Using Multi product Calibrator by direct method (2-wire) (Procedure no. CAT-CP-05 (E))
	10.00872 Ω 100.0056 Ω 1.000072 kΩ 9.99954 kΩ 100.0007 kΩ	0.30 mΩ 0.77 mΩ 0.013 Ω 0.13 Ω 2.1 Ω	Using Multi product Calibrator by direct method (4-wire) (Procedure no. CAT-CP-05 (E))
Capacitance Generate ³ (Fixed Value)	(1 kHz) 10.440 nF 20.1780 nF 50.163 nF 99.66 nF 1.0070 µF	0.014 nF 0.03 nF 0.04 nF 0.08 nF 0.78 nF	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-013 (E))
AC Voltage Generate ³	1 mV to 200 mV (45 Hz to 1.999 kHz) (2 kHz to 20 kHz)	0.021 % + 56 µV 0.09 % + 0.23 mV	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-01 (E))
	0.2 V to 20 V (45 Hz to 1.999 kHz) (2 kHz to 100 kHz)	0.044 % + 0.3 mV 0.47 % + 0.8 mV	
	20 V to 200 V (40 Hz to 1.999 kHz) (2 kHz to 20 kHz)	0.045 % + 15 mV 0.096 % + 17 mV	
	200 V to 750 V (40 Hz to 1 kHz)	0.039 % + 100 mV	
AC Current Generate ³	20 µA to 200 µA (40 Hz to 1 kHz)	0.07 % + 0.35 µA	Using Multi product Calibrator with Clamp Adaptor by direct method (Procedure no. CAT-CP-02 (E))
	0.2 mA to 200 mA (40 Hz to 1 kHz)	0.077 % + 0.9 µA	

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
AC Current Generate ³ (cont'd.)	0.2 A to 20 A (40 Hz to 1 kHz)	0.19 % + 11 mA	
	20 A to 1000 A (50 Hz)	0.61 % + 0.25 A	
Simulated Temperature Generate ³ Thermocouples			Using Multi product Calibrator with Thermocouple Simulator by direct method (Procedure no. CAT-CP-05 (E))
J-Type	-210 °C to 1200 °C	0.17 °C	
K-Type	-200 °C to 1370 °C	0.24 °C	
T-Type	-250 °C to 400 °C	0.14 °C	
S-Type	0 °C to 1760 °C	0.60 °C	
R-Type	0 °C to 1760 °C	0.60 °C	
B-Type	600 °C to 1820 °C	0.76 °C	
E-Type	-250 °C to 1000 °C	0.18 °C	
N-Type	-200 °C to 1300 °C	0.29 °C	
L-Type	-200 °C to 900 °C	0.39 °C	
U-Type	-200 °C to 600 °C	0.49 °C	
C-Type	0 °C to 2316 °C	0.79 °C	
DC Voltage Measure ⁴	0 mV to 200 mV 0.2 V to 200 V 200 V to 1000 V	0.004 % + 6 µV 0.006 % + 0.3 µV 0.006 % + 13 mV	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-08 (E))
AC Voltage Measure ⁴	(50 Hz) 1 mV to 200 mV 0.2 V to 200 V 200 V to 750 V	0.075 % + 0.1 mV 0.15 % 0.11 % + 0.31 V	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-08 (E))
DC Current Measure ⁴	1 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 10 A	0.054 % + 0.03 µA 0.045 % + 0.03 µA 0.18 % + 0.5 mA	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-09 (E))
AC Current Measure ⁴	(50 Hz) 10 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 10 A	0.055 % + 0.61 µA 0.3 % + 0.1 mA 0.23 % + 7.5 mA	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-09 (E))
DC Resistance Measure ⁴	1 Ω to 50 MΩ	0.94 % + 0.01 Ω	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-11 (E))
Simulated Temperature – Measure ⁴ Thermocouples			Using Multi product Calibrator with Thermo- couple Simulator by direct method
J-Type	-210 °C to 1200 °C	0.17 °C	
K-Type	-200 °C to 1370 °C	0.24 °C	

CL-243

CATIIS BAHRAIN W.L.L

Effective Date May 27, 2025

Page 6 of 14

IAS/CL/100-3



SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
T-Type S-Type R-Type B-Type E-Type N-Type L-Type U-Type C-Type	-250 °C to 400 °C 0 °C to 1760 °C 0 °C to 1760 °C 600 °C to 1820 °C -250 °C to 1000 °C -200 °C to 1300 °C -200 °C to 900 °C -200 °C to 600 °C 0 °C to 2316 °C	0.14 °C 0.60 °C 0.60 °C 0.76 °C 0.18 °C 0.29 °C 0.39 °C 0.49 °C 0.79 °C	(Procedure no. CAT-CP-12 (E))
Insulation Resistance - Generate ³	1 MΩ 9.9 MΩ 99 MΩ	3.3 kΩ 0.06 MΩ 0.58 MΩ	Using Electrical Calibrator by direct method, (Procedure no. CAT-CP-4 (E))
Additional Resistance to an electrical loop	1 Ω	0.10 Ω	Using Electrical Calibrator by direct method, (Procedure no. CAT-CP-4 (E))
RCD Tester-Generate ³	150 mA/ 30 ms 30 mA/ 150 ms 10 mA /150 ms	2.8 ms 1.7 ms 1.8 ms	Using Electrical Calibrator by direct method, (Procedure no. CAT-CP-4 (E))
Time and Frequency			
Frequency Generate ³	10 to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz	0.00058 % 0.0007 % 0.0076 %	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-03 (E))
Rotational Speed (Non-contact Type)	30 rpm to 100 rpm 100 rpm to 500 rpm 500 rpm to 4000 rpm	0.17 rpm 0.68 rpm 1.1 rpm	Using reference Tachometer by direct method (Procedure no. CAT-CP-39 (M))
Chemical/Gas			
pH Meter	4 pH 7 pH 10 pH	0.023 pH	Using Standard Buffer Solutions for pH by direct method (Procedure no. CAT-CP-14 (C))
Conductivity Meter	147 µS/cm 1413 µS/cm 2000 µS/cm	4 µS/cm 5 µS/cm 12 µS/cm	Using Standard conductivity solution by direct method (Procedure no. CAT-CP-15 (C))
TDS Meter	94.08 mg/L 904.32 mg/L 1280 mg/L	6.9 mg/L 6.9 mg/L 6.9 mg/L	Using Standard conductivity solution by direct method (Procedure no. CAT-CP-15 (C))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Spectrophotometer	648 nm to 218 nm	0.03 %	Using Reference Material - Holmium Glass Filter by direct method (Procedure no. CAT-CP-56 (C))

Satellite

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Vernier Calipers Vernier Depth Gauge	Up to 150 mm 150 mm to 300 mm 300 mm to 500 mm	2.1 µm 6.2 µm 7.3 µm	Using gauge block set & Accessories by comparison method, (Procedure no. CAT-CP-16(M))
Micrometers (OD, ID & Depth)	Up to 25 mm 25 mm to 300 mm 300 mm to 500 mm	0.23 µm 5.9 µm 7 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-17(M))
Height Gauge	Up to 300 mm	5.9 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-18(M))
Dial Indicators Dial Depth gauge	Up to 10 mm 10 mm to 25 mm	0.6 µm 5.8 µm	Using gauge block set & Accessories by comparison method (Procedure no. CAT-CP-19(M))
Feeler Gauge	Up to 2 mm	0.84 µm	Using Reference Micrometer by comparison method (Procedure no. CAT-CP-63 (M))
Mechanical			
Pressure Gauge/Indicator, Transmitter with or without indicator, recorder, switch	0 bar to 10 bar	0.015 %	Using Pressure Calibrator by comparison method (Procedure no. CAT-CP- 23(M))
	10 bar to 700 bar	0.016 %	
Vacuum Gauge/Indicator, Transmitter with or without indicator, recorder, switch	-0.85 bar to 0 bar	0.004 bar	Using Pressure Calibrator by comparison method (Procedure no. CAT-CP- 23(M))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Weighing Balance (Both Lab and on-site calibrations)	0.01 mg to 220 g 0.001 g to 500 g	0.10 mg 0.98 mg	Using E2 & F1 Class weights by comparison method (Procedure no. CAT-CP- 22(M))
	0.01 g to 10000 g	12 mg	Using F1 Class weights by comparison method (Procedure no. CAT-CP- 22(M))
	0.1 g to 24000 g	0.2 g	Using F1 Class weights by comparison method (Procedure no. CAT-CP- 22(M))
	0.01 kg to 300 kg	23 g	Using F1 & M1 Class weights by comparison method (Procedure no. CAT-CP- 22(M))
	0.1 kg to 1000 kg	0.14 kg	Using M1 Class weights by comparison method (Procedure no. CAT-CP- 22(M))
Compression Testing Machine	10 kN to 3000 kN	0.16 %	Using Load Cell with Indicator by direct method (Procedure no. CAT-CP-20(M))
Tensile Testing Machine	5 kN to 500 kN	0.28 %	Using Load Cell with Indicator by direct method (Procedure no. CAT-CP-20(M))
Torque Wrenches	30 N m to 500 N m 500 N m to 1000 N m 1000 N m to 1500 N m	0.44 % 0.2 % 0.26 %	Using Torque Calibrator by direct method
Volumetric – Micropipette / Syringes/ Pipette and Burette (Graduated / Non-graduated), Volumetric Cylinder, Beaker, Flask, etc.	10 µL to 100 µL 100 µL to 1 mL 1 mL to 10 mL 10 mL to 20 mL 20 mL to 100 mL	0.05 µL 0.30 µL 2 µL 3 µL 4 µL	Using Weighing balance and Distilled Water by Gravimetric method (Procedure no. CAT-CP-30 (M))
Flow Measurement (Liquid)	0 to 720 m ³ /hr	0.68 %	Using Clamp-on Ultrasonic Flow meter by direct method (Procedure no. CAT-CP-47 (M))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Hardness Tester (Indirect calibration on-site)	Up to 225 HRB 150 HB to 300 HB Up to 150 HV	0.8 HRB 3.2 HB 3.8 HV	Using Reference Hardness Blocks (Procedure no. CAT- CP-48 (M))
Thermal			
Indicator of Oven/Incubator/Water Bath/ Temperature Sources & Calibrator /Chiller/Freezer	-80 ° to 20 °C 20 °C to 200 °C 200 °C to 400 °C 400 °C to 1000 °C	0.058 °C 0.058 °C 0.059 °C 0.92 °C	Using RTD Sensor and TC with High precision Digital Thermometer by comparison method (Procedure no. CAT-CP-27 (T))
Digital Thermometers, Temperature Sensor, Transmitter (RTD/ Thermocouple) with or Without Indicator	-196 °C -20 °C to 120 °C 120 °C to 450 °C 450 °C to 850 °C	0.058 °C 0.11 °C 0.67 °C 0.98 °C	Using RTD Sensor and TC with High precision Digital Thermometer and Temperature calibrator by comparison method (Procedure no. CAT-CP-25 & 26 (T))
Relative Humidity Mete	20 %RH to 85 %RH (@ 20 °C to 60 °C)	0.45 %	Humidity Chamber by Direct method (Procedure no. CAT-CP-29(T))
Electrical – DC/LF			
DC Voltage Generate ³	0.1 mV to 200 mV 0.2 V to 20 V 20 V to 200 V 200 V to 1000 V	0.001 % 0.001 % 0.001 % 0.001 %	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-01 (E))
DC Current Generate ³	0 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 20 A 20 A to 1000 A	0.002 % 0.005 % 0.035 % 0.13 %	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-02 (E))
DC Resistance Generate ³ (Fixed Values)	0.189 Ω 10.198 Ω 100.218 Ω 1.000287 kΩ 9.99976 kΩ 100.0007 kΩ 1.000018 MΩ 9.99899 MΩ 99.889 MΩ 100.032 MΩ	1.6 mΩ 1.6 mΩ 2.1 mΩ 0.01 Ω 0.08 Ω 1.1 Ω 0.016 kΩ 0.39 kΩ 0.07 kΩ 0.017 MΩ	Using Multi product Calibrator by direct method (2-wire) (Procedure no. CAT-CP-05 (E))
	10.008728 Ω 100.00565 Ω 1.0000723 kΩ 9.999541 kΩ 100.00070 kΩ	1.6 mΩ 2.1 mΩ 0.01 Ω 0.08 Ω 1.1 Ω	Using Multi product Calibrator by direct method (4-wire) (Procedure no. CAT-CP-05 (E))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Insulation Resistance - Generate ³	1 MΩ 9.9 MΩ 99 MΩ	3.1 kΩ 0.06 MΩ 0.58 MΩ	Using Electrical Calibrator by direct method (Procedure no. CAT-CP-4 (E))
Loop Tester	Loop + 1 Ω	0.03 Ω	Using Electrical Calibrator by direct method (Procedure no. CAT-CP-4 (E))
RCD Tester-Generate ³	50 mA/ 30 ms 30 mA/ 150 ms 10 mA /150 ms	1.2 ms 1.5 ms 1.5 ms	Using Electrical Calibrator by direct method (Procedure no. CAT-CP-4 (E))
Capacitance Generate ³ (Fixed Value)	10.044 nF 20.018 nF 50.163 nF 99.66 nF 1.007 μF	0.014 nF 0.029 nF 0.11 nF 0.11 nF 0.9 nF	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-013 (E))
AC Voltage Generate ³	1 mV to 200 mV (45 Hz to 1.999 kHz) (2 kHz to 20 kHz) 0.2 V to 20 V (45 Hz to 1.999 kHz) (2 kHz to 100 kHz) 20 V to 200 V (40 Hz to 1.999 kHz) (2 kHz to 20 kHz) 200 V to 750 V (40 Hz to 1 kHz)	0.018 % 0.024 % 0.017 % 0.022 % 0.034 % 0.076 % 0.039 %	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-01 (E))
AC Current Generate ³	20 μA to 200 μA (40 Hz to 1 kHz) 0.2 mA to 200 mA (40 Hz to 1 kHz) 0.2 A to 20 A (40 Hz to 1 kHz) 20 A to 1000 A (50 Hz)	0.036 % 0.027 % 0.045 % 0.12 %	Using Multi product Calibrator with Clamp Adaptor by direct method (Procedure no. CAT-CP-02 (E))
Simulated Temperature Generate ³ Thermocouples J-Type K-Type	-210 °C to 1200 °C -200 °C to 1370 °C	0.09 °C 0.01 °C	Using Multi product Calibrator with Thermocouple Simulator by direct method

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
T-Type S-Type R-Type B-Type E-Type N-Type L-Type U-Type C-Type	-250 °C to 400 °C 0 °C to 1760 °C 0 °C to 1760 °C 600 °C to 1820 °C -250 °C to 1000 °C -200 °C to 1300 °C -200 °C to 900 °C -200 °C to 600 °C 0 °C to 2316 °C	0.06 °C 0.18 °C 0.18 °C 0.19 °C 0.08 °C 0.12 °C 0.08 °C 0.07 °C 0.18 °C	(Procedure no. CAT-CP-05 (E))
DC Voltage Measure ^{4,5}	0.0001 mV to 200 mV 0.2 V to 200 V 200 V to 1000 V 0 kV to 40 kV	0.002 % 0.003 % 0.004 % 3.8 %	Using 6½ Digit Digital Multimeter by Direct Method (Procedure no. CAT-CP-08 (E)) Using Reference Probe and Multimeter by direct method
AC Voltage Measure ^{4,5}	0.0001 mV to 200 mV @ (50 Hz) 0.2 V to 200 V @ 50 Hz 200 V to 750 V @ 50 Hz 0 kV to 28 kV @ 50 Hz	0.06 % 0.06 % 0.08 % 3.2 %	Using 6½ Digit Digital Multimeter by Direct Method (Procedure no. CAT-CP-08 (E)) Using Reference Probe and Multimeter by direct method
DC Current Measure ⁴	1 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 10 A	0.033 % 0.031 % 0.10 %	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-09 (E))
AC Current Measure ⁴	(50 Hz) 10 µA to 200 µA 0.2 mA to 200 mA 0.2 A to 10 A	0.18 % 0.08 % 0.15 %	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-09 (E))
DC Resistance Measure ⁴	1 Ω to 10 Ω 10 Ω to 10 KΩ 10 KΩ to 1 MΩ 1 MΩ to 100 MΩ	0.05 % 0.01 % 0.009 % 0.47 %	Using 6½ Digit Digital Multimeter by direct method (Procedure no. CAT-CP-11 (E))
Simulated Temperature – Measure ⁴ Thermocouples J-Type K-Type T-Type S-Type R-Type B-Type	 -210 °C to 1200 °C -200 °C to 1370 °C -250 °C to 400 °C 0 °C to 1760 °C 0 °C to 1760 °C 600 °C to 1820 °C	 0.13 °C 0.22 °C 0.10 °C 0.43 °C 0.43 °C 0.46 °C	Using Multi product Calibrator with Thermo- couple Simulator by direct method (Procedure no. CAT-CP-12 (E))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Simulated Temperature – Measure ⁴ Thermocouples (cont'd.) E-Type N-Type L-Type U-Type C-Type	-250 °C to 1000 °C -200 °C to 1300 °C -200 °C to 900 °C -200 °C to 600 °C 0 °C to 2316 °C	0.13 °C 0.21 °C 0.28 °C 0.25 °C 0.55 °C	
Time and Frequency			
Frequency Generate ³	10 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz	0.00058 % 0.0007 % 0.0076 %	Using Multi product Calibrator by direct method (Procedure no. CAT-CP-03 (E))
Non-contact Tachometer	60 rpm to 90000 rpm	1.2 rpm	Using reference Tachometer by direct method (Procedure no. CAT-CP-39 (M))
Rotational Speed	30 to 100 rpm 100 to 500 rpm 500 to 10000 rpm	0.17 rpm 0.68 rpm 1.2 rpm	Using reference Tachometer by direct method (Procedure no. CAT-CP-39 (M))
Sound Level Meter	94 dB 114 dB	0.4 dB 0.4 dB	Using Sound Calibrator by direct method
Chemical/Gas			
pH Meter	4 pH 7 pH 10 pH	0.01 pH	Using Standard Solutions for pH by direct method (Procedure no. CAT-CP-14 (C))
Conductivity Meter	147 µS/cm 1413 µS/cm 2000 µS/cm	4 µS/cm 5 µS/cm 12 µS/cm	Using Standard conductivity solution by direct method (Procedure no. CAT-CP-15 (C))
TDS Meter	94.08 mg/L 904.32 mg/L 1280 mg/L	2.9 mg/L 2.9 mg/L 2.9 mg/L	Using Standard TDS solution by direct method (Procedure no. CAT-CP-15 (C))
Spectrophotometer	190 nm to 1100 nm	0.03 %	Using Reference Material - by direct method (Procedure no. CAT-CP-56 (C))
Gas Detectors	SO ₂ : 300 ppm CO: 100 ppm and 500 ppm CO ₂ : 500 ppm NO ₂ : 300 ppm CH ₄ : 50% LEL	2.3 % 2.3 % 2.3 % 2.3 % 2.3 %	Using Certified Standard Span Calibration Gases dy direct method (Procedure no. CAT-CP- 33(MI))

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
	O ₂ : 8 % and 18 % H ₂ S: 25 ppm, 50 ppm and 300 ppm VOC: 300 ppm	2.3 % 2.3 % 2.3 %	

¹The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

²When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

³Capability is suitable for the calibration of measuring devices in the stated ranges.

⁴Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.

⁵Also available as site calibration. Note that actual measurement uncertainties achievable at a customer's site can normally be expected to be larger than the uncertainties listed on this Scope of Accreditation.

Notes:

ppm = parts per million

LEL=Lower Explosive Meter

