

NO: SAMM 533

Page: 1 of 12

LABORATORY LOCATION/ CENTRAL OFFICE:	Sirim Calibration Sdn. Bhd., Kuching Bangunan SIRIM Berhad Lot 802, Jalan Demak Laut 2 Jalan Perindustrian Demak Laut 93756 Kuching, Sarawak , 93756, SARAWAK MALAYSIA
	
ACCREDITED SINCE :	04 FEBRUARY 2025
FIELD(S) OF CALIBRATION:	DIMENSIONAL PRESSURE HEAT & TEMPERATURE ELECTRICAL

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

*** The uncertainty covered by the CMC is expressed as the expanded uncertainty corresponding to a coverage probability of approximately 95 % and have a coverage factor of k=2 unless stated otherwise.**

CENTRAL LOCATION	Sirim Calibration Sdn. Bhd., Kuching Bangunan SIRIM Berhad Lot 802, Jalan Demak Laut 2 Jalan Perindustrian Demak Laut 93756 Kuching, Sarawak , 93756, Sarawak
FIELD(S) OF CALIBRATION :	DIMENSIONAL, PRESSURE, HEAT & TEMPERATURE, ELECTRICAL

SCOPE OF CALIBRATION : DIMENSIONAL

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Caliper	0.01 mm to 600 mm	10 μ m	Caliper Checker JIS B 7507
Micrometer	0.001 mm to 25 mm	1 μ m	Gauge Block BS EN ISO 3611

Schedule

Issue date: 18 December 2023
Valid Until: 17 October 2028



NO: SAMM 533

Page: 2 of 12

SCOPE OF CALIBRATION : PRESSURE

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Pressure Measuring Device (oil Medium)	10 psi to 800 psi 801 psi to 16000 psi	0.03% of pressure 0.02% of pressure	Reference Standard: Dead Weight Tester BS EN 837-1

Scan this QR Code or visit <https://accreditation.ism.gov.my/public/listing/cab/samm-ct/3002919> for the current scope of accreditation

NO: SAMM 533

Page: 3 of 12

SCOPE OF CALIBRATION : HEAT & TEMPERATURE

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Liquid-in-glass Thermometer (total Immersion)	-20 °C to 250 °C	0.09 °C	Comparison method using Pt 100 Reference Standard in liquid bath
Temperature Sensor With Digital Indicator	-20 °C to 250 °C	0.07 °C	Comparison method using Pt 100 Reference Standard in liquid bath
Mechanical Thermometer	-20 °C to 250 °C	0.3 °C	Comparison method using Pt 100 Reference Standard in liquid bath

NO: SAMM 533

Page: 4 of 12

SCOPE OF CALIBRATION : ELECTRICAL

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Measuring Instrument (a) Dc Voltage ($\pm$)	0 mV to 330 mV 330 mV to 3.3 V 3.3V to 33 V 33 V to 330 V 330 V to 1020 V	23 μ V/V + 1.7 μ V 11 μ V/V + 9.9 μ V 13 μ V/V + 96 μ V 24 μ V/V + 0.97 mV 3 24 μ V/V + 5.5 mV	Generate using calibrator model Fluke 5522 A
Measuring Instrument (b) Resistance	0 Ω to 11 Ω 11 Ω to 33 Ω 33 Ω to 110 Ω 110 Ω to 330 Ω 330 Ω to 1.1k Ω 1.1 k Ω to 3.3 k Ω 3.3 k Ω to 11k Ω 11k Ω to 33 k Ω 33 k Ω to 110 k Ω 110 k Ω to 330 k Ω 330 k Ω to 1.1 M Ω 1.1 M Ω to 3.3 M Ω 3.3 M Ω to 11 M Ω 11 M Ω to 33 M Ω 33 M Ω to 110 M Ω 110 M Ω to 330 M Ω 330 M Ω to 1100 M Ω	48 μ Ω / Ω + 1.2 m Ω 35 μ Ω / Ω + 1.8 m Ω 34 μ Ω / Ω + 1.6 m Ω 33 μ Ω / Ω + 2.4 m Ω 1.3 μ Ω / Ω + 0.67 m Ω 4.8 μ Ω / Ω + 0.67 m Ω 12 μ Ω / Ω + 0.64 m Ω 27 μ Ω / Ω + 0.6 m Ω 32 μ Ω / Ω + 0.42 Ω 38 μ Ω / Ω + 2.4 Ω 37 μ Ω / Ω + 3.8 Ω 70 μ Ω / Ω + 35 Ω 0.16 m Ω / Ω + 62 Ω 0.3 m Ω / Ω + 2.9 k Ω 0.6 m Ω / Ω + 4.7 k Ω 3.6 m Ω / Ω + 0.11 M Ω 18 m Ω / Ω + 5.8 M Ω	Generate using calibrator model Fluke 5522 A
Measuring Instrument (c) Ac Voltage (see Matrix A)	0 mV to 1020 V (See Matrix A)	(See Matrix A)	Generate using calibrator model Fluke 5522 A
Measuring Instrument (d) Frequency	0.01 Hz to 120 Hz 120 Hz to 1200 Hz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz	2.4 μ Hz/Hz + 79 μ Hz 2.5 μ Hz/Hz + 0.61 mHz 64 nHz/Hz + 0.89 Hz 0.53 μ Hz/Hz + 0.88 Hz 0.62 μ Hz/Hz + 8.7 Hz 1.4 μ Hz/Hz + 7.9 μ Hz	Generate using calibrator model Fluke 5522 A

NO: SAMM 533

Page: 5 of 12

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Measuring Instrument (e) Capacitance	220 pF to 400 pF 0.4 nF to 1.1 nF 1.1 nF to 3.3 nF 3.3 nF to 11 nF 11nF to 33 nF 33 nF to 110 nF 110 nF to 320 nF 0.33 mF to 1.1 mF 1.1 mF to 3.3 mF 3.3 mF to 11 mF 11 mF to 33 mF 33 mF to 110 mF 110 mF to 330 mF 0.33 mF to 1.1 mF 1.1 mF to 3.3 mF 3.3 mF to 11 mF 11 mF to 33 mF 33 mF to 110 mF	5.8 μ F/F + 12 pF 5.6 mF/F + 13 pF 5.9 mF/F + 12 pF 3 mF/F + 12 pF 3.4 mF/F + 7 pF 2.9 mF/F + 21 pF 2.9 mF/F + 59 pF 3 mF/F + 1.2 nF 3 mF/F + 3.6 nF 3 mF/F + 12 nF 4.6 mF/F + 38 nF 5.3 mF/F + 0.13 μ F 5.2 mF/F + 0.36 μ F 5.3 mF/F + 1.2 μ F 5.3 mF/F + 3.5 μ F 5.8 mF/F + 17 μ F 8.7 mF/F + 35 μ F 13 mF/F + 0.12 mF	Generate using calibrator model Fluke 5522 A
Measuring Instrument (f) Dc Current	0 μ A to 330 μ A 330 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 330 mA to 1.1 mA 1.1 A to 3 A 3 A to 11 A 11 A to 20.5 A	0.18 mA/A + 24 nA 0.12 mA/A + 59 nA 0.12 mA/A + 0.33 μ A 0.12 mA/A + 3.3 μ A 0.24 mA/A + 51 μ A 0.44 mA/A + 59 μ A 0.56 mA/A + 0.92 mA 1.3 mA/A + 1.1 mA	Generate using calibrator model Fluke 5522 A
Measuring Instrument (g) Ac Current (see Matrix B)	(See Matrix B)	(See Matrix B)	Generate using calibrator model Fluke 5522 A
Measuring Instrument (h) Clamp Meters Dc Current Via Current Coil	10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	2.8 mA/A + 5 mA 4.5 mA/A - 55 mA 3 mA/A + 27 mA	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	0 A to 20.5 A	4.3 mA/A + 8.7 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (1-Turn Coil)
	0 A to 102.5 A	4.9 mA/A + 9.9 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (5-Turn Coil)

NO: SAMM 533

Page: 6 of 12

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
	0 A to 1025 A	2.9 mA/A + 18 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (50-Turn Coil)
Measuring Instrument (h) Clamp Meters Ac Current Via Current Coil	(45 Hz to 65 Hz) 10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	2.8 mA/A + 19 mA 3.2 mA/A + 43 mA 2.8 mA/A + 0.22 A	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	(65 Hz to 440 Hz) 10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	8.9 mA/A + 10 mA 9.2 mA/A + 31 mA 9.1 mA/A + 0.17 A	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 20.5 A	3.2 mA/A + 46 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (1-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 102.5 A	2.9 mA/A + 44 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (5-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 1025 A	2.9 mA/A + 18 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (50-Turn Coil)
Measuring Instrument (i) Timer/ Stopwatch	0 sec. to 10 sec. 0 sec. to 100 sec. 0 sec. to 1000 sec 0 sec. to 10000 sec. 0 hr. to 24 hr.	33 μ s/s + 40 ms 1.2 μ s/s + 41 ms 0.95 μ s/s + 40 ms 67 ns/s + 41 ms 0.12 μ s/s + 40 ms	Comparison using Time Calibrator SST2
Measuring Instrument (j) Power Meters Dc Power Energy	0.1 W to 1 kW 1 kW to 20 kW	0.26 mW/W + 0.28 mW 0.82 mW/W - 2.7 mW	Generate using Fluke 5522A
Measuring Instrument Ac Power Energy 45 Hz To 65 Hz At Pf = 1	0.1 W to 1 W 1 W to 10 kW 10 kW to 20 kW	0.2 mW/W + 23 mW 1.2 mW/W + 7.8 mW 1.2 mW/W + 50 mW	Generate using Fluke 5522A

NO: SAMM 533

Page: 7 of 12

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Sourcing/generating Instrument (a) Dc Voltage	± 100 mV Range $\pm (100 \mu\text{V to } 120 \text{ mV})$ ± 1 V Range $\pm (0.1 \text{ V to } 1.2 \text{ V})$ ± 10 V Range $\pm (1 \text{ V to } 12 \text{ V})$ ± 100 V Range $\pm (10 \text{ V to } 10 \text{ V})$ ± 1000 V Range $\pm (100 \text{ V to } 1050 \text{ V})$	$4.4 \mu\text{V/V} + 0.7 \mu\text{V}$ $3.6 \mu\text{V/V} + 2 \mu\text{V}$ $4.7 \mu\text{V/V} + 2.6 \mu\text{V}$ $6.1 \mu\text{V/V} + 0.16 \text{ mV}$ $6.1 \mu\text{V/V} + 1.5 \text{ mV}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (b) Ac Voltage	10 mV to 700 V (See Matrix C)	(See Matrix C)	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (c) Frequency Or Period	<u>Input Signal 1 mVrms to 700 Vrms</u> 1 Hz to 40 Hz or 1 s to 25 ns 40 Hz to 10 MHz or 25 ns to 100 ns	$0.58 \text{ mHz/Hz} + 0.11 \mu\text{Hz}$ $0.58 \text{ ms/s} - 31 \text{ ps}$ $0.12 \text{ mHz/Hz} - 8.3 \text{ mHz}$ $0.12 \text{ ms/s} + 2 \text{ fs}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (d) Resistance, (four-wire Ohms And Twowire Ohms)	0 ? to 12 ? 10 ? to 120 ? 0.1 k? to 1.2 k? 1 k? to 12 k? 10 k? to 120 k? 0.1 M? to 1.2 M? 1 M? to 12 M? 10 M? to 120 M? 0.1 G? to 1.2 G?	$15 \mu\text{?/?} + 0.11 \text{ m?}$ $13 \mu\text{?/?} + 0.79 \text{ m?}$ $11 \mu\text{?/?} + 2.3 \text{ m?}$ $11 \mu\text{?/?} + 22 \text{ m?}$ $8.6 \mu\text{?/?} + 0.46 \text{ ?}$ $13 \mu\text{?/?} + 10 \text{ ?}$ $52 \mu\text{?/?} + 0.2 \text{ k?}$ $0.55 \text{ m?/?} + 5 \text{ k?}$ $58 \text{ m?/?} + 10 \text{ k?}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (e) Dc Current	± 100 nA Range $\pm (1 \text{ nA to } 120 \text{ nA})$ $\pm 1 \mu\text{A}$ Range $\pm (0.1 \mu\text{A to } 1.2 \mu\text{A})$ $\pm 10 \mu\text{A}$ Range $\pm (1 \mu\text{A to } 12 \mu\text{A})$ $\pm 100 \mu\text{A}$ Range $\pm (10 \mu\text{A to } 120 \mu\text{A})$ $\pm 1 \text{ mA}$ Range $\pm (0.1 \text{ mA to } 1.2 \text{ mA})$ $\pm 10 \text{ mA}$ Range $\pm (1 \text{ mA to } 12 \text{ mA})$ $\pm 100 \text{ mA}$ Range $\pm (10 \text{ mA to } 120 \text{ mA})$ $\pm 1 \text{ A}$ Range $\pm (0.1 \text{ A to } 1.05 \text{ A})$	$30 \text{ mA/A} + 48 \text{ pA}$ $20 \text{ mA/A} + 48 \text{ pA}$ $26 \mu\text{A/A} + 0.12 \text{ nA}$ $19 \mu\text{A/A} + 2.1 \text{ nA}$ $22 \mu\text{A/A} + 12 \text{ nA}$ $23 \mu\text{A/A} + 0.11 \mu\text{A}$ $42 \mu\text{A/A} + 1.4 \mu\text{A}$ $0.12 \text{ mA/A} + 21 \mu\text{A}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002

NO: SAMM 533

Page: 8 of 12

Instrument Calibrated/Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty ($\pm$)*	Remarks
Sourcing/generating Instrument (f) Ac Current	5 μ A to 1 A (See Matrix D)	(See Matrix D)	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002

SITE LOCATION (HQ)	1. Site Category 1
FIELD(S) OF CALIBRATION :	ELECTRICAL, HEAT & TEMPERATURE

SCOPE OF CALIBRATION : HEAT & TEMPERATURE

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
Temperature Controlled Enclosure	0 °C to 300 °C	0.7 °C	Temperature Recorder and TC Wire based on Thai Laboratory Accreditation Scheme G-20

SCOPE OF CALIBRATION : ELECTRICAL

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
Measuring Instrument (a) Dc Voltage ($\pm$)	0 mV to 330 mV 330 mV to 3.3 V 3.3V to 33 V 33 V to 330 V V 330 V to 1020 V	23 μ V/V + 1.7 μ V 11 μ V/V + 9.9 μ V 13 μ V/V + 96 μ V 24 μ V/V + 0.97 mV 24 μ V/V + 5.5 mV	Generate using calibrator model Fluke 5522 A

NO: SAMM 533

Page: 9 of 12

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
Measuring Instrument (b) Resistance	0 Ω to 11 Ω 11 Ω to 33 Ω 33 Ω to 110 Ω 110 Ω to 330 Ω 330 Ω to 1.1k Ω 1.1 k Ω to 3.3 k Ω 3.3 k Ω to 11k Ω 11k Ω to 33 k Ω 33 k Ω to 110 k Ω 110 k Ω to 330 k Ω 330 k Ω to 1.1 M Ω 1.1 M Ω to 3.3 M Ω 3.3 M Ω to 11 M Ω 11 M Ω to 33 M Ω 33 M Ω to 110 M Ω 110 M Ω to 330 M Ω 330 M Ω to 1100 M Ω	48 $\mu\Omega/\Omega$ + 1.2 m Ω 35 $\mu\Omega/\Omega$ + 1.8 m Ω 34 $\mu\Omega/\Omega$ + 1.6 m Ω 33 $\mu\Omega/\Omega$ + 2.4 m Ω 1.3 $\mu\Omega/\Omega$ + 0.67 m Ω 4.8 $\mu\Omega/\Omega$ + 0.67 m Ω 12 $\mu\Omega/\Omega$ + 0.64 m Ω 27 $\mu\Omega/\Omega$ + 0.6 m Ω 32 $\mu\Omega/\Omega$ + 0.42 Ω 38 $\mu\Omega/\Omega$ + 2.4 Ω 37 $\mu\Omega/\Omega$ + 3.8 Ω 70 $\mu\Omega/\Omega$ + 35 Ω 0.16 m Ω/Ω + 62 Ω 0.3 m Ω/Ω + 2.9 k Ω 0.6 m Ω/Ω + 4.7 k Ω 3.6 m Ω/Ω + 0.11 M Ω 18 m Ω/Ω + 5.8 M Ω	Generate using calibrator model Fluke 5522 A
Measuring Instrument (c) Ac Voltage (see Matrix E)	0 mV to 1020 V (See Matrix E)	(See Matrix E)	Generate using calibrator model Fluke 5522 A
Measuring Instrument (d) Frequency	0.01 Hz to 120 Hz 120 Hz to 1200 Hz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz	2.4 $\mu\text{Hz}/\text{Hz}$ + 79 μHz 2.5 $\mu\text{Hz}/\text{Hz}$ + 0.61 mHz 64 nHz/Hz + 0.89 Hz 0.53 $\mu\text{Hz}/\text{Hz}$ + 0.88 Hz 0.62 $\mu\text{Hz}/\text{Hz}$ + 8.7 Hz 1.4 $\mu\text{Hz}/\text{Hz}$ + 7.9 μHz	Generate using calibrator model Fluke 5522 A

NO: SAMM 533

Page: 10 of 12

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
Measuring Instrument (e) Capacitance	220 pF to 400 pF 0.4 nF to 1.1 nF 1.1 nF to 3.3 nF 3.3 nF to 11 nF 11nF to 33 nF 33 nF to 110 nF 110 nF to 320 nF 0.33 mF to 1.1 mF 1.1 mF to 3.3 mF 3.3 mF to 11 mF 11 mF to 33 mF 33 mF to 110 mF 110 mF to 330 mF 0.33 mF to 1.1 mF 1.1 mF to 3.3 mF 3.3 mF to 11 mF 11 mF to 33 mF 33 mF to 110 mF	5.8 μ F/F + 12 pF 5.6 mF/F + 13 pF 5.9 mF/F + 12 pF 3 mF/F + 12 pF 3.4 mF/F + 7 pF 2.9 mF/F + 21 pF 2.9 mF/F + 59 pF 3 mF/F + 1.2 nF 3 mF/F + 3.6 nF 3 mF/F + 12 nF 4.6 mF/F + 38 nF 5.3 mF/F + 0.13 μ F 5.2 mF/F + 0.36 μ F 5.3 mF/F + 1.2 μ F 5.3 mF/F + 3.5 μ F 5.8 mF/F + 17 μ F 8.7 mF/F + 35 μ F 13 mF/F + 0.12 mF	Generate using calibrator model Fluke 5522 A
Measuring Instrument (f) Dc Current ($\pm$)	0 μ A to 330 μ A 330 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 330 mA to 1.1 mA 1.1 A to 3 A 3 A to 11 A 11 A to 20.5 A	0.18 mA/A + 24 nA 0.12 mA/A + 59 nA 0.12 mA/A + 0.33 μ A 0.12 mA/A + 3.3 μ A 0.24 mA/A + 51 μ A 0.44 mA/A + 59 μ A 0.56 mA/A + 0.92 mA 1.3 mA/A + 1.1 mA	Generate using calibrator model Fluke 5522 A
Measuring Instrument Ac Current (see Matrix F)	(See Matrix F)	(See Matrix F)	Generate using calibrator model Fluke 5522 A
Measuring Instrument (h). Clamp Meters Dc Current Via Current Coil	10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	2.8 mA/A + 5 mA 4.5 mA/A - 55 mA 3 mA/A + 27 mA	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	0 A to 20.5 A	4.3 mA/A + 8.7 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (1-Turn Coil)
	0 A to 102.5 A	4.9 mA/A + 9.9 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (5-Turn Coil)

NO: SAMM 533

Page: 11 of 12

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
	0 A to 1025 A	2.9 mA/A + 18 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (50-Turn Coil)
Measuring Instrument (h). Clamp Meters Ac Current Via Current Coil	(45 Hz to 65 Hz) 10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	2.8 mA/A + 19 mA 3.2 mA/A + 43 mA 2.8 mA/A + 0.22 A	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	(65 Hz to 440 Hz) 10 A to 16.5 A 16.5 A to 150 A 150 A to 1025 A	8.9 mA/A + 10 mA 9.2 mA/A + 31 mA 9.1 mA/A + 0.17 A	Generate using Calibrator Fluke 5522A with Fluke 5500 A/Coil (50-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 20.5 A	3.2 mA/A + 46 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (1-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 102.5 A	2.9 mA/A + 44 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (5-Turn Coil)
	<u>30 Hz to 60 Hz</u> 0 A to 1025 A	2.9 mA/A + 18 mA	Generate using Calibrator Fluke 5522A with Transmille 2901 AC/DC Clamp Coil Adaptor (50-Turn Coil)
Measuring Instrument (i) Timer/ Stopwatch	0 sec. to 10 sec. 0 sec. to 100 sec. 0 sec. to 1000 sec. 0 sec. to 10000 sec. 0 hr. to 24 hr.	33 μ s/s + 40 ms 1.2 μ s/s + 41 ms 0.95 μ s/s + 40 ms 67 ns/s + 41 ms 0.12 μ s/s + 40 ms	Comparison using Time Calibrator SST2
Measuring Instrument (j). Power Meters Dc Power Energy	0.1 W to 1 kW 1 kW to 20 kW	0.26 mW/W + 0.28 mW 0.82 mW/W - 2.7 mW	Generate using Fluke 5522A
Measuring Instrument Ac Power Energy 45 Hz To 65 Hz At Pf = 1	0.1 W to 1 W 1 W to 10 kW 10 kW to 20 kW	0.2 mW/W + 23 mW 1.2 mW/W + 7.8 mW 1.2 mW/W + 50 mW	Generate using Fluke 5522A

Schedule

Issue date: 18 December 2023
Valid Until: 17 October 2028



NO: SAMM 533

Page: 12 of 12

Material / Product Tested	Type Of Test / Properties Measured / Range Of Measurement	Standard Test Methods / Equipment / Techniques	Remarks
Sourcing/generating Instrument (a) Dc Voltage	$\pm 100 \text{ mV}$ Range $\pm (100 \text{ }\mu\text{V}$ to $120 \text{ mV}) \pm 1 \text{ V}$ Range $\pm (0.1 \text{ V}$ to $1.2 \text{ V}) \pm 10 \text{ V}$ Range $\pm (1 \text{ V}$ to $12 \text{ V}) \pm 100 \text{ V}$ Range $\pm (10 \text{ V}$ to $10 \text{ V}) \pm 1000 \text{ V}$ Range $\pm (100 \text{ V}$ to $1050 \text{ V})$	$4.4 \text{ }\mu\text{V/V} + 0.7 \text{ }\mu\text{V}$ $3.6 \text{ }\mu\text{V/V} + 2 \text{ }\mu\text{V}$ $4.7 \text{ }\mu\text{V/V} + 2.6 \text{ }\mu\text{V}$ $6.1 \text{ }\mu\text{V/V} + 0.16 \text{ mV}$ $6.1 \text{ }\mu\text{V/V} + 1.5 \text{ mV}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (b) Ac Voltage	10 mV to 700 V (See Matrix G)	(See Matrix G)	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002
Sourcing/generating Instrument (c) Frequency Or Period	<u>Input Signal 1 mVrms to 700 Vrms</u> 1 Hz to 40 Hz or 1 s to 25 ns 40 Hz to 10 MHz or 25 ms to 100 ns	$0.58 \text{ mHz/Hz} + 0.11 \text{ }\mu\text{Hz}$ $0.58 \text{ ms/s} - 31 \text{ ps}$ $0.12 \text{ mHz/Hz} - 8.3 \text{ mHz}$ $0.12 \text{ ms/s} + 2 \text{ fs}$	Measure using 8 ½ Digit Multimeter Keysight 3458A Opt. 002

Scan this QR Code or visit <https://accreditation.ism.gov.my/public/listing/cab/samm-ct/3002919> for the current scope of accreditation