National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name :	ERROR DETECTOR, 53/2, HARIDEVPUR ROAD, 24 PARGANAS (S), WEST BENGAL, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz to 1 kHz)	Using Digital Multimeter (5 ¾ digit) by direct method	0.01 mA to 10 A	0.58 % to 0.63 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz to 1 kHz)	Using 6 ½ digit Precision Multimeter by direct method	0.1 mA to 1 mA	0.59 % to 0.16 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (50 Hz to 1 kHz)	Using 6 ½ digit Precision Multimeter by direct method	1 mA to 10 A	0.16 % to 0.39 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage @ 50 Hz	Using High voltage probe with Digital Multimeter by direct method	1 kV to 20 kV	5.88 % to 5.85 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (1 phase 50 Hz, UPF, 0.2 lead & lag to 0.8 lead & lag, 100 V to 500 V, 100 mA to 10 A)	Using Digital Multimeter (5 ¾ digit)-Power Meter by direct method	10 W to 5 kW	1.97%
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz to 1 kHz)	Using 6 ½ digit Precision Multimeter by direct method	1 mV to 1 V	0.53 % to 0.11 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz to 1 kHz)	Using 6½ digit Precision Multimeter by direct method	1 V to 1000 V	0.11 % to 0.096 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz to 1 kHz)	Using Digital Multimeter (5¾ digit) by direct method	2 mV to 950 V	0.70 % to 0.23 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 1 kHz)	Using Multiproduct Calibrator by direct method	30 µA to 329.9 µA	0.99 % to 0.26 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 1 kHz)	Using Multiproduct Calibrator by direct method	329.9 µA to 10 A	0.26 % to 0.15 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50 Hz	Using Multiproduct Calibrator with Current Coil by direct method	10 A to 900 A	1.53 % to 1.50 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50 Hz	Using Multifunction Calibrator with Current coil by direct method	10 A to 999 A	1.42 % to 1.53 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (1 phase, 50 Hz, 0.2 lead and lag to 0.8 lead and lag, 20 V to 320 V, 10 mA to 10 A)	Using Multiproduct Calibrator by direct method	40 mW to 2.56 kW	0.44 % to 0.18 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (1 phase, 50 Hz, UPF, 100 V to 320 V, 100 mA to10 A)	Using Multiproduct Calibrator by direct method	10 W to 3.2 kW	0.66 % to 0.08 %
15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (1 phase, 50 Hz, UPF, 20 V to 100 V, 10 mA to 100 mA)	Using Multiproduct Calibrator by direct method	200 mW to 10 W	0.4 % to 0.66 %

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16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (50 Hz to 1 kHz)	Using Multifunction Calibrator by direct method	5 mV to 999 V	0.23 % to 0.18 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (50Hz to 1 kHz)	Using Multiproduct Calibrator by direct method	1 mV to 329.9 mV	2.50 % to 0.076 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (50Hz to 1 kHz)	Using Multiproduct Calibrator by direct method	32.9 V to 329.9 V	0.057 % to 0.067 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (50Hz to 1 kHz)	Using Multiproduct Calibrator by direct method	329.9 mV to 32.9 V	0.076 % to 0.057 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @ 1 kHz	Decade Capacitance box by direct method	1 nF to 10 µF	1.94 % to 1.80 %
21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @ 1kHz	Using Multiproduct Calibrator by direct method	1 nF to 10 µF	1.94 % to 1.80 %

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22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @ 1kHz	Using Multiproduct Calibrator by direct method	10 µF to 330 µF	1.80 % to 1.93 %
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Inductance @ 1 kHz	Using Decade Inductance Box by direct method	100 µH to 10 H	0.65 % to 0.58 %
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor (230 V/1 A & 320 V/5 A)	Using Multiproduct Calibrator by direct method	0.2 lead/lag to 1 UPF	0.009PF
25	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Digital Multimeter (5 ¾ digit) by direct method	0.01 mA to 290 mA	0.44 % to 0.13 %
26	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6 ½ digit Precision Multimeter by direct method	100 µA to 9.9999 A	0.09 % to 0.21 %
27	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Digital Multimeter (5 ¾ digit) by direct method	290 mA to 10 A	0.13 % to 0.31 %

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28	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Multimeter (5 ¾ digit) by direct method	1 Mohm to 30 Mohm	0.19 % to 1.39 %
29	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Multimeter (5 ¾ digit) by direct method	1 ohm to 100 ohm	4.10 % to 0.10 %
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance (2 Wire)	Using 6 ½ digit Precision Multimeter by direct method	100 Mohm to 1000 Mohm	0.94 % to 2.33 %
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance (4 wire)	Using 6 ½ digit Precision Multimeter by direct method	1 ohm to 10 ohm	0.35 % to 0.05 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance (4 wire)	Using 6 ½ digit Precision Multimeter by direct method	10 ohm to 100 kohm	0.05 % to 0.01 %
33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance (4 wire)	Using 6 ½ digit Precision Multimeter by direct method	100 kohm to 100 Mohm	0.01 % to 0.94 %

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34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using High voltage probe with digital multimeter by direct method	1 kV to 5 kV	3.68 % to 3.63 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6 ½ digit Precision Multimeter by direct method	1 mV to 100 mV	0.42 % to 0.01 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using Digital Multimeter (5 ¾ digit) by direct method	10 mV to 1000 V	0.21 % to 0.03 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6 ½ digit Precision Multimeter by direct method	100 mV to 1000 V	0.01 % to 0.006 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multifunction Calibrator by direct method	0.1 mA to 9.999 A	0.46 % to 0.13 %
39	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator by direct method	10 µA to 100 µA	0.94 % to 0.10 %

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40	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator with Current Coil by direct method	10 A to 1000 A	1.08%
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multifunction Calibrator with Current Coil by direct method	10 A to 999 A	1.26 % to 1.40 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator by direct method	100 µA to 32.9 mA	0.10 % to 0.014 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator by direct method	2.19 A to 10 A	0.061 % to 0.088 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator by direct method	32.9 mA to 329.9 mA	0.014 % to 0.05 %
45	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multiproduct Calibrator by direct method	329.9 mA to 2.19 A	0.05 % to 0.061 %

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46	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 wire)	Using Meg ohm box by direct method	2 Gohm	4.58%
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm box by direct method	20 Gohm	3.90%
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm Box by direct method	20 Mohm	3.64%
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 wire)	Using Meg ohm box by direct method	200 Gohm	5.66%
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm box by direct method	200 Mohm	3.64%
51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	0.1 ohm	0.59%

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52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	0.1 ohm to 1 ohm	9.39 % to 0.94 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	1 kohm	0.59%
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	1 ohm	0.59%
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	1 ohm to 10 ohm	0.94 % to 0.11 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Decade Resistance box by direct method	1 ohm to 100 Mohm	0.58 % to 0.11 %
57	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	10 Mohm to 330 Mohm	0.076 % to 0.59 %

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58	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	10 ohm	0.59%
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	10 ohm to 100 ohm	0.11 % to 0.03 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	100 kohm to 10 Mohm	0.02 % to 0.076 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Decade Resistance box by direct method	100 Mohm to 999.99 Mohm	0.11 % to 0.58 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	100 ohm	0.59%
63	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Multiproduct Calibrator by direct method	100 ohm to 100 kohm	0.03 % to 0.02 %

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64	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Gold plated low discrete resistance box by direct method (5,10,15,20,50,100,200,300,500,1000mOhm)	5 mohm to 1000 mohm	1.73%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire) Discrete value	Using Standard Resistance Box by direct method	0.001 ohm	0.58%
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire) Discrete value	Using Standard Resistance Box by direct method	0.01 ohm	0.59%
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multiproduct Calibrator by direct method	0.1 mV to 1 mV	3.57 % to 0.36 %
68	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multiproduct Calibrator by direct method	1 mV to 329.9 V	0.36 % to 0.008 %

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69	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multifunction Calibrator by direct method	1 mV to 999 V	0.72 % to 0.12 %
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD (PT-100)	Using Temperature Calibrator by direct method	-200 °C to 800 °C	0.93°C
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (B type)	Using Temperature Calibrator by direct method	600 °C to 1750 °C	2.82°C
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (B type)	Using Multiproduct Calibrator by direct method	600 °C to 1750 °C	0.83°C
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (E type)	Using Multiproduct Calibrator by direct method	-100 °C to 1000 °C	0.70°C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (E type)	Using Temperature Calibrator by direct method	-100 °C to 700 °C	1.76°C

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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (J type)	Using Temperature Calibrator by direct method	-190 °C to 1100 °C	0.83°C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (J type)	Using Multiproduct Calibrator by direct method	-190 °C to 1100 °C	0.51°C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (K type)	Using Temperature Calibrator by direct method	-190 °C to 1350 °C	0.95°C
78	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (K type)	Using Multiproduct Calibrator by direct method	-200 °C to 1300 °C	0.61°C
79	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (R type)	Using Temperature Calibrator by direct method	0 °C to 1750 °C	2.25°C
80	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (R type)	Using Multiproduct Calibrator by direct method	300 °C to 1750 °C	0.93°C

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81	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (S type)	Using Temperature Calibrator by direct method	0 °C to 1750 °C	2.25°C
82	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (S type)	Using Multiproduct Calibrator by direct method	100 °C to 1750 °C	0.85°C
83	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (T type)	Using Temperature Calibrator by direct method	-190 °C to 350 °C	0.84°C
84	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (T type)	Using Multiproduct Calibrator by direct method	-190 °C to 400 °C	0.83°C
85	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple (J type)	Using Process calibrator by direct method	-200 °C to 1200 °C	0.87°C
86	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple B type	Using Process calibrator by direct method	600 °C to 1800 °C	2.12°C

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87	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple B type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	600 °C to 1790 °C	0.83°C
88	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple E type	Using Process calibrator by direct method	-200 °C to 1000 °C	0.77°C
89	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple E type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	-100 °C to 1000 °C	0.68°C
90	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple J type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	-190 °C to 1100 °C	0.47°C
91	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple K type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	-200 °C to 1300 °C	0.58°C
92	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple K type	Using Process calibrator by direct method	-200 °C to 1350 °C	1.06°C

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93	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple N type	Using Process calibrator by direct method	-200 °C to 1300 °C	0.85°C
94	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple R type	Using Process calibrator by direct method	0 °C to 1750 °C	2.08°C
95	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple R type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	100 °C to 1750 °C	0.93°C
96	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple RTD (PT-100)	Using Process calibrator by direct method	-200 °C to 800 °C	0.93°C
97	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple S type	Using Process calibrator by direct method	0 °C to 1750 °C	1.97°C
98	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple S type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	100 °C to 1750 °C	0.85°C

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99	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple T type	Using Multiproduct Calibrator & using standard chart mV to °C chart by direct method	-190 °C to 350 °C	0.81°C
100	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple T type	Using Process calibrator by direct method	-200 °C to 400 °C	0.73°C
101	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD (PT-100)	Using Multiproduct Calibrator by direct method	-190 °C to 800 °C	0.39°C
102	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 6 ½ digit Precision Multimeter by direct method	10 Hz to 100 kHz	0.07 % to 0.013 %
103	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Digital Multimeter (5 ¾ digit) by direct method	45 Hz to 1 kHz	0.09 % to 0.06 %
104	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Digital Timer using Comparison method	10 s to 3600 s	0.015 s to 4.17 s

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105	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 100V	Using Multiproduct Calibrator by direct method	45 Hz to 20 kHz	0.008 % to 0.009 %
106	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 10V	Using Multiproduct Calibrator by direct method	10 Hz to 100 kHz	0.01 % to 0.008 %
107	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 200V	Using Multiproduct Calibrator by direct method	45 Hz to 20 kHz	0.008 % to 0.009 %
108	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 230 V	Using Multifunction Calibrator by direct method	45 Hz to 1000 Hz	0.26 % to 0.015 %
109	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 300V	Using Multiproduct Calibrator by direct method	45 Hz to 10 kHz	0.008 % to 0.009 %
110	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 3V	Using Multiproduct Calibrator by direct method	1 MHz to 1.1999 MHz	0.01%

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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage @ 50 Hz	Using High voltage probe with digital multimeter by direct method	1 kV to 28 kV	5.87 % to 5.85 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (1 phase 50 Hz, UPF, 0.2 lead & lag to 0.8 lead & lag, 100 V to 500 V, 100 mA to 10 A)	Using Digital Multimeter (5 ¾ digit)-Power Meter by direct method	10 W to 5 kW	1.97%
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (50 Hz to 1 kHz)	Using Digital Multimeter (5¾ digit) by direct method	2 mV to 950 V	0.70 % to 0.23 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50 Hz	Using Multifunction Calibrator by direct method	0.1 mA to 9.9 A	0.45 % to 0.21 %
5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50 Hz	Using Multifunction Calibrator with Current coil by direct method	10 A to 999 A	1.42 % to 1.53 %

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6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (50 Hz to 1 kHz)	Using Multifunction Calibrator by direct method	5 mV to 999 V	0.23 % to 0.18 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @ 1 kHz	Decade Capacitance box by direct method	1 nF to 10 µF	1.94 % to 1.80 %
8	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Digital Multimeter (5 ¾ digit) by direct method	0.01 mA to 290 mA	0.44 % to 0.13 %
9	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using Digital Multimeter (5 ¾ digit) by direct method	290 mA to 10 A	0.13 % to 0.31 %
10	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Multimeter (5 ¾ digit) by direct method	1 Mohm to 30 Mohm	0.19 % to 1.39 %
11	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using Digital Multimeter (5 ¾ digit) by direct method	1 ohm to 100 ohm	4.10 % to 0.10 %

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12	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using High voltage probe with digital multimeter by direct method	1 kV to 5 kV	3.68 % to 3.63 %
13	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using Digital Multimeter (5 ¾ digit) by direct method	10 mV to 1000 V	0.21 % to 0.03 %
14	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multifunction Calibrator by direct method	0.1 mA to 9.999 A	0.46 % to 0.13 %
15	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multifunction Calibrator with Current Coil by direct method	10 A to 999 A	1.26 % to 1.40 %
16	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 wire)	Using Meg ohm box by direct method	2 Gohm	4.58%
17	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm box by direct method	20 Gohm	3.90%

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18	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm Box by direct method	20 Mohm	3.64%
19	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 wire)	Using Meg ohm box by direct method	200 Gohm	5.66%
20	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (2 Wire)	Using Meg ohm box by direct method	200 Mohm	3.64%
21	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	0.1 ohm	0.59%
22	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	1 kohm	0.59%
23	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	1 ohm	0.59%

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24	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Decade Resistance box by direct method	1 ohm to 100 Mohm	0.58 % to 0.11 %
25	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	10 ohm	0.59%
26	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Decade Resistance box by direct method	100 Mohm to 999.99 Mohm	0.11 % to 0.58 %
27	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Standard Resistance Box by direct method	100 ohm	0.59%
28	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire)	Using Gold plated low discrete resistance box by direct method (5,10,15,20,50,100,200,300,500,1000mOhm)	5 mohm to 1000 mohm	1.73%

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29	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire) Discrete value	Using Standard Resistance Box by direct method	0.001 ohm	0.58%
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Resistance (4 wire) Discrete value	Using Standard Resistance Box by direct method	0.01 ohm	0.59%
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multifunction Calibrator by direct method	1 mV to 999 V	0.72 % to 0.12 %
32	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD (PT-100)	Using Temperature Calibrator by direct method	-200 °C to 800 °C	0.93°C
33	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (B type)	Using Temperature Calibrator by direct method	600 °C to 1750 °C	2.82°C
34	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (E type)	Using Temperature Calibrator by direct method	-100 °C to 700 °C	1.76°C

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35	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (J type)	Using Temperature Calibrator by direct method	-190 °C to 1100 °C	0.83°C
36	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (K type)	Using Temperature Calibrator by direct method	-190 °C to 1350 °C	0.95°C
37	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (R type)	Using Temperature Calibrator by direct method	0 °C to 1750 °C	2.25°C
38	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (S type)	Using Temperature Calibrator by direct method	0 °C to 1750 °C	2.25°C
39	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple (T type)	Using Temperature Calibrator by direct method	-190 °C to 350 °C	0.84°C
40	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple (J type)	Using Process calibrator by direct method	-200 °C to 1200 °C	0.87°C

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41	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple B type	Using Process calibrator by direct method	600 °C to 1800 °C	2.12°C
42	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple E type	Using Process calibrator by direct method	-200 °C to 1000 °C	0.77°C
43	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple K type	Using Process calibrator by direct method	-200 °C to 1350 °C	1.06°C
44	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple N type	Using Process calibrator by direct method	-200 °C to 1300 °C	0.85°C
45	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple R type	Using Process calibrator by direct method	0 °C to 1750 °C	2.08°C
46	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple RTD (PT-100)	Using Process calibrator by direct method	-200 °C to 800 °C	0.93°C

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47	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple S type	Using Process calibrator by direct method	0 °C to 1750 °C	1.97°C
48	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	(Indicator/Recorder /Controller/Transducer) Thermocouple T type	Using Process calibrator by direct method	-200 °C to 400 °C	0.73°C
49	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Digital Timer using Comparison method	10 s to 3600 s	0.015 s to 4.17 s
50	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency @ 230 V	Using Multifunction Calibrator by direct method	45 Hz to 1000 Hz	0.26 % to 0.015 %

*** CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.**