

Laboratory **Samarth Krupa Instru Lab, 06, Rajashree Apt. Wadala – Pathardi Road, Indiranagar, Nashik, Maharashtra**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **CC-2650** Page **1 of 4**

Validity **26.04.2018 to 25.04.2020** Last Amended on -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>ELECTRO-TECHNICAL CALIBRATION</u>				
1.	SOURCE			
1.	DC Voltage [#]	1 mV to 100 mV 100 mV to 1000 V	1.61 % to 0.14 % 0.14 % to 0.15 %	Using Zeal 5 ½ Digit Multifunction Calibrator by Direct Method
2.	AC Voltage [#]	50Hz to 60Hz 5 mV to 100 mV 100 mV to 1000 V	1.85 % to 0.24 % 0.24 % to 0.23 %	Using Zeal 5 ½ Digit Multifunction Calibrator by Direct Method
3.	DC Current [#]	0.2 mA to 10A 10A to 1000A	0.4 % to 0.25% 2.41% to 1 %	Using Zeal 5 ½ Digit Multifunction Calibrator by Direct Method Using Zeal 5½ Digit Multifunction Calibrator with Current Coil by Direct Method
4.	AC Current [#]	50Hz to 60Hz 1 mA to 10 A 50Hz 10 A to 1000 A	0.56 % to 0.44% 2.1 % to 1.26 %	Using Zeal 5 ½ Digit Multifunction Calibrator by Direct Method Using Zeal 5½ Digit Multifunction Calibrator with Current Coil by Direct Method
5.	Frequency [#]	45 Hz to 1000 Hz	0.32 % to 0.08 %	Using Zeal 5 ½ Digit Multifunction Calibrator by Direct Method

Shally Sharma
Convenor

Avijit Das
Program Director

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6.	DC Capacitance [#]	1nF to 100 μ F	1.3 % to 1.13 %	Using Zeal Decade Capacitance Box by Direct Method
7.	DC Resistance [#]	1 Ω to 10 Ω 10 Ω to 10 M Ω 10 M Ω to 100 M Ω 100 M Ω to 1000 M Ω	1.13 % to 0.14 % 0.14 % 0.14 % to 1.16 % 1.16 % to 2.38 %	Using Zeal Decade Resistance Box by Direct Method
8.	Temperature Simulation [#] RTD (PT100) Thermocouple J-Type K-Type R-Type S-Type	(-)200 $^{\circ}$ C to 850 $^{\circ}$ C (-)200 $^{\circ}$ C to 760 $^{\circ}$ C (-)200 $^{\circ}$ C to 1370 $^{\circ}$ C 50 $^{\circ}$ C to 1750 $^{\circ}$ C 50 $^{\circ}$ C to 1750 $^{\circ}$ C	0.41 $^{\circ}$ C 0.36 $^{\circ}$ C 0.36 $^{\circ}$ C 0.59 $^{\circ}$ C 0.59 $^{\circ}$ C	Using Masibus MC 12 Multifunction Calibrator by Direct Method
II.	MEASURE			
1.	DC Voltage [#]	1 mV to 100 mV 100 mV to 1000V	0.46 % to 0.008 % 0.008 % to 0.006 %	Using Fluke 8846A 6 1/2 DMM by Direct Method
2.	DC Voltage [#]	1 mV to 1000 V	0.48 % to 0.05 %	Using Fluke 8846A 6 1/2 DMM by Comparison Method
3.	AC Voltage [#]	50Hz to 1kHz 5 mV to 10 mV 10 mV to 100 mV 100 mV to 1000 V	1.26 % to 0.69 % 0.69 % to 0.13 % 0.13 % to 0.10 %	Using Fluke 8846A 6 1/2 DMM by Direct /Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
4.	DC Current [#]	20 µA to 200 mA 200 mA to 10 A	0.24 % to 0.19 % 0.19 %	Using Fluke 8846A 6 ½ DMM by Direct / Comparison Method
5.	AC Current [#]	45Hz to 1kHz 20µ A to 10 A	0.65 % to 0.33%	Using Fluke 8846A 6 ½ DMM by Direct /Comparison Method
6.	Frequency [#]	45 Hz to 1000 Hz	0.13 % to 0.013 %	Using Fluke 8846A 6 ½ DMM by Direct Method
7.	DC Capacitance [#]	1nF to 100 µF	2.45 % to 1.83 %	Using Fluke 8846A 6 ½ DMM by Direct Method
8.	DC Resistance [#]	1Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 MΩ 1MΩ to 100 MΩ 100 MΩ to 1000MΩ	0.36 % to 0.05 % 0.05 % to 0.02 % 0.02 % to 0.012 % 0.012 % to 0.94 % 0.94 % to 2.34 %	Using Fluke 8846A 6 ½ DMM by Direct Method
9.	Temperature Simulation [#] RTD (PT100) Thermocouple J-Type K-Type R-Type S-Type	(-)200°C to 850 °C (-)200 °C to 760 °C (-)200 °C to 1370 °C 50 °C to 1750°C 50 °C to 1750°C	0.36 °C 0.36 °C 0.36 °C 0.60 °C 0.60 °C	Using Masibus MC 12 Multifunction Calibrator by Direct Method
10.	DC High Voltage*	1 kV to 20 kV 20 kV to 40 kV	6.4 % to 3 % 3 % to 3.8 %	Using Zeal HV Probe with DMM By Direct Method

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11.	AC High Voltage*	1 kV to 20 kV 20 kV to 30 KV 30 kV to 40 KV	5.8 % to 4 % 4 % to 5 % 5 % to 8.8 %	Using Zeal HV Probe With DMM By Direct Method

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

*Only for Site Calibration

The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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Avijit Das
Program Director