

Laboratory **Orgi Instruments and Sensors, No. 8A, Natarajan Street, Padmavathi Srinivasan Nagar, Ambattur, Chennai, Tamil Nadu**
Accreditation Standard **ISO/IEC 17025: 2005**
Certificate Number **CC-2554** **Page** **1 of 5**
Validity **07.02.2018 to 06.02.2020** **Last Amended on** **-**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
<u>ELECTRO-TECHNICAL CALIBRATION</u>				
I.	SOURCE			
1.	DC Voltage [#]	1 mV to 10 mV 10 mV to 100 mV 100 mV to 50 V 50 V to 1000 V	4.7 % to 0.05 % 0.05 % to 0.019 % 0.019 % to 0.025 % 0.025 % to 0.06 %	Using MFC calys1000 and Meco 90A Calibrator By Direct Method
2.	DC Current [#]	10 μ A to 1 mA 1 mA to 100 mA 100 mA to 1A 1 A to 10 A	0.3 % to 0.1 % 0.1 % to 0.08 % 0.08 % to 0.07 % 0.07 %	Using Meco 90A By Direct Method
3.	AC Voltage [#]	50 Hz to 400 Hz 10mV to 100mV 100mV to 10V 10V to 1000V	0.75 % to 0.13 % 0.13 % to 0.08 % 0.08 % to 0.094 %	Using Meco 90A By Direct Method
4.	AC Current [#]	50 Hz to 400 Hz 100 μ A to 1mA 1mA to 100mA 100mA to 1A 1A to 10A	0.4 % to 0.15 % 0.15 % to 0.15 % 0.15 % to 0.16 % 0.16 % to 0.18 %	Using Meco 90A By Direct Method
5.	DC Resistance [#] Discrete Values In Steps Of 10-24-50-100	10 Ω to 500 Ω 500 Ω to 24 k Ω 24 k Ω to 500 k Ω 500 k Ω to 24 M Ω	0.5 % to 0.25 % 0.25 % to 0.23 % 0.23 % 0.23 %	Using Meco 90A By Direct Method
	Continuous Value	1 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 4k Ω	0.36 % to 0.06 % 0.06 % to 0.04 % 0.04 % to 0.02 %	Using MFC calys 1000 By Direct Method
6.	Frequency [#]	10Hz to 1 kHz 1kHz to 10 kHz	0.058 % to 0.01% 0.01%	Using MFC calys1000 By Direct Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
7.	Temperature Simulation [#]			
	RTD (PT100)	(-) 200 °C to 600 °C	0.36 °C	Using MFC calys1000 By Direct Method
	Type J	(-) 200 °C to 750 °C	0.3 °C	
	Type K	(-) 200 °C to 1370 °C	0.4 °C	
	Type N	(-) 200 °C to 1300 °C	0.4 °C	
	Type T	(-) 200 °C to 400 °C	0.3 °C	
	Type R	300 °C to 1700 °C	0.76 °C	
	Type S	300 °C to 1700 °C	0.97 °C	
II.	MEASURE			
1.	DC Voltage [#]	1 mV to 10 mV 10 mV to 100 mV 100 mV to 10 V 10 V to 1000 V	0.41 % to 0.047 % 0.047 % to 0.012 % 0.012 % to 0.01 % 0.01 % to 0.011 %	Using MFC calys 1000 and 6 ½ DMM by direct Method
2.	DC Current [#]	10 uA to 1 mA 1 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.36 % to 0.08 % 0.08 % 0.08 % to 0.15 % 0.15 % to 0.18 %	Using 6 ½ DMM by Direct Method
3.	AC Voltage [#]	50 Hz to 400 Hz 1 mA to 100 mV 100 mV to 10 V 10 V to 750 V	0.54 % to 0.12 % 0.12 % to 0.11 % 0.16%	Using 6 ½ DMM by Direct Method
4.	AC Current [#]	50 Hz to 400 Hz 1 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.17 % to 0.16 % 0.16 % to 0.19 % 0.19 % to 0.26 %	Using 6 ½ DMM by Direct Method
5.	DC Resistance [#]	1 Ω to 10 Ω 10 to 1k Ω 1k Ω to 1M Ω 1M Ω to 10M Ω 10M Ω to 100M Ω	0.47 % to 0.06 % 0.06 % to 0.015 % 0.015 % to 0.017 % 0.017 % to 0.07 % 0.07 % to 0.94 %	Using 6 ½ DMM by Direct Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
6.	Frequency [#]	10 Hz to 1 kHz 1 kHz to 10 kHz	0.068 % 0.068 %	Using 6 ½ DMM by Direct Method
7.	Temperature Simulation [#]			
	RTD(Pt 100)	(-) 200 °C to 600 °C	0.36 °C	Using MFC Calys 1000 By Direct Method
	Type J	(-) 200 °C to 750 °C	0.3 °C	
	Type K	(-) 200 °C to 1370 °C	0.43 °C	
	Type N	(-) 200 °C to 1300 °C	0.58 °C	
	Type T	(-) 200 °C to 400 °C	0.31 °C	
	Type R	300 °C to 1700 °C	1.2 °C	
	Type S	300 °C to 1700 °C	1.2 °C	
8.	Time Interval [#]	10 sec to 5 Hrs	0.067 sec to 15.14 sec	Using Comparison Method

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<u>MECHANICAL CALIBRATION</u>				
I.	PRESSURE INDICATING DEVICES			
1.	Vacuum Pressure [#] (Dial Pressure Gauges, Digital Pressure Gauges, Vacuum Indicating Instruments)	(-)0.85 bar to (-)0.25 bar	0.55% rdg	Using Digital Pressure Gauge By Comparison Method as per DKD R-6-1
2.	Pressure-Pneumatic [#] (Digital Pressure Gauge, Dial Pressure Gauge, Pressure Indicating Equipments, Pressure Transmitter, Manometers, Data Loggers, Recorders)	0 to 10 bar	0.2% rdg	Using Digital Pressure Gauge By Comparison Method as per DKD R-6-1
3.	Pressure – Hydraulic [#] Digital Pressure Gauges, Dial Pressure Gauges, Pressure Indicating Equipments (Hydraulic) Pressure Transmitters, Data Loggers, Recorders	0 to 700 bar	0.2% rdg	Using Digital Pressure Gauge By Comparison Method as per DKD R-6-1

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<u>THERMAL CALIBRATION</u>				
I.	TEMPERATURE			
1.	Thermocouple RTDs, Temperature Transmitter with or without Indicator/ Recorder/Data Logger, Digital Thermometers/ Indicators of Temperature Bath and Dry Block [#]	(-) 15°C to 120°C	0.3 °C	Using Standard PRT and Low Temperature Bath with 6 ½ DMM
2.	Thermocouple RTDs, Temperature Transmitter with or without Indicator/ Recorder/ Data Logger, Digital Thermometers/ Indicators of Temperature Bath and Dry Block [#]	120 °C to 300 °C 300 °C to 600 °C 600 °C to 1200 °C	0.36 °C 1.5 °C 2.1 °C	Using Std PRT, S Type Thermocouple and Dry Block Furnace with 6 ½ DMM
3.	Muffle Furnace / Dry Block Furnace/ Tempering and Hardening Furnaces/ Oven *	100 °C to 300 °C 300 °C to 1200 °C	3.4 °C 4.8 °C	Using Multipoint Data Logger and 4 wire RTD (Pt100) Sensors, Thermocouples Multi Position Calibration

* 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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