

Laboratory Sri Calibrations Services, H. No. 12-10-335/3/A, Fl. No. S1 & S2, Nomula Lakshmi Residency, Seethaphalmandi, Secunderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Discipline Electro-Technical Calibration **Issue Date** 01.08.2015

Certificate Number C-0942 **Valid Until** 31.07.2017

Last Amended on 03.08.2015 **Page** 1 of 4

Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
I. SOURCE			
1. DC Voltage \$	1 mV to 1 V	0.5 % to 0.010 %	Using Multi Product Calibrator by Direct Method
	1 V to 10 V	0.010 %	
	10 V to 100 V	0.010 %	
	100 V to 1000 V	0.010 %	
2. AC Voltage \$	50 Hz to 1 kHz		Using Multi Product Calibrator by Direct Method
	1 mV to 200 mV	3.2 % to 0.06 %	
	200 mV to 2 V	0.06 % to 0.084 %	
	2 V to 20 V	0.084 % to 0.06 %	
	20 V to 200 V	0.06%	
3. DC Current \$	10 μ A to 2 mA	0.81 % to 0.017 %	Using Multi Product Calibrator
	2 mA to 20 mA	0.017 to 0.019 %	
	20 mA to 200 mA	0.019 % to 0.014 %	
	200 mA to 2 A	0.014 % to 0.017 %	Using Multi Product Calibrator using Current Coil Adapter (Transmille, EA002) by Direct Method with Current Coil
	2 A to 20 A	0.017 % to 0.40 %	
	20 A to 1000 A	1.6 % to 0.8 %	
4. AC Current \$	50 Hz to 1 kHz		Using Multi Product Calibrator (Transmille, M3050A) Using Multi Product Calibrator using Current Coil Adapter (Transmille, EA002) by Direct Method with Current Coil
	10 μ A to 200 μ A	3.6 % to 0.36 %	
	200 μ A to 200 mA	0.36 % to 0.1 %	
	200 mA to 20 A	0.1 % to 0.48 %	
	20 A to 1000 A	1.7 % to 0.9 %	

Ranjith Kumar
Convenor

Avijit Das
Program Manager

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5. Resistance ^{\$}	1 Ω to 10 Ω 10 Ω to 90 M Ω 90 M Ω to 900M Ω	1.78 % to 0.29 % 0.29 % 0.29 % to 1.2 %	Using Decade Resistance Box by Direct Method
6. Frequency ^{\$}	100 Hz to 1 kHz 1 kHz to 100 kHz 100 kHz to 10 MHz	0.003 % to 0.008 % 0.008 % to 0.006 % 0.006 % to 0.009 %	Using Multi Product Calibrator by Direct Method
7. Capacitance ^{\$}	10 nF 20 nF 50 nF 100 nF 1 μ F	0.47 % 0.47 % 0.47 % 0.47 % 0.70 %	Using Multi Product Calibrator by Direct Method
8. Temperature Simulation [#]			
K-Type	-140 $^{\circ}$ C to 500 $^{\circ}$ C 500 $^{\circ}$ C to 1340 $^{\circ}$ C	0.69 $^{\circ}$ C to 0.18 $^{\circ}$ C 0.18 $^{\circ}$ C to 0.31 $^{\circ}$ C	Using Multi Function Calibrator by Direct Method
T- Type	-240 $^{\circ}$ C to 200 $^{\circ}$ C 200 $^{\circ}$ C to 390 $^{\circ}$ C	0.69 $^{\circ}$ C to 0.25 $^{\circ}$ C 0.25 $^{\circ}$ C to 0.18 $^{\circ}$ C	
J- Type	-180 $^{\circ}$ C to 1200 $^{\circ}$ C	0.63 $^{\circ}$ C to 0.28 $^{\circ}$ C	
E -Type	0 $^{\circ}$ C to 200 $^{\circ}$ C 200 $^{\circ}$ C to 800 $^{\circ}$ C	0.15 $^{\circ}$ C to 0.27 $^{\circ}$ C 0.27 $^{\circ}$ C to 0.20 $^{\circ}$ C	
R- Type	0 $^{\circ}$ C to 1000 $^{\circ}$ C 1000 $^{\circ}$ C to 1700 $^{\circ}$ C	1.12 $^{\circ}$ C to 0.76 $^{\circ}$ C 0.76 $^{\circ}$ C to 0.82 $^{\circ}$ C	
S- Type	0 $^{\circ}$ C to 1000 $^{\circ}$ C 1000 $^{\circ}$ C to 1700 $^{\circ}$ C	1.10 $^{\circ}$ C to 0.8 $^{\circ}$ C 0.8 $^{\circ}$ C to 0.85 $^{\circ}$ C	
B -Type	600 $^{\circ}$ C to 800 $^{\circ}$ C 800 $^{\circ}$ C to 1700 $^{\circ}$ C	1.10 $^{\circ}$ C to 1.00 $^{\circ}$ C 1.00 $^{\circ}$ C to 1.1 $^{\circ}$ C	
N- Type	-200 $^{\circ}$ C to 500 $^{\circ}$ C 500 $^{\circ}$ C to 1300 $^{\circ}$ C	0.46 $^{\circ}$ C to 0.17 $^{\circ}$ C 0.17 $^{\circ}$ C to 0.28 $^{\circ}$ C	
RTD- Type	-100 $^{\circ}$ C to 800 $^{\circ}$ C	0.35 $^{\circ}$ C to 0.36 $^{\circ}$ C	
9. DC Voltage [*]	100 mV to 50 V	0.019 % to 0.023 %	

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
II. MEASURE			
1. DC Voltage \$	1 mV to 100 mV	0.51 % to 0.017 %	Using 6½ Digit Digital Multimeter Direct Method
	100 mV to 1 V	0.017 %	
	1 V to 10 V	0.017 %	
	10 V to 100 V	0.017 % to 0.018 %	
	100 V to 1000 V	0.018 % to 0.025 %	
2. AC Voltage \$	@50 Hz		Using 6½ Digit Digital Multimeter by Direct Method
	1 mV to 100 mV	5.9 % to 0.18 %	
	100 mV to 1 V	0.18 %	
	1 V to 750 V	0.18 %	
3. DC Current \$	10 mA to 100 mA	0.09 % to 0.07 %	Using 6½ Digit Digital Multimeter by Direct Method
	100 mA to 1 A	0.07 % to 0.21 %	
	1 A to 10 A	0.21 % to 0.35%	
4. AC Current \$	@50 Hz		Using 6½ Digit Digital Multimeter by Direct Method
	10 mA to 2 A	4.9 % to 0.43 %	
	2 A to 10 A	0.43 % to 0.72 %	
5. Resistance \$	1 Ω to 100 Ω	0.07 % to 0.03 %	Using 6½ Digit Digital Multimeter by Direct Method
	100 Ω to 10 k Ω	0.03 %	
	10 k Ω to 100M Ω	0.03 % to 1.74 %	
6. Time Interval \$	60 s to 900 s	0.9 s to 1.3 s	Using Digital Timer by Direct Method
	900 s to 3600 s	1.3 s to 2.9 s	

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
7. Temperature Simulation #			
K Type	-140 °C to 500 °C	0.93 °C to 0.20 °C	Using Multi Function Calibrator by Direct Method
	500 °C to 1340 °C	0.20 °C to 0.31 °C	
T Type	-240 °C to 200 °C	0.31 °C to 0.16 °C	
	200 °C to 399 °C	0.16 °C to 0.19 °C	
J Type	-180 °C to 500 °C	0.31 °C to 0.19 °C	
	500 °C to 1150 °C	0.19 °C to 0.28 °C	
E Type	0 °C to 200 °C	0.15 °C to 0.17 °C	
	200 °C to 800 °C	0.17 °C to 0.23 °C	
R Type	0 °C to 1000 °C	0.93 °C to 0.71 °C	
	1000 °C to 1700 °C	0.71 °C to 0.77 °C	
S Type	0 °C to 1000 °C	0.93 °C to 0.74 °C	
	1000 °C to 1700 °C	0.74 °C to 0.81 °C	
B Type	600 °C to 800 °C	0.81 °C to 0.69 °C	
	800 °C to 1700 °C	0.69 °C to 0.78 °C	
N Type	-200 °C to 500 °C	0.59 °C to 0.18 °C	
	500 °C to 1300 °C	0.18 °C to 0.28 °C	
RTD Type	-100 °C to 800 °C	0.36 °C	
8. High Voltage \$	1 kV to 5 kV DC @ 50Hz	0.025 kV to 0.125 kV	Using High Voltage Probe with Digital Multimeter by Direct Method
	1 kV to 5 kV AC	0.3 kV	
9. High Voltage *	1 kV to 28 kV AC @ 50Hz	0.3 kV to 1.5 kV	Using High Voltage Probe with Digital Multimeter by Direct Method
	1 kV to 40 kV DC	0.02 kV to 2.3 kV	
10. Time Interval *	60 s to 900 s	0.9 s to 1.3 s	Using Digital Timer by Comparison Method
	900 s to 3600 s	1.3 s to 2.9 s	

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

\$Only in Permanent Laboratory

*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.

Ranjith Kumar
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