

Laboratory **BHEL Instruments Calibration Center, BHEL HRDI Complex,  
Sector- 16A, Noida, Uttar Pradesh**

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

Certificate Number **CC-2708** Page **1 of 4**

Validity **28.05.2018 to 27.05.2020** Last Amended on -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>ELECTRO-TECHNICAL CALIBRATION</u></b>				
<b>I.</b>	<b>SOURCE</b>			
<b>1.</b>	AC Voltage <sup>#</sup>	3V to 30V 30V to 300V 300V to 1000V	0.03 % to 0.062% 0.062% to 0.039% 0.039% to 0.063%	Using Fluke 5520A by Direct Method
<b>2.</b>	AC Current <sup>#</sup>	329 mA to 1.09 A 1.09 A to 2.99 A 2.99 A to 10.9 A 10.9 A to 20 A	0.095% to 0.14% 0.14% to 0.13% 0.13% to 0.14% 0.14% to 0.13%	Using Fluke 5520A by Direct Method
<b>3.</b>	AC Power <sup>#</sup> 1 phase	120V/ 0.5 to 5 A/ 0.8 pf & UPF	0.10% to 0.11%	Using Fluke 5520A by Direct Method
<b>4.</b>	DC Voltage <sup>#</sup>	329 mV to 1V 1 V to 3.29 V 3.29 V to 10 V 10 V to 32.9 V	0.0024% to 0.0015% 0.0015% to 0.0022% 0.0022% to 0.0016% 0.0016% to 0.0023%	Using Fluke 5520A by Direct Method
<b>5.</b>	DC Current <sup>#</sup>	1.9 mA to 3.29 mA 3.29 mA to 19 mA 19 mA to 32.9 mA 32.9 mA to 190 mA 190 mA to 329 mA 329 mA to 1.09 A	0.013% to 0.012% 0.012% to 0.011% 0.011% 0.011% 0.011% 0.011% to 0.024%	Using Fluke 5520A by Direct Method
<b>6.</b>	Resistance <sup>#</sup> (4 Wire)	2 $\Omega$ to 10.9 $\Omega$ 10.9 $\Omega$ to 19 $\Omega$ 19 $\Omega$ to 30 $\Omega$ 30 $\Omega$ to 109 $\Omega$ 109 $\Omega$ to 190 $\Omega$	0.059% to 0.0071% 0.0071 % to 0.0052% 0.0052% to 0.0034% 0.0034% to 0.0012% 0.0012% to 0.0013%	Using Fluke 5520A by Direct Method

**Ashish Kakran**  
Convenor

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Program Director

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		190 $\Omega$ to 300 $\Omega$ 300 $\Omega$ to 1.09k $\Omega$	0.0013% to 0.0011% 0.0011% to 0.0057%	
<b>II.</b>	<b>MEASURE</b>			
<b>1.</b>	DC Voltage <sup>s</sup>	10 mV to 1 V 1 V to 10 V	0.01% to 0.015 % 0.015% to 0.057%	Using Fluke 8 ½ DMM by Direct Method
<b>2.</b>	DC Current <sup>s</sup>	1 mA to 10 mA 10 mA to 20 mA	0.06 % to 0.0064% 0.0064 % to 0.004%	Using Fluke 8 ½ DMM by Direct Method
<b>3.</b>	Resistance <sup>s</sup> (4 Wire)	25 $\Omega$ to 200 $\Omega$ 200 $\Omega$ to 350 $\Omega$	0.023 % to 0.0031 % 0.0031 % to 0.0033%	Using Fluke 8 ½ DMM by Direct Method
<b>4.</b>	AC Voltage <sup>s</sup>	100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 500 V	0.018% to 0.013% 0.013% to 0.012% 0.012% to 0.015% 0.015% to 0.016%	Using Fluke 8 ½ DMM by Direct Method
<b>5.</b>	AC Current <sup>s</sup>	0.1 A to 1 A 1 A to 5A 5A to 10 A 10 A to 20 A	0.071% to 0.085% 0.085% to 0.13% 0.13% to 0.10% 0.10% to 0.095%	Using Fluke 8 ½ DMM by Direct Method

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<b><u>MECHANICAL CALIBRATION</u></b>				
<b>I.</b>	<b>PRESSURE INDICATING DEVICES</b>			
<b>1.</b>	Pressure Indicating Devices \$ (Hydraulic)	0 to 60 kg/cm <sup>2</sup> 0 to 61 kg/cm <sup>2</sup> 0 to 350 kg/cm <sup>2</sup> 0 to 351 kg/cm <sup>2</sup>	0.02% of rdg 0.02% of rdg 0.04% of rdg 0.04% of rdg	Using Dead Weight Tester by Comparison Method as per DKD-R 6-1, PWR/TSX/PGT/BICC/001/26
	(Pneumatic)	0 to 1 kg/cm <sup>2</sup> (abs) 0 to 10 kg/cm <sup>2</sup> (abs)	0.02% of rdg 0.04% of rdg	Using Digital Multifunction Calibrator by Comparison Method as per DKD-R 6-2, PWR/TSX/PGT/BICC/001/27

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<b><u>THERMAL CALIBRATION</u></b>				
<b>I.</b>	<b>TEMPERATURE</b>			
<b>1.</b>	PRT Calibration <sup>§</sup> (Fixed point method ) Temperature in °C TPW Ga MP Sn FP Zn FP Al FP	0.01 °C 29.7646 °C 231.928 °C 419.527 °C 660.323 °C	0.004 °C 0.032 °C 0.015 °C 0.020 °C 0.039 °C	Using Standard PRT, F300 Precision Thermometry bridge, Medusa dry block bath, Hydra bath
<b>2.</b>	PRT Calibration <sup>§</sup> comparison method (PT100) Temperature in °C	0 °C 100 °C 200 °C 300 °C 400 °C 500 °C 600 °C	0.06 °C 0.12 °C 0.12 °C 0.14 °C 0.14 °C 0.14 °C 0.14 °C	Using Semi standard PRT, F150 Precision Thermometer, Medusa dry block bath, Hydra bath
<b>3.</b>	T/C Type Calibration <sup>§</sup> comparison method Temperature in °C	0 °C 100 °C 200 °C 300 °C 400 °C 500 °C 600 °C	0.06 °C 0.12 °C 0.12 °C 0.14 °C 0.14 °C 0.14 °C 0.14 °C	Using Semi standard PRT, F150 Precision Thermometer, Medusa dry block bath, Hydra bath, TRU

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

<sup>§</sup>Only in Permanent Laboratory

<sup>#</sup>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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