

Laboratory

Calibration Lab-NTSC, NSIC Technical Services Centre, The National Small Industries Corporation Ltd., (A Govt. of India Enterprise), Sector B-24, Guindy Industrial Estate, Ekkaduthangal, Chennai, Tamil Nadu

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2011  
(in lieu of C-0601, C-0602, C-0603)

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Validity

27.02.2017 to 26.02.2019

Last Amended on --

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>ELECTRO-TECHNICAL CALIBRATION</u></b>				
I.	<b>SOURCE</b>			
1.	<b>DC Voltage</b>	10 mV to 100 mV 100 mV to 50 V	0.50 % to 0.05 % 0.05 % to 0.08 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
2.	<b>DC Current</b>	1 A to 20 mA	0.70 % to 0.1 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
3.	<b>Resistance</b>	10 $\Omega$ to 4000 $\Omega$	0.50 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
4.	<b>Temperature Simulation (Indicator Controller/ Recorder)</b>			
	<b>J Type Thermocouple</b>	(-) 100 <sup>o</sup> C to 1200 <sup>o</sup> C	1.50 <sup>o</sup> C	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
	<b>S Type Thermocouple</b>	170 <sup>o</sup> C to 1500 <sup>o</sup> C	1.50 <sup>o</sup> C	Direct Method
	<b>RTD (PT-100)</b>	(-) 100 <sup>o</sup> C to 800 <sup>o</sup> C	0.50 <sup>o</sup> C	
II.	<b>MEASURE</b>			
1.	<b>DC Voltage</b>	10 mV to 100 mV 100 mV to 50 V	0.50 % to 0.46 % 0.46 % to 0.10 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method

Abhinav Thakur  
Convenor

Avijit Das  
Program Director

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2.	DC Current	1 mA to 20 mA	0.60 % to 0.10 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
3.	Resistance	10 $\Omega$ to 4000 $\Omega$	0.20 % to 0.15 %	Using AOIP Calys 1000 Multifunction Calibrator by Direct Method
4.	Temperature Simulation (Indicator Controller/ Recorder)			
	J Type Thermocouple	(-) 100 <sup>0</sup> C to 1500 <sup>0</sup> C	1.50 <sup>0</sup> C	Using AOIP Calys1000 Multifunction Calibrator by Direct Method
	S Type Thermocouple	170 <sup>0</sup> C to 1500 <sup>0</sup> C	1.50 <sup>0</sup> C	
	RTD (PT-100)	(-) 100 <sup>0</sup> C to 800 <sup>0</sup> C	0.50 <sup>0</sup> C	

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<b><u>MECHANICAL CALIBRATION</u></b>				
I.	<b>PRESSURE INDICATING DEVICES</b>			
1.	Pressure-Hydraulic <sup>s</sup> (Dial, Digital Pressure Gauges/ Indicators, Pressure Transducers and Pressure Transmitter)	1 kg/cm <sup>2</sup> to 30 kg/cm <sup>2</sup> 30 kg/cm <sup>2</sup> to 600 kg/cm <sup>2</sup>	0.24 % 0.22 %	Using Hydraulic Dead Weight Tester Low Pressure 1 to 30 kg/cm <sup>2</sup> High Pressure 10 to 600 kg/cm <sup>2</sup> based on DKD-R6-1
2.	Pressure-Hydraulic <sup>a</sup> (Industrial Dial, Digital Pressure Gauges/ Indicators, Pressure Switch and Pressure Transmitter)	0 kg/cm <sup>2</sup> to 700 kg/cm <sup>2</sup>	0.32 %	Using Digital Pressure Calibrator 0-700 & Hydraulic Pump based on DKD-R6:1
3.	Pressure-Pneumatic <sup>s</sup> (Dial, Digital Pressure Gauges/ Indicators, Pressure Transducers and Pressure Transmitter)	1 kg/cm <sup>2</sup> to 30 kg/cm <sup>2</sup>	0.27 %	Using Pneumatic Pump & Digital Pressure Calibrator based on DKD-R6-1

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4.	Pressure-Pneumatic* (Dial, Digital Pressure Gauges/ Indicators, Pressure Transducers and Pressure Transmitter)	0 kg/cm <sup>2</sup> to 30 kg/cm <sup>2</sup>	0.40 %	Using Digital Pressure Calibrator 1 to 30 kg/cm <sup>2</sup> & Pneumatic Pump based on DKD-R6-1

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<b><u>THERMAL CALIBRATION</u></b>				
<b>I.</b>	<b>TEMPERATURE</b>			
1.	Temperature Sensor (RTD's Thermocouples and Thermistors with and without Indicator/ Controller and Temperature Gauges <sup>#</sup>	(-) 20 <sup>0</sup> C to 100 <sup>0</sup> C 100 <sup>0</sup> C to 600 <sup>0</sup> C 600 <sup>0</sup> C to 1200 <sup>0</sup> C 1200 <sup>0</sup> C to 1400 <sup>0</sup> C	0.67 <sup>0</sup> C 1.65 <sup>0</sup> C 5.1 <sup>0</sup> C 5.1 <sup>0</sup> C	Using RTD Pt-100, Thermocouple Type S, AOIP calys 1000 and Dry well by Comparison Method
2.	Temperature Baths, Oven <sup>#</sup>	(-) 20 <sup>0</sup> C to 100 <sup>0</sup> C 100 <sup>0</sup> C to 600 <sup>0</sup> C 600 <sup>0</sup> C to 1200 <sup>0</sup> C	0.67 <sup>0</sup> C 1.65 <sup>0</sup> C 5.1 <sup>0</sup> C	Using RTD Pt-100, Thermocouple Type S, AOIP calys 1000 and high temperature by Comparison Method

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

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

<sup>\*</sup> Only for Site Calibration

<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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