



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY CENTRE, MUMBAI

CALIBRATION CERTIFICATE



Accrd. Cert No. C-0085

Work Order No. : WO/ECL/840/16-17
Date : 12/12/2016

Certificate No. : CC/ECL/1953/16-17
Date of Calibration : 12/12 to 23/12/2016
Page No. : 1 of 22

Calibrated Item : Multifunction Calibrator With Current Coil

Calibrated for : M/s. Electro Meter Corporation, P-5, C.I.T. Road, Scheme-LV,
Kolkata-700 014

Calibrated at : IDEMI, Mumbai.

Specification of Item Under Calibration	Standard Instruments Used for Calibration
<p>Manufacturer : M/s Fluke</p> <p>Condition of Item on receipt : No visible damage</p> <p>Range of Calibration: DCV, DCA, ACV, ACA, Resistance, Frequency, AC Power, Power Factor, Current Coil, T/C (J,K,R,S,T,L,N,B,E) (Source Mode), RTD (Pt-100) (Source Mode), Capacitance Calibrator Sr. No. : 1372004 Model : 5520A Calibrator ID No.: EMC/MPC/570 Coil Sr. No. : 0025678 Coil ID No : EMC/CC/17 Accuracy : Refer Manual</p>	<p>Please Refer Page 2 of 22 for Standard Instruments Used for Calibration</p> <p>Standards used are traceable to to National / International Standards</p>

Ambient Conditions :

Temperature : 25 ± 2.5°C

Relative Humidity : 35% to 65%

Remarks : Please refer page 3 to 22 for Calibration Results.

- 1) Procedure of Calibration : Above mentioned item is calibrated as per operating procedure.
OP-ECL-022, 023, 027, 029, 032, 037, 038, 057, 065, 066, 068.
- 2) Reported Expanded Uncertainty is at Coverage factor $k=1.96$ & at 95% Confidence Level.
- 3) Calibration Status : Sticker No. 1711 indicating 'CAL STATUS' is affixed on the instrument.
- 4) Our NABL Accreditation certificate No. is C - 0085, Valid up to 30/08/2018.

Pradeep Gujarathi

PRADEEP GUJARATHI
TECHNICAL MANAGER
AUTHORISED SIGNATORY

NM
(Note : This certificate refers only to the particular item(s), submitted for calibration. The certificate should not be reproduced except in full without the prior permission from the Managing Director, IDEMI, Mumbai - 400 022.)



वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई

**INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI**

भारत सरकार की सोसाईटी
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Government of India Society

Ministry of Micro, Small & Medium Enterprises

स्वातंत्र्यवीर तात्या टोपे मार्ग, चुनाभट्टी, सायन डाकघर, मुंबई - ४०० ०२२.

SWATANTRYAVEER TATYA TOPE MARG, CHUANABHATTI, SION P.O. MUMBAI - 400 022.

FF-LAB-03



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No: 1372004

Page No. : 2 of 22

Current Coil Sr. No. : 0025678

Certificate No. : CC/ECL/1953/16-17

Date of Calibration : 12/12 to 23/12/2016

Standard Instruments Used for Calibration

- 1) Voltage Divider & voltage artifact with
8½ Reference Multimeter
ID No. IDEMI/ECL/DMM/07
Calibration Validity up to 05/02/2018
- 2) 8½ Reference Multimeter
ID No. IDEMI/ECL/DMM/07
Calibration Validity up to 05/02/2018
- 3) Digital Frequency Counter with
GPS Controlled Frequency Counter
ID No. : IDEMI/ECL/FC/01
Calibration Validity up to 12/02/2018
- 4) Standard Resistor
ID No. : IDEMI/ECL/RES/02
Calibration Validity up to 08/06/2018
- 5) Standard Current Clamp
with 6 1/2 Digit Multimeter
ID No. : IDEMI/ECL/DMM/02
Calibration Validity up to 07/01/2017
- 6) Standard Current Clamp with
7½ Digit Multimeter
ID No. : IDEMI/ECL/DMM/04
Calibration Validity up to 12/05/2017
- 7) Precision Current Shunt
ID NO. : IDEMI/ECL/PSHT/ 01,16
Calibration Validity up to 06/08/2017
- 8) Precision Current Shunt
ID NO. : IDEMI/ECL/PSHT/ 02,05,09,11
Calibration Validity upto July 2017
- 9) Standard Capacitors
ID No. : IDEMI/ECL/CAP/ 04 to 07
Calibration Validity up to 28/07/2017
- 10) Standard Capacitors
ID NO. : IDEMI/ECL/CAP/ 08 to 10
Calibration Validity up to 28/07/2017
- 11) Reference Energy Calibration System
ID No. : IDEMI/ECL/PEC/02
Calibration Validity up to 11/01/2017

Standards used are traceable to
National / International Standards

PRADEEP GUJARATHI
TECHNICAL MANAGER
AUTHORISED SIGNATORY



सह्य, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
ISME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 3 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

DC VOLTAGE CALIBRATION

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts DC	mV		mV	mV		
	0.09903	0 to	0.1000	0.00097	0.98	0.07
	0.99902	329.9999mV	1.0000	0.00098	0.10	0.01
	9.99885	DC	10.0000	0.00115	0.01	0.001
	99.99823		100.0000	0.00177	0.002	0.0007
	328.99864		329.0000	0.00136	0.0004	0.0007
	V		V	V		
	0.9999993	0 to	1.000000	0.0000007	0.0001	0.0005
	3.2899914	3.299999 V DC	3.290000	0.0000086	0.0003	0.0005
	9.999986	0 to 32.99999 V	10.00000	0.000014	0.0001	0.0005
	32.899594	DC	32.90000	0.000406	0.001	0.0005
	49.99950	30 to	50.0000	0.00050	0.001	0.0005
	99.99874	329.9999 V DC	100.0000	0.00126	0.001	0.0006
	328.9978		329.0000	0.00220	0.001	0.0006
	499.9958	100 to	500.000	0.0042	0.001	0.0008
	999.9937	1020 V DC	1000.000	0.0063	0.001	0.0008

Note : Value mentioned above is the mean of 5 readings.

Checked by
Checked by

Calibrated By
Calibrated By



महान, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 4 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC VOLTAGE CALIBRATION @ 50 Hz

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC	mV		mV	mV		
	1.0040	1.0 to	1.000	-0.0040	-0.40	0.3
	10.0058	32.999 mV AC	10.000	-0.0058	-0.06	0.03
	32.0058		32.000	-0.0058	-0.02	0.02
	50.0015	33 mV to	50.000	-0.0015	-0.003	0.013
	99.9941	329.999 mV AC	100.000	0.0059	0.01	0.008
	328.975		329.000	0.025	0.01	0.006
	V	0.33 V to	V	V		
	1.000028	3.29999 V AC	1.00000	-0.000028	-0.003	0.005
	3.20000		3.20000	0.00000	0.00	0.005
	9.99997	3.3 V to	10.0000	0.00003	0.0003	0.005
	31.9999	32.9999 V AC	32.0000	0.0001	0.0003	0.006
	50.0000	33 V to	50.000	0.0000	0.00	0.006
	100.0001	329.999 V AC	100.000	-0.0001	-0.0001	0.006
	329.011		329.000	-0.011	-0.003	0.006
	500.008	330 V to 1020 V	500.00	-0.008	-0.002	0.006
	1000.067	AC	1000.00	-0.067	-0.01	0.006

Note : Value mentioned above is the mean of 5 readings.

Anandhakar
Checked by-

Anandhakar
Calibrated by-

MSME

सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 5 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC VOLTAGE CALIBRATION @ 1 kHz

Calibration Standard		Unit Under Calibration		Error		Exp.Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC	mV		mV	mV		
	0.9993	1.0 to	1.000	0.0007	0.07	0.3
	9.9994	32.999 mV AC	10.000	0.0006	0.01	0.03
	31.9967		32.000	0.0033	0.01	0.02
	49.9975	33 mV to	50.000	0.0025	0.01	0.013
	99.9960	329.999 mV AC	100.000	0.0040	0.004	0.008
	328.975		329.000	0.025	0.01	0.006
	V	0.33 V to	V	V		
	1.000022	3.29999 V AC	1.00000	-0.000022	-0.002	0.005
	3.20000		3.20000	0.00000	0.0001	0.005
	9.99948	3.3 V to	10.0000	0.00052	0.01	0.005
	31.9985	32.9999 V AC	32.0000	0.0015	0.005	0.006
	49.9978	33 V to	50.000	0.0022	0.004	0.006
	99.9949	329.999 V AC	100.000	0.0051	0.01	0.006
	328.987		329.000	0.013	0.004	0.006
	500.011	330 V to	500.00	-0.011	-0.002	0.006
	1000.018	1020 V AC	1000.00	-0.018	-0.002	0.006

Note : Value mentioned above is the mean of 5 readings.

Amal K. D.
Checked by-

Amal K. D.
Calibrated by-



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 6 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC VOLTAGE CALIBRATION @ 20 kHz

Calibration Standard		Unit Under Calibration		Error		Exp.Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC	mV	32.999 mV AC	mV	mV		
	0.9987		1.000	0.0013	0.13	0.3
	9.9996		10.000	0.0004	0.004	0.03
	31.9973		32.000	0.0027	0.01	0.02
	49.9941	33mV	50.000	0.0059	0.01	0.013
	99.9892	329.999mV AC	100.000	0.0108	0.01	0.008
	328.968		329.000	0.032	0.01	0.006
	V	0.33 V to 3.29999 V AC	V	V		
	1.000024		1.00000	-0.000024	-0.002	0.005
	3.20003		3.20000	-0.00003	-0.001	0.005
	9.99940	3.3 V to	10.0000	0.00060	0.01	0.005
	31.9993	32.9999 V AC	32.0000	0.0007	0.002	0.006
	49.9921	33 V to	50.000	0.0079	0.02	0.006
	99.9845	329.999 V AC	100.000	0.0155	0.02	0.006
	329.017		329.000	-0.017	-0.01	0.006

AC VOLTAGE CALIBRATION @ 10 kHz

Calibration Standard		Unit Under Calibration		Error		Exp.Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC	V	330 V to 1020 V AC	V	V		
	499.989		500.00	0.011	0.002	0.006
	1000.014		1000.00	-0.014	-0.001	0.006

Note : Value mentioned above is the mean of 5 readings.

Aradhika
Checked by-

Aradhika
Calibrated by-



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME TECHNOLOGY DEVELOPMENT CENTRE
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 7 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

DC CURRENT CALIBRATION

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Amps DC	μA	329.999 μA DC	μA	μA		
	10.0007		10.000	-0.0007	-0.01	0.015
	100.0011		100.000	-0.0011	-0.001	0.005
	190.0014		190.000	-0.0014	-0.001	0.005
	329.0044		329.000	-0.0044	-0.001	0.005
	mA	3.29999 mA DC	mA	mA		
	0.499999		0.50000	0.000001	0.0002	0.005
	0.999995		1.00000	0.00001	0.001	0.005
	3.28998		3.29000	0.00002	0.001	0.005
	10.00004	32.9999 mA DC	10.0000	-0.00004	-0.01	0.005
	20.00008		20.0000	-0.00008	-0.0004	0.005
	32.90024		32.9000	-0.00024	-0.001	0.006
	100.0058	329.999 mA DC	100.000	-0.0058	-0.01	0.006
	200.0108		200.000	-0.011	-0.01	0.006
Auto Volts DC With Std. Resistor	Calculated mA		mA	mA		
	329.917		329.900	-0.017	-0.01	0.006
	Calculated A		A	A		
	0.499991	1.09999 A DC	0.50000	0.00001	0.002	0.006
	0.999999		1.00000	0.000001	0.0001	0.006
	2.999505	1.1 to 2.99999 A DC	2.99900	-0.00050	-0.02	0.006
	4.99978	0 to 10.9999 A DC	5.0000	0.00022	0.004	0.006
	9.99921		10.0000	0.00079	0.01	0.006
	19.99901	11 to 20.5 A DC	20.0000	0.00099	0.005	0.007

Note : Value mentioned above is the mean of 5 readings.

Aradhana
Checked by-

Aradhana
Calibrated by-



सुक्ष्म, लघु एवं माध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSEME - TECHNOLOGY DEVELOPMENT CENTRE.
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 8 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC CURRENT CALIBRATION @ 50 Hz

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC with Standard Shunt	Calculated μA		μA	μA		
	33.027	29 to 329.99 μA	33.00	-0.027	-0.08	0.02
	100.024	AC	100.00	-0.024	-0.02	0.02
	200.004		200.00	-0.004	-0.002	0.02
	329.030		329.00	-0.030	-0.01	0.02
	Calculated mA		mA	mA		
	0.999955	0.33 to	1.00000	0.000045	0.005	0.02
	3.289930	3.29999 mA AC	3.29000	0.000070	0.002	0.03
	9.99974	3.3 to	10.0000	0.00026	0.003	0.03
	32.89866	32.9999 mA AC	32.9000	0.00134	0.004	0.03
	99.9973	33 to	100.000	0.0027	0.003	0.03
	328.9862	329.999 mA AC	329.000	0.0138	0.004	0.03
	Calculated A	0.33 to	A	A		
	0.499958	1.09999 A	0.50000	0.000042	0.01	0.04
	1.089923	AC	1.09000	0.000077	0.01	0.03
	2.000690	1.1 to	2.00000	-0.000690	-0.03	0.02
	2.901050	2.99999 A AC	2.90000	-0.001050	-0.04	0.02
	5.000274	3 to	5.0000	-0.000274	-0.01	0.02
	10.900344	10.9999 A AC	10.9000	-0.000344	-0.003	0.02
	20.002825	11 to 20.5 A AC	20.0000	-0.002825	-0.01	0.02

Note : Value mentioned above is the mean of 5 readings.

Aravind
Checked by-

Aravind
Calibrated by-



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 9 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC CURRENT CALIBRATION @1 kHz

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC with Standard Shunt	Calculated μA		μA	μA		
	33.005	29 to 329.99 μA	33.00	-0.005	-0.02	0.02
	100.010	AC	100.00	-0.010	-0.01	0.02
	200.012		200.00	-0.012	-0.01	0.02
	329.026		329.00	-0.026	-0.01	0.02
	Calculated mA		mA	mA		
	0.999913	0.33 to	1.00000	0.000087	0.01	0.02
	3.289872	3.29999 mA AC	3.29000	0.000128	0.004	0.03
	10.00128	3.3 to	10.0000	-0.00128	-0.01	0.03
	32.90298	32.9999 mA AC	32.9000	-0.00298	-0.01	0.03
	100.0101	33 to	100.000	-0.0101	-0.01	0.03
	329.0324	329.999 mA AC	329.000	-0.0324	-0.01	0.03
	Calculated A		A	A		
	0.499967	0.33 to	0.50000	0.000033	0.01	0.04
	1.089921	1.09999 A AC	1.09000	0.000079	0.01	0.03
	1.999506	1.1 to	2.00000	0.00049	0.02	0.02
	2.899398	2.99999 A AC	2.90000	0.00060	0.02	0.02
	4.999574	3 to	5.0000	0.0004	0.01	0.02
	10.900359	10.9999 A AC	10.9000	-0.000359	-0.003	0.02
	20.004025	11 to 20.5 A AC	20.0000	-0.004025	-0.02	0.02

Note : Value mentioned above is the mean of 5 readings.

Chakrabarti
Checked by-

Chandhokar
Calibrated by-



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 10 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

AC CURRENT CALIBRATION @10 kHz

Calibration Standard		Unit Under Calibration		Error		Exp.Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC with Standard Shunt	Calculated μA		μA	μA		
	32.965	29 to 329.99 μA	33.00	0.0350	0.11	0.02
	99.880	AC	100.00	0.1200	0.12	0.02
	199.800		200.00	0.2000	0.10	0.02
	328.879		329.00	0.1210	0.04	0.01
	Calculated mA		mA	mA		
	0.999564	0.33 to	1.00000	0.000436	0.04	0.01
	3.28890	3.29999 mA AC	3.29000	0.00110	0.03	0.03
	10.01945	3.3 to	10.0000	-0.01945	-0.19	0.03
	32.9608	32.9999 mA AC	32.9000	-0.0608	-0.18	0.03
	100.1792	33 to	100.000	-0.1792	-0.18	0.03
	329.597	329.999 mA AC	329.000	-0.597	-0.18	0.03
	Calculated A		A	A		
	0.502762	0.33 to	0.50000	-0.002762	-0.55	0.04
	1.094058	1.09999 A AC	1.09000	-0.004058	-0.37	0.03
	2.005924	1.1 to	2.00000	-0.005924	-0.30	0.02
	2.915704	2.99999 A AC	2.90000	-0.0157	-0.54	0.02

AC CURRENT CALIBRATION @ 5 kHz

Calibration Standard		Unit Under Calibration		Error		Exp.Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Volts AC with Standard Shunt	Calculated A		A	A		
	4.99217	3 to	5.0000	0.00783	0.16	0.03
	10.87581	10.9999 A AC	10.9000	0.02419	0.22	0.02
	19.98696	11 to 20.5 A AC	20.0000	0.01304	0.07	0.02

Note : Value mentioned above is the mean of 5 readings.

Guahar
Checked by-

Anandhakar
Calibrated by-



सूक्ष्म, लघु एवं मध्यम उद्यम
MICRO, SMALL & MEDIUM ENTERPRISES
MSME - TECHNOLOGY DEVELOPMENT CENTRE,
MUMBAI

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई - ४०० ०२२.

INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022.



ELECTRICAL CALIBRATION LABORATORY

Instrument Sr. No. : 1372004
Date of Calibration : 12/12 to 23/12/2016

Page No. : 11 of 22
Certificate No. : CC/ECL/1953/16-17

Calibration Results :

RESISTANCE CALIBRATION

Calibration Standard		Unit Under Calibration		Error		Exp. Uncert in %
Range	Reading	Range	Reading	Units	% of Rdg	
Auto Ohms	Ω		Ω	Ω		
	0.99999	0 to	1.0000	0.00001	0.001	0.003
	4.99976	10.9999 Ω , 4 Wire	5.0000	0.00024	0.005	0.002
	10.89935		10.9000	0.00065	0.01	0.002
	19.99876	11 to	20.0000	0.00124	0.01	0.002
	32.89787	32.9999 Ω , 4 Wire	32.9000	0.00213	0.01	0.002
	49.99648	33 to	50.0000	0.00352	0.01	0.002
	109.89236	109.9999 Ω , 4 Wire	109.9000	0.00764	0.01	0.001
	199.99786	110 to	200.0000	0.00214	0.001	0.001
	329.89536	329.9999 Ω , 4 Wire	329.9000	0.00464	0.001	0.002
	$k\Omega$		$k\Omega$	$k\Omega$		
	0.5000008	0.33 to	0.500000	-0.0000008	-0.0002	0.002
	1.0899998	1.999999 $k\Omega$, 4 Wire	1.090000	0.0000002	0.00002	0.001
		1.1 to				
	3.2900085	3.299999 $k\Omega$, 4 Wire	3.290000	-0.0000085	-0.0003	0.002

Note : Value mentioned above is the mean of 5 readings.

Checked by-

Calibrated by-