



CALIBRATION CERTIFICATE




ELECTRONICS TEST & DEVELOPMENT CENTRE

STQC Directorate
Ministry of Communications & Information Technology
Department of Information Technology
Government of India
Dr. VSI Estate, Thiruvannamipur, Chennai 600 041

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VSI CALIBRATION SERVICE		Label No.:
ETDC, CHENNAI - 600 041.		5061
Nomenclature MULTIFUNCTION METER		
Make : KRISHNA	Sl. No. : 081051-526	
Model : MFN 33091	Cal. Due : 19/12/2012	
Cal. Date : 19/12/2011		
Cal. Certificate No. : 2011/11662	Signature : 	
FOR DETAILS REFER CALIBRATION CERTIFICATE		

NOTE

1. This Certificate refers only to the particular items submitted for Calibration
2. This Certificate shall not be reproduced, except in full, unless Written permission for the publication of an approved abstract has been obtained from the Director, ETDC, Chennai, Dr. VSI Estate, Thiruvanmiyur, Chennai - 600041
3. The results reported in this Certificate are valid at the time of and under the stipulated conditions of measurements

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STQC DIRECTORATE, DEPARTMENT OF INFORMATION TECHNOLOGY
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 Fax : 044-2454 3638 E-mail : cscetdc@gmail.com



C-0017

CALIBRATION CERTIFICATE

Certificate No.	ETDC(CN)/2011/41662	PAGE	01 OF 03
DATE OF CALIBRATION	19.12.2011	CALIBRATION DUE BEFORE	19.12.2012

1.1	Service Request No.	16543/11 - 12
1.2	Name & Address of the Customer	M/s. KRISHNAA ENERGY PVT LTD 184/2 SIDCO INDUSTRIAL ESTATE THIRUMUDIVAKKAM CHENNAI -600 044 -
1.3	Description and Identification of item	MULTIFUNCTION METER MAKE : KRISHNA MODEL : MFN 3309L SL.NO. : 0810SL-526
1.4	Item Received on	01.12.2011 1.5 Condition on Receipt : FUNCTIONAL
1.6	Calibration Performed at	CENTRE 1.7 Calibration Procedure Ref : MSP/ETC/002
1.8	Environmental Conditions	Temperature: 25°C±2.5°C RH: 50% ± 15 %
1.9	Traceability details :	

Sl. NO	STANDARDS USED	CALIBRATED AT / CERTIFICATE REF	VALID UPTO
1.0	POWER/ENERGY CALIBRATOR & 3 PHASE POWER EXTENDER ROTEK 8000-3P	ETDC-BANGLORE 42823, 27.05.2011	27.05.2012

ALL MEASUREMENTS ARE TRACEABLE TO THE NATIONAL / INTERNATIONAL STANDARDS

Note 1:

This calibration certificate refers only to the item calibrated and this certificate shall not be reproduced, except in full without written approval from 'Director, ETDC Chennai'.
 The results in the certificate are valid at the time of and under stated conditions of measurements

Calibrated by

(MOOLCHAND KUMAWAT)

Authorised Signatory

(A. GANESAN)



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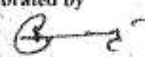
Certificate No. ETDC(CN)/2011/41662

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2.0 Calibration Results :

SL. NO.	PARAMETER /RANGES	* DUC READING	STANDARD READING	EXPANDED UNCERTAINTY	ERROR CLAIMED ±	ERROR OBSERVED ±
2.1.1 ACTIVE ENERGY (kWh) @ 50 Hz (CURRENT FORWARD DIRECTION) 3x240Vx5A						
	5%	0.25 A	UPF	± 0.02 %	1.0 %	-0.82 %
	100%	5 A	UPF	± 0.02	0.5	0.48
	10%	0.5 A	0.5 LAG	± 0.02	0.6	-0.21
	50%	2.5 A	0.5 LAG	± 0.02	0.6	-0.33
	10%	0.5 A	0.8 LEAD	± 0.02	0.6	-0.31
	50%	2.5 A	0.8 LEAD	± 0.02	0.6	0.17
2.1.2 ACTIVE ENERGY (kWh) @ 50 Hz (CURRENT REVERSE DIRECTION) 3x240Vx5A						
	5%	0.25 A	UPF	± 0.02 %	1.0 %	-0.14 %
	100%	5 A	UPF	± 0.02	0.5	-0.32
	10%	0.5 A	0.5 LAG	± 0.02	0.6	-0.13
	50%	2.5 A	0.5 LAG	± 0.02	0.6	-0.22
	10%	0.5 A	0.8 LEAD	± 0.02	0.6	-0.18
	50%	2.5 A	0.8 LEAD	± 0.02	0.6	-0.20

Calibrated by


 (MOOLCHAND KUMAWAT)

Authorised Signatory


 (A. MANESAN)

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SL. NO.	PARAMETER /RANGES	* DUC READING	STANDARD READING	EXPANDED UNCERTAINTY \pm	ERROR CLAIMED \pm	ERROR OBSERVED
2.2.1 REACTIVE ENERGY (kVARH) @ 50 Hz (CURRENT FORWARD DIRECTION) 3x240Vx5A						
	5%	0.25 A	ZPF	$\pm 0.02 \%$	1.0 %	-0.20 %
	100%	5 A	ZPF	± 0.02	0.5	-0.36
	10%	0.5 A	0.5 LAG	± 0.02	0.6	-0.07
	50%	2.5 A	0.5 LAG	± 0.02	0.6	-0.17
	10%	0.5 A	0.866 LEAD	± 0.02	0.6	0.23
	50%	2.5 A	0.866 LEAD	± 0.02	0.6	-0.01
2.2.2 REACTIVE ENERGY (kVARH) @ 50 Hz (CURRENT REVERSE DIRECTION) 3x240Vx5A						
	5%	0.25 A	ZPF	$\pm 0.02 \%$	1.0 %	-0.30 %
	100%	5 A	ZPF	± 0.02	0.5	-0.40
	10%	0.5 A	0.5 LAG	± 0.02	0.6	-0.19
	50%	2.5 A	0.5 LAG	± 0.02	0.6	-0.11
	10%	0.5 A	0.866 LEAD	± 0.02	0.6	0.42
	50%	2.5 A	0.866 LEAD	± 0.02	0.6	-0.12

3.0 REMARKS :

i. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of 95.45%, unless otherwise specified

CALIBRATION LABEL SL. NO.: 5061

*DUC-Device under calibration

Calibrated by

(MOOLCHAND KUMAWAT)

Authorised Signatory

(A. GANESAN)

A. GANESAN
Scientist 'C'

ELECTRONICS TEST AND DEVELOPMENT CENTRE
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Issued by

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 Scientist 'E'
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 MINISTRY OF COMMUNICATIONS & IT
 DEPARTMENT OF INFORMATION TECHNOLOGY
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