


<b>Prüfbericht - Nr.:</b> 19615510 001		<b>Seite 1 von 10</b>
<i>Test Report No.:</i>		<i>Page 1 of 10</i>
<b>Auftraggeber:</b> <i>Client:</i>	<b>M/s. ENERTECH UPS PVT. LTD.</b> S. No. 399/1-1, Plot No. 5, Bhare, P.O. Ghotawade, Near MSEB Substation, Pirangut, Tal. Mulshi, Pune- 412115, Maharashtra, INDIA	
<b>Gegenstand der Prüfung:</b> <i>Test item:</i>	SOLAR PCU (Solar Power Conditioning Unit)	
<b>Bezeichnung:</b> <i>Identification:</i>	10 KW / 10 KVA	<b>Serien-Nr.:</b> 201401296 <i>Serial-No.:</i>
<b>Wareneingangs-Nr.:</b> <i>Receipt No.:</i>	1803024992	<b>Eingangsdatum:</b> 2014.03.24 <i>Date of receipt:</i>
<b>Prüfport:</b> <i>Testing location:</i>	<b>TÜV Rheinland (India) Pvt. Ltd.</b> Plot No.17B, Electronic City Phase II Industrial Area, Hosur Road Bangalore - 560 100, Karnataka, India	
<b>Prüfgrundlage:</b> <i>Test specification:</i>	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30 (As per MNRE / customer requirement).	
<b>Prüfergebnis:</b> <i>Test Result:</i>	Refer section " Summary of testing"	
<b>Prüflaboratorium:</b> <i>Testing Laboratory:</i>	<b>TÜV Rheinland (India) Pvt. Ltd.</b> 82/A, West Wing, 3rd Main Road, Electronics City Phase 1 Bangalore – 560 100	
<b>geprüft/tested by:</b>		<b>kontrolliert/reviewed by:</b>
 2014.05.21 Manjunath.B.M / Engineer		 2014.05.21 Basavaraj Angadi / Sr. Manager
<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>
<b>Datum</b> <i>Date</i>	<b>Name/Stellung</b> <i>Name/Position</i>	<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges/Other Aspects:</b>		
This report consists of 10 pages including the following attachments: Attachment 1: Photo Document		
<b>Abkürzungen:</b>	<b>P(ass) = entspricht Prüfgrundlage</b>	<b>Abbreviations: P(ass) = passed</b>
<b>F(ail) = entspricht nicht Prüfgrundlage</b>	<b>F(ail) = failed</b>	<b>F(ail) = failed</b>
<b>N/A = nicht anwendbar</b>	<b>N/A = not applicable</b>	<b>N/A = not applicable</b>
<b>N/T = nicht getestet</b>	<b>N/T = not tested</b>	<b>N/T = not tested</b>
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>		

<b>TEST REPORT</b>	
<b>ENVIRONMENTAL TESTING</b>	
<b>Report reference No</b> .....	: 19615510 001
Tested by (printed name and signature).....	: (see cover page) .....
Approved by (printed name and signature).....	: (see cover page) .....
Date of issue. ....	: (see cover page)
<b>Testing Laboratory Name</b> .....	<b>TÜV Rheinland (India) Pvt. Ltd.</b>
Address .....	82/A, West Wing, 3rd Main Road, Electronics City Phase 1 Bangalore – 560 100
<b>Applicant's Name</b> .....	<b>M/s. ENERTECH UPS PVT. LTD.</b>
Address .....	S. No. 399/1-1, Plot No. 5, Bhare, P.O. Ghotawade, Near MSEB Substation, Pirangut, Tal. Mulshi, Pune- 412115, Maharashtra, INDIA
<b>Test specification</b> .....	:
Standard .....	: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-30 (As per MNRE / customer requirement).
Test procedure.....	: QMA 36.201.01
Non-standard test method .....	: N/A
<b>Test Report Form No.</b> .....	: TUVR_ENV_R2
TRF originator .....	: TUVR
Master TRF .....	: 2009.08.20
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Test item description.....	: SOLAR PCU (Solar Power Conditioning Unit)
Manufacturer .....	: M/s. ENERTECH UPS PVT. LTD.
Model and/or type reference.....	: 10 KW / 10 KVA
Serial number.....	: 201401296
Rating(s) .....	: CAPACITY: 10 KW / 10 KVA MAINS INPUT: 180-260 VAC, 50Hz INV. OUTPUT : 230 VAC, 50Hz DC VOLTAGE: 120 VDC

## Environmental Testing

## Copy of marking plate:

PRODUCT :- Solar PCU	QAF 1501 - 02
SR. NO. :- 201401296	AC INPUT :- 180-260 VAC
RATING :- 10.0 KW	AC OUTPUT :- 230 VAC
BATTERY DC :- 120 VDC	FREQ. :- 50 HZ
PV RANGE :- 150-220V	DISPATCH DATE :-
PRIORITY :- S.B.G/S.G.B	INST. DATE :-
 <b>ENERTECH UPS PVT. LIMITED</b> S. NO. 399/1-2, BHAREGAON, P.O. GHOTAWADE, DIST., PUNE - 412 111. Tel. Fax : (020) 22923172, 25282895 E-mail : sales@enertechups.com Web : www.enertechups.com	

**General product information:**

EUT under test is an Off Grid Solar Power Conditioning Unit (PCU).

**Summary of testing:**

- This report covers Environmental Tests undertaken as per customer's specifications with reference to the listed standards.
- EUT continues to work after each test and no physical damages were observed.

## Environmental Testing

**Particulars: test item vs. test requirements**

Equipment orientation ..... : Stationary

Operating condition ..... : OFF during testing

Condition of the equipment at the time of  
receipt ..... : Good**Test case verdicts**

Test case does not apply to the test object . : N/A

Test item does meet the requirement ..... : P(Pass)

Test item does not meet the requirement .... : F(Fail)

**Testing**

Date of receipt of test item ..... : 2014.03.24

Date(s) of performance of test ..... : 2014.04.03 to 2014.04.08

**General remarks**

The test result presented in this report relate only to the object(s) tested.

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"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

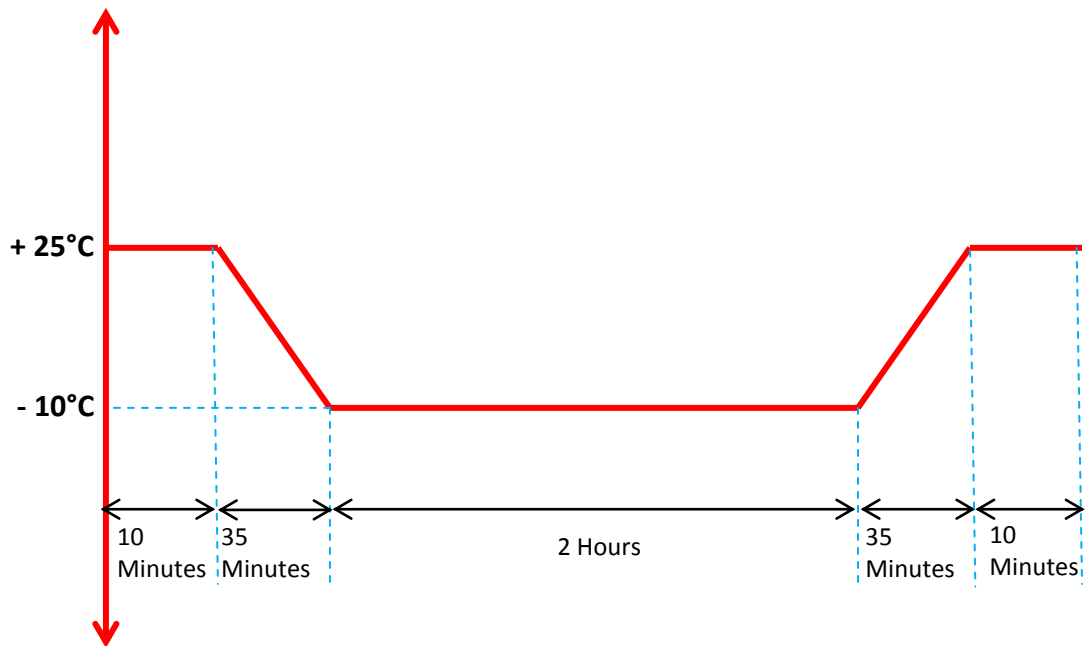
**Attachments:**

Attachment 1: Photo Document

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

<b>1</b>	<b>Cold Test</b>		<b>P</b>
1.1	Pre-checks		P
1.1.1	Examination before environmental conditioning.		P
1.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
1.1.1.2	EUT working condition	EUT was working fine before the cold test.	P
1.2	Cold Test specification		

Graph:



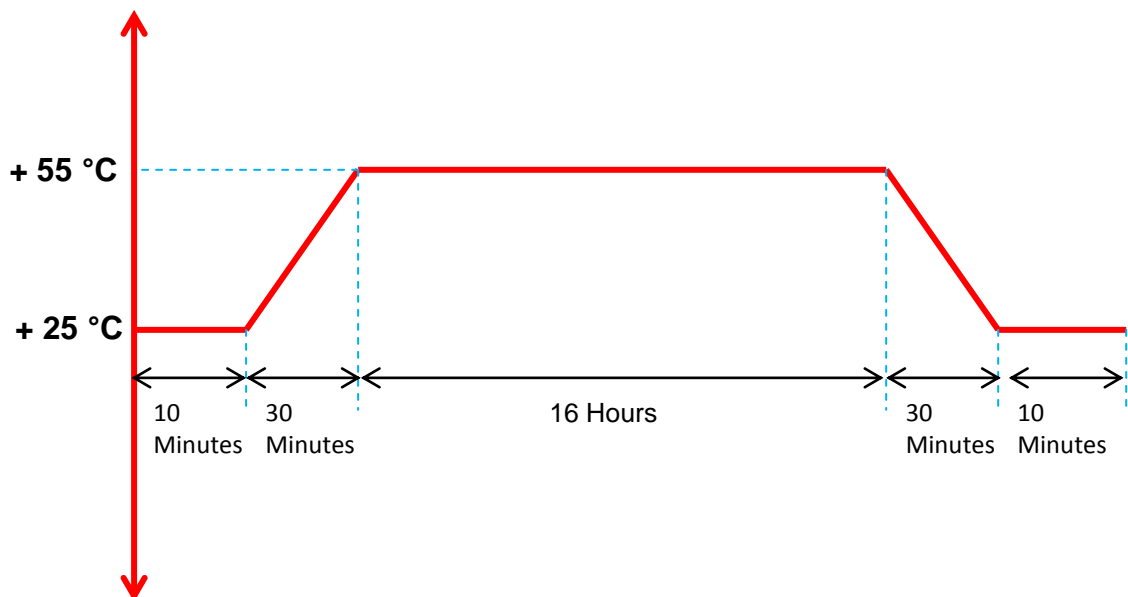
	EUT Operating Condition	Powered OFF	-
	Test Temperature	- 10°C	-
	Dwell Time	2 Hours	-
	No. of cycles	1 Cycle	-

1.3	Post check: Examination after environmental conditioning		P
1.3.1	Physical damages	No physical damages were observed	P
1.3.2	EUT working condition	EUT was working fine after the cold test	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

<b>2</b>	<b>Dry Heat Test</b>		<b>P</b>
2.1	Pre-checks		P
2.1.1	Examination before environmental conditioning.		P
2.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
2.1.1.2	EUT working condition	EUT was working fine before the dry heat test.	P
2.2	Dry Heat Test Specification		

Graph:



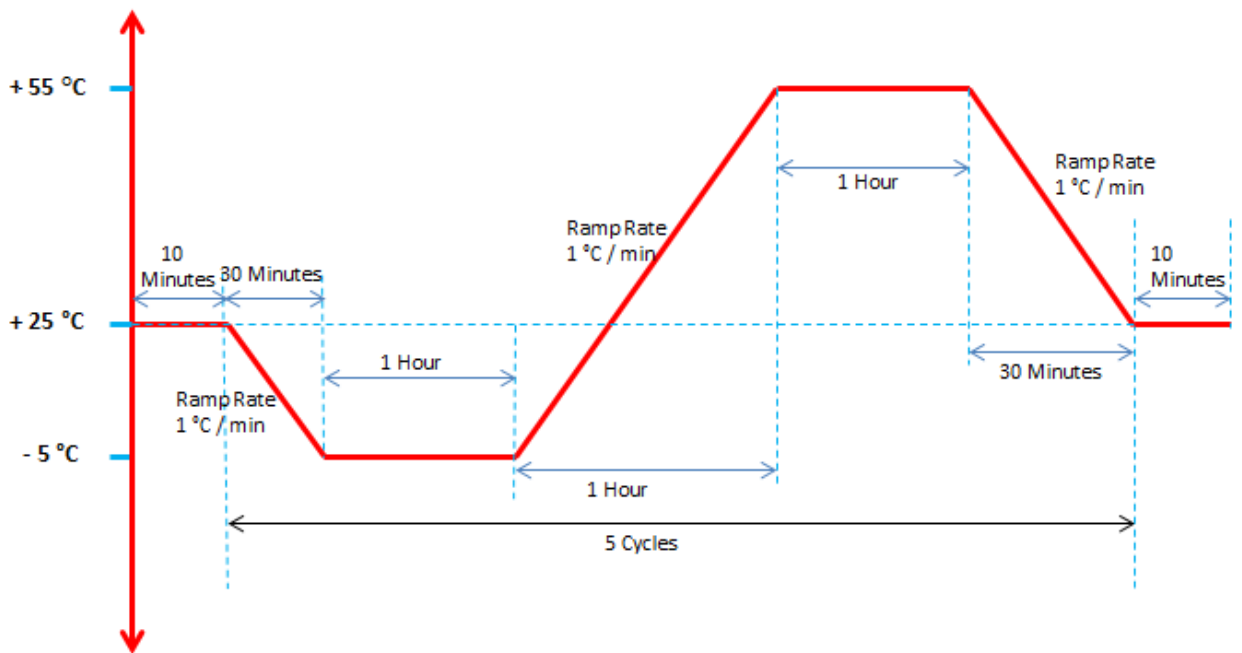
	EUT Operating Condition	Powered OFF	-
	Test Temperature	+55°C	-
	Dwell Time	16 Hours	-
	No. Of cycles	1 Cycle	-

2.3	Post check: Examination after environmental conditioning		P
2.3.1	Physical damages	No physical damages were observed.	P
2.3.2	EUT working condition	EUT was working fine after the dry heat test	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

<b>3</b>	<b>Change of Temperature</b>		<b>P</b>
3.1	Pre-checks		P
3.1.1	Examination before environmental conditioning.		P
3.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
3.1.1.2	EUT working condition	EUT was working fine before the change of temperature test.	P
3.2	Change Of Temperature Test Specification		

Graph:



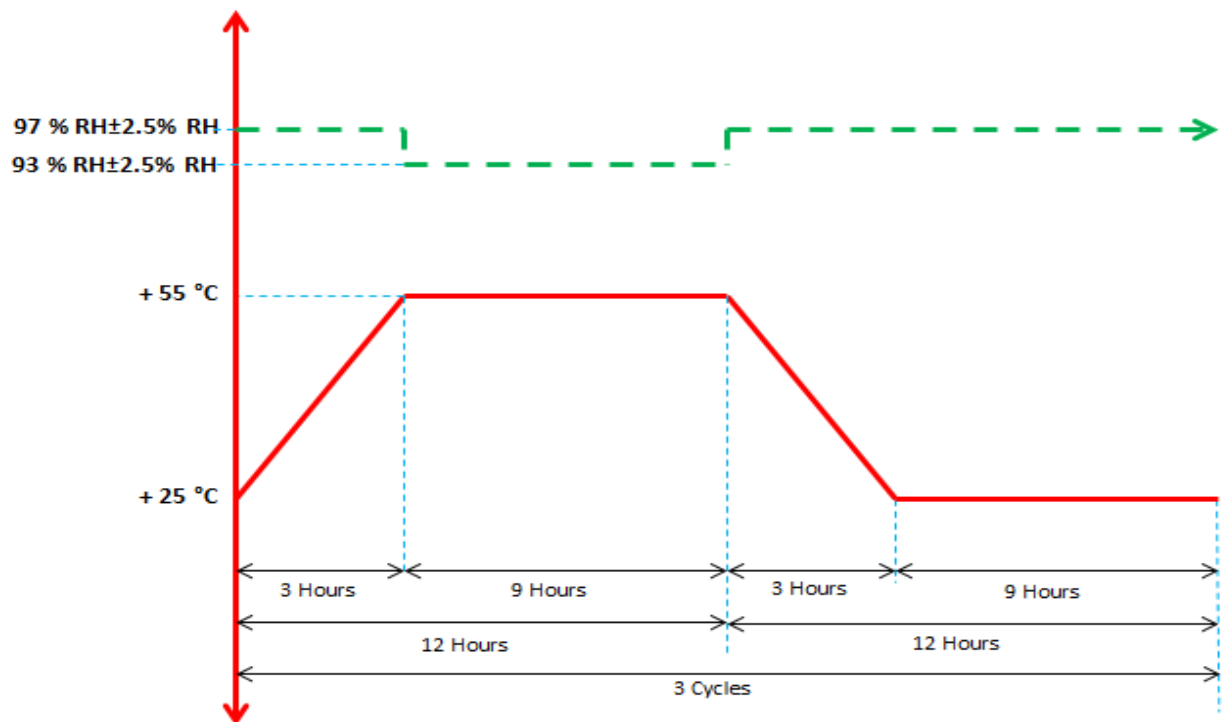
	EUT Operating Condition	Powered OFF	-
	Test Temperature	Upper: +55° C Lower: -5°C	-
	Rate of change of temperature	1°C/min	-
	Dwell Time	1 Hour at each temperature	-
	No. of cycles	5 Cycle's	-

3.3	Post check: Examination after environmental conditioning		P
3.3.1	Physical damages	No physical damages were observed	P
3.3.2	EUT working condition	EUT was working fine after the change of temperature test.	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

<b>4</b>	<b>Damp Heat cyclic</b>		<b>P</b>
4.1	Pre-checks		P
4.1.1	Examination before environmental conditioning.		P
4.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
4.1.1.2	EUT working condition	EUT was working fine before the damp heat cyclic test	P
4.2	Damp Heat Cyclic Test Specification		

Graph:



	EUT Operating Condition	Powered OFF	-
	Ramp –up / -down time	3 Hours	-
	One Cycle duration	12 Hours +12 Hours	-
	No. of cycles	3 Cycle's	-
	Total Test Duration	72 Hours	-

4.3	Post check: Examination after environmental conditioning		P
4.3.1	Physical damages	No physical damages were observed.	P
4.3.2	EUT working condition	EUT was working fine after the damp heat cyclic test.	P



Environmental Testing

Attachment-1 Photo Document



Front view



Rear view

Environmental Testing

Attachment-1 Photo Document



Overall View

\*\*\* End of Test Report \*\*\*