



Certificate No. : TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)

ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.

EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33

Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org

**TEST REPORT**

SHEET NO.: 1 OF 13

<b>NAME &amp; ADDRESS OF CUSTOMER</b>  <b>M/s. RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.</b> Khasra No. 911-914, Karola-Bhinmal Road, Karola, Sanchore, Rajasthan-343 041 (India)	<b>REPORT NO.:</b> RP-1718-046230 <b>DATE</b> : 18/12/2017	
	<b>CUSTOMER REF. NO.:</b> NP/ERDA/TT/40/2017-18 <b>DATED</b> : 29/11/2017	
	<b>DATE OF SAMPLE RECEIPT</b>	<b>DATE OF TESTING</b>
	05/12/2017	15/12/2017
<b>SAMPLE DESCRIPTION</b>  <b>DISTRIBUTION TRANSFORMER</b> Energy Efficiency Level: 2 RATING : 315 kVA VOLTS : 11000/433 V CURRENT : 16.53/420.02 A PHASES : 03 COOLING : ONAN FREQUENCY : 50 Hz % IMPEDANCE : 4.5 % VECTOR GROUP : Dyn 11 B.I.L. : H.V.: 28 kVrms / 95 kVp L.V.: 3 kVrms / ---	<b>SAMPLE IDENTIFICATION</b>  Sr. No. : RPTPL/17-18/315KVA/001  Year of mfg. : 2017  Make: M/s. RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.  ERDA Sample Code No.: ERDA-00229815	
<b>TEST DETAIL</b> Lightning impulse test with chopped on the tail on all the three phases of HV Terminals at <b>95 kVp</b> .  ENCLOSURE: DRG. No.: (1) RPTPL/315KVA/002 (2) RPTPL/315KVA/003  TEST WITNESSED BY: Mr. Khatri Irfan - M/s. RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.	<b>TEST SPECIFICATION</b> IS 1180 (Part 1): 2014, Amendment No.1 & 2 Cl. No. 21.3 (a) and test procedure followed as per IS 2026 (Part 3): 2009, Cl. No. 14 & test voltage was specified by the customer.	
REMARKS: From the observation of enclosed oscillographic records, it is concluded that the transformer <b>conforms</b> to the requirements of the above mentioned standard with respect to the test carried out.		
 <b>PREPARED BY</b>	 <b>CHECKED BY</b>	 <b>A.S.KHOPKAR APPROVED BY</b>
<b>Note</b> : 1. This report relates only to the particular sample received in good condition for testing at ERDA. 2. This report cannot be reproduced in part under any circumstances. 3. Publication of this report requires prior permission in writing from Director, ERDA. 4. Only the tests asked for by the customer have been carried out. 5. In case of any dispute, Vadodara will be the exclusive jurisdiction & shall be construed as where the cause has arised.		
<b>Caution:</b> ERDA is not responsible for the authenticity of photocopied or reproduced test reports. ERDA provides support to customers for verification of the authenticity of test reports issued by ERDA.		

TC 2375122



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**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 2 OF 13

## HV - TERMINALS

### TEST PARAMETERS :

RATED VOLTAGE : 11 kV  
TEST VOLTAGE : 95 kVp  $\pm$  3 %  
WAVE SHAPE : 1.14/47.92  $\mu$ s  
NOS. OF PHASE TESTED : 03

## HV - TERMINALS

Sr. No.	Test Application Detail	Peak Magnitude (kVp)		
		1U-Phase	1V-Phase	1W-Phase
1.	Reduced Full Impulse Wave	56.79	56.77	56.69
2.	100 % Full Impulse Wave	94.37	94.39	94.33
3.	Reduced Chopped Impulse Wave	61.22	60.68	61.00
4.	110 % Chopped Impulse Wave	103.66	103.84	103.38
5.	110 % Chopped Impulse Wave	103.28	104.08	103.64
6.	100 % Full Impulse Wave	94.44	94.38	94.19
7.	100 % Full Impulse Wave	94.41	94.32	94.29

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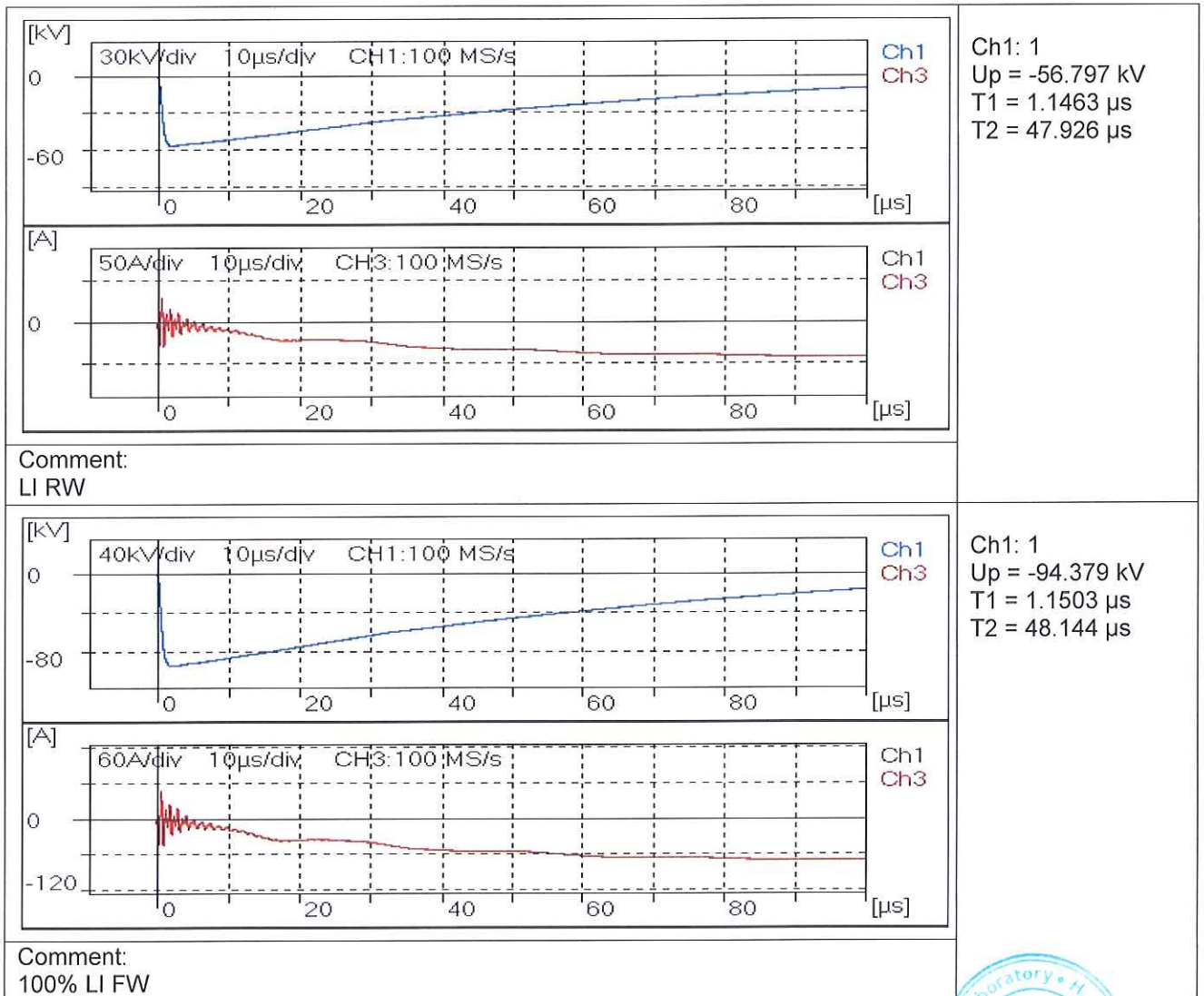
Certificate No. : TC-5389

**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 3 OF 13

## Lightning impulse test on transformer

### 1U-PHASE



TC 2375374

*Politef*  
**PREPARED BY**

*[Signature]*  
**CHECKED BY**



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**REPORT NO.:** RP-1718-046230

**SHEET NO.:** 4 OF 13

**DATE** : 18/12/2017

## Lightning impulse test on transformer

### 1U-PHASE

	<p>Ch1: 1 Up = -61.229 kV Tc = 2.8971 μs</p>
<p>Comment: LI CRW</p>	
	<p>Ch1: 1 Up = -103.66 kV Tc = 2.7938 μs</p>
<p>Comment: 110% LI CFW</p>	
	<p>Ch1: 1 Up = -103.28 kV Tc = 2.2696 μs</p>
<p>Comment: 110% LI CFW</p>	

TC 2375376

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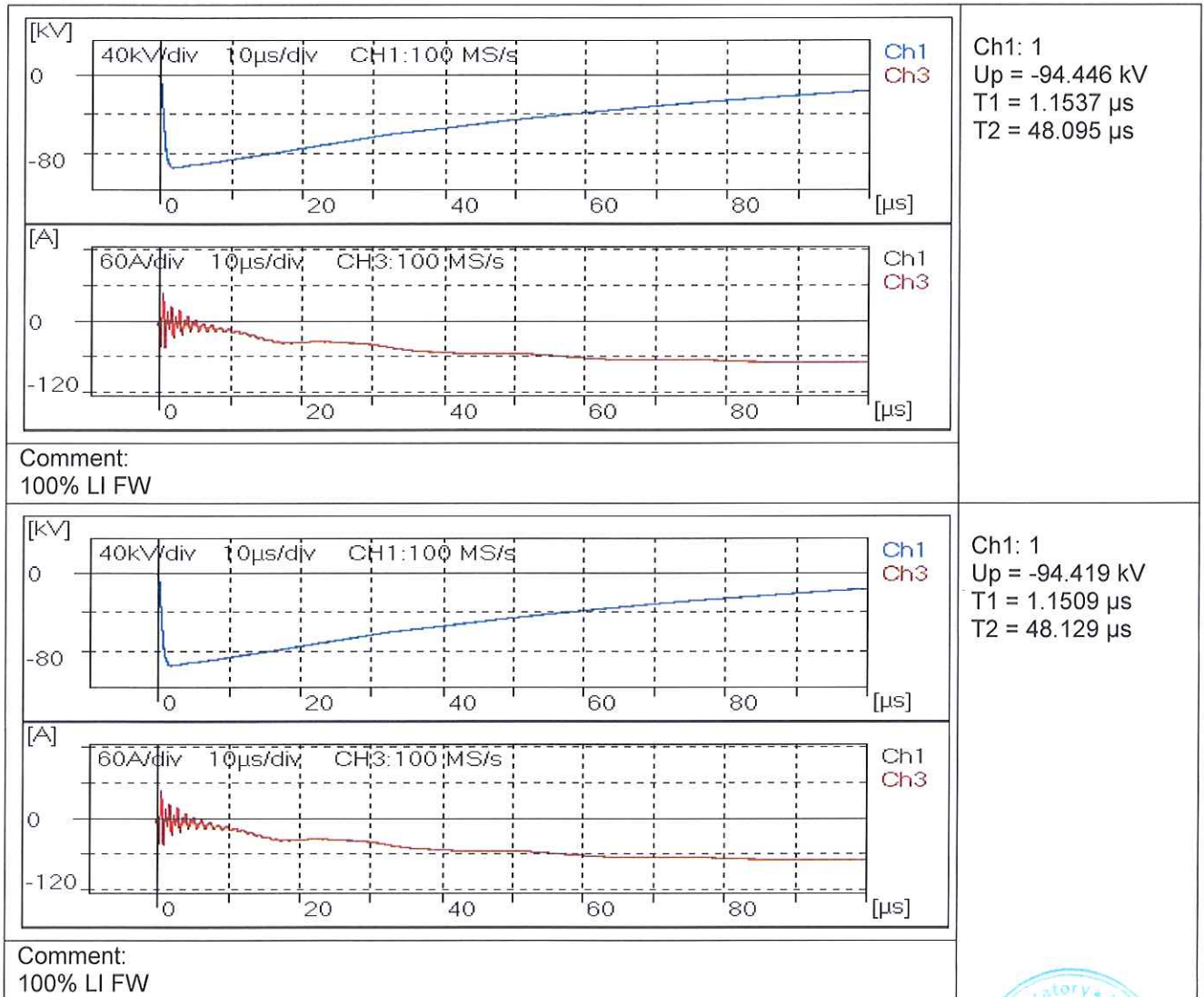
REPORT NO.: RP-1718-046230

SHEET NO.: 5 OF 13

DATE : 18/12/2017

## Lightning impulse test on transformer

### 1U-PHASE



TC 2375375

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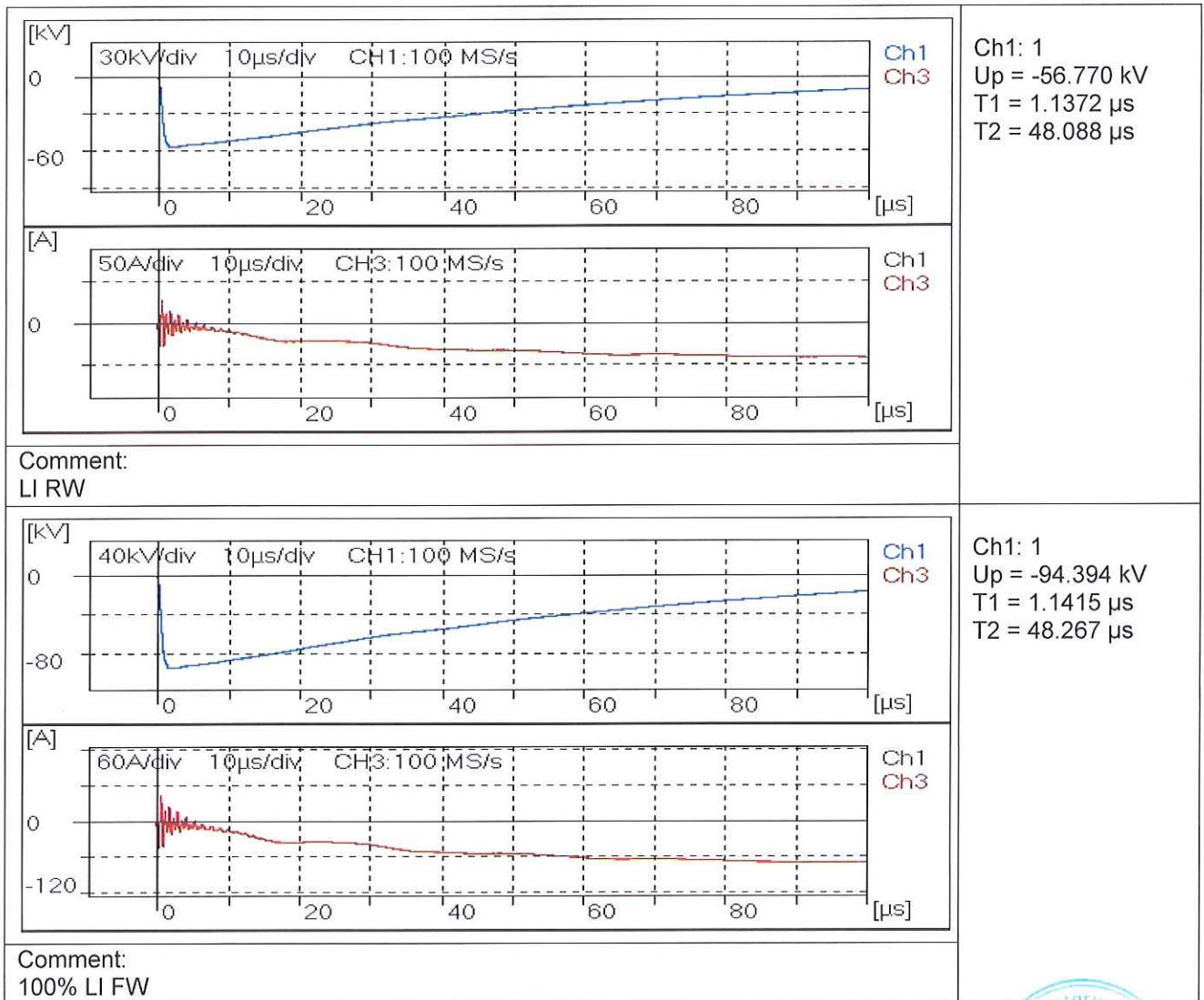
REPORT NO.: RP-1718-046230

SHEET NO.: 6 OF 13

DATE : 18/12/2017

## Lightning impulse test on transformer

### 1V-PHASE



TC 2375377

*Robert*  
PREPARED BY

*[Signature]*  
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**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 7 OF 13

**Lightning impulse test on transformer**

**1V-PHASE**

	<p>Ch1: 1 Up = -60.689 kV Tc = 2.2202 µs</p>
<p>Comment: LI CRW</p>	
	<p>Ch1: 1 Up = -103.84 kV Tc = 2.5898 µs</p>
<p>Comment: 110% LI CFW</p>	
	<p>Ch1: 1 Up = -104.08 kV Tc = 3.2181 µs</p>
<p>Comment: 110% LI CFW</p>	

TC 2375379

*Prepared*  
**PREPARED BY**

*Checked*  
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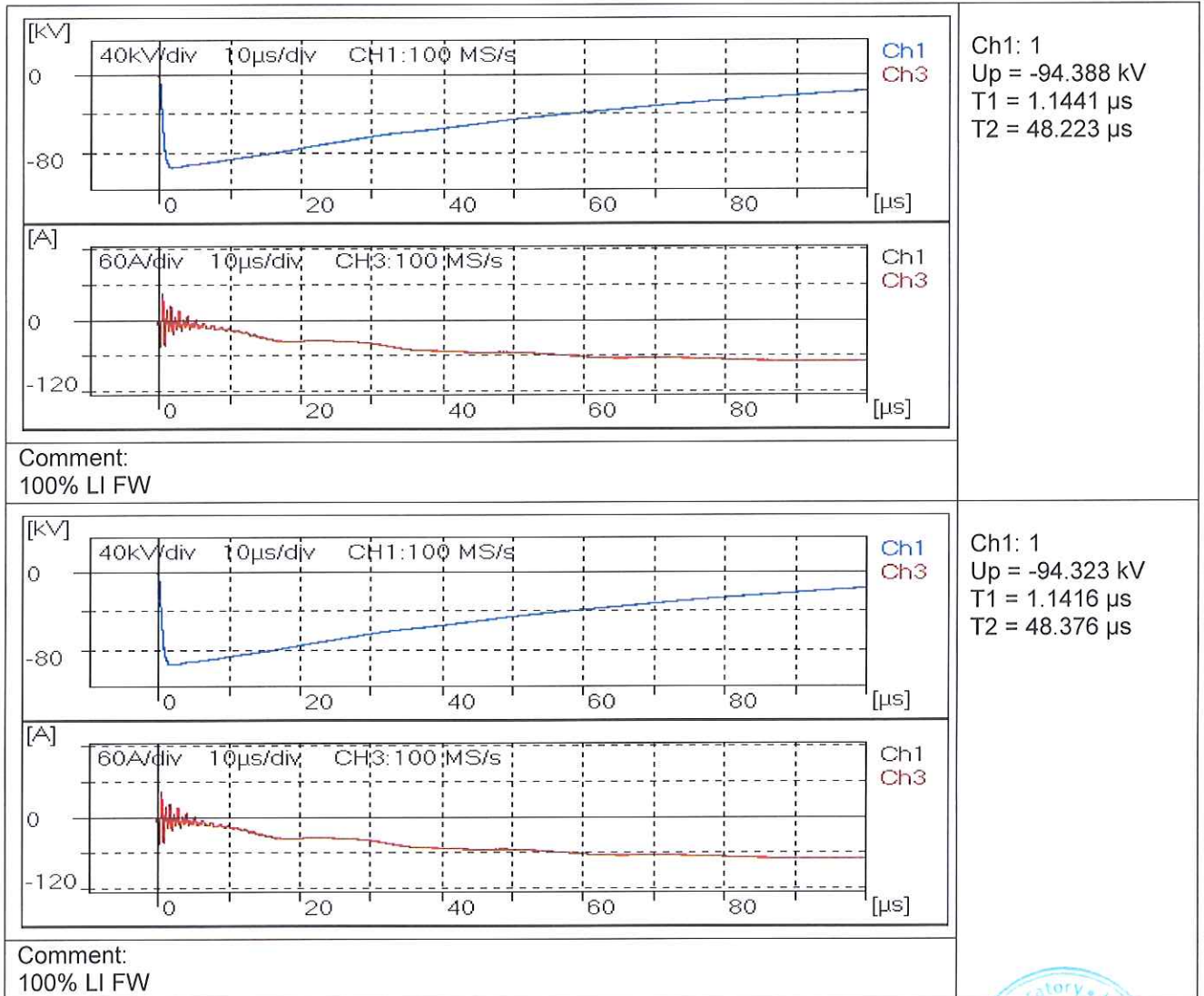
REPORT NO.: RP-1718-046230

SHEET NO.: 8 OF 13

DATE : 18/12/2017

## Lightning impulse test on transformer

### 1V-PHASE



TC 2375378

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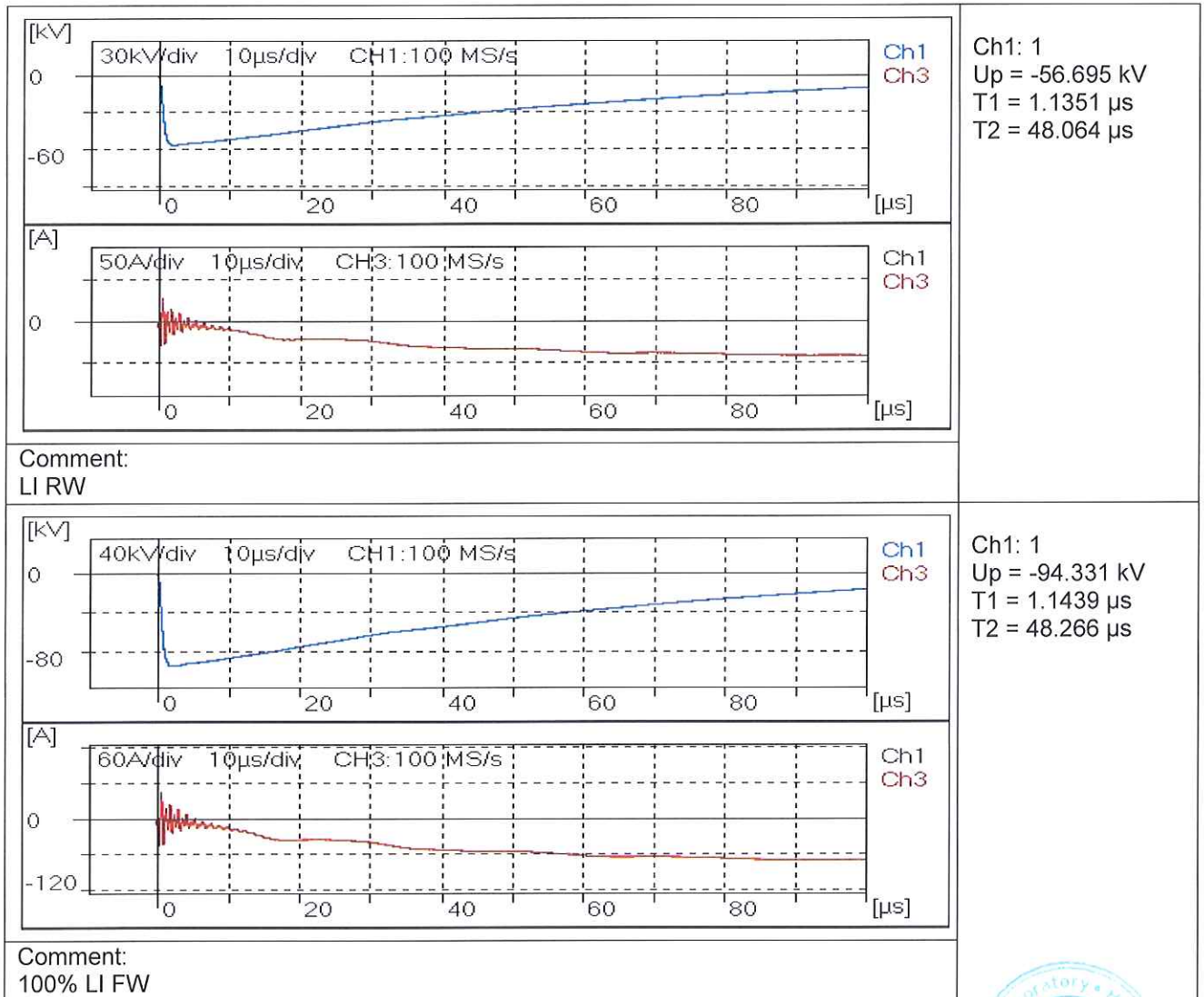


**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 9 OF 13

## Lightning impulse test on transformer

### 1W-PHASE



TC 2375380

*Prepared by*  
**PREPARED BY**

*Checked by*  
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REPORT NO.: RP-1718-046230

SHEET NO.: 10 OF 13

DATE : 18/12/2017

## Lightning impulse test on transformer

### 1W-PHASE

	<p>Ch1: 1 Up = -61.008 kV Tc = 2.4033 µs</p>
<p>Comment: LI CRW</p>	<p>Ch1: 1 Up = -103.38 kV Tc = 2.1867 µs</p>
<p>Comment: 110% LI CFW</p>	<p>Ch1: 1 Up = -103.64 kV Tc = 3.0011 µs</p>
<p>Comment: 110% LI CFW</p>	

TC 2375382

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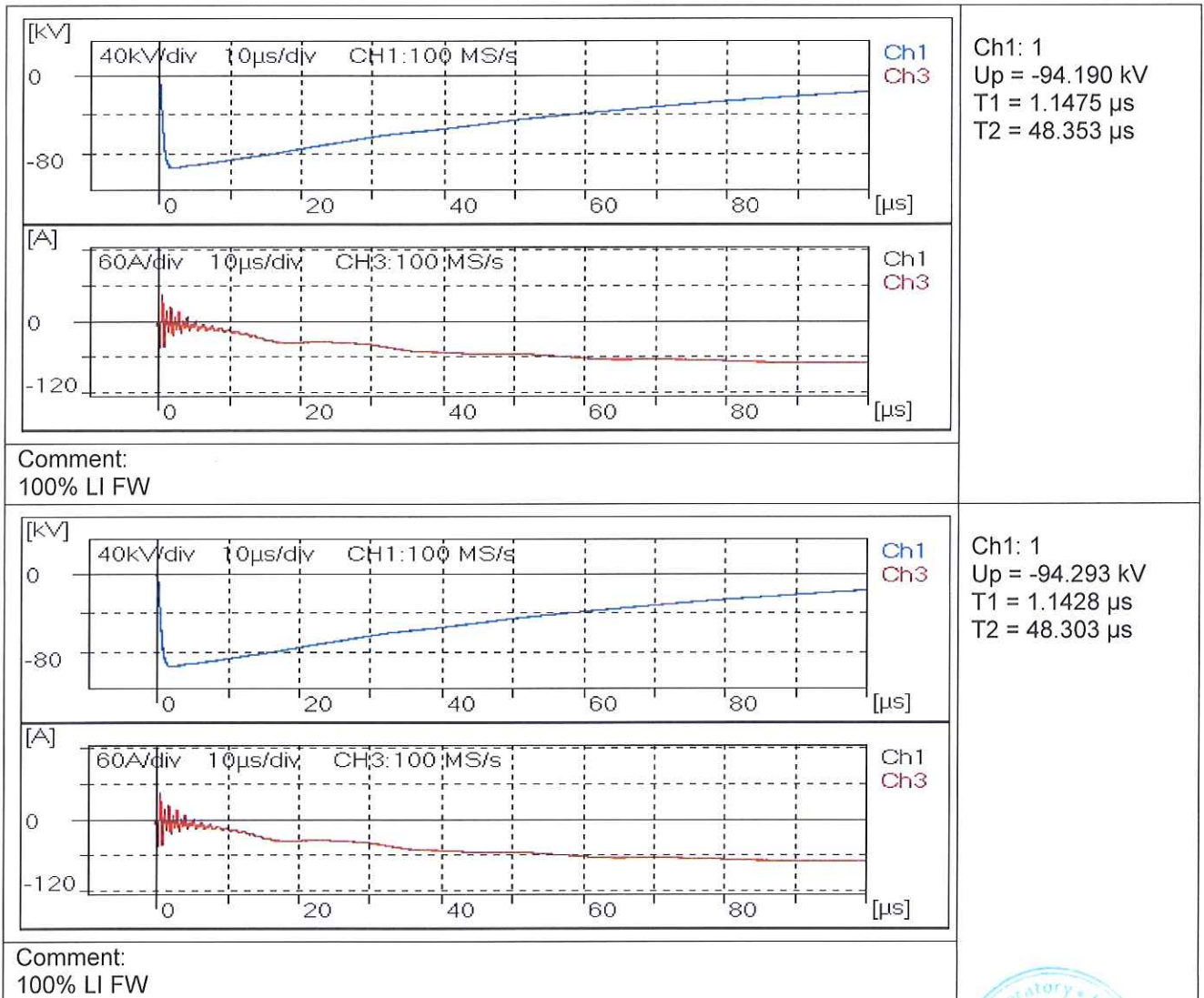


**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 11 OF 13

## Lightning impulse test on transformer

### 1W-PHASE



TC 2375381

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**REPORT NO.:** RP-1718-046230

**SHEET NO.:** 12 OF 13

**DATE** : 18/12/2017

## Photograph of test sample



TC 2375124

*Polvel*  
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*[Signature]*  
**CHECKED BY**





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**REPORT NO.:** RP-1718-046230  
**DATE** : 18/12/2017

**SHEET NO.:** 13 OF 13

## Photograph of rating & terminal marking plate

### DISTRIBUTION TRANSFORMER

## RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.

Karola-Bhinmal Road, Karola, Sanchore-343 041.  
Dist : Rajasthan INDIA

IS:1180  
  
PART-I  
CML-8400030105

3 PHASE TRANSFORMER		ENERGY EFFICIENCY LEVEL	2
STANDARD	IS:1180(PART-I)/2014		MAX. TOTAL LOSSES
KVA	315	AT 50% LOAD W	1025
VOLTS AT NO LOAD	HV 11000 LV 433	MAX. TOTAL LOSSES AT 100% LOAD W	3100
BIL	HV LI/5/AC28 LV LI-/AC 3	TYPE OF COOLING	ONAN
AMPERES	HV 16.53 LV 420.02	TEMP RISE	OIL 40 °C WDG 45 °C
FREQUENCY	Hz 50	MASS OF OIL	Kg. 310
VECTOR GROUP REF.	. DYN11	TOTAL MASS	Kg. 1820
IMPEDANCE VOLT %	4.5	VOLUME OF OIL	LTRS 375
TAPPING	NA	MONTH & YEAR OF MFG.	2017
CUSTOMER		SERIAL NO. 8PI/1515/18/2017-18/01	
ORDER NO.			

MADE IN INDIA

TC 2375125

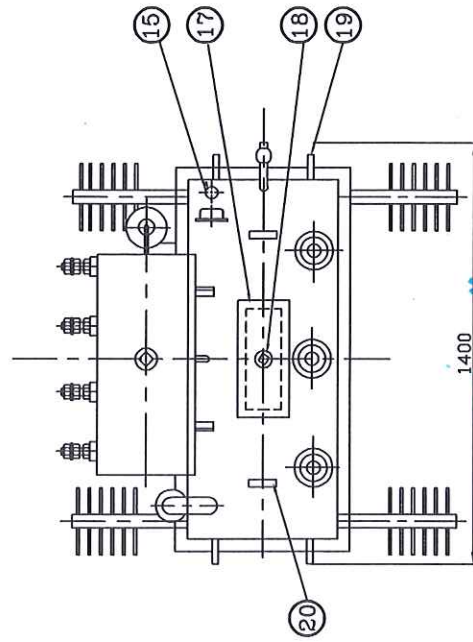
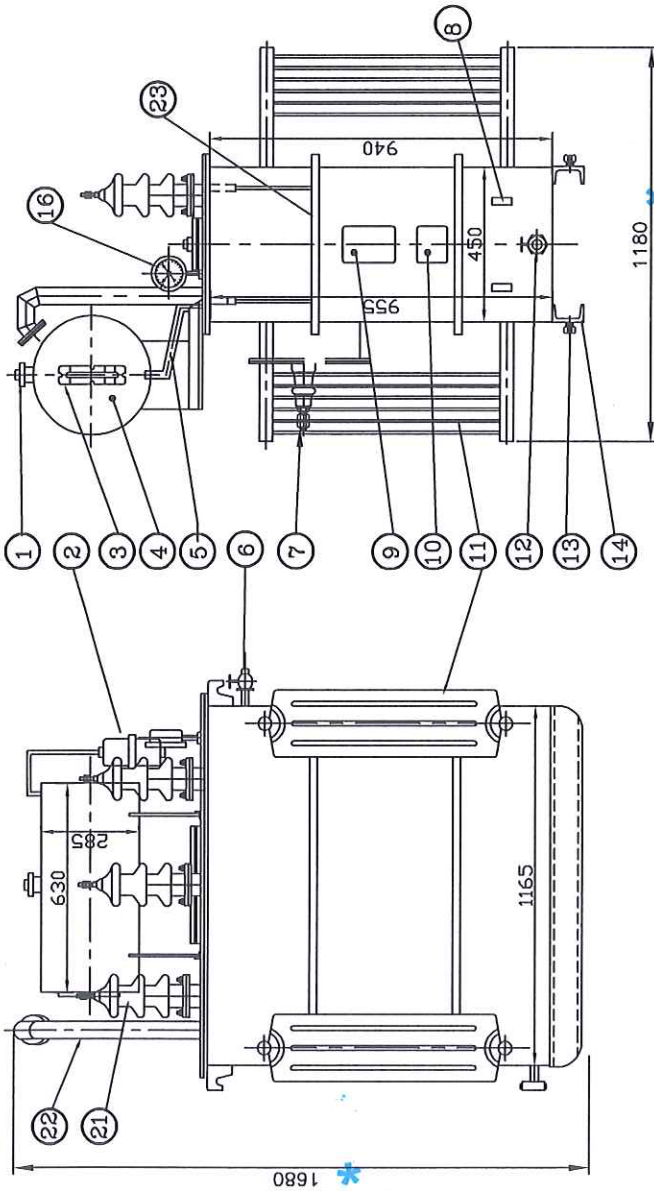
*[Signature]*  
**PREPARED BY**

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**CHECKED BY**



NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
2. ±10% TOLERANCES ON WEIGHTS & DIMENSIONS



Test Report No. ... Rf-17.15-040.230  
 Date : 19/12/2017  
 Product : Dist - T.R.  
 Verified By : *[Signature]*  
 Verification of this drawing by ERDA is limited to relevant dimensional checks only.  
 Verified dimensions are marked with \*.

TANK DIMENSIONS	
LENGTH	1165
BREADTH	450
HEIGHT	940/955
WEIGHT DETAILS	
Core & Windings	1110 Kgs.
Tank & Fitting	400 Kgs.
Weight of Oil	310 Kgs.
Total Weight	1820 Kgs.
Quantity of Oil	375 Ltrs.

SHEET THICKNESS	
TOP	5 mm
BOTTOM	5 mm
MIN. ELECTRICAL CLEARANCE	
SIDES	4 mm
PHASE TO PHASE CLEARANCE	
HV	255
LV	75
REMARKS	
REV.No.	DATE
SIGN.	REMARKS



ITEM	DESCRIPTIONS	QTY.
23.	STIFFNER-(40X40X6)MM ANGLE	2
22.	EXPLOSION VENT	1
21.	HV OUTDOOR BUSHINGS	3
20.	LIFTING LUGS FOR TANK COVER	2
19.	TRANSFORMER LIFTING LUGS	4
18.	AIR RELEASE PLUG	1
17.	INSPECTION HOLE	1
16.	4" DIAL TYPE THERMOMETER WITH MAX. DEMAND POINTER	1
15.	THERMOMETER POCKET	1
14.	UNDERBASE CHANNELS (100X50)MM	2
13.	EARTING TERMINALS M-12X40L	2
12.	OIL DRAIN CUM SAMPLING VALVE	1
11.	COOLING PSR RADIATORS 700C/CX300W-6FINS	4
10.	IDENTITY PLATE	1
9.	NAME & RATING PLATE	1
8.	PULLING LUGS	4
7.	L.V. BUSHING	4
6.	OIL FILTER VALVE-20MM GUN METAL	1
5.	CONSERVATOR PIPE	1
4.	OIL CONSERVATOR WITH DRAIN PLUG	1
3.	OIL LEVEL GAUGE	1
2.	DEHYDRATING BREATHER	1
1.	OIL FILLING HOLE WITH CAP	1

RAJASTHAN POWERGEN TRANSFORMER PVT. LTD  
 KAROLA-BHINMAL ROAD, KAROLA, SANCHORE  
 RAJASTHAN - 343041

Title:- OUTLINE GENERAL ARRANGEMENT DRAWING OF 315KVA  
 11/0.433KV ENERGY EFFICIENCY LEVEL-2 TRANSFORMER

DRN.	CUSTOMER	---
CKD.	SPEC. No.	---
APPD.	SCALE	N T S
DATE	DRG. No.	RPTPL/315KVA/002

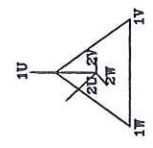
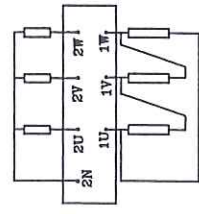
105  
95

**DISTRIBUTION TRANSFORMER**

RAJASTHAN POWERGEN TRANSFORMER PVT. LTD  
KAROLA-BHINMAL ROAD, KAROLA, SANCHORE  
RAJASTHAN (INDIA)

3 PHASE TRANSFORMER ENERGY LEVEL 2  
STANDARD EFFICIENCY 2014 AT 50% LOAD W 1025  
KVA 315 AT 100% LOAD W 3100  
VOLTS AT HV 11000 TYPE OF COOLING ONAN  
NO LOAD LV 433 TEMP. RISE { OIL 40° C  
WDG. 45° C  
BIL HV LI-AC3 MASS OF OIL(KG) 310  
AMPERES HV 16.53 TOTAL MASS (KG) 1820  
LV 420.02  
FREQUENCY HZ 50 VOLUME OF OIL LTRS 375  
VECTOR GROUP Dyn11 MONTH YEAR OF MFG 2017  
IMPEDANCE VOLT % 4.5  
TAPPING NA S.NO. RPTPL/17-18/315KVA/001  
CUSTOMER  
ORDER NO.

MADE IN INDIA



MADE IN INDIA



Test Report No. .... RP-1718-046230  
Date : ..... 15/12/2019  
Product : ..... 315 - T.R.  
Verified By : .....  
Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with \*.

RAJASTHAN POWERGEN TRANSFORMER PVT. LTD  
KAROLA-BHINMAL ROAD, KAROLA, SANCHORE  
RAJASTHAN - 343041

**TITLE: - NAME PLATE DRAWING OF 315KVA,11/0.433KV  
COPPER WOUND ENERGY EFFICIENCY LEVEL-2 TRANSFORMER**

CUSTOMER	---
T.S.No.	RPTPL/17-18/315KVA/001
SCALE	N T S
DRG. No.	RPTPL/315KVA/003