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 12

NAME & ADDRESS OF CUSTOMER Rajasthan Powergen Transformer Pvt. Ltd. Khasra No. 911-914, Karola-Bhinmal Road, Sanchore - 343041 RJ	**REPORT NO.:** RP-1718-051919 **DATE** : 19 Jan 2018	
	CUSTOMER REF NO.	**DATE**
	NP/ERDA/TT/40/2017-18	29 Nov 2017
	DATE OF SAMPLE RECEIPT	**DATE OF TESTING**
	05 Dec 2017	28 Dec 2017 to 10 Jan 2018

SAMPLE DESCRIPTION **DISTRIBUTION TRANSFORMER (NON-SEALED TYPE)** Make: RAJASTHAN POWERGEN TRANSFORMER PVT. LTD. Rating: 500 kVA 11000 / 433 Volts 26.24 / 666.71 Amp. Vector Group: Dyn11 Energy efficiency level: 2 Further details as per sheet No. 2.	**SAMPLE IDENTIFICATION** ERDA sample code number: ERDA-00229816 Manufacturer serial number: RPTPL/500KVA/2017-18/001 Year of manufacture: 2017 Enclosed drawing numbers: 1) RPTPL/500KVA/003 2) RPTPL/500KVA/002 3) RPTPL/17-18/500 KVA/004 REV:00 SHEET NO.: 01
TEST DETAILS As per sheet 3.	**TEST SPECIFICATION** As per sheet 3.

TEST RESULTS: As per sheets from 4 to 10

ENCLOSURE: Photographs of test sample - As per sheets from 11 to 12

REMARKS: 1) The transformer **conforms** to the guaranteed requirement as per above mentioned test specification for above mentioned test nos. 1, 2, 5, 6, 7, 8, 9.
2) Criteria limit has not been specified for test nos. 3, 4, 10.

PREPARED BY **CHECKED BY** **APPROVED BY**
(Kapil J. Sharma)

NOTE: 1. This report relates only to the particular sample received for testing in good condition at ERDA, Vadodara.
2. This report cannot be reproduced in part under any circumstances.
3. Publication of this report requires prior permission in writting 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.

Caution: ERDA is not responsible for the authenticity of photocopied or reproduced test reports.
ERDA provides support to consumers for verification of the authenticity of test reports issued by ERDA.

TC 2434151

High Voltage Products Division * Vadodara *

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

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

TECHNICAL SPECIFICATIONS OF TEST OBJECT ASSIGNED BY CUSTOMER

1	Name of manufacturer	RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.
2	Serial No.	RPTPL/500KVA/2017-18/001
3	kVA rating	500
4	Rated voltage H.V. (Volts)	11000
5	Rated voltage L.V. (Volts)	433
6	Rated current H.V. (Amp.)	26.24
7	Rated current L.V. (Amp.)	666.71
8	Number of phases	3
9	Energy efficiency level	2
10	Vector group	Dyn11
11	Winding material	Copper
12	Type of cooling	ONAN
13	Frequency (Hz.)	50
14	Guaranteed percentage impedance(%)	4.5
15	Total losses at 50% load (Watts)	1510
16	Total losses at 100% load (Watts)	4300
17	Guaranteed temperature rise of oil/winding	40°C /45°C
18	Year of manufacture	2017
19	Standard No.	IS: 1180 PART 1-2014 WITH AMENDMENT NO. 1 & 2, as per customer`s requirement, CBIP manual, IS 2026

PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

TC 2434280

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

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	TEST DETAILS	TEST SPECIFICATION
1	No load current at 112.5 percent voltage:	As per cl.no.21.4.c of IS: 1180 PART 1-2014
2	Magnetic balance test	As per CBIP manual; Publication no.317 - 2013
3	Measurement of zero-sequence impedance (s) on three-phase transformers	As per customer`s requirement testing procedure followed as per cl.no.10.7. of IS: 2026 PART 1-2011
4	Measurement of unbalance current	As per customer`s requirement
5	Temperature-rise test	As per customer`s requirement testing procedure followed as per cl.no.21.3.b of IS: 1180 PART 1-2014
6	Oil leakage test	As per cl.no.21.2.j of IS: 1180 PART 1-2014
7	Pressure test (routine test)	As per cl.no.21.2.h of IS: 1180 PART 1-2014
8	Pressure test (type test)	As per cl.no.21.3.d of IS: 1180 PART 1-2014
9	Permissible flux density and over fluxing	As per cl.no. 7.9 of IS: 1180 PART 1-2014
10	Measurement of the Harmonics of the No-load current	As per customer`s requirement testing procedure followed as per cl.no.10.6. of IS: 2026 (PART 1)-2011

PREPARED BY CHECKED BY

TC 2434279

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
Certificate No. : TC-5389

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	Particular of Tests & Cl.No.	Requirement as per Specification	Obtained Value	Remarks
1	**No load current at 112.5 percent voltage:** (As per cl.no.21.4.c of IS: 1180 PART 1-2014) Test voltage of 112.5 percent of rated voltage at rated frequency was applied to the L.V. winding terminals and H.V. winding terminals were kept open circuited. No load current was recorded. **Test voltage** (Volts) **No load current** (Amps) **No Load Current (%)**	 Max. 5.0	 487.125 1.7809 0.267	**Conforms**
2	**Magnetic balance test** (As per CBIP manual; Publication no.317 - 2013)			**Conforms**

Voltage Applied Between	Applied Voltage (Volts)	Measured Voltage Between		
2u & 2n	99.99	2v & 2n	50 to 90 %	75.85 V
		2w & 2n		23.74 V
2v & 2n	100.09	2u & 2n	30 to 70 %	49.85 V
		2w & 2n	30 to 70 %	49.68 V
2w & 2n	100.08	2u & 2n		24.80 V
		2v & 2n	50 to 90 %	75.09 V

3	**Measurement of zero-sequence impedance(s) on three-phase transformers** (As per customer`s requirement testing procedure followed as per cl.no.10.7. of IS: 2026 PART 1-2011) The 2u, 2v and 2w terminals of LV winding shorted together. A test current (i.e. 1/3rd of rated current) was circulated between shorted terminals and 2n and measured a voltage across them. The obtained values are tabulated as below: **Test current (Amps)**		222.24	---

PREPARED BY CHECKED BY

High Voltage Products Division, Vadodara

TC 2434275

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

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	Particular of Tests & Cl.No.	Requirement as per Specification	Obtained Value	Remarks
	Measured Voltage (Volts)		1.310	
	Z ps = 3V/I (Ω/Phase)		0.018	
	(3V * kVA)			
	Z ps = ---------- (%)	--	4.716	
	(I * 10 (kV)2)			
4	**Measurement of unbalance current** (As per customer`s requirement) All the three terminals of the secondary (LV) winding shorted together, except neutral terminal. Current measuring terminal of ammeter was connected between short circuited secondary (LV) windings and neutral terminal for measurement of unbalance current. 3-phase voltage was applied to the primary (HV) winding for circulating rated current in both the windings and measured unbalance current.			---
	a)Rated secondary (LV) winding current (Amps):		666.71	
	b)Measured unbalance current (Amps):		0.1	
	c)Measured unbalance current (%):	--	0.015	
5	**Temperature-rise test** (As per customer`s requirement testing procedure followed as per cl.no.21.3.b of IS: 1180 PART 1-2014) Before starting test, the dimensions of tank with radiators were measured & recorded. Size of tank: L1-1245 mm, W1-550 mm, H1-1050 mm, H2-1065 mm Size of fins: L-700 mm, W-300 mm, No. of radiators-4, No. of fins per radiator-9 **Losses fed for temperature-rise test were 4300 Watts**			**Conforms**

PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

TC 2434281

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
Certificate No. : TC-5389

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	Particular of Tests & Cl.No.	Requirement as per Specification	Obtained Value	Remarks
	(As specified by the customer) Specified losses were fed to the transformer (i.e. supply was connected to HV winding and LV winding kept short circuited) till steady state temperature rise was attained. Top oil temperature was recorded hourly. After steady state condition, the losses were brought down in reference to the rated current one hour prior to shut down. At the shut down, the hot winding resistances were measured and temperature rise calculated. A) Top oil temperature-rise B) Winding temperature-rise (Resistance method) 1) HV winding 2) LV winding C) Ambient temperature at shutdown D) Time of shutdown (Hrs)	 Max. 40°C Max. 45°C Max. 45°C	 30.9°C 44.7°C 42.2°C 23.8°C 01:30	
6	**Oil leakage test** (As per cl.no.21.2.j of IS: 1180 PART 1-2014) The assembled transformer with all fittings including bushings in position was tested at a pressure at the top equivalent to the head that was available at the base of the tank for 8 hours.	There should be no leakage at any point	No leakage observed	**Conforms**
7	**Pressure test (routine test)** (As per cl.no.21.2.h of IS: 1180 PART 1-2014) The transformer tank was tested at an air pressure of 35 kPa above atmosphere pressure maintained inside the tank for 10 min.	There should be no leakage at any point	No leakage observed	**Conforms**

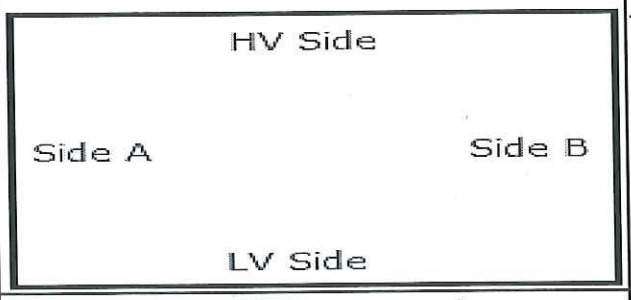
PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

TC2434168

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
Certificate No. : TC-5389

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	Particular of Tests & Cl.No.	Requirement as per Specification	Obtained Value	Remarks
8	**Pressure test (type test)** (As per cl.no.21.3.d of IS: 1180 PART 1-2014) The transformer tank was subjected to air pressure of 80 kPa for 30 minutes. The permanent deflection of flat plates was recorded, after pressure had been released.			**Conforms**
	Deflection measured at / **Length of plate (mm)**			
	HV side 1245	Max. 6.5 mm	0.3 mm	
	LV side 1245	Max. 6.5 mm	0.3 mm	
	Side A 550	Max. 5.0 mm	0.2 mm	
	Side B 550	Max. 5.0 mm	0.1 mm	
	The transformer tank was subjected to vacuum of 500 mm of Mercury for 30 minutes. The permanent deflections of flat plates was recorded, after vacuum had been released.			
	Deflection measured at / **Length of plate (mm)**			
	HV side 1245	Max. 6.5 mm	0.2 mm	
	LV side 1245	Max. 6.5 mm	0.2 mm	
	Side A 550	Max. 5.0 mm	0.1 mm	
	Side B 550	Max. 5.0 mm	0.1 mm	
		There should be no leakage at any point	No leakage observed	
9	**Permissible flux density and over fluxing** (As per cl.no. 7.9 of IS: 1180 PART 1-2014)			**Conforms**

E 24841167

PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

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
Certificate No. : TC-5389

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

Sr. No.	Particular of Tests & Cl.No.	Requirement as per Specification	Obtained Value	Remarks
	(a) Overfluxing test: Test voltage at rated frequency was applied to the L.V. winding terminals and H.V. winding terminals were kept open circuited and exciting current was recorded at 100% and 112.5% of rated voltage. Rated full load current of L.V. winding = 666.71 Amps			
	% of rated voltage / Test voltage (Volts) / No load current (Amps)			
	100% / 434.16 / 1.2275	Max. 2.0%	0.184%	
	112.5% / 487.125 / 1.7809	Max. 5.0%	0.267%	
	(b) Permissible flux density: Transformer was opened for the measurement of total area of the core. The core was dismantled and various dimensions of width and thickness were measured to calculate the total area of the core. Number of turns of L.V. winding were counted. Total measured area of the core: **33397.47** mm² Stacking factor: **0.97** (As specified by customer) Total no. of turns of L.V winding: **25** per phase Rated voltage of L.V winding: **250** V per phase Rated frequency: **50** Hz Flux density is calculated with +12.5 percent combined voltage and frequency variation from rated voltage and frequency. Flux density= 112.5 % of voltage/phase / (4.44 x Freq.(Hz) x Turns x Area of Core)	1.9 Tesla	1.56 Tesla	

PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

TC 9434169

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

REPORT NO.: RP-1718-051919 Date: 19-Jan-2018

Sr. No.	Particulars of test and clause no.	Requirement as per specification.	Obtained value	Remarks
10	**Measurement of the Harmonics of the No-load current** (As per customer's request testing procedure followed as per cl. no. 10.6 of IS 2026 (Part 1):2011)	The harmonics of the no-load current in the three phases shall be measured and magnitude of the harmonics shall be expressed as a percentage of the fundamental component.	Refer table 1 for individual current harmonics components & individual voltage harmonics components measured at LV side at rated voltage i.e. 433 V Current THD: R-ph: 24.05% Y-ph: 24.42% B-ph: 22.76% Voltage THD: R-ph: 1.62% Y-ph: 1.64% B-ph: 1.54%	---

Prepared by: Checked by:

High Voltage Product * Vadodara * INDIA

TC 2434730

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

REPORT NO.: RP-1718-051919 Date: 19-Jan-2018

TABLE-1 : Harmonics in voltage and current (as a percentage of fundamental)

Harmonic order	Current I_R in %	Current I_R in Amps	Voltage V_{RY} in %	Current I_Y in %	Current I_Y in Amps	Voltage V_{YB} in %	Current I_B in %	Current I_B in Amps	Voltage V_{BR} in %
1	100.00	1.75	100.00	100.00	1.05	100.00	100.00	1.73	100.00
2	1.86	0.03	0.02	1.61	0.02	0.02	1.61	0.03	0.02
3	3.12	0.05	0.20	6.48	0.07	0.14	8.30	0.14	0.11
4	0.55	0.01	0.02	2.15	0.02	0.03	0.25	0.00	0.01
5	22.35	0.39	1.19	20.95	0.22	1.08	16.62	0.29	1.24
6	0.52	0.01	0.01	0.91	0.01	0.03	0.54	0.01	0.03
7	1.22	0.02	0.45	4.80	0.05	0.51	3.47	0.06	0.48
8	0.29	0.01	0.01	0.30	0.00	0.01	0.18	0.00	0.01
9	2.72	0.05	0.06	3.81	0.04	0.31	2.73	0.05	0.17
10	0.47	0.01	0.01	0.92	0.01	0.01	0.56	0.01	0.01
11	5.15	0.09	0.95	1.73	0.02	0.97	1.15	0.02	0.57
12	0.26	0.00	0.01	0.44	0.00	0.02	0.24	0.00	0.02
13	2.71	0.05	0.17	7.76	0.08	0.43	8.73	0.15	0.46
14	0.28	0.00	0.01	0.44	0.00	0.01	0.28	0.00	0.01
15	1.36	0.02	0.13	1.01	0.01	0.14	7.17	0.12	0.08
16	0.11	0.00	0.01	0.19	0.00	0.01	0.10	0.00	0.02
17	1.07	0.02	0.14	1.83	0.02	0.06	1.10	0.02	0.09
18	0.10	0.00	0.00	0.18	0.00	0.01	0.12	0.00	0.01
19	2.88	0.05	0.05	0.16	0.00	0.01	2.99	0.05	0.03
20	0.31	0.01	0.00	0.51	0.01	0.00	0.31	0.01	0.01
21	2.74	0.05	0.02	0.74	0.01	0.03	2.76	0.05	0.04
22	0.10	0.00	0.00	0.15	0.00	0.00	0.10	0.00	0.00
23	1.16	0.02	0.02	0.23	0.00	0.02	1.19	0.02	0.02
24	0.10	0.00	0.00	0.18	0.00	0.00	0.10	0.00	0.00
25	1.25	0.02	0.01	0.13	0.00	0.03	1.26	0.02	0.02
THD %	24.05		1.62	24.42		1.64	22.76		1.54
Parameter measured	1.80 A		430.53 V	1.08 A		433.37 V	1.77 A		436.03 V

Prepared by

Checked by

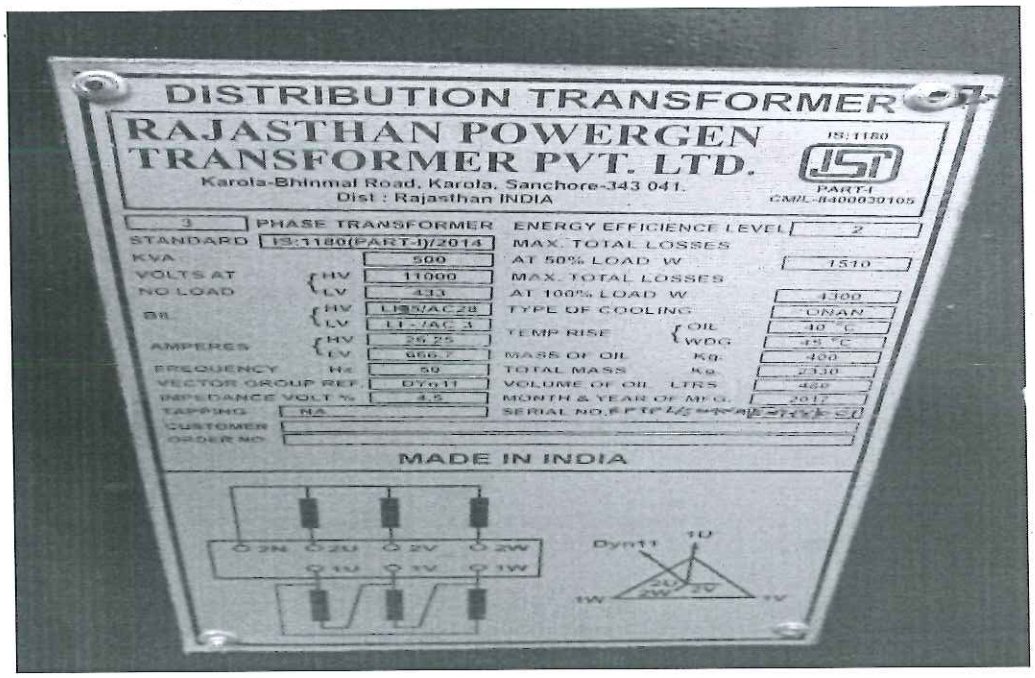
High Voltage Products Division * Vadodara *

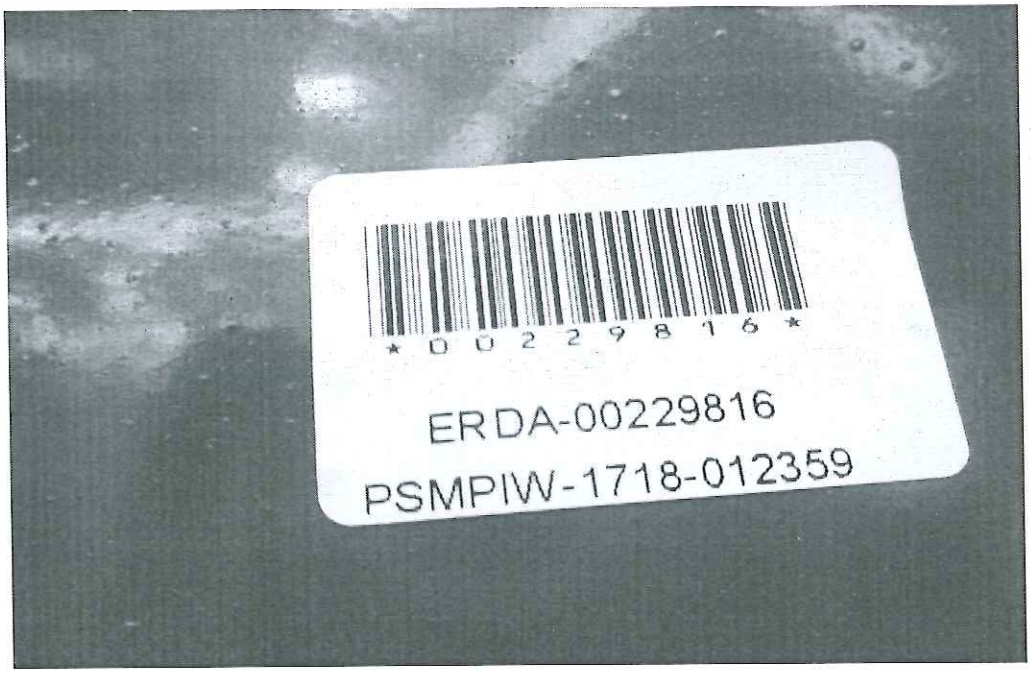
TC 2434711

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
Certificate No. : TC-5389

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

PHOTOGRAPHS OF TEST SAMPLE





PREPARED BY

CHECKED BY

High Voltage Products Division * Vadodara *

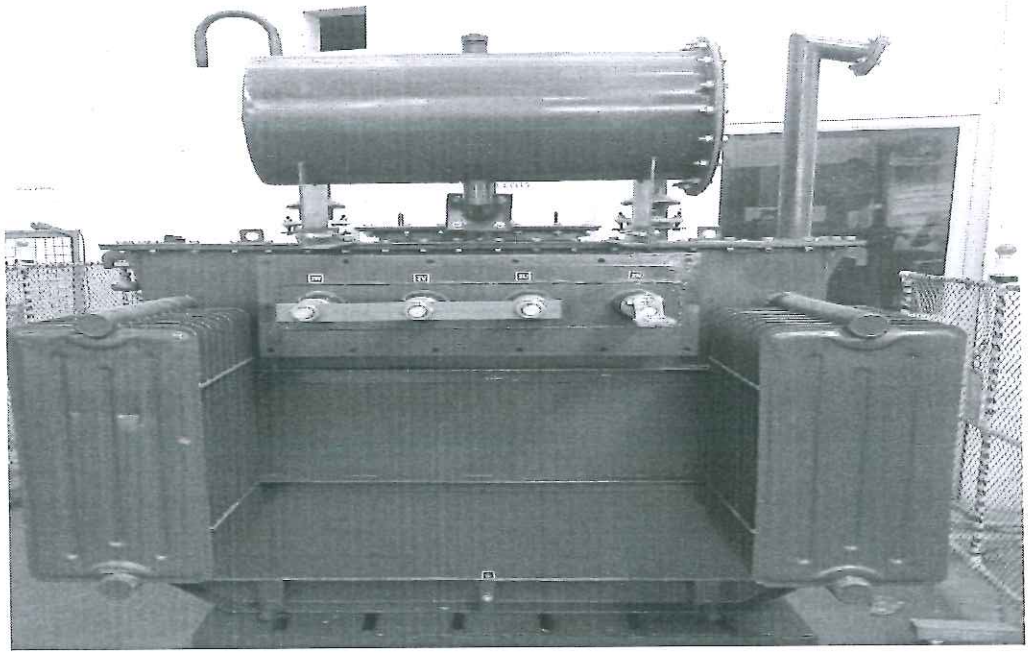
TC 2434165

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

REPORT NO.: RP-1718-051919 Date: 19 Jan 2018

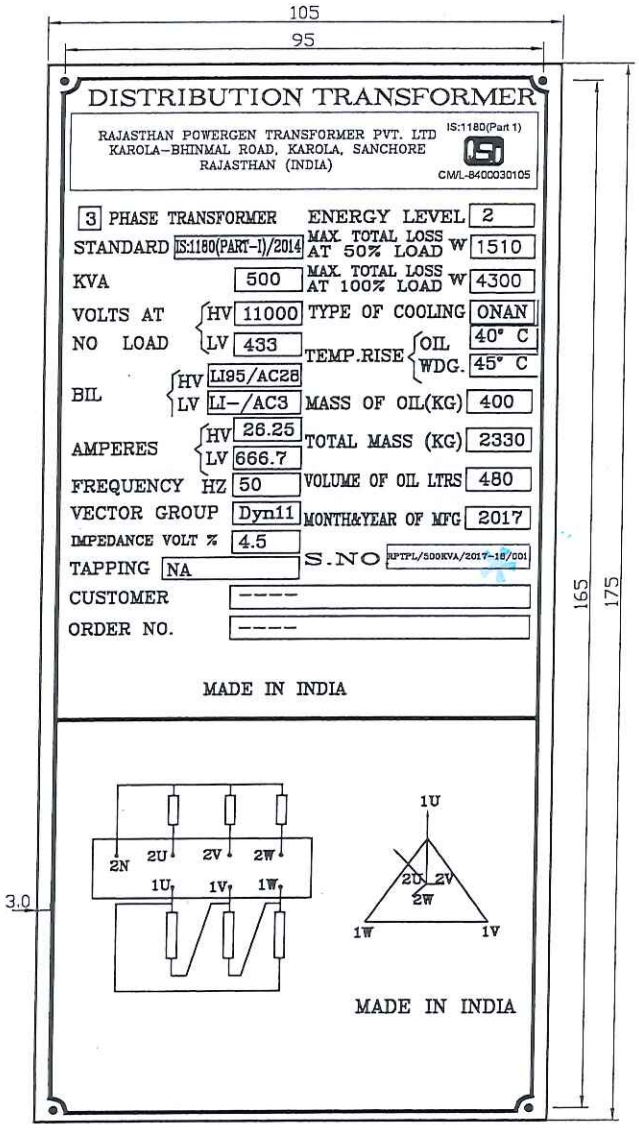
PHOTOGRAPHS OF TEST SAMPLE



PREPARED BY CHECKED BY

High Voltage Products Division * Vadodara *

TC 2434164

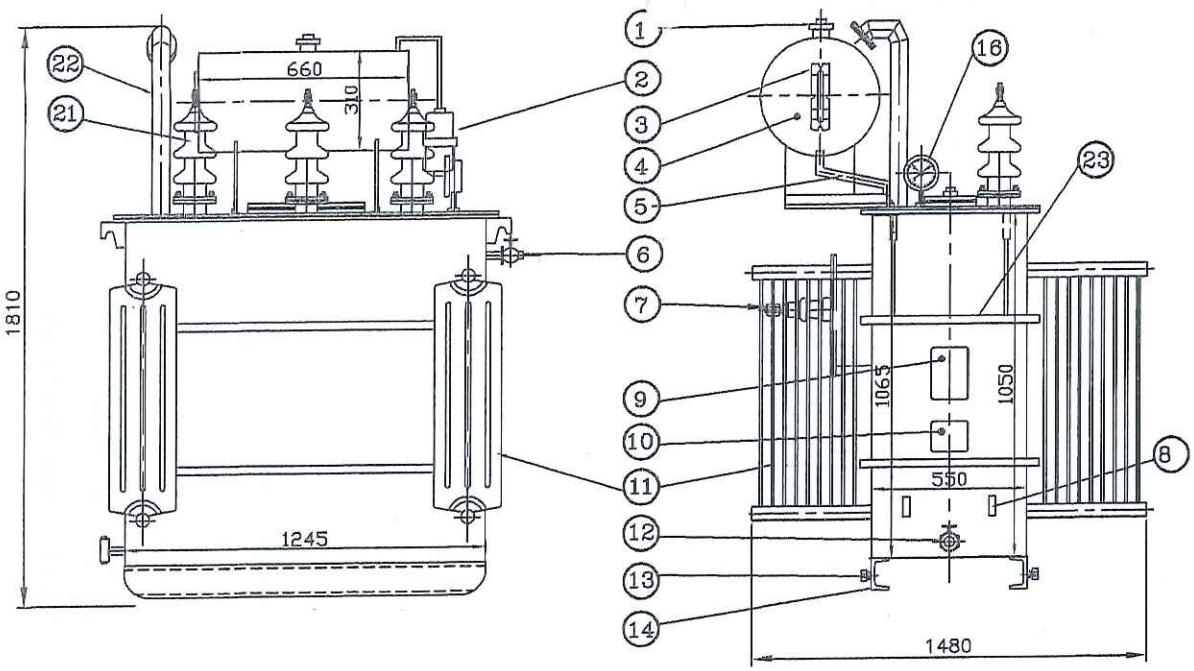


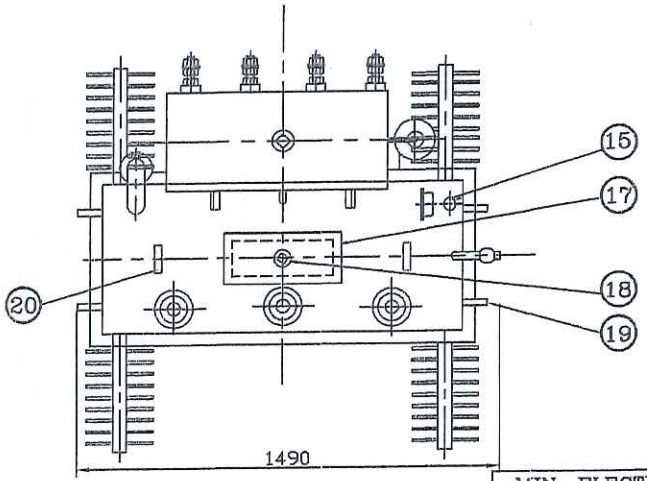
Test Report No. : RP-1718-051919
Date : 19/Jan/2019
Product : 500KVA, 11mes
Verified By :
Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with tick

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

TITLE:– NAME PLATE DRAWING OF 500KVA,11/0.433KV
COPPER WOUND ENERGY EFFICIENCY LEVEL–2 TRANSFORMER

CUSTOMER	---
T.S.No.	RPTPL/17–18/500KVA/001
SCALE	N T S
DRG. No.	RPTPL/500KVA/003





NOTES:-

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

TesMR Report No. : RP-1718-091919
Date : 19/Jun/2018
Product : 500KVA, 1φ meter
Verified By :
Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with ***

ITEM	DESCRIPTIONS	QTY.
23.	STIFFNER-(50X50X6)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 (125X65)MM	2
13.	EARTHING TERMINALS M-12X40L	2
12.	OIL DRAIN CUM SAMPLING VALVE	1
11.	COOLING PSR RADIATORS 700C/CX300W-9FINS *	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

High Voltage Products Division * Vadodara *

TANK DIMENSIONS	
LENGTH	1245
BREADTH	550 *
HEIGHT	1050/1065 *

SHEET THICKNESS	
TOP	5 mm
BOTTOM	5 mm
SIDES	4 mm

WEIGHT DETAILS	
Core & Windings	1460 Kgs.
Tank & Fitting	470 Kgs.
Weight of Oil	400 Kgs.
Total Weight	2330 Kgs.
Quantity of Oil	480 Ltrs.

MIN. ELECTRICAL CLEARANCE			
PHASE TO PHASE		PHASE TO EARTH	
HV	255	HV	140
LV	75	LV	40

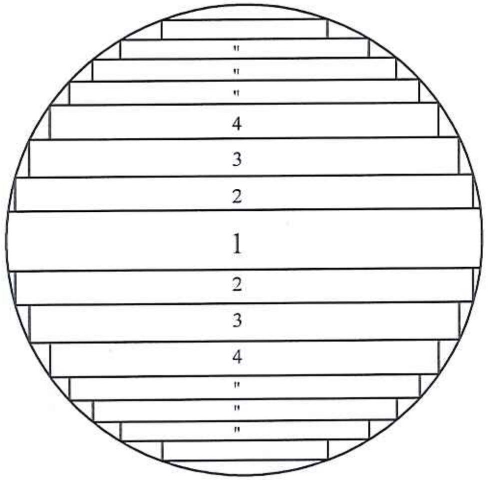
REV.No.	DATE	SIGN.	REMARKS

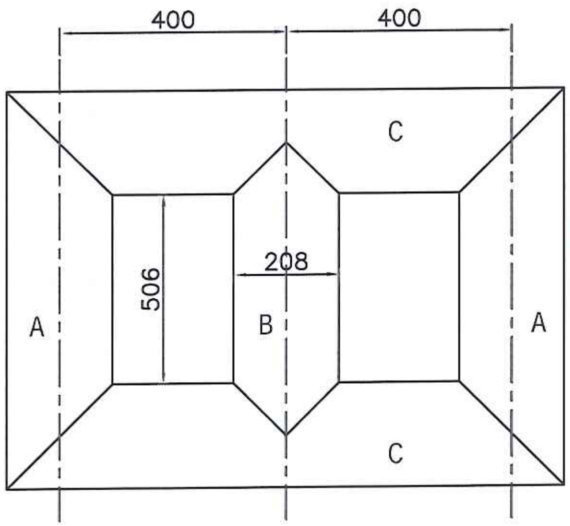
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD
KAROLA-BHINMAL ROAD, KAROLA, SANCHORE
RAJASTHAN - 343041

Title:- OUTLINE GENERAL ARRANGEMENT DRAWING OF 500KVA 11/0.433KV ENERGY EFFICIENCY LEVEL-2 TRANSFORMER

DRN.		CUSTOMER	---
CKD.		SPEC. No.	---
APPD.		SCALE	N T S
DATE		DRG. No.	RPTPL/500KVA/002

File Path : BFTC/RPTPL/12012017/500 kVA FDENSITY.dwg





STEP REF.	WIDTH (mm)	STEP THICKNESS (mm)	GROSS SECTION AREA (mm^2)
1	200	57.10	11420.00
2	190	27.50	5225.00
3	180	19.60	3528.00
4	170	15.60	2652.00
5	160	13.00	2080.00
6	150	11.20	1680.00
7	140	9.70	1358.00
8	130	8.50	1105.00
9	120	7.50	900.00
10	110	6.60	726.00
11	100	5.80	580.00
12	80	9.60	768.00
13	60	7.10	426.00
	TOTAL CROSS SECTION AREA (in mm^2)		32448.00
	SAFETY FACTOR		0.97
	NET CROSS SECTION AREA (in mm^2)		31474.56

SAY NET AREA (A x 0.97) = 31474.56

$E = 4.44 \times f \times Bmax \times A \times N \times 0.97 \times 10^{-6}$

$$Bmax = \frac{E \times 10^6}{4.44 \times f \times A \times N \times 0.97}$$

$$= \frac{250 \times 10^6}{4.44 \times 50 \times 25 \times 31474.56} \text{ TESLA}$$

$$= 1.431 \text{ TESLA}$$

High Voltage Products Division * Vadodara * ERDA

Test Report No.: RP-1718-05191
Date: 19/Jan/2018
Product: SOOKVA, Ajmer
Verified By: [signature]
Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with [illegible]

00	17.04.2017				ORIGINAL ISSUE.
Rev	Date	Draw	Checked	Approved	Description

Title : OUTLINE GENERAL ARRANGEMENT

Work Order : ---

Rating : 500 KVA, 11/0.433 kV, 30, 50 Hz. TRF.

Drawing No. : RPTPL/17-18/500 KVA/004 Rev. : 00

Sheet No. : 01 Total Sheets: 01

RAJASTHAN POWERGEN TRANSFORMER P. LTD.
Karola – Bhinmal Road, Karola, Sanchore – 343041 Dist – Jalore, Rajasthan (India)

All dimensions are in millimeters unless otherwise stated. If in doubt - Please Ask !

Scale : N.T.S