



Certificate No. : TC-5389

**ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION**

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

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**TEST REPORT****ULR-TC538920000019775F****Sheet : 1 of 7**

NAME AND ADDRESS OF CUSTOMER		REPORT NO.: RP-2021-013298	
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.		DATE : 19.09.2020	
KHASRA NO. 911-914, KAROLA-BHINMAL ROAD, KAROLA, SANCHORE, RAJASTHAN-343041		CUSTOMER REF. NO.	DATE
		Letter	15.09.2020
		DATE OF SAMPLE RECEIPT	DATE OF TESTING
		28.08.2020	17.09.2020 & 18.09.2020
SAMPLE DESCRIPTION		SAMPLE IDENTIFICATION	
DISTRIBUTION TRANSFORMER		ERDA sample code number : ERDA-00378229	
Manufactured by : RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.		Manufacturer serial no.: RPTPL/EXPT/100/01	
Rating : 100 kVA		Year of manufacture : 2020	
Volts : 33000/400 V (at no-load)		Enclosed drawing numbers :	
Current : 1.75/144.34 Amps		1) RPTPL/CUS/02 NP Rev. : 00 Sheet No. : 00	
Phases : 3/3		2) RPTPL/CUS/06 OGA Rev. : 01 Sheet No. : 01	
Vector group : Dyn11			
Further details as per sheet no.2			
TEST DETAILS		TEST SPECIFICATION	
As per sheet 3 of 7.		As per sheet 3 of 7.	
TEST RESULTS : As per sheets from 4 of 7 to 6 of 7.			
ENCLOSURE : Photographs of test sample - As per sheet 7 of 7.			
REMARKS : 1) The transformer conforms to the guaranteed requirement as per above mentioned test specification for above mentioned test nos. 2,4 & 5. 2) Criteria limit has not been specified for test nos. 1 & 3.			
 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 E.R.D.A., Makarpura. 2. This report cannot be reproduced in part under any circumstances. 3. Publication of this report requires prior permission in writing from Director, E.R.D.A. 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 arisen.			
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**ULR-TC538920000019775F****REPORT NO.:** RP-2021-013298**Sheet : 2 of 7****DATE** : 19.09.2020**TECHNICAL SPECIFICATIONS OF TEST OBJECT ASSIGNED BY CUSTOMER**

1.	Name of Manufacturer	RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.
2.	Manufacturer serial no.	RPTPL/EXPT/100/01
3.	kVA rating	100
4.	Rated Voltage H.V.(Volts)	33000
5.	Rated Voltage L.V.(Volts)	400
6.	Rated Current H.V.(Amp.)	1.75
7.	Rated Current L.V.(Amp.)	144.34
8.	Number of phases	3
9.	Vector Group	Dyn11
10.	Winding Material	Copper
11.	Type of Cooling	ONAN
12.	Frequency (Hz)	50
13.	Guaranteed Percentage impedance (%)	4.5
14.	Guaranteed maximum no-load loss (Watts)	310
15.	Guaranteed maximum load loss at 75°C (Watts)	1800
16.	Guaranteed temperature rise of oil/Winding	50/55°C
17.	Year of Manufacture	2020
18.	Standard no.	IEC 60076 (PART-1 & 2) 2011 & customer's requirement.

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REPORT NO.: RP-2021-013298

Sheet : 3 of 7

DATE : 19.09.2020

SR. NO.	TEST DETAILS	TEST SPECIFICATION
1.	Measurement of short-circuit impedance and load loss (At tap no. 1)	As per cl.no.11.4 of IEC 60076 (Part 1) : 2011
2.	Measurement of short-circuit impedance and load loss (At tap no. 3)	As per customer's requirement, testing procedure followed as per cl.no.11.4 of IEC 60076 (Part 1) : 2011
3.	Measurement of short-circuit impedance and load loss (At tap no. 5)	As per cl.no.11.4 of IEC 60076 (Part 1) : 2011
4.	Measurement of no-load loss and current.	As per customer's requirement, testing procedure followed as per cl.no.11.5 of IEC 60076 (Part 1) : 2011
5.	Temperature rise test (At tap no. 5)	As per customer's requirement, testing procedure followed as per cl.no.7 of IEC 60076 (Part 2) : 2011

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**ULR-TC538920000019775F****REPORT NO.:** RP-2021-013298**Sheet :** 4 of 7**DATE** : 19.09.2020

Sr. No.	Particulars of test and Cl. No.	Requirement as per specification	Obtained Value	Remarks
1.	Measurement of short-circuit impedance and load loss : (As per cl.no.11.4 of IEC 60076 (Part 1) : 2011) (At tap no. 1) Tested with 1.6608 Amps (on HV side) Frequency : 49.967 Hz Oil temperature : 28.4 °C Test current (Amps) Impedance voltage (Volts) Measured load loss (Watts) Impedance voltage (%) (Computed to 100% load) At 28.4 °C At 75 °C Load loss (Watts) (Computed to 100% load) At 28.4 °C At 75 °C		1.6608 1578.09 1321.40 4.58 4.65 1336.08 1552.21	--- --- ---
2.	Measurement of short-circuit impedance and load loss : (As per customer's requirement, testing procedure followed as per cl.no.11.4 of IEC 60076 (Part 1) : 2011) (At tap no. 3) Tested with 1.7509 Amps (on HV side) Frequency : 49.977 Hz Oil temperature : 28.4 °C Test current (Amps) Impedance voltage (Volts) Measured load loss (Watts) Impedance voltage (%) (Computed to 100% load) At 28.4 °C At 75 °C Load loss (Watts) (Computed to 100% load) At 28.4 °C At 75 °C	4.50 (±10%) Max. 1800	1.7509 1479.75 1364.60 4.48 4.55 1363.20 1585.02	Conforms

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Sheet : 5 of 7

Sr. No.	Particulars of test and Cl. No.	Requirement as per specification	Obtained Value	Remarks
3.	Measurement of short-circuit impedance and load loss : (As per cl.no.11.4 of IEC 60076 (Part 1) : 2011) (At tap no. 5) Tested with 1.8359 Amps (on HV side) Frequency : 49.914 Hz Oil temperature : 28.4°C <div style="text-align: right;"> Test current (Amps) Impedance voltage (Volts) Measured load loss (Watts) Impedance voltage (%) (Computed to 100% load) At 28.4°C At 75°C Load loss (Watts) (Computed to 100% load) At 28.4°C At 75°C </div>		1.8359 1386.93 1397.00 4.43 4.51 1403.25 1630.69	--- --- ---
4.	Measurement of no-load loss and current : (As per customer's requirement, testing procedure followed as per cl.no.11.5 of IEC 60076 (Part 1) : 2011) Tested with average 399.71 Volts (on LV side) Frequency : 50.018 Hz <div style="text-align: right;"> RMS voltage (Volts) No-load current (Amps) Measured no-load loss (Watts) Corrected no-load loss (Watts) </div>	Max. 310	400.20 1.9273 282.91 282.57	Conforms

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**ULR-TC538920000019775F****REPORT NO.:** RP-2021-013298**Sheet :** 6 of 7**DATE** : 19.09.2020

Sr. No.	Particulars of test and Cl. No.	Requirement as per specification	Obtained value	Remarks
5.	Temperature-rise test : (As per customer's requirement, testing procedure followed as per cl.no.7 of IEC 60076 (Part 2) : 2011) (At tap no. 5) Before starting test, the dimensions of tank with corrugated fins were measured & recorded. Size of tank : L-925 mm, W-410 mm, H-890/900 mm Size of corrugated fins : L-600 mm, W-160 mm No. of corrugated fins radiator : 1 No. of corrugated fins per radiator : 20 Losses fed for temperature-rise test were 2110 Watts (As specified by 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 shutdown, the hot windings resistance were measured and temperature-rise calculated. A) Top oil temperature-Rise : Max. 50°C B) Winding Temperature Rise (Resistance method) 1) HV Winding : Max. 55°C 2) LV Winding : Max. 55°C C) Ambient temperature at shutdown : 29.5°C D) Time of Shutdown (HRS) : 20:30			Conforms

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ULR-TC538920000019775F

REPORT NO.: RP-2021-013298

Sheet : 7 of 7

DATE : 19.09.2020

PHOTOGRAPHS OF TEST SAMPLE

DISTRIBUTION TRANSFORMER
RAJASTHAN POWER & TRANSFORMER PVT. LTD.
KATOLA-DHARMAL ROAD, KATOLA, SANCHORE
DIST. JALORE, RAJASTHAN, INDIA

TECHNICAL TRANSFORMER DATA		RATING	
STANDARD	IEC - 60076	FREQUENCY	Hz 50
KVA	100	TYPE OF COOLING	ONAN
VOLTS AT HV	33000	VECTOR GROUP	Dyn-11
NO. LOAD LV	400	TOTAL MASS	KG 520
AMPERES HV	175	MASS OF OIL	KG 285
LV	144.34	VOLUME OF OIL	LITRE 313
IMPEDANCE	5.5 %	CORE WEIGHT	400
NO. LOAD LOSS	310 W	LOAD LOSS	1300 W
MAX. TEMP. RISE OIL / WINDING		50/55 °C	
INSULATION LEVEL		CL 175/10KV LV 10KV	
CLASS OF INSULATION	A	YEAR OF MFG	2020
WINDING MATERIAL		CUGU	
OIL SPECIFICATION		IND PCIR	
OIL SPECIFICATION		IS 50298	
CONTINUOUS AMBIENT TEMP.		30 DEG. C	
ORDER NO.			
PURCHASER			

CONNECTION DIAGRAM

OFF / ON	DRY TAP	NO. LOAD VOLTAGE	% OF HV	
1	B-5	24500	400	+3.2%
2	B-6	25225	400	+3.2%
3	A-7	25950	400	NORMAL
4	A-8	26675	400	-3.2%
5	A-9	27400	400	-3.2%

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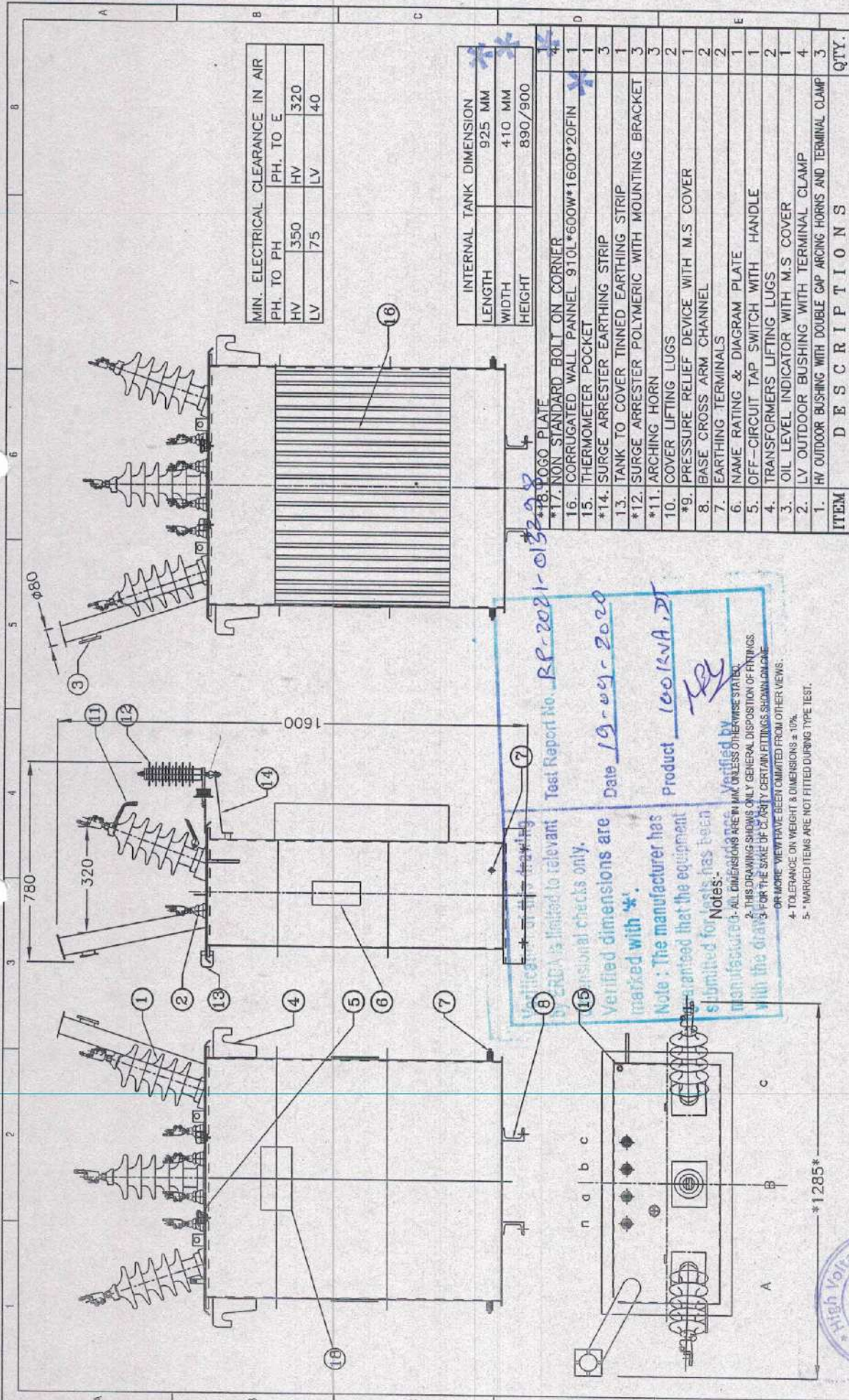
PREPARED BY



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00	-				ORIGINAL ISSUE.
Rev	Date	Draw	Checked	Approved	Description
		Title : RATING & DIAGRAM PLATE			Work Order : ----
		Rating : 100 KVA , 33/0.4 KV	Drawing No. : RPTPL/CUS/02 NP	Rev. : 00	Sheet No. : 00
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 !	
					



MIN. ELECTRICAL CLEARANCE IN AIR		
PH. TO PH	PH. TO E	
HV	350	320
LV	75	40

INTERNAL TANK DIMENSION	
LENGTH	925 MM
WIDTH	410 MM
HEIGHT	890/900

ITEM	DESCRIPTION	QTY.
1	HV OUTDOOR BUSHING WITH DOUBLE GAP ARCS AND TERMINAL CLAMP	3
2	LV OUTDOOR BUSHING WITH TERMINAL CLAMP	4
3	OIL LEVEL INDICATOR WITH M.S COVER	1
4	TRANSFORMERS LIFTING LUGS	2
5	OFF-CIRCUIT TAP SWITCH WITH HANDLE	1
6	NAME RATING & DIAGRAM PLATE	1
7	EARTHING TERMINALS	2
8	BASE CROSS ARM CHANNEL	2
9	PRESSURE RELIEF DEVICE WITH M.S COVER	1
10	COVER LIFTING LUGS	2
11	ARCHING HORN	3
12	SURGE ARRESTER POLYMERIC WITH MOUNTING BRACKET	3
13	TANK TO COVER TINNED EARTHING STRIP	1
14	SURGE ARRESTER POLYMERIC WITH MOUNTING BRACKET	1
15	THERMOMETER POCKET	1
16	CORRUGATED WALL PANNEL 910L*600W*160D*20FIN	1
17	NON STANDARD BOLT ON CORNER	4
18	LOGO PLATE	1

Test Report No. RP-2021-013298

Date 19-09-2020

Product 100/12.5VA, D

Notes:-
 1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED.
 2. THIS DRAWING SHOWS ONLY GENERAL DISPOSITION OF FITTINGS.
 3. FOR THE SAKE OF CLARITY CERTAIN FITTINGS SHOWN ON ONE OR MORE VIEWS HAVE BEEN OMITTED FROM OTHER VIEWS.
 4. TOLERANCE ON WEIGHT & DIMENSIONS ± 10%.
 5. * MARKED ITEMS ARE NOT FITTED DURING TYPE TEST.

		OUTLINE GENERAL ARRANGEMENT		Work Order: ---	
Rating: 100KVA 33/0.420 KV / 11 KV E MOUNTED TYPE		Drawing No.: RP/PL/CUS/06 OGA 01		Sheet No.: 01	
RAJASTHAN POWERGEN TRANSFORMER P. LTD. Kandi - Bhilai Road, Kandi, Sanchos - 343041 Dist - Jaipur, Rajasthan (India)		Rev.: 01		Total Sheets: 01	
All dimensions are in millimeters unless otherwise stated. If in doubt - Please Ask!		Scale: N.T.S		8	