

**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.

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Fax : +91 (0265) 2638382

E-mail : erda@erda.org

Web : http://www.erda.org

**TEST REPORT****SHEET 01 OF 04**

NAME & ADDRESS OF CUSTOMER: M/s. Rajasthan Powergen Transformer Pvt. Ltd. Khasra No. 911-914, Karola-Bhinmal Road, Karola, Sanchoe, Rajasthan-343041	REPORT NO: RP-1718-055261 DATE: 05/02/2018	
	CUSTOMER REF. NO. & DATE: NP/ERDA/TT/40/2017-18, dt. 29/11/2017	
	DATE OF SAMPLE RECEIPT 05/12/2017	DATE OF TESTING 01/01/2018
SAMPLE DESCRIPTION: Distribution Transformer [1 No.] 315 KVA, 11/0.433 kV, E.E.L-2 Sr. No.: RPTPL/315KVA/2017-18/001	SAMPLE IDENTIFICATION: Sr. No.: RPTPL/315KVA/2017-18/001 Drawing Nos.: 1] RPTPL/315KVA/002 2] RPTPL/315KVA/003 ERDA Sample Code No.: ERDA-00229815	
TEST DETAIL: Determination of Sound levels [A-Weighted Sound Power Level Measurement]	TEST SPECIFICATION: For Test Procedure: 1] IS 1180 (Part 1): 2014 with 2 amendments. 2] IS 2026 (Part 10): 2009 For Test Requirement: As per customer's requirement	
ENCLOSURE: Reference Drawing Nos.: 1] RPTPL/315KVA/002, 2] RPTPL/315KVA/003		
REMARKS: 1] Guaranteed value of sound pressure level is considered as 56 dB(A) as mentioned in customer's letter. 2] Transformer conforms to the requirement of guaranteed value of Sound pressure level. 3] Photographs of test sample & name plate have been attached. [Refer SHEET 04 OF 04]		
 PREPARED BY	 CHECKED BY	 APPROVED BY

Note:

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TC 2451101



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TEST REPORT NO: RP-1718-055261

DATE: 05/02/2018

SHEET 02 OF 04

Particulars of Tests & Cl. No.:

Determinations of sound levels [A- Weighted Sound Power Level Measurement]

[Cl. No. 21.4.a of IS 1180 (Part 1): 2014 & Cl. No. 13 of IS 2026 (Part 10): 2009]

Condition of transformer

Transformer was energized at no load condition & excited at the rated voltage of sinusoidal waveform & rated frequency.

Details of equipment used:

Name: Sound level meter **Make:** Lutron
Meter Type: Type 1 **Serial No.:** I.62852
Calibration Report No. & Date: NCQC-M/141117/01, Dt. 27/11/2017

TEST RESULTS:

A-Weighted sound pressure levels of the background noise

Sr. No.	Measurement Locations (Refer Sketch Below)	At the start of test dB(A)	At the end of test dB(A)
1	A	44.1	45.3
2	B	44.5	45.1
3	C	44.4	44.2
4	D	44.6	44.4
5	E	44.9	44.6
6	F	45.1	44.3
7	G	44.3	44.8
8	H	44.7	44.5
9	I	44.6	44.4
10	J	44.8	44.5
Arithmetic Average $\overline{L_{bgA}}$		44.6	44.6

A-Weighted sound pressure levels at energized condition L_{pAi}

Sr. No.	Measurement Locations (Refer Sketch Below) dB(A)	L_{pAi} dB(A)
1	A	46.6
2	B	46.4
3	C	45.9
4	D	46.2
5	E	46.3
6	F	46.8
7	G	46.9
8	H	47.2
9	I	46.8
10	J	46.5
Arithmetic Average $\overline{L_{pA0}}$		46.6

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TC 2439790

TEST REPORT NO: RP-1718-055261

DATE: 05/02/2018

SHEET 03 OF 04

TEST PARAMETERS:

Measurement distance : 1 m,

Microphone Spacing: 1 m

Measurement made : Half of the height of the transformer tank

Method followed: Sound pressure measurement as per Cl. No. 11, 11.3 & Table 2 of IS 2026 (Part 10): 2009.

Length of prescribed contour: 7.56 m

Transformer Tank Height: 0.955 m

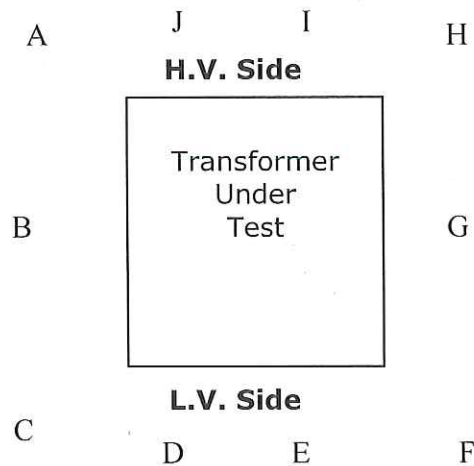
Person present during sound level measurement: 3

A-Weighted sound pressure level (L_{pA0}):	46.6 dB(A)
--	------------

Corrected average A-weighted sound pressure level (L_{pA}):	42.3 dB(A)
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Calculated A- weighted sound power level (L_{WA}) :	51.9 dB(A)
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REMARKS: A -Weighted sound pressure level (L_{pA0}) found within guaranteed value given by customer.



Sketch showing the locations of sound measurement


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Certificate No. : TC-5389

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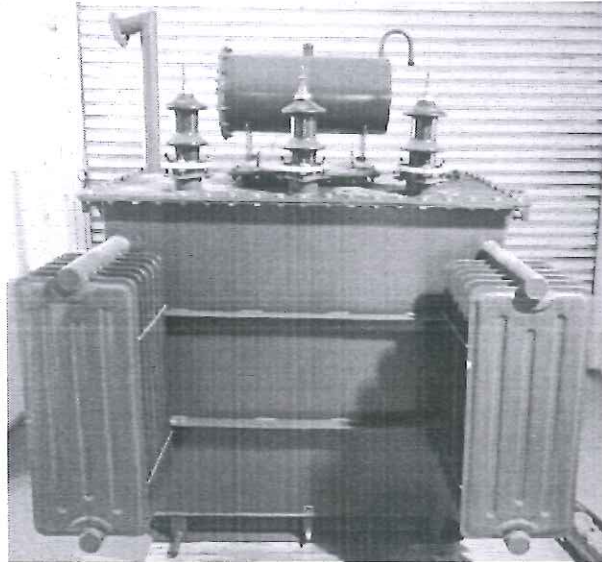


TEST REPORT NO: RP-1718-055261

DATE: 05/02/2018

SHEET 04 OF 04

PHOTOGRAPHS OF TEST SAMPLE & NAME PLATE



DISTRIBUTION TRANSFORMER			
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD.			
Karola-Gharwal Road, Karola, Sanchore-343 041. Dist. Rajasthan INDIA			
1. PHASE TRANSFORMER		ENERGY EFFICIENCY LEVEL 2	
STANDARD IS 1100(PART-1)/2014	MAX. TOTAL LOSSES AT 50% LOAD W		1100
KVA 315	MAX. TOTAL LOSSES AT 100% LOAD W		1100
VOLTS AT HV 11000	TYPE OF COOLING		ONAN
NO LOAD LV 433	TEMP. RISE FOR WDG		55 °C
BIL HV 1100VAC/20	MASS OF OIL KG		215
LV 110VAC/3	TOTAL MARS KG		1100
AMPERES HV 16.53	VOLUME OF OIL LTRS		375
LV 420.02	MONTH & YEAR OF MFG.		2017
FREQUENCY Hz 50	SERIAL NO & FILE NO		42011-2-200
VECTOR GROUP REF DYN11	TAPPOS		RE
IMPEDANCE VOLT % 4.5	CUSTOMER ORDER NO.		
MADE IN INDIA			

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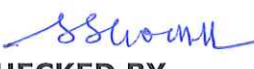
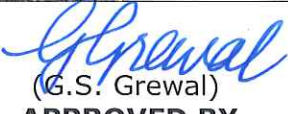
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TEST REPORT

SHEET 01 OF 04

NAME & ADDRESS OF CUSTOMER: M/s. Rajasthan Powergen Transformer Pvt. Ltd. Khasra No. 911-914, Karola-Bhinmal Road, Karola, Sanchoe, Rajasthan-343041	REPORT NO: RP-1718-055262 DATE: 05/02/2018	
	CUSTOMER REF. NO. & DATE: NP/ERDA/TT/40/2017-18, dt. 29/11/2017	
	DATE OF SAMPLE RECEIPT	DATE OF TESTING
	05/12/2017	01/01/2018
SAMPLE DESCRIPTION: Distribution Transformer [1 No.] 500 KVA, 11/0.433 kV, E.E.L-2 Sr. No.: RPTPL/500KVA/2017-18/001	SAMPLE IDENTIFICATION: Sr. No.: RPTPL/500KVA/2017-18/001 Drawing Nos.: 1] RPTPL/500KVA/002 2] RPTPL/500KVA/003 ERDA Sample Code No.: ERDA-00229816	
TEST DETAIL: Determination of Sound levels [A-Weighted Sound Power Level Measurement]	TEST SPECIFICATION: For Test Procedure: 1] IS 1180 (Part 1): 2014 with 2 amendments. 2] IS 2026 (Part 10): 2009 For Test Requirement: As per customer's requirement	
ENCLOSURE: Reference Drawing Nos.: 1] RPTPL/500KVA/002, 2] RPTPL/500KVA/003		
REMARKS: 1] Guaranteed value of sound pressure level is considered as 56 dB(A) as mentioned in customer's letter. 2] Transformer conforms to the requirement of guaranteed value of Sound pressure level. 3] Photographs of test sample & name plate have been attached. [Refer SHEET 04 OF 04]		
 PREPARED BY	 CHECKED BY	 APPROVED BY (G.S. Grewal)

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Certificate No. : TC-5389

TEST REPORT NO: RP-1718-055262

DATE: 05/02/2018

SHEET 02 OF 04

Particulars of Tests & Cl. No.:

Determinations of sound levels [A- Weighted Sound Power Level Measurement]

[Cl. No. 21.4.a of IS 1180 (Part 1): 2014 & Cl. No. 13 of IS 2026 (Part 10): 2009]

Condition of transformer	Transformer was energized at no load condition & excited at the rated voltage of sinusoidal waveform & rated frequency.
Details of equipment used:	Name: Sound level meter Make: Lutron Meter Type: Type 1 Serial No.: I.62852 Calibration Report No. & Date: NCQC-M/141117/01, Dt. 27/11/2017

TEST RESULTS:

A-Weighted sound pressure levels of the background noise

Sr. No.	Measurement Locations (Refer Sketch Below)	At the start of test dB(A)	At the end of test dB(A)
1	A	44.7	44.9
2	B	44.9	44.7
3	C	45.1	44.7
4	D	45.2	45.3
5	E	44.6	45.1
6	F	44.8	45.4
7	G	44.3	44.8
8	H	44.6	44.6
9	I	45.2	45.2
10	J	44.4	44.9
Arithmetic Average $\overline{L_{bgA}}$		44.8	45.0

A-Weighted sound pressure levels at energized condition L_{pAi}

Sr. No.	Measurement Locations (Refer Sketch Below) dB(A)	L_{pAi} dB(A)
1	A	45.3
2	B	45.6
3	C	44.9
4	D	46.2
5	E	46.6
6	F	46.8
7	G	45.9
8	H	46.2
9	I	46.6
10	J	46.8
Arithmetic Average $\overline{L_{pA0}}$		46.1

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TEST REPORT NO: RP-1718-055262

DATE: 05/02/2018

SHEET 03 OF 04

TEST PARAMETERS:

Measurement distance : 1 m,

Microphone Spacing: 1 m

Measurement made : Half of the height of the transformer tank

Method followed: Sound pressure measurement as per Cl. No. 11, 11.3 & Table 2 of IS 2026 (Part 10): 2009.

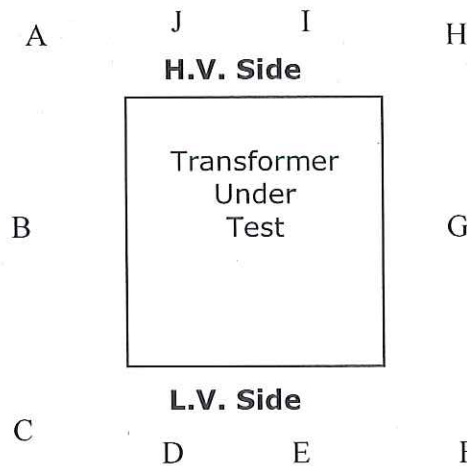
Length of prescribed contour: 8.34 m

Transformer Tank Height: 1.065 m

Person present during sound level measurement: 3

A-Weighted sound pressure level ($\overline{L_{pA0}}$):	46.1 dB(A)
Corrected average A-weighted sound pressure level ($\overline{L_{pA}}$):	40.2 dB(A)
Calculated A-weighted sound power level (L_{WA}):	50.7 dB(A)

REMARKS: A -Weighted sound pressure level ($\overline{L_{pA0}}$) found within guaranteed value given by customer.



Sketch showing the locations of sound measurement

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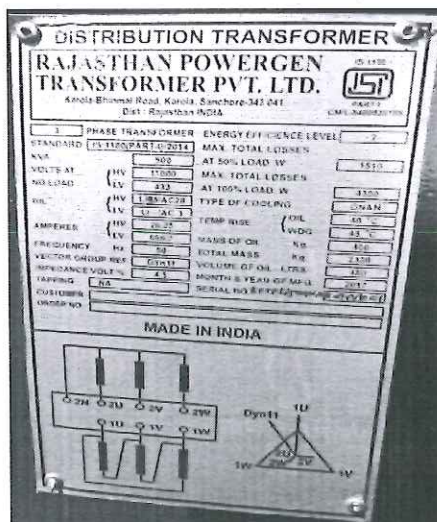
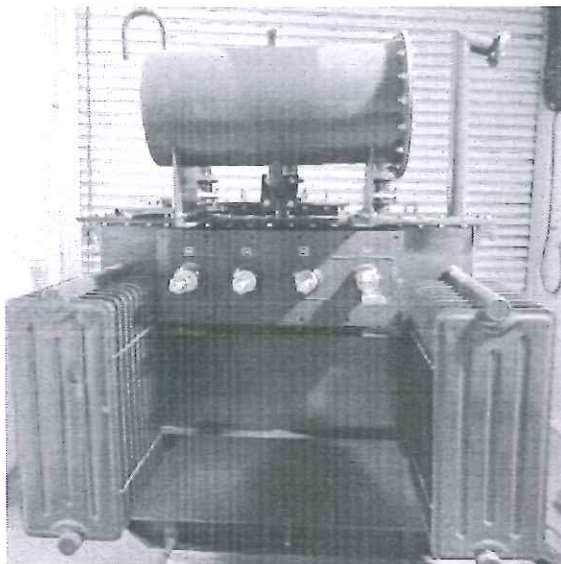


TEST REPORT NO: RP-1718-055262

DATE: 05/02/2018

SHEET 04 OF 04

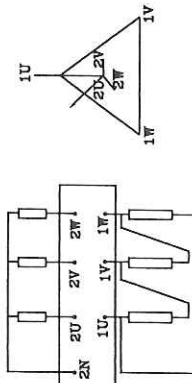
PHOTOGRAPHS OF TEST SAMPLE & NAME PLATE



PREPARED BY

CHECKED BY

TC 2439796

105		95	
DISTRIBUTION TRANSFORMER			
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD (IS1160 Part 1) KAROLA-BHINMAL ROAD, KAROLA, SANCHORE RAJASTHAN (INDIA) CML-840035C105			
3 PHASE TRANSFORMER		ENERGY LEVEL 2	
STANDARD IS1160(PART-1)/2014		MAX TOTAL LOSS W 1025	
KVA 315		AT 50% LOAD W 3100	
VOLTS AT HV 11000		TYPE OF COOLING ONAN	
NO LOAD LV 433		TEMP RISE { OIL 40° C	
BIL { HV LI95/AC2B		WDG. 45° C	
LV LI-/AC3		MASS OF OIL(KG) 310	
AMPERES HV 16.53		TOTAL MASS (KG) 1820	
FREQUENCY HZ 50		VOLUME OF OIL LTRS 375	
VECTOR GROUP Dy11		MONTH/YEAR OF MFG 2017	
IMPEDANCE VOLT % 4.5		S.N.O. [Serial/315KVA/2017-10/001]	
TAPPING NA		CUSTOMER	
ORDER NO.		MADE IN INDIA	
			
MADE IN INDIA			

Test Report No. <u>RP-1718-055261</u>
Date <u>05/02/18</u>
Product <u>TRANSFORMER</u>
Verified by <u>[Signature]</u>
The drawing has been used for reference only.

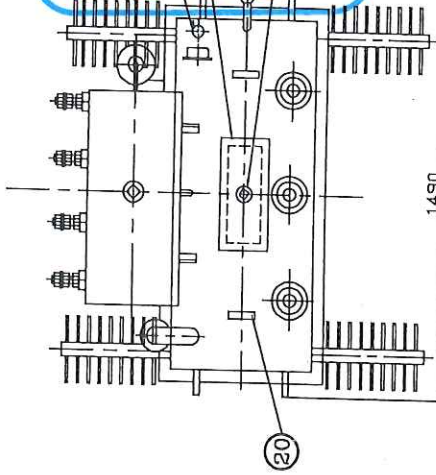
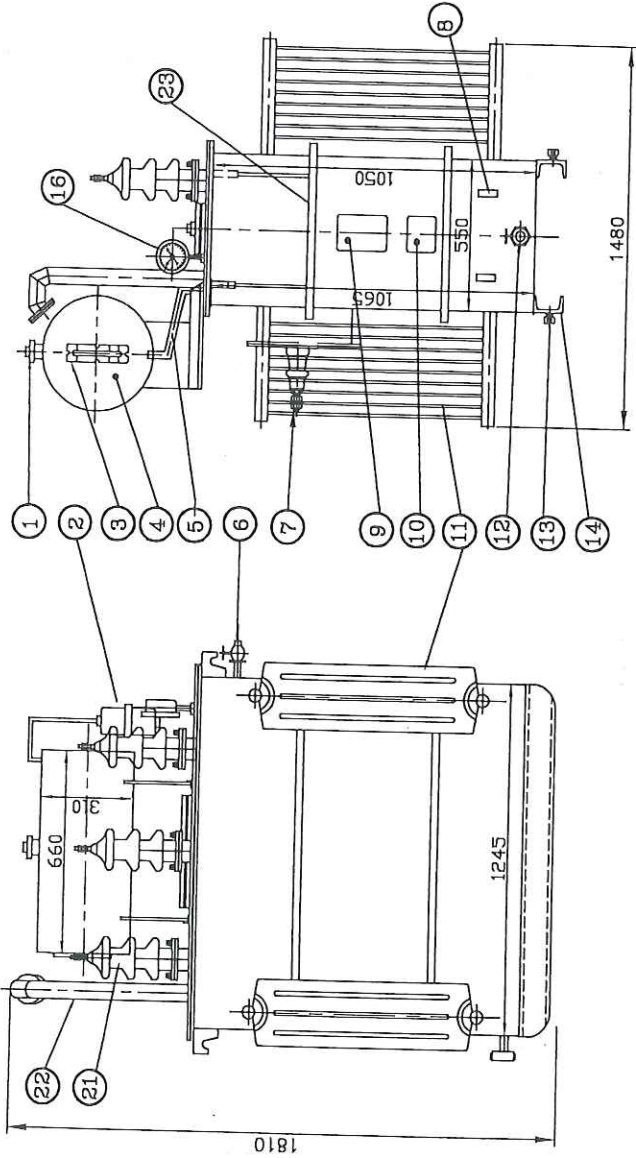
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD
KAROLA-BHINMAL ROAD, KAROLA, SANCHORE
RAJASTHAN - 343041

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

NOTES:-

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



Test Report No. RP-1218-055262

Date 05/02/18

Product Transformer

Verified by

TANK DIMENSIONS	
LENGTH	1245
BREADTH	550
HEIGHT	1050/1065
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	255
PHASE TO EARTH	140
HV	75
LV	40

REMARKS

ITEM	DESCRIPTION	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.	LV. 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

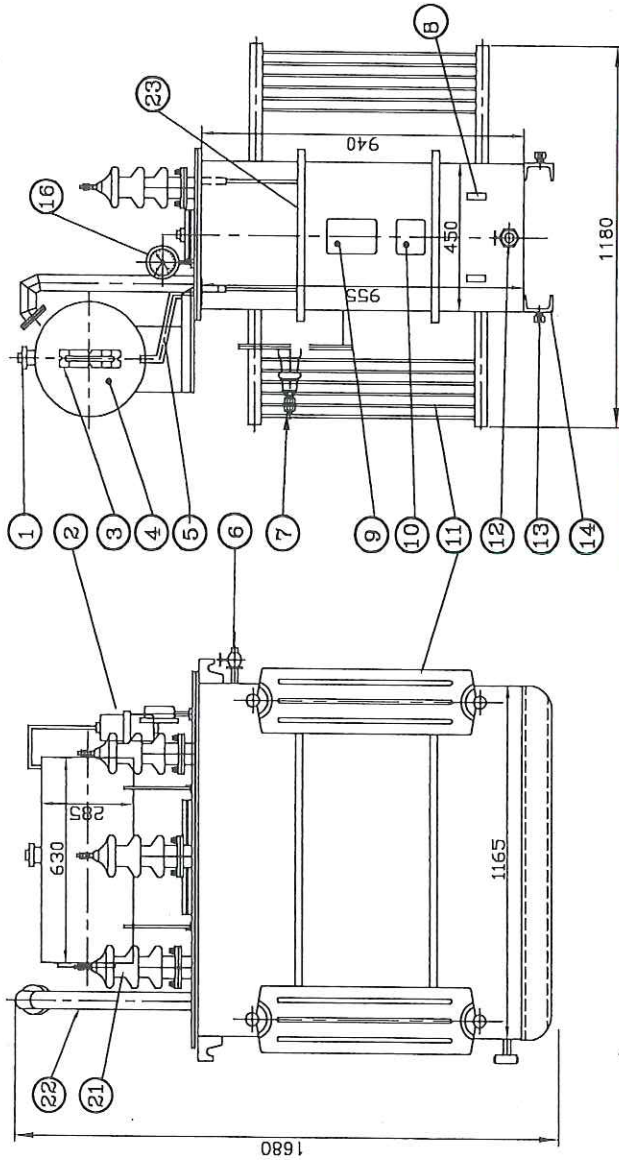
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD
KAROLA-BHINMAL ROAD, KAROLA, SANCHORE
RAJASTHAN - 343041

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

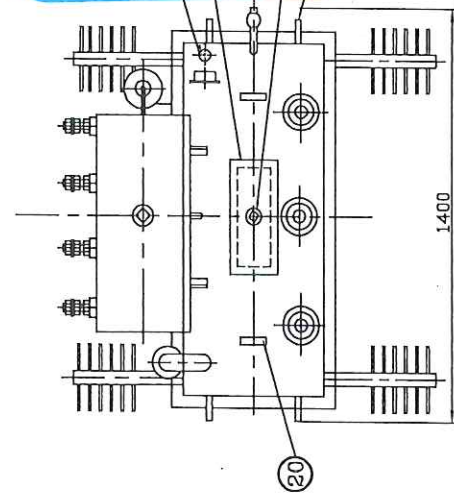
DRN.	CUSTOMER	---
CKD.	SPEC. No.	---
APPD.	SCALE	N T S
DATE	DRG. No.	RP/PL/500KVA/002

NOTES:-

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



Test Report No. RP-1718-0552
 Date 05/02/18
 Product Transformer
 Verified by PCD
 The drawing has been used for reference



ITEM	DESCRIPTION	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

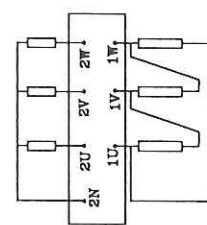
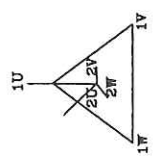
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD
 KAROLA-BHINMAL ROAD, KAROLA, SANCHORE
 RAJASTHAN - 343041

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

MIN. ELECTRICAL CLEARANCE	Core & Windings	Tank & Fitting
PHASE TO PHASE	1110 Kgs.	400 Kgs.
PHASE TO EARTH	310 Kgs.	1820 Kgs.
HV	255	75
LV	140	40
REV.No.	DATE	SIGN.
		REMARKS

SHEET THICKNESS	TOP	BOTTOM	SIDES
5 mm	5 mm	5 mm	4 mm
LENGTH	1165	BREADTH	450
HEIGHT	940/955	WEIGHT DETAILS	

105		95	
DISTRIBUTION TRANSFORMER			
RAJASTHAN POWERGEN TRANSFORMER PVT. LTD KAROLA-BHINMAL ROAD, KAROLA, SANCHORE RAJASTHAN (INDIA) IS:1180(Part 1) CIVIL-840030105			
3] PHASE TRANSFORMER		ENERGY LEVEL 2	
STANDARD [S1180(PART-1)/2017]		MAX. TOTAL LOSS W 1510	
KVA 500		MAX. TOTAL LOSS W 4300	
VOLTS AT HV 11000		TYPE OF COOLING ONAN	
NO. LOAD LV 433		TEMP. RISE OIL 40° C	
BIL HV LI95/AC2B		TEMP. RISE WDG. 45° C	
AMPERES HV 26.25		MASS OF OIL (KG) 400	
FREQUENCY HZ 50		TOTAL MASS (KG) 2330	
VECTOR GROUP Dyn11		VOLUME OF OIL LTRS 480	
IMPEDANCE VOLT % 4.5		MONTH & YEAR OF MFG 2017	
TAPPING NA		S.N.O. [PPTPL/500KVA/2017-18/001]	
CUSTOMER		ORDER NO.	
MADE IN INDIA			
			
MADE IN INDIA			

Test Report No. RP-1718-0552-62Date 05/02/18Product TransformerVerified by PCD

The drawing has been used for reference only.

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