PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

INVENTORY NO.	SIGN. & DATE	REF. DRG. NO.
		POW111469.DWG

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

DRAWING NO. 1 456 19 51 479

भारत हेवी इलेक्ट्रिकल्स लिमिटेड
BHARAT HEAVY ELECTRICALS LIMITED JHANSI

शक्ति परिणामित्र — POWER TRANSFORMER

AS PER IS. 2026-2009/IEC60076-2011

MISC. SERVICE TRANSFORMER

शीतन प्रकार / TYPE OF COOLING	ONAN
निर्धारण उ.वो. मे.वो.ऐ. / RATING H.V. (M.V.A.)	31.5
निर्धारण नि.वो. मे.वो.ऐ. / RATING L.V. (M.V.A.)	31.5
शून्य भार वोल्टता उ.वो. कि.वो. / NO LOAD VOLTAGE H.V.(kV)	132
शून्य भार वोल्टता नि.वो. कि.वो. / NO LOAD VOLTAGE L.V.(kV)	34.5
लाइन धारा उ.वो. ऐ. / LINE CURRENT H.V.(AMPS.)	137.78
लाइन धारा नि.वो. ऐ. / LINE CURRENT L.V.(AMPS.)	527.15
ताप वृद्धि तेल सें. / TEMPERATURE RISE OIL (°C)	50 OVER AMBIENT TEMP. OF 50°C
ताप वृद्धि कुंडलन सें. / TEMPERATURE RISE WINDING (°C)	55 OVER AMBIENT TEMP. OF 50°C
ग्राहक / CUSTOMER	M/S NTPC DARLIPALI STPP 2X800 MW

फेज / PHASE	3
आवृति हर्ट्ज / FREQUENCY (Hz)	50
संयोजन प्रतीक / CONNECTION SYMBOL	YNyno
GUARANTEED % IMPEDANCE AT NOR TAP-5	12.5%±10% TOL. AT31.5MVA,BASE

INSULATION LEVEL

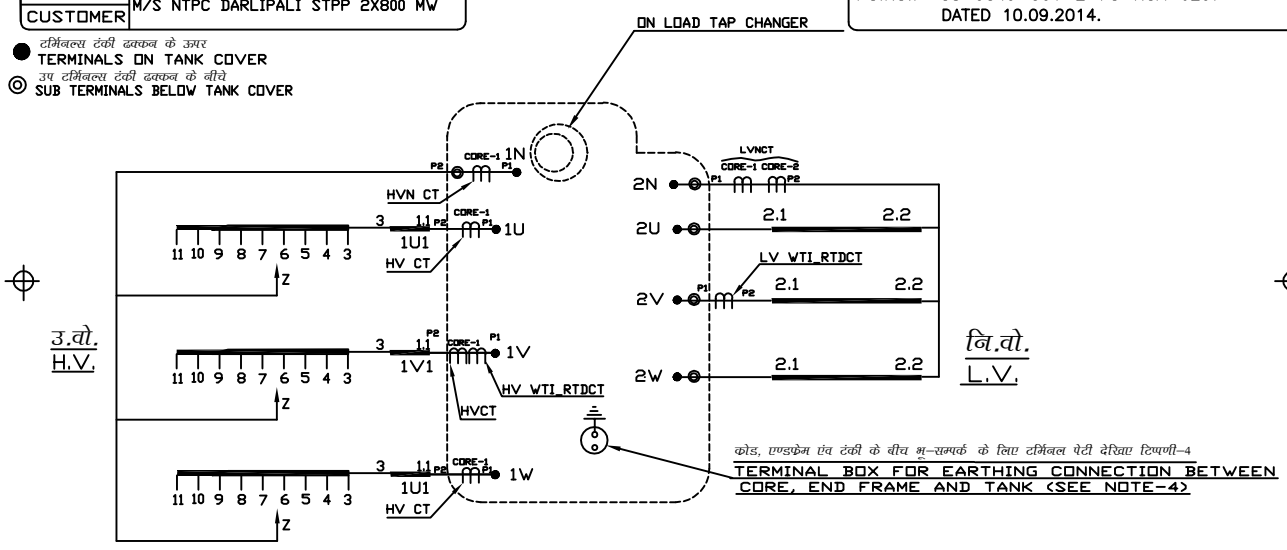
उ. वो. H.V.	650 KVP	275 KVrms
नि. वो. L.V.	170 KVP	70 KVrms
उ. वो. न्यूट्रल H.V.N.	95 KVP	38 KVrms
नि. वो. न्यूट्रल L.V.N.	170 KVP	70 KVrms

निर्माणकार की क्रम संख्या / MAKER'S SERIAL NO.	2041
वैद्युत विनिर्देश संख्या / ELEC.SPEC. NO.	6268
निर्माण वर्ष / YEAR OF MANUFACTURE	201
आरेख ड्राईंग संख्या / DIAGRAM DRAWING NO.	14561951479
प्रारुप ड्राईंग संख्या / O.G.A. DRAWING NO.	04560050430
कोड और कुंडलन कि.ग्रा. / CORE & WINDING (Kg)	27800
तेल का भार कि.ग्रा. / WEIGHT OF OIL (Kg.)	16020
पूर्ण भार कि.ग्रा. / TOTAL WEIGHT (Kg)	65900
तेल का भार कि.ग्रा. / OIL QUANTITY (Litre)	18000
परिवाहन भार N_2 भरा कि.ग्रा. / TRANSPORT WEIGHT OIL FILLED (Kg)	48200
टंकी से निकालने का भार कि.ग्रा. / UNTANKING WEIGHT (Kg)	27800

PO.NO.: CS-9549-501-2-FC-NOA-6207 DATED 10.09.2014.

● टर्मिनल्स टंकी ढक्कन के ऊपर — TERMINALS ON TANK COVER

◎ उप टर्मिनल्स टंकी ढक्कन के नीचे — SUB TERMINALS BELOW TANK COVER



TYPE : OLTC - MII-350-60/C-10090

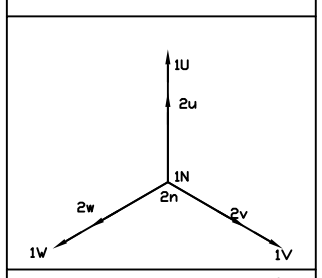
TAPPING RANGE:+10% TO -10% IN 8 EQUAL STEPS OF 2.5% SIZE

स्विच स्थान SWITCH POSITION	चालक तारें संयोजित LEADS JOINED	उच्च वोल्ट H.V.TERMINALS 1U,1V,1W: शून्य भार वोल्टता कि.वो. NO LOAD VOLTAGE KV	निर्धारित धारा ऐम्पियर RATED CURRENT AMPS.	निम्न वोल्ट L.V.TERMINALS 2U,2V,2W: शून्य भार वोल्टता कि.वो. NO LOAD VOLTAGE KV	निर्धारित धारा ऐम्पियर RATED CURRENT AMPS.	IMPEDANCE MEASURED AT 31.5 M.V.A. BASE
1(MAX.)	(Z-11)	145.2	125.252			
2	(Z-10)	141.9	128.164			
3	(Z-9)	138.6	131.216			
4	(Z-8)	135.3	134.416			
5(NT)	(Z-7)	132.0	137.777	34.5	527.146	
6	(Z-6)	128.7	141.310			
7	(Z-5)	125.4	145.028			
8	(Z-4)	122.1	148.948			
9(MIN.)	(Z-3)	118.8	153.085			

LOSSES

	GUARANTEED	MEASURED
NO LOAD LOSS	18 kW	
LOAD LOSS	120 kW	

VECTOR DIAGRAM



VECTOR GROUP YNyn0

BUSHING CT DETAILS

SL. NO.	CT NOMENCLATURE	LOCATION	RATIO	ACCURACY CLASS	BURDEN VA	KNEE POINT VOLTAGE,Vk	MAG. CURRENT, Ie AT Vk/2	SECONDARY RESISTANCE AT 75°C	TERMINALS CONNECTED
01	H.V. WTI_RTD CT	HV TURRET	153.1/2.6-2.4-2.2-2.0	±5.0%	15	-	-	-	1S1-1S
02	H.V. WTI_RTD CT	LV TURRET	527.15/3.0-2.8-2.6-2.4	±5.0%	15	-	-	-	2S1-2S
03	H.V. CT	HV TURRET	200/1A	PS	-	≥ 200 V	≤ 30 mA	≤ 1.0 Ω	3S1-3S2
04	HVN CT	HVN TURRET	200/1A	PS	-	≥ 200 V	≤ 30 mA	≤ 1.0 Ω	4S1-4S2
05	LVN CT CORE-1	LVN TURRET	800/1A	PS	-	≥ 500 V	≤ 30 mA	≤ 5.0 Ω	5S1-5S2
	CORE-2	LVN TURRET	800/1A	5P20	15	-	-	-	6S1-6S2

टिप्पणियाँ:-
1. ऊपर की सारणी में शून्य भार वोल्टता दिखलाई गइ है ।
2. परिणामित्र के आपेक्षित टर्मिनल स्थान लगभग यहाँ दिखाऐ अनुसार हैं ।
3. टंकी कोड और कुंडलन के साथ पूर्ण विर्वात तथा तेल के दवाव 0.86 किग्रा /से.मी. वर्ग लिए उपयुक्त है ।
4. कोड , एण्डफ्रेम एंव टंकी के बीच भू-सम्पर्क बनाने वाली श्रंखला को ढक्कन हटाने से पहले अलग करें ।

NOTES:- 1) THE ABOVE TABLE GIVES VOLTAGE AT NO LOAD.
2) THE RELATIVE TERMINAL POSITIONS ON TRANSFORMER ARE APPROXIMATELY AS SHOWN
3) THE TANK IS SUITABLE FOR FULL VACUUM WITH CORE AND WINDING INSIDE AND OIL
4) EARTHING CONNECTION BETWEEN CORE, END FRAME & TANK SHOULD BE REMOVED BEFORE LIFTING THE COVER.

W.O.-71191P17400

भारत में निर्मित — MADE IN INDIA

NOTE TO SHOP:-
1. ENGRAVE MAKER'S SERIAL NO.,YEAR OF MANUFACTURE
2. % IMPEDANCE VOLTAGE ON EACH PLATE AFTER JOB IS TESTED.
2. ENGRAVED LETTERS TO BE FILLED WITH BLACK PAINT.

NOTES TO DIAGRAM PLATE MANUFACTURER
1. CONSULT ENGINEERS BEFORE ENGRAVING WEIGHTS AND OIL QUANTITIES.
2. RATING PARTICULARS TO BE ENGRAVED OR MACHINE STAMPED AND FILLED IN BLACK HAND STAMPING NOT PERMITTED.

2.LETTERING:-
I.LETTER HEIGHT FOR VARIOUS HEADINGS SHALL BE AS PER TABLE - 1.
II.BILINGUAL COMPANY'S MONOGRAM TO BE AS PER STANDARD AA 040121 OF SIZE 60MM.

3.FINISH:-
I.PLATES ARE TO BE MANUFACTURED BY ETCHING PROCESS.
II.ALL LETTERS,DIVIDING LINES,BORDER LINES & FIGURES ETC. TO BE BLACK .
III.BACK GROUND TO BE SATIN SILVER.
4.THE SURFACE OF THE DIAGRAM PLATE SHOULD BE DONE AS NEAR AS POSSIBLE TO DRAWING .
5.DRILLING IS TO BE DONE IN PLATE BEFORE ENGRAVING OR ANODISING .
6. DRAWING NO.14561951479 REV.01 V.DNO.71191P17400 TO BE PAINTED ON THE BACK OF THE PLATE .

7.PACKING:-
RATING & DIAGRAM PLATE TO BE SUITABLY PACKED IN POLYTHENE COVERS (500 MICRONS THICKNESS) TO AVOID DAMAGE DURING TRANSIT / STORING.

8.MATERIAL:-
FOR STAINLESS STEEL 1.6TK.SIZE AND DRILLING OF PLATE SEE DRAWING NO. 449919000010.

9.NOTES TO CUSTOMER :-
I - THE RATING & DIAGRAM PLATE IS MADE OF ANODISED STAINLESS STEEL.
II - SEE NOTE TO SHOP ALSO.
III- VEIGHTS AND OIL QUANTITIES ARE APPROXIMATE AND FINAL VALUES SHALL BE FURNISHED AFTER FINALISATION OF DESIGN.

TABLE - 1

SIZE OF THE RATING PLATE HEADING	LETTER SIZE ENGLISH
BHARAT HEAVY ELECTRICALS LIMITED JHANSI	8
MADE IN INDIA	6
NAME OF EQUIPMENT	6
RATING PARTICULARS NOMENCLATURES	4
NOTES	3

REV	DATE	ALTERED	CHECKED	APPROVED
02	16/3/17		MSC	CPS
01	06/08/15		MSC	V.JASEJA

DRAWING REVISED TO UPDATE WEIGHTS

DRAWING REVISED AS PER NTPC COMMENTS.

W.O. 71191P17400

PO. NO. :- CS-9549-501-2-FC-NOA-6207

SPEC. NO. -

STATUS - DISTRIBUTION

BHEL TRE-1 TRX-1 TRM-3

NTPC

NTPC DRG. NO. 9549-501-PVE-B-20

BHEL DRG. NO. 1 456 19 51 479

CUSTOMER : M/S NTPC DARLIPALI STPP 2X800 MW

Hkkjr gsoh bysdfVªdYl fyfeVsM
>Waklh
BHARAT HEAVY ELECTRICALS LTD.
JHANSI

	NAME	SIGN	DATE
DRN	PAWAN		27.12.14
CHD			
APPD	V.JASEJA		

TITLE
RATING & DIAGRAM PLATE
31.5 MVA, 132/34.5 KV ONAN COOLED MISC SER TRANSFORMER

	DEPT	SIGN	DATE

SCALE NTS

DRAWING NO. 1 456 19 51 479 REV. 02

SHEET 01 OF 01

SIZE A1

(ALL DIMENSIONS ARE IN mm)

FIRST ANGLE PROJECTION

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT