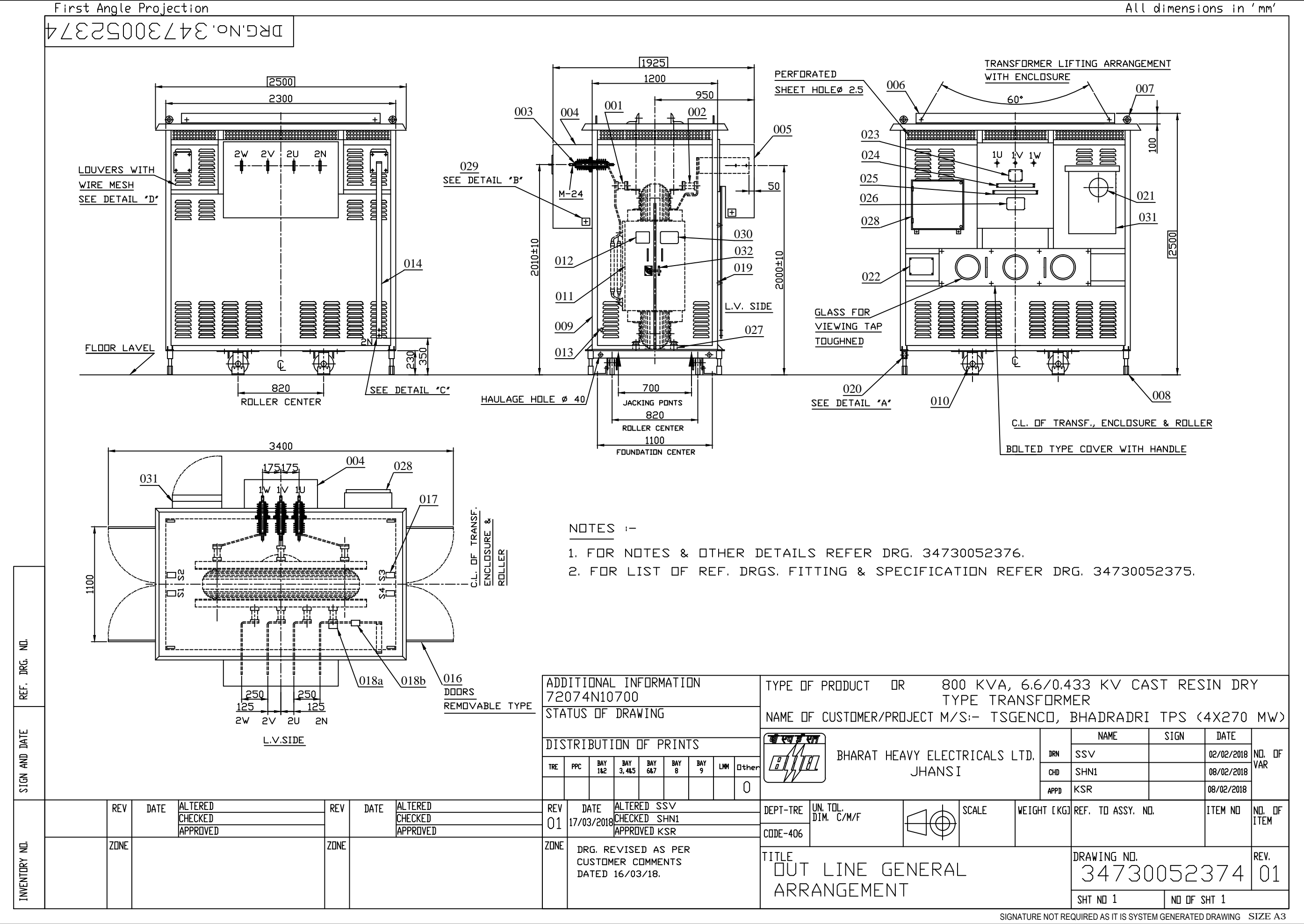


# Annexure-G

Drawings of 800kVA dry type  
transformer

(for reference in Udangudi  
project)


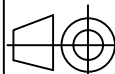


All dimensions in 'mm'

## LIST OF FITTINGS

SPECIFICATIONS	
TYPE	DRY TYPE CAST RESIN 3 PHASE
RATED POWER	800 kVA
VOLTAGE RATIO	6600/433 VOLTS
VECTOR GROUP	Dyn11
METHOD OF COOLING	AN
TEMPERATURE RISE	90°C ABOVE AMBIENT TEMP. OF 50°C
INSULATION CLASS	H
STANDARD	CONFORMING TO I.S. 11171-1985
IRON / LOAD LOSSES(KW)	2.4/9.0 kW (FIRM)
IMPEDANCE	5% ± IS TOL.
PROTECTION CLASS FOR ENCLOSURE	I.P. - 33
CORE COIL ASSY. (KG.)	3400 (APPROX.)
ENCLOSURE (KG.)	600 (APPROX.)
SHIPPING WEIGHT (KG.)	4000 (APPROX.)
OFF-CIRCUIT TAPS ON H.V.	+ 5% TO - 5% IN STEP OF 2.5 %

REFERENCE	DRAWING
B.H.E.L. DRG. NO.	DRG. DESCRIPTION
34736250442	WIRING DIAGRAM
34730650825	H.V. CABLE BOX
34731951139	R. & D. PLATE
34730350358	H.V. BUSHING
34730052377	MARSHALLING BOX
34730052374	DGA
34730052376	DETAIL & NOTES
34730650826	L.V. CABLE BOX

ADDITIONAL INFORMATION 72074N10700										TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY TYPE TRANSFORMER									
STATUS OF DRAWING										NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)									
DISTRIBUTION OF PRINTS										<div></div> <div>BHARAT HEAVY ELECTRICALS LTD. JHANSI</div>				DRN	NAME		SIGN	DATE	NO. OF VAR
TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LWM	Other	SSV							02/02/2018			
									CHD						SHN1		08/02/2018		
								0	APPD						KSR		08/02/2018		
REV 01	DATE 17/03/2018	ALTERED SSV CHECKED SHN1 APPROVED KSR								DEPT-TRE	UN. TOL. DIM. C/M/F		SCALE	WEIGHT [KG]	REF. TO ASSY. NO.		ITEM NO	NO. OF ITEM	
ZONE	DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.								CODE-406										
TITLE LIST OF FITTINGS										DRAWING NO. 34730052375				REV. 01					
										SHT NO 1				NO OF SHT 1					

First Angle Projection

All dimensions in 'mm'

DRG. NO. 34730052376

4 HOLES M-8

PAD FOR ENCLOSURE  
TO STATION EARTHING  
12TK. STEEL PLATE

DETAIL-A

40

HOLE M-12

DETAIL-B

029

LOUVER  
OPENING

DETAIL-D

FLOOR LEVEL

M-16

FOUNDATION PLATE  
WITH STUD AND HARDWARE

DETAIL-E

NOTES:-

1. INTERIOR & EXTERIOR PAINT SHADE 275 OF IS:5 OPALINE GREEN EPOXY PAINT.

2. JACKING POSITION FOR TRANSFORMER ARE PROVIDED.

3. TRANSFORMER CAN BE REMOVED ALONG WITH BASE OF ENCLOSURE.

4. DIMENSIONS MARKED THUS ARE OVERALL SHIPPING DIMENSIONS EXCLUDING PACKING.

5. THE CABLE BOX CAN BE REMOVED WITHOUT DISCONNECTING HV CABLE.

6. ALL HARDWARES FOR ENCLOSURE WILL BE CADMIUM PLATED PASSIVATED/ZINC PLATED PASSIVATED.

7. ACCESS COVERS AND DOORS WILL BE WITH NITRILE RUBBER GASKETS.

8. ENCLOSURES DIMENSIONS SHALL HAVE ± 20 MM. TOLERANCE.

9. JACKING ARRANGEMENT OF ENCLOSURE TO BE USED FOR WITHDRAWAL OF TRANSFORMER WITH BASE PLATE FROM ENCLOSURE.

10. CLEARANCE - HV SIDE PHASE TO PHASE & PHASE TO EARTH 120mm MIN. & 100mm MIN. RESPECTIVELY.  
(EXTERNAL TERMINAL) LV SIDE PHASE TO PHASE & PHASE TO EARTH 25 mm MIN.

11. DOORS ARE PROVIDED WITH HINGES HAVING REMOVEABLE PINS.THE PINS CAN BE TAKEN OUT FOR REMOVAL OF THE DOORS.

2 HOLES Ø14

DETAIL "C"

HARD CPR. STRIP 5TK.  
ALONG WITH HARDWARES

HV SIDE

JACKING POINT

LV SIDE

FOUNDATION PLAN

REF. DRG. NO.	SIGN AND DATE	INVENTORY NO.	REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
			CHECKED	CHECKED	CHECKED	CHECKED	CHECKED	CHECKED	CHECKED		
			ZONE			ZONE			ZONE		

ADDITIONAL INFORMATION	TYPE OF PRODUCT	OR	800 KVA, 6.6/0.433 KV CAST RESIN DRY								
72074N10700			TYPE TRANSFORMER								
STATUS OF DRAWING	NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)										
DISTRIBUTION OF PRINTS	Bharat Heavy Electricals Ltd. Jhansi										
TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LMN	Other			
								0			
REV 01	DATE 17/03/2018	ALTERED SSV	CHECKED SHN1	APPROVED KSR	DEPT-TRE	UN. TOL. DIM. C/M/F	SCALE	WEIGHT (KG)	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM
DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.					TITLE			DRAWING NO. 34730052376			
					DETAIL & NOTES			REV. 01			
								SHT NO 1 NO OF SHT 1			

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE: A3

First Angle Projection

All dimensions in 'mm'

DRG.No. 34730052377

TABLE OF FITTING

IT.NO.	DESCRIPTION	QTY.
01	M. BOX (BODY 2.0 MMTK.H.R.C.SHEET)	1 NO.
02	TEMP. SCANNER (PECON MAKE, MODEL NO. TR7570)	1 NO.
03	TUBULAR HEATER (70/80 WATTS)	1 NO.
04	EARTHING PAD M-12 S.STEEL 25 SQ. 12TK.	2 NOS.
05	WINDOW GLASS	1 NO.
06A	TERMINAL BLOCK 1 TO 30 NOS. (CAT- M4) ( INCLUDING 4 NOS. CATD M 4 TERMINALS )	1 SET
06B	TERMINAL BLOCK 1 TO 20 NOS.	1 SET
07	HANDLE WITH PAD LOCKING ARRGT. & LOCK	1 NO.
08	HINGE TYPE DOOR WITH 4TK.X20WIDE NEOPRENE RUBBER GASKET ON BODY	1 NO.
09	SWITCH & SOCKET (5 AMP. , 240 V.)SSK/ANCHOR	1 NO.
10	REMOVABLE GLAND PLATE (2.0TK S. SHT.)	1 NO.
11	THERMOSTAT 30°C-75°C	1 NO.
12	MOUNTING BRACKET 5TK.X50X100 LG.	4 NOS.
13	ILLUMINATION LAMP ASSY. SSK./ANCHOR (40W)	1 NO.
14	HEATER SWITCH TOGGLE TYPE KAYCEE MAKE	1 NO.
15	LAMP SWITCH TOGGLE TYPE KAYCEE MAKE	1 NO.
16	DANGER LABEL 415V.	1 NO.

NOTES:-

1. FOR WIRING REFER DRG. NO. 34736250442

2. PAINT SHADE 275 OF IS:5 OPALINE GREEN EPOXY PAINT.

3. INSIDE WHITE COLOUR.

4. PROTECTION CLASS IP - 55.

ADDITIONAL INFORMATION  
72074N10700

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LMH	Other
								0

TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY TYPE TRANSFORMER

NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)

DRN

CHD

APPD

TBA,SSV

SHN1

KSR

SIGN

DATE

NO. OF VAR

02/02/2018

08/02/2018

08/02/2018

DEPT-TRE UN. TOL. DIM. C/M/F

CODE-406

SCALE

WEIGHT (KG)

REF. TO ASSY. NO.

ITEM NO

NO. OF ITEM

TITLE MARSHLING BOX

DRAWING NO. 34730052377

SHT NO 1

NO OF SHT 1

REV. 01

REV 01

DATE 17/03/2018

ALTERED SSV

CHECKED SHN1

APPROVED KSR

DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.

INVENTORY NO.

REF. DRG. NO.

SIGN AND DATE

REV DATE ALTERED CHECKED APPROVED

ZONE

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE: A3

First Angle Projection

All dimensions in 'mm'

DRG. NO. 34730350358

M24X1.5 THREAD ON BOTH SIDES

EC COPPER STEM

EPOXY RESIN

108Ø

50Ø

55

315

25

425

4 HOLES 10 Ø

55

110

140

110

140

TECHNICAL SPECIFICATION

1. ONE MINUTE DRY WITH STAND VOLTAGE----- 42 KV.

2. IMPULSE WITH STAND VOLTAGE----- 95 KV.

3. DYNAMIC RATING ----- 2.55 X 44 KAP.

4. RATED CURRENT ----- 250 AMP.

5. RATED VOLTAGE----- 12 KV.

6. GENERALLY CONFIRMING TO STANDARD----- IS 2099

7. CREEPAGE DISTANCE----- 325 mm.

8. FAULT LEVEL ON HV SIDE ----- 44KA FOR 1 SEC.

ADDITIONAL INFORMATION  
72074N10700

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LMN	Other
								0

TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY TYPE TRANSFORMER

NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)

DRN

SSV

02/02/2018

NO. OF VAR

CHD

SHN1

08/02/2018

APPD

KSR

08/02/2018

DEPT-TRE UN. TOL. DIM. C/M/F

CODE-406

SCALE

WEIGHT (KG)

REF. TO ASSY. NO.

ITEM NO

NO. OF ITEM

TITLE H.V. BUSHING. EPOXY

DRAWING NO. 34730350358

REV. 01

SHT NO 1 NO OF SHT 1

REF. DRG. NO.

SIGN AND DATE

INVENTORY NO.

REV	DATE	ALTERED	REV	DATE	ALTERED
		CHECKED			CHECKED
		APPROVED			APPROVED
ZONE			ZONE		

REV 01

DATE 17/03/2018

ALTERED SSV

CHECKED SHN1

APPROVED KSR

DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE: A3

First Angle Projection

All dimensions in 'mm'

DRG.No. 34730650825

700

800

600

006

004

375

110 MIN.

001

003

007

008

1U 175 1V 175 1W

002

005

TABLE OF FITTINGS

IT.NO.	DESCRIPTION	QTY.
001	CABLE BOX <BOLTED TO ENCLOSURE>	01
002	TERMINAL BUSHING <EPOXY> 12KV.	03
* 003	LUG	03
* 004	CABLE <3C×240 Sq.mm. ARMORED AL CABLE>	01
005	INSPECTION COVER GASKETTED WITH HANDLE	01
* 006	BRASS CABLE GLAND	01
007	EARTHING PADS <SUITABLE FOR M-12 SCREW>	02
008	REMOVABLE STEEL GLAND PLATE	01

NOTE:-

\* 1. THESE ITEMS ARE NOT IN SCOPE OF B.H.E.L. JHANSI SUPPLY.  
2. DEGREE OF PROTECTION IP-54.

REF. DRG. NO.

SIGN AND DATE

INVENTORY NO.

REV	DATE	ALTERED	CHECKED	APPROVED	REV	DATE	ALTERED	CHECKED	APPROVED
ZONE					ZONE				

ADDITIONAL INFORMATION  
72074N10700

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LMM	Other
								0

REV 01 DATE 17/03/2018  
ALTERED SSV  
CHECKED SHN1  
APPROVED KSR

DRG. REVISED AS PER  
CUSTOMER COMMENTS  
DATED 16/03/18.

TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY  
TYPE TRANSFORMER

NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS <4X270 MW>

DRN

SSV

CHD

SHN1

APPD

KSR

NAME

SIGN

DATE

02/02/2018

08/02/2018

08/02/2018

NO. OF VAR

DEPT-TRE UN.TOL. DIM. C/M/F

CODE-406

SCALE

WEIGHT [KG]

REF. TO ASSY. NO.

ITEM NO

NO. OF ITEM

TITLE H.V.CABLE BOX

DRAWING NO. 34730650825

REV. 01

SHT NO 1

NO OF SHT 1

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE: A3

First Angle Projection

All dimensions in 'mm'

DRG.No. 34730650826

1200  
1100  
500  
400  
250  
125  
125  
250  
2W  
2V  
2U  
2N  
001  
002  
003  
004  
005  
006  
007  
SEE NOTE - 1

2 HOLESØ14 BUSBARS

40 20

10TK.X80 COPPER BUSBAR

005  
007

NOTES:-

\* 1. THESE ITEMS ARE IN NOT SCOPE OF B.H.E.L. JHANSI SUPPLY.  
2. DEGREE OF PROTECTION IP -54.

TABLE OF FITTINGS

ITEM NO.	DESCRIPTION	QTY.
001	CABLE BOX (BOLTED ON ENCLOSURE)	001
002	REMOVABLE STL. GLAND PLATE	001
* 003	CABLE GLAND BRASS	
004	INSPECTION COVER GASKETTED WITH HANDLE	002
* 005	LUGS.	
006	EARTHING PADS (SUITABLE FOR M-12 SCREW)	002
* 007	CABLE (2-1C×630 Sq.mm. XLPE) PER PHASE & (1-1C×630 Sq.mm. XLPE) NEUTRAL CABLE	

REF. DRG. NO.

SIGN AND DATE

INVENTORY NO.

REV	DATE	ALTERED	CHECKED	APPROVED	REV	DATE	ALTERED	CHECKED	APPROVED
ZONE					ZONE				

ADDITIONAL INFORMATION  
72074N10700

STATUS OF DRAWING

DISTRIBUTION OF PRINTS

TRE	PPC	BAY 1&2	BAY 3,4&5	BAY 6&7	BAY 8	BAY 9	LM	Other
								0

REV 01  
DATE 17/03/2018  
ALTERED SSV  
CHECKED SHN1  
APPROVED KSR

DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.

TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY TYPE TRANSFORMER

NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)

BHARAT HEAVY ELECTRICALS LTD. JHANSI

DRN	NAME	SIGN	DATE	NO. OF VAR
SSV			02/02/2018	
CHD	SHN1		08/02/2018	
APPD	KSR		08/02/2018	

DEPT-TRE UN. TOL. DIM. C/M/F

CODE-406

SCALE

WEIGHT (KG)

REF. TO ASSY. NO.

ITEM NO

NO. OF ITEM

TITLE L.V. CABLE BOX

DRAWING NO. 34730650826

REV. 01

SHT NO 1

NO OF SHT 1

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE: A3



All dimensions in 'mm'

# भारत हेवी इलेक्ट्रिकल्स लिमिटेड झांसी

## BHARAT HEAVY ELECTRICALS LIMITED JHANSI

### शुष्क प्रकार का परिणामित्र

LVNCT-1 RATIO 1250/1A PS CLASS,  $V_k < (50R_{ct} + 250)V$ ,  $I_e < 30mA$ ,  $R_{ct} < 6.25\Omega$   
LVNCT-2 RATIO 1250/1A 5P20, 20VA

**CAUTION** :- DE-ENERGISE TRANSFORMER  
BEFORE CHANGING THE TAP

भारत में निर्मित MADE IN INDIA

### DRY TYPE CAST RESIN TRANSFORMER

शीतन प्रकार	AN
TYPE OF COOLING	

निर्धारण (कि.वो.ए.)	800
RATING (kVA)	

मानक सामान्यतः	IS:11171
STANDARD GENERALLY TO	1985

टेप संख्या TAP NO.	वोल्टता VOLTAGE	
	उ. वो.(वोल्टज) H.V.(VOLTS)	नि. वो.(वोल्टज) L.V.(VOLTS)
1	6930	
2	6765	
3	6600<NT>	433
4	6435	
5	6270	

निर्धारित धारा उ. वो. (ऐ.)	69.98
RATED CURRENT HV(AMPS)	

निर्धारित धारा नि. वो. (ऐ.)	1066.70
RATED CURRENT LV(AMPS)	

प्रतिवाधा (वोल्टज)	5 % $\pm$ IS TOL.
IMPEDANCE VOLTS %	

आवरण श्रेणी रक्षण	IP-33
COVERING CLASS PROTECTION	

ड्राइंग संख्या	3 473 19 51139
DRG. NO.	

फेज संख्या	3
NO. OF PHASES	

क्रम संख्या	
SERIAL NO.	

निर्माण वर्ष	
YEAR OF MANUFACTURE	

आवृत्ति (हर्टज)	50
FREQUENCY(HZ)	

सदिश समूह	Dyn11
VECTOR GROUP	

ताप वृद्धि	90°C
TEMP. RISE OVER AMB.	

परिवात तापमान	50°C
AMBIENT TEMPERATURE	

विद्युत रोधन स्तर उ. वो./नि वो	20 KVrms/ 60 kvp
INSUL. LEVEL HV/LV	

विद्युत रोधन श्रेणी	H
INSULATION CLASS	

भार (कि.ग्रा.)	4000K.G.
WEIGHT (kg.)	


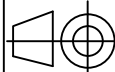
ग्राहक संदर्भ	TSGENCO
CUST. REF.	BHADRADRI

आदेश संख्या	72074N10700
W.D. NO.	

4 HOLES  $\phi$  5.5

R10

1. MATERIAL OF PLATE - 1.6 mm.TK. ANODISED ALUMINIUM.  
2. FOR GENERAL NOTES TO MANUFACTURER REFER  
DRG. NO. 4 473 19 50003.

ADDITIONAL INFORMATION 72074N10700										TYPE OF PRODUCT OR 800 KVA, 6.6/0.433 KV CAST RESIN DRY TYPE TRANSFORMER													
STATUS OF DRAWING										NAME OF CUSTOMER/PROJECT M/S:- TSGENCO, BHADRADRI TPS (4X270 MW)													
DISTRIBUTION OF PRINTS										<div><div></div><div>BHARAT HEAVY ELECTRICALS LTD. JHANSI</div></div>													
TRE	PPC	BAY 1&2	BAY 3, 4&5	BAY 6&7	BAY 8	BAY 9	LWM	Other	DRN											NAME	SIGN	DATE	NO. OF VAR
									CHD											SHN1		08/02/2018	
								0	APPD											KSR		08/02/2018	
REV 01	DATE 17/03/2018	ALTERED SSV CHECKED SHN1 APPROVED KSR								DEPT-TRE	UN. TOL. DIM. C/M/F		SCALE	WEIGHT [KG]	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM						
ZONE	DRG. REVISED AS PER CUSTOMER COMMENTS DATED 16/03/18.								CODE-406	TITLE RATING & DIAGRAM PLATE				DRAWING NO. 34731951139			REV. 01						
															SHT NO 1		NO OF SHT 1						

