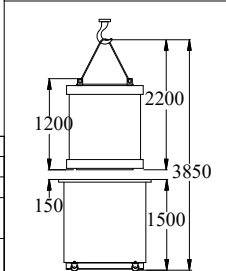
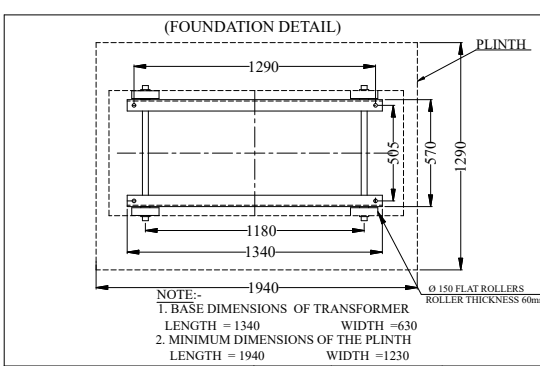
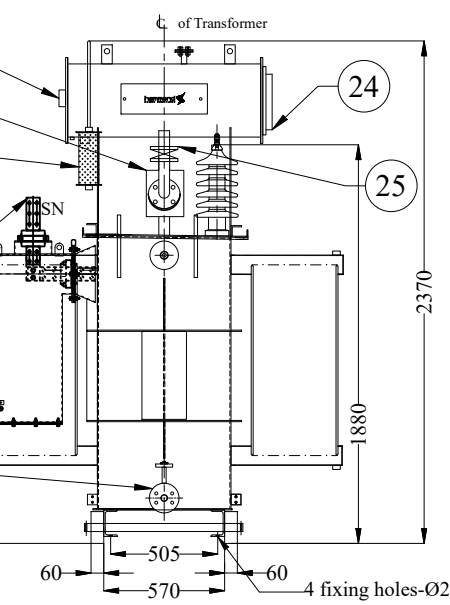
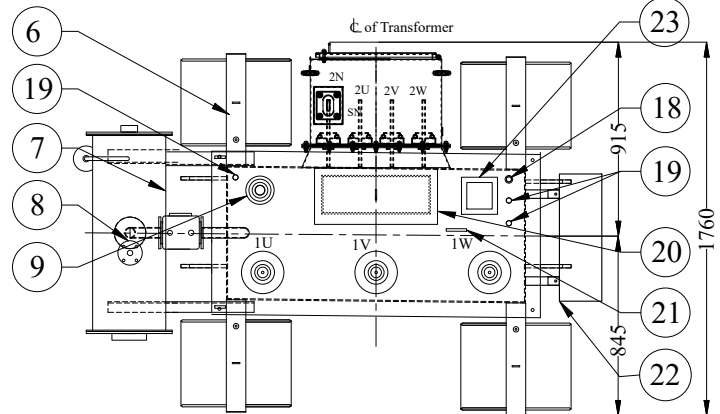
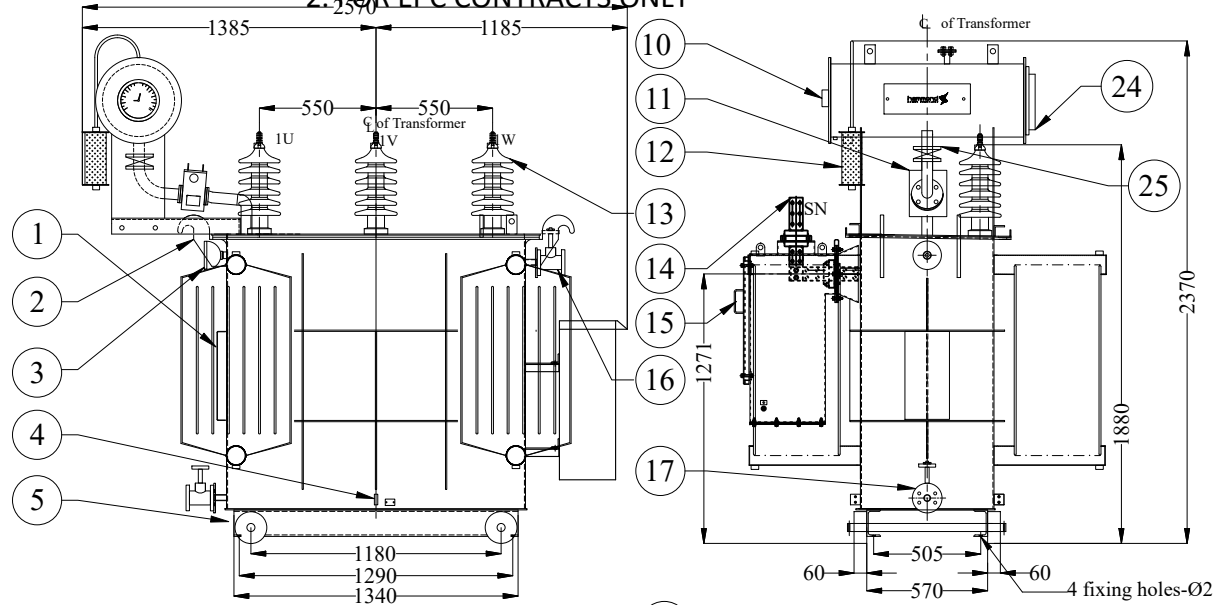


8496522/2024/EMRT-ENE51

2. FOR EPC CONTRACTS ONLY

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QTY.	PT. No.	DESCRIPTION
1	1	RATING AND TERMINAL MARKING PLATE
4	2	LIFTING LUGS
1	3	OFF CIRCUIT TAP CHANGING SWITCH WITH LOCK & KEY
2	4	EARTHING TERMINALS
4	5	BI - DIRECTIONAL FLAT ROLLERS
4	6	RADIATORS (ATTACHABLE TYPE)
1	7	CONSERVATOR WITH DRAIN PLUG & LIFTING EYES
1	8	OIL FILLING PIPE WITH BLANKING PLATE
1	9	PRESSURE RELIEF DEVICE WITH TRIP CONTACTS.
1	10	OIL LEVEL INDICATOR
1	11	GAS AND OIL RELAY WITH ALARM AND TRIP CONTACTS
1	12	DEHYDRATING SILICAGEL BREATHER
3	13	H.V BARE BUSHINGS
1	14	SEPARATE NEUTRAL BUSHING
1	15	L. V CABLE BOX
1	16	FILTER VALVE WITH BLANKING PLATE
1	17	DRAIN CUM FILTER VALVE WITH BLANKING PLATE
1	18	AIR RELEASE PLUG
3	19	THERMOMETER POCKETS
1	20	INSPECTION COVER
3	21	COVER LIFTING EYES
1	22	MARSHALLING BOX CONTAINING : a) O.T.I WITH ALARM & TRIP CONTACT TERMINALS With (4-20mA) b) W.T.I WITH ALARM & TRIP CONTACT TERMINALS With (4-20mA) c) G.O.R. ALARM & TRIP CONTACT TERMINALS d) W.T.I. CT CONTACT TERMINALS e) PRV WITH TRIP CONTACT TERMINALS f) M.O.G. 'LOW OIL LEVEL ALARM' CONTACT TERMINALS
1	23	WTI CT TERMINAL BOX
1	24	MAGNETIC OIL LEVEL GAUGE WITH LOW LEVEL ALARM CONTACTS
1	25	SHUT-OFF VALVE BETWEEN GOR AND CONSERVATOR.

FOR CUSTOMER'S APPROVAL/RECORDS

kVA	PHASE	FREQUENCY	VECTOR GROUP	COOLING	VOLTAGE (V)		CURRENT (A)	
					H.V.	L.V.	H.V.	L.V.
630	3	50 Hz	Dyn11	ON AN	33000	415	11.0	876.48

APPROXIMATE DIMENSIONS & WEIGHT

- LENGTH :2570, WIDTH :1760, HEIGHT :2370
- UNTANKING MASS : 1840 KG.
- TANK AND FITTINGS : 1170 KG.
- OIL WEIGHT : 900 KG.
- TOTAL WEIGHT : 3910 KG.
- OIL QUANTITY : 1070 LTRS.
- ALL HARDWARE HOT DIP GALVANIZED
- PAINT :- POLYURETHANE LIGHT GREY SHADE NO.631, OF IS:5

NOTES

- ALL DIMENSIONS ARE IN mm (±10% TOLERANCE).
- TOLERANCE ON IMPEDANCE & LOSS FIGURES AS PER IS:1180
- THE DIMENSIONS & POSITION OF COMPONENTS SHOWN ABOVE MAY VARY DURING FABRICATION
- ALL INFORMATION CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL & THE PROPERTY OF Hammond Power Solutions Pvt.Ltd.
- REPRODUCTION OF THESE IN ANY FORM IS TO BE DONE WITH THE SPECIFIC PERMISSION OF THE COMPANY.

NOTE: ALL DIMENSIONS ARE IN mm.

CRANE LIFT DETAILS FOR UNTANKING

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APTRANSCO/VS/Vijayawada



REV. No.	DESCRIPTION	DATE	DRAWN	CHKD	APPD.	STATUS

OWNER: TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

CONTRACT: [REDACTED]

PROJECT: [REDACTED]

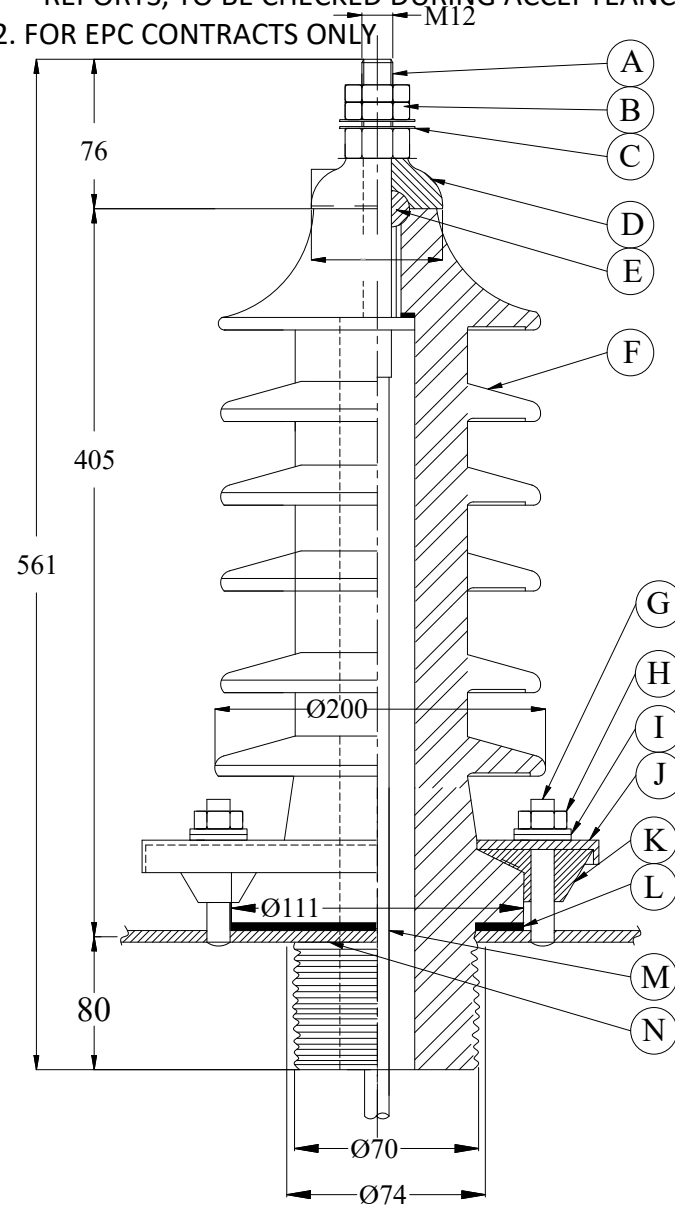
L.O.I/P.O: [REDACTED]

TITLE: GENERAL ARRGMT.

DRAWING No.	SIZE	SCALE	TOTAL SHEETS	SH. No.	REV.
MEIL-APT-1349-ATPM	A3	NTS	17	1	0



NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
2. FOR EPC CONTRACTS ONLY



NOTE : ALL DIMENSIONS ARE IN mm.

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MATERIAL LIST

QTY.	PT. NO.	DESCRIPTION AND DIMENSIONS	MATERIAL OR DRG. REF.	REMARKS
1	A	TERMINAL STEM - M12 ( IS - 3347 (PART - V / SEC 2) - 1979.)	COPPER	
3	B	HEXAGONAL NUTS - M12 ( Full nut - 1 + Lock nuts - 2)	BRASS	
2	C	FLAT WASHERS - M12	-DO-	
1	D	CAP	-DO-	
1	E	SEALING WASHER	NEOPRENE	
1	F	BUSHING ( IS - 3347 (PART - III ) - 1977.)	PORCELINE	
4	G	FIXING STUDS - M10 X 70 mm .Equally Spaced on "Ø123 " P.C.D	M.S.	
4	H	FULL NUTS - M10	M.S.	
8	I	WASHERS -10 ( Flat washers - 4 + Spring washers - 4)	M.S.	
1	J	BUSHING CLAMP	M.S.GALVANISED	
4	K	BUSHING SHOES	ALUMINIUM	
1	L	GASKET	S.R.C	
1	M	CONNECTING LEAD	M.S.	
1	N	MOUNTING PLATE	M.S.	
-	O	CREEPAGE DISTANCE : 1116 mm.(31mm/kV)		

NOTE :

- RATING 36K.V., 250 AMPS. BARE BUSHING.
- PROCELAIN BUSHING PARTS REFER IS - 8603 (PART - III ) - 1977
- BUSHING METAL PARTS REFER IS - 3347 (PART - V / SEC 2) - 1979.
- BUSHING MOUNTING HOLE " 78 "Ø
- BUSHING MOUNTING STUDS 4 NOS OF M10 X 70 mm . LONG FULL THREADED HEXAGONAL SCREWS
- NORMAL SYSTEM VOLTAGE : 33 KV.
- RATED VOLTAGE : 36 KV.
- VISIBLE DISCHARGE TEST VOLTAGE : 27 KV.
- ONE MINUT WET-DRY WITHSTAND VOLTAGE : 70 KV.
- LIGHTNING IMPULS WITHSTAND TEST VOLTAGE : 170KV.
- CREEPAGE DISTANCE (Min.) : 1116mm.
- BUSHING ROD : 12 Ø

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REV. No.	DESCRIPTION	DATE	DRAWN	CHECKED	APPD.	STATUS
OWNER:	TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
CONTRACT	[REDACTED]					
PROJECT:	[REDACTED]					
L.O.I/P.O	[REDACTED]					
TITLE:	(36K.V.,250 Amps,BARE )					
DRAWING No.	SIZE	SCALE	TOTAL SHEETS	SH.No.	REV.	
MEIL-APT-1349-ATPM	A3	NTS	17	3	0	

MANUFACTURED BY :







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SHEET NO.	CONTENTS	REV. NO.
1	CUSTOMER BLOCK	0
2	CONTENT SHEET	0
3	GENERAL ARRANGMENT	0
4	FABRICATION BILL OF MATERIAL & NOTES	0
5	GENERAL INFORMATION	0
6	GRAPHICAL GA	0
7	HEATER AND LIGHT CIRCUIT	0
8	TRANSMITTER CIRCUIT	0
9	ALARM AND TRIP CIRCUIT	0
10	DEVICE CONFIGURATION	0
11	BILL OF MATERIALS - 1	0
12	BILL OF MATERIALS - 2	0
13	TERMINAL PLAN	0

SHEET NO.	CONTENTS	REV. NO.

SHEET NO.	CONTENTS	REV. NO.

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**NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
2. FOR EPC CONTRACTS ONLY**

REV. No.	DESCRIPTION	DATE	DRAWN	CHECKED	APPD.	STATUS

OWNER: TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD  
 CONTR: [REDACTED]  
 PROJEC: [REDACTED]  
 L.O.I/P: [REDACTED]

TITLE: **CONTENT SHEET**

DRAWING No.	SIZE	SCALE	TOTAL SHEETS	SH.No.	REV.
MEIL-APT-1349-ATPM	A3	NTS	17	7	0









SR NO	SYMBOL	DESCRIPTION	SR NO.	SYMBOL	DESCRIPTION
1		THERMOSTAT	9		BUCHHOLZ RELAY
2		CCU OIL TEMPERTAURE INDICATOR	10		MAGNETIC OIL LEVEL GAUGE
3		CCU WINDING TEMPERTAURE INDICATOR	11		PRESSURE RELIF VALVES
4		ILLUMINATION LAMP	12		HEATER
5		MCB DOUBLE POLE	13		WTI CT
6		MCB SINGLE POLE	14		DOOR LIMIT SWITCH
7		OIL TEMPERATURE INDICATOR	15		SUPPLY SOCKET
8		WINDING TEMPERATURE INDICATOR	16		TERMINAL BLOCK

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NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
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REV. No.	DESCRIPTION	DATE	DRAWN	CHECKED	APPD.	STATUS
OWNER:	TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
CONTRACT						
PROJECT						
L.O.I./P.O.						
TITLE:	GRAPHICAL GA					
DRAWING No.		SIZE	SCALE	TOTAL SHEETS	SH.No.	REV.
MEIL-APT-1349-ATPM		A3	NTS	17	11	0









BILL OF MATERIALS

2. FOR EPC CONTRACTS ONLY

LOCATION	IT NO.	QTY	DEVICE NO.	DESCRIPTION	RATING	MAKE
+MBOX	1	1	-B1	THERMOSTAT	0-110 DEG C , 240VAC , 15AMP	GRISH /APT
+MBOX	2	1	-CCU1	CURRENT CONVERTING UNIT (CCU) FOR OIL TEMPERATURE	90° 260V AC/DC, DUAL 4-20mA OUT PUT	PRECIMEASURE
+MBOX	3	1	-CCU2	CURRENT CONVERTING UNIT (CCU) FOR WINDING LV TEMPERATURE	90° 260V AC/DC, DUAL 4-20mA OUT PUT	PRECIMEASURE
+MBOX	4	1	-E1	ILLUMINATION LAMP	5 WATT , 240VAC	PHILIPS/CGL
+MBOX	5	1	-F11	SOCKET SUPPLY MCB	1 POLE 16AMP ,240VAC , 10KA C CURVE	ABB/L&T/SIEMENS/SCHNEIDER
+MBOX	6	1	-F15	TRANSMITTER SUPPLY MCB	2 POLE , 6AMP, 415/240VAC , 10KA	ABB/L&T/SIEMENS/SCHNEIDER
+MBOX	7	1	-F3	HEATER & ILLUMINATION SUPPLY MCB	2 POLE , 20AMP, 415/240VAC , 10KA	ABB/L&T/SIEMENS/SCHNEIDER
+MBOX	8	1	-F71	WINDING TEMPERATURE INDICATOR LV	0-150 DEG.C,2 NO Micro Switch 5A @ 250V AC (1031H)	PRECIMEASURE
+MBOX	9	1	-F74	OIL TEMPERATURE INDICATOR	0-150 DEG.C,2 NO Micro Switch 5A @ 250V AC (1031H)	PRECIMEASURE
+MBOX	10	1	-F9	HEATER SUPPLY MCB	1 POLE 2AMP ,240VAC , 10KA C CURVE	ABB/L&T/SIEMENS/SCHNEIDER
+MBOX	11	1	-HT1	HEATER PROTECTIVE SHILDED TYPE	40 WATT, 240VAC	GRISH / APT
+MBOX	12	1	-S6	DOOR LIMIT SWITCH	6/10 AMP AC ,240VAC 1NO+1NC AUX	KAYCEE / EASSAN
+MBOX	13	1	-S0	SUPPLY SOCKET	5/15 AMP , 240VAC	ANCHOR / CPL
+MBOX	14	18	-X3	TERMINAL BLOCK	24A,800VAC, 4Sq MM SUITABLE	CONNECT WELL ,ELMEX
+MBOX	15	20	-X1	TERMINAL BLOCK	24A,800VAC, 4Sq MM SUITABLE	CONNECT WELL ,ELMEX
+MBOX	16	4	-X4D	TERMINAL BLOCK	24A,800VAC, 4Sq MM SUITABLE	CONNECT WELL ,ELMEX
+MBOX	17	5	-X2	TERMINAL BLOCK DISCONNECTED TYPE	41A,800VAC, 4Sq MM SUITABLE	CONNECT WELL ,ELMEX
+MBOX	18	6	-X4	TERMINAL BLOCK	24A,800VAC, 4Sq MM SUITABLE	CONNECT WELL ,ELMEX
+TRFR	19	1	-F75	BUCHHOLZ RELAY	2 Amp at 240 V, 50 Hz AC/DC	ATVUS/SUKRUT/VIAT
+TRFR	20	1	-F76	MAGNETIC OIL LEVEL GAUGE	5 Amps 240 V.AC / 0.5 Amps 240 V.DC	ATVUS/SUKRUT/VIAT
+TRFR	21	1	-F77	PRESSURE RELIF VALVES	AC - 240V 10 ,DC - 250V 0.4 Amps, 1NO+1NC	ATVUS/SUKRUT/VIAT
+TRFR	22	1	-LV WTI CT	LV WTI CT	2AMP	KALAPA / KAPPA/PRAGATI

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REV. No.	DESCRIPTION	DATE	DRAWN	CHECKED	APPD.	STATUS
OWNER:	TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.					
CONTRACT	[REDACTED]					
PROJECT	[REDACTED]					
L.O.I./P.O.	[REDACTED]					
TITLE:	BILL OF MATERIALS					
DRAWING No.	SIZE	SCALE	TOTAL SHEETS	SH.No.	REV.	
MEIL-APT-1349-ATPM	A3	NTS	17	16	0	



NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST

REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS

2. FOR EPC CONTRACTS ONLY

8496322/2024/EEMRT-ENE51



HAMMOND POWER SOLUTIONS PRIVATE LIMITED

MANUFACTURER'S GUARANTEED TECHNICAL PARTICULARS OF TRANSFORMER 630 KVA, 33 / 0.415 kV Distribution Transformer			
REF: GTP/630/33/OLTC/BIS/L-1		Date :11-01-2024	
Sr No	Particulars	Unit	Offered Details
	The transformer will be designed and manufactured as per IS-1180 and will be supplied with first filling of oil to IS-335		
<b>1.01. General Specifications</b>			
1	Service & Application		Continuous, Distribution Transformer
2	Type		Liquid filled
3	Location		Outdoor
4	Transformer complies to		IS-1180, IS-2026
5	Type of Cooling		ONAN
6	Type of Oil		Mineral Oil as per IS-335
<b>1.02. Rating</b>			
1	Rated kVA	KVA	630 (Level-1)
2	Rated Voltage of H.V.( Volts )/Current(Amps)	Volts & Amp	33000 V / 11.02 A
3	Rated voltage of L.V.(Volts)/Current(Amps)	Volts & Amp	415 V / 876.46 A
4	Frequency	Hz	50
5	Number of phases		3
6	System Voltage variation		+/- 10%
7			
8			
9	Maximum Ambient Temperature	° C	50
10	Max. Temperature rise in oil by thermometer above ambient Temperature	° C	40
11	Max.Temperature rise above ambient temperature of winding by resistance method	° C	45
<b>1.03. Winding Connection Details</b>			
1	Winding Material		Electrolytic copper
2	Connections		
	a. H.V. Winding		Delta
	b. L.V. Winding		Star
	c. Neutral brought out from tank		Yes
2	Tapings		
	a. Voltage range		+10% to -10% in steps of 2.5%
	b. No. of positions		9 ( 8 Steps )
	c. Step Voltage	V	825.0
3	Vector Symbol		Dyn11

PREPARED BY : Venkatesh

CHECKED BY : Srihari

APPROVED BY : Ritesh Mahor

Page 1 of 4

**Chief Engineer/Projects**  
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## HAMMOND POWER SOLUTIONS PRIVATE LIMITED

MANUFACTURER'S GUARANTEED TECHNICAL PARTICULARS OF TRANSFORMER 630 KVA, 33 / 0.415 kV Distribution Transformer			
REF: GTP/630/33/OLTC/BIS/L-1		Date :11-01-2024	
<b>1.04. Losses and Performance</b>			
1	Reference Temperature	° C	75
2	a) Total losses at 50% load at rated frequency	W	1999.5 (Max.)
	b) Total losses at 100% load at rated frequency	W	5697.5 (Max.)
3	Percentage Impedance at Normal tap	%	4.50 Subject to IS Tol.
4	No Load Current Approx	%	Less than 2% of Full load current
5	Regulation at full load at u.p.f	%	0.79%
6	Efficiency		u.p.f. 0.8 p.f.
	a. 100% Full Load	%	99.15 98.94
	b. 75% Full Load	%	99.30 99.12
	c. 50% Full Load	%	99.42 99.31
6	Maximum efficiency	%	99.5
7	Load at which Max. efficiency occurs kVA	KVA	199.00
<b>1.05. Constructional details</b>			
1	Terminal Arrangement		
	a. HV		Bare bushings
	b. LV		Cable box
2	Type of Construction		Core
3	Insulation between laminations		Carlite
4	Type of joint between core limb and yoke		Mitred
5	Type of Winding		
	a.HV Winding		Cross over
	b.LV Winding		Spiral
<b>1.06. Insulation of conductors</b>			
	a.HV Winding turn Insulation		TPC
	b.LV Winding turn Insulation		DPC
	c. Between HV and LV Winding		Oil duct + solid insulation + Oil duct
	d. Between LV Winding and core		Solid insulation
<b>1.07. Test Voltages</b>			
1	Impulse (1.2 / 50 micro second wave) withstand voltage		
	a. H.V Winding ( Basic insulation impulase level )	KVp	170
	b. L.V Winding	KVp	Not applicable
	c. HV Neutral	KVp	Not applicable
	d. LV Neutral	KVp	Not applicable

PREPARED BY : Venkatesh

CHECKED BY : Srihari

APPROVED BY : Ritesh Mahor

**Chief Engineer/Projects**  
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MANUFACTURER'S GUARANTEED TECHNICAL PARTICULARS OF TRANSFORMER 630 KVA, 33 / 0.415 kV Distribution Transformer			
REF: GTP/630/33/OLTC/BIS/L-1		Date :11-01-2024	
2	One minute power Frequency		
	withstand voltage		
	a. H.V Winding	KVrms	70
	b. L.V Winding	KVrms	3
<b>1.08. Details of Tank and Material</b>			
1	Minimum Thickness of side plates	mm	4
2	Minimum Thickness of bottom plates	mm	5
3	Minimum Thickness of cover plates	mm	5
4	Minimum Thickness of radiator (pipes or sheets)	mm	1
<b>1.09. Weight and Dimensions (Approx.)</b>			
1	Net untanking weight		1840 Kg
	(Core and windings with clamps )		
2	Volume of insulating oil	L	1070
3	Tank and fittings		1170 Kg
4	Total Weight of Transformer		3910 Kg
5	Overall dimension of transformer ( L x W x H )	mm	2570 mm x 1760 mm x 2370 mm
<b>1.10. Parts to be detached for transport</b>			
			Rollers, Breather
<b>1.11. Painting</b>			
1	Surface preparation		By grit Blasting/Sand
2	Paint type		PU
3	Shade		Light grey, Shade No. : 631
4	Thickness for Tank	Microns	80 Microns
5	Thickness for Radiators	Microns	80 Microns
<b>1.12. Current transformer</b>			
1	HV side Phase / Neutral current transformer		
	a. Ratio		Not applicable
	b. Class / Burden		Not applicable
2	LV side Phase / Neutral current transformer		
	a. Ratio		Not applicable
	b. Class / Burden		Not applicable
<b>1.13. Tests</b>			
1	Routine Tests		As per standard all the Routine tests shall be carried out at our works

PREPARED BY : Venkatesh

CHECKED BY : Srihari

APPROVED BY : Ritesh Mahor

**Chief Engineer/Projects**  
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HAMMOND POWER SOLUTIONS PRIVATE LIMITED

MANUFACTURER'S GUARANTEED TECHNICAL PARTICULARS OF TRANSFORMER 630 KVA, 33 / 0.415 kV Distribution Transformer	
REF: GTP/630/33/OLTC/BIS/L-1	Date :11-01-2024

1.14. Standard Fittings and Accessories			
S.NO.	DESCRIPTION	QTY (Number)	MAKE
1	Rating and terminal marking plate	1	
2	Lifting Lugs	4	
3	OFTC	1	
4	Uni-directional Flat Rollers	4	
5	Earthing terminals	2	
6	Radiators (Detachable)	4	
7	Conservator with drain plug	1	
8	oil filling hole with cap	1	
9	oil level indicator	1	
10	Dehydrating silicagel breather	1	
11	Separate neutral bushing	1	
12	Filter valve with blanking plate	1	
13	Drain cum filtervalve with blanking plate	1	
14	Air release device	1	
15	WTI with A & T Contacts, RTD (4 to 20mA)	1	
16	OTI with A & T Contacts, RTD (4 to 20mA)	1	
17	GOR with A & T Contacts	1	
18	Marshling box	1	
19	Spare:		
	1) HV Bushings with metal parts	1	
	2) LV Bushings with metal parts	1	
20	Spare: Silicagel Breather	2	
21	MOG with LOLA contacts	1	
22	Pressure relief valve	1	
1.19 SPECIAL REQUIREMENTS GIVEN IN TECHNICAL SPECIFICATION & CONSIDERED.			
1			
2			

QA/MKT/03A/08

PREPARED BY : Venkatesh

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