

NOTE: DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.



Drawing approval subject to valid vendor registration

FOR EPC CONTRACTS ONLY

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA

CONTRACTOR :

PO NO. 1) Minimum 300mm plinth shall be maintained for CT/PT/CVT/Isolators in the substation during foundation works to ensure safe live to ground clearances as per IE rules.

PROJECT :
2) Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/PT/CVT/Isolators requirement and compatibility.

LIST OF DRAWINGS BEING SUBMITTED FOR 245 kV CT (LIVE TANK TYPE OSKF-245)

CT RATIO: 300-500/1-1-1-1-1A (BAR TYPE PRIMARY)

SL	DRAWING NUMBER	DESCRIPTION OF DRAWING
01	Rev:00	GTP
02	411-B-10705 Rev:00	OUTLINE DIAGRAM
03	431-B-6814 Rev:00	RATING & CONNECTION PLATE
04	411-B-10706 Rev:00	SECTIONAL VIEW
05	422-B-5390 Rev:00	DETAIL OF SEC TERMINAL BOX

Note: Drawing Approval subject to valid type test reports to be checked during acceptance tests

	Chief Engineer		
	Power Systems, Planning & Design		
PRPD:	APTransco	CHKD:	APPRD:
SANGITH		SANGITH	MAYANK
24.03.2021		24.03.2021	24.03.2021

ISO : -----

⚠ CONTENTS OF THE DRAWING SHALL NOT BE MODIFIED WITHOUT PRIOR INTIMATION TO GE. REQUIRED CHANGES, IF ANY, SHALL BE HIGHLIGHTED OR MARKED AND COMMUNICATED TO GE FOR NECESSARY ACTION

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GUARANTEED TECHNICAL PARTICULARS FOR CURRENT TRANSFORMER

245kV CT RATIO - 300-500/1-1-1-1-1A



Sr. No.	Description	Technical Parameters
1	Manufacturer	GE T&D INDIA LIMITED, INDIA
2	CT Type	OSKF 245
3	Design	Live Head-type, Oil filled ,Out door & Hermatically sealed
4	Max. Systems Voltage	245 kV
5	Nominal Systems Voltage	220 kV
6	Nominal Frequency	50 Hz
7	Lightning Impulse Withstand Voltage 1.2/50µS	1050 kV
8	Power Frequency Withstand Voltage (1 min)	460 kV
9	Switching Impulse Withstand Voltage - 250/2500µS (Wet)	N/A
10	Insulator	Porcelain
11	Nominal Creepage Distance	6125 mm
12	Color of Insulator	Brown
13	Standard applicable	IEC-61869-1&2
14	Rated Primary Current (contin.)	500A
15	Rated Primary Current (extended)	600A
16	Power Frequency Withstand Voltage between Secondary & Earth	5 kV for 1 min.
17	No. of Cores	5
18	Ratio	300-500/1-1-1-1-1 A
19	Core Data (Burden & Accuracy Classes)	
	Core 1	20VA, 5P, ALF-20
	Core 2	PX (Vkp: 300@300/1, 40(Rct+10)@500/1; Rct: 3-5 Ω; Iexc: 50-30mA
	Core 3	PX (Vkp: 350@300/1, 80(Rct+5)@500/1; Rct: 3-5 Ω; Iexc: 50-30mA
	Core 4	PX (Vkp: 350@300/1, 80(Rct+5)@500/1; Rct: 3-5 Ω; Iexc: 50-30mA
20	Rated Short Time Thermal Current	40 kA / 1 sec.
21	Rated Short Time Dynamic Current	100 kAp
22	Radio Interference Voltage at 1.1 Ur/√3 at 1.0 Mhz	≤1000µV
23	Partial discharge level	10pC at Um, 5pC at 1.2 Um/√3 (Max)
24	Oil Standard (EHV Grade)	IEC 60296
25	Oil Quantity	155 Kgs
26	Oil Type	Mineral Oil
27	Dimensional details	
	a) Overall height from mounting plane (mm)	3485±100
	b) Height up to terminals from mounting plane (mm)	3070±90
	c) Mounting dimensions and diameter of mounting holes (mm)	450±10 x 450±10 (Hole to Hole); Mounting hole Ø20 x 4 nos
	d) Terminal pad dimensions (mm)	50mm Diameter; 135mm length
e) Material of primary terminal	Aluminium	
28	Details of Insulator	
	Make	BHEL/IEC/MODERN
	Type	Hollow
	Height (mm)	2270±10
	Inner diameter (mm)	160±5
	Cantilever strength	400kg
29	Seismic accelartion	0.3g
30	Corona Extinction Voltage	156 KVrms
31	Similar equipment type tested within the last 2 years	Yes
32	Transportation postion	Horizontal only
33	Overall general dimension drawing	Refer Outline Drawing
34	Total equipment weight	720kg
35	Tan delta	<0.005, As per IEC 61869-1&2

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PRPD
Sangith.R
24.03.2021

CHECKED
Sangith. R
24.03.2021

APPRD
Mayank
24.03.2021

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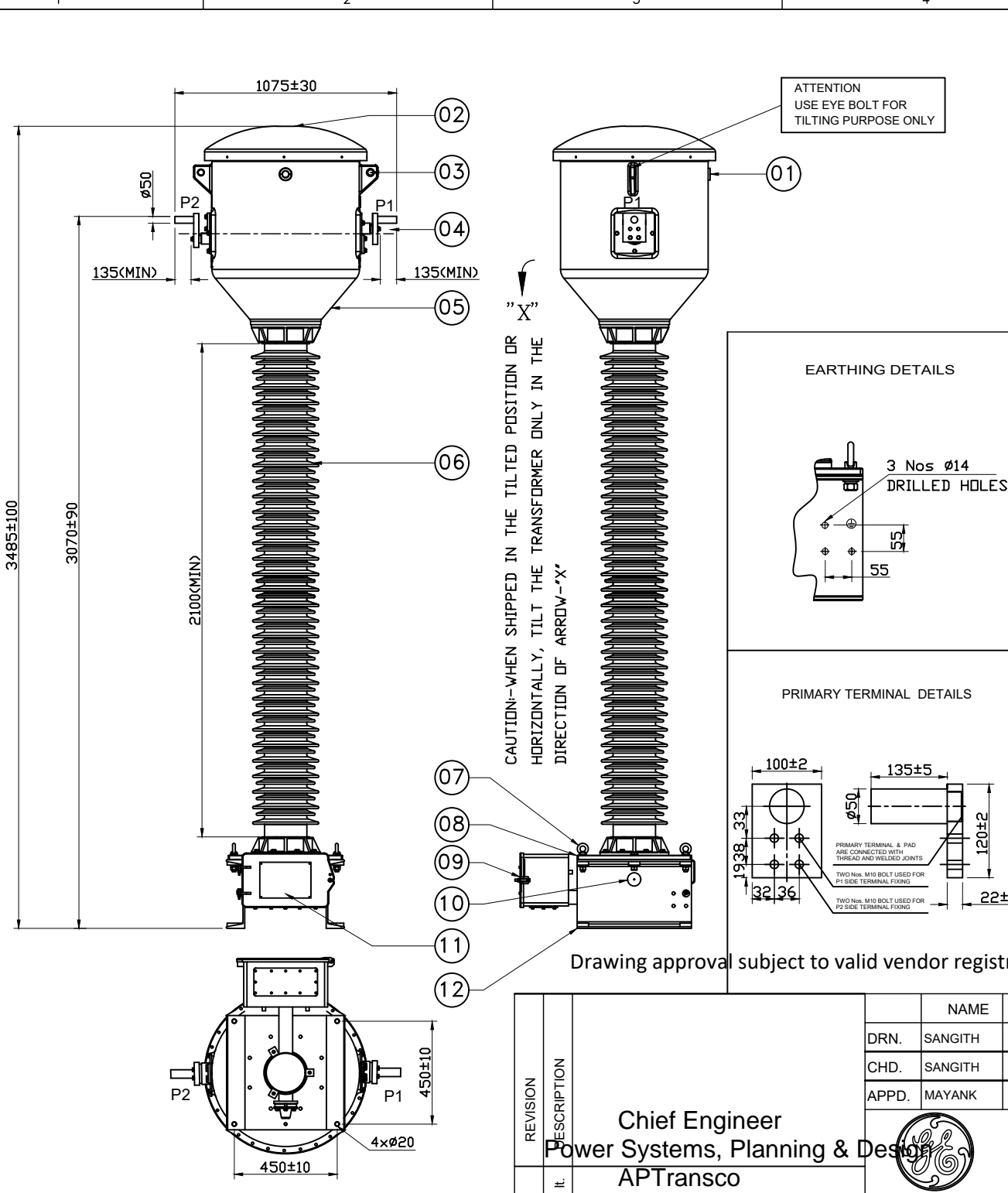
Chief Engineer
Power Systems, Planning & Design
APTransco

Signature _____
Date _____

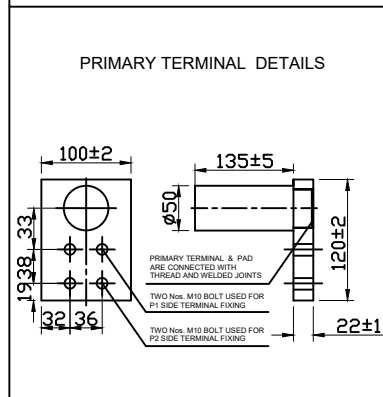
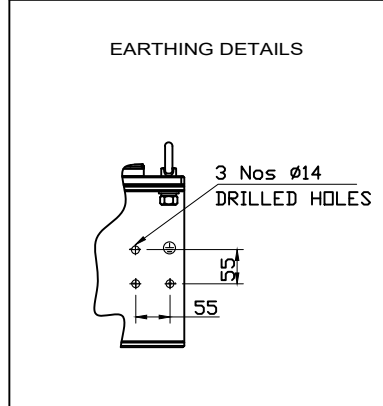
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IT.No.	DESCRIPTION	MATERIAL	15
1	OIL SIGHT GLASS	POLYCARBONATE	01
2	BELLOW COVER	ALUMINIUM	01
3	TANK LIFTING EYE	ALUMINIUM	02
4	PRIMARY TERMINAL STUD	ALUMINIUM ALLOY	02
5	TANK	ALUMINIUM	01
6	INSULATOR & END CASTING	PORCELAIN & GCI/AI	01
7	EYE BOLTS FOR LIFTING	STAINLESS STEEL	04
8	BASE PLATE	ALUMINIUM	01
9	SEC TERMINAL BOX	MS HDG / AL	01
10	OIL DRAIN DEVICE	BRASS	01
11	RATING & SCHEMATIC PLATE	STAINLESS STEEL	01
12	MOUNTING CHANNEL/EARTHING PAD	MS HDG	02



NOTES :-


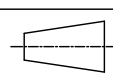
- NOMINAL CREEPAGE DISTANCE: 6125 mm.(25mm/kV)
- TOTAL WEIGHT OF C.T : 720 Kgs (Approx.)
- TOTAL SHIPPING WEIGHT: 1000 Kgs (Approx.)
- MAKE OF INSULATOR :- BHEL / IEC / MODERN
- GENERAL TOLERANCE WILL BE APPLICABLE WHERE TOLERANCE IS NOT INDICATED
- MINOR MODIFICATION WITHOUT NOTICE
- ALL FERROUS PARTS SHALL BE HOT DIP GALVANIZED
- OIL COMPLIANCE STANDARD - IS:335 / IEC:60296
- CANTILEVER STRENGTH - 400Kg (Min.)

ELECTRICAL PARAMETERS :-

RATED SYSTEM VOLTAGE	: 220 kV
HIGHEST SYSTEM VOLTAGE	: 245 kV
APPLICABLE STANDARD	: IEC:61869-1&2
RATED PRIMARY CURRENT	: 500A
RATED EXTENDED PRIMARY CURRENT	: 120% OF RATED PRIMARY CURRENT
INSULATION LEVEL	: 245/460/1050 kV (Peak)
SHORT TIME CURRENT	: 40 kA FOR 1 Sec.
DYNAMIC CURRENT	: 100kA (Peak)
RIV at 156 kV	: < 1000 µV

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CT RATIO: 300-500/1-1-1-1-1A (BAR TYPE PRIMARY)

REVISION	DESCRIPTION	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	SANGITH	24.03.2021	OUTLINE DIAGRAM FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF: -----
CHD.	SANGITH	SANGITH	24.03.2021		 
APPD.	MAYANK	MAYANK	24.03.2021		

Chief Engineer
Power Systems, Planning & Design
APTransco



GE T&D India Limited

DRG.No.
411-B-10705
Rev:00

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GE T&D INDIA LIMITED
MADE IN INDIA

CURRENT TRANSFORMER
AS PER IEC 61869-1&2

SL.No./YEAR						CUSTOMER	TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA		
RATIO (A/A)	300-500/1-1-1-1-1					TYPE	-	OSKF 245	
CORE NUMBER	1	2	3	4	5	HSV/NSV	kV	245/220	
ACCURACY CLASS	5P	PX	PX	PX	0.2S	BIL	KV(r.m.s)/kVp	460/1050	
ISF/ALF	20	-	-	-	≤ 5	FREQUENCY	Hz	50	
OUTPUT (VA)	20	-	-	-	20	RTD. CONT. CURRENT	A	500	
KPV (V)	-	40(Rct+10) @ 500/1, 300 @ 300/1		80(Rct+5) @ 500/1, 350 @ 300/1		RTD. EXT. CURRENT	A	600	
Iexc at V _k (mA)	-	50 - 30		50 - 30		RTD. THER. CURRENT	A	-	
Rct at 75°C (Ohms)	-	3 - 5		3 - 5		I _{th}	ka/S	40/1	
SECONDARY CONNECTION	P1-P2 300/1	1S1-1S2	2S1-2S2	3S1-3S2	4S1-4S2	5S1-5S2S' (SHORT 5S2 S')	I _{dyn}	ka	100
	P1-P2 500/1	1S1-1S3	2S1-2S3	3S1-3S3	4S1-4S3	5S1-5S3S' (SHORT 5S3 S')	OIL WEIGHT	Kg	155
	-	-	-	-	-	-	TOTAL WEIGHT	Kg	720
	-	-	-	-	-	-	INSULATION CLASS	-	CLASS "A"
	-	-	-	-	-	-	NOMINAL CREEPAGE	mm	6125

SCHEMATIC DIAGRAM AND CONNECTION



ATTENTION
01. L.V. BUSHING SHOULD ALWAYS BE EARTHED & DISCONNECTED ONLY FOR TAN DELTA MEASUREMENT
02. EARTHING LINK TO BE RECONNECTED FIRMLY BEFORE ENERGISING CURRENT TRANSFORMER

"A" - COMPENSATING CORE TO MEET ISF
NOTES:-
01. INSULATION OIL TYPE : MINERAL OIL (IS 335 / IEC 60296)
02. TEMPERATURE CATEGORY : -5°C TO 40°C (AS PER IEC 61869-1; CLAUSE-4.2.1)
03. STATIC LOAD WITHSTAND : 4000N (AS PER IEC 61869-1; CLAUSE-6.7)
04. "C" - CAPACITANCE/TAN DELTA POINT

DANGER:- VOLTAGE RISE WHEN SECONDARY IS OPENED

431-B-6814 Rev:00

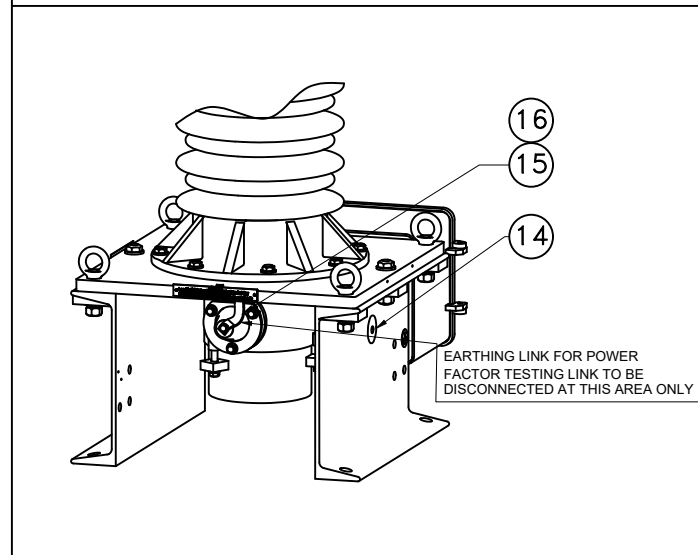
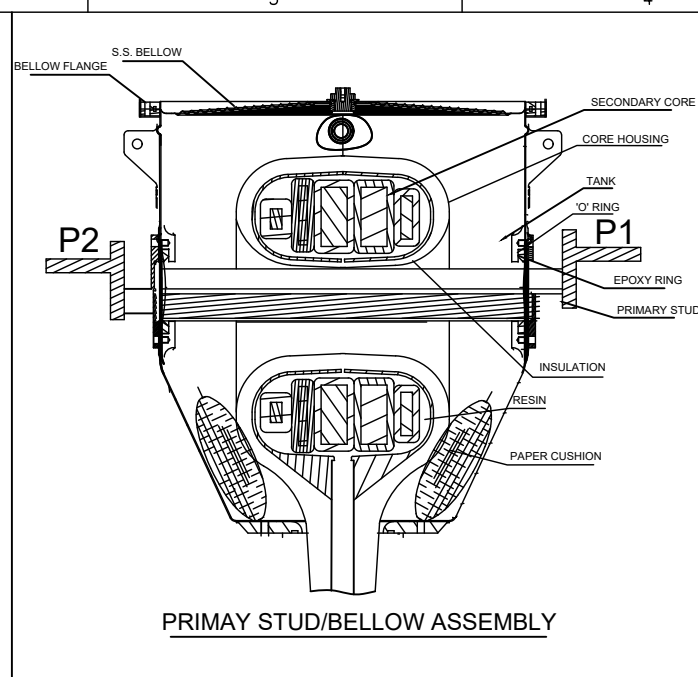
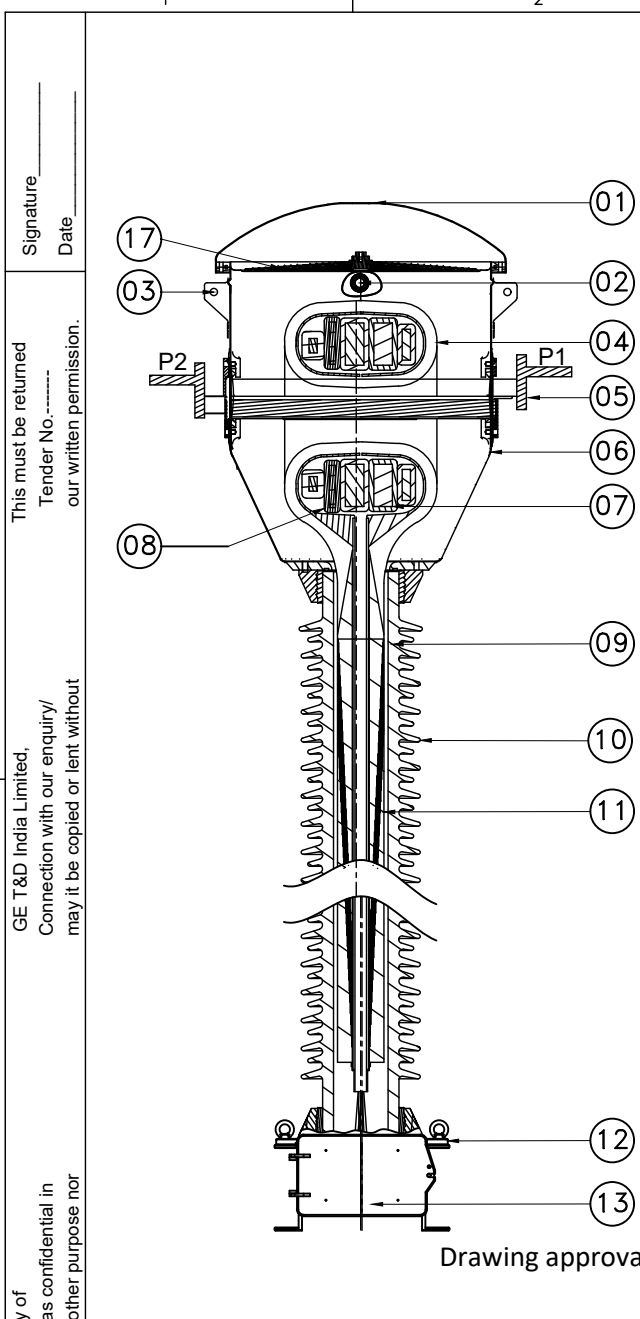
∅4 X 4 HOLES

155
145±0.5

210±0.5
220

NOTES:-
OUTDOOR PROOF (MATERIAL : STAINLESS STEEL - 0.5 mm THICK)

CT RATIO: 300-500/1-1-1-1-1A (BAR TYPE PRIMARY)				
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	24.03.2021	RATING & CONNECTION PLATE FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF:
CHD.	SANGITH	24.03.2021		
APPD.	MAYANK	24.03.2021		
Chief Engineer Power Systems, Planning & Design APTransco				DRG.No. 431-B-6814 Rev:00



IT.No.	DESCRIPTION	MATERIAL	17
01	BELLOW COVER	ALUMINIUM ALLOY	513
02	OIL SIGHT GLASS	POLYCARBONATE	
03	TANK LIFTING EYE	ALUMINIUM ALLOY	
04	HEAD INSULATION	PAPER	
05	PRIMARY TERMINAL	ALUMINIUM ALLOY	
06	TANK	ALUMINIUM ALLOY	
07	SECONDARY CORES	CRGO/SPL ALLOY	
08	SECONDARY WINDING	COPPER	
09	OIL	MINERAL OIL	
10	INSULATOR	PORCELAIN	
11	ACTIVE PART	PAPER	
12	BASE PLATE	ALUMINIUM	
13	SECONDARY TERMINAL BOX	MS HDG WITH AL. COVER	
14	OIL DRAIN VALVE	BRASS	
15	LV BUSHING FOR TAN DELTA & CAPACITANCE MEASUREMENT	COPPER-TERMINAL EPOXY- BUSHING	
16	EARTHING LINK FOR LV BUSHING	COPPER	
17	BELLOW	STAINLESS STEEL	

PRIMARY WINDING DETAILS :-

NO. OF PRIMARY TURN	: TWO
PRIMARY CONDUCTOR MATERIAL	: ALUMINIUM ALLOY
PRIMARY TERMINAL MATERIAL	: ALUMINIUM ALLOY
CROSS SECTIONAL AREA	: 1963 Sq.mm

SECONDARY WINDING DETAILS :-

NO. OF SECONDARY TURNS	: 1000
SEC. CONDUCTOR MATERIAL	: SUPER ENAMELLED COPPER WIRE
CROSS SECTIONAL AREA	: 19 SWG - 14 SWG

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CT RATIO: 300-500/1-1-1-1A (BAR TYPE PRIMARY)				
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	24.03.2021	SECTIONAL VIEW FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF: -----
CHD.	SANGITH	24.03.2021		
APPD.	MAYANK	24.03.2021		

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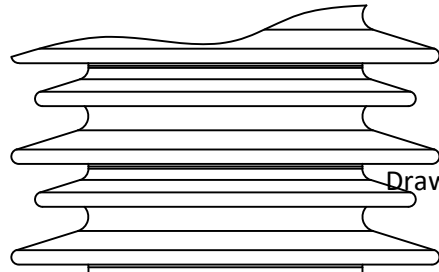
DRG.No.
411-B-10706
Rev:00

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Date _____

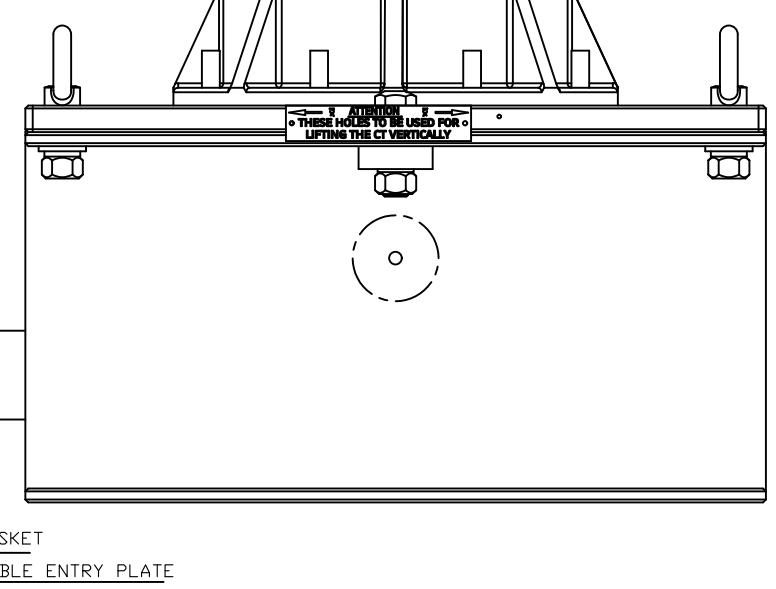
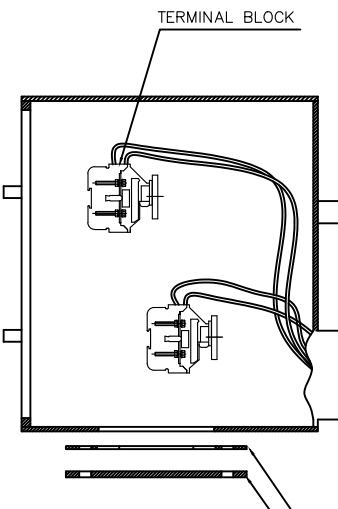
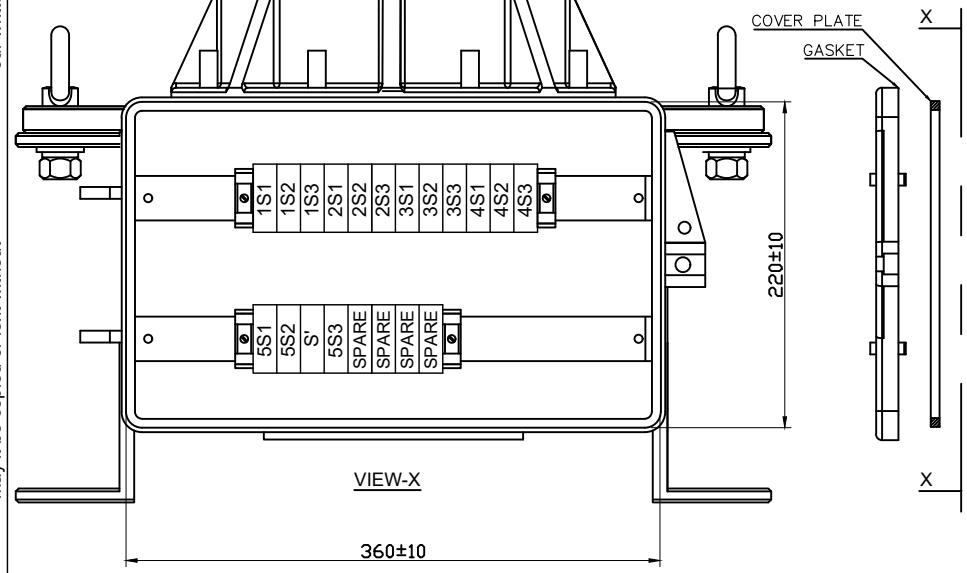
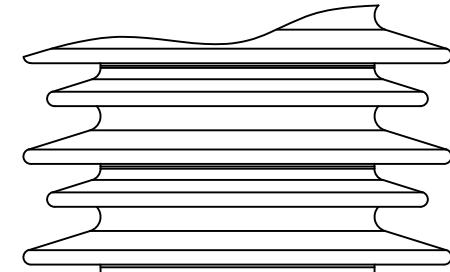
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
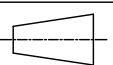



LEGEND

1. M6 STUD TYPE SECONDARY TERMINAL OF 750V GRADE SUITABLE FOR 4 - 6SQ.MM CABLE SIZE WITH NECESSARY SHORTING LINK
MAKE : ELMEX / CONNECTWELL
2. GASKET. (TYPE : NEOPRENE / EPDM)
3. CABLE ENTRY ALUMINIUM PLATE (278 x 122 x 4)

NOTES:

1. TERMINAL BOX CONFORMS TO IP:55 DEGREE PROTECTION AS PER IS/IEC60947-1:2004
2. 5 Nos.3/4" DOUBLE COMPRESSION CABLE GLANDS IN THE SCOPE OF GE SUPPLY.

CT RATIO: 300-500/1-1-1-1-1A (BAR TYPE PRIMARY)				
	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	SANGITH	24.03.2021	DETAIL VIEW OF SEC. TERMINAL BOX FOR 245 kV CT (LIVE TANK TYPE OSKF-245) (120% EXTENDED PRIMARY CURRENT)	REF: -----
CHD.	SANGITH	24.03.2021		 
APPD.	MAYANK	24.03.2021		
				DRG.No. 422-B-5390
			GE T&D India Limited	Rev:00

REVISION	DESCRIPTION
It.	

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Power Systems, Planning & Design
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