



FOR EPC CONTRACTS ONLY

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA
CONTRACTOR :
PO NO. :
PROJECT : Drawing approval subject to valid vendor registration

Suitable Clamps/Connectors in the scope of the EPC contractor

LIST OF DRAWINGS BEING SUBMITTED FOR 400 kV C.T (TYPE OSKF-420)		
CT RATIO: 500-1000-2000-3000/1-1-1-1-1A		
SL	DRAWING NUMBER	DESCRIPTION OF DRAWING
01	GTP Rev:00	GUARANTEED TECHNICAL PARTICULARS
02	411-B-10904 Rev:00	OUTLINE DIAGRAM
03	431-B-6905 Rev:00	RATING & CONNECTION PLATE
04	411-B-10905 Rev:00	SECTIONAL VIEW
05	422-B-5547 Rev:00	DETAIL OF SEC TERMINAL BOX

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

Chief Engineer
Planning & Power Systems

PREPARED: APTransco
RAGHUL
27.01.2022

CHECKED:
SANGITH
27.01.2022

APPROVED:
MAYANK
27.01.2022

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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5645387/2022/EEMRT-ENES1
 NOTE: DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS.

GUARANTEED TECHNICAL PARTICULARS FOR CURRENT TRANSFORMER		
420kV CT RATIO - 500-1000-2000-3000/1-1-1-1-1A		
Sr. No.	Description	Technical Parameters
1	Manufacturer	GE T&D INDIA LIMITED, INDIA
2	CT Type	OSKF 420
3	Design	Live Head-type, Oil filled ,Out door & Hermatically sealed
4	Max. Systems Voltage	420 kV
5	Nominal Systems Voltage	400 kV
6	Nominal Frequency	50 Hz
7	Lightning Impulse Withstand Voltage 1.2/50µS	1425 kV
8	Power Frequency Withstand Voltage (1 min)	630 kV
9	Switching Impulse Withstand Voltage - 250/2500µS (Wet)	1050 kV
10	Insulator	Porcelain
11	Nominal Creepage Distance	10,500 mm
12	Color of Insulator	Brown
13	Standard applicable	IEC-61869-1&2
14	Rated Primary Current (contin.)	3000 A
15	Rated Primary Current (extended)	120% FOR 3000/1, 180% FOR 2000/1 AND 200% AT LOWER RATIO
16	Power Frequency Withstand Voltage between Secondary & Earth	5 kV for 1 min.
17	No. of Cores	5
18	Ratio	500-1000-2000-3000/1-1-1-1-1 A
19	Core Data (Burden & Accuracy Classes)	
	Core 1	PX (Vkp: 500-1000-2000-3000 V; Rct: 2.5-5-10-15 Ω; Iexc: 120-60-30-20 mA)
	Core 2	PX (Vkp: 500-1000-2000-3000 V; Rct: 2.5-5-10-15 Ω; Iexc: 120-60-30-20 mA)
	Core 3	20VA, 0.2S, ISF ≤ 5
	Core 4	PX (Vkp: 500-1000-2000-3000 V; Rct: 2.5-5-10-15 Ω; Iexc: 120-60-30-20 mA)
20	Rated Short Time Thermal Current	50 kA / 1 sec.
21	Rated Short Time Dynamic Current	125 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	295 Kgs
26	Oil Type	Mineral Oil
27	Dimensional details	
	a) Overall height from mounting plane (mm)	4715±150
	b) Height up to terminals from mounting plane (mm)	3920±100
	c) Mounting dimensions and diameter of mounting holes (mm)	555±10 x 555±10 (Hole to Hole); Mounting hole Ø28 x 4 nos
	d) Terminal pad dimensions (mm)	200 x 150 x 22 Thick
e) Material of primary terminal	Aluminium	
28	Details of Insulator	
	Make	BHEL/IEC/MODERN
	Type	Hollow
	Height (mm)	3100±10
	Inner diameter (mm)	250±5
	Cantilever strength	5 kN (min)
29	Seismic accelartion	0.3g
30	Corona Extinction Voltage	320 (max)
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	1270kg
35	Tan delta	<0.005, As per IEC 61869-1&2

Chief Engineer

Planning & Power Systems

APTransco

PRPD
Raghul
27.01.2022

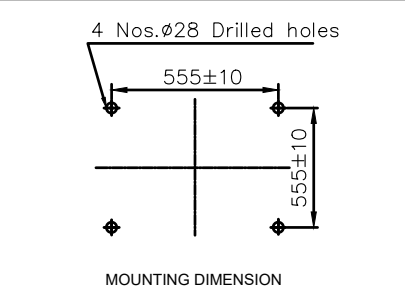
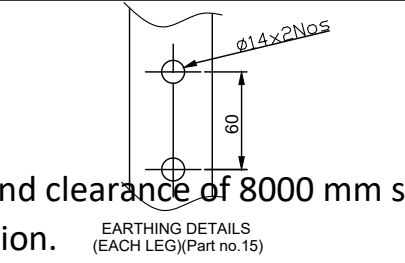
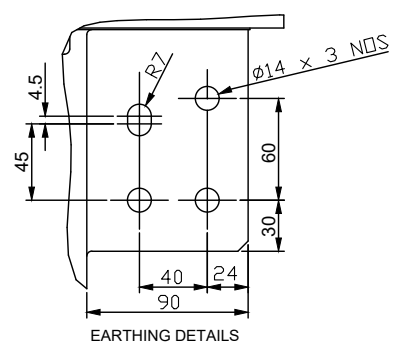
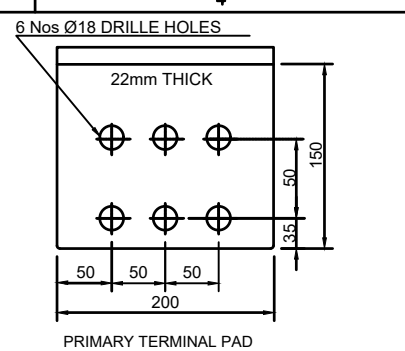
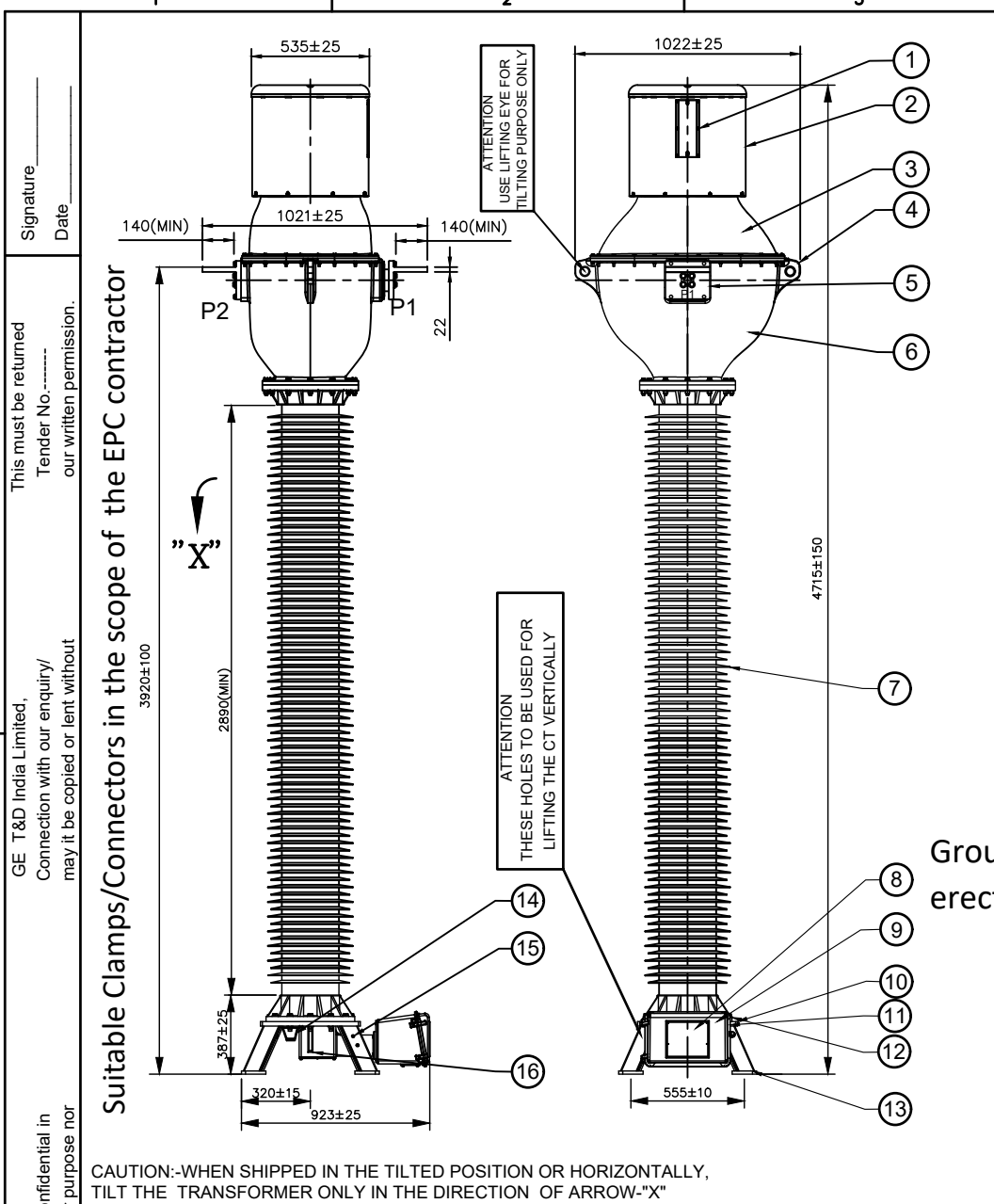
CHECKED
Sangith. R
27.01.2022

APPRD
Mayank
27.01.2022

Ground clearance of 8000 mm shall be maintained from Plinth level during erection.

Secondary winding shall be rated for continuous current of 2 Amps.

Drawing approval subject to valid vendor registration



IT.No.	DESCRIPTION	MATERIAL	QTY
1	BELLOW INDICATOR	POLYCARBONATE	01
2	BELLOW WITH COVER	S.S & AI	01
3	TANK COVER	ALUMINIUM ALLOY	01
4	TANK LIFTING EYE	ALUMINIUM ALLOY	02
5	PRIMARY TERMINAL PAD	ALUMINIUM	01
6	TANK	ALUMINIUM ALLOY	01
7	INSULATOR	PORCELAIN	01
8	RATING & SCHEMATIC PLATE	STAINLESS STEEL	01
9	SEC. TERMINAL BOX COVER & CABLE GLAND PLATE	ALUMINIUM ALLOY	01
10	BASE PLATE	ALUMINIUM ALLOY	01
11	OIL DRAIN DEVICE	BRASS	01
12	BASE LIFTING HOLE	M.S HDG	04
13	BASE PEDESTAL	M.S HDG	01
14	L.V. BUSHING	COPPER/EPOXY	01
15	EARTHING DETAIL (LEG)	M.S HDG	04
16	EARTHING PAD	ALUMINIUM ALLOY	01
17	MOUNTING HARDWARES M24x100 HEX BOLT WITH NUT FLAT & SPRING WASHER	M.S HDG	04Set

NOTE :-

- NOMINAL CREEPAGE DISTANCE - 10,500 mm.
- TOTAL WEIGHT OF CT - 1270 Kgs (APPROX.)
- TOTAL SHIPPING WEIGHT - 1600 Kgs (APPROX.)
- MAKE OF INSULATOR - BHEL / IEC / MODERN
- GENERAL TOLERANCE WILL BE APPLICABLE AS PER ISO 2768 WHERE TOLERANCE IS NOT INDICATED
- MINOR MODIFICATION WITHOUT NOTICE
- ALL FERROUS PARTS SHALL BE HOT DIP GALVANIZED
- OIL COMPLIANCE STANDARD - IS : 335 / IEC : 60296

Ground clearance of 8000 mm shall be maintained from Plinth level during erection.

ELECTRICAL PARAMETERS :-

1. RATED SYSTEM VOLTAGE	: 400 kV
2. HIGHEST SYSTEM VOLTAGE	: 420 kV
3. APPLICABLE STANDARD	: IEC:61869-1&2
4. RATED PRIMARY CURRENT	: 3000 A
5. RATED EXTENDED PRIMARY CURRENT	: 120% FOR 3000/1, 180% FOR 2000/1 AND 200% AT LOWER RATIO
6. BASIC INSULATION LEVEL	: 420 kV/1050 kV(rms)/1425 kV(Peak)
7. SHORT TIME CURRENT	: 50kA FOR 1 Sec.
8. DYNAMIC CURRENT	: 125 kAp
9. RIV at 267 kV	: ≤1000 µV

CT RATIO: 500-1000-2000-3000/1-1-1-1-1A

NO.	REVISION DESCRIPTION

Chief Engineer Drawing approval subject to valid vendor registration
Planning & Power Systems
APTransco

NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN. RAGHUL	27.01.2022	OUTLINE DIAGRAM FOR 400 kV C.T (TYPE OSKF-420) (120 % EXTENDED PRIMARY CURRENT)	ISO : -----
CHD. SANGITH	27.01.2022		
APPD. MAYANK	27.01.2022		DRG.No. 411-B-10904 Rev:00



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Signature _____
Date _____

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NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE

CHECKED DURING ACCEPTANCE TESTS

Suitable Clamps/Connectors in the scope of the EPC contractor

170
160±0.5

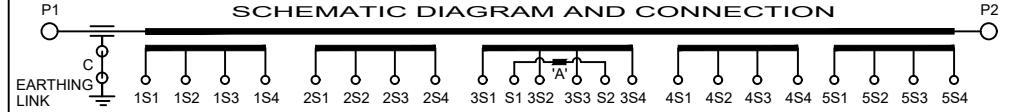


GE T&D INDIA LIMITED
MADE IN INDIA

CURRENT TRANSFORMER
AS PER IEC 61869-1&2

SL.No./YEAR	CUSTOMER	TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED, VIJAYAWADA
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RATIO (A/A)	500-1000-2000-3000/1-1-1-1-1					TYPE	OSKF 420	
CORE NUMBER	1	2	3	4	5	HSV/NSV	kV 420/400	
ACCURACY CLASS	PX	PX	0.2S	PX	PX	BIL (KV(r.m.s)/kVp)	630/1425	
ISF/ALF	-	-	<5	-	-	FREQUENCY	Hz 50	
OUTPUT (VA)	-	-	20	-	-	RTD. CONT. CURRENT	A 3000	
KPV (V)	500 - 1000 - 2000 - 3000	-	-	500 - 1000 - 2000 - 3000	-	RTD. EXT. CURRENT	A **	
I _{exc} at E _k (mA)	120 - 60 - 30 - 20	-	-	120 - 60 - 30 - 20	-	RTD. THER. CURRENT	A -	
R _{ct} at 75°C (Ohms)	2.5 - 5 - 10 - 15	-	-	2.5 - 5 - 10 - 15	-	I _{th} .	kA/S 50/1	
SECONDARY CONNECTION	P1-P2 500/1	1S1 - 1S2	2S1 - 2S2	3S1 S1-3S2 S2 (SHORT 3S1 S1-3S2 S2)	4S1 - 4S2	5S1 - 5S2	I _{dyn.}	kA 125
	P1-P2 1000/1	1S3 - 1S4	2S3 - 2S4	3S3 S1-3S4 S2 (SHORT 3S3 S1-3S4 S2)	4S3 - 4S4	5S3 - 5S4	OIL WEIGHT	Kg 295
	P1-P2 2000/1	1S1 - 1S3	2S1 - 2S3	3S1 S1-3S3 S2 (SHORT 3S1 S1-3S3 S2)	4S1 - 4S3	5S1 - 5S3	TOTAL WEIGHT	Kg 1270
	P1-P2 3000/1	1S1 - 1S4	2S1 - 2S4	3S1 S1-3S4 S2 (SHORT 3S1 S1-3S4 S2)	4S1 - 4S4	5S1 - 5S4	INSULATION CLASS	- CLASS "A"
							NOMINAL CREEPAGE	mm 10,500



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

- NOTES:-
01. "A" - COMPENSATING CORE, PURPOSE:- TO MEET ISF AT RATIO
02. GROUNDING - EFFECTIVELY GROUNDED
03. INSULATION OIL TYPE : MINERAL OIL (IS 335 / IEC 60296)
04. TEMPERATURE CATEGORY : -5°C TO 40°C (AS PER IEC 61869-1; CLAUSE-4.2.1)
05. STATIC LOAD WITHSTAND : 5000N (AS PER IEC 61869-1; CLAUSE-6.7)
06. RATED THERMAL CURRENT SHALL BE 200% FOR 15MIN. @ 3000/1 RATIO & 120% CONTINUOUS
07. **RATED EXTENDED PRIMARY CURRENT SHALL BE 120% FOR 3000/1, 180% FOR 2000/1 AND 200% AT LOWER RATIO

DANGER:- VOLTAGE RISE WHEN SECONDARY IS OPENED

431-B-6905 Rev:00

185±0.5

195

∅4 X 4 HOLES

Secondary winding shall be rated for continuous current of 2 Amps.

Ground clearance of 8000 mm shall be maintained from Plinth level during erection.

NOTES:-

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

CT RATIO: 500-1000-2000-3000/1-1-1-1-1A

REVISION NO.	DESCRIPTION	Chief Engineer Planning & Power Systems APTransco	Drawing approval subject to valid vendor registration

DRN.	NAME	DATE
	RAGHUL	27.01.2022
	SANGITH	27.01.2022
	MAYANK	27.01.2022

ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.
RATING & CONNECTION PLATE
FOR 400 kV C.T (TYPE OSKF-420)
(120 % EXTENDED PRIMARY CURRENT)

SCALE : NTS
ISO : -----



GE T&D India Limited

DRG.No.
431-B-6905
Rev:00

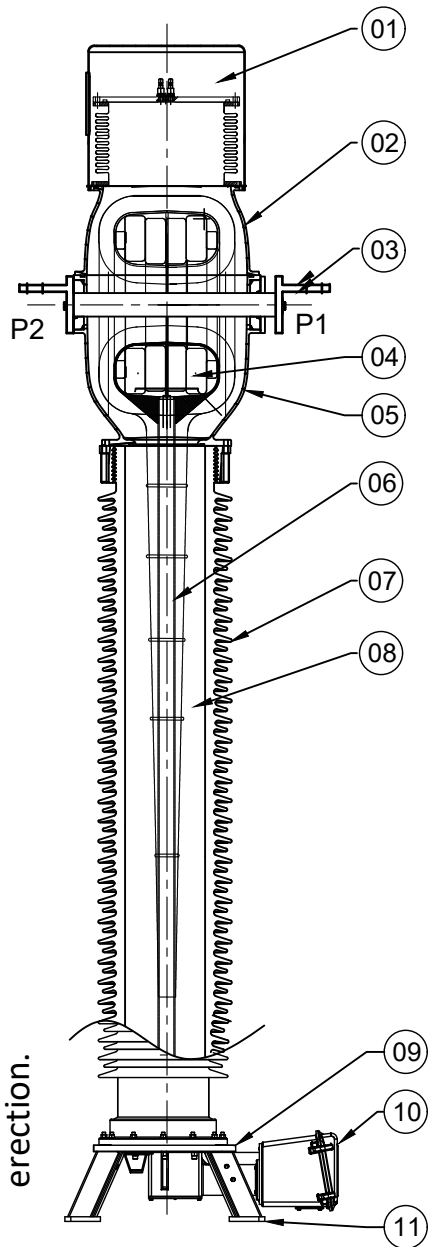
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Date _____

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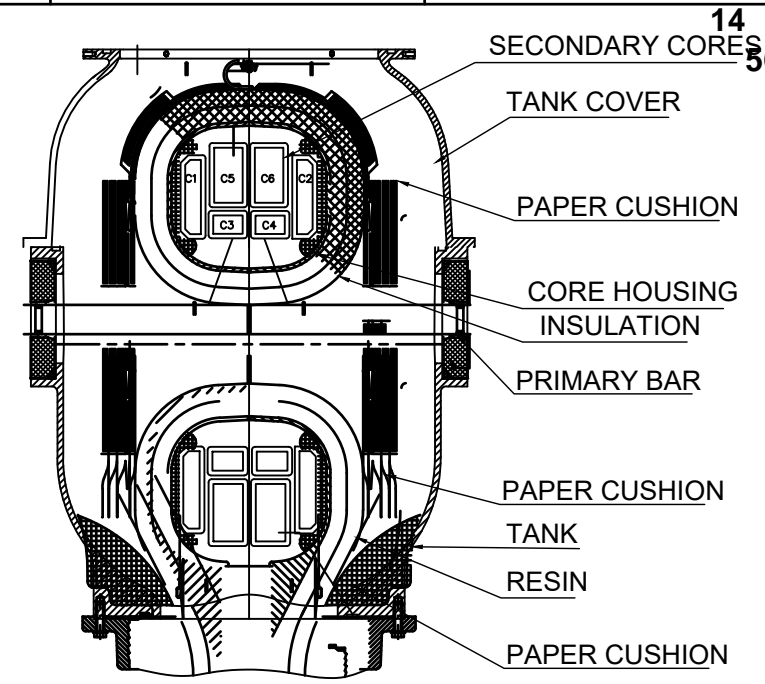
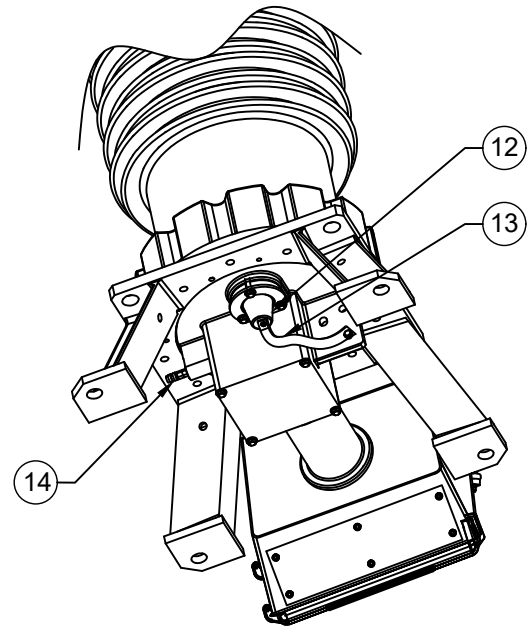
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Ground clearance of 8000 mm shall be maintained from Plinth level during erection.



IT.No.	DESCRIPTION	MATERIAL
01	BELLOW WITH COVER	SS WITH ALUMINIUM
02	TANK COVER	ALUMINIUM ALLOY
03	PRIMARY TERMINAL PAD	ALUMINIUM
04	SECONDARY CORES	CRGO/SPL ALLOY
05	TANK	ALUMINIUM ALLOY
06	ACTIVE PART	PAPER
07	INSULATOR	PORCELAIN
08	OIL	MINERAL OIL
09	BASE PLATE	ALUMINIUM ALLOY
10	SEC. TERMINAL BOX	ALUMINIUM ALLOY
11	BASE CHANNEL	MS HDG
12	L.V. BUSHING FOR TAN DELTA & CAPACITANCE MEASUREMENT	EPOXY WITH COPPER TERMINAL
13	EARTHING LINK FOR LV BUSHING	COPPER
14	OIL DRAIN DEVICE	BRASS



TYPICAL VIEW OF CORE, CORE BOX
PRIMARY BAR & TANK, TANK COVER

PRIMARY WINDING DETAILS :-

NO. OF PRIMARY TURN : ONE
PRIMARY CONDUCTOR MATERIAL : ALUMINIUM
CROSS SECTIONAL AREA : 4900 Sq.mm

SECONDARY WINDING DETAILS :-

NO. OF SECONDARY TURNS : 3000
SEC. CONDUCTOR MATERIAL : SUPER ENAMELLED COPPER WIRE
CROSS SECTIONAL AREA : 19 SWG - 14 SWG

CT RATIO: 500-1000-2000-3000/1-1-1-1-1A

NO	REVISION	DESCRIPTION
		Chief Engineer Planning & Power Systems APTransco

Drawing approval subject to valid vendor registration

NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN. RAGHUL	27.01.2022	SECTIONAL VIEW FOR 400 kV C.T (TYPE OSKF-420) (120 % EXTENDED PRIMARY CURRENT)	ISO : -----
CHD. SANGITH	27.01.2022		
APPD. MAYANK	27.01.2022		
GE T&D India Limited			DRG.No. 411-B-10905 Rev:00

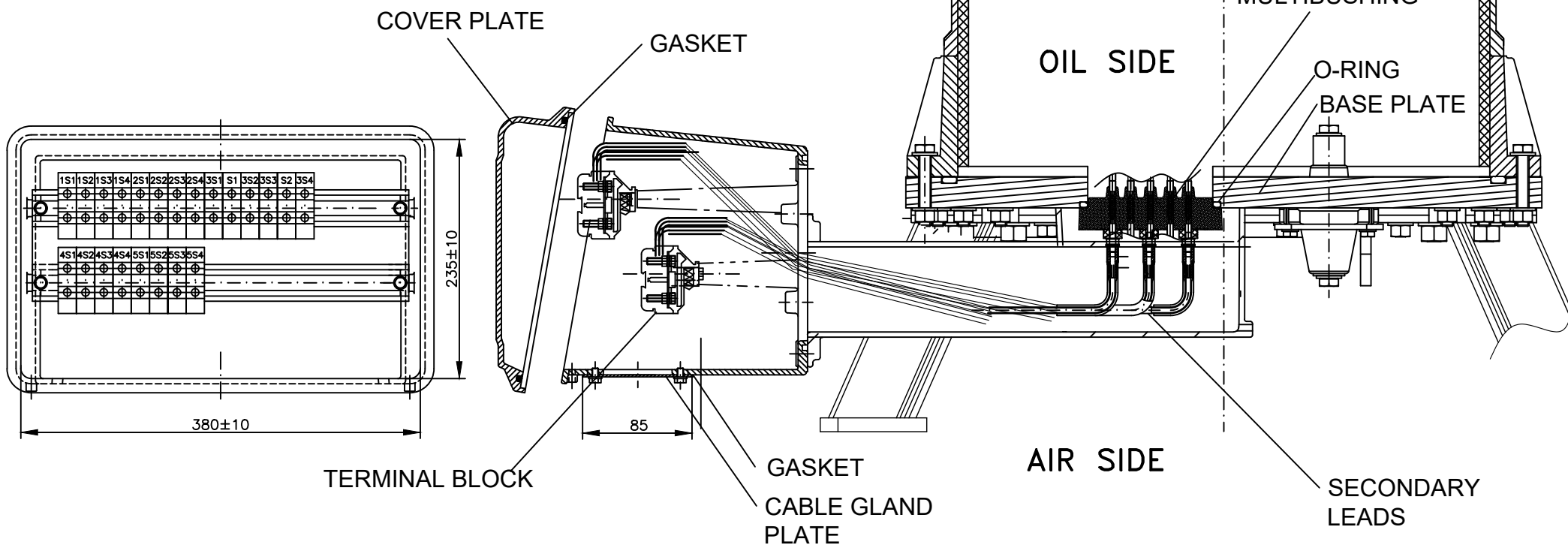
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LEGEND:

1. M5 STUD TYPE SECONDARY TERMINAL OF 1100V GRADE WITH NECESSARY SHORTING LINK SHALL BE PROVIDED MAKE : ELMEX / CONNECTWELL
 2. GASKET (TYPE: NBR/EPDM)
 3. CABLE ENTRY ALUMINUM PLATE (320x105x4)
- Ground clearance of 8000 mm shall be maintained from Plinth level during erection.

NOTE:

1. TERMINAL BOX CONFIRMS TO IP:56 DEGREE PROTECTION AS PER IS/IEC 60947-1:2004
2. 5 Nos.3/4" DOUBLE COMPRESSION CABLE GLANDS IN THE SCOPE OF GE SUPPLY.

CT RATIO: 500-1000-2000-3000/1-1-1-1-1A

REVISION	DESCRIPTION	Chief Engineer Planning & Power Systems APTransco
	NO.	

	NAME	DATE	ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.	SCALE : NTS
DRN.	RAGHUL	27.01.2022	DETAILED VIEW OF SEC. TERMINAL BOX FOR 400 kV C.T (TYPE OSKF-420) (120 % EXTENDED PRIMARY CURRENT)	ISO : -----
CHD.	SANGITH	27.01.2022		
APPD.	MAYANK	27.01.2022		
				DRG.No. 422-B-5547
				Rev:00