

LIST OF STANDARD DRAWINGS APPLICABLE FOR 245 KV CT

SR. NO.	DESCRIPTION	DRG./DOC.NO.	APP. CAT.	REMARKS
01	GENERAL ARRANGEMENT	3-KAD 5347/R0		
02	RATING/SCHEMATIC PLATE	3-KAD 5348/R0		
03	SECONDARY TERMINAL BOX G.A.	3-KAD 5349/R0		
04	SECTIONAL VIEW	3-KAD 5350/R0		

LIST OF VARIABLE DRAWINGS APPLICABLE FOR 245 KV CT

SR. NO.	DESCRIPTION	DRAWING NO.
01	COVER SHEET	AS APPLICABLE
02	RATING/SCHEMATIC PLATE	AS APPLICABLE


Drawing approval subject to valid vendor registration

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

REMARKS	APPROVAL LETTER NO.

- 1). Minimum 300 mm Plinth shall be maintained for Current transformers in the substation during foundation works to ensure safe live to ground clearances as per IE rules.
- 2). Since the supply of terminal connectors is not in the scope of CT Manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with the CT requirement and compatibility.

CHIEF ENGINEER/CONSTRUCTION  
APTRANSCO

				CUSTOMER : APTRANSCO			TITLE : LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE ( FOR 245 KV CT ) (400-600-800/1-1-1-1 A)	
4				GEN. TOL.	MATL.: SPEC.:		 <b>CG Power and Industrial Solutions Limited</b> S1 - DIVISION, AMBAD, NASHIK	
3				THIRD ANGLE PROJECTION				
				SCALE: NTS	INITIALS	NAME	DRG.NO: 3-KAD 5346 REV 0	
2				ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB		
1					CHD	SHB		
					APPD	USS		
NO	REVISION	SIGN	DATE	DATE : 15.02.2021				

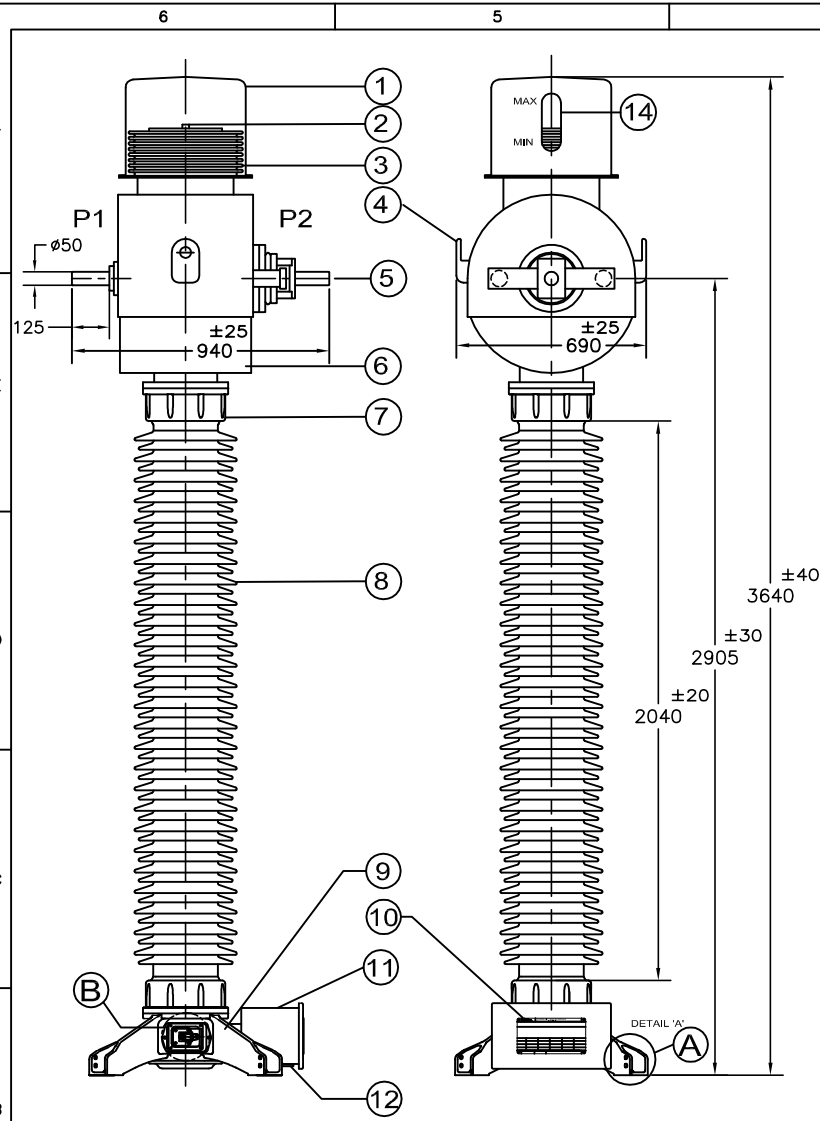
DRG.NO: 3-KAD 5347

IF IN DOUBT, ASK

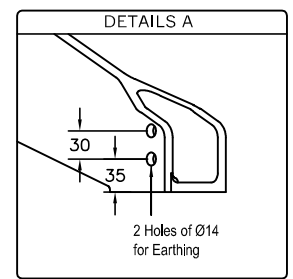
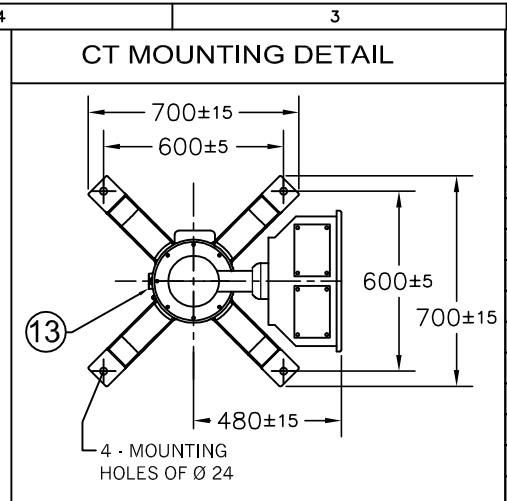
FRAME:- 749-2T50-6125-NB

CG Power and Industrial Solutions Limited

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NOTE: REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION



NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	OIL PRESENCE INDICATOR	POLY CARBONATE
3	1	BELLOWS	STAINLESS STEEL
4	2	LIFTING LUG Ø 40	ALUMINIUM
5	2	PRIMARY TERMINAL	ALUMINIUM
6	1	HOUSING	ALUMINIUM
7	2	PORCELAIN FLANGE	ALUMINIUM
8	1	PORCELAIN INSULATOR	PORCELAIN
9	1	BASE	ALUMINIUM
10	1	RATING PLATE	ALUMINIUM
11	1	SECONDARY TERMINAL BOX	STEEL HDG
12	2	GLAND PLATE	STEEL HDG
13	1	OIL FILLING/SAMPLING VALVE	STEEL EG
14	1	BELLOWS LEVEL INDICATOR	POLYCARBONATE
15	1	CAPACITANCE & TAN DELTA MEASUREMENT TERMINAL Cy	BRASS
16	1	WARNING STICKER	ALUMINIUM
17	1	COVER	ALUMINIUM
18	1	EARTHING LINK	COPPER (NICKEL PLATED)

TOTAL MASS = 800±10% kg  
 TOTAL OIL MASS = 200±10% kg  
 CREEPAGE DISTANCE = 6125 mm

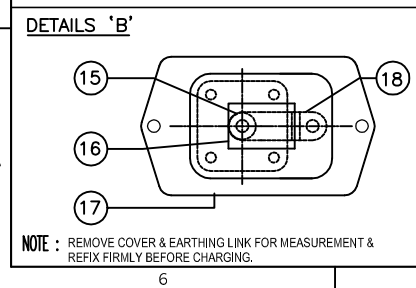
MAKE OF PORCELIAN : MODERN/IEC/CJI/RAVIKIRAN

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
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CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

CUSTOMER : APTRANSCO		GEN. TOL.		MATL: SPEC.:		TITLE : STANDARD DRAWINGS GENERAL ARRANGEMENT (FOR 245 kV CT) (400-600-800/1-1-1-1 A)	
THIRD ANGLE PROJECTION		SCALE: NTS		INITIALS		NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.		APPD		ORG		NSB	
		DATE : 15.02.2021		CHD		SHB	
				APPD		USS	
				DATE : 15.02.2021		DRG.NO: 3-KAD 5347	
						REV 0	



ITEM NO. 16  
 WARNING  
 \*Cy TERMINAL - DO NOT OPEN WHILE IN SERVICE\*

NOTE : REMOVE COVER & EARTHING LINK FOR MEASUREMENT & REFIX FIRMLY BEFORE CHARGING.

4			
3			
2			
1			
NO	REVISION	SIGN	DATE

DRG.NO: 3-KAD 5348

IF IN DOUBT, ASK

**CG Power and Industrial Solutions Limited**  
S1 - DIVISION, AMBAD, NASHIK

## CURRENT TRANSFORMER

MADE IN INDIA

RATING AND SCHEMATIC PLATE

CUSTOMER : APTRANSCO

TYPE: [IOSK: 245/460/1050] I.L. [460kV / 1050 kVp] SPEC. [IEC 61868-1 & 2, IS 16227-1&2] S.O.NO. [AS APPLICABLE] SR.NO. [REDACTED] YEAR [REDACTED]

STR. [40 kA for 1 Sec] Idyn [100 kAp] FREQ. [50 Hz] RATED PRI. CURRENT [800 A] RATED CONT. CURRENT [960 A]

CORE NO.	1			2			3			4			5		
RATIO	400/1	600/1	800/1	400/1	600/1	800/1	400/1	600/1	800/1	400/1	600/1	800/1	400/1	600/1	800/1
PRI. TERMINAL	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2	P1- P2
SEC. TERMINAL	1S1-1S2	1S1-1S3	1S1-1S4	2S1-2S2	2S1-2S3	2S1-2S4	3S1-3S2	3S1-1S3	3S1-3S4	4S1-4S2	4S1-4S3	4S1-4S4	5S1-5S2 (SHORT 1 & 5S2)	5S1-5S3 (SHORT 1 & 5S3)	5S1-5S4 (SHORT 1 & 5S4)
VA	---	---	---	---	---	---	---	---	---	---	---	---	20	20	20
CLASS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	0.2S	0.2S	0.2S
ISF	---	---	---	---	---	---	---	---	---	---	---	---	≤5	≤5	≤5
Vk ( V ) min.	400	600	800	400	600	800	400	600	800	400	600	800	---	---	---
max Iexc at Vk (mA)	60	40	30	60	40	30	60	40	30	60	40	30	---	---	---
Rct ( Ω )	≤2	≤3	≤4	≤2	≤3	≤4	≤2	≤3	≤4	≤2	≤3	≤4	---	---	---

TOTAL MASS = 800 kg ±10%

OIL MASS = 200 kg ±10%

CAUTION : - SHORT ALL SEC. TERMINALS WHEN NOT IN USE OR BEFORE DISCONNECTING BURDENS. ALSO CHECK BELLOWS POSITION.  
- CAPACITANCE & TAN DELTA TERMINAL 'Cy' SHALL ALWAYS BE CONNECTED TO EARTH & DISCONNECT ONLY FOR MEASUREMENT.

4 HOLES OF #4

1mm Thk. Aluminium ( metal photo )

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

CHIEF ENGINEER/CONSTRUCTION  
APTRANSCO

2					
1					
NO	REVISION	SIGN	DATE		

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS RATING/SCHEMATIC PLATE (FOR 245 kV CT) (400-600-800/1-1-1-1 A)	
	SPEC.:		
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	
	CHD	SHB	
	APPD	USS	
DATE : 15.02.2021			DRG.NO: 3-KAD 5348
			REV 0

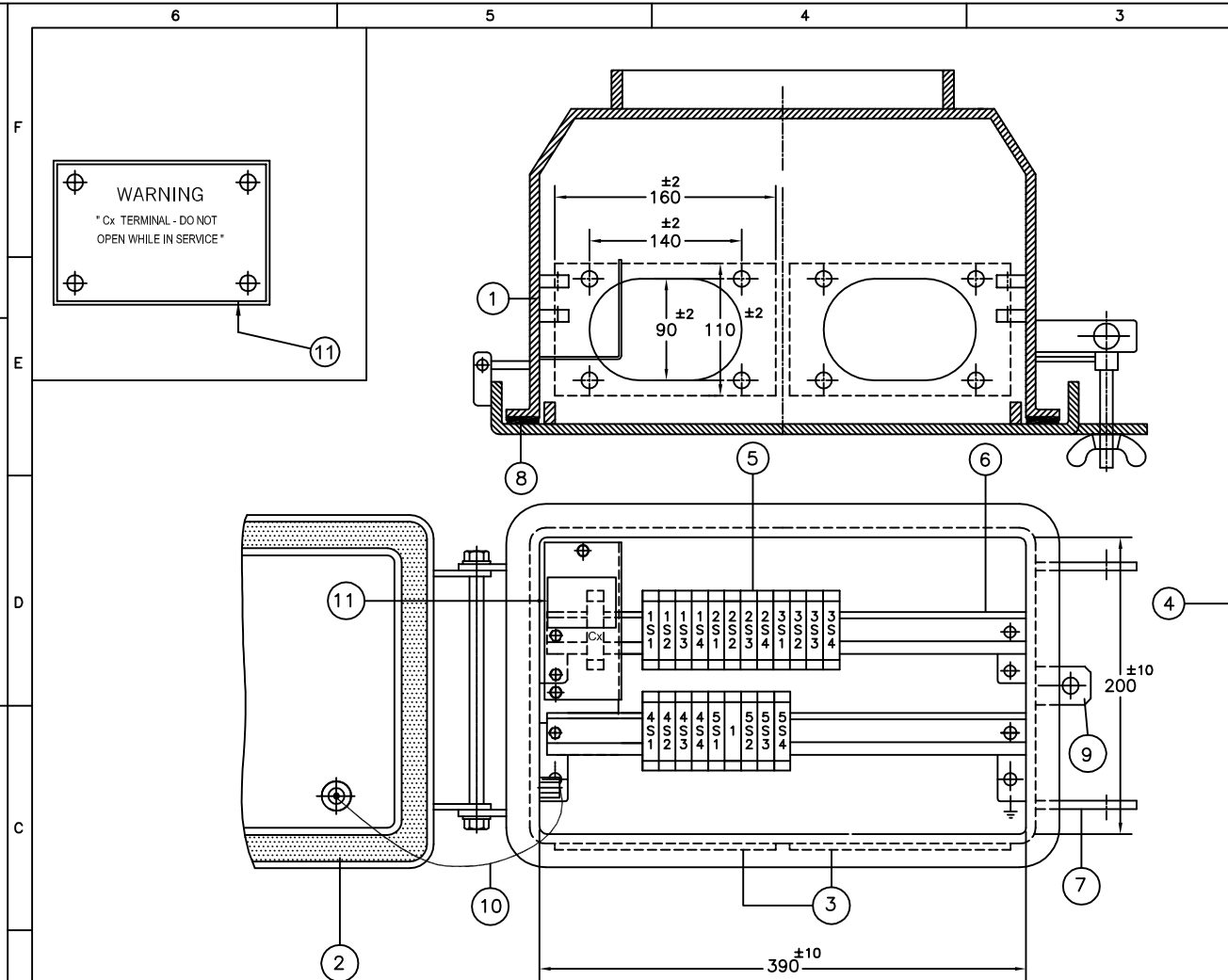
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DRG.NO. : 3-KAD 5349

IF IN DOUBT, ASK

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NO.	QTY.	DESCRIPTION	MTRL./RATING
1	1	SECONDARY TERMINAL BOX	M.S HDG
2	1	SECONDARY TERMINAL BOX COVER	M.S HDG
3	2	GLAND PLATE	M.S HDG
4	1	RATING & SCHEMATIC PLATE	ALUMINIUM
5	22	STUD TYPE SECONDARY TERMINAL BLOCK	ELMEX MAKE,
6	2	TERMINAL MOUNTING BRACKET	M.S POWDER COATED
7	1	LOCKING ARRANGEMENT	S.S, BRASS
8	1	GASKET	EPDM SPONGE RUBBER
9	1	BRACKET FOR PAD LOCK	M.S HDG
10	1	COPPER CABLE FOR BOX DOOR EARTHING	COPPER
11	1	WARNING PLATE FOR 'Cx' TERMINAL	ALUMINIUM

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

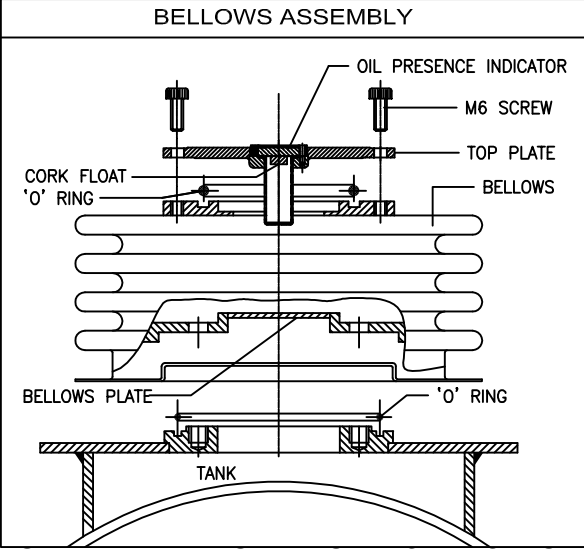
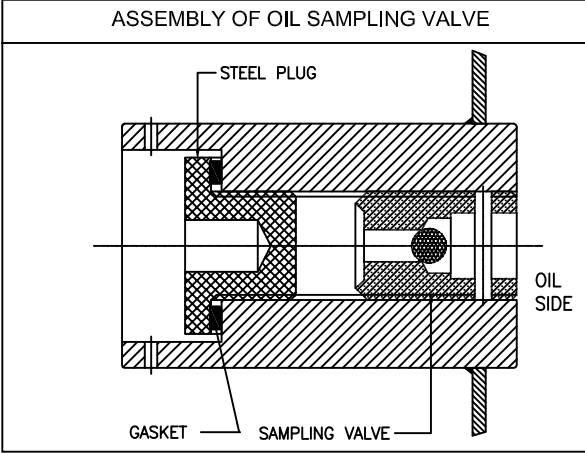
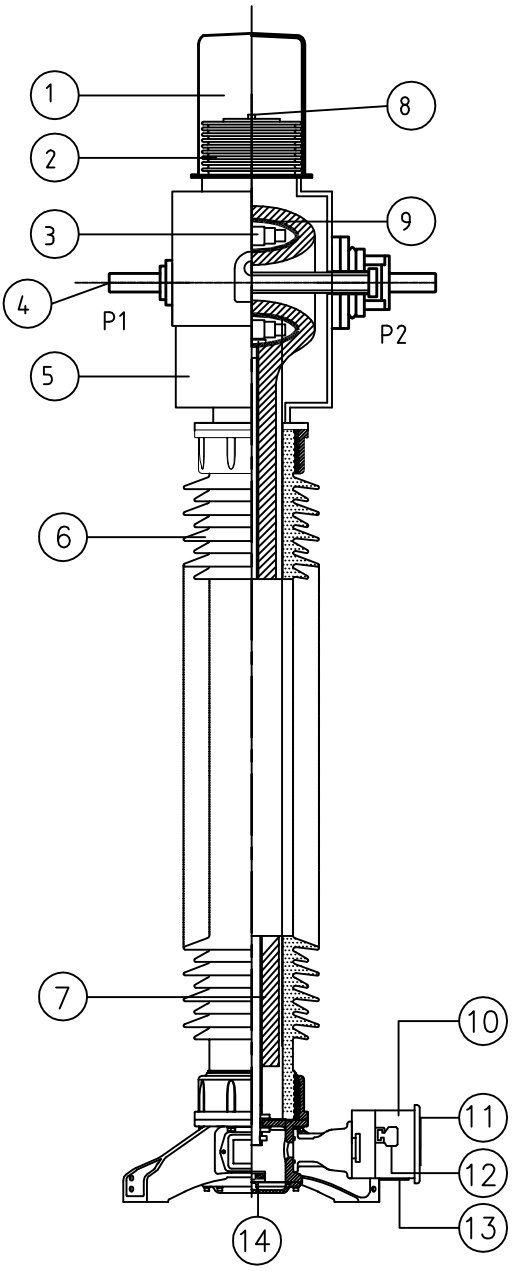
DEGREE OF PROTECTION : IP55

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL. SPEC.	TITLE : STANDARD DRAWINGS SECONDARY BOX G.A. (FOR 245 kV CT) (400-600-800/1-1-1-1-1 A)	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	 CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK
	CHD	SHB	
	APPD	USS	
DRG.NO: 3-KAD 5349			REV 0
NO	REVISION	SIGN	DATE
DATE : 15.02.2020			

DRG.NO: 3-KAD 5350

IF IN DOUBT, ASK




SR.NO.	DESCRIPTION	MATERIAL
1	HOOD	ALUMINIUM
2	BELLOWS	STAINLESS STEEL
3	CORE WITH SECONDARY WINDING *	
4	PRIMARY TERMINAL	ALUMINIUM
5	HOUSING	ALUMINIUM
6	INSULATOR	PORCELAIN
7	CONDENSER BUSHING	KRAFT PAPER (OIP)
8	OIL PRESENCE INDICATOR	POLY CARBONATE
9	SHELL	ALUMINIUM
10	SECONDARY TERMINAL BOX	M.S. HDG.
11	RATING/SCHEMATIC PLATE	ALUMINIUM
12	SECONDARY TERMINALS	STUD TYPE
13	GLAND PLATE	M.S. HDG.
14	AUXILIARY CORE	NANO-CRYSTALLINE

NOTE.....  
 INSULATING OIL SHALL BE EHV GRADE AS PER IS 335, IEC 296  
 \* CORE - CRGO Si-Fe/EQUIVALENT HIGH PERMEABILITY MATERIAL, MU-METAL, NANO-CRYSTALLINE  
 \* SEC. WINDING - ENAMELLED COPPER

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 2. FOR EPC CONTRACTS ONLY

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

CUSTOMER : APTRANSCO				TITLE : STANDARD DRAWINGS SECTIONAL VIEW (FOR 245 kV CT) (400-600-800/1-1-1-1 A)	
GEN. TOL.	MATL.:	 CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK			
	SPEC.:				
THIRD ANGLE PROJECTION		SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.		DRN		NSB	
		CHD		SHB	
		APPD		USS	
NO		REVISION		SIGN	DATE
DATE : 15.02.2021		DRG.NO: 3-KAD 5350		REV 0	

2			
1			
NO	REVISION	SIGN	DATE

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NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
 4403727/2021/EEMRT-ENE51 2. FOR EPC CONTRACTS ONLY

kV Class	STC Rating	Insulation Level (kV)	Rated Current (Amps)	Rated Extended Current (Amps)	Primary Winding	Insulator
245	40kA-1sec	460/-/1050	800	960	Aluminium	Porcelain

Item - 1600	Core 1	Core 2	Core 3	Core 4	Core 5
Current Ratios A/A	800-600-400/1A				
Output burden (VA)	--	--	--	--	20
Class of accuracy	PS	PS	PS	PS	0.2S
Accuracy limit factor	--	--	--	--	< 5 @ All Ratios
Min. knee point voltage (kpv)	800 @ 800/1A, 600 @ 600/1A, 400 @ 400/1A	800 @ 800/1A, 600 @ 600/1A, 400 @ 400/1A	800 @ 800/1A, 600 @ 600/1A, 400 @ 400/1A	800 @ 800/1A, 600 @ 600/1A, 400 @ 400/1A	--
Rct( $\Omega$ )	$\leq 4$ @ 800/1A, $\leq 3$ @ 600/1A, $< 2$ @ 400/1A	$\leq 4$ @ 800/1A, $\leq 3$ @ 600/1A, $< 2$ @ 400/1A	$\leq 4$ @ 800/1A, $\leq 3$ @ 600/1A, $< 2$ @ 400/1A	$\leq 4$ @ 800/1A, $\leq 3$ @ 600/1A, $< 2$ @ 400/1A	--
Max. excitation current in mA @ V/k	30 @ 800/1A, 40 @ 600/1A, 60 @ 400/1A	30 @ 800/1A, 40 @ 600/1A, 60 @ 400/1A	30 @ 800/1A, 40 @ 600/1A, 60 @ 400/1A	30 @ 800/1A, 40 @ 600/1A, 60 @ 400/1A	--

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

Drawing approval subject to valid vendor registration

- 1). Minimum 300 mm Plinth shall be maintained for Current transformers in the substation during foundation works to ensure safe live to ground clearances as per IE rules.
- 2). Since the supply of terminal connectors is not in the scope of CT Manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with the CT requirement and compatibility.

S.No	Particulars	Units	Data
<b>B</b>	<b>SUPPLIER DATA</b>		<b>245KV Current Transformers</b>
1	Name of Manufacturer		CG Power and Industrial Solutions Limited, Nasik
2	Type		IOSK:245/460/1050
3	Reference Standard		IEC:- 61869-1 & 2
4	Oil Standard		IS : 335 (2018) / IEC -60296
5	Whether it is Live tank or Dead tank		Live Tank CT
6	Service		Outdoor Type, Single Phase CT
6.1	Primary Winding		<b>Aluminium</b>
<b>7</b>	<b>System details</b>		
7.1	Highest system voltage		245kV
7.2	No. of phase		Single
7.3	Rated Frequency		50HZ
7.4	System neutral		Solidly Earthed
<b>8</b>	<b>CT ratings:</b>		
9	Voltage Class	KV	245kV
10	Rated continuous thermal current		120% of rated primary current
11	Insulation Level		
11.1	1 Minute 50 Hz withstand		
11.1.1	HV terminal & earth	KV r.m.s	460
11.1.2	Secondary wiring	KV	5kV
11.2	1.2/50 micro second Lightning Impulse withstand voltage	KV Peak	1050 kV peak
11.3	250/2500 second Switching Impulse withstand voltage	KV Peak	Not Applicable
12	Short-time current		
12.1	Rated 1 second current	kA rms	40 rms
12.2	Rated Dynamic current	kA p	100 kA peak
13	Insulation Class	Class	A class
14	Temperature rise	°C	
14.1	Design ambient temperature	°C	55
14.2	Limit of temperature rise / Max Temperature rise over ambient		55
15	Minimum Creepage Distance ( mm/kV)	mm/kV	<b>6125 mm</b>
16	Corona extinction voltage	kV rms	156
17	Maximum radio interference voltage at 1.1U <sub>r</sub> /rated/sq.rt.3 at 1 MHz	micro volts	2500 μV
18	Partial discharge level at U <sub>m</sub>	pC (max.)	<10 PC @ U <sub>m</sub> , <5PC @1.2U <sub>m</sub> /v <sup>3</sup>
19	Mounting		As per Drawings Hot Dip Galvanised
20	Seismic Acceleration	g	0.3 g
21	Cantilever strength of CT at the terminal	kg	350
22	Whether it is possible to adjust the tap settings of any core independent of other cores?		Yes
23	As per specification. CT to be provided with oil level gauge, Pressure relief device / Stainless steel bellows		CT will come with Oil Level gauge & Stainless Steel Bellow. CGL don't have PRD design in its CTs.
24	As per specification, an inert gas cushion / stainless steel bellow shall be provided on top for expansion of the oil.		Stainless Steel Bellow
25	As per specification, N2 sealing cover is required.		Stainless Steel Bellow, No gas cushioning given in our CT design
26	Whether GA & foundation drawings are furnished along with the offer for each type of CT?		Attached
27	Ttan delta		< 0.005.

Drawing approval subject to valid vendor registration