

DRG.NO: 3-KAD 5361

IF IN DOUBT, ASK

LIST OF STANDARD DRAWINGS APPLICABLE FOR 245 kV CT- 31 mm/kV

SR. NO.	DESCRIPTION	DRG./DOC.NO.	APP. CAT.	REMARKS
01	GENERAL ARRANGEMENT	3-KAD 5362/R0		
02	RATING/SCHEMATIC PLATE	3-KAD 5363/R0		
03	SECONDARY TERMINAL BOX G.A.	3-KAD 5364/R0		
04	SECTIONAL VIEW	3-KAD 5365/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

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


- 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.

REMARKS	APPROVAL LETTER NO.

**CHIEF ENGINEER  
 POWER SYSTEMS, PLANNING & DESIGN  
 APTRANSCO**

Drawing approval subject to valid vendor registration

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CUSTOMER : APTRANSCO			
4		GEN. TOL.	MATL.: SPEC.:
3		THIRD ANGLE PROJECTION	
2		SCALE: NTS	INITIALS NAME
1		ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG NSB CHD SHB APPD USS
NO	REVISION	SIGN	DATE
		DATE : 26.03.2021	1/2
TITLE : LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE ( FOR 245 kV CT -31mm/kV) (300-500/1-1-1-1-1 A)			REV 0
 <b>CG Power and Industrial Solutions Limited</b> S1 - DIVISION, AMBAD, NASHIK			DRG.NO: 3-KAD 5361

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST

16

449

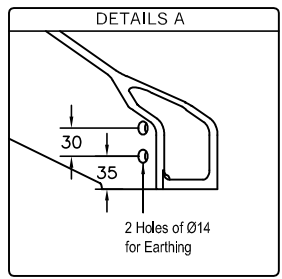
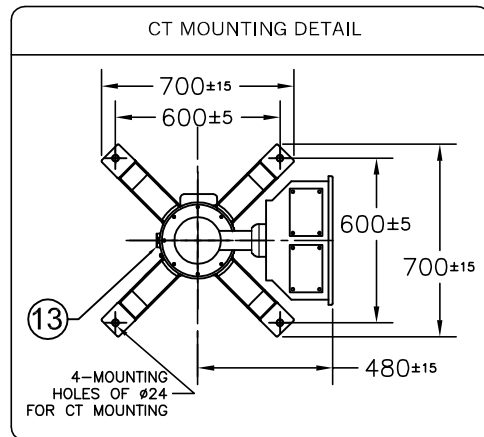
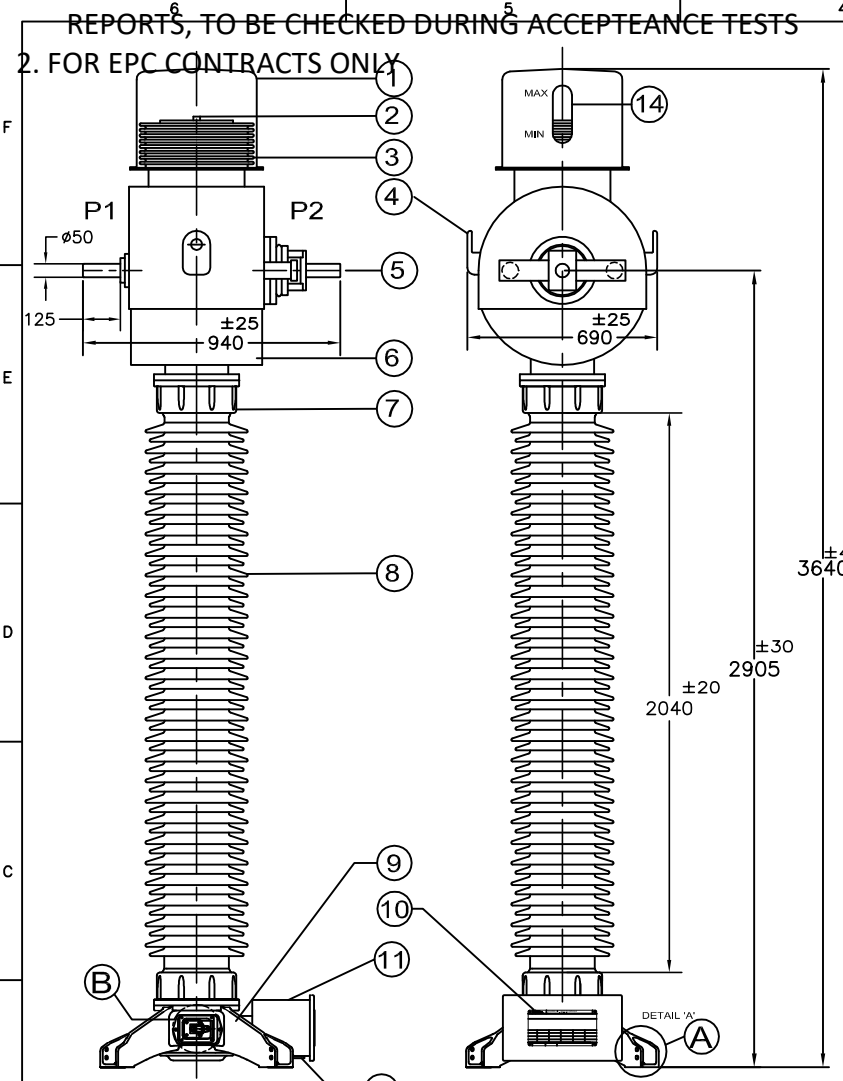
DRG.NO: 3-KAD 5362

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FRAME: 749-2T50-7595-NB

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TOTAL MASS = 800±10% kg  
 TOTAL OIL MASS = 200±10% kg  
 CREEPAGE DISTANCE = 7595 mm

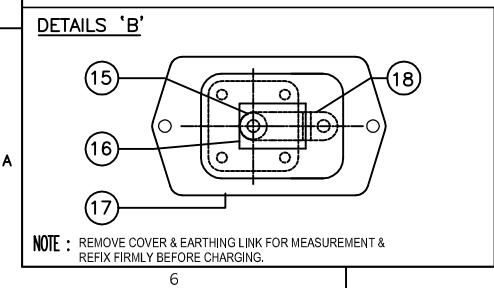
NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	OIL PRESENCE INDICATOR	POLY CARBONATE
3	1	BELLOWS	STAINLESS STEEL
4	2	LIFTING LUG Ø 40	ALUMINIUM
5	2	PRIMARY TERMINAL	ALUMINIUM
6	1	HOUSING	ALUMINIUM
7	2	PORCELAIN FLANGE	ALUMINIUM
8	1	PORCELAIN INSULATOR	PORCELAIN
9	1	BASE	ALUMINIUM
10	1	RATING PLATE	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)

MAKE OF PORCELIAN : MODERN/IEC/CJI/RAVIKIRAN/ABIL

**CHIEF ENGINEER  
 POWER SYSTEMS, PLANNING & DESIGN  
 APTRANSCO**

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NOTE:- REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION



**ITEM NO. 16**


WARNING  
 \*Cy TERMINAL - DO NOT OPEN WHILE IN SERVICE\*

NO	REVISION	SIGN	DATE
4			
3			
2			
1			

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL. SPEC.:	TITLE : STANDARD DRAWINGS GENERAL ARRANGEMENT (FOR 245 kV CT-31mm/kV) (300-500/1-1-1-1 A)	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	<b>CG Power and Industrial Solutions Limited</b> S1 - DIVISION, AMBAD, NASHIK
	CHD	SHB	
	APPD	USS	
DATE : 26.03.2021		DRG.NO: 3-KAD 5362	
		REV 0	

DRG.NO: 3-KAD 5363

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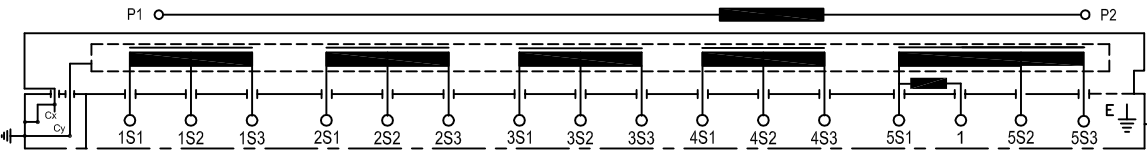
## CURRENT TRANSFORMER

MADE IN INDIA

RATING AND SCHEMATIC PLATE

CUSTOMER : APTRANSCO

TYPE	I.L.	SPEC.	S.O.NO.	SR.NO.	YEAR
IOSK245/460/1050	460kV / 1050 kVp	IEC 61869-1 & 2, IS 16227-1 & 2	AS APPLICABLE	[REDACTED]	2021
STR.	Idyn	FREQ.	RATED PRI. CURRENT	RATED CONT. CURRENT	
40 kA for 1 Sec	100 kAp	50 Hz	500 A	600 A	



CORE NO.	1		2		3		4		5	
RATIO	300/1	500/1	300/1	500/1	300/1	500/1	300/1	500/1	300/1	500/1
PRI. TERMINAL	P1 - P2		P1 - P2		P1 - P2		P1 - P2		P1 - P2	
SEC. TERMINAL	1S1- 1S2	1S1- 1S3	2S1- 2S2	2S1- 2S3	3S1- 3S2	3S1- 3S3	4S1- 4S2	4S1- 4S3	5S1- 5S2 (SHORT 1 & 5S2)	5S1- 5S3 (SHORT 1 & 5S3)
VA	20	20	--	--	--	--	--	--	20	20
CLASS	5P	5P	PS	PS	PS	PS	PS	PS	0.2 S	0.2 S
ALFASF	20	20	--	--	--	--	--	--	≤ 5	≤ 5
Vk (V) min.	--	--	300	40(Rct+10)	350	80(Rct+5)	350	80(Rct+5)	--	--
max Iexc at Vk (mA)	--	--	50	30	50	30	50	30	--	--
Rct (Ω)	--	--	≤ 3	≤ 5	≤ 3	≤ 5	≤ 3	≤ 5	--	--

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.


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

- 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.

Drawing approval subject to valid vendor registration

2					
1					
NO	REVISION	SIGN	DATE		

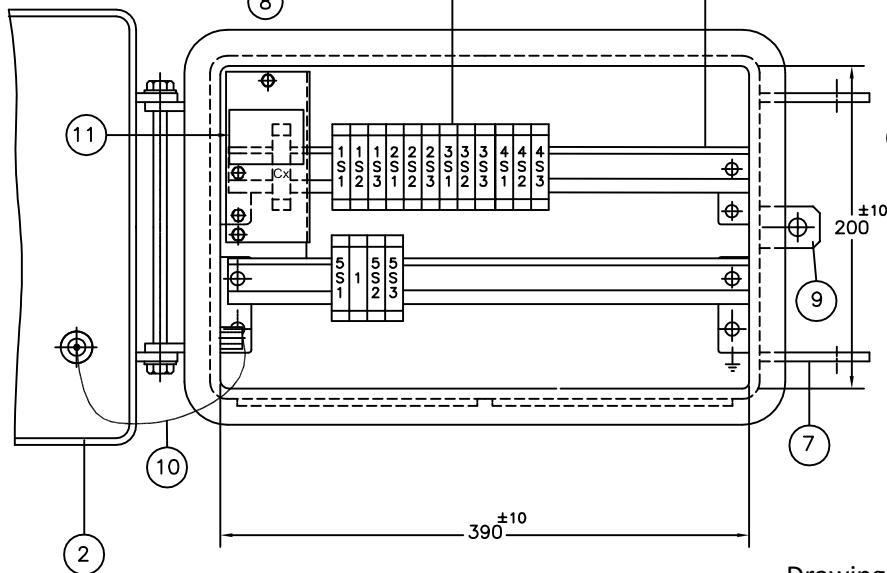
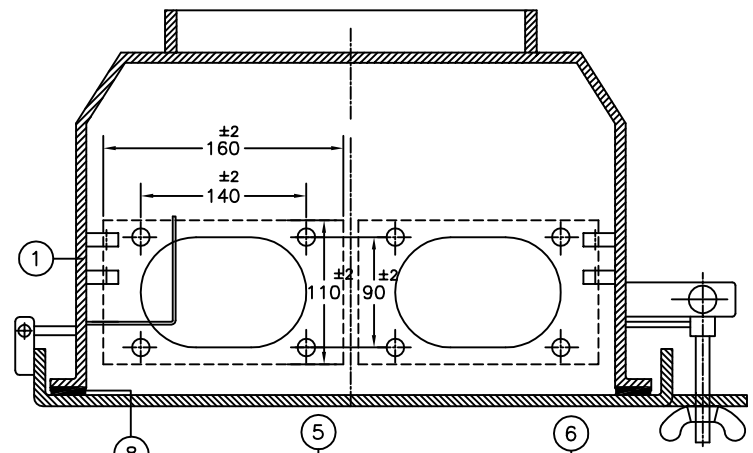
**CHIEF ENGINEER**  
**POWER SYSTEMS, PLANNING & DESIGN**  
**APTRANSCO**

CUSTOMER : APTRANSCO						
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS RATING/SCHEMATIC PLATE (FOR 245 kV CT-31mm/kV) (300-500/1-1-1-1 A)				
	SPEC.:					
THIRD ANGLE PROJECTION						
SCALE: NTS		INITIALS	NAME			
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG		NSB			
	CHD		SHB			
	APPD		USS			
		 <p><b>CG Power and Industrial Solutions Limited</b> S1 - DIVISION, AMBAD, NASHIK</p>		DRG.NO: 3-KAD 5363		REV 0
DATE : 26.03.2021				3/7		

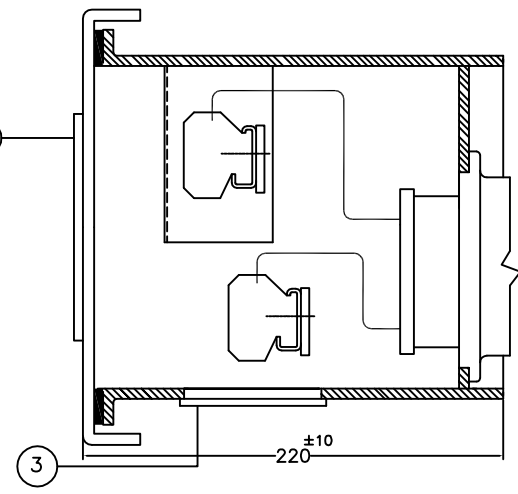
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DRG.NO: 3-KAD 5364

IF IN DOUBT, ASK



2		1	
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	17	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



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**CHIEF ENGINEER  
 POWER SYSTEMS, PLANNING & DESIGN  
 APTRANSCO**

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS SECONDARY BOX G.A. (FOR 245 kV CT-31mm/kV) (300-500/1-1-1-1-1 A)	
	SPEC.:		
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	
	CHD	SHB	
	APPD	USS	
DATE : 26.03.2021			REV 0



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 S1 - DIVISION, AMBAD, NASHIK

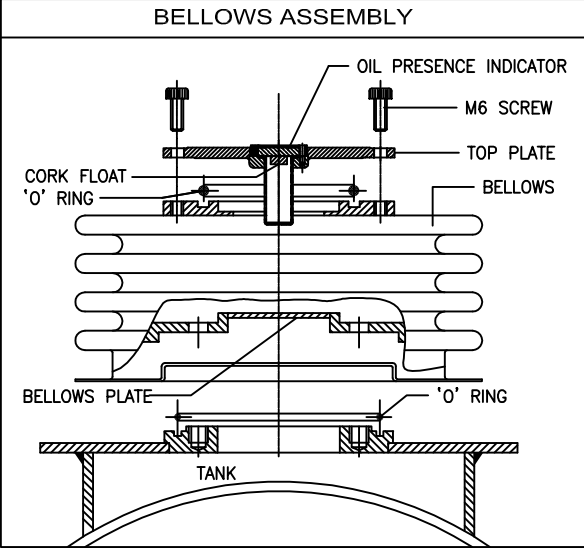
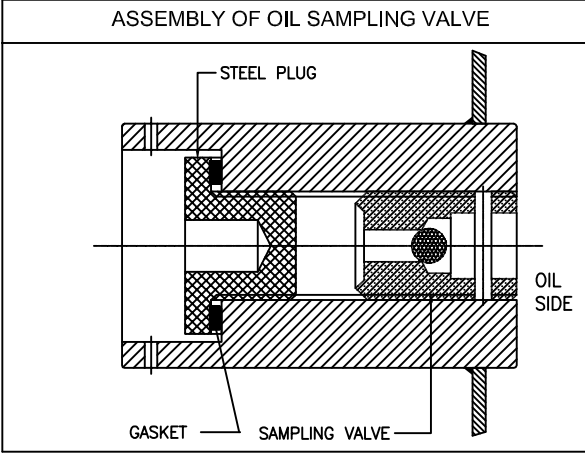
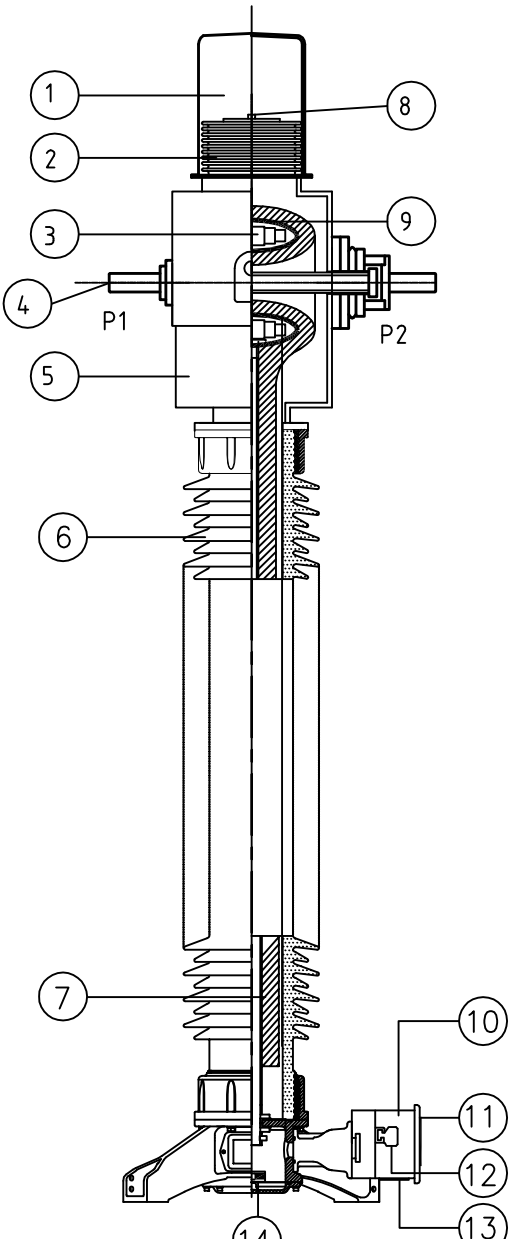
DRG.NO: 3-KAD 5364

NO	REVISION	SIGN	DATE
2			
1			

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DRG.NO: 3-KAD 5365

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

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS	
	SPEC.:	SECTIONAL VIEW	
THIRD ANGLE PROJECTION		(FOR 245 kV CT-31mm/kV)	
SCALE: NTS	INITIALS	NAME	(300-500/1-1-1-1-1 A)
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	 CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK
	CHD	SHB	
	APPD	USS	
NO		REVISION	SIGN
DATE : 26.03.2021		DRG.NO: 3-KAD 5365	
		REV 0	

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4494738/2021/EEMRT-ENE51

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS  
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GTP FOR 245 KV CURRENT TRANSFORMER

Particulars	Units	Data
<b>SUPPLIER DATA</b>		
Name of Manufacturer		CG Power and Industrial Solutions Limited, Nasik
Type		IOSK:245/460/1050
Reference Standard		IEC:- 61869-1 & 2 ; IS 16227-1&2
Oil Standard		IS : 335 (2018) / IEC -60296
Whether it is Live tank or Dead tank		Live Tank CT
Service		Outdoor Type, Single Phase CT
Primary Winding		<b>Aluminium</b>
<b>System details</b>		
Highest system voltage		245kV
No. of phase		Single
Rated Frequency		50HZ
System neutral		Solidly Earthed
<b>CT ratings:</b>		
Voltage Class	KV	245
Rated continuous thermal current		120% of rated primary current
Insulation Level		
1 Minute 50 Hz withstand		
HV terminal & earth	KV r.m.s	460
Secondary wiring	KV	5
1.2/50 micro second Lightning Impulse withstand voltage	KV Peak	1050
250/2500 second Switching Impulse withstand voltage	KV Peak	Not Applicable
Short-time current		
Rated 1 second current	kA rms	40
Rated Dynamic current	kA p	100
Insulation Class	Class	A
Temperature rise	°C	
Design ambient temperature	°C	55
Limit of temperature rise / Max Temperature rise over ambient		55
Minimum Creepage Distance ( mm/kV)	mm/kV	<b>7595 mm</b>
Corona extinction voltage	kV rms	156
Maximum radio interference voltage at 1.1U <sub>rated</sub> /sq.rt.3 at 1 MHz	micro volts	2500 μV
Partial discharge level at Um	pC (max.)	<10 PC @ Um , <5PC @1.2Um/√3
Mounting		As per Drawings Hot Dip Galvanised
Seismic Acceleration	g	0.3 g
Cantilever strength of CT at the terminal	kg	350
Whether it is possible to adjust the tap settings of any core independent of other cores?		Yes
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.
As per specification, an inert gas cushion / stainless steel bellow shall be provided on top for expansion of the oil.		Stainless Steel Bellow
As per specification, N2 sealing cover is required.		Stainless Steel Bellow, No gas cushioning given in our CT design
Whether GA & foundation drawings are furnished along with the offer for each type of CT?		Attached
Tan delta		< 0.005.

**CHIEF ENGINEER**  
**POWER SYSTEMS, PLANNING & DESIGN**  
**APTRANSCO**

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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.

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2. FOR EPC CONTRACTS ONLY

STC Rating	Insulation Level (kV)	Rated Current (Amps)	Rated Extended Current (Amps)	Primary Winding	Insulator
40kA-1sec	460/-/1050	500	600	Aluminium	Porcelain

Core 1	Core 2	Core 3	Core 4	Core 5
500-300/1A				
20	--	--	--	20
5P	PS	PS	PS	0.2S
20	--	--	--	≤ 5 @ All ratios
--	40(Rct+10) @ 500/1A, 300 @ 300/1A	80(Rct+5) @ 500/1A, 350 @ 300/1A	80(Rct+5) @ 500/1A, 350 @ 300/1A	--
=	≤5 @ 500/1A, ≤3 @ 300/1A	≤5 @ 500/1A, ≤3 @ 300/1A	≤5 @ 500/1A, ≤3 @ 300/1A	--
--	30 @ 500/1A, 50 @ 300/1A	30 @ 500/1A, 50 @ 300/1A	30 @ 500/1A, 50 @ 300/1A	--

**CHIEF ENGINEER  
POWER SYSTEMS, PLANNING & DESIGN  
APTRANSCO**

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