

DRG.NO: 3-KAD 5356

IF IN DOUBT, ASK

LIST OF STANDARD DRAWINGS APPLICABLE FOR 245 KV CT

SR. NO.	DESCRIPTION	DRG./DOC.NO.	APP. CAT.	REMARKS
01	GENERAL ARRANGEMENT	3-KAD 5357/R0		
02	RATING/SCHEMATIC PLATE	3-KAD 5358/R0		
03	SECONDARY TERMINAL BOX G.A.	3-KAD 5359/R0		
04	SECTIONAL VIEW	3-KAD 5360/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			
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 : 15.02.2021			REV 0

TITLE :  
LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE  
( FOR 245 KV CT )  
(300-500/1-1-1-1-1 A)



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

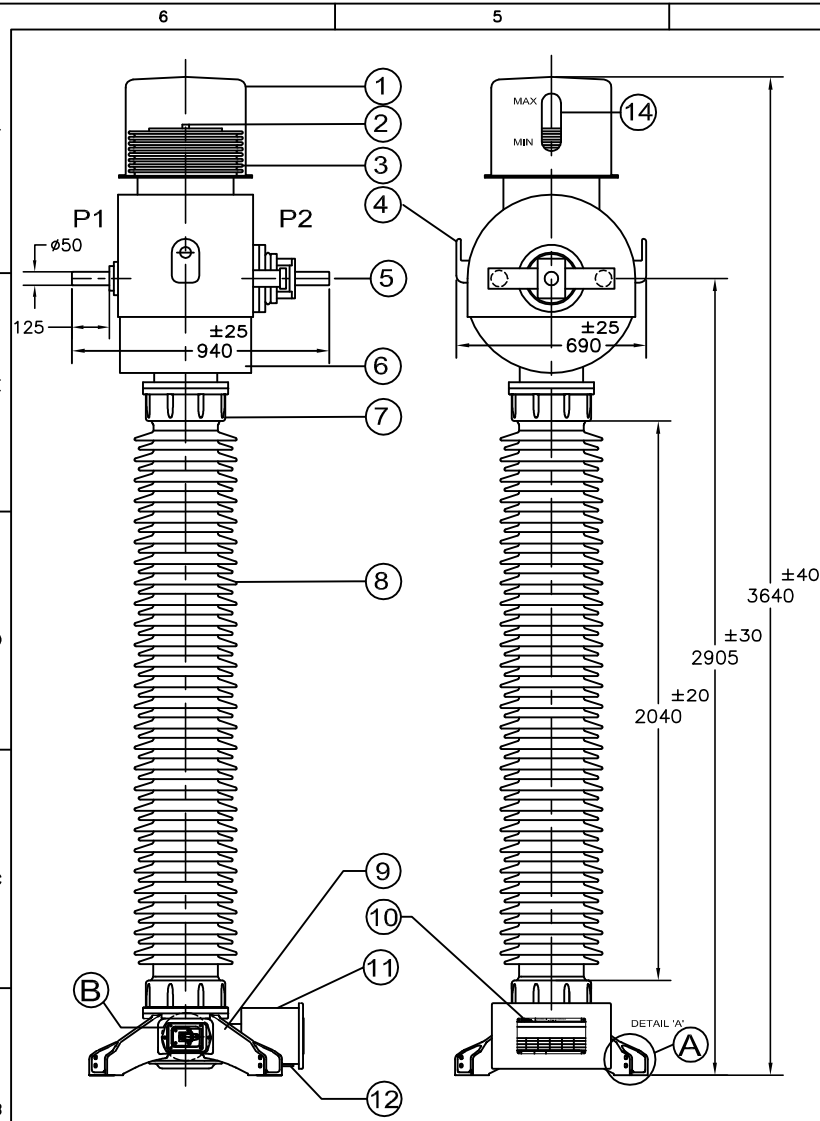
DRG.NO: 3-KAD 5356

DRG.NO: 3-KAD 5357

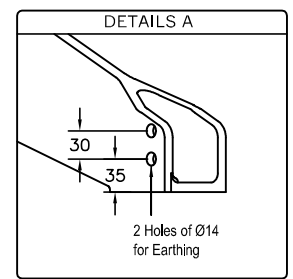
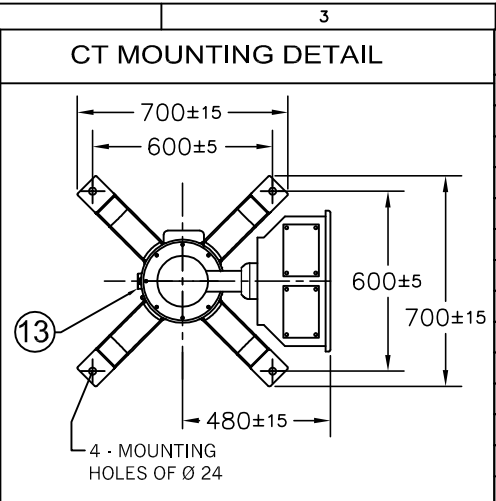
IF IN DOUBT, ASK

FRAME:- 749-2T50-6125-NB

All information contained in this document is confidential & should not be used without prior consent of CG Power and Industrial Solutions Limited



NOTE: REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION



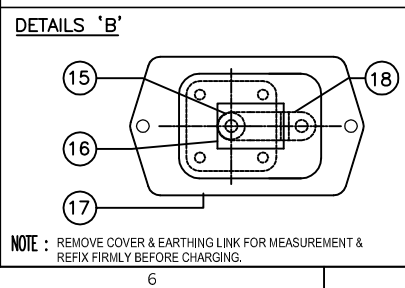
NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	OIL PRESENCE INDICATOR	POLY CARBONATE
3	1	BELLOWS	STAINLESS STEEL
4	2	LIFTING LUG Ø 40	ALUMINIUM
5	2	PRIMARY TERMINAL	ALUMINIUM
6	1	HOUSING	ALUMINIUM
7	2	PORCELAIN FLANGE	ALUMINIUM
8	1	PORCELAIN INSULATOR	PORCELAIN
9	1	BASE	ALUMINIUM
10	1	RATING PLATE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

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO



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

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

CUSTOMER : APTRANSCO		TITLE : STANDARD DRAWINGS GENERAL ARRANGEMENT (FOR 245 kV CT) (300-500/1-1-1-1 A)	
GEN. TOL.	MATL: SPEC.:	THIRD ANGLE PROJECTION	
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	
	CHD	SHB	
	APPD	USS	
DATE : 15.02.2021		<b>CG Power and Industrial Solutions Limited</b> S1 - DIVISION, AMBAD, NASHIK	
DRG.NO: 3-KAD 5357		REV 0	

NO	REVISION	SIGN	DATE
4			
3			
2			
1			

DRG.NO: 3-KAD 5358

IF IN DOUBT, ASK

**CURRENT TRANSFORMER**  
MADE IN INDIA

RATING AND SCHEMATIC PLATE

CUSTOMER : APTRANSCO

TYPE:  I.L.  SPEC.  S.O.NO.  SR.NO.  YEAR

STR.  Idyn  FREQ.  RATED PRI. CURRENT  RATED CONT. CURRENT

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	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.

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)		
	SPEC.:	(300-500/1-1-1-1-1 A)		
THIRD ANGLE PROJECTION				
SCALE: NTS		INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG		NSB	
	CHD		SHB	
	APPD		USS	
DATE : 15.02.2021				REV 0

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

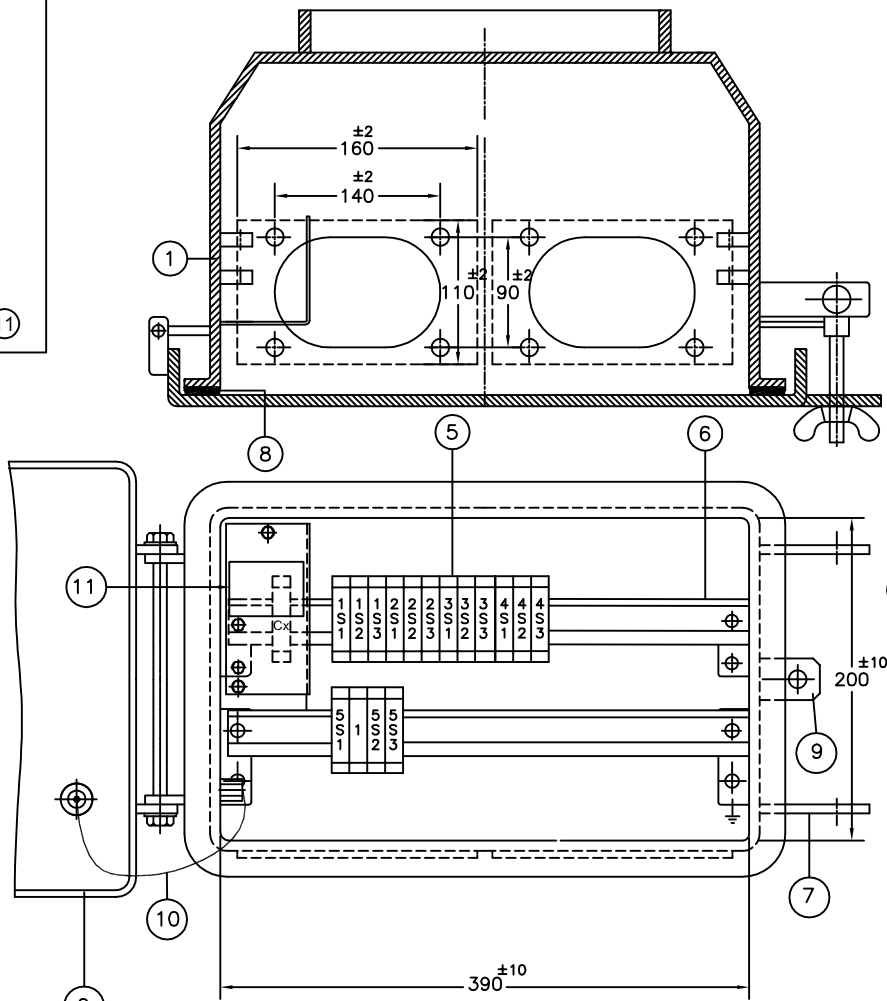
DRG.NO: 3-KAD 5358

All information contained in this document is confidential & should not be used without prior consent of CG Power and Industrial Solutions Limited

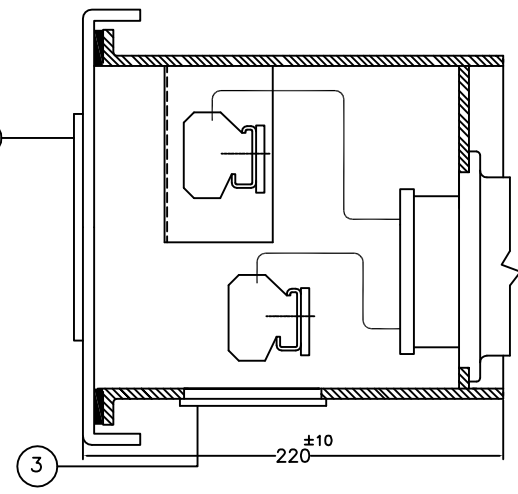
DRG.NO: 3-KAD 5359

IF IN DOUBT, ASK

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



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



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

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS SECONDARY BOX G.A. (FOR 245 kV CT) (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	
DATE : 15.02.2021			REV 0

NO	REVISION	SIGN	DATE
2			
1			



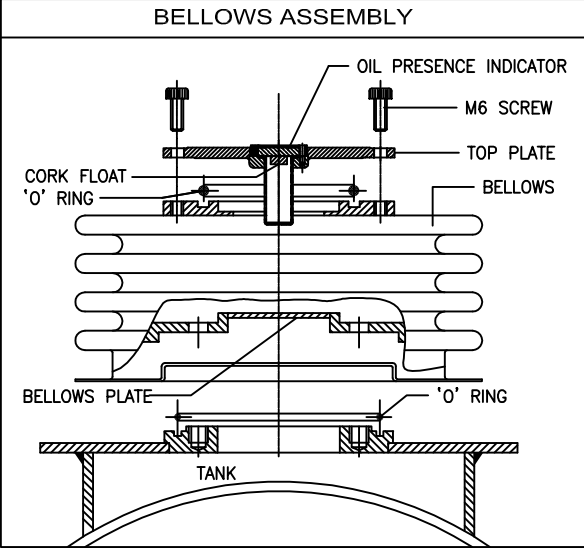
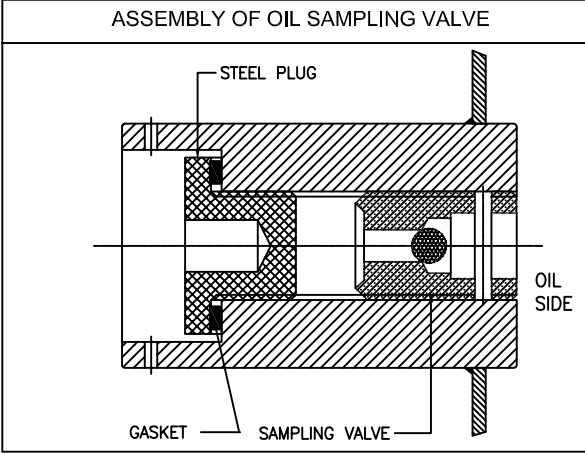
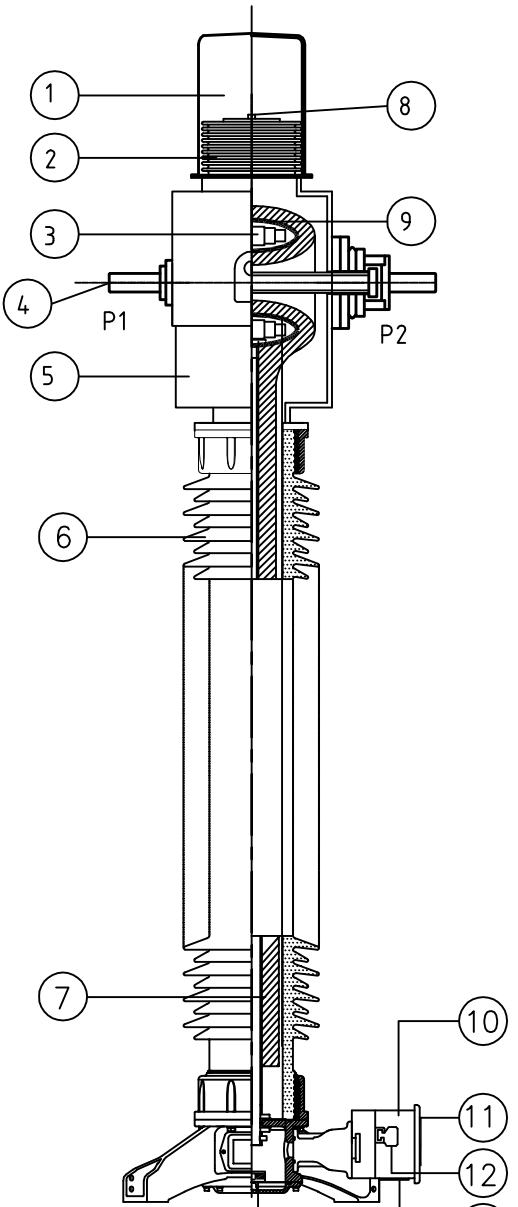
**CG Power and Industrial Solutions Limited**  
 S1 - DIVISION, AMBAD, NASHIK

DRG.NO: 3-KAD 5359

All information contained in this document is confidential & should not be used without prior consent of CG Power and Industrial Solutions Limited

DRG.NO: 3-KAD 5360

IF IN DOUBT, ASK



SR.NO.	DESCRIPTION	MATERIAL
1	HOOD	ALUMINIUM
2	BELLOWS	STAINLESS STEEL
3	CORE WITH SECONDARY WINDING *	
4	PRIMARY TERMINAL (FLAT)	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

CHIEF ENGINEER/CONSTRUCTION  
 APTRANSCO

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

NO	REVISION	SIGN	DATE
2			
1			

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS	
	SPEC.:	SECTIONAL VIEW	
THIRD ANGLE PROJECTION		(FOR 245 kV CT)	
SCALE: NTS	INITIALS	NAME	(300-500/1-1-1-1 A)
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	 CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK
	CHD	SHB	
	APPD	USS	
DATE : 15.02.2021			DRG.NO: 3-KAD 5360
			REV 0

All information contained in this document is confidential & should not be used without prior consent of CG Power and Industrial Solutions Limited

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST

4403743/2021/EEMRT-ENE51

REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS

2. FOR EPC CONTRACTS ONLY

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 $1.1U_{rated}/\text{sq. rt. } 3$ at 1 MHz	micro volts	2500 $\mu$ V
18	Partial discharge level at $U_m$	pC (max.)	<10 PC @ $U_m$ , <5PC @ $1.2U_m/\sqrt{3}$
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.

CHIEF ENGINEER/CONSTRUCTION

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

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

kV Class	STC Rating	Insulation Level (kV)	Rated Current (Amps)	Rated Extended Current (Amps)	Primary Winding	Insulator
245	40kA-1sec	460/-/1050	500	600	Aluminium	Porcelain

Item - 1600	Core 1	Core 2	Core 3	Core 4	Core 5
Current Ratios A/A	500-300/1A				
Output burden (VA)	20	--	--	--	20
Class of accuracy ALF/ISF	5P 20	PS --	PS --	PS --	0.2S < 5 @ All ratios
Min. knee point voltage (kpv)	--	40(Rct+10) @ 500/1A, 300 @ 300/1A	80(Rct+5) @ 500/1A, 350 @ 300/1A	80(Rct+5) @ 500/1A, 350 @ 300/1A	--
Rct( $\Omega$ )	=	$\leq 5$ @ 500/1A, $\leq 3$ @ 300/1A	$\leq 5$ @ 500/1A, $\leq 3$ @ 300/1A	$\leq 5$ @ 500/1A, $\leq 3$ @ 300/1A	--
Max. excitation current in mA @ Vk	--	30 @ 500/1A, 50 @ 300/1A	30 @ 500/1A, 50 @ 300/1A	30 @ 500/1A, 50 @ 300/1A	--

CHIEF ENGINEER/CONSTRUCTION

APTRANSCO

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