

DRG.NO: 3-KAD 5391

IF IN DOUBT, ASK

LIST OF STANDARD DRAWINGS APPLICABLE FOR 245 KV CT- METERING

LIST OF VARIABLE DRAWINGS APPLICABLE FOR 245 KV CT

SR. NO.	DESCRIPTION	DRG./DOC.NO.	APP. CAT.	REMARKS
01	GENERAL ARRANGEMENT	3-KAD 5392/R0		
02	RATING/SCHEMATIC PLATE	3-KAD 5393/R0		
03	SECONDARY TERMINAL BOX G.A.	3-KAD 5394/R0		
04	SECTIONAL VIEW	3-KAD 5395/R0		

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

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


- 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.

FOR EPC CONTRACTS ONLY

Drawing approval subject to valid vendor registration

REMARKS	APPROVAL LETTER NO.

Chief Engineer
Power Systems, Planning & Design
APTransco

				CUSTOMER : APTRANSCO				
4				GEN. TOL.	MATL. SPEC.:	TITLE : LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE (FOR 245 KV CT- METERING) (400/1 A)		
3				THIRD ANGLE PROJECTION			 CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK	
2				SCALE: NTS	INITIALS	NAME		
1				ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	SHB	
					APPD	USS	DRG.NO: 3-KAD 5391	REV 0
NO	REVISION	SIGN	DATE	DATE : 09.06.2021				

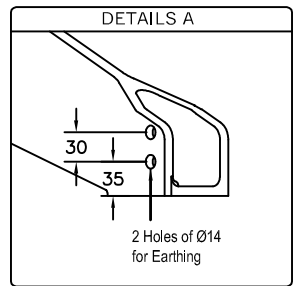
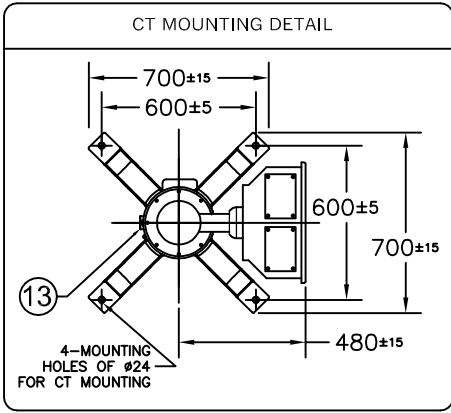
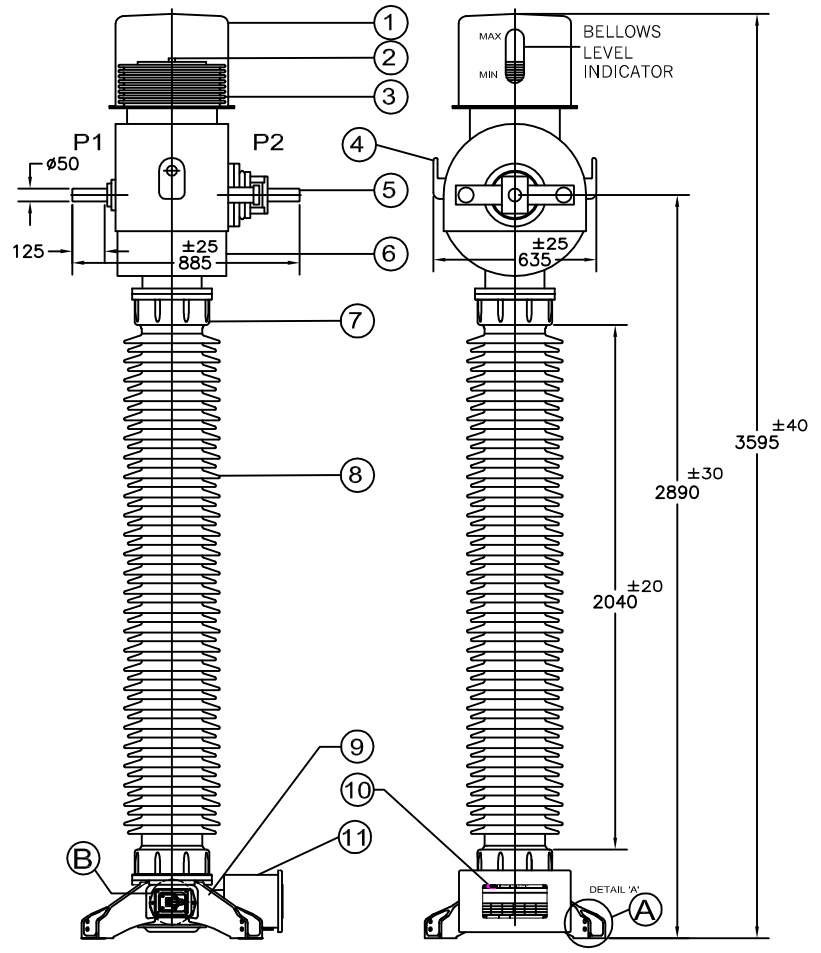
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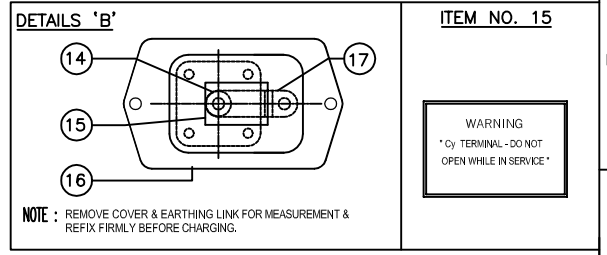
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FRAME: 104-2T50-61.25-NB

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NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	OIL FILLING PLUG	STEEL GALVANISED
3	1	BELLOWS	STAINLESS STEEL
4	2	LIFTING LUG Ø 40	ALUMINIUM
5	2	PRIMARY TERMINAL (STUD)	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 SAMPLING DEVICE	STEEL GALVANISED
14	1	CAPACITANCE & TAN DELTA MEASUREMENT TERMINAL Cy	BRASS
15	1	WARNING STICKER	ALUMINIUM
16	1	COVER	ALUMINIUM
17	1	EARTHING LINK	COPPER (NICKEL PLATED)



TOTAL MASS = 750±10% kg
 TOTAL MASS = 190±10% kg
 CREEPAGE DISTANCE = 6125 mm

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Chief Engineer
 Power Systems, Planning & Design
 APTransco
 NOTE: REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION

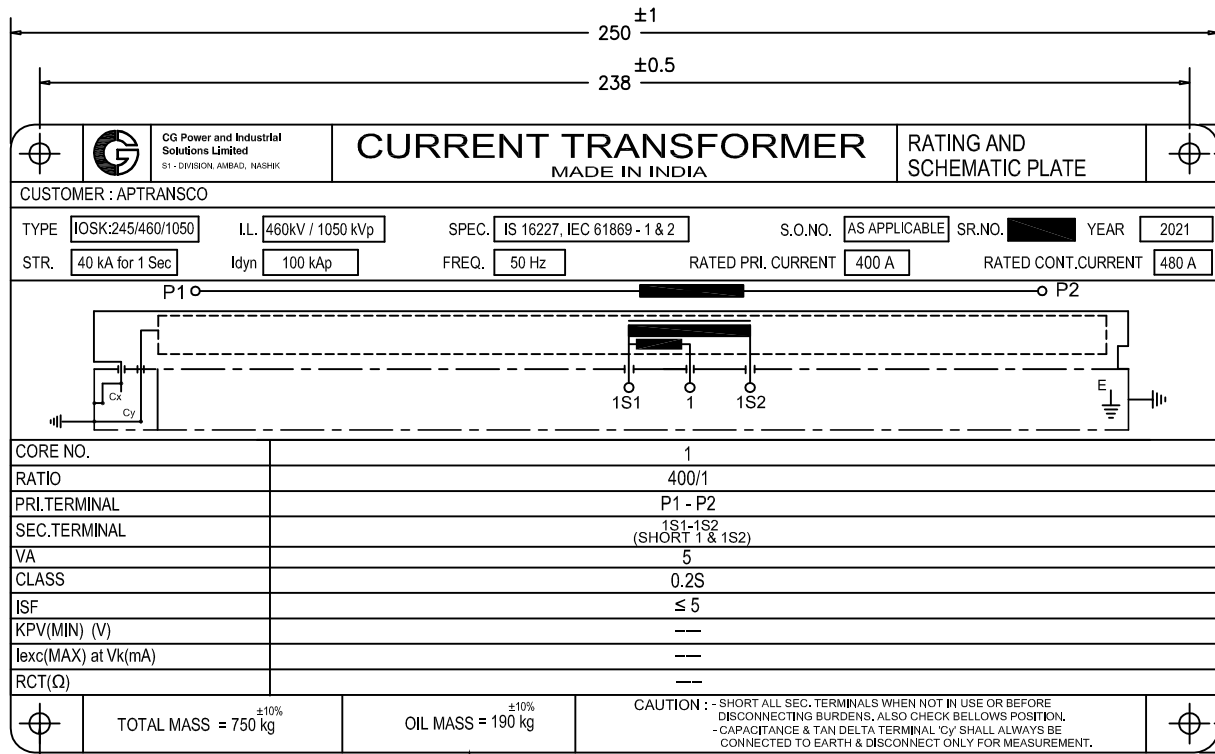
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1			

CUSTOMER : APTRANSCO				TITLE : GENERAL ARRANGEMENT (FOR 245 kV CT- METERING) (400/1 A)	
GEN. TOL.	MATL.:	CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK			
	SPEC.:				
THIRD ANGLE PROJECTION					
SCALE: NTS	INITIALS	NAME	DRG.NO: 3-KAD 5392		
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB			
	CHD	SHB			
	APPD	USS	DATE : 09.06.2021	REV	0

DRG.NO: 3-KAD 5393

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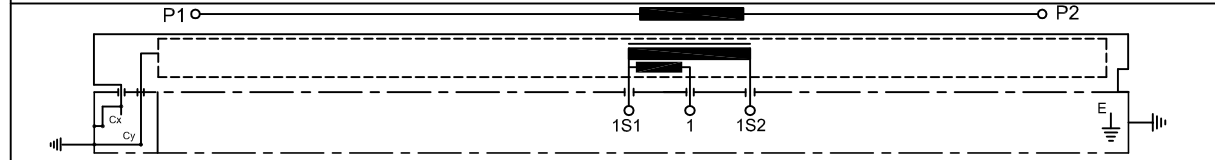
CURRENT TRANSFORMER
MADE IN INDIA

RATING AND SCHEMATIC PLATE

CUSTOMER : APTRANSCO

TYPE: IOSK:245/460/1050 LL: 460kV / 1050 kVp SPEC: IS 16227, IEC 61869 - 1 & 2 S.O.NO. AS APPLICABLE SR.NO. [REDACTED] YEAR: 2021

STR: 40 kA for 1 Sec Idyn: 100 kAp FREQ: 50 Hz RATED PRI. CURRENT: 400 A RATED CONT. CURRENT: 480 A



CORE NO.	1
RATIO	400/1
PRI. TERMINAL	P1 - P2
SEC. TERMINAL	1S1-1S2 (SHORT 1 & 1S2)
VA	5
CLASS	0.2S
ISF	≤ 5
KPV(MIN) (V)	---
Iexc(MAX) at V/k(mA)	---
RCT(Ω)	---

TOTAL MASS = 750 kg ±10% OIL MASS = 190 kg ±10%

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

4 HOLES OF Ø4 1 mm THK. ALUMINIUM (METAL PHOTO)

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

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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.

Chief Engineer
Power Systems, Planning & Design
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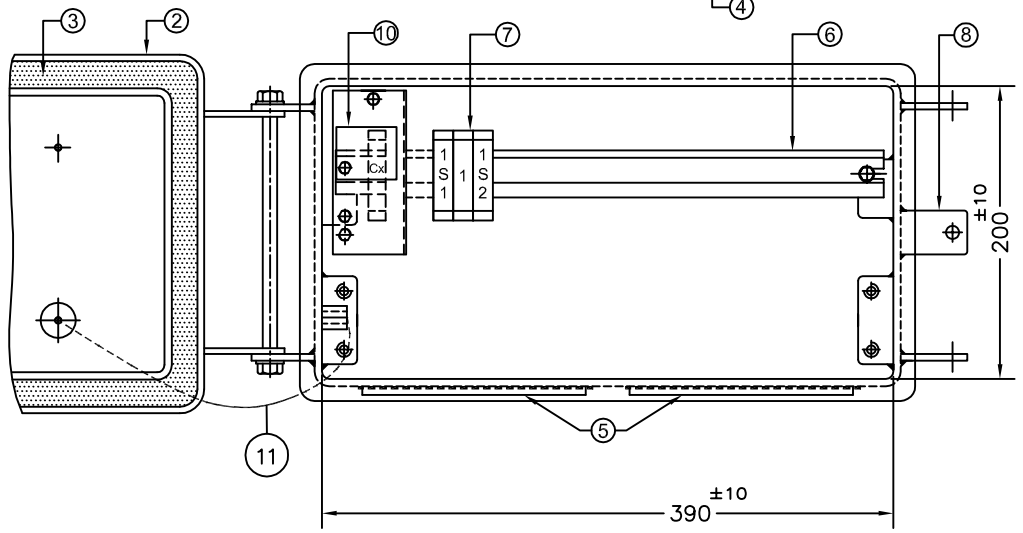
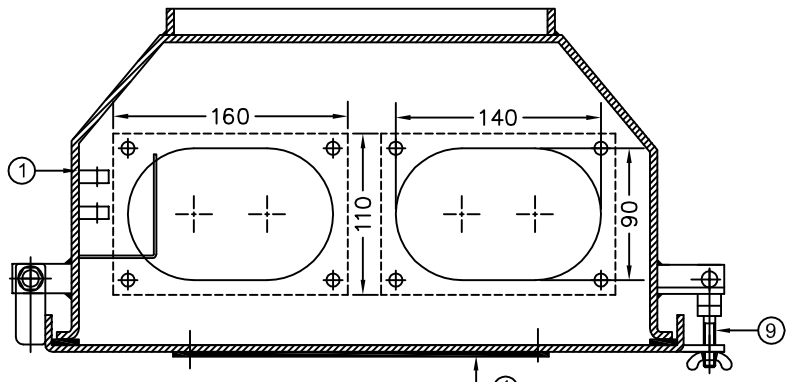
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GEN. TOL.	MATL.:	TITLE : RATING/SCHEMATIC PLATE	
	SPEC.:	(FOR 245 kV CT- METERING) (400/1 A)	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	
	CHD	SHB	
	APPD	USS	
DRG.NO: 3-KAD 5393			REV 0

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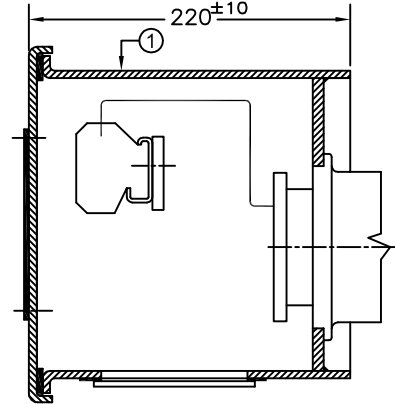
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DRG.NO: 3-KAD 5394



SR.NO	QTY	DESCRIPTION	MTRL./RATING
1	1	SECONDARY TERMINAL BOX	STEEL, HDG
2	1	BOX COVER	STEEL, HDG
3	1	GASKET	EPDM SPONGE RUBBER
4	1	RATING SCHEMATIC PLATE	ALUMINIUM
5	2	GLAND PLATE	STEEL, HDG
6	1	TERMINAL MOUNTING BRACKET	STEEL POWDER COATED
7	4	SECONDARY TERMINAL	STUD TYPE
8	1	PAD LOCK ARRANGEMENT	STEEL, HDG
9	2	HINGE ARRANGEMENT	S.S. BRASS
10	1	WARNING PLATE FOR 'Cx' TERMINAL	ALUMINIUM METAL PHOTO TYPE
11	1	FLEXIBLE COPPER BTRAIDED CABLE FOR BOX DOOR EARTHING	COPPER



DEGREE OF PROTECTION : IP55

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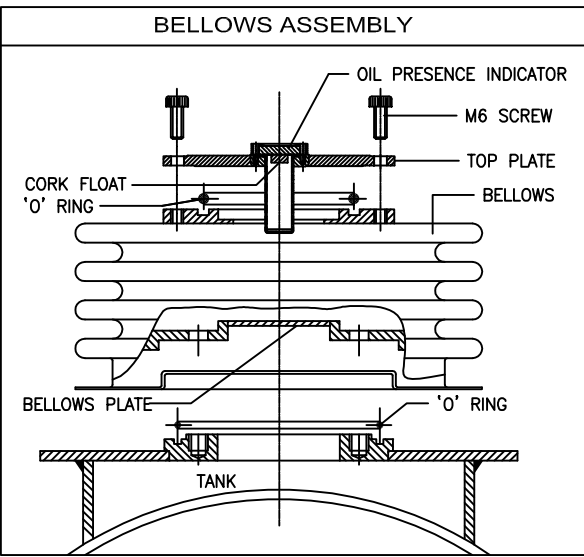
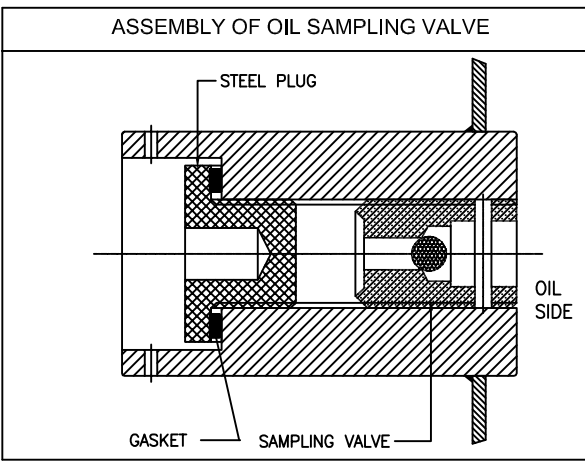
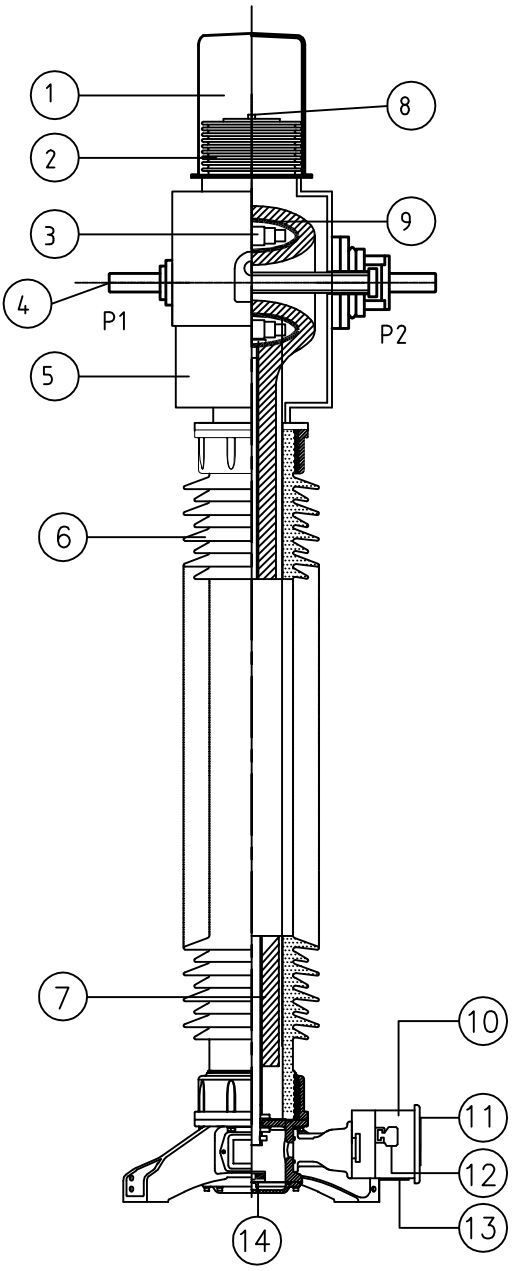
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3			
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1			

CUSTOMER : APTRANSCO				TITLE : SECONDARY BOX (FOR 245 KV CT- METERING) (400/1 A)	
GEN. TOL.	MATL.:	SPEC.:		CG Power and Industrial Solutions Limited S1 - DIVISION, AMBAD, NASHIK	
THIRD ANGLE PROJECTION					
SCALE: NTS	INITIALS	NAME			
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB		DRG.NO: 3-KAD 5394	REV 0
	CHD	SHB			
	APPD	USS			
DATE : 09.06.2021					

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DRG.NO: 3-KAD 5395

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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 - NANO-CRYSTALLINE
 * SEC. WINDING - ENAMELLED COPPER

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CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS SECTIONAL VIEW (FOR 245 kV CT- METERING) (400/1 A)	
	SPEC.:		
THIRD ANGLE PROJECTION			
SCALE: NTS		INITIALS	NAME
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN		NSB
	CHD		SHB
	APPD		USS
DATE : 09.06.2021			REV 0



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

DRG.NO: 3-KAD 5395

NO	REVISION	SIGN	DATE
2			
1			

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Annexure-A**GUARANTEED TECHNICAL PARTICULARS FOR CURRENT TRANSFORMERS (245kV CT: 400 / 1 A)**

1	Type of tank/Installation Dead/Live Tank Type	Live tank, Single phase, Oil Filled, Outdoor Type
2	Type of mounting	Pedestal Mounting
3	Manufacturer's Name and address and Country of Manufacture	CG Power and Industrial Solutions Limited, A-3 MIDC, Ambad, Nashik , INDIA
4	Whether Conforming to IEC 61869 standard	Yes, IEC 61869-1&2 , IS 16227-1&2
5 a) i)	Primary and Secondary winding made out of	Primary – Aluminum, Secondary – Copper
ii)	Primary windings -Design density for short circuit current -Conductivity of metal used -	Aluminum - 20.37 Amp/mm ² (approx.) - As per IEC
b) i)	Area of cross section of primary winding	1963 mm ² (approx.)
ii)	Area of cross section of secondary winding	1.167 mm ² (approx.)
c)	Material used for providing Primary terminals	Aluminium
d)	Material used for providing secondary terminals	Copper Alloy
e)	Whether Primary is Rigid Bar type in case of live tank	Yes, Rigid Bar type
6	Rated primary voltage (kV rms)	220 kV / root3
7	Rated highest voltage (kV rms)	245 kV
8	Rated frequency (Hz)	50 Hz
9	Rated primary current (A)	400A
10	Rated secondary current (A)	1
11	Ratio taps (on secondary side only)	On Secondary Side
12	Type of insulation	Class A
13	Seismic acceleration (g)	0.3 g vertical
14	RIV at 1.1 x Rated voltage (mv)	< 1000 micro volts
15	Tank material and Tank coating	Aluminium Tank with Natural finish
16	Hardware exposed to atmosphere	Stainless Steel
17	Bolts, Nuts and Washers	Stainless Steel.
18	Porcelain housing and it make (Single piece only)	IEC/Modern/ABIL/CJI/RAVIKIRAN or Equivalent Make
19	Sealing (Nitrogen gas cushion/Metal bellow)	Stainless Steel bellows
20	Instrument security factor	<5 (For Metering core)
21	Whether Tan Delta test tap provided	Yes
22	Whether secondary terminal plate is of molded epoxy resin type	Yes (Epoxy Monoblock)

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23	Whether primary terminal bushings are of molded Epoxy cast resin/Glass fiber reinforced Polymer	Not applicable
24	Whether all seals are of "O" ring type	Yes "O" ring
25	Whether all "O" Rings are fixed in machined grooves with adequate space for compression'	Yes
26	Whether the main hollow insulator has the flanges cemented at both ends	Yes
27	Whether "O" Rings are of Nitrile butyl rubber or Viton	Yes (Viton)
28	Whether the Short circuit Ampere-turns of the CT being supplied is same as type tested CTs	Yes
29	Tan Delta	< 0.4 %
30	Whether ratio selection is achieved only in secondary	Yes
31	Whether ratio selection is achieved only in secondary	Yes
32	Whether Non return drain valve for oil sampling is arranged for 132kV and above CT/IVT	Yes
33	Acceptable limit of temperature	As per IS/IEC
34	Partial Discharge Level	< 5pC at 1.2 xUm /√3, < 10pC at Um (where Um is highest system voltage)
35	Rated short time withstand current for 1 sec. duration (kA rms)	40 kA
36	Rated dynamic withstand current (kAp)	100 kA
37	Rated continuous thermal current (pu) where pu = rated current	120% of rated primary current
38	1.2/50 micro second impulse withstand voltage (kVp)	1050 kVp
39	One minute power frequency withstand voltage (kV rms) of primary winding (Dry)	460 kV rms
40	One minute power frequency withstand voltage of secondary winding (kV rms)	3 KV rms
41 a)	Minimum total Creepage distance of insulator bushing (mm)	6125 mm / (25mm/kV) Porcelain Insulator
b)	Protected Creepage of distance of bushing (mm)	< 50 % of total Creepage

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42	Details of Cores	Core 1	Core 2	Core 3	Core 4	Core 5
42.1	Current Ratios A/A	400/1				
42.2	Output burden (VA)	5				
42.3	Class of accuracy	0.2S				
42.4	Accuracy limit factor / ISF	≤ 5				
42.5	Min. knee point voltage (kpv) in volts	-				
42.6	Secondary resistance corrected to 75 deg.C in ohms	-				
42.7	Max. Exciting current (mA) at - 20% of knee point voltage - 50% of knee point voltage - 100% of knee point voltage	-				
42.8	Application	Metering				
43	Weight of oil (Kg.)	190 Kg. ± 10% (approx.)				
44	Approximate weight of Copper used (Kgs)	2.5 Kg. (approx.)				
45	Approximate weight of Steel used (Kgs)	-				
46	Total Weight (Kg.)	750 Kg. ± 10%. (approx.)				
47	Mounting details	600mm x600mm (Please refer GA Drawing)				
48	Overall dimensions	Please refer GA Drawing				
49	Characteristics (whether graphs enclosed):	Not applicable				
a)	Ratio and phase angle curves	NA				
b)	Magnetization curves	Not applicable				
c)	Ratio correction factor curves	NA				
50	Core					
a)	Area of cross section (sq.cm.)	As per Standard design practice				
b)	Flux density at rated primary current and rated burden	As per Standard design practice				
c)	Grade	Nano-crystalline core for Metering				

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

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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.

FOR EPC CONTRACTS ONLY

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