

DRG.NO: 3-KAD 5371

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 5372/R0		
02	RATING/SCHEMATIC PLATE	3-KAD 5373/R0		
03	SECONDARY TERMINAL BOX G.A.	3-KAD 5374/R0		
04	SECTIONAL VIEW	3-KAD 5375/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

Drawing approval subject to valid vendor registration

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
POWER SYSTEMS, PLANNING & DESIGN
APTRANSCO

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CUSTOMER : APTRANSCO				TITLE : LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE (FOR 245 kV CT-31mm/kV) (800-1200-1600/1-1-1-1-1 A)	
4				GEN. TOL.	MATL.: SPEC.:
3				THIRD ANGLE PROJECTION	
				SCALE: NTS	INITIALS NAME
2				ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG NSB CHD SHB
1				APPD	USS
NO	REVISION	SIGN	DATE	DATE : 26.03.2021	177
DRG.NO: 3-KAD 5371					REV 0

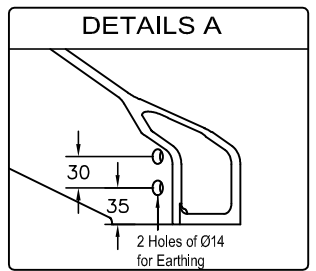
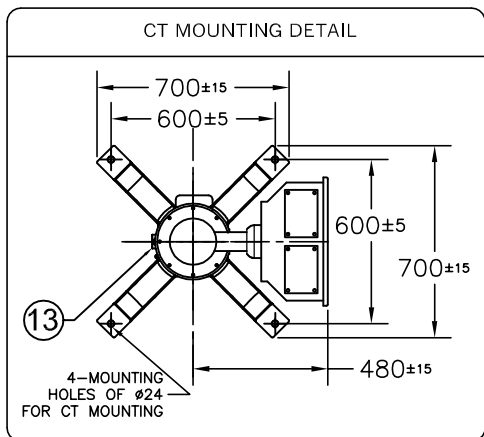
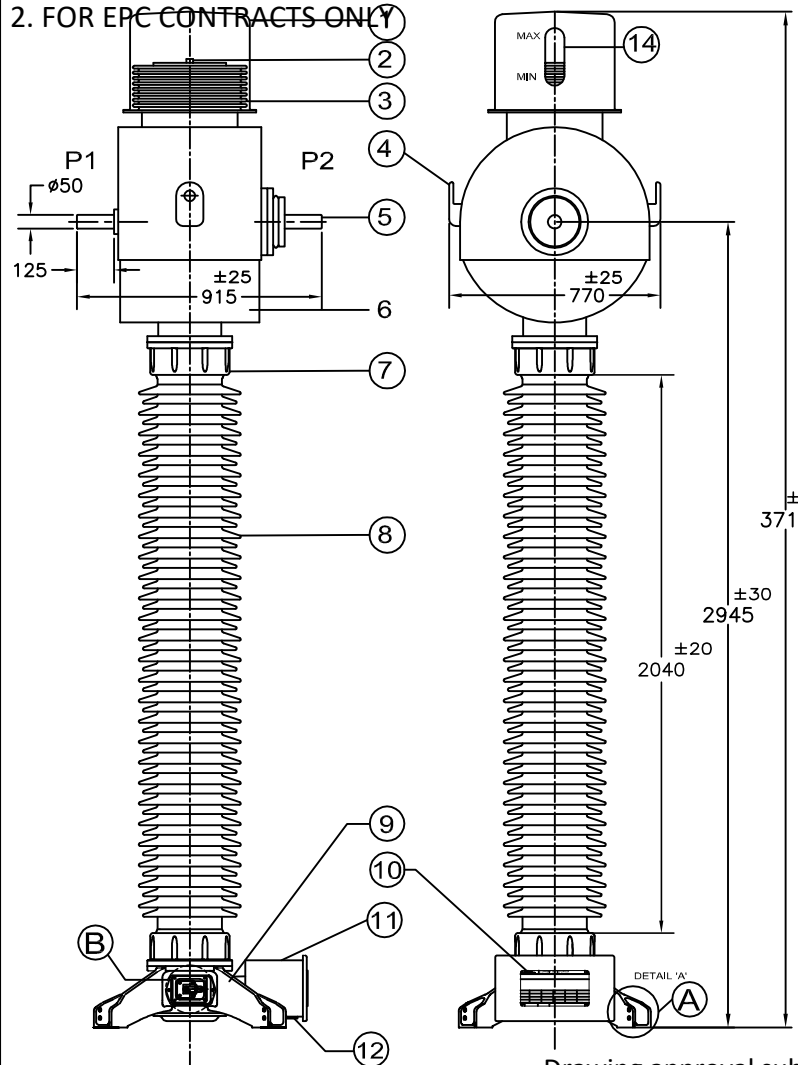


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NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST

REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS

2. FOR EPC CONTRACTS ONLY



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

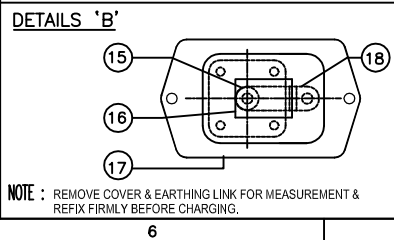
NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	OIL PRESENCE INDICATOR	POLY CARBONATE
3	1	BELLOWS	STAINLESS STEEL
4	2	LIFTING LUG Ø 40	ALUMINIUM
5	2	PRIMARY TERMINAL	ALUMINIUM
6	1	HOUSING	ALUMINIUM
7	2	PORCELAIN FLANGE	ALUMINIUM
8	1	PORCELAIN INSULATOR	PORCELAIN
9	1	BASE	ALUMINIUM
10	1	RATING PLATE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

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

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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
2			
1			

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL. SPEC.	TITLE : STANDARD DRAWINGS GENERAL ARRANGEMENT (FOR 245 kV CT-31mm/kV) (800-1200-1600/1-1-1-1-1 A)	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	
	CHD	SHB	
	APPD	USS	
DATE : 26.03.2021		DRG.NO: 3-KAD 5372	
		2/7	
			REV 0



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FRAME:- 382-1T50-7595-NB

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CURRENT TRANSFORMER
MADE IN INDIA

RATING AND SCHEMATIC PLATE

CUSTOMER : APTRANSCO

TYPE [IOSK: 245/460/1050] I.L. [460kV/1050 kVp] SPEC. [IEC 61869-1 & 2; IS 16227-1 & 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 [1600 A] RATED CONT. CURRENT [1920 A]

CORE NO.	1			2			3			4			5		
RATIO	800/1	1200/1	1600/1	800/1	1200/1	1600/1	800/1	1200/1	1600/1	800/1	1200/1	1600/1	800/1	1200/1	1600/1
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 <small>(SHORT 1 & 5S2)</small>	5S1-5S3 <small>(SHORT 1 & 5S3)</small>	5S1-5S4 <small>(SHORT 1 & 5S4)</small>
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.	800	1200	1600	800	1200	1600	800	1200	1600	800	1200	1600	---	---	---
max Iexc at Vk (mA)	60	40	30	60	40	30	60	40	30	60	40	30	---	---	---
Rct (Ω)	≤4	≤6	≤8	≤4	≤6	≤8	≤4	≤6	≤8	≤4	≤6	≤8	---	---	---

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 BELLOW'S 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

- 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.
- 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
APTRANSCO

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS RATING/SCHEMATIC PLATE (FOR 245 kV CT-31mm/kV) (800-1200-1600/1-1-1-1-1 A)	
	SPEC.:		
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	DRN	NSB	
	CHD	SHB	
	APPD	USS	
DATE : 26.03.2021		DRG.NO: 3-KAD 5373	
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NO	REVISION	SIGN	DATE
2			
1			

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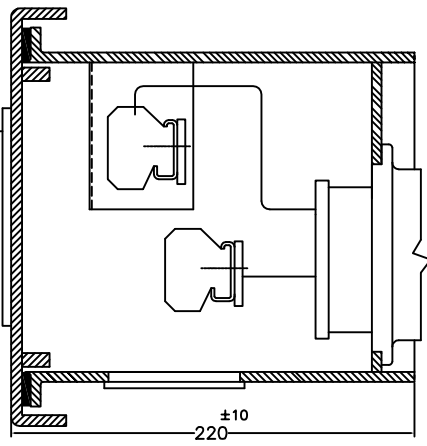
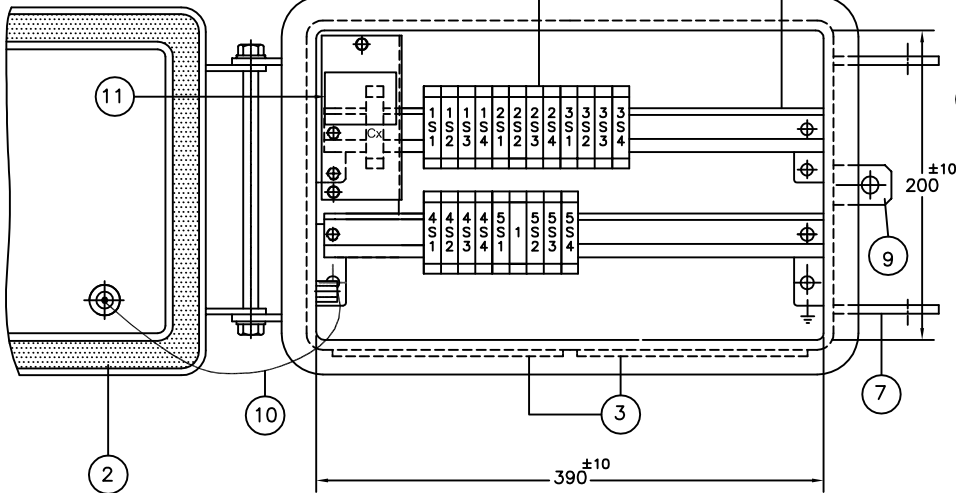
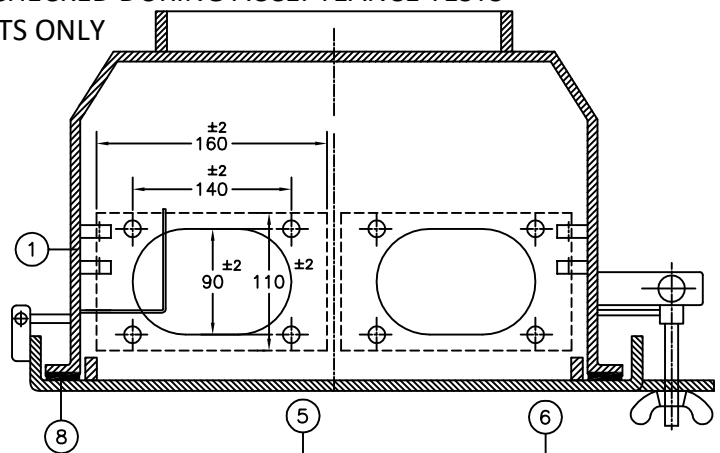
DRG.NO: 3-KAD 5373

DRG.NO. : 3-KAD 5374

IF IN DOUBT, ASK

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS

2. FOR EPC CONTRACTS ONLY



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

DEGREE OF PROTECTION : IP55

CHIEF ENGINEER
POWER SYSTEMS, PLANNING & DESIGN
APTRANSCO

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL.:	TITLE : STANDARD DRAWINGS	
	SPEC.:	SECONDARY BOX G.A.	
THIRD ANGLE PROJECTION		(FOR 245 kV CT-31mm/kV)	
SCALE: NTS	INITIALS	NAME	(800-1200-1600/1-1-1-1-1 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
DATE : 26.03.2021			DRG.NO: 3-KAD 5374
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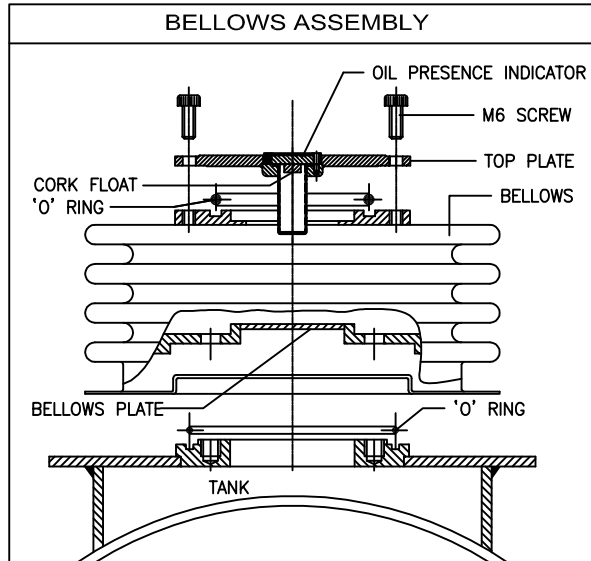
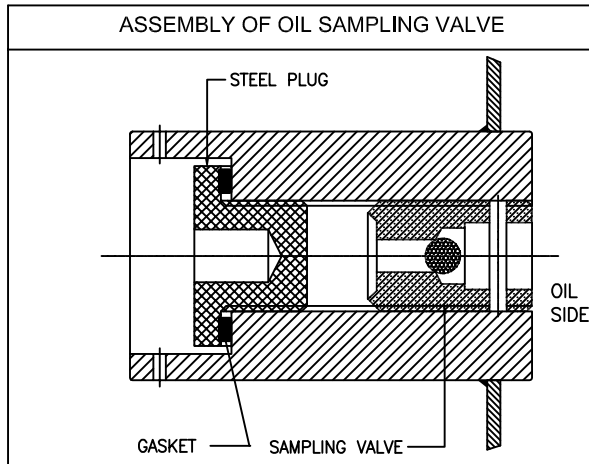
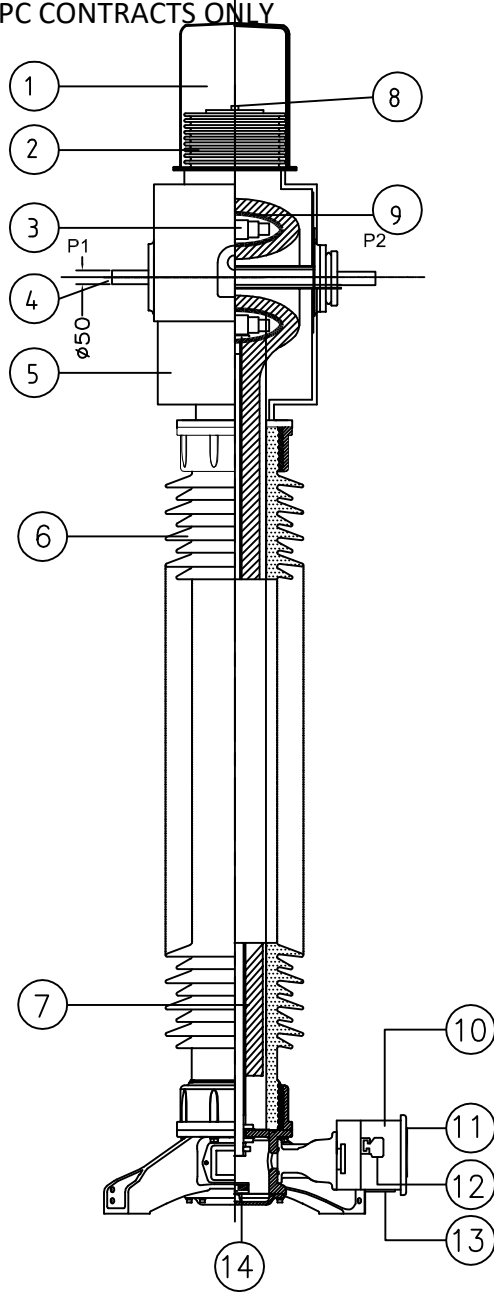
NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST

REPORTS, TO BE CHECKED DURING ACCEPTANCE TESTS

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DRG.NO: 3-KAD 5375

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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 - CRGO Si-Fe/EQUIVALENT HIGH PERMEABILITY MATERIAL, MU-METAL, NANO-CRYSTALLINE

* SEC. WINDING - ENAMELLED COPPER

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

CUSTOMER : APTRANSCO

GEN. TOL. :
MATL.:
SPEC.:

TITLE : STANDARD DRAWINGS
SECTIONAL VIEW
(FOR 245 kV CT-31mm/kV)
(800-1200-1600/1-1-1-1-1 A)

THIRD ANGLE PROJECTION
SCALE: NTS

ORG	NSB
CHD	SHB
APPD	USS



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Solutions Limited**
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DRG.NO: 3-KAD 5375

REV
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DATE : 26.03.2021

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1				
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4494762/2021/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
SUPPLIER DATA		
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		Aluminium
System details		
Highest system voltage		245kV
No. of phase		Single
Rated Frequency		50HZ
System neutral		Solidly Earthed
CT ratings:		
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	7595 mm
Corona extinction voltage	kV rms	156
Maximum radio interference voltage at $1.1U_{rated}/\sqrt{3}$ at 1 MHz	micro volts	2500 μ V
Partial discharge level at U_m	pC (max.)	<10 PC @ U_m , <5PC @ $1.2U_m/\sqrt{3}$
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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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.

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4494762/2021/EEMRT-ENE51

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STC Rating	Insulation Level (kV)	Rated Current (Amps)	Rated Extended Current (Amps)	Primary Winding	Insulator
40kA-1sec	460/-/1050	1600	1920	Aluminium	Porcelain

Core 1	Core 2	Core 3	Core 4	Core 5
1600-1200-800/1A				
--	--	--	--	20
PS	PS	PS	PS	0.2S
--	--	--	--	≤ 5 @ All ratios
1600 @ 1600/1A, 1200 @ 1200/1A, 800 @ 800/1A	1600 @ 1600/1A, 1200 @ 1200/1A, 800 @ 800/1A	1600 @ 1600/1A, 1200 @ 1200/1A, 800 @ 800/1A	1600 @ 1600/1A, 1200 @ 1200/1A, 800 @ 800/1A	--
≤8 @ 1600/1A, ≤4 @ 800/1A ≤6 @ 1200/1A,	≤8 @ 1600/1A, ≤6 @ 1200/1A, ≤4 @ 800/1A	≤8 @ 1600/1A, 1200/1A, ≤6 @ 800/1A	≤8 @ 1600/1A, ≤6 @ 1200/1A, ≤4 @ 800/1A	--
30 @ 1600/1A, 60 @ 800/1A 40 @ 1200/1A,	30 @ 1600/1A, 40 @ 1200/1A, 60 @ 800/1A	30 @ 1600/1A, 1200/1A, 40 @ 60 @ 800/1A	30 @ 1600/1A, 40 @ 1200/1A, 60 @ 800/1A	--

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**CHIEF ENGINEER
POWER SYSTEMS, PLANNING & DESIGN
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.
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