

LIST OF STANDARD DRAWINGS APPLICABLE FOR 245kV IVT

SR. NO.	DESCRIPTION	DRG./DOC.NO.	APP. CAT.	REMARKS
01	GENERAL ARRANGEMENT	3-VAD 3392/R0		
02	RATING/SCHEMATIC PLATE	3-VAD 3393/R0		
03	SECONDARY TERMINAL BOX G.A.	3-VAD 3394/R0		

LIST OF VARIABLE DRAWINGS APPLICABLE FOR 245 kV IVT

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**

REMARKS	APPROVAL LETTER NO.

Chief Engineer  
 Planning & Power Systems  
 APTransco

Drawing approval subject to valid vendor registration

CUSTOMER : APTRANSCO				TITLE : LIST OF STANDARD DRGS. / DOCUMENTS APPLICABLE FOR 245 kV IVT (CREEPAGE = 25 mm/ kV)	
4				GEN. TOL.	MATL.: SPEC.:
3				THIRD ANGLE PROJECTION	
				SCALE: NTS	INITIALS NAME
2				ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG NSB CHD PBN
1				APPD	USS
NO	REVISION	SIGN	DATE	DATE : 15.12.2021	DRG.NO: 3-VAD 3391
					REV 0



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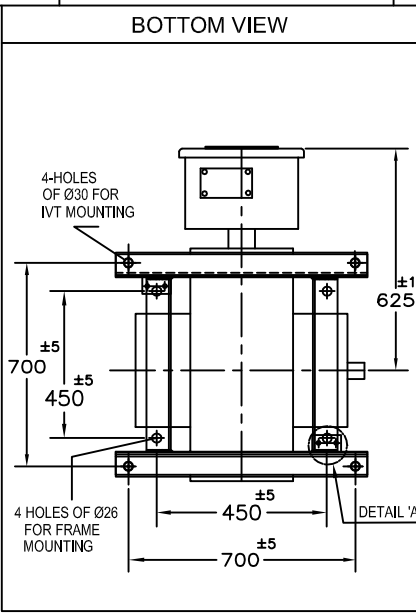
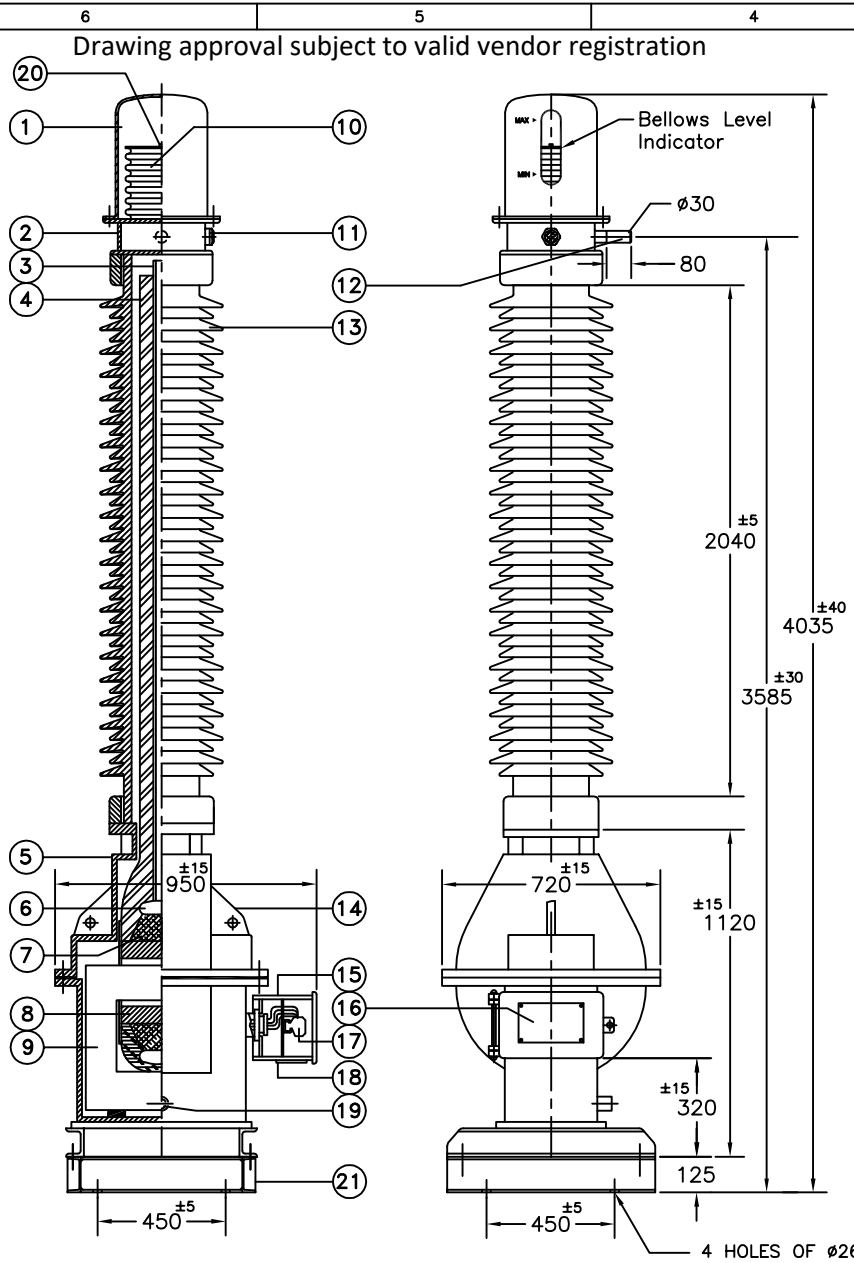
DRG.NO: 3-VAD 3392

IF IN DOUBT, ASK

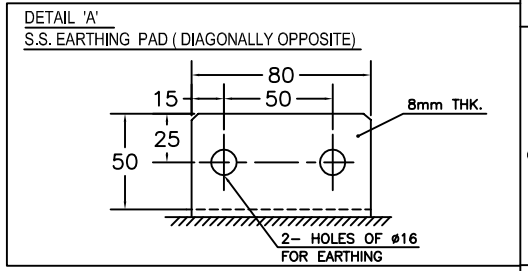
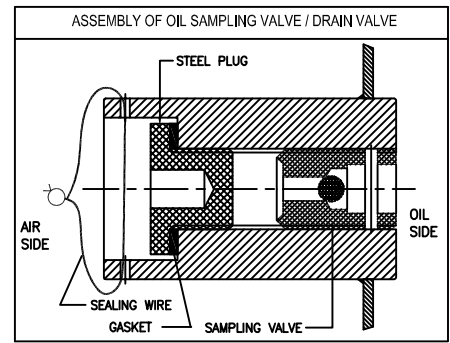
FRAME : DOM-ST-6125

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TOTAL MASS	= 850 kg	±10%
OIL MASS	= 125 kg	±10%
TOTAL CREEPAGE DISTANCE(MIN)	= 6125 mm	



SR.NO.	QTY.	DESCRIPTION	MATERIAL
1	1	HOOD	ALUMINIUM
2	1	TOP HOUSING	ALUMINIUM
3	1	BUSHING TUBE	ALUMINIUM
4	1	BUSHING PORTION OF ACTIVE PART	O.I.P.
5	1	TANK	STEEL HDG.
6	1	SHIELD	ALUMINIUM
7	1	PRIMARY WINDING	COPPER
8	-	SECONDARY WINDING	COPPER
9	1	C.R.G.O. CORE	C.R.G.O.
10	1	METALLIC BELLOWS	STAINLESS STEEL
11	1	OIL INDICATOR	PRISMATIC TYPE
12	1	PRIMARY TERMINAL	COPPER (NICKEL PLATED)
13	1	PORCELAIN INSULATOR	PORCELAIN
14	2	LIFTING LUG Ø35	STEEL HDG.
15	1	SECONDARY TERMINAL BOX	STEEL HDG.
16	1	RATING/SCHEMATIC PLATE	ALUMINIUM
17	--	SECONDARY TERMINALS	ELMEX
18	1	GLAND PLATE	STEEL HDG.
19	1	OIL SAMPLING VALVE	STEEL E.G.
20	1	OIL PLUG	BRASS PLATED
21	1	MOUNTING FRAME (SHALL BE SUPPLIED LOOSE)	STEEL HDG

CUSTOMER : APTRANSCO

GEN. TOL.	MATL.:	TITLE : STANDARD DRAWING GENERAL ARRANGEMENT OF 245 kV IVT (CREEPAGE = 25 mm/ kV)
	SPEC.:	
THIRD ANGLE PROJECTION		
SCALE: NTS	INITIALS	NAME
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB
	CHD	PBN
	APPD	USS

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DRG.NO: 3-VAD 3392

NO	REVISION	SIGN	DATE	DATE : 15.12.2021	REV 0
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Chief Engineer  
Planning & Power Systems

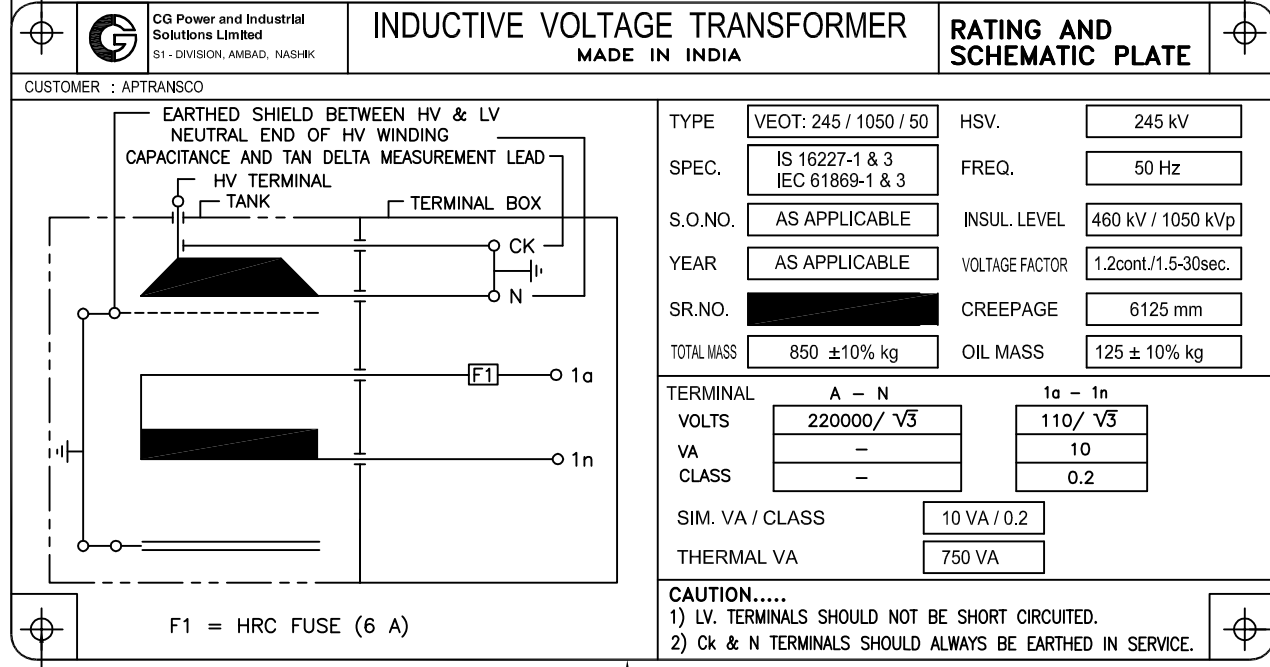
2			
1			
NO	REVISION	SIGN	DATE

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

FOR EPC CONTRACTS ONLY

DRG.NO: 3-VAD 3393

IF IN DOUBT, ASK



F1 = HRC FUSE (6 A)

TYPE	VEOT: 245 / 1050 / 50	HSV.	245 kV
SPEC.	IS 16227-1 & 3 IEC 61869-1 & 3	FREQ.	50 Hz
S.O.NO.	AS APPLICABLE	INSUL. LEVEL	460 kV / 1050 kVp
YEAR	AS APPLICABLE	VOLTAGE FACTOR	1.2cont./1.5-30sec.
SR.NO.	[REDACTED]	CREEPAGE	6125 mm
TOTAL MASS	850 ±10% kg	OIL MASS	125 ± 10% kg

TERMINAL	A - N	1a - 1n
VOLTS	220000/ √3	110/ √3
VA	-	10
CLASS	-	0.2

SIM. VA / CLASS	10 VA / 0.2
THERMAL VA	750 VA

**CAUTION.....**  
 1) LV. TERMINALS SHOULD NOT BE SHORT CIRCUITED.  
 2) Ck & N TERMINALS SHOULD ALWAYS BE EARTHED IN SERVICE.

- 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  
 Planning & Power Systems  
 APTransco

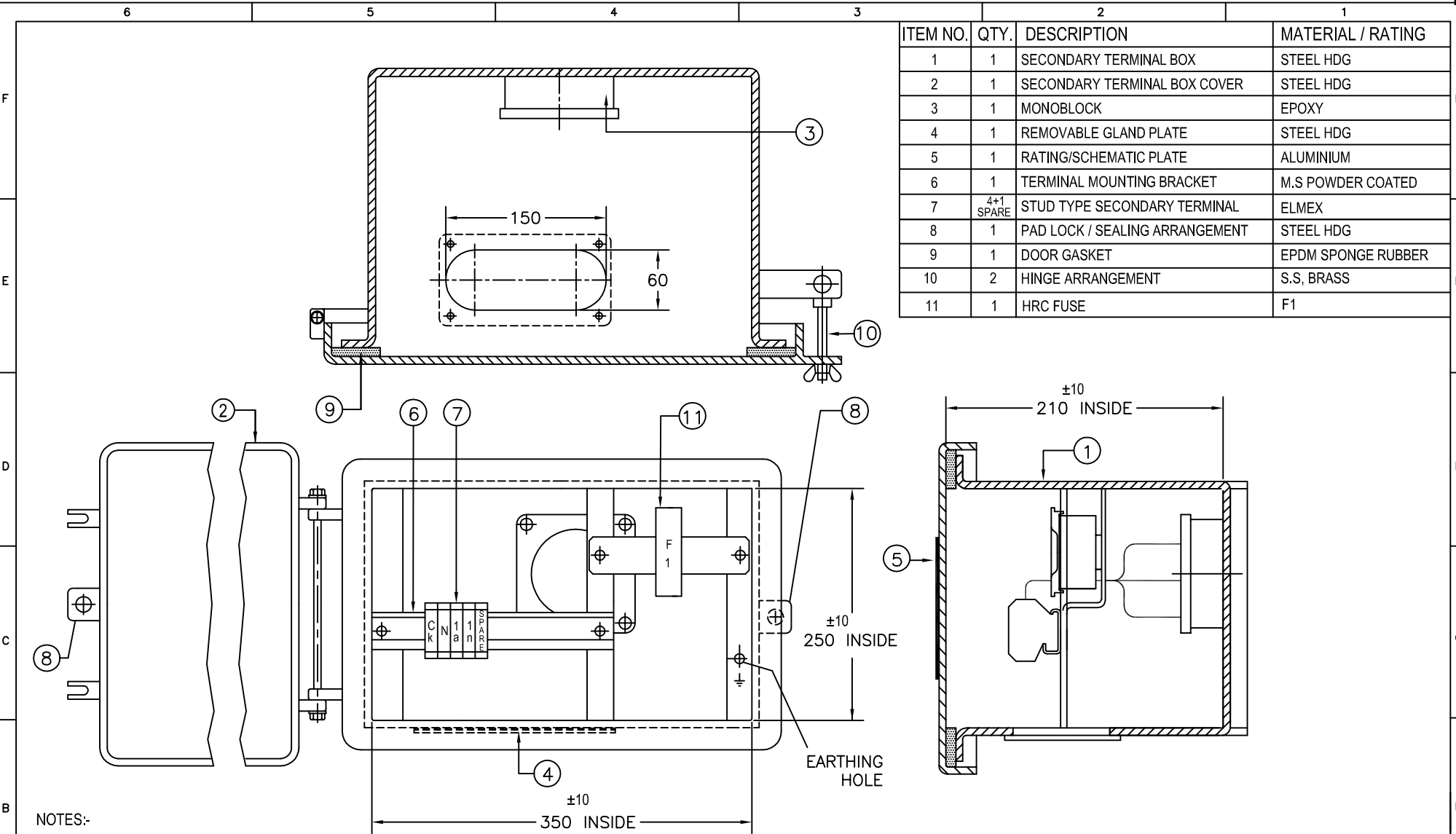
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CUSTOMER : APTRANSCO			
GEN. TOL.	MATL. SPEC.	TITLE : STANDARD DRAWING RATING/SCHEMATIC PLATE OF 245 kV IVT ( CREEPAGE = 25 mm/ kV )	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	
	CHD	PBN	
	APPD	USS	
DRG.NO: 3-VAD 3393			REV 0
NO	REVISION	SIGN	DATE
DATE : 15.12.2021			

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DRG.NO: 3-VAD 3394

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ITEM NO.	QTY.	DESCRIPTION	MATERIAL / RATING
1	1	SECONDARY TERMINAL BOX	STEEL HDG
2	1	SECONDARY TERMINAL BOX COVER	STEEL HDG
3	1	MONOBLOCK	EPOXY
4	1	REMOVABLE GLAND PLATE	STEEL HDG
5	1	RATING/SCHEMATIC PLATE	ALUMINIUM
6	1	TERMINAL MOUNTING BRACKET	M.S POWDER COATED
7	4+1 SPARE	STUD TYPE SECONDARY TERMINAL	ELMEX
8	1	PAD LOCK / SEALING ARRANGEMENT	STEEL HDG
9	1	DOOR GASKET	EPDM SPONGE RUBBER
10	2	HINGE ARRANGEMENT	S.S, BRASS
11	1	HRC FUSE	F1

NOTES:-  
 1) SECONDARY BOX ASSEMBLY CONFORMS TO IP55  
 2) Ck : TERMINAL FOR CAPACITANCE & TAN DELTA MESUREMENT ONLY.  
 IT SHOULD ALWAYS BE EARTHED IN SERVICE & DISCONNECT ONLY FOR MEASUREMENT.

Drawing approval subject to valid vendor registration

Chief Engineer  
 Planning & Power Systems  
 APTranSCO

CUSTOMER : APTRANSCO			
GEN. TOL.	MATL. SPEC.:	TITLE : STANDARD DRAWING SECONDARY BOX GA OF 245 kV IVT ( CREEPAGE = 25 mm/ kV )	
THIRD ANGLE PROJECTION			
SCALE: NTS	INITIALS	NAME	
ALL DIMNS. IN MM. UNLESS OTHERWISE SPECIFIED.	ORG	NSB	
	CHD	PBN	
	APPD	USS	
DATE : 15.12.2021			REV 0



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5565940/2022/EEMRT-ENE51

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

**CG Power and Industrial Solutions Limited.** Tel: +91-253-2382271  
Switchgear Complex, Fax: +91-253-2381247  
A-3, MIDC, Ambad,  
Nashik – 422 010. INDIA

**APTRANSCO**

Date:17.12.2021

**Our ref: GTP 245kV IVT GTP/ 1 winding/Metering/25mm/kV**

**SCHEDULE OF TECHNICAL & GUARANTEED PARTICULARS**  
**FOR 245kV POTENTIAL TRANSFORMER**

Sr. No.	Type:	
		Oil filled, Outdoor, Hermetically sealed, single phase IVT.
1.	Manufacturer's type/designation:	VEOT: 245/1050/50.
2.		Mounting of tank (Bottom): - Dead tank.
3.	Conforming to standard	IS: 16227 & IEC:61869-1&3
4.	System rated voltage/highest voltage(kV)	220 kV/ $\sqrt{3}$ / 245/ $\sqrt{3}$
5.	Rated primary voltage (kV)	220 kV/ $\sqrt{3}$ .
6.	Secondary voltage details	
	a. No. of secondary windings	<b>a. Winding-I</b>
	b. Rated secondary voltage (VA)	b. 110 V/ $\sqrt{3}$
	c. Rated burden (VA)	c. 10 VA
	d. Class of accuracy	d. 0.2
7.	Temperature rise at 1.1 times rated voltage with rated burden (deg C):	Less than 50 deg C.
8.	Rated voltage factor and time	1.2 for continuous & 1.5 for 30Sec.
9.	Temperature rise for item-10 above (deg C)	Not Applicable.
10.	Impulse withstand test voltage (kV) peak: -	1050kVp.
11.	One minute power frequency withstands test voltage on primary (kV rms)	460kV rms.
12.	One minute power frequency withstands test voltage on secondary (kV rms)	3 kV rms
13.	Porcelain bushing (make)	IEC/CJI/Ravi Kiran
14.	Total creepage distance of the bushing (mm)	6125mm.
15.	Protected creepage distance of the bushings (mm)	Not Applicable.
16.	Quantity of insulating oil (litres)	In the event of order.
17.	Weight of OIL (Kg)	As per attached GA drawing
18.	Total weight including OIL (Kg)	As per attached GA drawing
19.	Mounting details	Kindly refer our tender purpose GA drawings.
20.	Whether V.T. is sealed construction with nitrogen at top	Our VT is hermetically sealed with stainless steels below at the top, hence nitrogen is not provided.
21.	Tan-delta	< 0.005
22.	Grade of oil: -	IS335.
23.	RIV at 1.1 x Um/Root3 (micro volts)	<1000 $\mu$ V
24.	Partial discharge at Um is <10pC	<10 pC @ Um <5 pC @ 1.2 Um/ $\sqrt{3}$
25.	Terminal Connectors	Not In CGPISL scope of Supply in case of EPC contractors
26.	Support Structures & Marshalling Boxes	Not In CGPISL scope of Supply in case of EPC contractors

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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