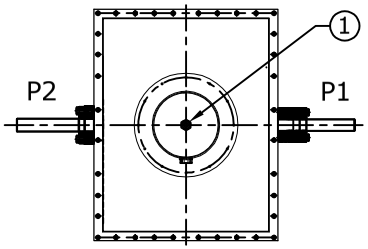
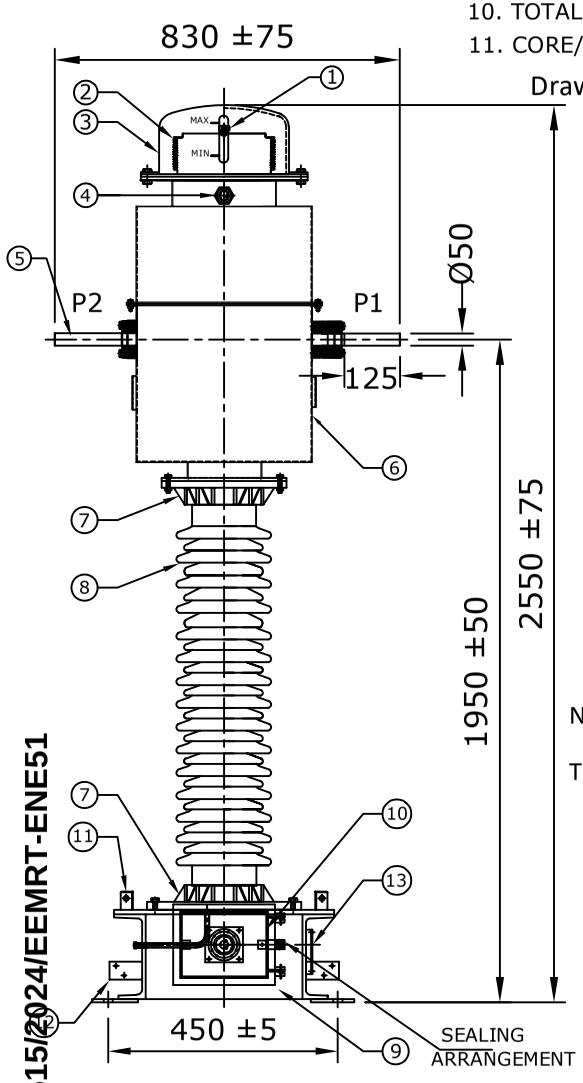
NOTES :-

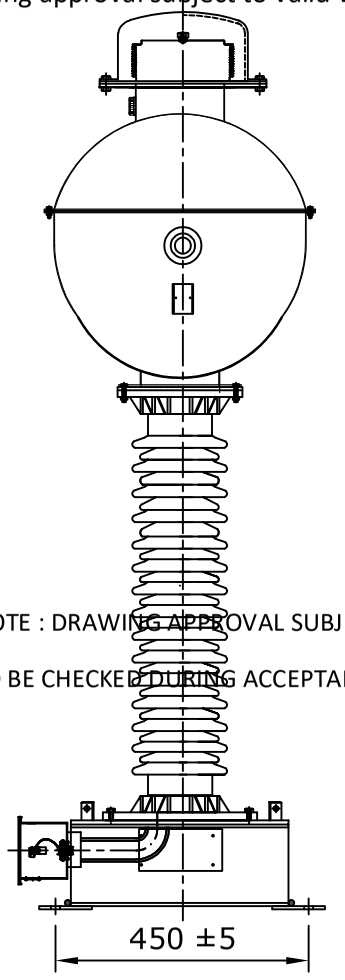
1. MAKE OF BUSHING: IEC/MODERN/ABIL/BHEL/CJI
2. ALL FERROUS PART EXPOSED TO THE ATMOSPHERE SHALL BE PAINTED WITH P.U PAINT SHADE 631 OF IS:5
3. ALL GASKETS SHALL BE FIXED IN PROPERLY MACHINED GROOVES.
4. PRIMARY WINDING SHALL BE BAR TYPE.
5. ALL HARDWARE SHALL BE HOT DIP GALVANIZED.
6. TRANSFORMER OIL AS PER IEC : 60296.
7. ALL GASKETS SHALL BE MADE OF NITRILE BUTYL RUBBER.
8. TOTAL WEIGHT OF CT :- 350 kg. (APPROX.)
9. QUANTITY OF OIL :- 90 LITRES (APPROX.)
10. TOTAL CREEPAGE DISTANCE :- 3625 mm. (MINIMUM)
11. CORE/SECONDARY WINDINGS SHALL BE ENCASED IN ALUMINUM SHELL.

Drawing approval subject to valid vendor registration

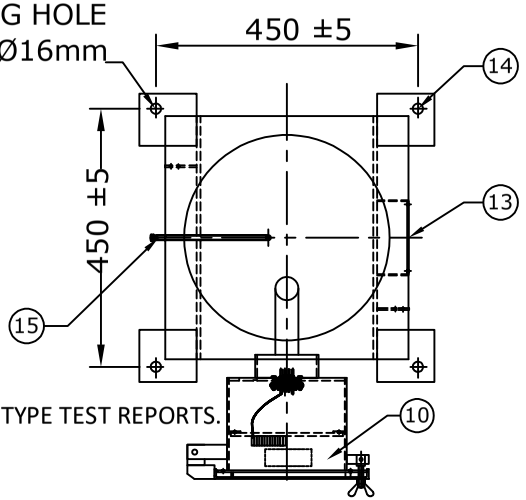
S.No.	DESCRIPTION	MATERIAL	QTY
1	OIL FILLING PORT	M.S	1
2	BELLOW	S.S	1
3	BELLOW DOME	M.S/AL	1
4	OIL LEVEL INDICATOR	BRASS/AL.	1
5	PRIMARY TERMINAL	ALUMINUM	1
6	OIL TANK WITH COVER	M.S	1
7	BUSHING FLANGE	GI/CI	2
8	BUSHING	PORCELAIN	1
9	BASE	M.S	1
10	SECONDARY TERMINAL BOX	M.S	1
11	LIFTING HOOK	M.S	4
12	EARTHING FLAT 80x50x8THICK.	M.S	2
13	NAME AND RATING PLATE	AL. ANODIZED	1
14	MOUNTING HOLE, Ø16 ±2 mm	M.S	4
15	OIL DRAIN PLUG	M.S	1







MOUNTING HOLE Ø16mm



MOUNTING DETAILS

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

TANDU SUDEEVAN KUMAR
Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:17:36 +05'30'

Chief Engineer
Projects

8546515/2024/EEMRT-ENE51

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED
PROJECT NAME : AS APPLICABLE

UNLESS OTHERWISE SPECIFIED
1. ALL DIMENSIONS ARE IN mm
2. TOLERANCE WHEREVER NOT INDICATED: ±5%

	DATE	NAME
DGN.	08.02.2024	SPS
DRN.	08.02.2024	AKASH
CHD.	08.02.2024	BLS

MATERIAL: SEE TABLE

MEHRU
MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LIMITED

TITLE
GENERAL ARRANGEMENT DRAWING FOR 132kV CURRENT TRANSFORMER RATIO : 800-1200/1A, 3 CORE BAR TYPE CT

SCALE: N.T.S

DRG.NO: ME-132CT-GA-01

SHEET No. 1 OF 7

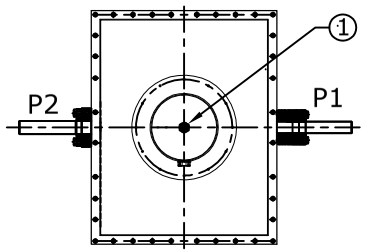
REV.	REVISION DESCRIPTION	DATED INITIALS
R0	FOR APPROVAL	08.02.2024

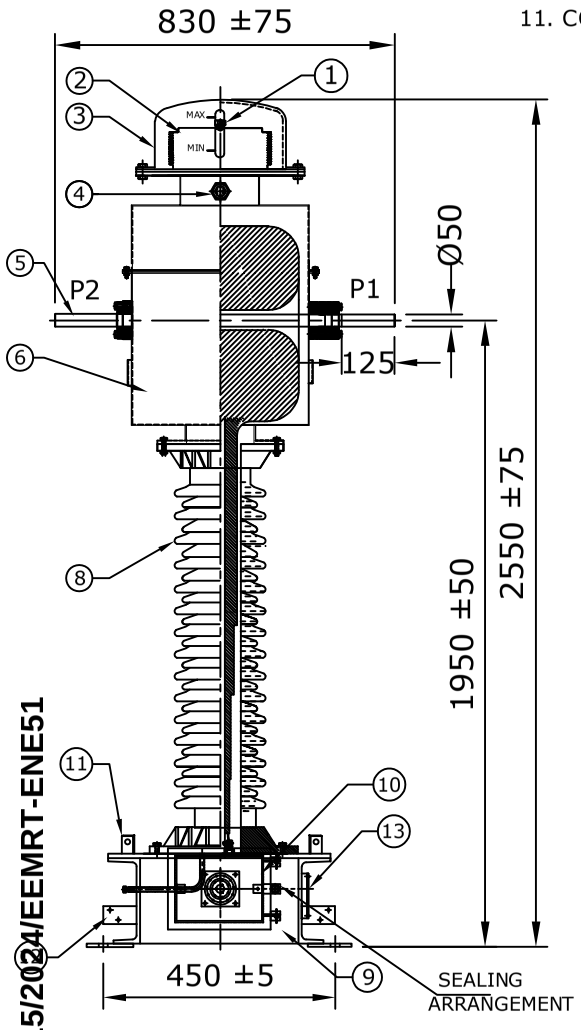
Drawing approval subject to valid vendor registration

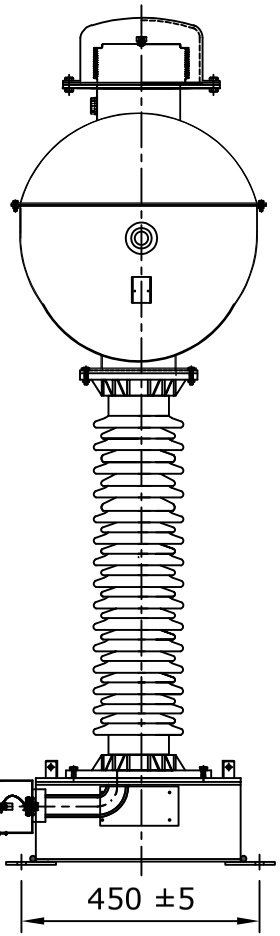
NOTES :-

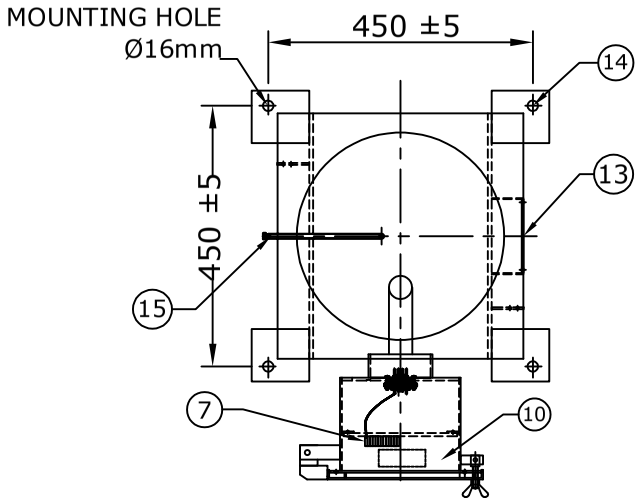
1. MAKE OF BUSHING: IEC/MODERN/ABIL/BHEL/CJI
2. ALL FERROUS PART EXPOSED TO THE ATMOSPHERE SHALL BE PAINTED WITH P.U PAINT SHADE 631 OF IS:5
3. ALL GASKETS SHALL BE FIXED IN PROPERLY MACHINED GROOVES.
4. PRIMARY WINDING SHALL BE BAR TYPE.
5. ALL HARDWARE SHALL BE HOT DIP GALVANIZED.
6. TRANSFORMER OIL AS PER IEC : 60296.
7. ALL GASKETS SHALL BE MADE OF NITRILE BUTYL RUBBER.
8. TOTAL WEIGHT OF CT :- 350 kg. (APPROX.)
9. QUANTITY OF OIL :- 90 LITRES (APPROX.)
10. TOTAL CREEPAGE DISTANCE :- 3625 mm. (MINIMUM)
11. CORE/SECONDARY WINDINGS SHALL BE ENCASED IN ALUMINUM SHELL.

S.No.	DESCRIPTION	MATERIAL	QTY
1	OIL FILLING PORT	M.S	1
2	BELLOW	S.S	1
3	BELLOW DOME	M.S/AL.	1
4	OIL LEVEL INDICATOR	BRASS/AL.	1
5	PRIMARY TERMINAL	ALUMINUM	1
6	OIL TANK WITH COVER	M.S	1
7	SECONDARY TERMINAL	Brass+Polyamide	---
8	BUSHING	PORCELAIN	1
9	BASE	M.S	1
10	SECONDARY TERMINAL BOX	M.S	1
11	LIFTING HOOK	M.S	4
12	EARTHING FLAT 80x50x8THICK.	M.S	2
13	NAME AND RATING PLATE	AL. ANODIZED	1
14	MOUNTING HOLE, Ø16 ±2 mm	M.S	4
15	OIL DRAIN PLUG	M.S	1









MOUNTING DETAILS

TANDU SUDEEVAN KUMAR
Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:17:57 +05'30'

Chief Engineer
Projects

8546515/2024/EEMRT-ENE51

REV.	REVISION DESCRIPTION	DATED INITIALS
R0	FOR APPROVAL	08.02.2024

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED
PROJECT NAME : AS APPLICABLE

UNLESS OTHERWISE SPECIFIED
1. ALL DIMENSIONS ARE IN mm
2. TOLERANCE WHEREVER NOT INDICATED: ±5%

	DATE	NAME
DGN.	08.02.2024	SPS
DRN.	08.02.2024	AKASH
CHD.	08.02.2024	BLS

MATERIAL: SEE TABLE

MEHRU
MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LIMITED

SHEET No. 2 OF 7

TITLE
SECTIONAL ARRANGEMENT DRAWING FOR 132kV CURRENT TRANSFORMER RATIO : 800-1200/1A, 3 CORE BAR TYPE CT

SCALE N.T.S

DRG.NO ME-132CT-SE-01

Drawing approval subject to valid vendor registration

MEHRU

LIVE TANK CURRENT TRANSFORMER

MADE TO IS : 16227

HIGHEST SYSTEM VOLTAGE	145 kV		INSULATION LEVEL	275/650 kV
RATED S.T.C	31.5 kA for 1 Second		RATED FREQUENCY	50 Hz
NOMINAL SYSTEM VOLTAGE	132 kV	CORE 1	CORE 2	CORE 3
RATIO	PRIMARY(Amp)	800-1200	800-1200	800-1200
	SECONDARY(Amp)	1	1	1
SECONDARY TERMINALS		1S1-1S2-1S3	2S1-2S2-2S3	3S1-3S2-3S3
RATED BURDEN IN V.A		20 VA	----	20 VA
ACCURACY CLASS		5P	PS	0.2S
ALF/ISF		20	----	<5 @All Tap
Min. knee point voltage **@1200A**		----	60I(Rct+10)V	----
Max. Rct at 75°C **@1200A**		----	6 Ω	----
Max. Iext at Vk **@1200A**		----	75 mA	----
YEAR OF MANUFACTURE	2024	SERIAL NO.		

RATED CONTINUOUS THERMAL CURRENT : 120% OF THE RATED PRIMARY CURRENT

TOTAL WEIGHT OF CT :- 350 kg. APPROX. , QUANTITY OF OIL :- 90 LITRES APPROX.

TOTAL CREPAGE DISTANCE :- 3625 mm. MINIMUM.

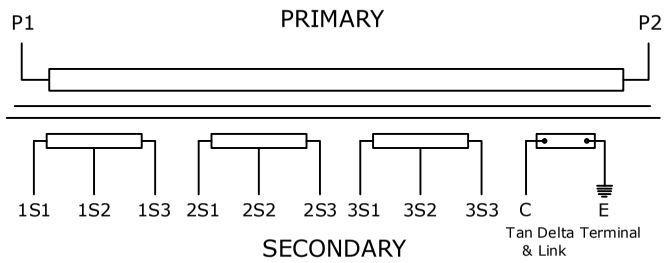
MADE IN INDIA BY

MEHRU ELECTRICAL AND MECHANICAL ENGINEERS (P) LTD.

SP-2/180, RIICO INDUSTRIAL AREA, KEHRANI, BHIWADI-301019, RAJASTHAN (INDIA)

SUITABLE FOR HOT LINE WASHING

CONNECTION DIAGRAM



FOR RATIO	PRIMARY CONNECTION	SECONDARY CONNECTION		
		CORE 1	CORE 2	CORE 3
800/1A	P1 - P2	1S1-1S2	2S1-2S2	3S1-3S2
1200/1A	P1 - P2	1S1-1S3	2S1-2S3	3S1-3S3

CAUTION:

1) SHORT CIRCUIT AND EARTH ALL SECONDARY TERMINALS WHICH ARE NOT IN USE.
2) ALWAYS KEEP TAN DELTA TESTING TERMINAL 'C' SHORTED TO EARTH DURING OPERATION.
3) DO NOT REMOVE EARTH LINK WHEN IN OPERATION.

105 ±10

225 ±15

NOTES:-

1. THICKNESS OF NAME PLATE 1.2 mm
2. MATERIAL OF NAME PLATE SHALL BE AL. ANODIZED.
3. SERIAL NUMBER SHALL BE ENGRAVED BEFORE THE DISPATCH.

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

TANDU SUDEEVAN KUMAR
Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:18:14 +05'30'

Chief Engineer
Projects

REV.	REVISION DESCRIPTION	DATED INITIALS
R0	FOR APPROVAL	08.02.2024

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED
PROJECT NAME : AS APPLICABLE

UNLESS OTHERWISE SPECIFIED
1. ALL DIMENSIONS ARE IN mm
2. TOLERANCE WHEREVER NOT INDICATED: ±5%

	DATE	NAME
DGN.	08.02.2024	SPS
DRN.	08.02.2024	AKASH
CHD.	08.02.2024	BLS

MATERIAL: AL. ANODIZED

MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LIMITED

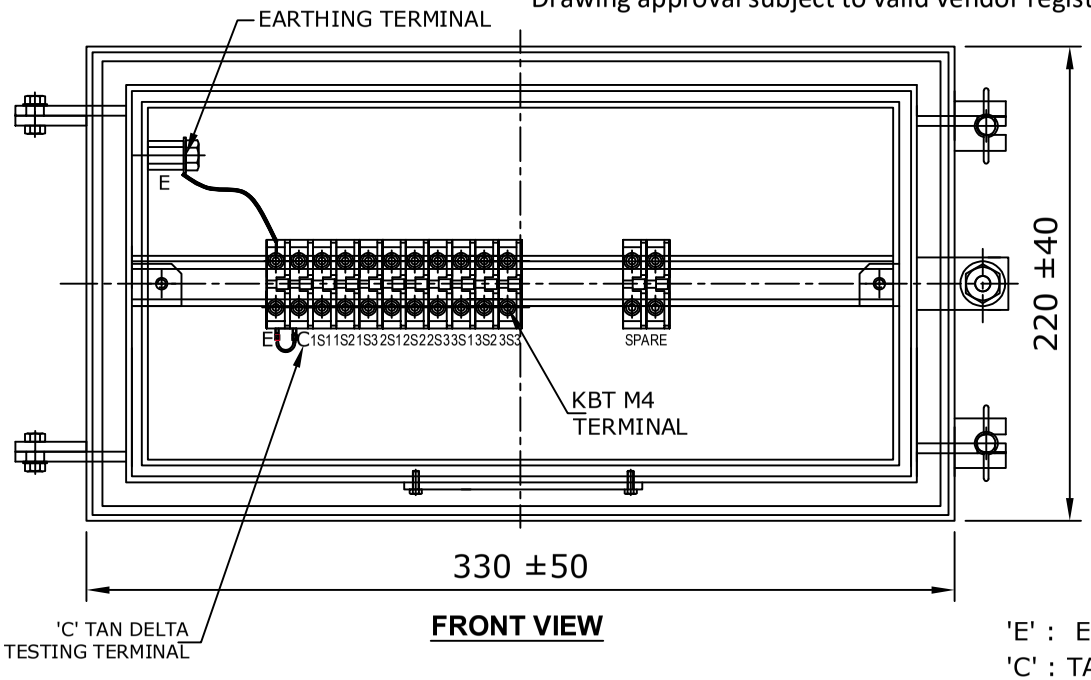
SHEET No. 3 OF 7

TITLE: NAME PLATE DRAWING FOR 132kV CURRENT TRANSFORMER RATIO : 800-1200/1A, 3 CORE BAR TYPE CT

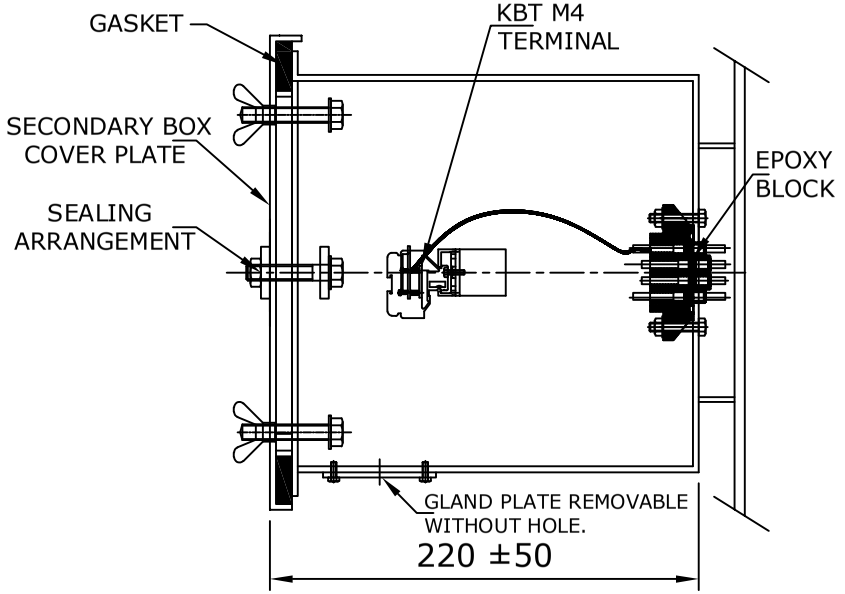
SCALE: N.T.S

DRG.NO: ME-132CT-NP-01

Drawing approval subject to valid vendor registration

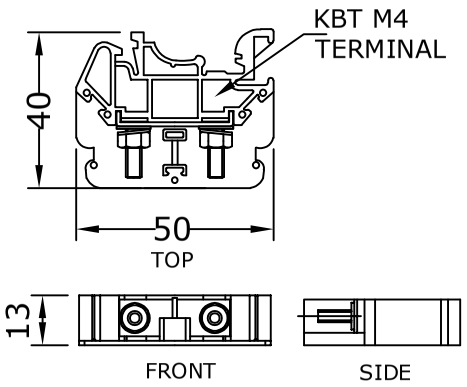


FRONT VIEW



SIDE VIEW

'E' : EARTHING TERMINAL
'C' : TAN DELTA TESTING TERMINAL



MATERIAL: POLYAMIDE
MAKE: ELMEX

TERMINAL (DETAIL)

NOTES:-

1. SECONDARY TERMINAL BOX SHALL BE PROVIDE WITH REMOVABLE GLAND PLATE WITHOUT HOLE.
2. SECONDARY TERMINAL BOX SHALL BE PROVIDED WITH COVER.
3. M.S SHEET THICKNESS FOR TERMINAL BOX SHALL BE 3.0mm & FOR COVER 2.0mm.
4. MATERIAL OF GASKET : EPDM/NITRILE BUTYL RUBBER GASKET.
5. DEGREE OF PROTECTION : IP 55.
6. 20% SPARE TERMINAL SHALL BE PROVIDED.

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

TANDU SUDEEVAN KUMAR
Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:18:29 +05'30'
Chief Engineer
Projects

Drawing approval subject to valid vendor registration

REV.	REVISION DESCRIPTION	DATED INITIALS
R0	FOR APPROVAL	08.02.2024

CLIENT : TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED
PROJECT NAME : AS APPLICABLE

UNLESS OTHERWISE SPECIFIED		DATE	NAME	MATERIAL
1. ALL DIMENSIONS ARE IN mm	DGN.	08.02.2024	SPS	M.S
2. TOLERANCE WHEREVER NOT INDICATED: ±5%	DRN.	08.02.2024	AKASH	
	CHD.	08.02.2024	BLS	

MEHRU
MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LIMITED

TITLE
SECONDARY TERMINAL BOX DRAWING FOR 132kV CURRENT TRANSFORMER RATIO : 800-1200/1A, 3 CORE BAR TYPE CT

SCALE N.T.S

DRG.NO ME-132CT-STB-01

SHEET No. 4 OF 7

8546515/2024/EEMRT-ENE51

1) Minimum 300 mm plinth shall be maintained for CT/PT/CVT/Isolators 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 manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/PT/CVT/Isolators requirement and compatibility.

Guaranteed Technical Particulars for 132kV Current Transformer			
Sl. No.	**Item Description**	**Unit**	**GTP as per Bid**
E	**CURRENT TRANSFORMER**		
1	Make		Mehru Electrical & Mechanical Engineers (P)Ltd, Bhiwadi, (Raj), Inida
2	Type and Designation		Outdoor, Oil Cooled Live Tank Type, Current Transformer
3	Applicable standards		IS 16227
4	Class		A
5	Rated Voltage	132 kV	132 kV
6	Rated Primary current	Amps	1200-800A
7	Rated Secondary current	Amps	1
8	Rated output (Burden)	VA	Core:-1 : 20 VA, Core-2: NA Core-3: 20 VA
9	Rated output at 0.8 lag. p.f.	VA	N/A
10	Class of accuracy		Core:1 – 5P, Core-2: PS Core:3 – 0.2S
11	Accuracy limit factor		Core-1: 20
12	Knee point voltage @highest tap	Volts	Core-2: 60I (RCT+10)
13	CT Resistance of secondary winding corrected to 75deg.C @highest tap	Ohms	Core-2: 6 Ω
14	Magnetizing current at knee-voltage point @highest tap		Core-2: 75 mA
15	secondary limiting voltage	kV	As per IS 16227
16	Instrument security factor for winding meant formetering		Core-3-≤ 5 at all tap
17	One minute Power Frequency withstand test voltageof		
a)	Primary winding	kV (rms)	275
b)	Secondary winding	kV (rms)	3

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

TANDU SUDEEVAN KUMAR
Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:18:44 +05'30'

Drawing approval subject to valid vendor registration

Chief Engineer
Projects

8546515/2024/EEMRT-ENE51

Drawing approval subject to valid vendor registration

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

18	Impulse wave withstand voltage of primary winding	kV (peak)	650
19	One minute dry P.F. withstand voltage of primarywinding	kV (rms)	275
20	Creepage distance	mm	25mm/kV i.e. 3625mm (Min.)
21	Rated continuous thermal current	Amps	120% of rated primary current
22	Ratios available at highest taps		Yes
23	Rated short time thermal current	kA (rms)	31.5 kA
24	Rated time for above	Sec.	1
25	Rated dynamic current for primary	kA (Peak)	78.75
26	Class of insulation		A
27	Max. Temperature rise over ambient of 50 deg.C at any part of oil	deg.C	50c max
28			
b)	Radio interference voltage		As per IS 16227 Clause 6.11.2 <2500uV
c)	Partial discharge level		<10 pC at Um & <5 pc at 1.2Um/√3
29	Temp. rise after passsing short time thermal current for one second	deg.C	50c max
30	Current density in primary winding at		
a)	Normal rating		0.61 Amps/sqmm
b)	Short time rating of 1 Sec.		16.05 Amp/sqmm
c)	Dynamic rating		40.13 Amp/sqmm
31	Type of primary winding		Bar Type
32	No. of primary turns		1
33	No. of secondary turns		1200-800
35	Radio interference voltage	(micro volts)	
a)	with terminal connector mounted		<2500uV

TANDU SUDEEVAN KUMAR

Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:18:56 +05'30'

Chief Engineer
Projects

8546515/2024/EEMRT-ENE51

Drawing approval subject to valid vendor registration

For EPC Contracts Only

b)	under test condition		<2500uV
36	Variation in ratio and phase angle error due to variation in		
a)	Voltage by 1%		N/A
b)	Frequency by 1 Hz.		N/A
37	Mounting details		450 X 450 mm
38	Source/grade of oil and standard with which it complies		EHV Grade
39	Quantity of insulating oil	Litres	90 LITRES (APPROX.)
40	Weight of Oil	kg	80 Kg
41	Total Weight including Oil	kg	350 kg. (APPROX.)
42	Overall dimensions (mm)		2550 ±75 X 1950 ±50 X 830 ±75 mm
43	Whether sealed (if so, type of sealing)		Yes, By SS BELLOW
44	Tan delta		<0.005

NOTE : DRAWING APPROVAL SUBJECT TO VALID TYPE TEST REPORTS.

TO BE CHECKED DURING ACCEPTANCE TESTS.

1) Minimum 300mm plinth shall be maintained for CT/PT/CVT/Isolators 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 manufacturer as mentioned in the drawings, the EPC contractors shall be instructed to supply the same in line with CT/PT/CVT/Isolators requirement and compatibility.

TANDU SUDEEVAN KUMAR

Digitally signed by TANDU SUDEEVAN KUMAR
Date: 2024.02.23 10:19:08 +05'30'

Chief Engineer
Projects