



BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA
A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna
CIN – U74110BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, Vidyut Bhawan, Bailey Road, Patna – 800021

E-mail address – ceplanningengg@gmail.com , engg.dept@bsptcl.bihar.gov.in

Website - www.bsptcl.in

Letter No. C.E. (P&E) 153/2023(part-i) 654 / BSPTCL, Patna

Dated 28/11/23

From,

Kumar Prasant
Chief Engineer (P&E)

To,

**JV of M/s ABN Tower & Transmission Pvt. Ltd.(Lead partner)
and M/s Binod Construction(JV partner)
Godrej Genesis Building, Unit No.609, Plot No.XI,
6th Floor, Block EP & GP, Sector-V, Salt Lake
Kolkata-700091**

Emai:- info@abntower.com

Sub:- Adoption of vendor, GTP & Drawing of 132KV 8800pF CVT of make M/s Mehru Electrical and Mechanical Engineers Pvt. Ltd. Bhiwadi, Rajasthan for Construction of 2x50MVA, 132/33KV GSS Bhorey (Dist.Gopalganj) including residential quarter with construction of associated 02 nos. 132KV Line bays at GSS Hathua & Construction of its associated 132KV D/C Bhorey-Hathua Tr. Line with ACSR Panther Conductor (Line length-60RKM) on turnkey basis under state plan against NIT-10/PR/BSPTCL/2023.

- Ref:-
1. NIT No.- 10/PR/BSPTCL/2023.
 2. NOA No.- 13(service), dated-01.09.23 & 12(supply), dated-01.09.23
 3. This office letter no. CE(P&E)-92/2023/411/BSPTCL, Dated -31.07.2023
 4. Your Letter no.- ABN/21-22/BSPTCL/01/RL-1162, Dated-23.11.23

Sir,

With reference to subject mentioned above, your request for **adoption of vendor, GTP & Drawing of 132KV 8800pF CVT of make M/s Mehru Electrical and Mechanical Engineers Pvt. Ltd. Bhiwadi, Rajasthan from NIT-49/PR/BSPTCL/2022** is hereby considered against NIT-10/PR/BSPTCL/2023 on the risk and responsibility of M/s ABN Tower & Transmission Pvt. Ltd.(Lead partner) JV with M/s Binod Construction(JV partner). Details of adopted documents are as below:-

Sl. no.	Document	Doc/Drq no
1	Guaranteed Technical Particulars for 132KV Capacitive Voltage Transformers	-
2	Secondary Terminal Box for 132KV Capacitor Voltage Transformer	ME-132CVT-STB-7354-01
3	Sectional arrangement for 132KV Capacitive Voltage Transformer	ME-132CVT-SE-7354-01
4	General arrangement for 132KV Capacitive Voltage Transformer	ME-132CVT-GA-7354-01
5	Name plate drawing for 132KV Capacitive Voltage Transformer	ME-132CVT-NP-7354-01

Please note that this approval and issue of this letter does not absolve you from any contractual responsibility in terms of quality and correctness of the material and should be strictly in accordance with the tender specifications/ISS/IEC. If at any time, any abnormality is observed, BSPTCL reserves the right to withdraw this approval with immediate effect without any pre-intimation.

Encl: As above.

Yours faithfully,

(Kumar Prasant)
Chief Engineer(P&E)

SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS FOR CVT			
Name of the tendering company			
Sl. No.	Description	220 KV	132 KV
1)	Manufacturer's Name & Type Designation	Mehru Elect. & Mech. Engg. P. Ltd., Bhiwadi (Rajasthan), India	Mehru Elect. & Mech. Engg. P. Ltd., Bhiwadi (Rajasthan), India
2)	Rated primary Voltage(KV)	220 kV	132 kV
3)	Number of Secondary windings	3	3
4)	Rated Secondary Voltage(KV)	110 V / $\sqrt{3}$	110 V / $\sqrt{3}$
5)	Rated Burden(VA)		
	Winding -I	50 VA	50 VA
	Winding -II	50 VA	50 VA
6)	Accuracy Class	50 VA	50 VA
	Winding -I	3P	3P
	Winding -II	3P for Winding-2 0.2 for winding-3	3P for Winding-2 0.2 for winding-3
7)	Maximum ratio error with rated burden and 5% normal primary voltage	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
8)	Maximum phase angle error with rated burden and 5% normal primary voltage	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
9)	Variation in ratio and Phase angle error for variation in	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
a)	Voltage by 1%	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
b)	Frequency by 1 Hz	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
10)	Temperature rise at 1.1 times rated voltage with rated burden	Within limits as per IS 3156/1992	Within limits as per IS 3156/1992
11)	Rated Voltage factor and time.	1.2 Cont. & 1.5 for 30 Seconds	1.2 Cont. & 1.5 for 30 Seconds
12)	1.2/50 micro second impulse wave withstand test voltage (KV peak)	1050 kVp	650 kVp
13)	One minute power frequency withstand test (dry) Voltage KV rms.	460 kV	275 kV
14)	One minute power frequency withstand test (wet) Voltage KV rms.	460 kV	275 kV
15)	One Minute Power Frequency withstand voltage on secondary (KV rms)	5.3 kV	5.3 kV
16)	Minimum creepage distance (mm)	25 mm / kV i.e: 6125 mm (Min.)	3650 mm (Min.)
17)	Total	25 mm / kV i.e: 3625 mm (Min.)	3650 mm (Min.)
18)	Protected	50% of creepage distance	50% of creepage distance
19)	Whether corona shield provided or not ?	No	No
20)	Weight of oil (Kg.)	As per Tentative G.A. Drawing enclosed	As per Tentative G.A. Drawing enclosed
21)	Total Weight(Kg.)	As per Tentative G.A. Drawing enclosed	As per Tentative G.A. Drawing enclosed
22)	Overall dimensions	As per Tentative G.A. Drawing enclosed	As per Tentative G.A. Drawing enclosed
23)	Mounting Details	As per Tentative G.A. Drawing enclosed	As per Tentative G.A. Drawing enclosed

21 JUL 2023

ADOPTED FOR

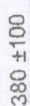
NIT No. 49 / PR/BSPTCL/2022

Adopted for NIT - 10 / PR/BSPTCL/2023

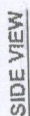
28/11/23

Approved as Corrected
Subject to the Condition That
You are Not Absolved in the
Responsibility of Correctness
Of Material

Electrical Superintending Engineer (Trans.)
Bihar State Power Transmission Co. Ltd., PATINA



HF : TAN DELTA TESTING TERMINAL
N : NEUTRAL TERMINAL
E : EARTHING TERMINAL
F1,F2&F3 - HRC FUSE 16Amp



NOTES:-

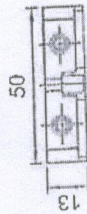
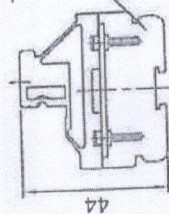
1. SECONDARY TERMINAL BOX SHALL BE PROVIDED REMOVABLE COVER.
2. SECONDARY TERMINAL BOX SHALL BE PROVIDED WITH COVER.
3. MS SHEET THICKNESS FOR TERMINAL BOX 2.5mm & FOR COVER 2mm(min).
4. MATERIAL OF GASKET: NITRILE BUTYL RUBBER/EPDM
5. DEGREE OF PROTECTION : IP 55

ADOPTED FOR
WT No. 4.2.../PR/BSPTCL/20.2.2.-

2023 JUL 1

Subscribed to by _____
 You Are Not Responsible to the
 Responsibility of Congress

TERMINAL: 24 800V



DUMMY TERMINAL (DETAIL)

[illegible]

6729, 6730 DATED 31.12.2015
SECONDARY TERMINAL BOX FOR 132KV
CAPACITOR VOLTAGE TRANSFORMER

6729, 6730 DATED 31.12.2015

ALSTOM	ME-135	N.T.S.
ALSTOM INC. 1100 A ST		

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

MAHESHWARI ENGINEERS
MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LTD.

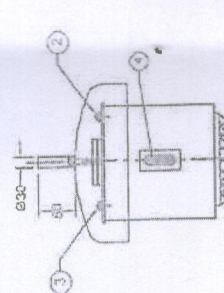
UNITED STATES POWER TRANSMISSION COMPANY LIMITED.

[illegible]

Electrical Superintendent Engineer Trust
Patna

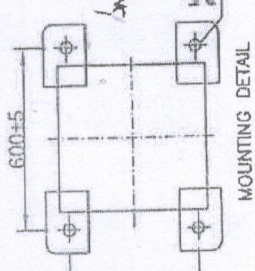
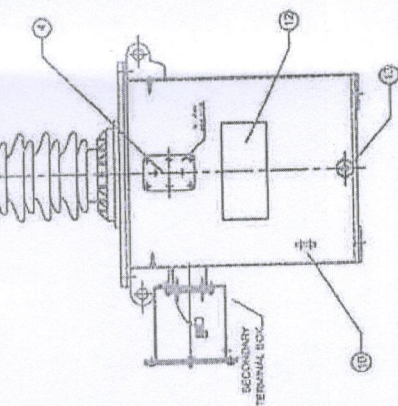
42

S.No.	DESCRIPTION	QTY	U/A
1	H.T. TERMINAL	1	BRASS
2	NITROGEN VALVE	1	BRASS
3	OIL FILLING PLUG	1	M.S.
4	OIL LEVEL INDICATOR	2	ALU.+ GLASS
5	OIL EXPANSION CHAMBER	1	M.S.
6	BUSHING CLAMP	2	G/CI
7	BUSHING (IEC/BHEL/MSE/AMODERN/BHEL)	1	PORCELAIN
8	LIFTING HOOK	4	M.S.
9	INDUCTION VOLTAGE TRANSFORMER	1	CRGO/COPPER
10	EARTHING TERMINAL (FLAT)	2	M.S.
11	TANK WITH COVER	1	M.S.
12	NAME AND RATING PLATE	1	ALU. Anodized
13	OIL DRAIN PLUG	1	M.S.
14	PRESSURE RELEASE DEVICE	1	ALU+Babbitt
15	COMPENSATING REACTOR	1	STD
16	FERRO RESONANCE SUPPRESSION CIRCUIT	1	STD
17	CAPACITOR ELEMENT	1	CRGO/COPPER
18	VOLTAGE DIVIDER TAP CONNECTION	1	STD



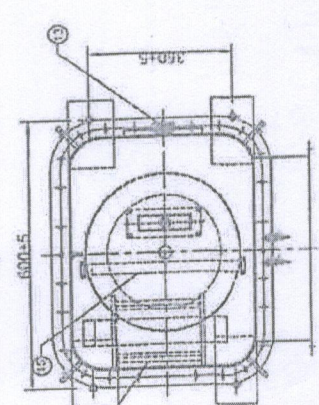
APPROVED
Subj. to the Condition That
You Are Not Allowed to In's
Responsibility of Competence
Of the Supplier

Electrical Superintending Engineer (Trans.)
Bihar State Power Transmission Co. Ltd., Patna



NOTE :-

Make of Bushing : IEC/MSE/ABIL/MODERN/BHEL
All ferrous parts exposed to the atmosphere shall be Epoxy/P.U point
light gray conforming to shade 631 of IS:5



TOTAL CREEPAGE DISTANCE :- 3625mm (MIN)
QUANTITY IN LITRES :- 90 LITRES APPROX. 125
TOTAL WEIGHT OF CVT :- 575 KGS APPROX. 500

ADOPTED FOR
NET No. 58 / PWDSPTOL/2022

Adopted for
NET-20/4 R/ 15/04/2025
28/11/23

MANUFACTURED BY: MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LTD.

DESIGNED BY: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED.

TESTED BY: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED.

DATE OF TEST: 28/11/23

SECTIONAL ARRANGEMENT FOR 132KV CAPACITOR VOLTAGE TRANSFORMER

729, 6730 DATED 31.12.2015

REVISIONS:

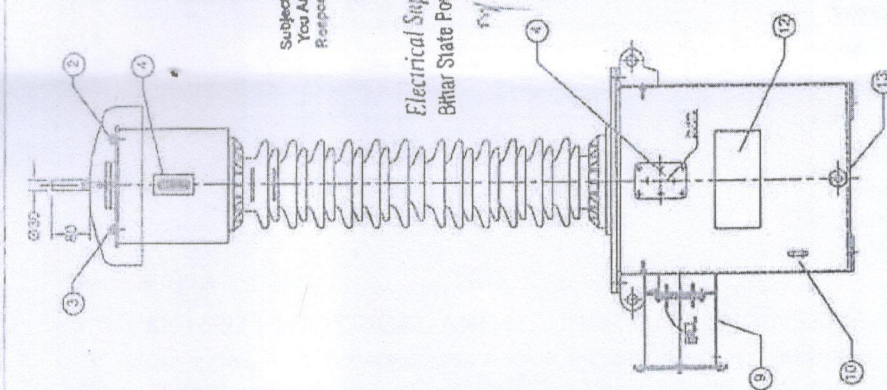
NO.	REFERENCE NO.	DESCRIPTION	DATE	BY	CHKD	APPD
REV 01		LEAD IN				

ALSTOM LTD. INDIA

ME-132CVT-SE-7354-01

N.T.S

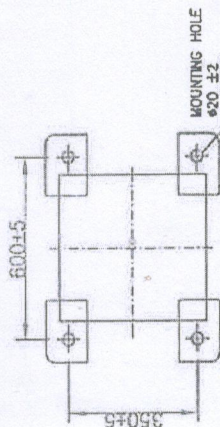
REV. 01



S.No.	DESCRIPTION	QTY	MAT'L
1	H.T TERMINAL	1	BRASS
2	NITROGEN VALVE	1	BRASS
3	OIL FILLING PLUG	1	M.S
4	OIL LEVEL INDICATOR	2	ALU.+ GLASS
5	OIL EXPANSION CHAMBER	1	M.S.
6	BUSHING CLAMP	2	GI/CI
7	BUSHING	1	PORCELAIN
8	LIFTING HOOK	4	M.S
9	SECONDARY TERMINAL BOX	1	M.S
10	EARTHING TERMINAL (FLAT) 75x10 THICK	2	M.S
11	TANK WITH COVER	1	M.S
12	NAME AND RATING PLATE	1	ALU. Anodized
13	OIL DRAIN PLUG -5/8" B.S.P Thread	1	M.S
14	PRESSURE RELEASE DEVICE	1	ALU.+Borelita
15	DOME (RAIN COVER)	1	GI

Approved *as Comptrol*
 Subject to The Condition That
 You Are Not Attached to the
 Responsibility With Correctness

Electrical Superintending Engineer (Trans)
Orissa State Power Transmission Co. Ltd. PATNA



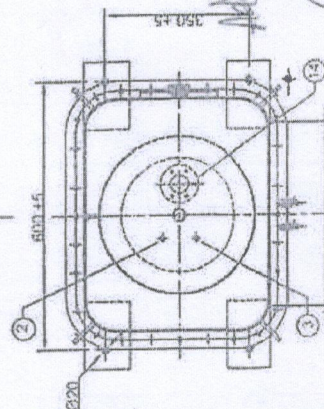
ADOPTED FOR

21 JUL 2023

NOTE: !

1. Make of Bushing : IEC/VSI/ABIL/NOVERN/BHEL
2. All ferrous parts exposed to the atmosphere shall be Epoxy/P.U paint light gray conforming to shade 631 of IS:5

- * TOTAL CREEPAGE DISTANCE : -- 3625mm (MIN)
 * OIL QUANTITY IN LITRES : -- 80 LITRES APPROX.
 * TOTAL WEIGHT OF CVT : 375-KGS APPROX.



MANUFACTURER:
MEHRI ELECTRICAL & MECHANICAL ENGINEERS PVT. LTD.

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED.

SUPPLY/DESIGN/FACTURE/TESTING AT MANUFACTURER'S WORKS TRANSPORTATION
INSURANCE AND DELIVERY OF EQUIPMENTS REQUIRED FOR THE WORK OF REM OF 2
Nos. of 132/230V/0W SUBSTATIONS WITH/AFR, JAMSHAD, BALASOR, SONOPURA,
VARANASI AND 1 No. of 223/230V/0W SUBSTATION KHALIGAL ON TURNKEY BASIS ON
TENDER NO. 28/29/2002/0017215 UNDER STATE PLAN

6729. 6730 DATED 31.12.2015

GENERAL ARRANGEMENT FOR 132KV
CAPACITOR VOLTAGE TRANSFORMER

ALSTOM

ALSTON	DAVID MC	1/5-57
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ASD	Part
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3	
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3	
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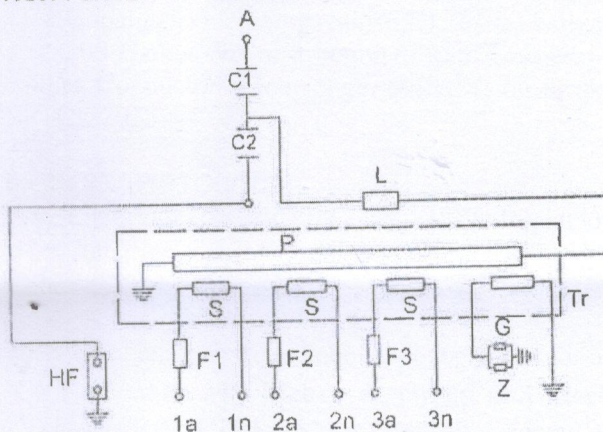
MEHRU CAPACITOR VOLTAGE TRANSFORMER

MAKE TO IS: 3156/ IEC 60044-5

MAXIMUM VOLTAGE	145KV
RATED LINE VOLTAGE	132 KV
Equivalent Capacitance	8800pF (+10%-5%)
FREQUENCY	50 Hz
OVERVOLTAGE FACTOR	1.5 Un 30 SECONDS
CONTINUOUS VOLTAGE FACTOR	1.2
TEMPERATURE CATEGORY	-10°C to + 50°C
INSULATION LEVEL	275/650(kVrms/kVp)
SIMULTANEOUS BURDEN	50 VA
YEAR OF MFD.	2017

RATED PRIMARY VOLTAGE	132KV/V ₃
RATED SECONDARY VOLTAGE	110 V / V ₃
WDG I SECONDARY CONNECTION	1a -1n
BURDEN	50 VA
CLASS	3P
RATED SECONDARY VOLTAGE	110 V / V ₃
WDG II SECONDARY CONNECTION	2a -2n
BURDEN	50 VA
CLASS	3P
RATED SECONDARY VOLTAGE	110 V / V ₃
WDG III SECONDARY CONNECTION	3a -3n
BURDEN	50 VA
CLASS	0.2
SERIAL No.	

CAUTION : WHEN HF TERMINAL IS NOT IN USE IT SHOULD BE SHORTED TO EARTH.



- A - HV TERMINAL
- C1 - PRIMARY CAPACITANCE
- C2 - SECONDARY CAPACITANCE
- HF - HIGH FREQUENCY TERMINAL
- L - COMPENSATING REACTOR
- F1,F2&F3- HRC FUSE 16A
- Z-G - FERRO- RESONANCE SUPPRESSION CIRCUIT
- P - PRIMARY WINDING OF INTERMEDIATE VT
- S - SECONDARY WINDING OF INTERMEDIATE VT
- Tr - INTERMEDIATE VOLTAGE TRANSFORMER

MADE IN INDIA BY:

MEHRU ELECTRICAL AND MECHANICAL ENGINEERS (P) LTD.

SP-2/180, RIICO INDUSTRIAL AREA KHARANI EXT. BHIMADI-301019, (RAJASTHAN)

NOTES :-

1. CAUTION TO BE MARKED IN RED
2. MIN. THICKNESS OF RATING PLATE :- 1.2 mm
3. MATERIAL :-ALU.ANODISED
4. ALL DIMENSIONS IN mm
5. DIMENSIONAL TOLERANCE $\pm 5\%$

ADOPTED FOR

No. 49/PR/BSPTCL/2022

REV2	REFERENCE NO.	DATE	STATUS
REV1	DESCRIPTION		
REV0	LEGEND		

MANUFACTURER: MEHRU MEHRU ELECTRICAL & MECHANICAL ENGINEERS PVT. LTD.

CUSTOMER: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED.

SUPPLY, DESIGN, MANUFACTURE, TESTING AT MANUFACTURE'S WORKS TRANSPORTATION INSURANCE AND DELIVERY OF EQUIPMENTS REQUIRED FOR THE WORK OF R&M OF 8 Nos. OF 132/33KV GRID SUBSTATIONS WITHAPUR, JEHMABAD, BAHJAF, SOKHIPURA, HAMPUR AND 1 No. OF 220/132/33KV GRID SUBSTATION KHAGAIL ON TURNKEY BASIS ON FIRM PRICE AGAINST NIT No. 79/PR/BSPTCL/2015 UNDER STATE PLAN

DATE: 6729, 6730 DATED 31.12.2015

NAME PLATE DRAWING FOR 132KV CAPACITOR VOLTAGE TRANSFORMER

ALSTOM

ME-132CVT-NP-7354-01

SCALE: N.T.S

REV. 00

21 JUL 2023