ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India)
ERDA Road, Makarpura Industrial Estate, Vadodara-390 010, India.
EPABX : +91 (0265) 2642942, 2642964, 2642377, 3043128 / 29 / 30 / 31 / 33
Fax : +91 (0265) 2638382
E-mail : erda@erda.org
Web : http://www.erda.org

TC-5389

RP-2425-031357

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TEST REPORT

ULR NO.: TC538925000001317F **SHEET NO.:** 1 OF 4

NAME & ADDRESS OF CUSTOMER	**REPORT NO.:** RP-2425-031357 **DATE OF ISSUE:** 17.01.2025
M/s. CG Power and Industrial Solutions Limited S6, Instrument Transformer and Bushings D2 & D1/2, MIDC, Waluj, Aurangabad – 431 136, Maharashtra, India.	**CUSTOMER REF. NO.:** LETTER **DATED** : 06.01.2025
	DATE OF SAMPLE RECEIPT: 07.01.2025 **DATE OF TESTING**: 08.01.2025

SAMPLE DESCRIPTION
(As provided by customer)

132 kV Inductive Voltage Transformer

Rated Voltage	: 132 kV
H.S.V.	: 145 kV
Ratio	: 132000/√3//110/√3-110/√3-110/√3 V
Burden	: 200/ 50 / 50 VA
Acc. Class	: 3P / 3P / 0.5
V.F.	: 1.2 Count /1.5 for 30 sec.
Insulation Level	: 275 kVrms / 650 kVp
Frequency	: 50 Hz
Insulation Class	: A

SAMPLE IDENTIFICATION

Sr. No. : 234656
Type : VEOT:145/650/50
Year of Mfg. : 2024
Make : M/s. CG Power and Industrial Solutions Limited
ERDA Sample Code No.: ERDA-00613165

TEST DETAIL
Transmitted overvoltage test

TEST SPECIFICATION
IEC : 61869-1 (2023),
IEC : 61869-3 (2011)

ENCLOSURE: Drg. No.: 1) 413695829 IVT4900 GA/R0
2) 413695829 IVT4900 RS_R0

WITNESSED BY: Mr. Sarang Porandare - M/s. CG Power and Industrial Solutions Limited

REMARKS: As per **SHEET NO.:** 2 OF 4

CHECKED BY

T. S. Vishwakarma
APPROVED BY

Note:

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6. Particulars of manufacturer/ supplier, given in this report are based on information supplied by the customer, along with the test request/sample. ERDA does not assume any responsibility for the correctness of the information for above mentioned Sample Under Test (SUT). ERDA will not be responsible for any changes in SUT made after the test. This test report is given as per instrument status while testing.
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TC 3744138

TC-5389

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ULR NO.: TC538925000001317F
Discipline: Electrical **Group: High Voltage Test Facility**

REPORT NO.: RP-2425-031357 **SHEET NO.:** 2 OF 4
DATE OF ISSUE: 17.01.2025

Transmitted overvoltage test
(As per Cl. No. 7.4.4 of IEC : 61869-3 (2011) and
Cl. No. 7.4.2 of IEC : 61869-1 (2023))

Atmospheric condition

Dry bulb temperature : 28.0°C
Wet bulb temperature : 24.0°C
Atmospheric pressure : 758.0 mm of Hg

Test parameters:
U_1 : A voltage impulse applied between one of the primary terminals and earth.
U_2 : Transmitted voltage (Measured at the open secondary terminals)
U_{tov} : Overvoltage transmitted to the secondary winding
U_{pref} : Peak value of reference voltage = $1.6 \times \frac{\sqrt{2}}{\sqrt{3}} \times U_m = 189.42$ kVp

U_m : H.S.V.= 145 kV

Observation table:

Winding No.	U_1 in kVp (Applied)	Wave shape of U_1 in µs	Winding No.	U_2 in Vp (Measured)	$U_{tov}=U_{pref} \times U_2/U_1$ in kVp
Primary Terminal Winding (A - N)	52.501	1.015/72.965	Winding 1 (1a - 1n)	125.980	0.454
	51.925	0.992/74.339	Winding 2 (2a - 2n)	120.121	0.438
	51.935	0.985/74.312	Winding 3 (3a - 3n)	103.519	0.378

Note: The transmitted overvoltage peak value limits (U_{tov}) : 1.6 kVp

REMARKS: "Conforms"

Electrical Research and Development Association GEN/16-001 Vadodara

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ULR NO.: TC5389250000001317F

REPORT NO.: RP-2425-031357 **SHEET NO.:** 3 OF 4
DATE OF ISSUE: 17.01.2025

PHOTOGRAPH OF TEST SAMPLE

Electrical Research and Development Association
GEN/10 001
Vadodara

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ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION
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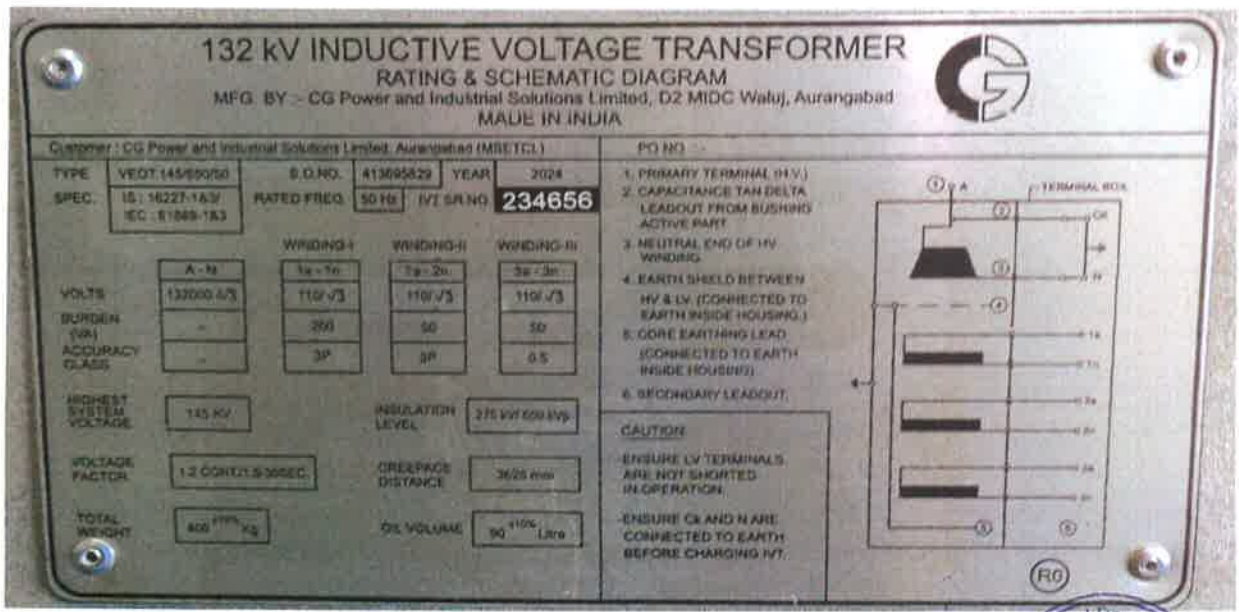
ULR NO.: TC538925000001317F

REPORT NO.: RP-2425-031357 **SHEET NO.:** 4 OF 4
DATE OF ISSUE: 17.01.2025

PHOTOGRAPH OF NAME PLATE



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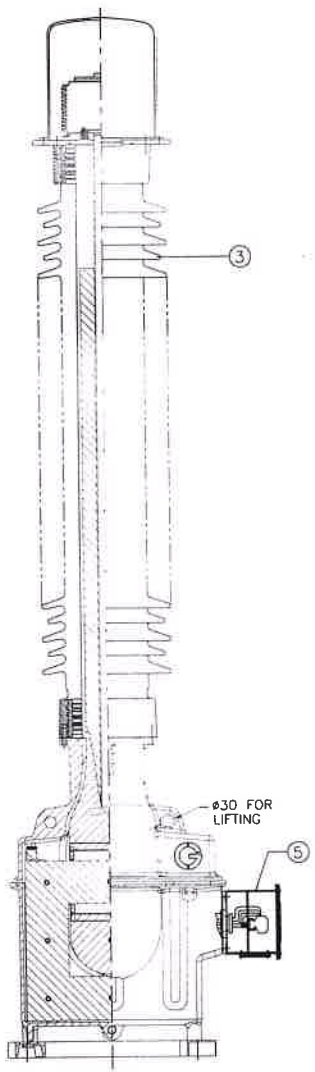
Electrical Research and Development Association GEN/16 OCT Vadodara

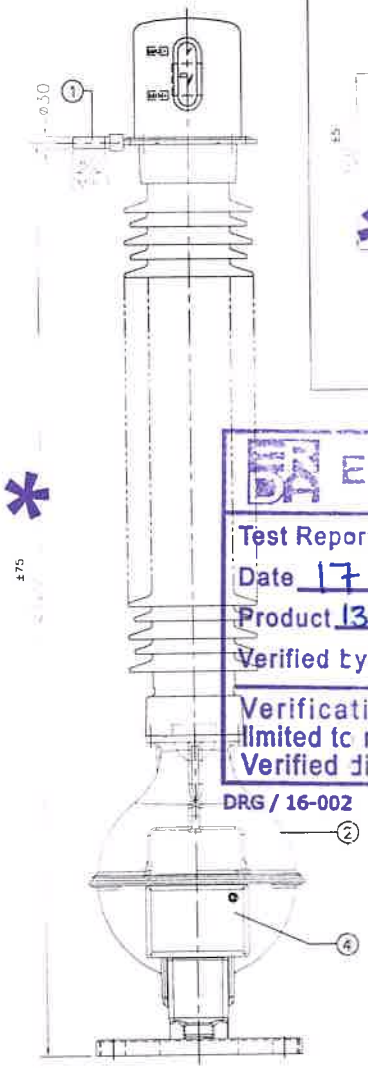
***** END OF TEST REPORT *****

TC 3744141

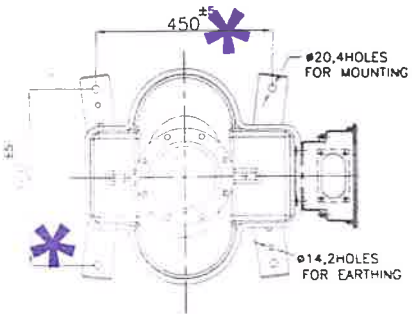
IF IN DOUBT ASK



SECTIONAL SIDE VIEW



FRONT VIEW



MOUNTING DETAILS

TOP VIEW

ERDA, MAKARPURA

Test Report No. RP-2425-031357

Date 17.01.2025

Product 132kV Induative Voltage transformer

Verified by

Verification of this drawing by ERDA is limited to relevant dimensional checks only. Verified dimensions are marked with '*'.

DRG / 16-002

Electrical Research and Development Association • Vadodara •

ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	1	PRIMARY TERMINAL – ø30x80L(Min.)	COPPER
2	1	TANK	ALUMINIUM CAST
3	1	PORCELAIN INSULATOR	PORCELAIN BROWN COLOUR
4	1	RATING & SCHEMATIC DIAGRAM	ALUMINIUM
5	1	SECONDARY TERMINAL BOX	ALUMINIUM CAST

TECHNICAL SPECIFICATIONS
132 kV INDUCTIVE VOLTAGE TRANSFORMER

SPECIFICATION	UNIT	RATING
HIGHEST SYSTEM VOLTAGE (Ph-Ph)	Kilo Volts	145
HIGHEST SYSTEM VOLTAGE (Ph-E)	Kilo Volts	145/√3
1 MIN. AC WITHSTAND VOLTAGE	Kilo Volts	275
LIGHTNING IMPULSE WITHSTAND VOLTAGE	Kilo Volts(Peak)	650
TOTAL CREEPAGE DISTANCE(MINIMUM)	Milimeter	3625
TOTAL WEIGHT (±10%)	Kilogram	400
OIL VOLUME (±10%)	Litre	90
APPLICABLE STANDARDS	–	IEC:61869-1&3
VOLTAGE FACTOR	–	1.2 CONTINUOUS/1.5-30SEC
INSULATION CLASS	–	A

1) PRIMARY WINDING NO OF TURNS : 37120

2) CROSS SECTION AREA OF PRIMARY WIDING : 38 SWG (0.01824 Sq.mm)

3) SECONDARY WINDING :

NO.OF WINDING	NUMBER OF TURNS	SWG/Sq.mm
WINDING-I	31	(14x2)/6.48
WINDING-II	31	(14x2)/6.48
WINDING-III	31	(14x4)/12.97

4) CORE MATERIAL : CRGO M4

NOTE : PLEASE REFER INSTRUCTION MANUAL FOR HANDLING & TRANSPORTATION OF IVT.

Dimensions shown are tentative and may change during detailed design/engineering.

NO	REVISION	SIGN	DATE
R6			
R5			
R4			
R3			
R2			
R1			

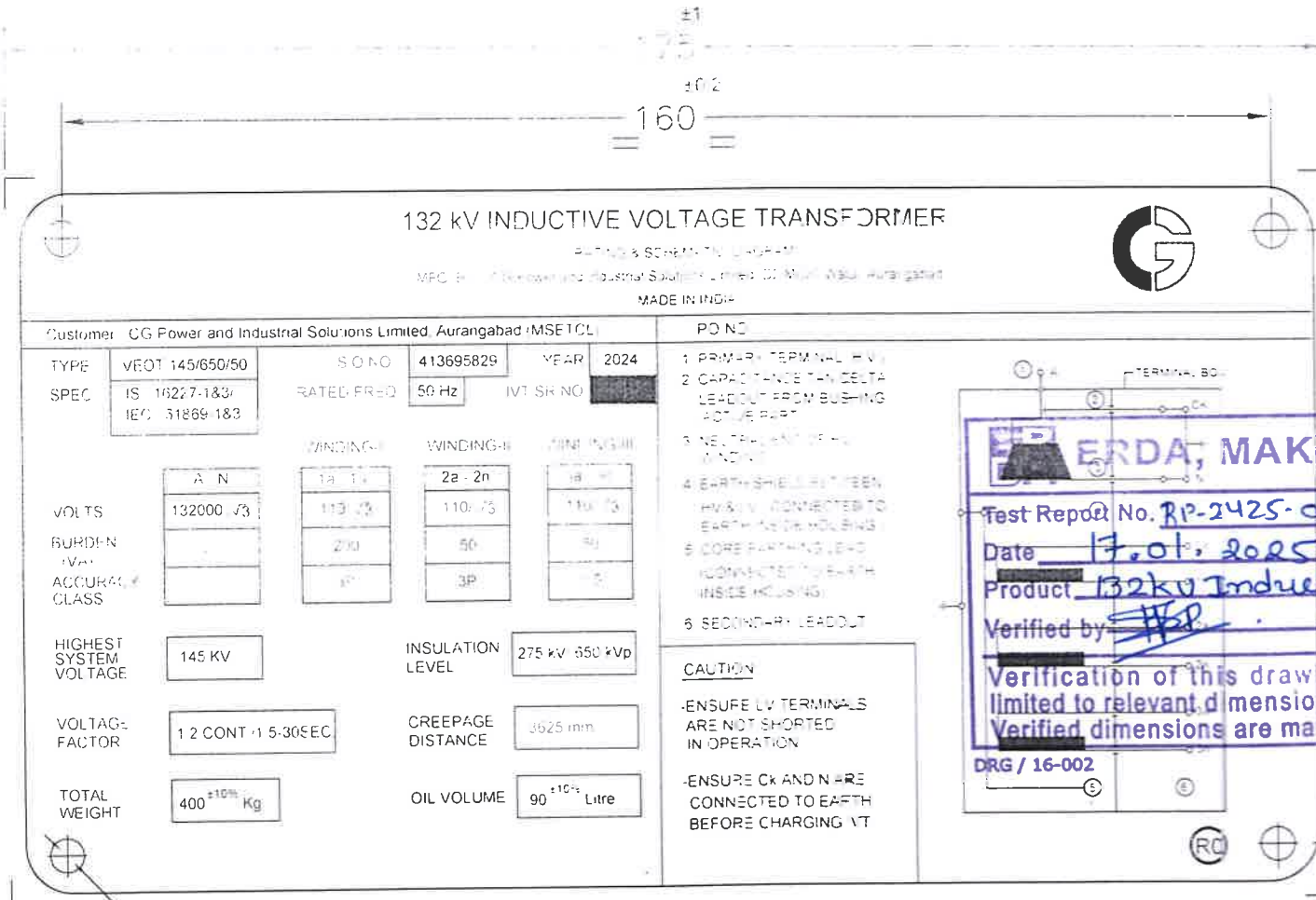
	SIGN	NAME
DRN		STJ
CHD		SDS
APPD		SDS

GENERAL ARRANGEMENT DRAWING [illegible]

SCALE N.T.S. | DATE : 14.12.2023 | ALL DIMENSIONS ARE IN mm

DRG.NO:-413695629 MT4900 GA/RO

IF IN DOUBT ASK



NO	REVISION	SIGN	DATE
R6			
R5			
R4			
R3			
R2			
R1			

	SIGN	NAME
DRN		KSH
CHD		STJ
APPD		SDS

RATING & SCHEMATIC DIAGRAM
132 kV INDUCTIVE VOLTAGE TRANSFORMER

SCALE : 1:1 | DATE : 15.12.2023 | ALL DIMENSIONS ARE IN mm

CG Power and Industrial Solutions Limited, Aurangabad

DRG. No. :- 413695829 IVT4900 RS_R0