



Tesla Power Equipments and Projects Limited, Bhopal
IDTs and Distribution Transformer Division



Tesla Power Equipments and Projects Limited, Mandideep
IDTs and Distribution Transformer Division



tesla group

Tesla Power Equipments and Projects Limited, led by Mr. Jaideep Jain (CMD) is a multiproduct and service organisation in the electric sector dealing in manufacturing, supplying, erecting, testing of solar and wind application Inverter Duty Transformer (IDTs) & Distribution transformer with credibility over past few years and fully committed to the norms of international quality and standards in synergy to achieve customer satisfaction. Tesla group has an excellent brand image and an ISO-9001, 14001 & 45001 certified company.

We are one of the largest manufacturer of Inverter Duty Transformers. Through which we encouraging the usage of clean and renewable energy with our energy efficient solar and wind application inverter duty transformers "Doing our bit for the environment".

Our design and RnD department is highly qualified and experienced also equipped with newest 3D & design simulation packages. Which offers us to easily customized the design according to customer requirement in multi-winding packages.

Tesla group successfully designed and Type tested at CPRI, our highest rating 17.6 MVA 33 KV multi-winding transformer and supplied to one of the leading solar project site. Our customers to which we regularly supply IDTs are TATA Power Solar, ADANI, ACME Solar, Sterling & Wilson, Insolare, Fourth Partner Energy, Sunsare, SAEL and many more...

Tesla has founding principles of unrelenting integrity, uncompromising standards, unfailing services and unyielding commitments. We at Tesla surging ahead with a vision to be the best by delivering the best.



ISO 9001



ISO 14001



ISO 45001



expanding horizons

Establishing an Additional Manufacturing Plant

To enhance the efficiency and production capacity of our product offerings (specially IDT requirements for Renewable Energy Sector) we recently established additional manufacturing plant located in Mandideep, Raisen, Madhya Pradesh (approximately 30 KM from the Bhopal Unit). It is a sprawling industrial complex that serves as a vital hub of production and economic activity for the region, with production capacity of 4800 MVA per annum.



floating solar

Central India's first floating Solar

Tesla Power make 8.85 MVA and 6.66 MVA 33/2 X 0.69 KV Ester oil Inverter Duty Transformers have been successfully commissioned at Omkareshwar Floating Solar Sub Station in Madhya Pradesh



solar (Multi Winding) inverter duty transformers



12.5 MVA 33KV 5 Winding Solar Inverter Duty Transformer

Current Scenario of Solar generation in India...

The Sun has been worshiped as a life-giver to our planet since ancient times. The industrial ages gave us the understanding of sunlight as an energy source. India is endowed with vast solar energy potential. About 5,000 trillion kWh per year energy is incident over India's land area with most parts receiving 4-7 kWh per sq. m per day. Solar photovoltaic power can effectively be harnessed providing huge scalability in India. Solar also provides the ability to generate power on a distributed basis and enables rapid capacity addition with short lead times.



What are solar Transformers?

Transformers are an essential component in the production and distribution of solar energy. There have been two main types of transformers as step-up transformer and step-down transformers from non-renewable energy sources. For transformers used for solar projects, it is necessary to design with high durability, stable, and long-term operation. These transformers operate with low voltage input, which are solar inverters influenced by high-order harmonics, DC components generated during transport operation change the solar panels. There are different solar transformers, including distribution, station, auxiliary station, pad mounting, and grounding. All solar transformers have special needs that affect the cost of the machine.

Features of Solar Transformers

- Rating upto 17.6 MVA or as per customer requirement.
- HV Voltage 11, 22 & 33 or as per customer requirement.
- LV Voltage - 0.30, 0.38, 0.420, 0.433, 0.750, 1.05, 6.6 or as per customer requirement.
- Vector Group - Dy11Y11, Dy11, Y11y11, Dy5y5y5 or as per customer requirement.
- Voltage step-up from the inverter output to the MV feeding network.
- Galvanic isolation between the solar inverter and the feeding network.
- High mechanical strength LV winding comprise of two windings made of aluminium or copper both connected in wye (Y) with or without neutral point.
- Natural or air forced cooling system.
- Robust and oil tight mechanical construction with customised overall dimensions.
- High quality surface protection.
- Protection & monitoring with devices that offer oil level indication, gas detection, pressure and temperature control.



Foil winding machine

Short Circuit Report of 12.5 MVA 33KV Five Winding Transformer

CENTRAL POWER RESEARCH INSTITUTE	
TEST REPORT	
ADDITIONAL TEST REPORT	
CPRI	
Test Report Number	: CPRI/PLSTNA210108 Date: 01 July 2021
Name and Address of the Customer	: M/s Tesla Power Equipments & Projects (P) Limited H-147, L-147, Sector-44, Industrial Area, Govindpura, Bhopal - 462 023, Madhya Pradesh (India)
Name and Address of the Manufacturer	: M/s Tesla Power Equipments & Projects (P) Limited H-147, L-147, Sector-44, Industrial Area, Govindpura, Bhopal - 462 023, Madhya Pradesh (India)
Particulars of Sample tested	: 12500 KVA, 33/10.630-0.630-0.630/0.630 KV, Multitap Inverter Duty Transformer
Type	: Indoor
Description of test sample	: Refer Sheet 2 of 9
Serial Number	: TP0201/6416
Number of Samples Tested	: One
Date(s) of Test(s)	: 04.07.20 and 09 June 2021
CPRI sample code number(s)	: STNA210102
Particulars of tests conducted	: Ability to withstand the dynamic effects of Short circuit
Test in accordance with	: IEC 60076-5: 2006
Sampling Plan	: NI
Customer's Requirement	: Refer Sheet 3 of 9
Deviations, if any	: NI
Name of the witnessing persons	: Mr. M.S. Philip, General Manager
Customer's Representative	: Mr. Alok Soni, Inspecting Officer, BPHL (BPL) on behalf of ACME
Other than Customer's Representatives	: None
Text subcontracted with and address of the laboratory	: None
Documents constituting this report (in words)	: None
Number of Sheet(s)	: Nine
Number of Oscillogram(s)	: None
Number of Graph(s)	: NI
Number of Photograph(s)	: Four
Number of Test Circuit Diagram(s)	: One
Number of Drawing(s)	: Four

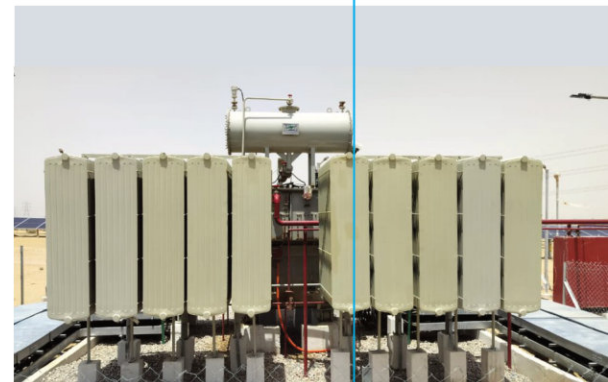

 (G. V. S. Srinivasulu)
 Test Engineer


 (M. K. Wadhawan)
 Head of Division
 Reviewed and Authorized by

ULR - TC19142105/STNA210108P
 Discipline : Electrical
 Group : Induction & Transformers

SWITCHGEAR TESTING & DEVELOPMENT STATION
 GOVINDPURA, BHOPL - 462 023, MP
 TEL: +91 755 288862 FAX: +91 755 288774

Sheet 1 of 9



13.2 MVA IDT Installed at site



WIND Application Inverter Duty Transformer

What is WIND Application Inverter Duty Transformer?

A WIND Application Inverter Duty Transformer is a specialized transformer designed for wind energy applications, particularly in systems where an inverter is used to convert the variable frequency output of a wind turbine generator into a stable AC voltage for grid connection.

Key Features and Functions

- **Low Loss Core with CRGO Steel** – The core is built using Low Loss Prime CRGO (Cold Rolled Grain Oriented) steel with mitered joints to minimize core losses, reduce hysteresis and eddy current losses, and improve overall efficiency.
- **Voltage Matching** – It steps up the voltage at wind turbine generator
- **Withstands Harmonics** – Specifically designed to handle high-frequency harmonics generated by inverters, reducing the risk of overheating and insulation stress.
- **Enhanced Insulation** – Equipped with improved insulation to withstand voltage spikes and transient overvoltages caused by inverter switching.
- **Capability to Handle Low Voltage Conditions** – Transformers are designed to operate at up to 5-10% lower voltage, allowing them to handle higher current during sudden drops in wind speed, ensuring stable operation without system failures.
- **Thermal Performance** – Built to withstand high current surges and temperature variations while keeping heat dissipation efficient.
- **Cooling System** – Available with air-cooled (AN/AF) or liquid-cooled (ONAN/ONAF) systems to handle different environmental conditions and operational loads.

Where It's Used

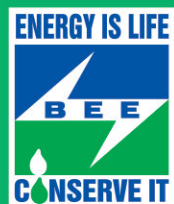
- Wind farms to step up generator voltage for efficient transmission.
- Between wind turbine inverters and the power grid.
- Offshore and onshore wind energy projects.

Short Circuit Report of 5.6 MVA 33/0.950 KV Transformer

Successful completion of "Ability to withstand the dynamic effects of Short Circuit Test" on 5.6 MVA 33/0.950 kV Aluminium Winding Wind Application Transformer.

Tesla Power's recent successful completion of the "Ability to withstand the dynamic effects of Short Circuit Test" on their 5.6 MVA 33/0.950 kV Aluminium Winding Wind Application Transformer represents a significant milestone in the company's ongoing commitment to engineering excellence and innovation. This rigorous testing procedure is designed to evaluate the transformer's resilience and structural integrity when subjected to the immense forces and stresses generated by a short circuit event, which can produce powerful electromagnetic forces capable of causing catastrophic damage if the transformer's design is not up to the task.

CENTRAL POWER RESEARCH INSTITUTE (Member of ISIL)	
TEST REPORT	
CPRI	
Test Report Number	: CPRI/PLS/TA247017
Date	: 13 September 2024
Name and Address of the Customer	: M/s Tesla Power Equipments & Projects (P) Limited H-147, 1st Floor, Industrial Area, Gurgaon, Bhopal-462023, Madhya Pradesh (India)
Name and Address of the Manufacturer	: M/s Tesla Power Equipments & Projects (P) Limited H-147, 1st Floor, Industrial Area, Gurgaon, Bhopal-462023, Madhya Pradesh (India)
Particulars of Sample tested	: 5600 KVA, 33/0.950kV, Three Phase, Transformer
Type	: Oil filled
Description of test sample	: Refer Sheet 2 of 8
Serial Number	: 1919308
Number of Samples Tested	: One
Date(s) of Test(s)	: 27 and 28 August 2024
CPRI sample code number(s)	: 87942458433
Particulars of tests conducted	: Ability to withstand the dynamic effects of short circuit
Test in accordance with	: IS 2026 (Part 6) : 2011
Standard Specification	: Nil
Sampling Plan	: Refer Sheet 3 of 8
Customer's Requirement	: Nil
Deviations, if any	: Nil
Name of the witnessing persons	: 1. Mr. Shrinani Jaisi, GM(Design)
Customer's Representative	: 2. Mr. Shastryendra Shukla
Other than Customer's Representative	: Mr. Pradyip Kapadia, Adani Green Energy Limited
Test subcontracted with and address of the laboratory	: None
Documents constituting this report (in words)	: None
Number of Sheets	: Eight
Number of Oscillograms(s)	: Nine
Number of Graph(s)	: Nil
Number of Photograph(s)	: Three
Number of Test Circuit Diagram(s)	: One
Number of Drawing(s)	: Seven
(Signature/Seal) Test Engineer	(Signature/Seal) Head of Division Reviewed and Authorized by
U/LR - TC51812481247017	SWITCHGEAR TESTING & DEVELOPMENT STATION
Discipline : Electrical	Gurgaon, Haryana, India - 122 002, India
Group : Transformers	TEL: +91 98 765 88888 FAX: +91 98 765 88874
	Sheet 1 of 8



energy efficient transformers BIS level

Electricity is one of the most vital infrastructure inputs for economic development of a country. The demand for electricity is enormous and is growing steadily. This growth has been slower than country's economic growth. To balance this demand and supply of electricity, it is the time for electric utilities to go for energy efficient electrical equipment for huge savings as this would be utilized for future needs.

Tesla Power Equipments and Projects Limited. is one of the few/first units manufacturing energy efficient transformers in India. We have supplied more than 25000 units of various rating energy efficient transformers to electrical utilities in India.

Energy efficient transformers are rated as Level-I, Level-II or Level-III rating. In energy efficient transformers we guarantee individually the no-load loss and load loss without any positive tolerance at 50% and 100% load condition (at rated voltage and frequency and at 75°C.

The maximum allowable losses at rated voltage and rated frequency permitted at 75 °C for distribution transformers can be chosen from the values of Level-I, Level-II or Level-III rating for transformers. No positive tolerance shall be allowed on the maximum losses displayed on the label for both 50% and 100% loading values.

BIS ENERGY EFFICIENCY CHART

Maximum Total Losses as per Latest Amendment IS 1180 (Level 1)							
Rating (KVA)	Impedance (Percent)	Maximum Total Loss (Watts)					
		11 KV Losses (Energy Efficiency Level 1)		22 KV Losses (Energy Efficiency Level 1)		33 KV Losses (Energy Efficiency Level 1)	
		50 % Load	100% Load	50 % Load	100% Load	50 % Load	100% Load
16	4.50	135	440	142	462	145	473
25	4.50	190	635	200	667	204	683
63	4.50	340	1140	357	1197	366	1226
100	4.50	475	1650	499	1733	511	1774
160	4.50	670	1950	704	2048	720	2096
200	4.50	780	2300	819	2415	839	2473
250	4.50	980	2930	1029	3077	1054	3150
315	4.50	1025	3100	1076	3255	1102	3333
400	4.50	1225	3450	1286	3623	1317	3709
500	4.50	1510	4300	1586	4515	1623	4623
630	4.50	1860	5300	1953	5565	2000	5698
800	5.00	2287	6403	2401	6723	2459	6883
1000	5.00	2790	7700	2930	8085	2999	8278
1250	5.00	3300	9200	3465	9660	3548	9890
1600	6.25	4200	11800	4410	12390	4515	12685
2000	6.25	5050	15000	5303	15750	5429	16125
2500	6.25	6150	18500	6458	19425	6611	19888

Maximum Total Losses as per Latest Amendment IS 1180 (Level 2)							
Rating (KVA)	Impedance (Percent)	Maximum Total Loss (Watts)					
		11 KV Losses (Energy Efficiency Level 2)		22 KV Losses (Energy Efficiency Level 2)		33 KV Losses (Energy Efficiency Level 2)	
		50 % Load	100% Load	50 % Load	100% Load	50 % Load	100% Load
16	4.50	120	400	126	420	129	430
25	4.50	175	595	184	625	188	640
63	4.50	300	1050	315	1103	323	1129
100	4.50	435	1500	457	1575	468	1613
160	4.50	570	1700	599	1785	613	1828
200	4.50	670	2100	704	2205	720	2258
250	4.50	920	2700	966	2835	989	2903
315	4.50	955	2750	1003	2888	1027	2956
400	4.50	1150	3300	1208	3465	1236	3548
500	4.50	1430	4100	1502	4305	1537	4408
630	4.50	1745	4850	1832	5093	1876	5214
800	5.00	2147	5838	2254	6130	2308	6276
1000	5.00	2620	7000	2751	7350	2817	7525
1250	5.00	3220	8400	3381	8820	3462	9030
1600	6.25	3970	11300	4169	11865	4268	12148
2000	6.25	4790	14100	5030	14805	5149	15158
2500	6.25	5900	17500	6195	18375	6343	18813

Maximum Total Losses as per Latest Amendment IS 1180 (Level 3)							
Rating (KVA)	Impedance (Percent)	Maximum Total Loss (Watts)					
		11 KV Losses (Energy Efficiency Level 3)		22 KV Losses (Energy Efficiency Level 3)		33 KV Losses (Energy Efficiency Level 3)	
		50 % Load	100% Load	50 % Load	100% Load	50 % Load	100% Load
16	4.50	108	364	113	382	116	391
25	4.50	158	541	166	568	170	582
63	4.50	270	956	284	1004	290	1028
100	4.50	392	1365	412	1433	421	1467
160	4.50	513	1547	539	1624	551	1663
200	4.50	603	1911	633	2007	648	2054
250	4.50	864	2488	907	2612	929	2675
315	4.50	890	2440	935	2562	957	2623
400	4.50	1080	3214	1134	3375	1161	3455
500	4.50	1354	3909	1422	4104	1456	4202
630	4.50	1637	4438	1719	4660	1760	4771
800	5.00	2015	5323	2116	5589	2166	5722
1000	5.00	2460	6364	2583	6682	2645	6841
1250	5.00	3142	7670	3299	8054	3378	8245
1600	6.25	3753	10821	3941	11362	4034	11633
2000	6.25	4543	13254	4770	13917	4884	14248
2500	6.25	5660	16554	5943	17382	6085	17796



our clients

ELECTRICAL UTILITIES (GOVT. SECTOR)

- Assam Power Distribution Company Ltd.
- M.P. Madhya Kshetra Vidyut Vitran Company Ltd. (MPMKVVCL)
- M.P. Poorva Kshetra Vidyut Vitran Company Ltd. (MPPKVVCL)
- M.P. Paschim Kshetra Vidyut Vitran Company Ltd.
- Maharashtra State Electricity Distribution Company Ltd.
- NTPC Renewables
- NLC
- NHDC
- SJVN

EPC's

- ABB India Ltd.
- ACME Solar holdings pvt. Ltd.
- ADANI Green Energy Ltd.
- Aditya Birla Renewables
- Bielectric photovoltaic pvt. Ltd.
- Enerture technologies pvt. Ltd.
- Fourth partner energy ltd.
- Gensol
- Hitachi Energy
- Insolare Energies Pvt. Ltd.
- KEC International
- MEGA Engineering & Infra Ltd.
- KPI Green Energy Ltd.
- O2 Power
- SAEL engineering pvt. Ltd.
- Solarworld energy solution pvt. Ltd.
- Sterling & Wilson
- Sunsire Energy Pvt. Ltd.
- Sunkind india pvt. Ltd.
- Sunfree pachim renewables energy pvt. Ltd.
- TATA Power Solar
- Waree engineers pvt. Ltd.

OTHER CLIENT'S

- AGRO CHEMICAL PLANTS
- BANKING SECTOR
- CABLE ELECT. INDUSTRIES
- COAL MINES
- DATA CENTERS
- DEFENCE SECTOR
- EDUCATION SECTOR
- ELECTRICAL UTILITIES (Govt. Sector)
- ELECTRICAL UTILITIES (Private Sector)
- ELECTRICAL CONTRACTORS
- FINANCIAL INSTITUTION
- FOOD & BEVERAGES INDUSTRIES
- FOOD PROCESSING PLANTS
- FURNACE INDUSTRIES
- GENERATION PLANTS
- HOTELS
- HOSPITALS/HEALTH CARE SECTOR
- HOUSING BOARDS
- HYDEL PROJECTS
- INFORMATION/ELECTRONICS
- NATIONAL UTILITIES
- PHARMACEUTICALS
- SOLAR PROJECTS
- STONE CRUSHER PLANTS
- TEXTILE INDUSTRIES
- WIND PROJECTS

APPROVALS / FOOTPRINTS



And many more . . .



Tesla Power Equipments And Projects Limited, Bhopal
147-H, 147-I, Sector H, Industrial Area, Govindpura, Bhopal-462023

Tesla Power Equipments And Projects Limited, Mandideep
Plot No. D-20, Phase II, Industrial Area Mandideep, Raisen- 462046

Tel: 0755-4945666

Mob: +91 9755557703, +91 9993055536

Email: mktg@teslaindia.co / projects@teslaindia.co / tesla@teslaindia.co / mktgdomestic@teslapower.biz

For Enquiries

Head Office (Bhopal) - Domestic	Mr. Jitendra Singh	+91-9755557703	Jitendra@teslaindia.co
Head Office (Bhopal) - Export	Mr. N. Gopalan	+91-9993055536	gopalan@teslaindia.co

BRANCHES

Region	Name	Mobile No.	Email
Central - MP Region	Mr. Yasir Farooque	+91-7024120460	Yasir@teslaindia.co
Central - Nagpur / Chhattisgarh	Mr. Shashank Thakre	+91-7389905881	Sthakre@teslaindia.co
Northern - New Delhi	Mr. Abhishek Jayaswal	+91-9425745385	abhishek@teslaindia.co
Northern - Lucknow	Mr. Ajay Kumar Tiwari	+91-7024012365	aktiwari@teslaindia.co
North Eastern - Kolkata/Assam	Mr. Pratim Das	+91-7024120441	pratim.das@teslaindia.co
Eastern - Kolkata/Orissa/Bihar	Mr. Sougata Bhattacharjee	+91-7024007768	sougata@teslaindia.co
Southern - Hyderabad	Mr. Shantanu Mukherjee	+91-7024154624	shantanu.mukherjee@teslaindia.co
Southern - Bangalore	Mr. Akash Soni	+91-7024154610	akash.soni@teslaindia.co
Southern - Chennai	Mr. Sanjoy Kumar Hazra	+91-9609512760	sanjoykumar@teslaindia.co
South Western - Mumbai/ Pune	Mr. Shailesh Karnani	+91-9967014407	3wmpowerproducts@gmail.com
Western - Gujarat	Mr. Niher Ranjan Paul	+91-9748753616	niher@teslaindia.co
Western - Rajasthan	Mr. Vipin Singhai	+91-7471128044	vipin@teslaindia.co

 <https://teslapowerltd.com>

Follow us on:

 Tesla Power Equipments And Projects Limited