TOSHIBA

Toshiba Transmission & Distribution Systems (India) Private Limited

Innovative Solutions for T & D Sector

- EHV & UHV Power Transformers
- Medium & Small Power and Distribution Transformers
- Gas Insulated Switchgear (GIS)
- Surge Arresters
- Control & Relay (Protection) Panels & Substation Automation Systems (SAS)
- EPC (Turnkey Projects and Packaged Solutions)

About Us

A Global Supplier of Integrated Solutions

Toshiba Transmission & Distribution Systems group is a world leader in the supply of integrated solutions for energy Transmission & Distribution. Our systems effectively control Transmission & Distribution in order to deliver reliable electricity from Power Plants to Industries, Transportation Systems to Agriculture, even to our Homes.

Toshiba has developed its superior technology and has a history of high product quality in this market throughout the course of more than 100 years, manufacturing its first transformer in 1894 and its first switchgear in 1902.

Hiroshi Furuta
Chairman & Managing Director

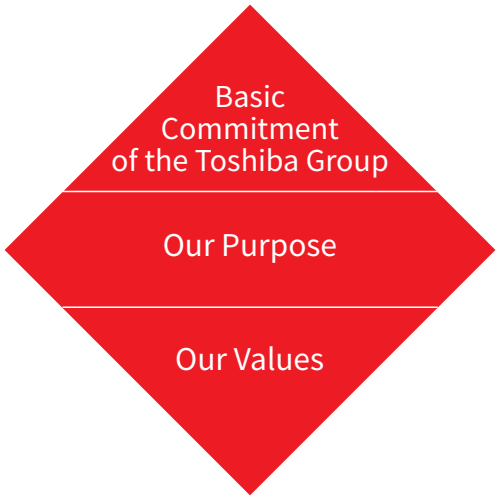
Our vast experience & continued expansion has allowed us to gain immense trust and appreciation from customers around the world. We strive to create products and services that enhance society and protect the environment. This is accomplished through a single component reducing environmental impact or a complete smart grid solution. Toshiba continues to serve the people and the planet that we call home.

Toshiba Corporation, Japan has established **Toshiba Transmission & Distribution Systems (India) Private Limited (TTDI)** in 640,000 Square Meter Area at Hyderabad, Telangana State, India for T&D Business. TTDI is the global manufacturing hub of Toshiba Corporation to cater products & solutions across the world. Also focusing on Renewables and Environment.

The Essence of Toshiba

The Essence of Toshiba is a statement of our unwavering credo as an organization. It has three components.

The Basic Commitment of Toshiba Group, Our Purpose, and Our Values.



Basic Commitment of The Toshiba Group

Committed to People,
Committed to the Future.

Our Purpose

We turn on the promise of a new day.

Our Values

Do the right thing

look for a better way

Always consider the impact

Create together

EHV & UHV Power Transformers

Key Milestones

- Proven Design, Technology and Process backed with TOSHIBA Design Philosophy contributed to carry-out Dynamic Short Circuit Test on several Transformers from 132kV to 420kV Class on ICTs, GTs, UAT, ST.
- Successfully conducted Dynamic Short Circuit test on 500 MVA, 400/220/33kV 3-Ph Auto Transformer as per Central Electricity Authority (CEA) Specification at NHPTL, Bina, India.
- Successfully Designed, Manufactured and supplied 500 MVA, 765/400/33 kV 1-Ph Transformers (with Tap and Tap less design) as per CEA Specification.
- Successfully Designed, Manufactured and supplied 340 MVA, 400/33-33kV 3-Ph Transformers to M/s. GIPCL, which is highest rating in Renewable Energy Segment in India.

Infrastructure

- Vertically Integrated Manufacturing Facility " with Huge Installed Capacity to cater to very High Scale of Business Operations resulting in Optimum Delivery Time at a Competitive Price.
- Winding , Core Coil Assembly are carried out in dust proof Clean Room with Temperature Control
- Design and Manufacturing Capability to handle Transformers for very Extreme Climatic Conditions and delivered Transformers for Renewables, Railway Applications, Oil & Gas etc..
- NABL Accredited Testing laboratory vide Certificate Number TC-7827, to cater to Indian and International Standards

Product Range

S.NO	DESCRIPTION	RATING	VOLTAGE CLASS	STANDARDS
1	Generator Transformers	Up to 315 MVA (1- Phase) Up to 315 MVA (3 - Phase)	Up to 765 kV Class Up to 420 kV Class	IEC, IEEE, IS, BS, AS
2	Auto Transformers	Up to 500 MVA (3-Phase) Up to 500 MVA (1-Phase) Up to 333 MVA (1-Phase)	Up to 420 kV Class Up to 765 kV Class Up to 1200 kV Class	IEC, IEEE, IS, BS, AS
3	Separate Winding Transformers	Up to 340 MVA	Up to 420 kV Class	IEC, IEEE, IS, BS, AS
4	Traction Transformers	Up to 200 MVA	Up to 245 kV Class	IEC, IEEE, IS, BS, AS

Future Products: Auto Transformers up to 700 MVA, 1200 kV Class (1-Phase), Ester Oil Transformers up to 220 kV Class (3-Phase), Reactors up to 550 kV Class and Gas Insulated Transformers (GIT)

765 kV Class Power Transformers

Applications: • Power Generation Stations • Transmission Substations • Industries • Railways • Renewables • Data Centres

Distribution Transformers Division

- Vertically integrated manufacturing base for Transformers
- Leading supplier of Energy Efficient Amorphous Metal Distribution Transformers

Product Range

Description	Core Material	Phase	Primary Voltage	Rating
Medium & Small Power Transformers	CRGO	1	Up to 66 kV	Up to 3333 kVA
		3	Up to 66 kV	Up to 31500 kVA
CRGO Silicon Steel Distribution Transformers	CRGO	1	Up to 33 kV	Up to 167 kVA
		3	Up to 33 kV	Up to 4000 kVA
Amorphous Metal Core Distribution Transformers	Amorphous	1	Up to 33 kV	Up to 167 kVA
		3	Up to 33 kV	Up to 2500 kVA
Completely Self Protected (CSP) Distribution Transformers	Amorphous /CRGO	1	Up to 11 kV	Up to 167 kVA
		3	Up to 11 kV	Up to 315 kVA
Pad Mounted Transformers	CRGO	1 & 3	Up to 25 kV	Up to 1000 kVA
	Amorphous	1	Up to 25 kV	Up to 167 kVA
		3	Up to 25 kV	Up to 1000 kVA
Underground Distribution Transformers	CRGO	3	Up to 24 kV	Up to 1000 kVA
Solar Inverter Duty Transformers	CRGO	3	Up to 33kV	3 Windings : Up to 10MVA 5 Windings : Up to 20MVA

TTDI also offers Special Transformers for Wind Farm Applications

Future Products: Railways (Auto Transformers)

Medium & Small Power Transformers

Three Phase
Distribution Transformers

Under Ground
Three Phase
Distribution
Transformers

Inverter Duty Transformers
Reliable for solar grids

Single Phase
Distribution Transformers

Pad Mounted
Transformers

Gas Insulated Switchgears

Special Features of Toshiba Design

- Outdoor GIS : Built to survive in extreme environmental conditions like Snowy Regions, Deserts, Coastal Regions etc.,
- Protection Against Extreme Environmental Conditions
- Safe & Reliable Operation with Minimal Maintenance

Indoor & Outdoor	66/132 kV	220 kV	400 kV
Rated Voltage	72.5 kV /145 kV	245 kV	420 kV
Rated Current	Up to 3150 A	Up to 4000 A	Up to 4000/ 6000
Rated Short Time withstand Current	Up to 40 kA – 3 sec	Up to 50 kA – 3 sec	Up to 63/ 80 kA – 3 sec
Rated Frequency	50 Hz	50 Hz	50 Hz
Applied Standards	IEC	IEC	IEC

Future Products: 765kV GIS

Manufacturing Facilities for Gas Insulated Switchgear (upto 765 kV Voltage level)


GIS Production bay


GIS Testing bay


Operation test facility for GIS


HV test facility for GIS

Indoor & Outdoor GIS Equipment Installations


380-420 kV GIS


380-420 kV GIS


170-245 kV GIS


170-245 kV GIS


72.5-145 kV GIS


72.5-145 kV GIS

Applications: • Power Generation Stations • Transmission Substations • Industries • Railways • Renewables • Data Centres

Surge Arresters

Special Features of Toshiba Polymer Surge Arrester

- **Reliable, tried & tested ZnO element:** High protective characteristics and High energy absorption capability
- **Durable performance:** Anti-pollution Hydrophobic silicone rubber
- **Compact & lightweight:** Easy installation and High anti-seismic performance

	Distribution	Substation		Transmission Line	
Model	RVSQN Series	RVLQC Series	RVLQB Series	TMLRG / RVLRG Series	RVLRC Series
Max. System Voltage	12 kV - 36 kV	52 kV - 245 kV	52 kV - 550 kV	72.5 kV - 362 kV	145 kV - 550 kV
Rated Voltage	9 kV - 36 kV	48 kV - 216 kV	48 kV - 444 kV	72.5 kV - 288 kV	120 kV - 384 kV
Arrester Classification	DH	SM	SH	Y2 / Y3	Y4
Nominal Discharge Current	10 kA	10 kA	20 kA	10 kA / 15 kA	20 kA
	8/20us			2/20us	
High Current impulse Capability	100 kA	100 kA	100 kA	25kA / 40 kA	65 kA
	4/10us			2/20us	
Applicable Standards	IEC 60099-4 Ed 3.0 2014			IEC 60099-8 Ed 2.0 2017	

*IEEE Std C62.11-2020 also applicable

Smart Solution for Stable Power Supply

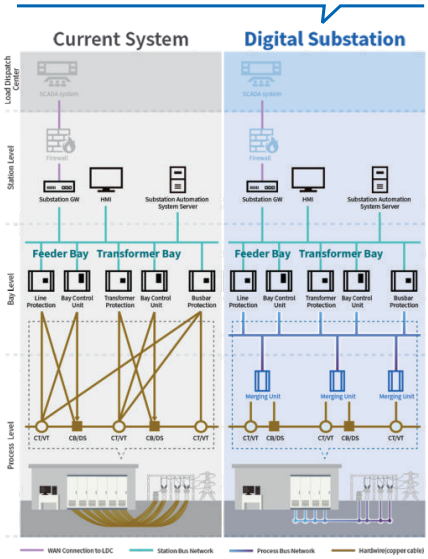
ZnO Element

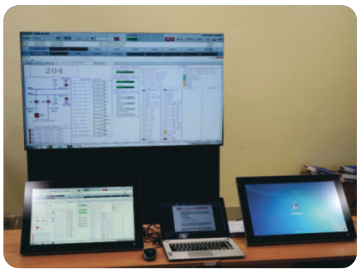
Hydrophobicity of silicone rubber

Transmission Line Arrester with External Series Gap (EGLA)

Protection Relay, Control Relay Panel & Substation Automation Systems (SAS)

The Digital Substation concept improves not only the operation of the substation, but also optimizes the maintenance of the overall system by improving asset management.





Extensive product range

Key IEDs from the GR-200 universal platform designed to meet expansive and future demands:

- GBU200 Bay Control Unit
- GRZ200 Distance Protection Relay
- GRL200 Line Differential Protection Relay
- GRT200 Transformer Protection Relay
- GRB200 Busbar Protection Relay
- GRD200 Multi-Function Protection & Control Unit
- GRH200 High Impedance Busbar/Restricted Earth Fault Protection Relay
- GMU200 Merging Unit for Digital Substation
- GRG 200: Generator & Motor Protection
- GRY 200: Railway DC Protection

Note: Toshiba GR-200 Series protection and control devices now support station bus server and process bus client functionality, and are fully compatible with IEC 61850-8-1 GOOSE & MMS as well as IEC 61850-9-2 Sample Value.

Process Bus Technology for Digital Substation:

The digital substation focuses on the digitalization of both station level and process level by converting analog measurement data and binary status information into digital data. Digitalization provides a secure and reliable method of data transmission, as well as significantly reduced investment and operating costs.

Portfolio

We, Toshiba Transmission & Distribution Systems (India) Pvt. Ltd (TTDI) having portfolios of Design, Engineering, System configuration, Assembly, Supply, Testing & Commissioning on Site, Training for Control Relay Panels and Substation Automation Systems.

Toshiba Protection Relays, IEDs and Protection Systems are recognized worldwide for its rich virtues of quality, stability and have successful experience in varied installations world over, including in India. Toshiba Brand Relays enjoy a very large installed base and successful operation in various utilities of India.

Toshiba Protection Relays and Substation Automation Systems are IEC 61850, PRP, Cyber Security Complaint and Substation Automation communicates with SCADA/ Master control centre over IEC 101/104 Protocol

Applications:

1. Power Generation Stations, Transmission Substations, Industries, Railways, Renewables, Data centers and Distribution Substations.
2. Protection and Automation Solutions with HSR/RSTP/PRP.
3. Protection and Automation Solutions with Process Bus.

Future Solutions : Digital Transformation Solutions

EPC (Turnkey Projects and Packaged Solutions)


Turnkey Substation Solutions with Indoor GIS


Turnkey Substation Solutions with Outdoor GIS


Turnkey GIS Substation Solutions for Renewables and Data Centre Applications


Turnkey Power and Generator Transformers Solutions

Energy Systems and Solutions

The Power Generation, Transmission & Distribution market requires innovative and reliable solutions for the power from conventional and renewable generation plants to be efficiently transmitted and distributed to its commercial and industrial consumers.

Toshiba's rich global experience, relevant regional and global centres of competences, domain knowledge encompassing from System Studies to Front End Design to Detailed Design to Project Engineering to Project Management to Construction to Testing & Commissioning, being within easy reach, enable us to provide optimized turnkey solutions and engineered equipment packages.

Our Solutions cover System Solutions, Substations and Installations associated with Power Transmission & Distribution, Railway Electrification and Renewable Energy Systems.

Our offering covers variety of Projects, Systems and Packaged Equipment Solutions and encompassing a range of voltage levels, up to 765 kV and saliently includes:

- Turnkey Gas Insulated Substations (Both Indoor and Outdoor) & Air Insulated Substations.
- Turnkey Underground Substations.
- Engineered Substation packages.
- Packaged Products Supply Solutions.
- Substation and Electrical Installation in Renewable Energy Systems.
- Mobile Substation Solutions.

We also offer services for solutions with Toshiba's Products and Systems, which include:

- System Studies.
- Front End Design.
- Project Management & Engineering.
- Installation, Testing and Commissioning.
- Preventive, Scheduled and Corrective Maintenance, Troubleshooting.
- Training and Support.
- Spare parts, Consumables.

We cater to our customers' requirements for Turnkey Solutions and Projects, by delivering Engineered Product Packages, Project Solutions, and Customized Solutions, undertaking these, with our capabilities in Engineering, Providing World-Class Products and Expertise Project Management Services- turnkey from design to commissioning, on Single Point Responsibility basis.

Head Office & Works:

Toshiba Transmission & Distribution Systems (India) Private Limited

Rudraram Village, Patancheru Mandal, Sangareddy Dist. - 502329, Hyderabad, Telangana State, India.
Website: www.toshiba-ttdi.com, E-mail: marketing.info@toshiba-ttdi.com

TTDI / CAT / PRD / 02 - 2025 / R5