#### Certified Company Powertech Transformers & Controls Pvt. Ltd.

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Power & Distribution Transformers

**Power & Distribution Panels** 

**11KV Load Break Switches** 

Undertake all Turnkey Projects upto 132 KV Substation

Low Losses | High Efficiency | Good Performance Our Commitment Customer Satisfaction



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CLG NUMBER

1



We would like to introduce ourselves as the Manufacturers & Testing Facilities of 11KV Class, 22KV Class & 33KV Class Power & Distribution Transformers i.e : Oil & Dry Type Transformers, Special Purpose Step up Power Transformers in the Country. Our factory is situated at CIE Gandhinagar near Balanagar at Hyderabad Telangana.

We are certified by (BIS Standards) 1180 Level-I & II, - Oil Cooled Transformers up to 2500 KVA range, as per Bureau of Energy Efficiency Standards (BEE Standards) in 11 KV Class, in 22 KV Class and in 33 KV Class 15 KVA to 12.5 MVA - with Off Circuit Tap Changer and On Load Tap Changer (OLTC).

We have an industry (Unit - II) Manufacturing of Power & Distribution Panels, Bus Duct's, and 11 KV Load Break Switches (LBS). It is approved by CPRI, as per the requirement of the customers.

More than 10,000 Transformers, 1500 11 KV Load Break Switches and 1000 No's of Distribution Panels are in operation with best service at various utilities like H.T and L.T. consumers like Government & Private Sectors, Water Works Department RWS, CPWS, APSIDC, AP Housing Boards, Public Health Departments, Electric Supply Co-operative Societies like Co-op. Electric Supply Society Ltd., Sircilla, Kuppam & Commercial Complexes, Industries, Hotels, Shopping Malls, Software Parks, Hospitals, Engineering Units, Crushers, Granite Industries, Chemical Industries in TS & AP etc.

We have a good team of Engineers, Skilled & Experienced Technocrats to take up any type of Electrical Designs Installation & Erection works as one of Class 'A' Contractors for all voltage i.e. up to 132 KV License holder with the Govt. of Telangana, the license No. A 2-2596 / 1726.

#### Vision :

To create new benchmarks in the highly demanding and critical areas of Manufacturing Power & Distribution Transformers and allies products and cater to a wide range of customers in the Domestic and International markets.

#### Quality makes all the difference

Powertech Transformers & Controls Pvt. Ltd. have established their credentials among a wide section of domestic market that includes, State service providers, Government and Private Sectors service providers, several projects both stand alone and turnkey basis with a no-compromise attitude to 'absolute quality'.

#### The driving force

The Company has a strong R & D Base that complements the manufacturing, quality control and testing facilities that are headed by highly experienced engineers and qualified personnel that ensure high quality control and attention to detail.

#### **The Preferred choice**

With a dedicated service network for prompt and effective after sales service, Powertech Transformers & Controls Pvt. Ltd. is the preferred choice of customers and the name that spells 'absolute quality'. All products of Powertech Transformers & Controls Pvt. Ltd. are type tested and conform to IS specifications and IEC Standards.

#### **Advantage Power Tech**

- Attention to detail
- Strong accent on absolute quality
- Highly qualified and experienced personnel
- Own state-of-the-art manufacturing facility
- Cost-effective
- Timely delivery module
- Prompt and effective after-sales & service.



Integrated in-house production & testing facilities supplemented by state-of-the-art technologies guarantee reliability and efficiency for all the Indian Markets.

#### **The Winding**

Rectangular and round conductors are used for the windings. The conductors is usually insulated with high grade multi paper covering of with an insulating enamel casting. The windings are such has designed so as to ensure reduced axial stress in short circuit conditions and also to withstand impulse and over voltages. Some standard forms of coil windings are spiral, helica, interleaved disc and plain disc. For Distribution Transformers, both low voltage and high voltage windings are disc type, which give highest resistance against short circuits. It is ensured that proper tension is give on the winding for rigidness.

#### **Core-coil Assembly**

The "active" part of the Transformer consists of the magnetic core with windings and accessories. The windings are place over the core limbs and necessary connections are made as per the tappings and vector groups. Sufficient ducts are provided between the coil to ensure heat dissipation through circulation of oil. Best quality insulation is provided at all joints and gaps. The optimum design of Core Coil Assembly is achieved by considering the required technical particulars, cooling, size compactness and tapping arrangement. All leads and conductor are rigidly supported by special wooden frames.

#### Drying

The Core-Catt Assembly is placed in the vaccum oven for removal of moisture. After the drying presses, the assembly is retightened to take up all shrinkage and then the unit is ready for tanking.

#### Tank-up

After removing the Core-Coil Assembly from the heating over, it is thoroughly cleaned by pressurised air and then placed into the tank and bolted up with all necessary accessories. High quality filtered transformer oil is filled in the tank to completely immerse the assembly. Finally, connections of primary and secondary to the terminal. Tanks made of high quality mild steel sheets and plates. State-of-Art welding technology is applied to give immaculated finish and task proof tanks. Cooling is provided by either Pressed Steel type Radiators, which are attached by flange of welded directly onto the body, or by corrugated fin walls. Either types of tanks can be supplied as per customer's requirement, however, corrugated type tank has merits over conventional radiator type tank because of its compact size and aesthetics. Every tanks is rigorously tested for any leakage or seepage, air pressure test, fluid test and ultra voilet lamp test are conducted on each tank to ensure that no leakage takes place. Continuous efforts in Research and Development result in excellent finish, leakproof and rigid tanks.

#### **The Core**

The Prime core of a transformer is the core. PTT uses high quality cold rolled grain oriented magnetic silicon steel to ensure optimum losses and most efficient working of the transformers. The type of magnetic steel is chosen according to the desired loss level. The laminations are out geometrically to ensure optimum now of magnetic flux and minimum air gap between the joint of two consecutive sheets. The supporting structures and clamping devices of the core contribute to the compactness of the design and also ensure low sound levels.

# Why should you choose us?

**Qualified Team** – We have a great team of certified technicians and highly qualified electrical engineers.

**Reliability** – We offer our clients a reliable service and after sales & service.

Integrity – At the core of our values is integrity and we wish to be reputed as a responsible company.

**Respect** – We respect our clients and our employees and trust them.

## **Power & Oil Cooled Distribution Transformers**



Powertech Transformers & Controls Pvt. Ltd. cover a wide range Oil Cooled Transformers with Off Circuit Tap Changer / On Load Tap Changer (up to 5000 KVA in 11 KV & 33 KV) conforming to the international standards of quality and safety for industries and commercial set-ups. These transformers are designed and developed using latest technologies and can be provided with a variety of terminations so as to suit the requirements for new installation or replacement.

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Optimum efficency is ensured by delicate proportioning of core and winding losses using CRGO M3 to MOH Lamination, Electrolytic Grade pure copper, with Transposition in L.V. coil for current sharing in parallel Conductors, Electric grade press paper, boards and mineral oil. Thus better regulation is achieved resulting in longer life. Careful designing also reduces noise level to the minimum.

## Transformer with Off Circuit Tap Changer Transformer with OLTC

# <image>

#### Standard Fittings (for Oil Cooled Transformers)

- Rating & Diagram plate
- Earthing terminals.
- Lifting lugs
- Thermometer pocket.
- Oil Conservator with drain plug
- Air release hole with plug.
- Oil Level indicator.

#### Optional Devices (for Oil Cooled Transformers)

- Bucholtz relay with alarm and trip contact.
- Oil temperature indicator with alarm and trip contact.
- Winding temperature indicator with alarm and trip contacts.
- Magnetic oil level gauge with alarm & trip contacts.
- Marshalling box to house O.T.I. and W.T.I.
- RTCC (Remote Tap Changer Control) Cubicle.
- Electronic Automatic Voltage Controller.
- Pressure Release Valve.
- Cable Box on H.T. & L.T. Side.

#### **Standard Specifications**

Capacity	Upto 12.50 MVA
No.of Phases	3Phase
Frequency	50Hz.
Voltage Range	11KV/22KV/33KV
Tapping	<b>On Load Tap Changer</b> to
	Provide +5% OR <b>Off Circuit</b>
	Tap Changer for + 5% Taps in
	steps of 2.5% each, on HT
	side.
Insulation	Class'A'
Vector Group	Dyn 11
Duty Cycle	Continuous
Winding	Copper Wound
Terminals	As per required

#### **CSP** Transformers



- Subjected to rigorous and strict quality controls at every stage of manufacturing
- Designed to meet latest national international standards like BIS, IS, IEC, ANSI, BS, DIN, etc.
- Wide range of Transformers duly tested at Central Power Research Institute, Bangalore, Bhopal Quality assurance programme available



#### **Technical Specifications**

- Off-circuit tap changer to provide +5% to -5% in steps of 2.5% (or as specified by customer)
- On-load tap changer to provide +5% to -15% in steps of 1.25% (or as specified by customer)

3 Phase, 50 Hz in voltages of 11 KV, 22 KV and 33 KV  $\,$ 

Continuous duty

Painting as per IS / IEC standards

Vector group Dyn 11

Standard fittings as per IS: 2026/IEC 76/BIS 1180

HV side cable box/Bare Bushings

LV side cable box/bus duct

#### **Salient Features**

- Design conforms to BIS 1180 & IS:2026, BS 171, IEC 76 and other relevant standards
- Latest manufacturing techniques to ensure cost effectiveness and reliability
- Very low power losses and low noise
- Optimum utilization of active materials for sleek design
- Withstands electrical impulses, thermal and dynamic stresses







#### **Technical Specification**

Rating		Three Phase
		100 kVA to 1000 kVA
Applicable Standards	:	IS 11171, IEC 726, ANSI.C.12.01
Cooling	:	AN, ANAF
Frequency	:	50 Hz, 60 Hz
Vector Group	:	As specified
Primary Voltage	:	Upto 33 KV
Secondary Voltage	:	220/127, 480/277 V
		(Other Voltages as required)
Winding Material	:	Copper/ Aluminum
Tapping Range :	:	+ 5% in steps of 2.5% (Other tappings as required)
Impedance	:	In line with applicable standards



Resistant to short circuits (High Mechanical Strengths)

Non-Flammable

**Resistant to Temperature Fluctuations** 

Moisture Resistant since non Hygroscopic

Space saving, permitting compact installation

Practically to maintenance; Long and Trouble-Free Service

Suitable for Hot and Humid environments

Automatic temperature control and protection



#### **Applications**

In service in diverse Industries, Electricity Boards, Nuclear / Thermal / Hydel Power Plants, Railway Traction, High-Rise Buildings, Hospitals, Subways, Underground Vaults, Tunnels, Schools, Steel Factories, Chemical Plants, etc. Where safety is of prime concern.

#### **Load Break Switch**



5-20m.Sec

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Rated Voltage	12KV
Rated Frequency	50Hz
Rated Current	630A/1250A
Rated Peak Current	62.5 KA
Rated Short time current / 3 Sec	25KA/3 Sec
Rated Making Current	62.5 KA
Rated Breaking Current	630 A
Impulse Voltage , Wave Shape	1.2/50 MS
(I) To Earth	75 KV
(ii) Between Poles	75 KV
(iii) Between Open Contacts	85 KV
Power Frequency Test Voltage	
(I) To Earth32 KV	32 KV
(ii) Between Poles	32 KV
(iii) Between Open Contacts	
Dimensions (Ref . Drg. Enclosed)	
(a) Between Poles (Centres) mm	210PP
(b) Between Open Contacts mm	120
	120
(c) Between Live parts and Earth mm	120

Technical Data PTC-12/630/1250A

- (c) Between Live parts and Earth mm
- (d) Arc Duration

**11KV SFU** 

#### 11KV SFU/LBS

We have a prominent position in the market as a Switch Fuse Unit Supplier. Our Switch Fuse Unit consists of steatite porcelain re-wired fuses or the HBC fuse fittings. The Switch Fuse Unit consists of back operating and front operating handle. The Switch Fuse Unit is durable and reliable. Our Switch Fuse Unit is safe to use.

#### LBS On/Off with Earth Switch & Fuse and Coil Trip



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- LBS Frame
- Insulators •
- **Brass Top Fixed Contact** •
- **GFN Moving Arm**
- Copper Moving Contact
- Brass Bottom Fixed Contact
- Main Switch Operating hole ۲
- Main Switch Indication
- Earth Switch Operating hole
- Earth Switch Indication
- Main Switch On/Off Indication
- HT HRC Fuse
- Shunt Trip Coil

#### **LT Panels**



#### **Product Special Features**

SMS facility for Energy Reading & Low Power Factor
 Earth fault relay
 Phase Sequence indication

- **General Features**
- L.V Switchboard
- As per IS Standards
- IP 52 / 54 / 55 protection
- Indoor / Outdoor
- Electrolytic Busbars Aluminium / Copper
  Complete Earthing of Doors & Frame
  - Shipping sections as per demand

Single Front / Double Front / Dead Front

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Customized Panels

DMC / SMC Insulators

Capacity Expandable

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#### **Products**

- Power Control Centres (PCC) Panels
- Motor Control Centres (MCC) Panels
- Automatic Power Factor Control (APFC) Panels
- Power Distribution Boards (PDB)
- Sub Distribution Boards
- Main Lighting Distribution Boards (MLDB)
- Sub Lighting Distribution Boards
- Control Desks
- Feeder Pillar Boxes
- Non Segregated LT Busducts
- VFD Control Panels
- 11kV RMU Panels
- LT Kiosks

### Most suitable for Industrial, Residential Commercial, Shopping Malls, Software, Airport , Stadium



#### **Salient Features**

- All major components are of standard make like Siemens, ABB, L&T and Schneider
- Microprocessor based automatic controller with power factor display
- All components are carefully integrated for reliable performance and longer life
- Capacitor duty Contactors and MCB or MCCB, are used to switch ON capacitors to minimize switching surges
- Uses small correction steps to maintain accurate setting
- Auto / Manual Facility, Cooling Facility
- Very low watt losses
- In-built time delay for switching ON of a capacitor bank to avoid impulse signal operation. All capacitor feeders have Auto / Manual mode facility with fuse protection and isolation

Power Factor Controllers are designed to operate, Automatically with Micro Processor Based Automatic Controller

Use a specially designed electronic control circuit that improves power factor to meet requirements of load switching pattern

Improvement of power factor up to optimum levels is guaranteed

Product range: 20 KVAr to 1000 KVAr.

We provide solutions for improving plant power factor by installing our APFC panel

Heavy duty capacitors with detuned filters will be provided where high level non linear harmonies present upto 30%

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#### **Most Suitable for**

- Manufacturing Companies
- BPO Organizations
  Shopping Malls
- Steel Mills 
  Spinning Mills 
  Cement and Paper Mills
- Offices & Buildings Hotel & Restaurants
- Rice Mills 
  Hospitals
- Cinema Halls / Multiplexes

#### **Advantages**

- Payback period is 8 to 10 months
- Reduction in maximum demand
- Energy saving up to 5%
- Low power factor penalty can be avoided
- Extended life for Switch Gears, Capacitors and Cables
- Avoid manual disruptions
- Avoid high current consumption losses
- Reduction in Electricity Bill

# **Our Certifications**







BIS LICENSE No. 5 CM/L-6300036494



# TURNKEY PROJECTS

Undertake all Turnkey projects upto 132 KV Substations

#### **11 kV Substation**

#### **33 kV Substation**

132 kV Substation



# Powertech Transformers & Controls Pvt. Ltd.

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#### **Online Promoters**



