

We Enlighten The World

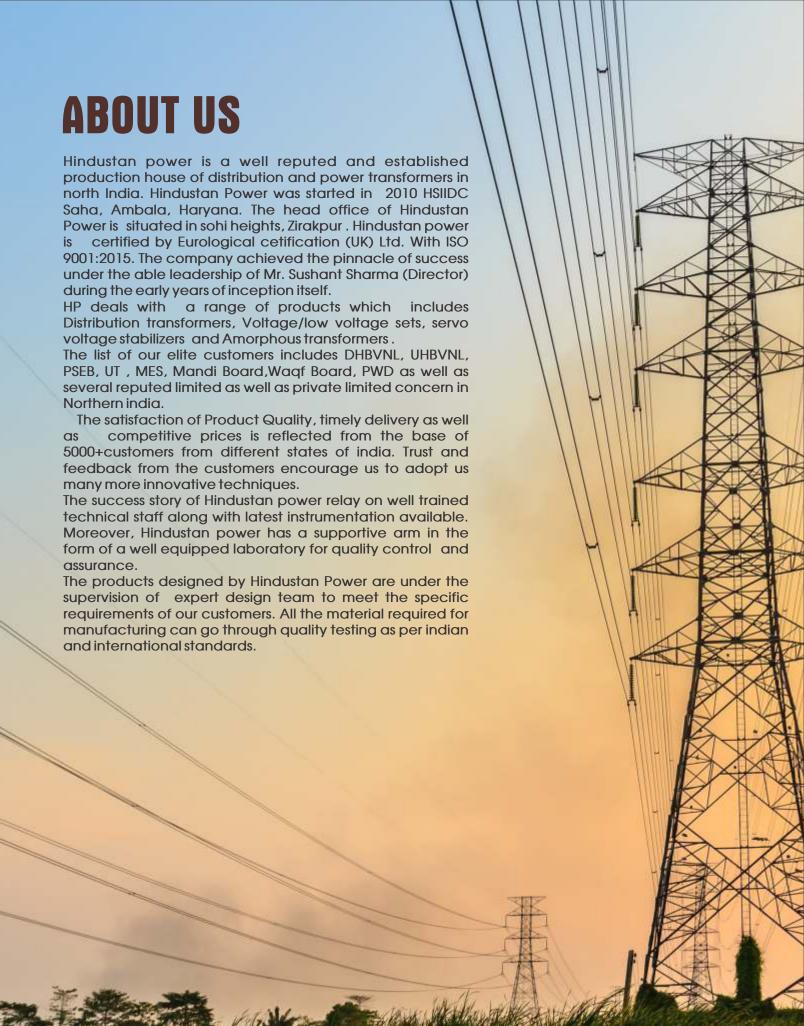












# **RANGE OF PRODUCTS**

- Distribution and power transformers from 6.3KVA to 5MVA
- Servo Voltage stablizers
- Distribution panels
- Capacitor bank panels
- All types panels
- Amorphous Transformers



### **DISTRIBUTION TRANSFORMERS**

A distribution transformer is a transformer that provides the final voltage transformation in the electric power distribution system, stepping down the voltage used in the distribution lines to the level used by the customer. Distribution transformers normally have ratings less than 200 kVA,(2) although some national standards can allow for units up to 5000 kVA to be described as distribution transformers. They are often used for the power supply of facilities outside settlements, such as isolated houses, farmyards or pumping stations at voltages below 30 Kv

These are attached to the overhead wires with two different types of connections. –

- 1. Wye On a wye distribution circuit, a 'wye' or 'phase to neutral' transformer is used. A single phase wye transformer usually has only one bushing on top, connected to one of the three primary phases.
- Delta On a delta distribution circuit, a 'delta' or 'phase to phase' transformer is used. A
  single phase delta transformer has two bushings on top which are connected to two of the
  three primary wires, so the voltage across the primary winding is the phase-to-phase
  voltage.



Single Phase Transformer



Three Phase Transformers



Copper Coiling in Transformers

## **SERUO UOLTAGE STABLZER**

Servo voltage stabilizer is a closed loop control mechanism which serves to maintain balanced 3 or single phase voltage output in spite of fluctuations at the input owing to unbalanced conditions.

Highly fluctuating AC mains supply is a very common phenomenon in India and difficulties caused by them are well known. The stable Input supply is a basic necessity in the absence of which sophisticated equipment do not give optimal performance. Major industrial loads are inductive in nature (i.e. A.C. Motors) and they draw considerably high current at High & Low voltages resulting in higher losses which in turn increases the temperature of motors thereby reducing the motor life



### DISTRIBUTION PANELS

A distribution Panel (also known as panel board, breaker panel, or electric panel or distribution board) is a component of an electricity supply system that divides an electrical power feed into subsidiary circuits, while providing a protective fuse or circuit breaker for each circuit in a common

enclosure. Normally, a main switch, a residual-current devices (RCD) or residual current breakers with overcurrent protection (RCBO), are also incorporated. It has bus-bars where breakers can be plugged in, and connection strips for ground and neutral distribution. It's used to distribute power to circuits with one or more outlets or light fittings, or to other distribution panels. These panels work as the main" circuit breaker that controls the power to the entire Transformer. Each Panel is designed to trip when the circuit is overloaded. In case, the breaker does not trip, there could be an issue. So, these panels are designed for the safety purposes.



## CAPACITOR BAN PANELS

A Capacitor Bank is a group of several capacitors of the same rating that are connected in series or parallel with each other to store electrical energy. The resulting bank is then used to counteract or correct a power factor lag or phase shift in an alternating current (AC) power. It is generally used for improving power factor of electricity consumed by bulk consumers. Capacitors, constitute leading

power factor load; thus compensating a major part of the inductive loads. Loads with low power factor draw more current from supply than same active load with high power factor and hence cause increased power loss in supply line. for capacitor banks include Marx generators, pulsed lasers, radars, fusion research, nuclear weapons detonators, and electromagnetic railguns and coilguns. Since this equipment uses an inductive load, they are susceptible to phase shifts and power factor lags in the power supply which can result in a loss of system efficiency if left uncorrected



### **AMORPHOUS TRANSFORMERS**

An amorphous metal transformer (AMT) is a type of energy efficient transformer found on electric grids. The magnetic core of this transformer is made with a ferromagnetic amorphous metal. The typical material (Metglas) is an alloy of iron with boron, silicon, and phosphorus in the form of thin (e.g. 25 µm) foils rapidly cooled from melt. These materials have high magnetic susceptibility, very low coercivity and high electrical resistance. The high resistance and thin foils lead to low losses by eddy currents when subjected to alternating magnetic fields. On the downside amorphous alloys have a lower saturation induction and often a higher magnetostriction compared to conventional crystalline iron-silicon electrical steel. In a transformer the no load loss is dominated by the core loss. With an amorphous core, this can be 70–80% lower than with traditional crystalline material..

The main application of AMTs are the grid distribution transformers rated at about 50–1000 kVA. These transformers typically run 24 hours a day and at a low load factor (average load divided by nominal load). The no load loss of these transformers makes up a significant part of the loss of the whole distribution net. Amorphous iron is also used in specialized electric motors that operate at high frequencies of perhaps 350 Hz or more.











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