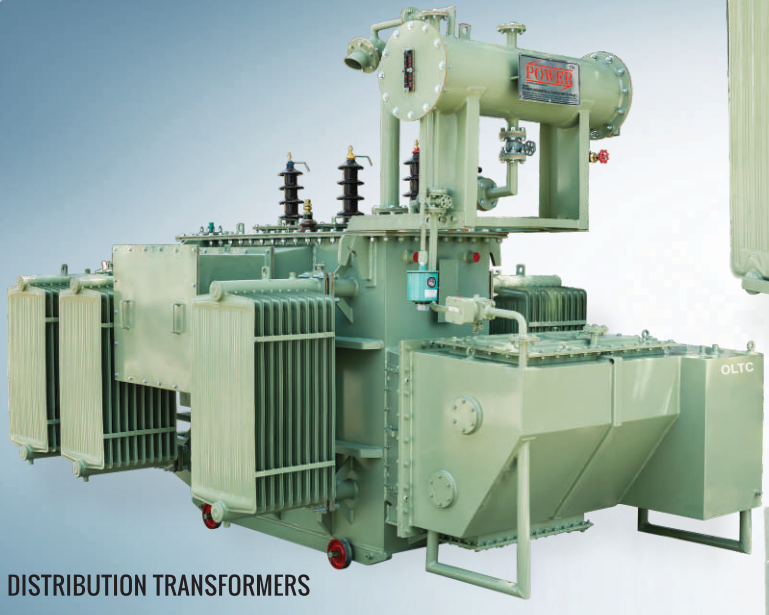
SAVE ENERGY

POWER™

5 Decades of Engineering Excellence

POWER ENGINEERS & CONSULTANTS (REGD.)

AUTOMATIC VOLTAGE CONTROLLER / REGULATOR



DISTRIBUTION TRANSFORMERS

ELECTROPLATING RECTIFIERS

www.powerengineers-india.com

AN ISO 9001 : 2015 CERTIFIED COMPANY

- AUTOMATIC VOLTAGE CONTROLLERS
- SERVO VOLTAGE STABILIZERS
- VOLTAGE REGULATORS
- VARIABLE VOLTAGE SUPPLIES
- H.T. AUTOMATIC VOLTAGE REGULATOR
- TRANSFORMERS WITH BUILT IN AVR / 2 IN 1
- ELECTROPLATING RECTIFIERS
- ELECTROCOLOURING RECTIFIERS
- DISTRIBUTION TRANSFORMERS
- ISOLATION TRANSFORMERS
- DRY TYPE TRANSFORMERS
- SPECIAL PURPOSE TRANSFORMERS

Introduction

About us:

For over five decades, **Power Engineers & Consultants (Regd.)**, known in the industry by the trusted brand name POWER™ has remained one of India's most respected names in the manufacturing of **Automatic Voltage Regulators (AVRs), Servo Voltage Stabilizers, Rectifiers, and Power Transformers**. Established on a foundation of engineering excellence, the company has consistently delivered solutions that combine **technical precision, robust performance, and long term reliability.**

Founded by Shri P.K. Maheshwari, an accomplished electrical engineer from the 1972 REC Rourkela batch, the company carries forward a legacy built on knowledge, discipline, and innovation. His experience and guidance have empowered POWER to meet evolving industry challenges in terms of quality, flexibility, engineering capability, and cost efficiency. Over the years, his technical expertise has benefitted leading organisations such as Hero Group, Munjal Showa, Majestic Auto, Jindal Electricals, Kangaro Industries and several other reputed manufacturers in India and abroad.

In 2002, the company entered a new phase of growth when Mr. Hitesh Maheshwari, an engineering professional, joined as Marketing & Export Director. His leadership, strategic vision, and customer-first approach strengthened the brand's position and propelled POWER™ to become one of the most preferred manufacturers of AVRs, Rectifiers, and Distribution Transformers in the domestic market, along with a strong presence in global territories.

A Legacy of Quality & Performance

The success of POWER lies in its unwavering commitment to strict quality controls, premium materials, advanced engineering practices, and highly refined finishing standards. Every unit is manufactured with meticulous attention to detail, delivering reliable performance under the most demanding industrial conditions.

Today, the company boasts over 20,000 successful installations across India and exports to regions including the USA, Europe, Africa, the Middle East, and South-East Asia, with manufacturing capabilities extending up to 10 MVA.

Excellence Backed by Technology & Innovation

POWER continuously benchmarks its products against global standards. The company invests extensively in R&D, product refinement, material enhancement, and process automation to ensure that each product meets the highest expectations of:

- Durability
- Accuracy
- Operational stability
- Energy efficiency

This forward-looking approach keeps POWER ahead in a competitive market and reinforces its reputation as a technology-driven Indian engineering manufacturer.

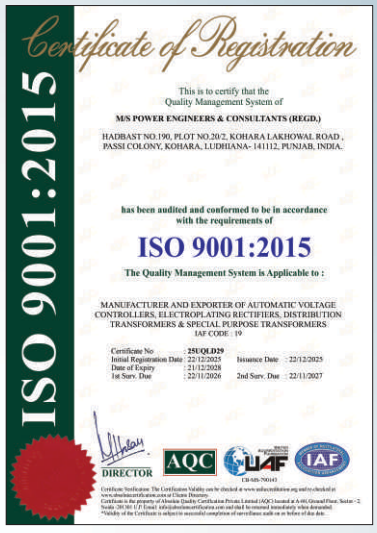
After-Sales Support

POWER believes that service is an extension of product quality. The company provides strong, responsive, and professional after-sales support through experienced engineers who handle new installations, troubleshooting, and system optimization.

"The motto of PEC is to use best quality material and give full satisfaction to customers by providing high quality equipments and prompt after sales service."

POWER ENGINEERS & CONSULTANTS (REGD.)

Our Product Strengths



POWER's proven product portfolio includes:

- Rolling Contact Type Automatic Voltage Controllers
- Servo-Based Voltage Regulators
- Electroplating & Chemical Process Rectifiers
- Special Purpose Transformers
- Power Transformers

Each product is engineered to deliver exceptional performance, backed by stringent testing and strong after sales support.

Quality Policy

Power Engineers & Consultants (Regd.) is committed to delivering products that fully meet customer specifications at competitive prices. The company continually enhances its quality management system to ensure reliability, consistency, and customer satisfaction.

Vision

To evolve as a technology-focused Indian engineering company and emerge as a leading manufacturer in both domestic and global power conditioning markets.

Mission

To build synergy between technology, systems, and skilled professionals to deliver products that excel in quality, performance and value, while upholding the highest standards of ethics, transparency and social responsibility.

Customer Satisfaction at the Core

For POWER, quality is more than a feature; it is a pledge of complete customer satisfaction. The company works closely with clients to understand their requirements and deliver made-to-order solutions with precision. A dedicated service team ensures:

- Seamless installation support
- Prompt technical assistance
- Long-term service reliability

This customer-centric approach has earned the company the confidence of major industries nationwide.

Research & Development

The in-house R&D division is committed to innovation—constantly exploring new materials, design enhancements, and cost-effective engineering practices. Their research ensures that POWER products remain relevant, competitive, and performance-driven for diverse industrial applications.

ROLLING CONTACT TYPE AUTOMATIC VOLTAGE CONTROLLERS / SERVO VOLTAGE STABILIZERS

RANGE : 30 KVA TO 10000 KVA

2500 KVA AUTOMATIC VOLTAGE REGULATOR / SERVO

Inspite of best efforts, no state electricity board can ensure constant voltage to the customer because of long and inadequate distribution lines and irregular load pattern on distribution transformers. Generally Voltage is low during day time and high during night hours. Moreover on holidays, peak hours, rainy days and when agricultural and Industrial load is switched off, the voltage rises sharply which is more dangerous.

This higher current affects the electrical motors (particularly smaller capacity motors upto 7.5 H.P.) in three ways:

- **Higher current produces higher losses in electrical motors which causes premature failure of winding.**
- **These higher losses of electric motors also increase the losses of cables, switches, transformers and other associated equipments.**
- **For smooth continuous operation of motors, over load relays are usually set at 20% higher setting.**

1250 KVA AVR / SERVO

POWER ENGINEERS & CONSULTANTS (REGD.)

With the installation of the stabilizer and maintaining 390/400 volts, the motor will operate smoothly drawing 15 - 20% lesser current and correspondingly the relay setting can be reduced by 15 - 20 %. In case single phasing occurs, the relay will trip in 40-50 seconds. The motor can withstand the high current for this period and will be safe. Also, the relays, contractors, switchgears, etc. incorporated with the motor will be safe.

The table below compares the behaviour of 5 H.P. motor at different voltage:

Input Voltage	Current	KVA	P F
400	7.5 A	5.2	0.8
425	11% More	18% More	0.7
435	19% More	28% More	0.61
445	26% More	38% More	0.57

The table below compares the behaviour of 60 watt lamp at different voltage:

Voltage	Current	Watts	Luminous Intensity	Life in Hours
230	0.26	60 W	710	1000
240	0.27	65 W - 8.3% More	820	575
250	0.28	70.6 - 17.6% More	943	338
260	0.29	75.4 - 25.6% More	1073	200
270	0.31	83.4 - 39% More	1213	100

APPLICATION :

Though stabilizer are useful for any kind of application, these are most suitable for 24 hour continuous process plants where breakdowns due to fluctuation results in heavy financial losses. These include:

- CEMENT PLANTS
- FLOUR MILLS
- CLUBS
- ENGINEERING UNITS
- HOTELS
- TUBE MILLS
- PHARMACEUTICAL UNITS
- HOT & COLD ROLLING MILLS
- RICE SHELLERS
- TEXTILE MILLS
- PAPER MILLS
- RUBBER INDUSTRIES
- COLD STORAGES UNITS
- FOOD PROCESSING UNITS
- HOSPITALS
- NURSING HOMES
- TEA ESTATE
- FOOTWARE & LEATHER UNITS
- DISTILLERIES & BEVERAGES
- OIL & VANASPATI PLANTS
- HIGH RISE BUILDINGS










DESCRIPTION OF AUTOMATIC VOLTAGE CONTROLLER :

POWER™ Servo Stabilizer primarily consists of the following :-

1. Linear, Plus / Minus Type Vertical Rolling Contact Voltage Regulator

In our regulators, we are using heavy section of electrolytic grade rectangular copper strip instead of copper wire to minimize the losses & increase the efficiency of equipment. We are using self lubricating Carbon Roller Assemblies (Rolls) instead of ordinary Carbon Brushes (Slides), which offers more reliability and trouble free performance of the equipment.

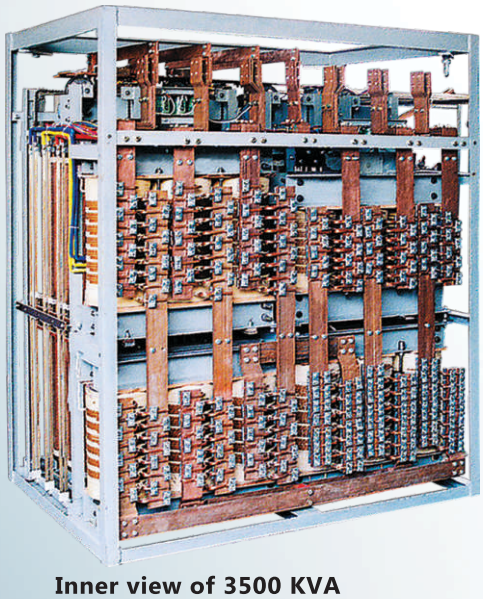
2. Double Wound Buck / Boost Type Series Transformer

In our Buck / Boost transformers, we are using CRGO lamination to minimize iron losses and coils of Buck / Boost transformer are wound with heavy section of multi strips electrolytic copper to minimize copper losses for getting better efficiency of the equipment.

3. Electronic Control Circuit and Meter Panel

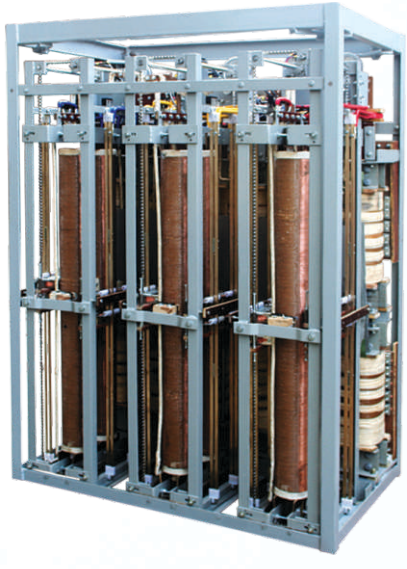
POWER™ Automatic Voltage Controller consists of very simple electronic control circuit for monitoring and controlling voltage, repair & maintenance of which is very easy.

The regulator and Buck / Boost transformer are oil cooled, housed in same or separate sheet steel tanks. Radiators are provided for effective cooling. The coils of voltage regulator & Buck / Boost Transformers are vacuum impregnated and oven dried as per IS.

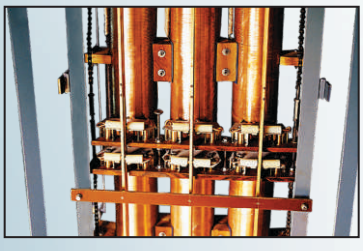


Inner view of 3500 KVA AVC (Export)

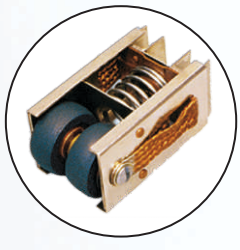
Inner view of Stabilizer (Balanced Type)



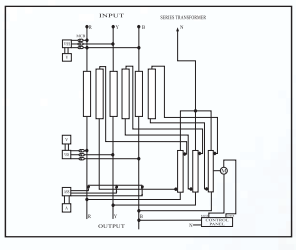
Inner view of Automatic Voltage Controller (Unbalanced Type) Export



Close view of Regulator



Carbon Roller Assembly



Basic Circuit

POWER ENGINEERS & CONSULTANTS (REGD.)

TECHNICAL SPECIFICATIONS

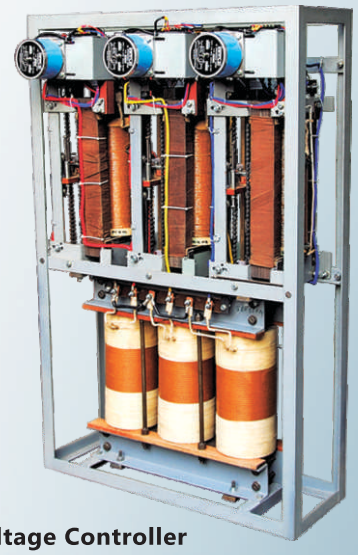
POWER™ Servo Stabilizers are available in a wide range and various models. The standard three phase models are suitable for balanced & unbalanced supply and loads. The standard models conforming to the following specification:

Input Voltage	360-450 V	350-460 V	340-460 V	340-480 V	320-480 V	300-480 V
Efficiency (as per calculation)	99.3%	99.1%	99.00%	98.90%	98.7%	98.30%
Output Voltage	400 V ± 1%, 3 Phase,50 Hz or as desired			STANDARD ACCESSORIES		
Output Voltage Adjustment	± 5%			1. Voltmeter with Selector Switch for I/P & O/P		
Output Voltage Regulation	± 1% (at no load / full load)			2. Ammeter with Selector Switch		
Correction Rate	10 V - 15 V / second (or as per requirement)			3. MCBs for Control Circuit		
Temperature Rise (Max.)	35° C - 40° C above ambient			4. Lifting Lugs		
Cooling	Naturally Oil Cooled.			5. Drain Valve		
Insulation	Class 'A'			6. Oil Level Gauge		
Type	Indoor/Outdoor Type or			7. Earthing Terminal		
Mode of Operation	Fully Automatic / Semi Automatic / Manual			8. Rating Plate		
Mounting	On Uni-directional Wheels			9. Junction Box		
Wave form distortion	Nil			10. Thermometer Pocket		
Duty Cycle	100% Continuous			11. Silica Gel Breather		

***Single Phase Protection Circuit and Complete bypass system (Optional)**

ADVANTAGES :

- ❖Reduction in Breakdown of Electrical Equipments
- ❖Improvement in power Factor (only in case of High Voltage)
- ❖Power Saving (Reduction in Power Bills)
- ❖Depreciation as per Income Tax Act. in India
- ❖Uniform Quality of end Products
- ❖Better Efficiency in Plant
- ❖Reduction in MDI



Inner View of Automatic Voltage Controller Unbalance Type with Ultra Isolation Transformer

DIFFERENT TYPES OF AUTOMATIC VOLTAGE CONTROLLER (CUSTOMIZED)

750 KVA Automatic Voltage Controller
(Balance Type with Special Control Modules)

500 KVA Automatic Voltage Controller
(Unbalanced Type with Special Control Modules)

300 KVA Automatic Voltage Controller (Balance Type)
with Special Export Control Circuit

2000 KVA Automatic Voltage Controller
(Unbalance Type + Complete Byepass Arrangement)

Electroplating Rectifier 24 Volts / 1500 Amps

50 KVA Automatic Voltage Controller (Unbalanced Type)
Special Control Modules + Bye Pass
+ Tripping with Protection Circuit

30/40/50 KVA Automatic Voltage Controller
(Unbalanced Type with Special Control Modules)

POWER ENGINEERS & CONSULTANTS (REGD.)

DIFFERENT TYPES OF CUSTOMIZED PRODUCTS (EXPORTED)

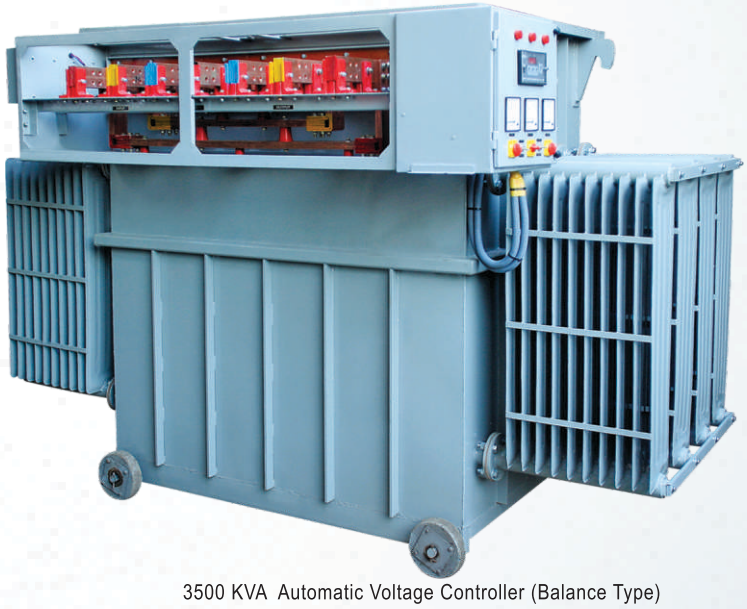
750 KVA Automatic Voltage
Controller (Unbalance Type+Isolation Transformer
+ Complete Byepass Arrangement)

OPTIONAL FEATURES:

Complete Bye Pass & Tripping System with Protection for:

- **Single Phasing**
- **Phase Reversal**
- **Phase Failure**
- **Neutral Failure**
- **Over Voltage**
- **Under Voltage**

Complete Bye Pass Panel of Automatic
Voltage Controller Capacity 1000 KVA



3500 KVA Automatic Voltage Controller (Balance Type)

Electroplating Rectifier,capacity 0-22V / 20000 Amps
(Expandable upto 0-66V / 20000 Amps)

1250KVA Automatic Voltage Controller(Unbalanced Type)

COMPARISON BETWEEN POWER™ MAKE & CONVENTIONAL MAKE AUTOMATIC VOLTAGE CONTROLLER

POWER™ MAKE ROLLER TYPE REGULATOR

- Power consumption is 0.5 to 1.5% depending upon the model and input voltage variation.
- Suitable for continuous 100% duty cycle.
- The carbon (graphite) Roller roll, while moving on the coil track, so contact Point of the roller goes on changing which prolongs the life of the rollers.
- Life at full load is 15-20 years.
- Negligible losses in full Buck / Boost Condition.
- 5 Years unconditional warrantee in India.

CONVENTIONAL MAKE WITH CARBON BRUSH REGULATOR

- Power consumption is 2 to 7% depending upon the model and input voltage variation.
- Suitable for only 30% to 40% duty cycle.
- Since the contact is by brush having flat surface, wear & tear of the brush is more and requires frequent replacement.
- Maximum life is 2-3 years at full load.
- Max. Losses in full Buck / Boost condition.
- Normal warrantee for one year or less.

Loss Comparison of POWER™ make Regulator and Conventional make Regulator

Capacity	Power make Roller type regulator losses	Conventional make Carbon brush type Dimmerstat losses
60 A	575 W	1050 W
75 A	730 W	2055 W
100 A	900 W	3105 W

The table below gives approximate quantitative advantages of Automatic Voltage Controller at various fluctuation levels:

	% Reduction in Breakdown Possible		Approx. Power Saving Possible	
Input Voltage Variation	Motor Load Below 10 HP.	Lighting Load	Motor Load Below 10 HP.	Lighting Load
380-400 volts	Nil	Nil	Nil	Nil & No Servo Stabilizer Required
380-420 volts	5%	10%	3%	5%
380-440 volts	10%	20%	5%	10%
380-460 volts	40%	40%	7%	20%
380-480 volts	60%	60%	10%	30%

VARIABLE VOLTAGE SUPPLIES / REGULATOR

RANGE : Upto 10MVA (0 - 33000 V)

Variable Voltage Regulator-1000 KVA

These kind of Regulators are used for testing applications where variable output is required from zero to any voltage. These kind of Variacs are widely used in transformer / motor / generator manufacturing units to perform various electrical tests.

The construction of these variable regulators is very simple & consists of Buck / Boost Double Wound Transformer and +/- Type linear rolling contact regulator for stepless control. Variable supplies are widely available upto 10 MVA from 0-33000 V.

For D.C. Variable Voltage Supplies, the Rectifier part can be added to convert A.C. to D.C.

Inner view of Variable Voltage Regulator

Special Purpose Variable Voltage Supplies (0-11000 V, 2000 KVA)

ROLLING CONTACT TYPE TECHNOLOGY ELECTROPLATING RECTIFIER FOR DC APPLICATION

RANGE : 0-1100V / 25000 Amps DC

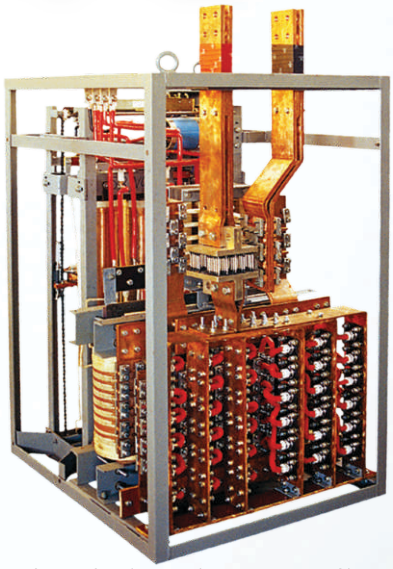
Electroplating Rectifier

0-22V / 20000 Amps DC with Protection Circuit & Constant Voltage Controller (CVC) / Constant Current Controller (CCC) (Expandable upto 0-66V / 20000 Amps)

Single Phase Prevention Circuit with zero rundown feature and CVC/CCC (Optional)

Front View

Inner View
(0-22V, 20000 Amps DC)



Inner view of Rectifier (0-10V / 5000 Amps DC)

*Accessories shown in the pictures are not standard part of the equipment

POWER ENGINEERS & CONSULTANTS (REGD.)

Rectifier is an equipment that converts AC into DC supply. POWER™ make Silicon Rectifiers are widely used in Electroplating, Anodising, Hydrogenation and all other electrochemical processes. These are customized, covering a wide range from 500 Amps to 25000 Amps at different output DC voltage as per requirement.

24V / 1500 Amps DC Rectifier

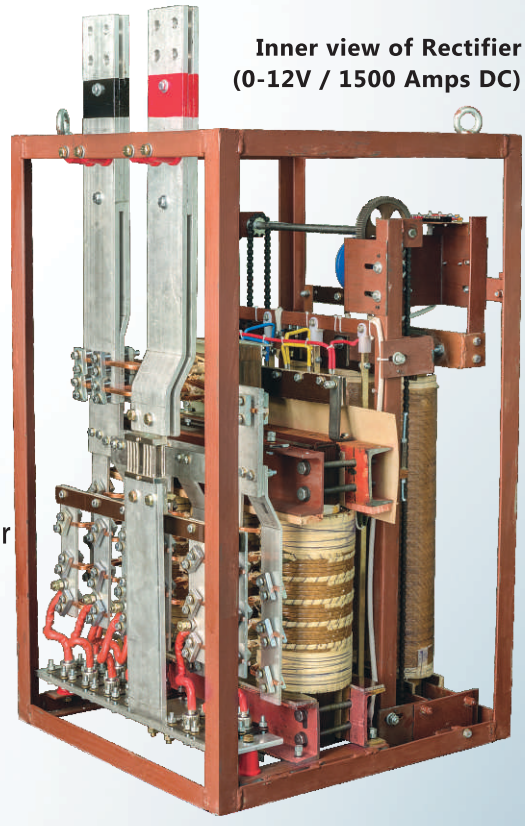
SALIENT FEATURES

- Designed for 100% Continuous Duty Cycle
- Compact Design for Space Saving
- Lesser Power Consumption
- Negligible Maintenance
- Tested at Each & Every Stage of Manufacturing
- Liberal Design & Rigorous Testing of The Equipment Enables Trouble Free Service for Longer Life

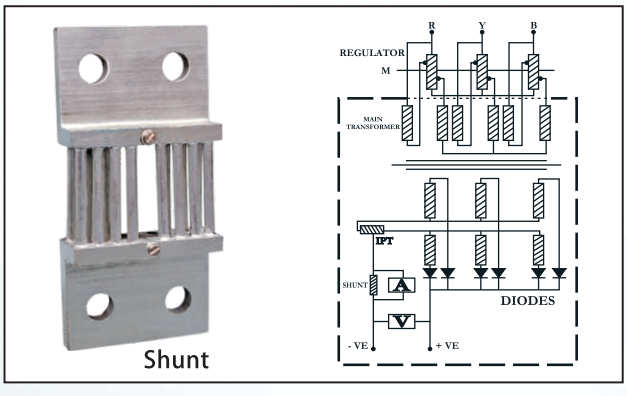
BRIEF SPECIFICATIONS

- **Input Voltage** : 380 - 440 Volts, 3-Phase 50Hz. AC supply or any other voltage
- **Output Voltage** : Fixed Rated maximum DC voltage or variable from zero to maximum rated voltage
- **Output Current** : Rated maximum DC current
- **Temperature Rise** : Less than 45° C above ambient at the top of the oil
- **Efficiency** : Depends on voltage and current rating of rectifier
- **Ripple Content** : Less than 4.2%
- **Insulation** : 'A' class for oil cooled

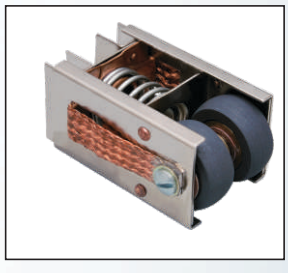
Inner view of Rectifier (0-12V / 1500 Amps DC)



Basic Circuit of Rectifier



Carbon Roller Assembly



Diode

POWER™

ELECTROPLATING RECTIFIER

WHY THE LINEAR TYPE REGULATOR CONTROL IS SUPERIOR THAN THYRISTORISED CONTROL IN RECTIFIER

1. In plating application the Linear type regulator is better & technology is adopted in Germany and Europe because of as explained in advantages.

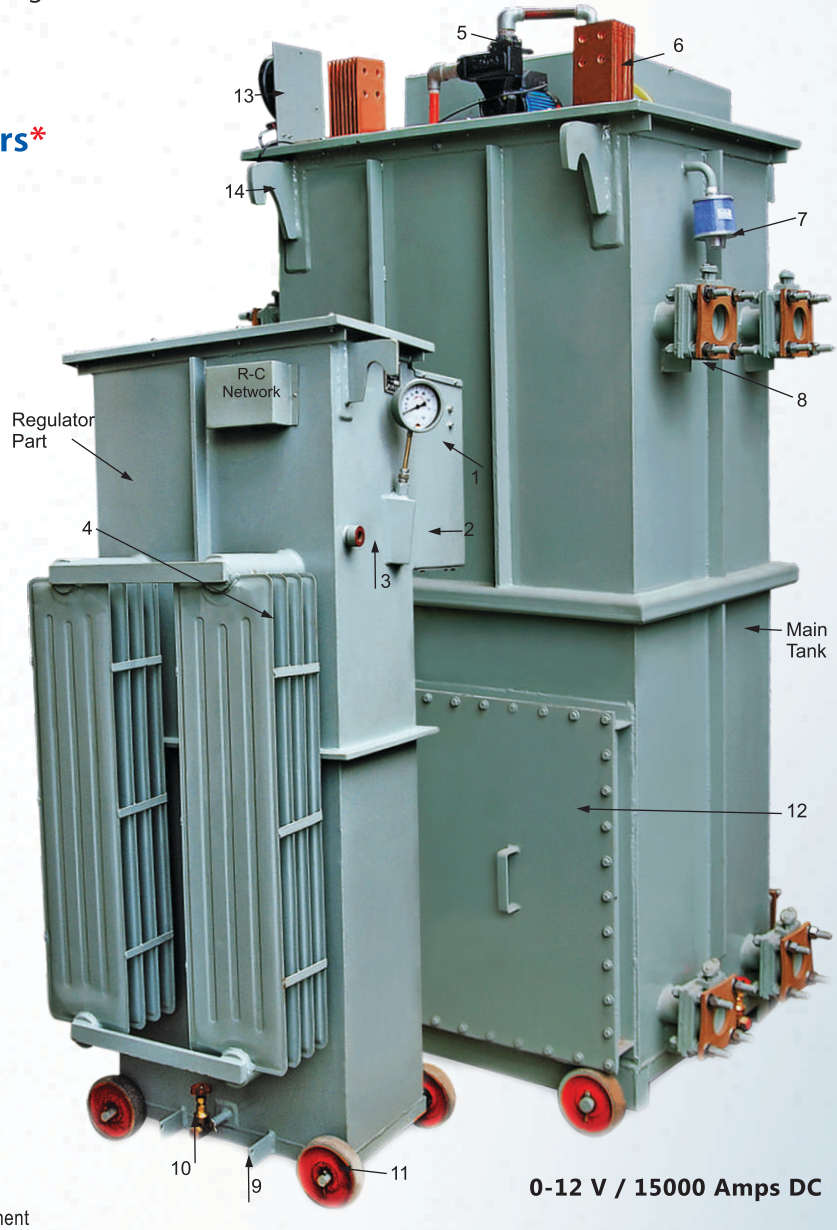
2. Other manufacturers of rectifiers have shifted to thyristors because they do not have the technology of rolling carbon roller regulators.

3. **Manufacturers of rectifiers claim that thyristor controlled rectifier has less losses than regulator. They compare thyristor with sliding carbon type regulator. In our case their claim is not true. We use vertical coil type rolling carbon regulator. The copper section is three times so the losses are almost 1/6 or 20%.**

4. In our regulator the roller move on both sides of the coil to give ± 440 V or ± 254 V output. We design the rectifier in 'Q' connection in which the regulator current is half the line current, so losses are less and life is much more.

Rectifier with Detachable Radiators*

1. OTI
2. OIL POCKET
3. OIL LEVEL
4. RADIATORS
5. OIL CIRCULATION PUMP
6. BUS BARS
7. SILICA GEL BREATHER
8. BUTTERFLY VALVES
9. EARTHING TERMINALS
10. OIL DRAIN VALVE
11. UNI DIRECTIONAL WHEELS
12. WINDOW FOR DIODES
13. OIL LEVEL INDICATOR
14. LIFTING LUGS



0-12 V / 15000 Amps DC

*Accessories shown in the pictures are not standard part of the equipment

POWER ENGINEERS & CONSULTANTS (REGD.)

STARTING CIRCUITRY

POWER™ Rectifiers are designed for 3 phase 50 Hz AC input supply & are available for operations at any voltage between 380 and 440 volts in India, but can be designed for 60 Hz AC and any other voltage available. It is recommended that the input to the rectifier should be connected through a proper protective device, to provide positive protection to personnel and the system, in the event of maintenance or in case a fault.

DC OUTPUT CONTROL

The function of the variable output controls is to control the voltage or current or its operating range by varying input voltage to the main transformer primary. The DC output voltage variation is achieved steplessly 0-100% by means of an ON LOAD roller type POWER™ make voltage regulator.

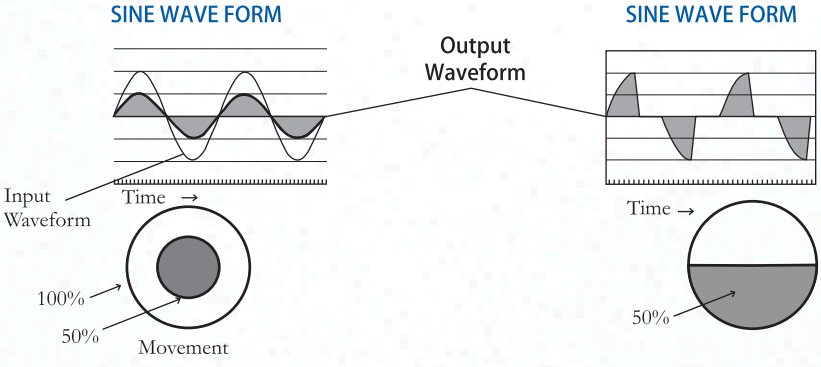
ADVANTAGES OF POWER™ MAKE ROLLER TYPE RECTIFIER AS COMPARED TO CONVENTIONAL MAKE RECTIFIER & THYRISTORISED RECTIFIER

Roller Type Rectifier

1. No wave form distortion at any load

Electrical wave form is like a moving wheel. For 50% Rated voltage the dia of wheel is reduced accordingly i.e. magnitude for a wave is decreased.

Say at 50% Voltage Magnitude



Power Make Roller Type Rectifier

2. Higher power factor of more than 0.98 is achieved.
3. The system is simple and can be repaired and maintained even by simple mechanic.
4. The cost of spares is very negligible.
5. Copper section for particular current is 3 times than conventional make.
6. Carbon roller rolls on coil and has trouble free life of more than 20 years.
7. Over all losses are less.

Thyristorised Rectifier

1. Wave form distortion in thyristorised type

It is like cutting the wheel by 50% and then moving the wheel i.e. wave form is cut as shown at full magnitude.

Thyristorised Rectifier

Specially Designed Rectifier

2. The power factor is lower between 0.5 to 0.75.
3. The system is specialized and needs specially trained electronic engineer to repair and maintain.
4. The cost of replacement is Very high.
5. Copper section for particular current in conventional make is 1/3.
6. Carbon brushes slides on coil, has less life due to sliding on coil & breaks regularly.
7. Over all losses are more.

ULTRA ISOLATION TRANSFORMER

RANGE : 50 KVA TO 10000 KVA

Ultra / Super Isolation Transformers are effective for Isolating sensitive equipment's from Line Voltage transients, spikes & DC Leakage etc. They are specially designed for sensitive critical equipment's like computers & peripherals, medical instrumentation, digital communication telemetry systems, CNC Machines etc. and stopping such disturbances generated by the noisy equipment load from being injected into the power line.

Multiple shielding techniques employed reduce the inter winding capacitance to below 0.005 Pico farad and increases DC Isolation to over 1000 Megaohms.

500 KVA Ultra Isolation Transformer (L.T) Dry Type

Technically, any transformers that have no direct current path between it's primary & secondary windings provides Isolation. Other commonly used, transformers even if they have separate primary & secondary winding are intended to convert the input voltage to a more useful level & do very little to attenuate the passage of noise or transients from primary to secondary. Even though both are separately wound transformers, they are substantially different w.r.t. Construction, specification & performance characteristics.

Technical Specification		
Input	Output	Rating Available
415V AC 3 PH OR ANY	415V AC 3 PH OR ANY	50 KVA to 10000 KVA
or as per requirement		Both Oil & Dry Type
System Connections	: Delta / Star (as per requirement)	
Ratios	: 1:1 (as per requirement)	
Regulation	: 5%	
Power Factor	: 0.75 lead to 0.75 Lag	
Insulation Resistance	: Better than 5 Mega ohm	
Coupling Capacitance	: 0.01 PF for 100 Db	
Leakage Current	: Less than 20 Micro Amps	
Type of Execution	: Closed Type	
Operating Temperature	: O° C to 45° C	
Type of Cooling	: O° C to 45° C	

800 KVA Ultra Isolation Transformer (L.T) Oil Type

H. T. TRANSFORMER WITH BUILT IN AUTOMATIC VOLTAGE STABILIZER /COMBO/2 IN 1/ DUAL TYPE

POWER™ H.T. Stabilizer Comprises of:

- Step down unit, double wound and Buck / Boost unit in one tank.
- Rolling Type Rollers Regulator with motorized control system in other tank.
- Both units are connected by suitable cables
- Control Unit

Salient Features

- Compact Design
- Suitable For Corrosive Industrial Sites
- Minimum Power Losses
- Low Maintenance
- Trouble Free Operation
- Long Service Life
- Space Saving

630 KVA AVR with transformer (Dual Type)

DRY TYPE DISTRIBUTION TRANSFORMER

POWER™ covers a wide range of Dry Type (VPI) Transformer with Off Circuit Tap Link / On Load Tap Changer (up to 2500 KVA in 11 KV Class) 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 variety of terminations so as to suit the requirements for new installation or replacement.

APPLICATIONS : Fire safety and environmental aspects are of increasing importance. The substitution of oil filled transformers by dry type transformers is one of the most important steps towards it. Dry Type Transformer is used when it has to be located near load center and in a fire hazardous place. Special type of fire resistant insulation is used for the windings thus reducing the fire risk considerably.

ADVANTAGES :

- High level of safety
- No flammable liquids
- No pollution from leaks solution
- No toxic gasses emission
- Can be placed close to the load
- More efficient
- Increased emergency overload capability
- Improved reliability
- Easy to repair (open coils)
- Low Noise and low maintenance

Dry Type Transformers (H.T.)

DISTRIBUTION TRANSFORMER

3150 KVA to 10 MVA (11 KV & 33 KV Voltage Class)

PRODUCT RANGE

Power & Distribution Transformers 3150 KVA to 10 MVA in 11 & 33 KV voltage class.

STANDARDS

POWER™ transformers were designed and tested as per applicable standards.

VECTOR GROUP

Transformers will be connected as per vector group reference Dyn 11. Other vector groups can be offered as per specific requirements.

TEMPERATURE RISE

POWER™ transformers are designed for a maximum temperature rise of 45°/50°C of oil / winding. Lower temperature rise can be offered on request.

TERMINAL ARRANGEMENTS

H.V. - Bare Bushings or Cable Box / L.V. - Bare Bushings or Cable Box. Disconnecting chambers can also be provided on both HV and LV Cable boxes.

3150 KVA Distribution Transformer with OLTC (33/0.433 kV Outdoor Type) (Exported)

POWER ENGINEERS & CONSULTANTS (REGD.)

SUPERIOR FEATURE OF POWER™ MAKE DISTRIBUTION TRANSFORMER

CORE

The core is constructed from low loss, cold rolled, grain oriented, annealed laminations of electrical sheet steel conforming to the latest international standards. Special frame is built in-house for clamping the core to reduce the magnetic noise as well as making the whole structure rigid and robust.

WINDINGS

Coils are wound with electrolytic high conductivity paper covered or synthetic enamelled copper conductors. Cooling ducts are provided to keep the hot spot temperature as low as possible. Coils are dried in electric ovens. Rigid connection support and coil clamping is provided to ensure high short circuit strength.

INSULATION

Precompressed board PARMALI board and JAPANEESE insulation paper of best quality is used.

TAPPING

A. OFF CIRCUIT TAP CHANGING SWITCH

Tappings from + 5% to - 5% in steps of 2.5% for HV variation or as per cutomer's requirement.

B. ON LOAD TAP CHANGER

Tapping range as per specific requirements can be offered. OLTC for remote / auto / parallel operation can also be offered.

OIL

Oil is tested for resistivity, dielectric and acidic characteristic conforming to IEC - 296 / IS - 335. Before topping up, oil is filtered throughly.

Core Assembly Section

Baking Oven

TANKS

The tanks are made of M.S. Steel plates / sheets with adequate bracing & stiffners. Tanks are pressure tested to withstand any type of inside or outside pressure. All the external surfaces are given a primary coat of zinc chromate, red oxide and two finishing coats of grey paint. The inner surfaces are given a coat of heat and oil resisting paint.

PAINTING

All the external surfaces are given a primary coat of zinc chromate and two finishing coats of paint. Paints and enamel varnish used confirm to IS:104 & 2932.

TERMINAL ARRANGEMENT & BUSHING

Following arrangements are provided : (a) H.V. - Bare or cable box bushings (b) L.V. - Bare or cable box bushings, disconnecting chambers can also be provided on both HV & LV cable boxes. Bushing conforms to IS : 3347, 2099, HV / LV bushing terminals of brass / copper conformers to IS : 3347 Section - II metal part.

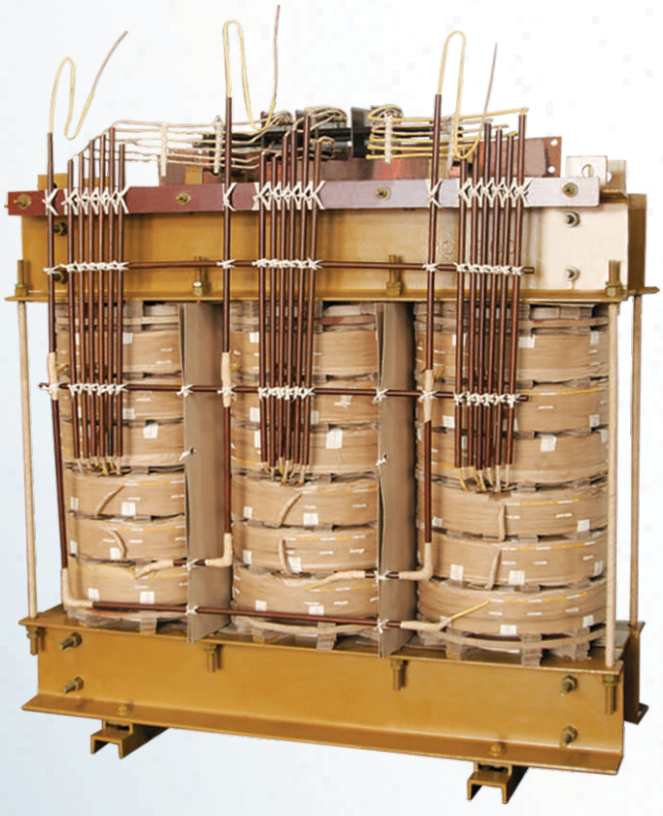
GASKETS & JOINTS

All gaskets used for making oil tight joints to be with cork as base banded by oil resisting synthetic material or rubber. Neoprene rubber is used for oil tight joints for HV & LV terminals. The gaskets conforms to IS : 4253, Part - II - 1980 (Reaffirmed 1999) NC 777, RC 70C.

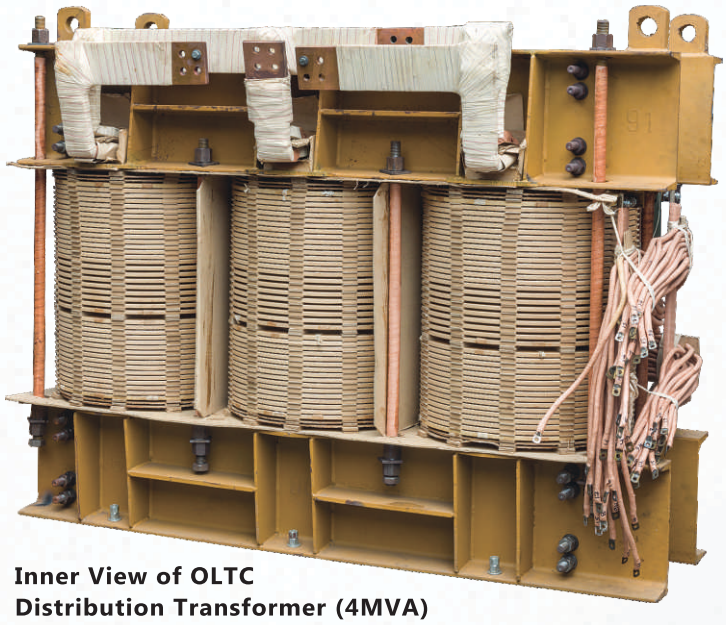
QUALITY CONTROL & ROUTINE TESTS

All POWER™ transformers undergo rigorous quality control checks and are routine tested as per IS in our fully equipped laboratory. Any specific test required by the customer can also be arranged.

Testing arrangement upto 10 MVA



Inner View of Distribution Transformer of 3150 KVA



Inner View of OLTC
Distribution Transformer (4MVA)

6 MVA 33 KV Class
Distribution Transformer
with detachable fins (Exported)

5 MVA 11 KV Class Distribution Transformer (India)

STANDARD FITTINGS

- Monogram plate
- Rating and diagram plate
- Earthing terminals - 2 Nos
- Cover lifting hooks
- Lifting lugs
- Jacking Lugs (500 KVA & above)
- Prismatic glass oil level indicator
- Drain-cum bottom filter valve with plug
- Oil filling hole with plug on conservator
- Oil conservator with drain plug
- Air release plug
- Silicagel air breather
- Bi-directional flat rollers
- HV terminals-outdoor bushings
- LV terminals-outdoor bushings
- LV additional neutral-1No. outdoor bushing without socket (for star connected enclosed LV terminals)
- Pressed sheet radiators (tank mounted upto 1250 KVA and detachable thereafter)
- Filter valve with plug
- Thermometer pocket
- Oil temperature Indicator (stem type)
- Externally operated off circuit tap changing switch
- Pressure relief valve without electrical contacts
- Sampling valve (for 2000 KVA & above Trf. only)

ACCESSORIES (OPTIONAL)

- LV and HV cable boxes
- Winding temperature indicator
- Buchholz relay
- Magnetic oil level gauge
- Marshalling box
- Disconnecting chamber
- Oil temperature indicator with electrical contacts
- Pressure relief valve with electrical contacts

DISTRIBUTION TRANSFORMERS

10 MVA 33KV/11KV class PowerTransformer with Detachable Fins (Outdoor type)

10 MVA PowerTransformer Installation (Actual Site Photo)

4 MVA Distribution Transformer Outdoor type

POWER ENGINEERS & CONSULTANTS (REGD.)

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* All specifications / calculations are subjected to change due to regular improvements in products without prior notice.

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Exporting to more than 35 Countries worldwide

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