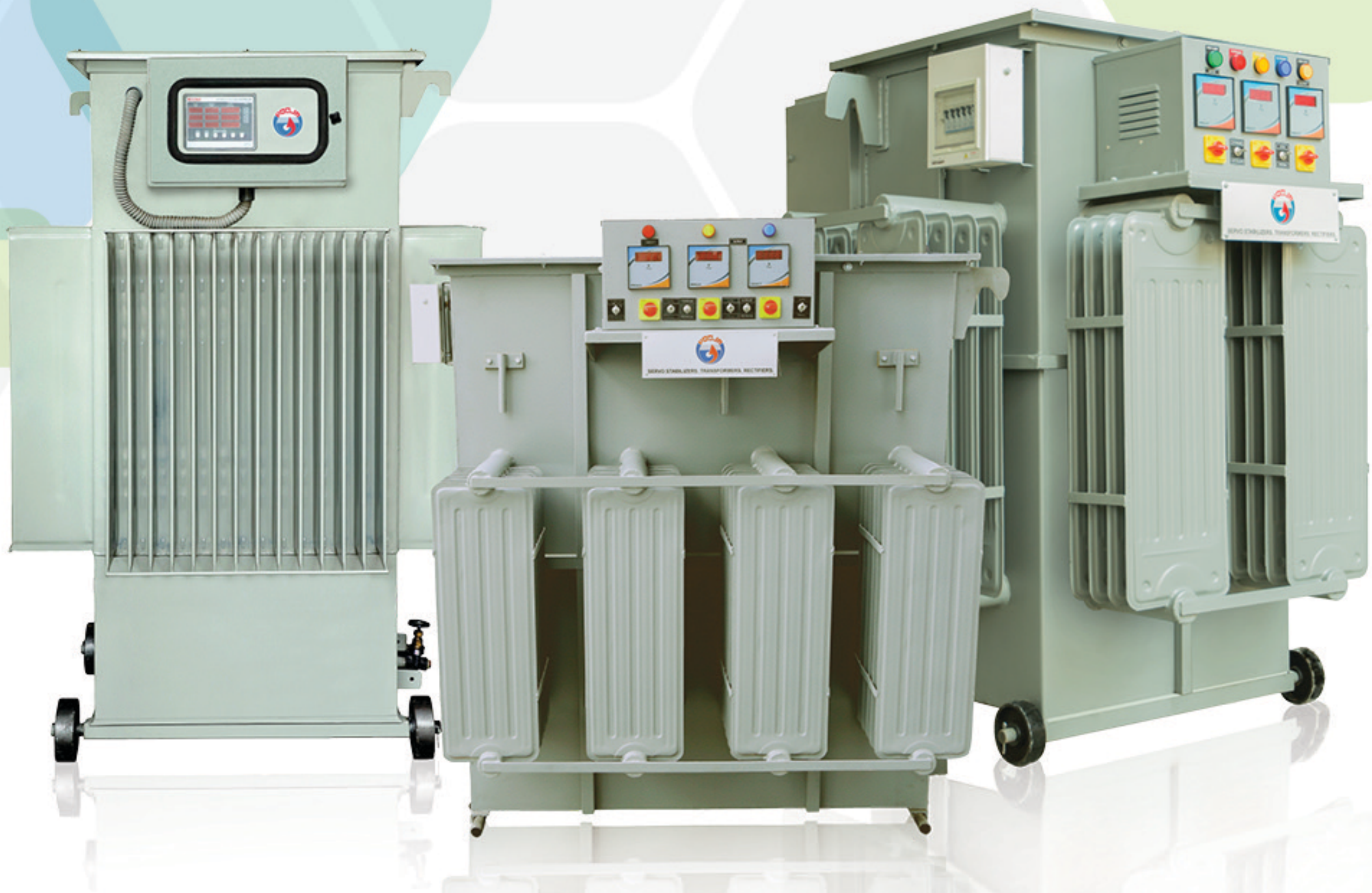




Automatic Voltage Controllers (AVC)



**Reduce Failure Rate of Electrical Equipments & Save Energy
by installing Pooja's Automatic Voltage Controller
(A breakthrough in energy conservation)**

About us:

With humble beginnings, today Pooja Group is into the manufacturing of HT and LT automatic voltage controllers, power and distribution transformers, variable voltage transformers, isolation transformers, electroplating rectifiers, and other special purpose transformers, apart from manufacturing sewing machines & fans in South Asia since 1975.

The Power controller manufacturing division of POOJA Group is a part of **JINDAL Group** who are pioneers in this field. The consolidated group is one of the South Asia's largest power control company with largest client base and service network in the industry.

The group operates from 4 factory complexes which are spread in Himachal Pradesh, Punjab and Haryana. All our facilities are ISO 9001:2008 certified.

Pooja follows stringent quality control measures starting from designing to selection and assembly of raw materials along with rigorous testing after every process. Our products are designed and developed with modern techniques and with optimum utilization of raw materials, ensuring cost-effectiveness and trouble free running of our equipments.



Automatic Voltage Controller (AVC):

Voltage variation is a common phenomenon across the world, especially in developing and underdeveloped nations.

Generally the voltage is low during the daytime and high during night hours. The industrial units working round the clock usually face the problem of low and high voltage. 90% of the industrial load is of motors. The higher current affects the electrical motors (particularly smaller capacity motors up to 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.
- » To tackle high current, overload relays are usually set at 20% higher setting for smooth and continuous operation of motors. Hence impacting life of motors,

Who Needs a Stabilizer

Industrial units having acute/higher failure rate of electrical equipment such as bulbs, tubes, chokes, starter, contractor coils motors etc., should verify that it may be due to voltage variation (especially high voltage). You may note down hourly readings of incoming voltage for a few days continuously. If you find that input voltage is lower or higher than 230V (single phase) / 400V (3-phase) even for a few hours a day, then you definitely require a stabilizer.

POOJA Linear Voltage Controller:

Our linear voltage regulating transformer technology has been specially designed to meet a wide variety of heavy-duty industrial applications. The regulators are wound with heavy section of copper strip and are suitable for 100% continuous duty cycle. They have an economic life of about 15-20 years at full load and require negligible maintenance throughout their life.

Our AVC primarily consists of the following key components housed in the same tank:

- » Linear +/- Vertical Rolling Contact on-load Voltage Controller
- » Double Wound Buck/Boost Transformer
- » Control Panel with Microprocessor based control module

Comparison Between **POOJA**'s & Conventional Automatic Voltage Controller

POOJA's Linear Voltage Regulator with Carbon Rollers	Conventional Dimmerstat Type Regulator with Carbon Roller
Power consumption is 0.5 to 1.5% of max. Load	Power consumption is 3 to 7% of max. Load
Suitable for 100% continuous duty cycle	Suitable for only 50-60% continuous duty
Life at full load is 15-20 years	Maximum life is 2-3 years at full load
Negligible maintenance throughout life	Require frequent maintenance
Compact construction	Very bulky in size

The table below shows **advantages of AVC at different voltage fluctuations:**

Input Voltage Variation	% Reduction in Breakdown Possible		% Power Saving Possible	
	Motor Load Below 10 HP	Lighting Load	Motor Load Below 10 HP	Lighting Load
380-400 volts	Nil & No Servo Stabilizer Required			
400-420 volts	5%	10%	3%	5%
420-440 volts	10%	20%	5%	10%
440-460 volts	40%	40%	7%	20%
460-480 volts	60-80%	60-80%	10%	30%

Advantages at Low Voltage:

At low voltage you will not be able to operate your machines at rated capacity resulting in lower production. You will need to run the machines on DG set. The power cost of DG set is three times as compared to unit energy cost charged by electricity board. This problem can be resolved by installing an AVC.

Pay Back:

POOJA's AVC not only stabilizes incoming voltage fluctuations but also saves energy up to 5%-10% and reduces breakdowns up to 80%. Owing to its high efficiency and associated benefits, the pay back period for the cost of our AVC is typically between 6-18 months, depending upon nature and duration of load and extent of voltage variation. And more often than not, it is simply avoiding a few hours of machine downtime or just one failure to recover cost of equipment.

Technical Specifications:

Technology	Linear type on-load voltage regulators with step less regulation with microprocessor based control module (Also referred to as vertical rolling contact or columnar design)				
No. of Phases	Three-phase				
Type	Balanced Type (Common control for all three phases. Suited for Balanced input supply and up to 40% unbalanced load) copper		Unbalanced Type (Individual phase control for all three phases. Suited for unbalanced input supply and unbalanced load)		
Winding Material	99.9% pure electrolytic grade Copper				
Primary Voltage	350-450V	340-460V	330-470V	320-480V	300-500V
	or as per customers specification and requirement				
Efficiency	≈99.5%	>99%	≈ 99%	≈98.5%	>98%
Secondary Voltage	400V ±1% (Ph-Ph)/230V ±1% (Ph-N)				
Cooling	Oil Natural Air Natural (ONAN)- Pressed Steel Radiators or Corrugated Finwall				
Duty Cycle	Designed for 100% continuous duty cycle and for a life of 18-20years at extreme conditions				
Response Time	Less than 10 milliseconds				
Correction Rate	6-15 Volts/ second (up to 500 kVA) and 3-8 Volts/second (above 500 kVA)				
Duty, Type	Continuous duty Outdoor/Indoor				
Terminations	Aluminum bus-bars are provided for input and output in a common junction box				
Class Of Insulation	Class A				
Insulating Oil	Mineral oil as per IS:335 / IEC:296				
Frequency	50/60 Hz ±5%				
Ambient Operating Temperature	-100 to 45 °C				
Temperature Rise	Designed for 35 °C rise above ambient at full load (against IEC std. of 45 °C)				
Mounting	On Unidirectional rollers				

AVC Application:

Our AVC's are installed either along with the main Distribution Transformer / Panel to ensure stabilized voltage supply to entire plant & machinery/complex, or along with individual machines or processes to hold voltage/current/power/temperature/lighting intensity constant.

Our equipments find wide application across all kinds of machines or industries/commercial/residential complexes.

Mines & Collieries	Cement Plants	Flour Mills	Rice Shelters
Hotels & Restaurants	Food Processing units	Pharmaceutical Units	Engineering Products
Hospitals & Clinics	Tea & Coffee Estates	Paper Mills	Cold Storages
Oil Plants	Rubber Industries	Textile Mills	Warehouses
Rolling Mills	Plastic Moulding	High Rise Buildings	Leather & Footwear
Vineyards & Poultry Farms	Sponge Iron Units	Breweries & Beverages	Showrooms
Schools & Colleges	Offices & Residences	Shopping Malls	Any kind of manufacturing

Advantages of Automatic Voltage Controller

Pooja's AVC resolves 99% of voltage problems automatically and ensures steady voltage supply round the clock. Some key advantages are:

- » Upto 80% reduction in breakdown of electrical equipment
- » 5%-10% Savings in electricity cost
- » Enhanced Productivity and superior quality of finished product
- » Reduction in MDI (peak demand)
- » Improvement in Power Factor
- » 40% depreciation as per Income Tax Act in India

The above advantages have been confirmed by our customers by placing repeat orders for their expansion of plants.



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