



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

AUTOMATIC VOLTAGE CONTROLLER



1250KVA AVC



100KVA AVC



125KVA AVC



50KVA AVC



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.

Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005

Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254

Mobile No.:- +91-9422929510,+91-9423777810

If you are getting high voltage more than 230VOLTS SINGLE PHASE/400 VOLTS THREE PHASE then you can save substantial amount of MONEY by Installing ACTIVE POWER CONTROLS automatic voltagecontroller

Automatic Voltage Controller is an industrial robot which first monitors items rectifiers the voltage variation round the clock & whenever there is any voltage fluctuation, it rectifiers to the desired level in few seconds.

The Basic purpose of AVC is to maintain the desired voltage and to reduce the breakdown of electrical equipment's due to low /high voltage. Power saving Reduction in MD landimprovement to P.F. will be added advantages at high voltage.



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

CONSTRUCTION OF AVC.

| | | |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 2.1 | <u>CORE</u> – The core will be constructed from low loss, cold rolled, grain oriented, annealed laminations of electrical sheet steel conforming to the latest international standards using grade 4 laminations with lamination thickness from 0.27mm to 0.30 for the minimum no load and load losses. | Do |
| 2.2 | <u>WINDINGS</u> – Coils will be wound with 4-DPC paper layer covered plus 3 polyester film cover for better insulation with Electrolytic grade copper strip and taking current density of 2.5 to 3 amps/mm ² in oil accordingly we use more copper than any other manufacturer to give the highest quality with minimum losses for the entire running life of the equipment. Radiators Cooling is provided to keep the high spot temp. as low as possible for higher working efficiency for all the years with lowest temperature riser even on full load conditions. | Do |
| 2.3 | <u>TANKS & PAINTS</u> – The acoustic enclosure / tanks will be made of sand blasted M.S. steel plated / sheets of 3mm thickness with adequate bracing & stiffeners. All the external surface are given a primary coat of 2 pack Epoxy primer and finishing two coat of Epoxy paint for better life with chemical treatment inside with seven tank paint procedure for the effective protection of the enclosure while working in the toughest of the chemical and moisture zones. | Do |
| 2.4 | <u>OIL</u> – Oil will be tested for resistivity, dielectric and acidic characteristic conforming to IS 335. Before topping up oil is filtered thoroughly. We use HT grade 11 KV oil even for the LT equipment for better dielectric strength and high flash point. | Do |
| 2.5 | <u>Protection</u> - We will give tripping to your existing ACB/MCCB in case of single Phasing with single phase preventer. Under voltage cut off and over voltage cut will also be provided. | Do |
| 2.6 | <u>AVR</u> – Linear Copper strip wound regulators in Differential Winding, Plus / minus type with negligible losses due to differential winding as a regulator part is out of ckt on minimum and maximum conditions. This regulator is wound with copper strip where as in market the series type regulator are made of copper wire with highest losses due to series winding. The losses of our regulator are 1/18th in comparison to others. Self-lubricating carbon roller assemblies. | Do |



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

| | | |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 2.7 | <u>Carbon Roller</u> – We are giving self-lubricating carbon roller assemblies with working life of 1 lakh track meters instead of Carbon brush used by other. Our rollers are point contact with least wear and tear as surface area in contact keeps on changing during the motion and heat is dissipated throughout the body, resulting in very high working life on maximum temperature rise with spring tension behind to keep the roller intact with coil for trouble free operation for ages. | Do |
| 3.0 | Following accessories will be provided | Compliance |
| 3.1 | Two No's Earthing terminals | Do |
| 3.2 | Lifting hooks at top | Do |
| 3.3 | Selector Switch for voltage readings for Primary Input & Secondary Output Side. | Do |
| 3.4 | Voltmeter & Ammeter of AE make a both primary & Secondary – Analog. | Do |
| 3.5 | Oil level Indicator | Do |
| 3.6 | Oil temp. Indicator – Indicator if asked. | Do |
| 3.7 | Junction box for cable termination with detachable gland plate & suitable for cable size up to maximum | Do |
| 4.0 | Following Test Report will be submitted | Compliance |
| 4.1 | Measurement of Insulation resistance & winding resistance test | Do |
| 4.2 | Induced over voltage test | Do |
| 4.3 | Oil test | Do |
| 4.4 | Efficiency test. | Do |
| 5.0 | Erection & Commissioning | |
| 5.1 | It will be done in presence of our Engineer | Do |
| 5.2 | Actual Energy data for saving calculation to be taken for first 2-3 days. | Do |
| 6.0 | Documentation | |
| 6.1 | O & M manual & electrical drawing – Each 2 sets will be provided. | Do |
| 7.0 | Following test inspection will be done. | |
| 7.1 | Insulation resistance, winding resistance, short ckt test, over voltage test, checking of meters, oil level etc. | Do |



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.

Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005

Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254

Mobile No.:- +91-9422929510,+91-9423777810

C. INSTALLATION - The following points should be taken care of, installing the servo voltage stabilizer.

1. **Space**—There should be a minimum of one feet open space on all sides of servo Stabilizer for sufficient heat dissipation, proper maintenance and safety. There should also be a clear space of 6' above the top the stabilizer in case major repairs have to be Carried out

2. **Temperature** – Active automatic Servo Stabilizer is built to work smoothly to a Temperature rise 45 C above the ambient. However, in case the ambient of the Particular room is higher than normal; ensure proper ventilation using exhaust fans.

3. **Location** – It is advisable to place your servo stabilizer close to the control panel and Connect it immediately next to the LT ACB / OCB, to avoid excess cabling.

4. **Cabling** – Input and output cables should be connected in accordance with the Maximum current rating of the stabilizer. For a three-phase unit, seven bus bars are Provided in the 'cable termination box' three each for input and output, marked Clearly. The middle bus bar is used for neutral. For neat and safe connections, ensure the use of Thimbles and Glands. Also make sure that the machine is properly earthed.

Now that your Servo Voltage Stabilizer is connected, follow the instructions given Below.

D. OPERATION

Open the top cover, bring the rollers to the top position and check the alignment and any obvious discrepancy.

With no input supply to the stabilizer, move the hand – wheel in anticlockwise direction to bring the regulator to its lowest position. Take the wheel out of the slot.

Switch on the input supply to the stabilizer.

At manual mode, raise the voltage to the desired level. Put it on Auto and adjust the pot for fine setting.

Check the movement of the regulator with the help of auto / manual and raise /

Lower switches to ensure that its output remains at the desired level at auto mode.

Capital & Interest cost is just 1.5% per month. Saving by reduction in breakdown of electrical equipment and energy saving shall be 4-8 times of capital & interest cost. Voltage variation is common phenomenon. The input voltage is generally low during day time and high during night hours.

Apart from above, few months in a year/few day in a month/few hour in a day the voltage is either low or high due to the following reasons:

- o Holidays
- o Peak Hours
- o Rain Days
- o Agricultural Load
- o Weather Condition etc.



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

Therefore, for smooth function it is suggested to install AVC with $\pm 15\%$ or 20% input voltage variation range i.e. 340-460 volts or 320-480 model.

In India all electrical equipment's are designed for 230/400 volts single/three phase. After installation of Automatic Voltage Controller, you will have number of the following Advantages:-

Suggestion: It is suggested to note down hourly input voltage by installing digital voltmeter at the security gate of your factory premises for a week.

Check: Failure rate of Electrical Equipment's such as Bulbs, Tubes, Chokes, Contactor Coil & Electronic Equipment's etc.

High Voltage:

| Voltage Variation | % Reduction possible in breakdown of Electrical Equipment's with AVC | | % Power saving possible with AVC | |
|-------------------|----------------------------------------------------------------------|---------------|-------------------------------------|---------------|
| | Motor Below 10 HP | Lighting Load | Motor Below 10 HP | Lighting Load |
| 380-400 V | No Reduction and No AVC required | | No Power saving and No AVC required | |
| 400-420 V | 5% | 10% | 3% | 5% |
| 420-440 V | 10% | 20% | 5% | 10% |
| 440-460 V | 20% | 40% | 7% | 20% |
| 460-480 V | 40% | 80% | 10% | 30% |

Low Voltage

At low voltage you will not be able to operate your machines at a rated capacity resulting in lower production.

You need to run the machines on DG set. The power cost of DG set is three times as compared to charge by electricity board.

Advantages of AVC

- o Reduction in Breakdown of Electrical Equipment's
- o Reduction in MDI
- o Energy Saving
- o Improvement in Power Factor
- o Uniform Quality of End Product
- o 80% Depreciation as per Income Tax Act



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

Specifications

Active's AVC is available in a wide range and various models. The standard Three phase models are suitable for balanced & unbalanced supply and loads.

AVC's Application

- o CementPlant
- o PaperMills
- o Footwear & LeatherUnits
- o FlourMills
- o TubeMills
- o Distilleries & Beverage
- o EngineeringUnits
- o RiceShellers
- o Hospitals
- o PharmaceuticalUnits
- o Footwear & LeatherUnits
- o RubberIndustries
- o NursingHome
- o ColdStorage
- o TeaEstates
- o Clubs
- o RollingMills
- o Food ProcessingUnits
- o High RiseBuildings
- o Textiles Mills
- o Oil and VanaspatiPlant
- o Mall & Multiplex

Comparison of Automatic Voltage Controller

| Linear Regulator with rolling contact carbon roller assembly | Dimmer Regulator sliding contact carbon brush assembly |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">o Power Consumption is below 0.5 to 1.5% depending upon the input voltage range.o Suitable for 100% duty cycleo Life at full load is more than 15 | <ul style="list-style-type: none">o Power Consumption is above 2 to 7% depending upon the input voltage range.o Suitable for less than 50% duty cycle |
| years <ul style="list-style-type: none">o Five years guarantee | <ul style="list-style-type: none">o Life at full load is less than 3 yearso One Year Guarantee |



Active Power Controls

MFRS.: AUTOMATIC VOLTAGE CONTROLLER, ISOLATION TRANSFORMER, LT PANEL.
Office Address: - Plot No. 8 Sharan Bashweshwar Nagar, Near Akashvani Kendra Solapur-413005
Plant Address: - Plot No.A 178 MIDC Chincholi, Solapur - 413254
Mobile No.:- +91-9422929510,+91-9423777810

Cost Per Month

It is such a fine equipment, which first monitors the voltage variation around the clock then rectifies the same if required instantaneously & cost just 1.5% per month of capital & interest and will save 4-8 times as explained hereunder:

For Example:

The cost of AVC Rs. 10, 00,000/- (Including Installation material, Expenses & Taxes etc.)

| | |
|------------------------------------------------------------------------------------|--------------------|
| Life of AVC Approx. 10 Years Cost Per Month for 10 Years (Rs.10,00,000/120 months) | Rs. 8,333/- |
| Interest P.M. on Reducing Basis @ 12% on Rs.10,00,000/- | Rs. 5,000/- |
| | Total Rs. 13,333/- |

Pay Back

It is a equipment, which pays back its cost within 1-2 years. If we try to rectify voltage variation manually it might be rectified but cannot be monitor always.

With the expenses of Rs.13,333/- per month, you will be able to achieve savings of more than Rs. 55,000/1,10,000/- per month depending upon the input voltage variation and working hours of the plant due to the following advantages;

- o Reduction in breakdown of electrical equipments up to 80%
- o Energy Saving up to 5%
- o Improvement in power factor and reduction in MDI
- o Uniform quality of end product
- o Better efficiency in plant due to lesser Breakdown
- o Depreciation @ 80% as per Income Tax Act

The Above advantages have been confirmed by the customers by placing repeat orders for their expansion of Plants.