



SR ENGINEERING

AN ONE STOP POWER SOLUTIONS

Manufacturers : All Type of Electrical Panel PCC, MCC, PLC, SYNG Panel & CAP Panel etc.

SAVE ENERGY



OUR PRODUCT RANGE

- ▶ **SERVO VOLTAGE STABILIZERS**
5 kVA to 5000 kVA
- ▶ **DISTRIBUTION TRANSFORMER WITH OLTC**
63 kVA to 5000 kVA
- ▶ **ELECTRO PLATING RECTIFIERS**
100 Amps to 5000 Amps
- ▶ **ISOLATION TRANSFORMERS**
- ▶ **FURNACE DUTY TRANSFORMERS**
- ▶ **ELECTRICAL DISTRIBUTION PANELS**
- ▶ **COMPACT SUBSTATION (CSS)**



AUTOMATIC VOLTAGE CONTROLLERS :-

Automatic voltage controller is an industrial robot, which continuously monitors the voltage variation round the clock & whenever there is any voltage fluctuation, it rectifies to the desired level in few seconds.

The basic purpose of AVC is to maintain the desired voltage & to reduce the breakdown of Electrical Equipments due to Low/high voltage Power saving. Reduction in MDI & improvement of “PF” will be added advantages.

In India all electrical equipments are designed for 230/400 volts single / three phase .

Voltage variation is common phenomenon. The input voltage is generally low during day time and high during light hours Apart from above, few months in a year few days in a month and few hours in a day the voltage is either low or high due to the following reasons.

Agriculture Load | Holidays | Peak Hours | Rainy Days | Weather Conditions etc.



**500 kVA INDOOR BALANCE TYPE
SERVO VOLTAGE STABILIZER**



**Carbon Roller
Assembly**

The Table Below Gives Approximate Quantitative Advantages of Automatic Voltage Controller at Various Fluctuation Levels :-

AT HIGH VOLTAGE :

Input Voltage	Approx Reduction in Breakdown of Electrical Equipments		Approx Power Saving	
	Motor Load below hp	Lighting Load	Motor Load below 10 hp	Lighting Load
Voltage Variation Bands				
380-400 volts	Nil	Nil	Nil	Nil & No Servo Controller 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%	60%	10%	30%



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**800 kVA INDOOR BALANCE TYPE
SERVO VOLTAGE STABILIZER**

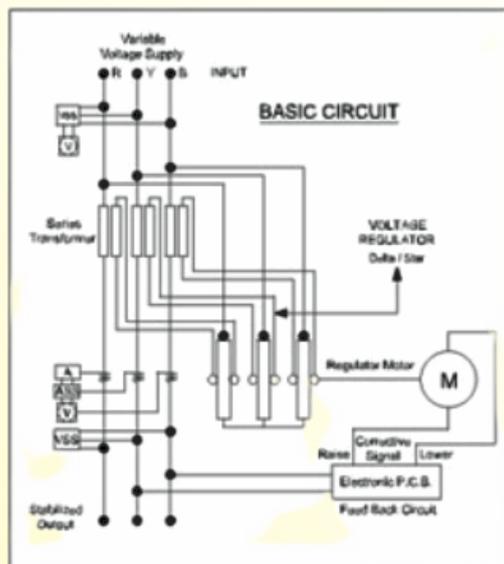
SERVO VOLTAGE STABILIZERS (Capacity 5 kVA to 5000 kVA)

AT LOW VOLTAGE:

1. At low voltage you will not be able to operate your machines at rated capacity resulting in lower production.
2. You need to run the machines on DG set. The power cost of DG set is three times as compared to charged by electricity board.

BENEFITS OF INSTALLING AUTOMATIC VOLTAGE CONTROLLER ON LIGHTING LOAD

By maintaining 380/210 volts - three / single phase output through Automatic Voltage Controller for Lighting Load, there will be definite saving in power bill & reduction in failure rate of lighting equipments. Higher the input voltage - more will be the savings. The overall effect on the brightness of the lamp at 210 volts will be negligible.



Basic Circuit of LT Automatic
Servo Voltage Controller



Close View of
Carbon Roller

ADVANTAGES :-

- Reduction in Breakdown of Electrical Equipments
- Reduction in MDI
- Improvement in Power Factor
- Uniform Quality of End Product
- 80% Depreciation as per Income Tax Ac



SPECIFICATIONS :-

Electrofine Servo stabilizers are available in a wide range & various models. The standard Three phase models are suitable for balanced & unbalanced supply and loads. The standard models conform to the following specification :-

Input Voltage	360 to 450, 350 to 460, 340 to 460, 340 to 480, 320 to 460, 300 to 460
Efficiency (approx.)	99.5 % 99% 98.7% 98.5% 98.25% 98%
Output Voltage	400 V \pm1 %, 3- Phase, 50 Hz
Cooling	Natural Oil Cooled
Type	Indoor
Temp. Rise (max.)	30 deg. C above ambient temperature
Mounting	On Uni- directional Wheel
Correction Rate	6-8 V/Sec. (Upto 500 Kva) and 3-4 V/Sec. (Obove 500 Kva)
Duty Cycle	100 % Continuous

ADVERSE EFFECTS OF SINGLE PHASING :

- a) The line current increases by 1.5 times.
- b) If the relay setting is at 15-20% higher than actual operating current then the relay will take 4-6 minutes to trip.
- c) The motor (particularly smaller capacity motors upto 7.5 H.P.) cannot withstand this high current for such a long time & in most of the cases it burns out before the relay trips.
- d) Heavy short circuit current flows through the relays contactors, cables etc.
- e) Under this condition when the relay, contactor trips, they produce sparks & some times burst.
- f) This further damages the switchgear & in some of the cases may cause fire also.

COMPARISON BETWEEN SR ENGINEERING MAKE & CONVENTIONAL MAKE AUTOMATIC VOLTAGE CONTROLLER

“SR Engineering” Make Roller Type Regulator

- ✔ Power consumption is 0.5 to 1.5 % depending upon the input voltage range.
- ✔ Suitable for continuous 100 % duty cycle.
- ✔ Life at full load is 15-20 years.
- ✔ Five years unconditional guarantee.
- ✔ Negligible losses in full boost & buck condition.

“Dimmer” Type With Carbon Brush Regulator

- ✘ Electricity consumption is 2 to 7 % depending upon the model and input voltage variation.
- ✘ Suitable for only 30 % to 40 % duty cycle.
- ✘ Maximum life is 2-3 years at full load.
- ✘ Max. Losses in full boost and buck condition
- ✘ Normal guarantee for one year



**630 kVA INDOOR BALANCE TYPE
SERVO VOLTAGE STABILIZER**



**100 kVA OIL COOLED
SERVO VOLTAGE STABILIZER**

ATTENTION FOR POWER CONSUMER UNITS HAVING LT. CONNECTIONS BUT NOT HAVING THEIR OWN DISTRIBUTION TRANSFORMER & SITUATED IN COMMERCIAL / RESIDENTIAL AREAS :

It has been observed that the said power consumers usually face unbalanced input voltage problem and to overcome the same should install Automatic Voltage Controller suitable for unbalanced input voltage (individual phase control)

ATTENTION FOR INDUSTRIAL UNITS HAVING OLTC :

The units already installed OLTC with transformer, also require stabilizer due to the reason that the tapping of OLTC is not changed frequently. It is changed only when the problem of very high or very low voltage is felt. On the other hand, the stabilizer continuously monitors the output voltage level. However the Input voltage range of stabilizer can be kept low where OLTC is installed.

APPLICATION :

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

- ▶ **Cement Plants**
- ▶ **Flour Mills**
- ▶ **Engineering Units**
- ▶ **Pharmaceutical Units**
- ▶ **Paper Mills**
- ▶ **Tube Mills**
- ▶ **Hotels**
- ▶ **High Rise Buildings**
- ▶ **Nursing Homes**
- ▶ **Hospitals**
- ▶ **Cold Storages**
- ▶ **Rolling Mills**
- ▶ **Textile Mills**
- ▶ **Clubs**
- ▶ **Rubber Industries**
- ▶ **Rise Shellers**
- ▶ **Oil & Vanaspati Plants**
- ▶ **Food Processing Units**
- ▶ **Beverages Tea Estates**
- ▶ **Footwear & Leather Units.**



Air Cooled Servo Voltage Stabilizer



Electro Plating Rectifier
24 Volt 2500 Amps



315 kVA Compact Substation (CSS)



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