

CONSERVE ENERGY

ACTIVE MAKE AUTOMATIC VOLTAGE CONTROLLER

If you are getting high voltage more than 230 Volts Single Phase / 400 Volts Three Phase
Then you can save substantial amount of Money by installing



ACTIVE

AUTOMATIC VOLTAGE CONTROLLER

ISO 9001

Salient Features
Diminish Failure rate of
Electrical Equipments
Uniform quality of end product
Depreciation @ 80% as per
Income Tax Act



Capacity 30-5000KVA

ACTIVE : MORE EFFICIENT : ADVANCED TECHNOLOGY

Web site www.activepowercontrols.com

ACTIVE is the name known for trustworthiness and unremitting improvement in the field of rolling contact type Automatic Voltage Controller The Systems are designed and supervised by a term of skilled person's having a lot of experience to accomplish best possible quality of total customer's contentment

Introduction of Automatic Voltage controller:

Automatic Voltage Controller is an industrial android which first monitors item rectifiers the voltage variation round the clock & whenever there is any voltage fluctuation, it rectifies to the preferred level in few seconds. The fundamental purpose of AVC is to maintain the preferred voltage and to reduce the breakdown of electrical equipments due to low/high voltage. Power saving Reduction in MDI and improvement of Power Factor will be added advantages at high voltage.

Who needs a Stabilizer

The industrial units having acute/high failure rate of Electrical Equipments such as bulbs, tubes, chokes, starter, contractors coils & motors (particularly smaller capacity motors upto 7.5 H.P.) etc. should verify that it may be due to Higher Voltage. You may note down hourly readings of voltage variation for few days. If you find that input voltage is above 230 volts single phase/400 volts three phase even for few hours a day, then you definitely require a stabilizer.

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



- Higher current produces higher losses in electrical motors which cause impulsive failure of winding.
- These higher losses of electric motors also increase the losses of cables, switches, transformers & other associated equipments,
- For smooth permanent procedure of motors, over load relays are usually set at 20% higher setting.

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The table below compares the behaviour of 5 HP motor at different voltage

Input Voltage	Current	KVA	PF
400	7.5 A	5.2	0.80
425	11% More	18% More	0.70
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
220	0.25	54 W	690	2000
230	0.26	60 W	710	1000
240	0.27	65 W - 8.3% More	820	575
250	0.28	70.6 W- 17.6% More	943	338
260	0.29	75.4 W- 25.6% More	1073	200
270	0.31	83.4 W- 39% More	1213	100

Adverse Effect of Single Phasing:

- a) The line current increases by 1.5 times.
- b) If the relay setting is at 15-20% higher than actual working current then the relay will take 4-6 minutes to trip
- c) The motor cannot withstand this high current for such a long time and in most of the cases it burns out before relay trips.
- d) Heavy Short circuit current flows through the relays, contractors, cable, etc.
- e) Under this condition when the relay, contractors trip, they produce sparks and sometimes bursts
- f) This further damages the switchgear and in some of the cases may lead fire.

Description of ACTIVE'S Make Automatic Voltage Controller



ACTIVE Servo Stabilizer principally consists of the following:

- 1. Linear type Plus/Minus type Vertical Rolling contact type regulator:

In our regulator 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 also using self lubricating

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Carbon roller Assemblies instead of ordinary Carbon Brushes which offers more reliability and trouble free performance of the equipment.

2. Double Wound Buck / Boost Transformer: In our buck / boost transformer 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!: Active's Automatic Voltage Controller consists of very simple electronic control circuit for monitoring and consists for circuit for monitoring and controlling voltage, repair & maintenance of which is very easy

Loss Comparison of ACTIVE Make Regulator & Conventional make Regulator

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

Superior Features of ACTIVE's Make AVC.Temp. Rise

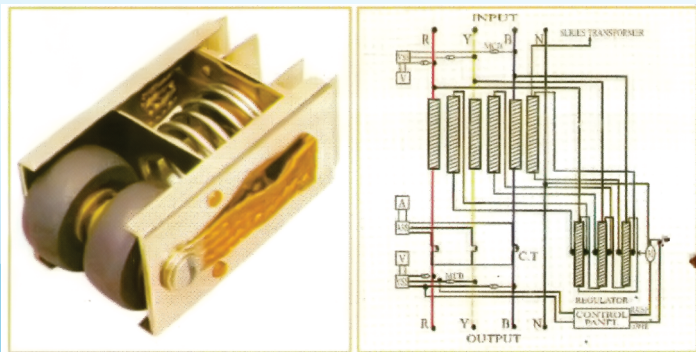
It is designed for 30-35 degree C above ambient. Suitable for any kind of ambient temperature conditions.

Core : Core is constructed from Low Loss of CRGO M-4 Grade conforming to latest standards & is fitted & clamped with special built in-house frames to reduce the magnetic noise & to make the structure rigid & robust.

Windings: Use paper covered electrolytic grade copper strip for winding. Cooling ducts are provided to keep the hot spot temperature as low as possible.

Tanks & Paint : Tanks are made of M.S. Sheets with adequate bracing & stiffeners are given a coat of Epoxy Primer & Epoxy paint for better life.

Oil : Oil of IS : 335 standards are being used and are filtered before topping.



Comparison between Active Make & Conventional Make Automatic Voltage Controller

Power Consumption is below 0.5 to 1.5% depending upon the input voltage range Suitable for Continuous 100% duty cycle Life at full load is more than 15 years Five years guarantee Economical for continuous/industrial load above 100 KVA	Power Consumption is above 2 to 7% depending upon the input voltage range Suitable for less than 50% duty cycle Life at full load is less than 3 years One Year Guarantee Suitable for commercial/residential load below 50KVA
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Table below gives approximate quantitative advantages of automatic voltage controller at various fluctuation levels:

Input Voltage Variation	% Reduction in Breakdown Possible		Approx Power Saving Possible	
	Motor Load Below 10 HP	Lighting Load	Motor Load Below 10 HP.	Lighting Load
380 to 400 volts	Nil	Nil	Nil	Nil
380 to 420 volts	5%	10%	3%	5%
380 to 440 volts	10%	20%	5%	10%
360 to 460 volts	40%	40%	7%	40%
360 to 480 volts	60%	60%	10%	60%

Technical Specification

ACTIVE Servo Stabilizers are available in wide range & various models according to customer's requirement for Balanced / Unbalanced supplies with following specifications

Input Voltage	360-460V 340-460V 320-460V 300-460V
Efficiency (approx)	99.5% : 99% : 98.7% 98.5%
Output Voltage	400 V±1%, 3 Phase, 50 Hz.
Cooling	Naturally Oil Cooled
Type	Indoor
Temp. Rise (Max)	30 Degree C above ambient
Mounting	On uni-directional Wheels
Correction Rate	6-8 V/ Sec.
Wave from distortion	Virtually Nil
Duty Cycle	100% Continuous

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Optional Features

(Which can be incorporated for extra cost)

High Voltage Cut off System
Low Voltage Cut off System
Over load and short Circuit Protection
In Case any Phase have Failed then
Stabilizer Shutdown
Phase sequence change protection.
Changeover switch to by pass the stabilizers and use
main voltage directly.

Advantages :

Power Saving (Reduction in Power Bills)
Reduction in Breakdown of electrical / electronic
equipments
Reduction in MDI
Improvement in Power Factor (At Higher Voltage)
Uniform Quality / Lesser Tripping
Improvement in quality of end products
Better efficiency in Plant
Depreciation as per income tax act (In India only)

Payback Period

It has been assessed with long experience & customer's
feedback that the payback period of Automatic Voltage
Controller is well within 6-12 months depending upon the
site conditions.

AVC's Application

Automatic Voltage Controllers are most suitable for all
type industries where breakdown due to fluctuation
results in heavy financial loss such as:

Cement Plant
Flour Mills
Engineering Units
Pharmaceutical Units
Cold Storage
Rolling Mills
Textiles Mills
Mall & Multiplex
Paper Mills
Tube Mills
Rice Seller

Rubber Industries
Tea Estates
Food Processing Units
Oil and Vanaspati Plant
Footwear & Leather Units
Distilleries & Beverage
Hospitals
Nursing Home
Clubs
High Rise Buildings



Active Power Controls

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

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