



ISO-9001

AC Voltage Stabilizers -1 KVA to 2000 KVA



DESCRIPTION

Servo Controlled Automatic AC Voltage Stabilizers of 'AE' make conform to IS:9815 & are of 'EMS' i.e. 'Electro-Mechanical Stabilizer' type.

The purpose of voltage stabilizer is to receive a fluctuating AC voltage of large amplitude & deliver an almost constant voltage, which remains within a very narrow band ($\pm 1\%$) of the nominal voltage - quality of the AC voltage remains unchanged.

The voltage variations, which have become a common phenomenon in current power supply system, cause havoc in modern complicated & sophisticated equipments. The voltage stabilizers are meant to take care of this problem & protect the equipments. They ensure longer life of the equipments & also drastically cut down electricity consumption of equipments leading to continuous reduction in electricity bills. Thus, they play an important role in energy conservation which is need of the day.

The EMS type AC voltage stabilizer basically comprises of the following –

- ◆ Dimmerstat (Continuously variable voltage auto transformer).
- ◆ Buck-Boost Transformer (Optional upto 5kVA 1Ph / 15kVA 3Ph).
- ◆ AC Step-synchronous motor.
- ◆ Solid state electronic control circuit.
- ◆ Two switching triacs.
- ◆ MOVs for surge suppression.

FEATURES

- ◆ Waveform distortion - nil.
- ◆ 98-99% efficiency (achieved by optimum design & by use of imported hi-quality CRGO laminations & 99.9% purity copper).
- ◆ Speed of correction up to 70V/S.
- ◆ Response time - less than 20ms.
- ◆ Immune to load PF & supply frequency variations.
- ◆ Power loss 2% max.
- ◆ Duty cycle continuous.
- ◆ Life expectancy - 20 -25 years.
- ◆ Easy & simple maintenance (with plug-in PCBs).
- ◆ Protections - over voltage / under voltage / overload / single phasing - optional.
- ◆ Very high reliability.
- ◆ Considerable short time overload capacity.
- ◆ Output voltage setting (by potentiometer in Auto Mode & by Raise / Lower Push Button in Manual Mode)
- ◆ Operation - Auto or Manual.
- ◆ LED Indications for Input Voltage High / Low.
- ◆ Metering (Analogue or Digital) – AC voltmeter with / without selector switch.
- ◆ Non-standard requirements can be catered to, such as AC Ammeter, Frequency Meters, Phase Sequence Meters, Single Phasing Preventor, Stabilizer by – pass arrangement, etc.

THE CONTROL & MONITOR SYSTEM OF THESE VOLTAGE STABILIZERS HAVE FOLLOWING STANDARD FEATURES

1. Alarm lamps which light up when the input voltage goes above or below the maximum or minimum specified voltage.
2. Voltmeter, with selector switch, to indicate either input or output voltage.
3. Screw driver adjustment to set the output voltage to the exact specified level.
4. 'Auto-Manual' selector switch to select the mode of working of the Stabilizer. In the event of failure of Automatic control, the unit can be used under Manual control.
5. Push Button Switches marked "Raise" & "Lower" to increase or decrease the output voltage when unit is under manual control.
6. Easily replaceable and serviceable printed circuit cards.

Following deviations from standard types of Stabilizers are possible, subject to confirmation:

1. Non-standard input voltage range, output voltage and KVA rating.
2. Automatic Alarm/Power cut-off in case of over voltage, under voltage, overload and phase failure.

ELECTRICAL SPECIFICATIONS

◆ MODEL	: EMS-12
◆ TYPE	: Indoor, Floor Mounting.
◆ COOLING	: Air-Cooled / Oil Cooled / Air - Oil Cooled.
◆ INPUT	: 160 - 260V / 180 - 250V, 1Phase AC. 300 - 460V / 360 - 460V, 3Phase, 4 Wire(or 3 Wire if required) AC. (Balanced or Unbalanced).
◆ OUTPUT	: 230V/240V \pm 1%, 1Phase AC. 380V/400V/415V \pm 1%, 3Phase AC.
◆ CAPACITY	: 1kVA - 2000kVA
◆ FREQUENCY	: 50 - 60Hz.
◆ INSULATION RESISTANCE	: Not less than 5M ohms at 500V DC
◆ DIELECTRIC TEST	: 1.5kV RMS for 1 minute.
◆ OPERATING TEMP.	: 0°C to 50°C
◆ STORAGE TEMP.	: -9°C to 70°C
◆ HUMIDITY	: up to 95% RH
◆ CONFORMS TO	: I.S. 9815

NOTES :

- ◆ Input & output voltages, other than specified above, are available on specific request.
- ◆ For 3 Phase balanced supply system, a common controller, connected to any one phase is employed.
- ◆ For 3 Phase unbalanced supply system, 3 individual & independent controllers, one for each of the 3Phases, are employed.
- ◆ Oil should be Transformer Oil Conforming to IS 335, IEC 296.



WHAT YOU SHOULD KNOW BEFORE ORDERING A STABILIZER.

Stabilizers are designed to work over a certain range of input voltage in which they give a stable output voltage. Therefore, the range over which the input voltage fluctuates must be known. Stabilizers are also designed to cater for certain maximum load on the stabilizer had to be ascertained. Based on these informations, the proper model can be selected. If the requirements are much beyond the standard models, a special one can be manufactured to meet the specifications.

For single phase systems, the declared standard supply voltage is 240V. However many customers prefer and specify 230V as the desired stabilized output voltage. Therefore the standard single phase stabilizers can be made either for 240V or for 230V output voltage and to take care of input voltage variations either in the range of 180 to 250 or 160 to 260 volts. There is also a provision by way of a screw driver adjustment for changing the level of output voltage within a narrow band. Similarly, for 3 Phase systems, the output voltage can be either 400V or 415V and the stabilizers are made to cater for an input voltage range of either

360 to 460V or 300 to 460V. The standard 3 phase stabilizer presumes that the supply voltage fluctuations are equal on all the 3 phases.

Therefore, only one of the three phases is monitored for error and necessary correction is effected equally on all the three phases. However, a switch is provided to select any of the three phases for monitoring. A voltmeter with a 5 way selector switch facilitates measurement of input and output voltage of any line or phase.

In cases, where the three phase voltages vary in an unbalanced manner, each phase will have to be corrected independently and this necessitates use of three single phase stabilizers connected in star.

For input voltage beyond the specified range, two limit switches, operated by the Dimmerstat at its extreme end positions, cut off the supply to the drive motor, till the supply voltage returns within the specified band. For input voltage beyond the specified range, the output voltage changes proportionately. Lower input voltage for longer period is not harmful. However, higher input voltage for a long period could be detrimental to the stabilizer, as well as to the connected equipment.

APPLICATIONS :

CNC Machines, Air Compressors, Textile Machines, Lightings, X-ray & Medical Equipments, Engineering Units, Computers, Pump Sets, Transmitters & many many other similar applications.

Ordering information

- Model ■ Type ■ Cooling ■ Input Voltage (Balanced or Unbalanced) ■ Output Voltage ■ Capacity (kVA)
- Protections (if required) ■ Non-standard metering. ■ With / without first filling of oil (only for oil cooled units).

