



DIGITAL CONTROLLED SERVO VOLTAGE STABILIZER



LINEAR A.C. VOLTAGE REGULATOR (ROLLER TYPE)



IGBT STATIC VOLTAGE STABILIZER



SERVO



ISOLATION TRANSFORMER



AVR



APFC PANEL



AMF PANEL



UPS

DIGITAL CONTROLLED SERVO VOLTAGE STABILIZER

Introduction

Fluctuations in the voltage, is a constant feature of our electricity supply. This is observed irrespective of the distribution being H.T./L.T. Constant fluctuations of voltage leads to frequent break down & higher rejection in the end products, high cost of production and last, but not the least – **loss of energy**. Major Industrial loads are inductive (i.e., A.C. Motors) and they draw very high currents at high / low voltages, resulting in higher losses which in turn raise the operating temperature of motors, thereby reducing the motor life. Other equipments that are affected by high / low voltages are Lighting loads, A/C plants, Lifts, Medical/Analytical equipments, Computers, Resistance & Induction heaters, Rectifiers and Welding equipment to name a few.



Single Phase

Field of Applications

- IT, Call centres & Micro-Processor based control system.
- Scientific, Medical, Agriculture, Educational, Research Institution, Commercial buildings and Complexes.
- Offset Printing presses. Colour Scanners, Processors, Phototypesetters, Photographic equipments, Photo copiers and Packaging Industries.
- Medical Equipments, X-Ray machines, E.C.G machines, Refrigerated Systems, Centrifuge, NMR, MRI, CT Scans etc
- Defence installations, Broadcasting & Telecommunications.
- Lifts, Escalators and Elevators.
- Central Air-Conditioning plants, Processing plants, Chemical Industries, Textile Industries, Cold Stores.
- CNC machines, Laser Machines and Moulding Machines.

Advantages of Selvon Stabilizers

1. Corrects voltage automatically & continuously.
2. Induction motors operate at high efficiency & improved power factor when supplied constant voltages.
3. Protects costly manufacturing equipments from menace of High/Low Voltages, thus cutting on the maintenance cost.
4. Less Production losses & better efficiency in plant.
5. **100% depreciation from Income Tax.**
6. Reduces MDI, saves power & increased productivity.
7. Pay-Back in 12-18 Months (Load Based).
8. Save on diesel cost.
9. **Reduction in Electricity Bills upto 10% (This depends on Input Variation, Loading & Number of working hours).**

Outstanding Features of Selvon Stabilizers

- Microcontroller based system for more accuracy & control.
- High overload capacity for high inrush & regenerating currents of induction motors.
- Machine wound variable auto-transformer.
- Specially design transformer to minimized losses.
- Prime grade CRGO lamination & electrolytic conductors of 99.9% purity used for transformer.
- Plug in type microprocessor-based control panel designed for easy on-line serviceability.
- All components used are of reputed makes, confirming to relevant IS/BS standards.
- All electronics components tested at 55 Degree Celsius to minimize failure.
- Exceptionally low output impedance.
- Efficiency better than 98.6%. Resulting in large energy conservation.
- Burn proof / brush less AC synchronous motor for greater reliability & longer life.
- Easy accessibility from all sides.
- Stabilizers are subjected to routine & type test in accordance with latest IS standards. (IS:9815-94)

Technical Specifications

Topology	Microcontroller Based
Capacity	1KVA to 100 KVA (Single Phase) 3 KVA to 2000 KVA (Three Phase)
Input Voltage Range	120V-280V, 150V – 280V, 170V – 280V (Single Phase) 208V-485V, 260V – 485V, 300V – 485V (Three Phase) (Other ranges available on specific order)
Output Voltage	230V / 240V Single Phase (adjustable) 400V / 415V Three Phase (adjustable)
Regulation	±1 % or Better.
Supply Frequency	47 Hz – 53 Hz.
Efficiency	>98.6%
Effect Of Load Power Factor	Nil
Wave Form Distortion	Nil
Rate Of Correction	Better Than 36V / Sec. In AN Better Than 20V / Sec. In ONAN
Duty Cycle	100% Continuous
Response Time	Less than 10 ms.
Cooling	AN / ONAN
Over Load Capability	Upto 200% momentarily
No Load Losses	Less than 0.8% over entire range
Suitability	Suitable for 3 Ph unbalanced/ balanced supply & unbalanced / balanced load
Mounting	On wheels
Earthing	Two numbers of earthing terminals
Cable Termination Box	Input / Output connections
Ambient Temperature	-10°C to +55°C
Relative Humidity	Upto 95%

Standard Accessories Controls

- ✦ Auto / manual soft switch.
- ✦ Output voltage adjusts by soft switches.
- ✦ Increase / decrease soft switches.

Digital Indications

- ✦ Input / Output Voltage.
- ✦ Output Current.
- ✦ Manis Input ON, Output ON.
- ✦ Under Voltage / Over Voltage.

Optional Accessories (at extra cost)

- ✦ Under / Over Voltage Trip-Off system.
- ✦ Protection against Single/reverse phasing.
- ✦ Overload / Short circuit protection.
- ✦ By-pass facility.
- ✦ RFI / EMI filter / Surge suppressor.
- ✦ Audio alarm / Remote Panel.



LINEAR A.C. VOTAGE REGULATOR (ROLLER TYPE)

Introduction

Selvon make **Linear A.C. Voltage Regulators** are the most suited to control low to high voltage fluctuations & provide constant voltage of 400V/415V+/-1%. It comprises of Roller Carbon Brushes which gives high reliability to less wear & tear, and Linear Voltage Regulator which employs heavy section of electrolytic grade rectangular Copper strip to minimize losses.



Outstanding features of Selvon Linear Voltage Regulators

1. Higher Overload Capability for high inrush & regenerating currents of Induction Motors.
2. Machine wound Variable Linear Regulators.
3. Specially designed Transformers to minimize losses, with CRGO/CRNO Laminations.
4. 99.9% purity electrolytic Conductors used for regulators.
5. Microprocessor Based Control Circuits used for correction.
6. All components used are of reputed makes, confirming to relevant IS/BS standards.
7. Suitability designed for 55 deg. Ambient.
8. Efficiency better than 99%.
9. Burn Proof/Brush less A.C. Synchronous Motors used for greater reliability & long life.

Advantages of Selvon Linear Voltage Regulators

1. Upto 80% reduction in Failure Rate of Installed Equipments.
2. Reduction in MDI.
3. Reduced Maintenance Cost.
4. Improved Power Factor.
5. Better Productivity/Quality of the end Product.
6. Pay-Back in 12-18 Months (Load Based).
7. Voltage Correction Automatically & Continuously.
8. **100% depreciation from Income Tax.**
9. Save on diesel cost.
10. **Reduction in Electricity Bills upto 10% (This depends on Input Variation, Loading & Number of working hours).**

Carbon Brushes

The Roller brush technology gives high reliability due to less wear & tear, as the surface area in contact keeps on changing during the stabilization process. The roller contact is fitted with spring tension behind to keep the roller intact with coil for trouble free operation. These are self lubricating roller assemblies with a life span of approx. 1 lac track metres.



Roller Carbon Brushes

Linear Voltage Regulator

Linear Voltage regulators employ vertical windings with Carbon Rollers on both sides of the coil. Linear technology employs heavy section of electrolytic grade rectangular Copper Strip, in order to minimize the losses. The core is built from grain oriented silicon steel laminations to keep the losses to the minimum. This is suitable for 100% continuous duty & have the capability to adhere to heavy inrush starting Loads.



Linear Voltage Regulator

Technical Specifications

Capacity	10 KVA to 5000 KVA (Three Phase)
Input Voltage Range	350V-450V, 340V-460V, 330V-470V, 320V-480V, 300V-500V
Output Voltage	400V / 415V Three Phase (adjust)
Regulation	(±) 1.0 %
Supply Frequency	47 Hz – 53 Hz.
Efficiency	Better than 99%
Effect Of Load Power Factor	Nil
Wave Form Distortion	Nil
Rate Of Correction	6-8V/sec
Duty Cycle	100% Continuous
Cooling	AN / ONAN
Over Load Capacity	Upto 150% momentarily
Suitability	Suitable for 3 Ph Unbalanced/ Balanced Supply & Load
Mounting	On wheels
Earthing	Two numbers of earthing terminals
Cable Termination Box	Input / Output connections
Ambient Temperature	-10°C to +50°C
Relative Humidity	Upto 95%

Standard Accessories Controls

- Auto / manual soft switch.
- Output voltage adjusts by soft switches.
- Increase / decrease soft switches.

Digital Indications

- Input / Output Voltage.
- Output Current.
- Manis Input ON, Output ON.
- Under Voltage / Over Voltage.

Optional Accessories (at extra cost)

- Under / Over Voltage Trip-Off system.
- Protection against Single/reverse phasing.
- Overload / Short circuit protection.
- By-pass facility.
- RFI / EMI filter / Surge suppressor.
- Audio alarm / Remote Panel.



IGBT STATIC VOLTAGE STABILIZER

Introduction

Selvon IGBT type Static Stabilizers are most suitable for fast, step-less and accurate Voltage regulation. These systems are built on state of the art technology with dual voltage & current tracking with robust algorithm to ensure that sensitive loads are effectively protected from grid voltage variations. The basic topology uses a buck-boost transformer with higher primary secondary ratio for voltage corrections upto +/- 25%. The voltage correction is achieved electronically without any step changes in voltage during regulation. The system is microprocessor based & works on a feedback & control system.



Need of IGBT static Stabilizers

1. Increased usage of precision equipments like PLC, CNC machines, AC/DC drives, IT infrastructure etc. These all are very sensitive to input voltage variations.
2. Expensive down times result in loss of production.
3. Voltage fluctuations are affecting the quality of the products, resulting in higher rejection levels.
4. Existing constant voltage solutions have very slow response time.
5. Moving parts of the voltage corrector affect the load by generating micro sparks & line noises.
6. Wear & tear of the moving parts, results in high maintenance cost.

Advantages of IGBT Static Stabilizers

1. Voltage correction through IGBTs with a response time of 100v/m sec.
2. Fast and accurate continuous without overshooting.
3. Isolation from Line disturbance & fluctuations.
4. No moving parts & stepless correction.
5. Efficient operation of equipments with increased & qualitative productivity & reduced rejections.
6. Compact in size.
7. Auto Bypass Facility of the system.
8. Output short circuit protection. The system detects abnormally heavy current flow from input & indicates occurrence of short circuit. Instant tripping will isolate the load & simultaneously switch off the IGBT converter to provide protection against damages.

Field of Application

- Medical Equipments, X-Ray Machines, Centrifuge, MRI/CT Scan stc.
- CNC, Laser & Moulding Machines etc.
- Printing Machines, Colour Processors, Packaging Industries etc.
- Textile & Weaving Industries, Central Air Conditioning, Chemical Industries, Processing Plants etc.
- Commercial Buildings, Complexes & Research & Development.
- Oil Gas – petrol Pumps using dispensing machines centrally connected through SCDA.
- Telecommunications, Radars etc.
- Information Technology & Call Centres.
- Defence Installations, IPTs & HPTs.
- Lifts & Escalators.

Technical Specifications

Regulator Technology	High frequency 20k Hz IGBT driven voltage regulation converter. Pulse width modulated (PWM) controlled direct AC to AC 32 Bit Digital converter topology. 7" Coloured Touch Interface (Optional) Synchronised operation of 3 Phase Converters Closed Loop Control
Input Nominal Voltage	230 volts AC, 1-phase, 2 wire, 50 Hz 400 volts AC, 3-phase, 4 wire, 50 Hz
Input Nominal Operating Voltage Range	1. 195V-265V / 200V-260V / 170V-300V, AC, 1-phase, 2 wire, 50 Hz 2. 340V-460V / 350V-450V / 300V-500V, AC, 3-phase, 4 wire, 50 Hz (Others ranges are available on specific order)
Output Nominal Voltage	230 / 400 V +/-0.5% AC, Single/Three Phase
Input Nominal Frequency	50Hz +/- 5%
Reaction Time	< 100 us
Efficiency	Better than 98.5%
Protections	Over Current Protection, Output Under/Over Voltages Protection, Semiconductor Fuses Soft Start Facility (Stabilized Output Voltage, on Mains restoration), Type 2 Surge Suppressors Output Contactor / MCCB(Optional), Input MCCB/MCB (Optional)
Metering	Input/Output Voltage Input/Output Current Frequency
MMI(Optional)	7" Coloured Interface (Optional) Input/Output Voltages, Input / Output Current Current/Voltage Waveforms, Operator Activity Log, Stack Temperature, Converter Current
Environment	Indoor IP 42, Ambient Temperature- Upto 50-degree, Relative humidity: 95% (Non-Condensing)
Available Ratings	3 Phase: 6KVA-500KVA 1 Phase: 2KVA-50KVA Note: Customised Ratings can be supplied



ISOLATION TRANSFORMER / ULTRA TRANSFORMER

Introduction

Switching of electrical equipments in Industrial & Commercial area generates spikes upto 10000 Volts & High frequency Noises, thus disturbing the sine-wave output. The spikes can cause the failure of thyristors, Micro-processors, or other sensitive electronic devices. The high frequency noises can interfere with Digital-Electronic equipment causing data corruption, erratic behaviour, loss of memory etc.

Isolation/Ultra Isolation Transformers eliminates such noises & attenuates the spikes to minimal values, providing complete protection against such electrical disturbances. It consists of a double wound transformer with extremely low coupling capacitance to isolate the voltage spikes and reduce noise from main with extremely high insulation resistance.



Technical Specifications

Input	Single/Three Phase
Rating	From 0.5 to 1000 KVA
Regulation	Better than 3% (Approx.)
Connections	Delta/Star for 3 Phase
Operating Power Factor	-0.75 to + 0.75
Dielectric Strength	2500 V for 60 secs
Resistance	Better than 1000 Mega Ohms
Coupling Capacitance	Less than 0.1 pf
a) Isolation	upto 100 dB
b) Ultra Isolation	more than 130dB

Special Features

- Symmetrical characteristics allow noise attenuation from both sides.
- No impedance matching required.
- No need for extra filter circuits.
- Can be used where different ground potential exists or the ground of the equipment cannot be earthed.
- No Secondary effects like resonance etc., as with filters.

AUTOMATIC VOLTAGE STABILIZER

Selvon make **Automatic Voltage Stabilizers** are smartly & technically designed for both home & offices environment with different loads like A.C.s, Deep Freezers, Refrigerators & other home appliances.

- Latest Microprocessor Based Circuit.
- High & Low Cut-Off with TDR facility.
- Power Saving Technology.
- Optionals:** -
 - By-pass Feature.
 - Thermal Overload Protection



Automatic Voltage Stabilizer

MAIN LINE AVR

Main Line AVR are used for residential & commercial uses to stabilize the incoming voltage fluctuations upto 10 KVA capacity from 90 Volts with Bypass Facility.

Main Line AVR's are also available from two phase to single phase applications



Main Line AVR

Technical Specifications

Input Voltage	90-280V ; 100-275V ; 120-200V ; 140-285V 150-270V ; 160-270V (Other ranges on order)
Output Voltage	200-240V
Efficiency	>95% at full load
Capacity	0.5 KVA-10 KVA

AUTOMATIC POWER FACTOR CORRECTION (APFC) PANEL

Automatic Power Factor Control or APFC Panels are mainly used for the improvement of Power Factor. Power Factor is the ratio of active power to apparent power and it is a major component in measuring electrical consumption. APFC is an automatic power factor control panel which is used to improve the power factor, whenever required, by switching ON and OFF the required capacitor bank units automatically.



APFC Panel

AUTOMATIC MAINS FAILURE (AMF) PANEL

Automatic mains failure (AMF) panels, make the power switch to emergency standby generators in the event of a significant loss of mains power or total blackout.

AMF Panel monitor the incoming AC mains supply, activate the standby generator when mains power fails, and make an automatic electrical transfer of the building's load from the mains to the generating set. When the mains supply resumes, the AMF panel switches to mains and shuts down the generator after a suitable cooling run.



AMF Panel

STEP-UP / STEP-DOWN TRANSFORMER

A **step-down transformer** is a type of transformer that converts the high voltage (HV) and low current from the primary side of the transformer to the low voltage (LV) and high current value on the secondary side of the transformer. The reverse of this is known as a **step-up transformer**.

These transformers are available in **single / three phase, air cooled / oil cooled models**.
Capacity : **1 KVA – 750 KVA**



NEUTRAL TRANSFORMER

Capacity : **3 KVA TO 500 KVA** ; Type : **Air Cooled / Oil Cooled**.

ON-LINE UNINTERRUPTED POWER SUPPLY

Selvon UPS is not only economical data saver system, but an outcome of perfect understanding of end use application, utilization of MOSFET technology for higher efficiency with latest Power Conversion Techniques which employ excellent line filtering devices. **Selvon UPS** is perfect for PCs, PC XT / ATs. Micro and Mini computers, peripherals, Biomedical/Analytical equipments etc.



Single Phase



Three Phase

Technical Specifications

Models	1 Phase - 1KVA - 50 KVA 3 Phase - 1 Phase - 6KVA - 80 KVA 3 Phase - 3 Phase - 6KVA - 500 KVA
Operating Mode	Online PWM based Double Conversion
Input Voltage	180V - 270 - 1 Phase 320V - 470V - 3 Phase
Frequency	50/60 Hz +/- 5%
Power Factor	0.8 - 0.95
Soft Start	0-100% 5s
Total Harmonic Distortion	3% - 5% with Filters
Phase	1 Phase + N + G 3 Phase + N + G
Output	230V/240V - 1Phase 380V/400V/415V - 3 Phase
Frequency	50/60Hz +/- 0.5% (Battery Mode)
Wave Form	True Sine Wave
Transient Response	< 10ms

Crest Factor	3:01
Overload	150% for 1 min, 125% for 1hr
Cooling	Forced AN
Isolation Transformer	Available
Protection	Under/Over Voltage/Short Circuit/Battery Load
Metering	Input Voltage/Output Vol Voltage/Output Current/Output Frequen
Transfer Time	0ms Inverter/Bypass (Ov
Charging Current	10% of the Battery Ratir
AC to AC	93%
ECO mode	98%
Interface	RS 232/SNMP (optional)
Type of Protection	IP 20
Operating Temperature	0 - 45 Degree
Humidity	30 - 95%

COMPANY PROFILE

Selvon has a proven track record of more than three decades in manufacturing of highly reliable and efficient Servo Controlled Automatic Voltage Stabilizers and other products. Our motto is total commitment towards customer's satisfaction. Since established in 1986 we have focused on the various aspects of power quality and its possible solutions. With this experience in hand, we move ahead with constant refinement of production techniques for the optimum satisfaction of our clients. Due to our special designs, stringent quality standard (**as per IS: 9815-94**) and efficient after Sales Service, we enjoy a good rapport with our buyers. Our efforts have been amply rewarded with repeat orders and project assignments from **Govt. Deptts / Public sectors / Institutions / MNCs & Big Business / Industrial houses**.

QUALITY POLICY

Selvon Instruments Pvt. Ltd. An ISO 9001-2015 Company is committed to improve its methods & ways to satisfy the needs of our customers & deliver to them on time, quality product & services.

Designing, Manufacturing, Installation & servicing is done as per ISO 9001-2015 quality procedures for Global Acceptance. Our 'Quest for excellence' helps us to maintain the trust of our customers through consistent improvements in all the related aspects.

Selvon Instruments Pvt. Ltd.

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