



NKB TECHNOCRATS PVT. LTD.

YOUR TRUSTED TECHNOLOGY PARTNER

Static Voltage Stabilizer (SVS)

High Frequency PWM Driven IGBT Controlled Line Voltage Conditioner



Single Phase SVS



Three Phase SVS





Sophisticated electronic machines, appliances and precision tools are an indispensable part of today's world. They are used extensively in both industries and households. These modern day machinery requires clean and stable power supply to work efficiently. Erratic incoming voltage that is the sags, swells, high frequency noises and transients are accountable for more than 90% of the failures faced at most industrial units and households. This disturbed voltage causes serious damage to sensitive electronic machines and tools that ultimately results in higher downtime, higher maintenance cost, loss of production and loss of profits.

Voltage Stabilizers need to be effective, efficient and most importantly quick enough to be able to regulate the erratic incoming fluctuations.

Static Voltage Stabilizer(SVS) by NKB Technocrats Pvt.Ltd. with inbuilt noise filters is the best solution to such erratic incoming voltage.

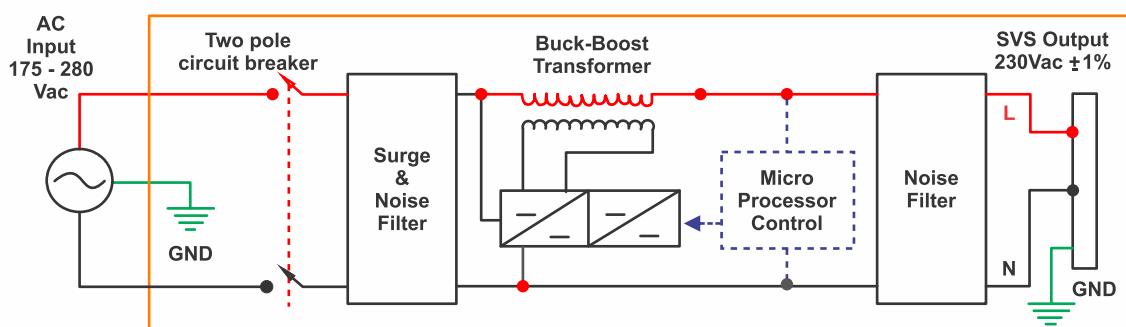
It's high frequency insulated-gate bipolar transistor (IGBT) units with PWM control managed by Digital Signal Processor(DSP) delivers smooth output voltage even during severe incoming fluctuations which ultimately enhances life of machines, increase in productivity and also results in energy saving.

HOW THE SVS WORKS

Static voltage Stabilizer(SVS) using IGBT and DSP by NKB Technocrats Pvt.Ltd is an AC to AC direct buck-boost Voltage Stabilizer. It is based on high frequency PWM driven IGBT. It measures the incoming AC Voltage against the nominal voltage and adds or subtracts the required difference using DSP to achieve precisely regulated output voltage. This gives the SVS such tight regulation and fast correction speed of 2500 Volts/Second which is impossible to obtain using conventional methods such as servo voltage stabilizers, SCR/triac type stabilizers, relay type stabilizers etc. It offers absolutely silent operation and pure sinewave output (no waveform distortion).

SVS is compatible with all kinds of load as it does not switch any components in the power path. Maximum performance, reliability and life time is achieved by a design with no moving parts.

Because of the robust technology & quick correction speed, it is by far the best voltage stabilizer which enhances the life of high end machinery & results in energy saving.



Block Diagram of SVS



KEY FEATURES

- Super quick response time of 50 microseconds
- Fast regulation speed of 2500 volt/sec (minimum)
- Continuous supply of highly stable output voltage
- Independent phase correction and capable to handle unbalanced 3-phase input without any trouble
- Built in protections against: over / under voltage, phase reversal, single phasing, over load, over temperature & short circuit
- Zero maintenance cost because of no mechanical or moving parts
- Completely noiseless operation
- Lowest foot print (less space needed)
- Compatible for all kinds of loads
- >99% efficiency
- Greatly improves power quality and reduces electricity consumption at site of installation
- Highly effective for sensitive load equipment having high speed solid-state devices and drives

TYPICAL APPLICATIONS

The unit is highly recommended where unstable mains is available and frequent voltage fluctuations are observed. Some of the popular applications are elevators, medical instrumentation, analytical/laboratory instruments, system calibrations labs, tele-communications, BTS units, Wireless sites, broadcast transmitters, semiconductor production, industrial automation, CNC machines & PLC based machines. SVS's ultra -Low impedance assures stability even with the most demanding loads.

SVS is also highly recommended as main line stabilizer in households for protecting expensive and sensitive appliances.



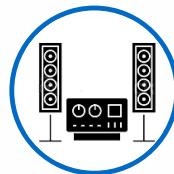
Households



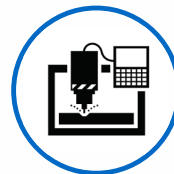
Elevator



Fuel Stations



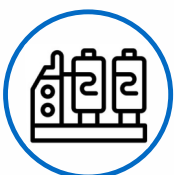
Audio Setup



CNC , Robotics & Automation



Radar & Telecommunication



Knitwear, Weaving & Textile Spinning



R&D, Testing, Diagnostics



Automotive Manufacturing



Plastic Processing



Packaging



Data Center

SPECIFICATIONS : SINGLE PHASE SVS

Capacity	1 KVA to 30 KVA
INPUT	
Input Voltage Range*	±25%, ±20%, ±15%
Input Frequency	50/60 Hz, ±5%
Input MCB	upto 400 A
Class of Insulation	Class H
Waveform	Sinusoidal
Input Connection	(P, N, G) (L, N, G)
OUTPUT	
Output Connection	(P, N, G) (L, N, G)
Output Voltage	230 vac (factory set) Nominal*
Line and Load Regulation	Output factory set voltage ±1%*
Frequency	Same as input
Correction Speed	4000V/Sec
Response Time	50 microseconds
Efficiency at Full Load	> 99% at nominal voltage
Technology	High frequency PWM controlled IGBT driven Line Voltage Conditioner
PROTECTIONS	
Protections Against	Overvoltage, Under Voltage, Surges, Short Circuit, Over Heating, Over Load
By Pass	Automatic bypass only in over Load & over temperature condition.
Indication	LCD Display showing system status and alarm in fault condition
CONSTRUCTIONAL DETAILS	
Cooling	Forced air cooled
Ingress protection	IP 20
Weight	Approx 30 Kg for 5KVA
Dimensions	265 mm wide x 448 mm high x 470 mm deep
Ambient Temperature	upto 50°C

* For Different Input / Output Voltage Range Consult Factory / Sales.

SPECIFICATIONS : THREE PHASE SVS

Capacity	15 KVA to 200 KVA
INPUT	
Input Voltage Range*	±25%, ±20%, ±15%
Input Frequency	50/60 Hz, ±5%
Input MCB/Isolator	20 A to 180 A
Class of Insulation	Class H
Waveform	Sinusoidal
Input Connection	L1, L2, L3, N, G
OUTPUT	
Output Connection	L1, L2, L3, N, G
Output Voltage	380/ 400/ 415 VAC (L-L) & 220/ 230/ 240 VAC (L-N)
Line and Load Regulation	Output factory set voltage ±1%*
Frequency	Same as input
Correction Speed	4000V/Sec
Response Time	50 microseconds
Efficiency at Full Load	> 99% at nominal voltage
Technology	High frequency PWM controlled IGBT driven Line Voltage Conditioner
PROTECTIONS	
Over Voltage Protection	Over Heating Protection
Surge Protection	Earth Fault Cut-Off
P-P Short Circuit Protection	Phase Reversal Protection
P-N Short Circuit Protection	Single Phasing Protection
Indication	LCD Display showing system status and alarm in fault condition
CONSTRUCTIONAL DETAILS	
Cooling	Forced air cooled
Ingress protection	IP 20
Grade Weight	25 to 30 KG
Dimensions	505 mm wide x 775 mm high x 690 mm deep
Ambient Temperature	upto 50°C

* For Different Input / Output Voltage Range Consult Factory / Sales.

Disclaimer: Due to constant quality improvement at our R&D centre, product specifications and other characteristics are subject to change without notice.

STATIC VOLTAGE STABILIZER VS SERVO STABILIZER

ASPECT	STATIC STABILIZER	SERVO STABILIZER
Input Voltage	Customized as per requirement	Standard specification – customization is expensive
Output Voltage	Customized as per requirement	Standard specification – customization is expensive
Cooling	Air Cooled	Oil cooled/air cooled
Rate of Correction	4,000 v/sec.	70 v/sec.
Response Time	50 micro sec.	10 mili sec.
Max Efficiency	>98%	90-95%
Short Time Overload	400% for 500 msec.	200% for 2 sec.
Effect of Spikes & Surges	No spikes/surges are either generated or transmitted to output	Spikes/surges are likely to be generated or transmitted to output
Effect of Fluctuation	No voltage fluctuations are transmitted to output as response time is fast & no mechanical switching	Fluctuations may be transmitted to O/P due to mechanical switching
Maintenance	No moving part and hence no maintenance	Considerable maintenance of servo motor & other moving parts required
Buck Boost Transformer	Class-H insulation (works upto 175 deg.)	Insulation with lower class – cannot handle high inner temperature inside cabinet
Control Circuit	High Frequency PWM controlled IGBT	Low frequency operation - Solid State sensing & feedback through control circuit to operate electromagnetic relays for operating motors
Size Per Watt	Small foot print & very compact	Large Size
Protections	Over load, over voltage, under voltage, single phase out, phase reversal, phase unbalance, thermal protection etc.	Technology constraints - some of the protections are not possible
System Noise	Noise free	High noise during operation

NKB TECHNOCRATS PVT. LTD.

Address : L-88, Ansal Sushant City, Kalwar Road,
Jaipur (Raj) - 302012

Mobile : +91-96600 61987

E-mail : sales@nkbtechnocratspltd.com

Website : www.nkbtechnocratspltd.com
