



Voltright™

SVS - SOLLATEK VOLTAGE STABILISER

The Sollatek SVS Range

A range of stabiliser devices that protect all electronic equipment and stabilise a fluctuating mains supply



Sollatek™
the power to protect

THE SOLLATEK SVS VOLTAGE STABILISER RANGE - DESCRIPTION

THE SOLLATEK VOLTAGE STABILISER (SOLLATEK SVS) has been designed to provide a clean, regulated AC power supply to all equipment in environments with unreliable, fluctuating mains supply.

OPERATION

The Sollatek SVS monitors the mains voltage continuously. If the voltage rises or drops, the SVS will stabilise the output to ensure the voltage reaching your equipment remains constant at 230V (±6%) or 110V (±6%) for US voltage systems, within the operating range of the unit. (See Input and Output Voltage Response on page 7).

THE SOLLATEK SVS HAS THE FOLLOWING ADVANCED FEATURES:

- The Sollatek SVS boosts low voltage.
- The Sollatek SVS reduces high voltage.
- The Sollatek SVS disconnects the load (fridge, TV, PC etc) using its built-in Automatic Voltage Switcher (AVS™), when mains stabilisation within acceptable limits is outside its capability (available as an option in 3 phase models*).
- Automatically reconnects the load, but only after the mains has remained within acceptable limits for a period of three minutes (see TimeSave™ function on the opposite page). This is to allow neutralisation of compressor gases, critical in such applications.*
- Has a very wide voltage response range of 145V to 290V (-26% to 18%). (see table of input and output voltage responses).
- Incorporates intelligent delay to reduce off-time when the appliance has been switched off for over three minutes (see TimeSave™ function on the opposite page*).
- Uses a unique zero voltage switching technique to achieve clean pure stabilised power.
- Incorporates full spike protection.
- Frequency compensated measurements.
- Frequency and voltage measurement smoothing in software to filter noise.
- Fault detection - senses if the measurements being made are unreasonable and disconnects output. Red and yellow LEDs flash alternately to indicate a fault.

APPLICATIONS

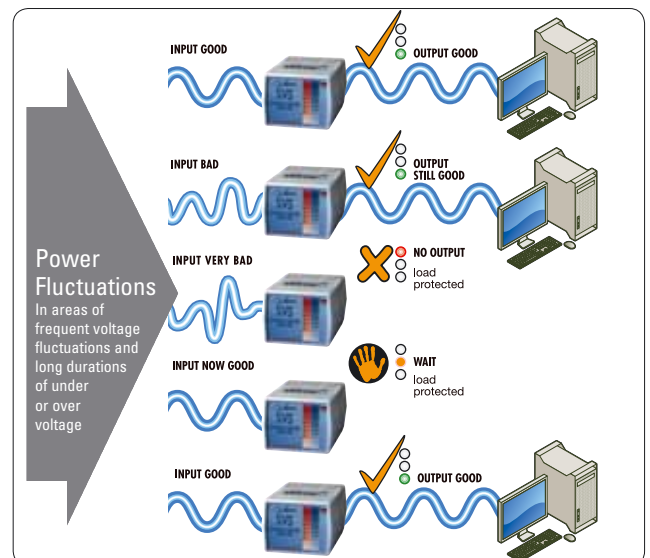
The SVS is suitable for all electrical and electronic appliances. It is particularly useful for the following: fridges, air conditioners, freezers, coolers, TV/hi-fi, computers, medical refrigeration, and telecom appliances.

FEATURES

- Microprocessor controlled stabiliser
- Very wide input voltage range
- Excellent output voltage stability
- Includes surge and spike suppression
- Extremely fast response
- Incorporates over-voltage and under voltage disconnect*
- Incorporates TimeSave™ feature*
- Available as single and three phase
- British design and manufacture
- 2 year worldwide warranty

* Applicable to certain SVS models

THE SVS PRINCIPLE*



THE SOLLATEK SINGLE PHASE SVS MODELS - OPTIONS



AVS™ function

AVS™ function adds the following protection: The Sollatek SVS is unique in having a built-in AVS™ (Automatic Voltage Switcher). When the mains power supply fluctuates outside pre-set tolerances the power to your equipment is disconnected.

The AVS™ monitors the voltage for a short period to ensure the power has stabilised before re-connecting. In addition, the start-up delay provides protection against power-back surges commonly experienced after resumption of power in a power cut situation.

Surge and spike protection is also incorporated to ensure protection against these events which are very common. They are generated by lightning and nearby switching off and on of other equipment such as vacuum cleaners, pumps, motors, television, elevators etc.




TIMESAVE™ function

TIMESAVE™ function adds the following protection: The Sollatek SVS has a built-in microprocessor which adds the advanced feature TimeSave™. TimeSave™ means that when the mains return to normal, the unit checks the duration of the OFF time. If the SVS has been off for more than the standard wait time, then it will reconnect the mains within 10 seconds. This means the Sollatek SVS will give you more vital working time than any other stabiliser.


The duration of the start-up delay period varies between 10 seconds and 10 minutes, depending on the model. For refrigeration and air-conditioning equipment a delay of 3-4 minutes is recommended. The 3-4 minute delay allows compressors to neutralise before re-starting.

SINGLE PHASE SVS SELECTION (Other sizes available, refer to Sollatek for more details)


MODEL	Amps	VA@240V	Socket	Weight	Dims	Case	type	Wall mountable	AVS/Timesave	Time delay
SVS02-22	2	480	UK EU UK5	2.0	190 x 100 x 124	A	plastic	No	Yes	Yes
SVS04-22	4	960	UK EU UK5	3.6	190 x 100 x 124	A	plastic	No	Yes	Yes
SVS08-22	8	1920	UK EU UK15	7.2	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS15-22	15	3600	EU UK15	9.0	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS16-22	16	3840	EU	9.0	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-22	20	4800	Cable	15.0	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-22	20	4800	Terminal	15.0	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-22WMM	20	4800	Terminal	20	300 x 200 x 280	C	metal	Yes	Yes	Yes
SVS35-22WMM	35	8400	Terminal	29.0	330 x 330 x 440	D	metal	Yes	Yes	Yes
SVS50-22WMM	50	12000	Direct wiring	29.0	330 x 330 x 440	D	metal	Yes	Yes	Yes
SVS75-22WMM	75	18000	Direct wiring	45.0	330 x 330 x 440	D	metal	Yes	Yes	Yes
MODEL	Amps	VA@115V	Socket	Weight	Dims	Case	type	Wall mountable	AVS/Timesave	Time delay
SVS02-11	2	230	US	3.6	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS04-11	4	460	US	5.0	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS08-11	8	920	US	5.0	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS15-11	15	1725	US	5.0	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-11	20	2300	US	7.0	162 x 132 x 275	B	plastic	No	Yes	Yes



Case type A
 Dims (unpacked): 190 x 100 x 124 mm
 Dims (packed): 240 x 178 x 150 mm



Case type B
 Dims (unpacked): 162 x 132 x 275 mm
 Dims (packed): 270 x 387 x 160 mm



Case Type C
 Dims (unpacked): 300 x 200 x 280 mm
 Dims (packed): 320 x 220 x 300 mm

Case type D
 Dims (unpacked): 330 x 330 x 440 mm
 Dims (packed): 350 x 240 x 460 mm

Wall mountable

SPECIAL VOLTAGES

The following models of SVS provide dual voltage (input and output) for countries where 110V & 220V are used.

MODEL	Input Voltages	Output Voltages	Output Power		Socket	Weight	Dims	Case	Type	AVS
			@220V	@110V						
SVS02-29 or or	220	110 and 220	230VA	and 230VA	UK US	3.0	240 x 178 x 150	A	plastic	No
	220	110 and 220	650VA	and 0VA	UK US	3.0	240 x 178 x 150	A	plastic	No
	220	110 and 220	0VA	and 300VA	UK US	3.0	240 x 178 x 150	A	plastic	No
SVS04-29 or or	220	110 and 220	500VA	500VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
			1000VA	0VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
			0VA	450VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
SVS08-29 or or	220	110 and 220	1000VA	1000VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
			2000VA	0VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
			0VA	900VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
SVS1000-28 or or	110/220	110 and 220	@220V	@110V	US / EU	5.0	270 x 387 x 160	B	plastic	No
	Input Voltage 220V		1000VA	0VA						
	Input Voltage 220V or Input Voltage 115V		0VA	400VA max total 400VA						
SVS1000-27 Dual I/O or or	127/220	127 and 220	@220V	@110V	US / EU	4.0	270 x 387 x 160	B	plastic	No
	Input Voltage 220V		1000VA	0VA						
	Input Voltage 220V or Input Voltage 127V		0VA	400VA max total 400VA						
SVS2000-28 Dual I/O or or	110/220	110 and 220	@220V	@110V	US / EU	9.0	270 x 387 x 160	B	plastic	No
	Input Voltage 220V		2000VA	0VA						
	Input Voltage 220V or Input Voltage 115V		0VA	800VA max total 800VA						
SVS2000-27 Dual I/O or or	127/220	127 and 220	@220V	@110V	US / EU	9.0	270 x 387 x 160	B	plastic	No
	Input Voltage 220V		2000VA	0VA						
	Input Voltage 220V or Input Voltage 127V		0VA	800VA max total 800VA						

Please note the above models may be subject to minimum order quantities



SPECIAL APPLICATIONS

SVS45-22: USE IN I.T. AND COMPUTER APPLICATIONS

The SVS45-22 is a fully electronic voltage stabiliser capable of regulating incoming supply voltage with a variation of 230V nominal $\pm 20\%$ to a stable output voltage of nominal $\pm 3\%$. The unit is capable of supplying 45Amps RMS at an ambient of 45°C. Efficiency is in excess of 96%. The SVS is suitable for all types of load, particularly I.T and computer loads.

FUNCTIONAL DESCRIPTION

The SVS45 is based around a multi-tapped autotransformer using hybrid control (Relay + Triacs). The incoming supply is fed into the transformer at one of three possible input taps. The output is then taken from the transformer at one of four possible output taps. The combination of these seven input and output taps gives eight useable configurations, allowing precise voltage control. Taps are selected by the Microcontroller (MCU) using solid-state switches (Triacs).

This model has a narrower input range ($\pm 20\%$) compared to the standard range and a finer output correction ($\pm 3\%$) making it more suitable for professional I.T equipment.

Furthermore, it has a full LCD digital meter displaying input/output voltages (selectable) and output current.

PARAMETER	230V
AMPS	45
KVA @ 230V	10.4
REGULATION RANGE	
Input	230V $\pm 20\%$ (184-276V)
Output	230V $\pm 3\%$
Frequency	45-75Hz
SPIKE PROTECTION	800J, 6500 Amps (8/20 μ s). Response time <10 ns
OUTPUT CURRENT	45A RMS @ 45°C
DISPLAY	Digital display of input voltage and output voltage
TECHNOLOGY	
Zero Voltage Switching	Transformer tap switching takes place at zero point in voltage waveform
Response time	Within 0.1 second
PERFORMANCE	
Thermal endurance	Continuously rated at full load at full boost (full boost represents worst case)
Over-voltage endurance	Runs continuously without damage at 300V input
EFFICIENCY	>96%
GROSS WEIGHT	35 KG
DIMENSIONS	480 x 480 x 380mm
CASE TYPE	D

THE SOLLATEK SVS: USE IN COLD CHAINS - DESCRIPTION



VOLTAGE REGULATORS FOR COLD CHAINS

Cold chains in central stores are often damaged due to fluctuations in the power supply. This results in premature need for repair and replacement of motors, compressors and other electrical components. Voltage fluctuations are controlled by installing a Sollatek SVS on the power lines which supply the cold room equipment.

WHEN TO USE A SOLLATEK VOLTAGE STABILISER (SVS)

The Sollatek Voltage Stabiliser (SVS) is strongly recommended in the following situations where, for example:

- A new vaccine cold room is being installed and experience in the area indicates that a problem already exists with the electricity supply at the site.
- It is likely that frequent damage to an existing vaccine cold room's motors, compressors, relays and other electrical equipment has been caused by an unstable supply of electricity.
- The area surrounding the vaccine cold room is under development and it is possible that the electricity supply will not develop at the same pace, resulting in an unstable, unreliable, or fluctuating electricity supply. In such circumstances, first confirm whether the voltage supply is in fact unstable: measure the electricity supply at the site of the cold room at frequent intervals over a period of several days - for example, every hour from 6am to 12pm for a week. If the measurements show a fluctuation of more than $\pm 7\%$ from the standard voltage at any time, it is strongly recommended that a SVS be installed.

Sollatek manufactures a range of SVSs which fully complies with WHO specification E7 for voltage regulators in cold chains. For model numbers, refer to opposite specification panel.

The basic requirements are:

Voltage/frequency:

Nominal 230V 50 Hz

Capacity rating:

Minimum 500VA continuous running. Under full rated load conditions, 10 successful starts out of 10

Operating voltage ranges:

Input: For 165 to 280V input

Output: 230V $\pm 10\%$

Protection voltage range:

Input: 0 to 300V without damage

Output: Shall switch to 0V at input 145V and 295V respectively

Delay in restoring supply:

When under or over-voltage cut-out has occurred and the input voltage has returned to the operating range, the delay in restoring output voltage shall be between 3 to 6 minutes.

Endurance:

Shall continue to operate satisfactorily under full load conditions during 96 hours at +43°C and 95% relative humidity when the input voltage is varied between the limits of the operating input voltage range at a frequency of 10 cycles per minute (electricity supply is 50 Hz).

OTHER FEATURES:

- Input lead 2 metres long, 3 core PVC insulated electrical cable with plug and where appropriate has an earth connection.
- Earthed output socket shall have a plug fitted.

Stock No.	MODEL	Amps	VA	Voltage	Socket
98202016	SVS02-22 <i>6 minute delay</i>	2A	500VA	230V	EU Socket
98202006	SVS02-22 <i>6 minute delay</i>	2A	500VA	230V	UK Socket
98204006	SVS04-22 <i>6 minute delay</i>	4A	1kVA	230V	UK Socket
98204016	SVS04-22 <i>6 minute delay</i>	4A	1kVA	230V	EU Socket
98208411	SVS08-11 <i>6 minute delay</i>	8A	1kVA	115V	US Socket
98216411	SVS15-11 <i>6 minute delay</i>	15A	1600VA	115V	US Socket
	SVS15-11 <i>6 minute delay</i>	15A	1.5kVA	115V	US Socket

THE SOLLATEK THREE PHASE SVS MODELS

SVS3x20-22 SVS3x35-22 SVS3x50-22 SVS3x75-22 AVAILABLE ON SPECIAL ORDER ONLY

THE THREE PHASE SVS is made up from three identical single phase regulator units. Each of these monitors its own output voltage and adjusts for variations in mains supply voltage so as to maintain an output voltage within close limits. The Sollatek three phase SVSs all boast the same input voltage range as standard of -30% to +22%, making it ideal for all applications where the voltage supply is erratic. Also, when compared to equivalent stabilisers of the same input range, the Sollatek SVS range is one of the most competitively priced units available.



THREE PHASE SVS

OPTIONS

A number of options is available on the SVS:

1. **AVS™ function** (refer to page 3 for detailed description).
2. **TimeSave™ function** (refer to page 3 for detailed description).
3. **DSP option** (additional surge/spike suppression).

Extra surge/spike suppression is available on the Sollatek 3 Phase SVS range, in the form of the Sollatek DSP (Distribution Surge Protector). This unit will provide a high level of protection from lightning induced voltage surges on the mains supply.



Features:

- Designed to handle surges of up to 20,000 amps
- Auto resetting - no maintenance required
- Full status indication for all protected circuits
- Remote Status indication via volt-free contacts
- Can be built-in or ordered separately in a plastic wall mounting enclosure
- Suitable for all current rating, as the unit is shunt connected
- Peak surge current 20kVA
- Limiting voltage <900V
- Multiple discharge current 20 shots @ 10kA
- Filtered option attenuation 65dB @ 10 Mhz

4. RFI Filter option for the SVS 3 Phase

Sensitive electronic equipment is at risk from damage due to surges, spikes and RFI (Radio Frequency Interference). Such electrical noise/interference causes equipment either to be damaged or malfunction in an unpredictable manner.

RFI & noise is generated by equipment such as central heating pumps, lifts, air-conditioners, vacuum cleaners, fluorescent lamps, photocopiers, computers, and TV.

The RFI option removes noise and RFI from the mains. It will attenuate noise typically from 15dB @ 100KHz up to 30dB at 1MHz thus ensuring delivery of pure mains supply to the appliance.

MODEL	Amps	kVA@230V/400	Weight	Dims
SVS3x20-22	3x20	13.8	50	400 x 400 x 645
SVS3x35-22	3x35	24.2	65	400 x 400 x 645
SVS3x50-22	3x50	34.5	75	400 x 400 x 645
SVS3x75-22	3x75	51.7	110	550 x 600 x 750

5. Isolating transformer

In areas of accentuated noise problems on the lines, the most effective way to remove this problem is by using an isolation transformer.

The Sollatek 3 Phase SVS can be ordered with a D-Y isolation transformer as an option. This option will be supplied fully integrated and pre-wired. It will provide clean output to the load with a new neutral.

The Isolation transformer option is available for all 3 models.

DELTA STAR ISOLATING TRANSFORMER 20A/PH

Dims 450 x 300 x 500H
Weight 130kg

DELTA STAR ISOLATING TRANSFORMER 50A/PH

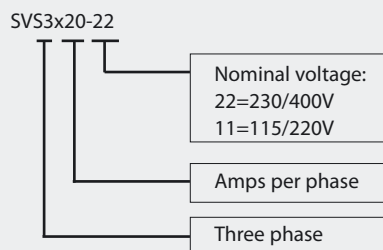
Dims 600 x 400 x 600H
Weight 200kg

DELTA STAR ISOLATING TRANSFORMER 75A

Dims 1000 x 500 x 1000H
Weight 375kg

ORDERING

The Sollatek three phase SVS range is easy to order. All units are rated by the number of AMPS per phase and the input/output range. For example:



TO CALCULATE THE VA:

VA = Amps x single phase voltage x 3
i.e: 20 (amps) x 230 (voltage) x 3 = 13800VA

TO CONVERT TO kVA:

Divide the VA by 1000:
i.e: 13800 ÷ 1000 = 13.8kVA

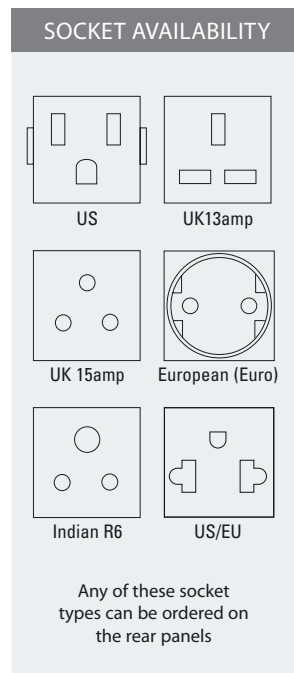
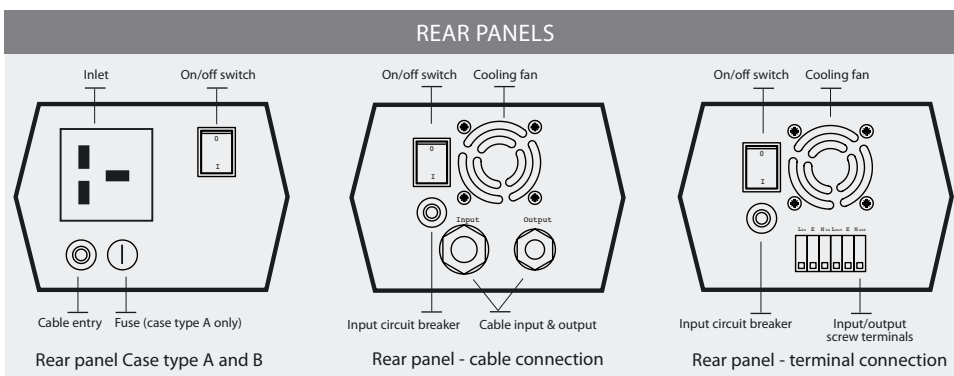
THE SOLLATEK SVS - GENERAL SPECIFICATIONS

Input/output range	
Input range	-26% to +19%.
Output accuracy	± 6%.
Frequency range	45Hz to 75Hz.
Regulator range @ 230V	171-274V ±6% (For input voltage beyond this range, output accuracy is +-10%. Refer to table below).
Regulator range @ 115V	86 -137V ±6% (For input voltage beyond this range, output accuracy is +-10%. Refer to table below) .
General	
Derating factor	10% to 15% per 10°C above 40°C.
Synchronization	Output synchronized to input.
Permissible overload	1000% for 100ms, 150% for 4 minutes, 110% for 15 minutes.
Load types	Designed to run lighting, motors, battery chargers, communications equipment, office equipment, SMPS, air-conditioners, compressors, industrial machines, medical equipment and others. Suitable for all domestic, commercial and industrial sites.
Technology	Transformer tap switching using relay based.
Efficiency	>97% (at 100% linear load).
Control	Microcontroller based control system provides self checks, system integrity monitoring and diagnostic indicators.
Control protection	Internal surge arrestors and filters in control circuit protect against disturbances. Filtering algorithms and fault tolerant software protect against disturbances and false measurements.
Ambient temperature range	0 to +55°C.
Relative humidity	>95%, non condensing.
Acoustic noise	< 45 dB (A).
Expected service life	> 10 years.
Standards	Manufactured to comply with :- ISO9001:2000, CE, EN 50081-1:1992, EN 50082-1:1998, EN 55022:1998, EN 61000-4-2:1995/1998, EN 61000-4-3:1996, EN 61000-4-4:1995, EN 61000-4-5:1995, EN 61000-4-6:1996, EN 61000-4-11:1994, DD ENV 50204, BS EN 61558-1, EN 60065, EN 60555.
Correction speed	750 Volts per sec.
Response	Within 0.1 second .
KVA rating	The Sollatek SVS range is wide and covers units from 480VA to 18kVA in single phase and 13kVA to 52kVA in three phase.
Wait time on start up	Standard delay is 10 secs. For refrigeration equipment: 3 mins delay (available on certain models only).
Efficiency	88% at 25% load, 94% at 50% load, 96% at 75% load, 97% at 100% load.
Power factors	Unaffected by load power factor.
AVS™ function	Automatic voltage switcher: output is switched off to protect device against over and under voltage (available on certain models only).
TimeSave™ function	Reduced startup delay if unit was off for more than the standard delay period to 10 seconds. Available on models with AVS function.

INPUT AND OUTPUT VOLTAGE RESPONSE FOR STANDARD MODELS

		230V																		
INPUT	0-144	145	155	165	175	185	195	205	210	215	225	235	240	245	255	265	275	285	290	291
OUTPUT	off	182	196	208	221	233	221	232	237	215	225	235	240	218	228	237	248	255	259	off

		115V																		
INPUT	0-72	73	78	83	88	93	98	103	105	108	113	118	120	123	128	133	138	143	145	146
OUTPUT	off	91	98	104	111	117	111	116	119	108	113	118	120	109	114	119	124	128	130	off



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