

THE SOLLATEK  
VOLTAGE STABILISER (SVS) RANGE



A RANGE OF STABILISER DEVICES



THAT PROTECT ALL ELECTRONIC EQUIPMENT

AND STABILISE A FLUCTUATING MAINS SUPPLY

# 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 ( $\pm 6\%$ ) or 110V ( $\pm 6\%$ ) for US voltage systems, within the operating range of the unit. (See Input and Output Voltage Response on back page).

If the input voltage falls below 142V\* or rises above 295V\*, the SVS will disconnect the output, thereby protecting the load. Once the mains voltage returns again within acceptable limits, the SVS will reconnect the output following a start up delay.

### APPLICATIONS

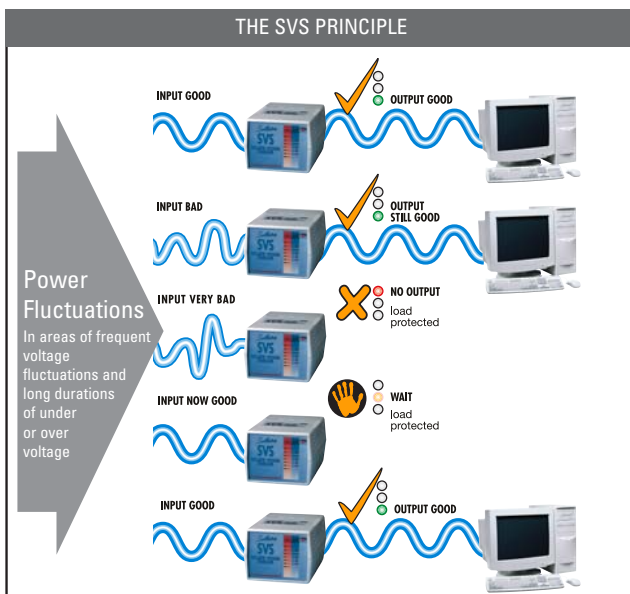
The SVS is suitable for all electrical and electronic appliances. It is particularly useful for the following: Fridges, Air conditioners, Freezers, Coolers, TV/HiFi, Computers, Medical Refrigeration, and Telecom Appliances.

### FEATURES

- Microprocessor controlled stabiliser
- Very wide input voltage range
- Excellent output voltage stability
- Includes surge and spike suppression
- Full RFI & noise suppression (ER option only)
- Extremely fast response
- Incorporates over-voltage & under voltage disconnect
- Incorporates TimeSave™ feature
- Available as single and three phase
- British design & manufacture
- 2 year worldwide warranty

## 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, 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.<sup>†</sup> This is to allow neutralisation of compressor gases, critical in such applications.
- Has a very wide voltage response range of 140V to 295V. (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.<sup>†</sup>
- 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.



<sup>†</sup> The duration of the start-up delay period varies between 10 seconds and 6 minutes, depending on the model. For refrigeration and air-conditioning equipment a delay of 3 minutes is recommended. The 3 minute delay allows compressors to neutralise before re-starting. For medical refrigeration applications and in order to comply with WHO specifications, the unit is set at 3-6 minutes delay.

\* Based on 230V nominal voltage.  
For full details refer to the Product Selection Table.

# THE SOLLATEK SINGLE PHASE SVS MODELS

## Options

### AVS FUNCTION - DESCRIPTION

The Sollatek SVS is unique in having a built-in Sollatek AVS™ (Automatic Voltage Switcher). This adds the following protective functions:

a) Provides a 3 minute<sup>†</sup> start-up delay which prevents rapid switching ON and OFF of the appliance in serious fluctuations. This is especially important for loads that use compressors (e.g. Fridges, Freezers, Coolers, Air conditioners) and vital for sensitive electronic equipment like computers, photocopiers, fax machines, lab equipment, medical instruments etc.

b) Provides a shutdown and disconnect function whereby it will disconnect your equipment if it can not safely correct the voltage in cases where the fluctuations are extremely BAD.

### TIMESAVE™ FUNCTION - DESCRIPTION TIMESAVE™

The Sollatek SVS also incorporates a built-in TIMESAVE™ function. This adds the following protective functions;

c) The Sollatek SVS has a built-in microprocessor which adds the advanced feature TimeSave.™ TimeSave™ means that when the mains return to normal, the SVS checks the duration of the OFF time. If the unit has been off for more than 3 minutes<sup>†</sup> then it will reconnect the mains within 30 seconds rather than the standard 3 minutes. This means the Sollatek SVS will give you more vital working time than any other stabiliser!

### PRODUCT SELECTION TABLE

MODEL	Amps	VA@240V	Socket	Weight	Dims	Case	type
SVS02-22	2	480	UK FR SCH UK5	2.0	193 x 100 x 124	A	plastic
SVS04-22	4	960	UK FR SCH UK5	3.0	193 x 100 x 124	A	plastic
SVS08-22	8	1920	UK FR SCH UK15	5.0	277 x 133 x 161	B	plastic
SVS15-22	15	3600	FR SCH UK15	8.0	277 x 133 x 161	B	plastic
SVS20-22	20	4800	Cable	14.0	277 x 133 x 161	B	plastic
SVS20-22	20	4800	Terminal	14.0	277 x 133 x 161	B	plastic
SVS50-22	50	12000	Direct wiring	29.0	345 x 330 x 260	E	metal
SVS75-22	75	18000	Direct wiring	38.0	345 x 330 x 260	E	metal
SVS01-22ER	1	240	UK FR SCH	2.0	193 x 100 x 124	A	plastic
SVS02-22ER	2	480	UK FR SCH	3.0	193 x 100 x 124	A	plastic
SVS04-22ER	4	960	UK FR SCH	4.0	193 x 100 x 124	A	plastic
SVS08-22ER	8	1920	UK FR SCH	7.0	277 x 133 x 161	B	plastic
SVS15-22ER	15	3600	UK15	12.0	336 x 212 x 179	D	metal
MODEL	Amps	VA@115V	Socket	Weight	Dims	Case	type
SVS02-11	2	230	US	1.5	193 x 100 x 124	A	plastic
SVS04-11	4	460	US	2.0	193 x 100 x 124	A	plastic
SVS08-11	8	920	US	3.0	193 x 100 x 124	A	plastic
SVS15-11	15	1725	US	5.0	277 x 133 x 161	B	plastic
SVS20-11	20	2300	US	7.0	277 x 133 x 161	B	plastic

### ER OPTION - DESCRIPTION



This range of Sollatek SVSs (from 250VA to 3500VA) is available with the ER option.

The ER option adds the following:

- CE certification - These units are tested and manufactured to comply with the following:
- EMC (electromagnetic compatibility) standards  
EN 50081-1 (1992) EN 50082-1 (1992)  
EN 61000-3-2 (1995) EN 61000-3-3 (1995)
- Safety BS 7452: 1991 and IEC 989
- Noise and RFI Filtering -Noise and RFI are generated by equipment such as central heating pumps, lifts, air-conditioners, vacuum cleaners, fluorescent lamps, photocopiers, computers, and TV. Lightning is also a major source of surges and spikes with potentially disastrous effects. Such electrical noise/interference causes equipment either to be damaged or malfunction in an unpredictable manner.

The ER range provides protection from the above to provide clean, RFI and noise-free output.

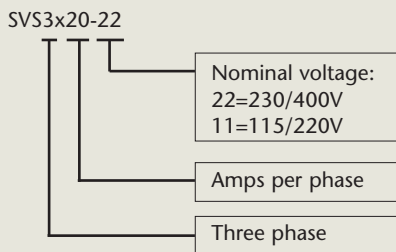
<sup>†</sup> The duration of the start-up delay period varies between 10 seconds and 6 minutes, depending on the model. For refrigeration and air-conditioning equipment a delay of 3 minutes is recommended. The 3 minute delay allows compressors to neutralise before re-starting. For medical refrigeration applications and in order to comply with WHO specifications, the unit is set at 3-6 minutes delay.

# THE SOLLATEK THREE PHASE SVS MODELS

SVS3x20-22    SVS3x35-22    SVS3x50-22    SVS3x75-22

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.

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:**  
 $VA = \text{Amps} \times \text{single phase voltage} \times 3$   
 i.e: 20 (amps) x 230 (voltage) x 3 = 13800VA

**TO CONVERT TO kVA:**  
 Divide the VA by 1000:  
 i.e: 13800  $\div$  1000 = 13.8kVA

## OPTIONS

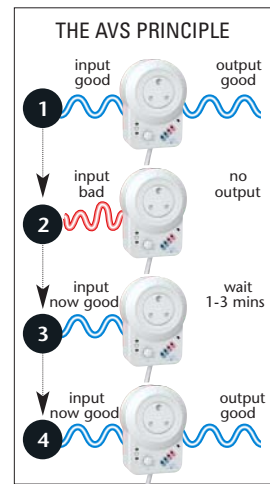
A number of options are available on the SVS:

### 1) Automatic Voltage Switcher Option (AVS™)

The AVS (a Sollatek UK Patent 2139436) option completes the protection that can be offered by the Sollatek SVS. The AVS simply disconnects the mains when the voltage is 'BAD' and re-connects it automatically when the voltage returns to 'GOOD'. Using this principle, the AVS monitors the output of the SVS. If the SVS can not correct the voltage sufficiently (in cases where the fluctuation is extremely high or extremely low), then the AVS will disconnect the output and thus provide the added protection to the appliance.

When the SVS's output is acceptable, the AVS will monitor the supply for 1 minute to ensure stability and will then reconnect the mains.

The Sollatek AVS has an additional useful feature of Timesave™. Using its own microprocessor, the AVS will monitor the time. If the unit has been disconnected for more than 1 minute then the AVS will reconnect within 30 seconds.



THREE PHASE SVS

## PRODUCT SELECTION TABLE

3 PHASE MODELS				
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

# THE SOLLATEK THREE PHASE SVS MODELS

SVS3x20-22    SVS3x35-22    SVS3x50-22    SVS3x75-22

## OPTIONS (continued)

### 2) 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 protection 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

### 3) RFI Filter Option for the SVS 3 Phase

Sensitive electronic equipment, are 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, 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.

### 4) 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 on all 3 models.



**DSP SPECIFICATION**

Maximum let through voltage (8/20 ms)	750V
Response time	10 ns
Peak discharge current	20 kA
Nominal voltage	380/415V
Total energy (DSP1)	1280 J

**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

# 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, see below.

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	Schuko
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	Schuko
98208411	SVS08-11 <i>6 minute delay</i>	8A	1kVA	115V	US Socket



# THE SOLLATEK SVS

## General specifications

PARAMETER	115V	SPECIFICATIONS	230V
<b>REGULATION RANGE</b>			
Input	86 - 137V		171 - 274V
Output	115V ± 6%		230V ± 6%
Input	82 - 142V		164 - 284V
Output	115V ± 10%		230V ± 10%
<b>INPUT VOLTAGE LIMITS</b>			
Vin high disconnect	147		295
Vin low disconnect	72		145
Max Input voltage	160		320
<b>SPIKE PROTECTION</b>			
	160J, 6500 Amps (8/20µs). Response time <10 ns		
<b>OUTPUT CURRENT</b>			
	See Product Selection Table		
<b>LEDs</b>			
	Input voltage increase is displayed in steps of +5%, +10% and +15% and Input voltage decrease is displayed in steps of -10%, -15% and -25%.		
	The Output voltage level is displayed in steps of 0%, +10% and +15% and -10% and -20%.		
<b>CONNECTION DELAY</b>			
Start up Delay	Incorporates a start-up delay (between 10 secs to 6 minutes depending on model)		
Intelligent Delay	See TimeSave™ function on page 3 for full description		
<b>TECHNOLOGY</b>			
Zero Voltage Switching	Transformer tap switching takes place at zero point in voltage waveform		
Response time	Within 0.1 second		
<b>PERFORMANCE</b>			
Thermal endurance	Continuously rated at full load at full boost (full boost represents worst case)		
Over-voltage endurance	Runs continuously without damage at maximum permissible input voltage		

Vin = Input Voltage Vout = Output Voltage

### 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



Front panel  
Case type A and B



Front panel  
Case type D

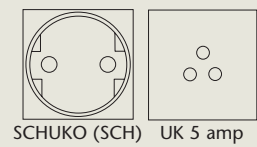
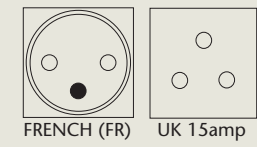
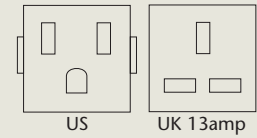


Front panel  
Case type C



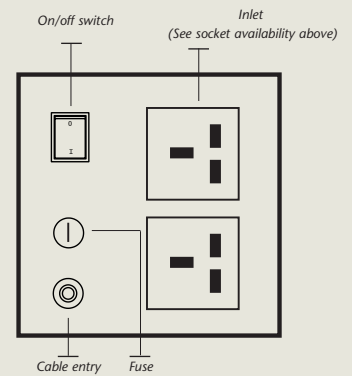
Front panel  
Case type E

### SOCKET AVAILABILITY

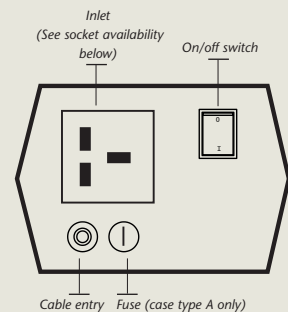


Any of the above sockets types can be ordered on the rear panels

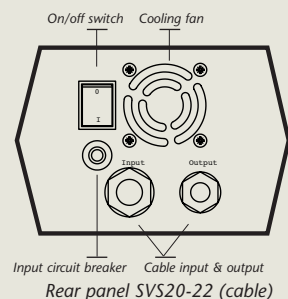
### REAR PANELS



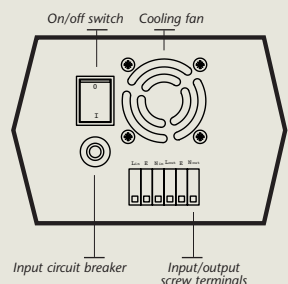
Rear panel Case type C and D



Rear panel Case type A and B



Rear panel SVS20-22 (cable)



Rear panel SVS20-22 (terminals)



All weights and dimensions  
are approximate.  
Specifications are subject to  
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*The Power to Protect*