



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

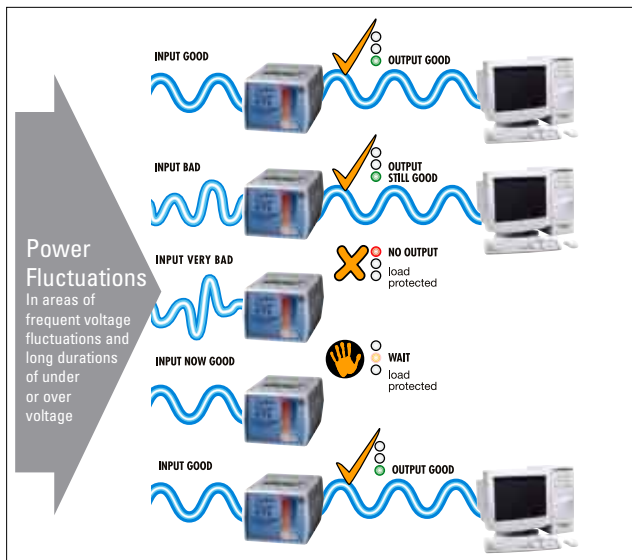
The Sollatek SVS monitors the mains voltage continuously. If the voltage rises or drops, the SVS will stabilise the output to ensure the voltage reaching your equipment remains constant at 230V (±6%) or 110V (±6%) for US voltage systems, within the operating range of the unit. (See Input and Output Voltage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

THE SVS PRINCIPLE



† 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.

FEATURES

- Microprocessor controlled stabiliser
- Very wide input voltage range
- Excellent output voltage stability
- Includes surge and spike suppression
- 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.† This is to allow neutralisation of compressor gases, critical in such applications.
- Has a very wide voltage response range of 140V to 295V (-25% to +19%). (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.†
- 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.

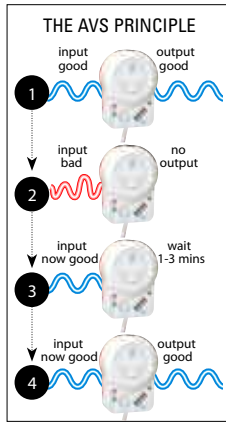
THE SOLLATEK SINGLE PHASE SVS MODELS

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[†] 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

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 returns to normal, the SVS checks the duration of the OFF time. If the unit has been off for more than 3 minutes[†] 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!

[†] 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 please refer to Page 5.

PRODUCT SELECTION TABLE

MODEL	Amps	VA@240V	Socket	Weight	Dims	Case	type
SVS02-22	2	480	UK FR SCH UK5	2.0	240 x 178 x 150	A	plastic
SVS04-22	4	960	UK FR SCH UK5	3.0	240 x 178 x 150	A	plastic
SVS08-22	8	1920	UK FR SCH UK15	5.0	270 x 387 x 160	B	plastic
SVS15-22	15	3600	FR SCH UK15	8.0	270 x 387 x 160	B	plastic
SVS20-22	20	4800	Cable	14.0	270 x 387 x 160	B	plastic
SVS20-22	20	4800	Terminal	14.0	270 x 387 x 160	B	plastic
SVS50-22	50	12000	Direct wiring	29.0	480 x 480 x 380	E	metal
SVS75-22	75	18000	Direct wiring	38.0	480 x 480 x 380	E	metal
MODEL	Amps	VA@115V	Socket	Weight	Dims	Case	type
SVS02-11	2	230	US	1.5	240 x 178 x 150	A	plastic
SVS04-11	4	460	US	2.0	240 x 178 x 150	A	plastic
SVS08-11	8	920	US	3.0	240 x 178 x 150	A	plastic
SVS15-11	15	1725	US	5.0	270 x 387 x 160	B	plastic
SVS20-11	20	2300	US	7.0	270 x 387 x 160	B	plastic



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



Case type E

Dims (unpacked): 480 x 480 x 380 mm

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	
			@220V	@110V					
SVS02-29 or or	220	110 and 220	230VA	230VA	UK US	3.0	240 x 178 x 150	A	plastic
	220	110 and 220	650VA	0VA	UK US	3.0	240 x 178 x 150	A	plastic
	220	110 and 220	0VA	300VA	UK US	3.0	240 x 178 x 150	A	plastic
SVS04-29 or or	220	110 and 220	500VA	500VA	Sch US	5.0	270 x 387 x 160	B	plastic
			1000VA	0VA	Sch US	5.0	270 x 387 x 160	B	plastic
			0VA	450VA	Sch US	5.0	270 x 387 x 160	B	plastic
SVS08-29 or or	220	110 and 220	1000VA	1000VA	Sch US	9.0	270 x 387 x 160	B	plastic
			2000VA	0VA	Sch US	9.0	270 x 387 x 160	B	plastic
			0VA	900VA	Sch US	9.0	270 x 387 x 160	B	plastic
SVS1000-28 or or	110/220	110 and 220	@220V	@110V	US	5.0	270 x 387 x 160	B	plastic
	Input Voltage 220V		1000VA	0VA					
	Input Voltage 220V Input Voltage 115V		0VA	400VA max total 400VA					
SVS1000-27 Dual I/O or or	127/220	127 and 220	@220V	@110V	US	4.0	270 x 387 x 160	B	plastic
	Input Voltage 220V		1000VA	0VA					
	Input Voltage 220V Input Voltage 127V		0VA	400VA max total 400VA					
SVS2000-28 Dual I/O or or	110/220	110 and 220	@220V	@110V	US	9.0	270 x 387 x 160	B	plastic
	Input Voltage 220V		2000VA	0VA					
	Input Voltage 220V Input Voltage 115V		0VA	800VA max total 800VA					
SVS2000-27 Dual I/O or or	127/220	127 and 220	@220V	@110V	US	9.0	270 x 387 x 160	B	plastic
	Input Voltage 220V		2000VA	0VA					
	Input Voltage 220V 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 IT 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 IT 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 more suitable for professional IT 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 380

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

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
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

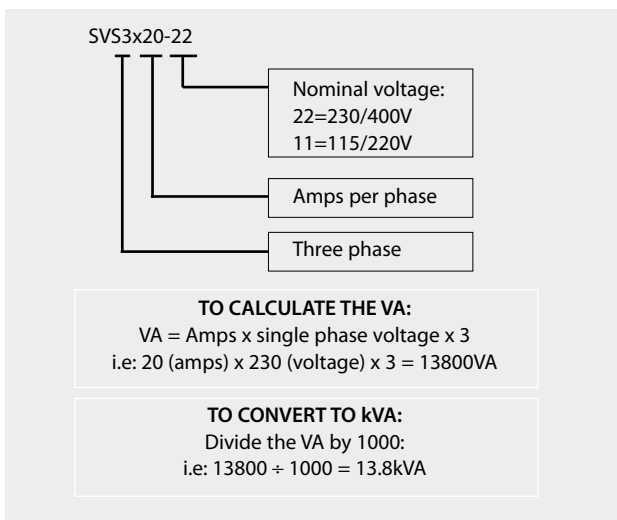
SVS3x20-22 SVS3x35-22 SVS3x50-22 SVS3x75-22 AVAILABLE ON SPECIAL ORDER ONLY

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

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:



OPTIONS

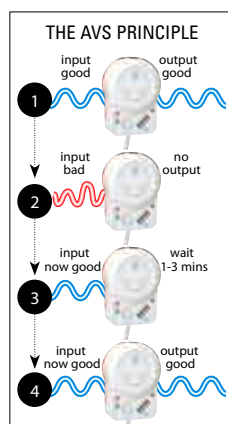
A number of options are available on the SVS:

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.



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

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.

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

General specifications

PARAMETER	115V	SPECIFICATIONS	230V
REGULATION RANGE			
Input	86 - 137V		171 - 274V
Output	115V ± 6%		230V ± 6%
Input	82 - 142V		164 - 284V
Output	115V ± 10%		230V ± 10%
INPUT VOLTAGE LIMITS			
Vin high disconnect	147		295
Vin low disconnect	72		145
Max Input voltage	160		320
SPIKE PROTECTION 160J, 6500 Amps (8/20µs). Response time <10 ns			
FREQUENCY RANGE 45-75Hz			
OUTPUT CURRENT See Product Selection Table			
LEDs 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%.			
CONNECTION DELAY			
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		
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 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	



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



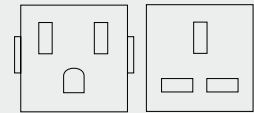
Case type C



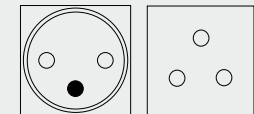
Case type E

Dims (unpacked): 480 x 480 x 380 mm

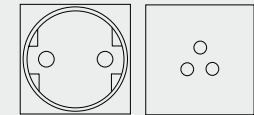
SOCKET AVAILABILITY



US UK 13amp



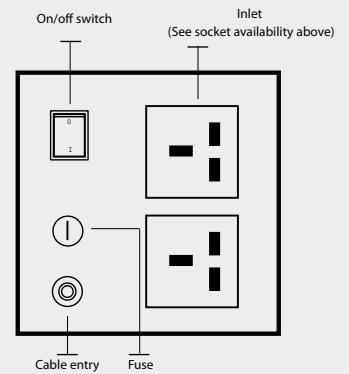
FRENCH (FR) UK 15amp



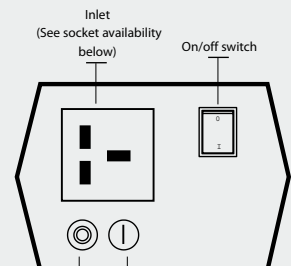
SCHUKO (SCH) UK 5 amp

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

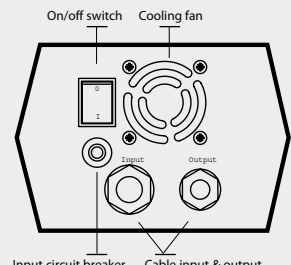
REAR PANELS



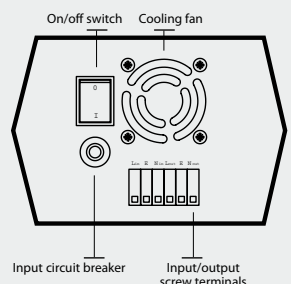
Rear panel Case type C and D



Rear panel Case type A and B



Rear panel SVS20-22 (cable)



Rear panel SVS20-22 (terminals)

Sollatek worldwide companies and agents



Distributors in over 50 countries including:

Algeria	Malawi	Zambia	Nepal	Yemen	United Kingdom
Angola	Mozambique	Zimbabwe	Pakistan	Australia	Mexico
Benin	Nigeria	Azerbaijan	Philippines	Denmark	USA
Cameroon	Sierra Leone	Croatia	Qatar	Finland	Venezuela
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Ghana	Sudan	Iraq	Taiwan	Holland	
Kenya	Tanzania	Jordan	Turkey	Norway	
Libya	Uganda	Kazakhstan	UAE	Sweden	

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TWO YEAR WORLDWIDE WARRANTY
 (subject to terms and conditions).

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 Stock code: 00024711