



 Voltright™

SOLLATEK VOLTAGE STABILISERS (SVS)

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

SVS INTRODUCTION

THE SVS HAS THE FOLLOWING ADVANCED FEATURES:

- The SVS boosts low voltage and reduces high voltage.
- 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 time (varies depends on model). (see TimeSave™ function on the opposite page).
- Has a very wide voltage response range of 145V to 290V (-26% to 18%). (see table of input and output voltage responses). Special models might have different input/output voltage range. Please refer to relevant section.
- 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.
- 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 Voltage Stabiliser (SVS) has been designed to provide a clean, regulated AC power supply to all equipment in environments with unreliable, fluctuating mains supply.



3 phase model



Single phase model



OPERATION

The 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 page 8).

APPLICATIONS

The SVS is suitable for the following electrical and electronic appliances; 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
- Surge and spike suppression
- Extremely fast response
- Over and under voltage with disconnect*
- TimeSave™ function*
- Available as single and three phase
- British design and manufacture
- 2 year worldwide warranty

* Applicable to certain SVS models

SINGLE PHASE 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

The Sollatek SVS has a built-in microprocessor which incorporates the advanced feature called 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	Cable length	Dims	Case	Type	Wall mountable	AVS/Timesave	Time delay
SVS02-22	2	480	UK EU UK5	2.0	2	190 x 100 x 124	A	plastic	No	Yes	Yes
SVS04-22	4	960	UK EU UK5	3.6	2.15	190 x 100 x 124	A	plastic	No	Yes	Yes
SVS04-22E	4	230	EU	7.2	1.5	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS08-22	8	1920	UK EU UK15	7.2	1	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS12b-22	12.5	3000	UK	9.0	1.5m	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS15-22	15	3600	EU UK15	9.0	1.5	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS16-22	16	3840	EU	9.0	1	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-22	20	4800	Cable	15.0	1.5	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
SVS20-22WM	20	4800	Terminal	20	-	300 x 200 x 280	C	metal	Yes	Yes	Yes
SVS35-22WM	35	8400	Terminal	29.0	-	330 x 330 x 440	D	metal	Yes	Yes	Yes
SVS50-22WM	50	12000	Direct wiring	29.0	-	330 x 330 x 440	D	metal	Yes	Yes	Yes
SVS75-22WM	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	2	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS04-11	4	460	US	5.0	2.15	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS08-11	8	920	US	5.0	1	187 x 115 x 95	A	plastic	No	Yes	Yes
SVS15-11	15	1725	US	5.0	1	162 x 132 x 275	B	plastic	No	Yes	Yes
SVS20-11	20	2300	US	7.0	1.50	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

Wall mountable

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
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SPECIAL VOLTAGE

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	220	110 and 220	230VA	and 230VA	UK US	3.0	240 x 178 x 150	A	plastic	No
or	220	110 and 220	650VA	and 0VA	UK US	3.0	240 x 178 x 150	A	plastic	No
or	220	110 and 220	0VA	and 300VA	UK US	3.0	240 x 178 x 150	A	plastic	No
SVS04-29	220	110 and 220	500VA	500VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
or			1000VA	0VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
or			0VA	450VA	Sch US	5.0	270 x 387 x 160	B	plastic	No
SVS08-29	220	110 and 220	1000VA	1000VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
or			2000VA	0VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
or			0VA	900VA	Sch US	9.0	270 x 387 x 160	B	plastic	No
SVS1000-28	110/220	110 and 220	@220V	@110V	US / EU	5.0	270 x 387 x 160	B	plastic	No
or	Input Voltage 220V		1000VA	0VA						
or	Input Voltage 220V		0VA	400VA						
or	Input Voltage 115V		Max total 400VA							
SVS1000-27 Dual I/O	127/220	127 and 220	@220V	@110V	US / EU	4.0	270 x 387 x 160	B	plastic	No
or	Input Voltage 220V		1000VA	0VA						
or	Input Voltage 220V		0VA	400VA						
or	Input Voltage 127V		max total 400VA							
SVS2000-28 Dual I/O	110/220	110 and 220	@220V	@110V	US / EU	9.0	270 x 387 x 160	B	plastic	No
or	Input Voltage 220V		2000VA	0VA						
or	Input Voltage 220V		0VA	800VA						
or	Input Voltage 115V		Max total 800VA							
SVS2000-27 Dual I/O	127/220	127 and 220	@220V	@110V	US / EU	9.0	270 x 387 x 160	B	plastic	No
or	Input Voltage 220V		2000VA	0VA						
or	Input Voltage 220V		0VA	800VA						
or	Input Voltage 127V		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 it 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 380mm
CASE TYPE	D

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



SVS USE IN COLD CHAINS

VOLTAGE REGULATORS FOR COLD CHAINS

The purpose of the vaccine “cold chain” is to maintain product quality from the time of manufacture until the point of administration by ensuring that vaccines are stored and transported within WHO-recommended temperature ranges.

Vaccine, blood and medical refrigerators are highly sensitive equipment that store critical contents, both expensive and life saving. Ensuring the well-being of the equipment with a healthy power supply is key to the safe operation and maintenance of accurate temperatures of the cabinets at all times.

WHEN TO USE A SOLLATEK VOLTAGE STABILISER (SVS)

The Sollatek SVS range is PQS compliant (WHO performance, quality and safety) and is strongly recommended in the following situations:

- 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.



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.

STANDARD RANGE

SVS04-22

Description

The Sollatek SVS04 has a set of LEDs to indicate state of the input voltage at all times and 5 LEDs to indicate the output voltage supplied to your load. This is a standard input/output voltage range and is suitable for areas where the power doesn't normally drop to very low levels.



SVS04-22 Input and Output voltage response

		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	

EXTENDED RANGE

SVS04-22E

Description

The Sollatek SVS04E has a modern state of the art 7 segment LCD display to indicate accurately the state of the input and output at all times. The "E" signifies that it is suitable for extended range of voltage. It can operate to as low as 100V (for a 230V supply) and still provide workable, safe voltage for the cold chain equipment. The SVS04E should be used where power fluctuations are severe and expected to drop down to very low levels.



SVS04-22E Input and Output voltage response

		230V																																					
INPUT	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	290
OUTPUT	OFF	182	191	200	209	218	227	236	211	219	227	235	242	216	223	230	236	243	215	221	227	232	238	244	215	220	225	230	235	240	245	215	219	224	228	233	238	242	OFF

EXTENDED RANGE

SVS20-22E & SVS45-22E

Description

The Sollatek SVS20E & SVS45E are 5kVA and 10kVA stabilisers, suitable for cold rooms and large single phase refrigeration equipment. The "E" signifies that it is suitable for extended range of voltage. It can operate to as low as 100V (for a 230V supply) and still provide workable, safe voltage for the cold chain equipment. The "E" models should be used where power fluctuations are severe and expected to drop down to very low levels.



SVS20E & SVS45E Input and Output voltage response

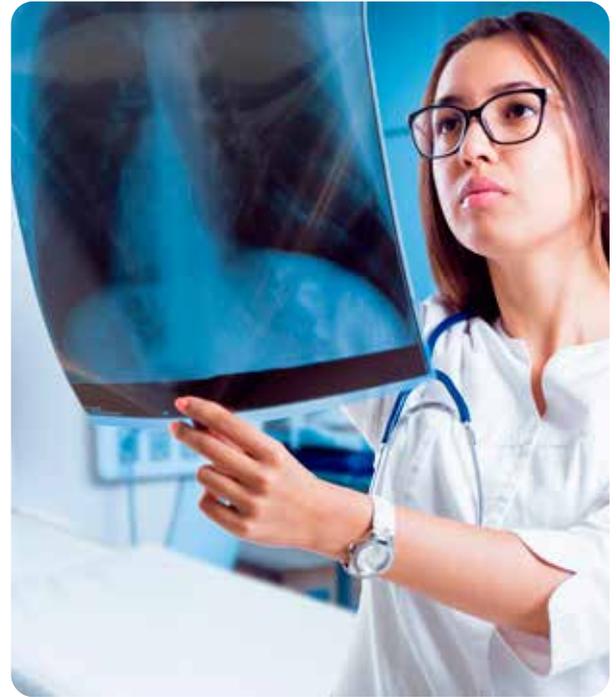
		230V																																					
INPUT	0-105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	305	306
OUTPUT	OFF	206	216	225	234	223	231	240	227	235	222	230	237	223	230	236	222	228	234	240	225	230	236	220	225	230	235	240	223	228	233	237	221	225	229	234	238	255	OFF

SVS - THREE PHASE MODELS

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 standard Sollatek three phase SVSs boast the input voltage range of -26% to +18% (and +/-6% output), 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 SVS3x45 has an input range of +/-20% but a more accurate output of +/-3% making it ideal for all electrical and electronic loads like IT equipment.



OPTIONS

The following functions are available on the SVS:

1. AVS™ FUNCTION

(refer to page 3 for detailed description).

2. TIMESAVE™ FUNCTION

(refer to page 3 for detailed description).

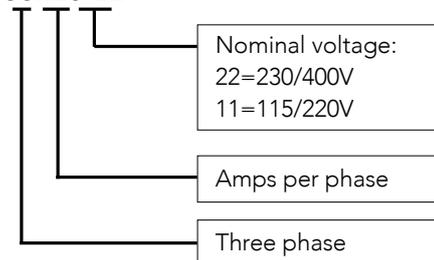
SVS3 THREE PHASE SPECIFICATIONS

MODEL	Amps	kVA@230V/400	Weight	Dims
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

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:

SVS3x20-22



TO CALCULATE THE VA:

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

TO CONVERT TO kVA:

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

THREE PHASE

SVS3x35

Description

The SVS3x35 is a 35Amps per phase stabiliser ideal for smaller 3 Phase loads. All 3 phases are individually monitored. It has a standard input & output voltage range protection.



SVS3x35 Input and Output voltage response

		230V																															
INPUT	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260
OUTPUT	141	150	157	163	171	177	184	192	200	206	213	220	227	234	240	220	227	233	239	220	224	230	235	241	220	225	230	235	240	245	250	255	OFF

THREE PHASE

SVS3x45

Description

The SVS3x45 is a 45Amps per phase stabiliser ideal for larger 3 Phase loads. All 3 phases are individually monitored on LCD displays. The SVS3x45 has a more accurate voltage output accuracy (+/-3%), suitable for IT equipment as well as more general electrical & refrigeration equipment. The input range is +/-20%.



SVS3x45 Input and Output voltage response

		230V																																							
INPUT	0-105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305
OUTPUT	OFF	136	143	148	154	161	167	173	179	186	192	198	204	210	216	222	230	235	230	236	230	236	230	235	230	235	229	233	233	227	232	236	230	234	227	230	235	232	243	247	OFF

THREE PHASE

SVS3x75

Description

The SVS3x75 is a 75Amps per phase stabiliser ideal for large 3 Phase loads. The unit has 2 modern displays, for input & output. All 3 phases are individually monitored and displayed simultaneously. It has a standard input & output voltage range protection.



SVS3x75 Input and Output voltage response

		230V																															
INPUT	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260
OUTPUT	141	150	157	163	171	177	184	192	200	206	213	220	227	234	240	220	227	233	239	220	224	230	235	241	220	225	230	235	240	245	250	255	OFF

THE SVS - GENERAL SPECIFICATIONS

Input/output range

Input range	-26% to +19%. Some models might differ
Output accuracy	+/-6%. Some models might differ
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) .

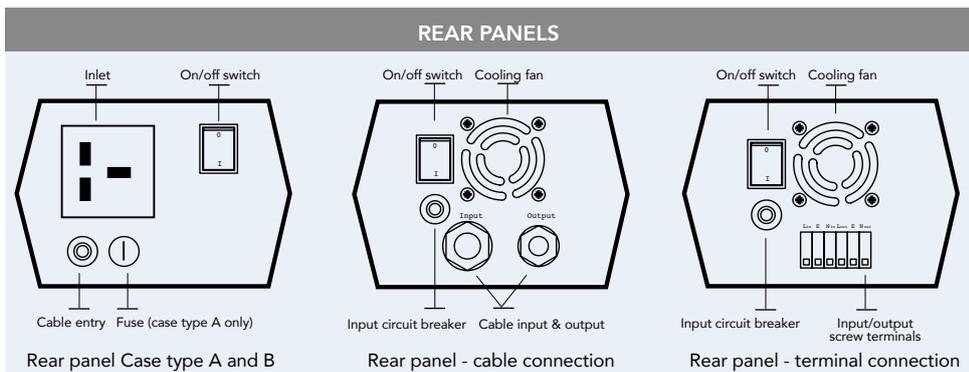
General

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.

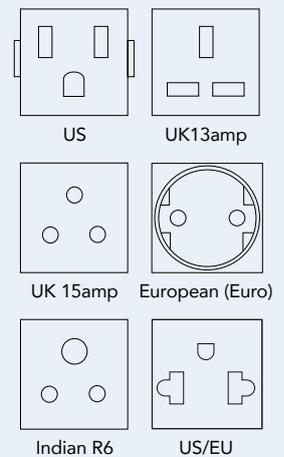
INPUT AND OUTPUT VOLTAGE RESPONSE FOR STANDARD MODELS

		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



SOCKET AVAILABILITY



Any of these socket types can be ordered on the rear panels





SOLLATEK'S EXPERTISE EXTENDS WORLDWIDE THROUGH LOCAL NETWORKS



- ▲ **HEAD OFFICE:** SOLLATEK UK
- ▲ **MANUFACTURING FACILITIES:** EGYPT, THAILAND, CHINA.
- **LOCAL SOLLATEK COMPANIES:** USA, MEXICO, TURKEY, EGYPT, NIGERIA, GHANA, KENYA, SOUTH AFRICA, INDIA.
- **DISTRIBUTORS**

GLOBAL AND LOCAL

Established for over 35 years in the United Kingdom, Sollatek is a manufacturer of innovative products in power control, energy saving, temperature control and solar energy.

Operating from 12 countries and a global distribution network in 60 more. Sollatek has grown to become a household name, particularly in harsh and demanding environments where reliability and affordability are essential to everyday life.

The Sollatek voltage protection product range now includes full lines of voltage switches, stabilisers, conditioners and uninterruptible power supplies (UPS). So whether the need is to control the quality or continuity of electrical supply, Sollatek is sure to have a solution.

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