Voltsure™

The Sollatek **PowerBack**

Transformerless, non-linear range




Clean and efficient backup power

Sollatek Voltage Protection Products

Sollatek™
the power to protect

Voltsure™

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Transformerless, non-linear range

BACKUP POWER FOR:

- Office equipment and appliances, including lighting
- Home appliances, including air conditioners and refrigeration

During power cuts or shortages in power supply from the utility, essential power loss means you are unable to cool or heat your house/office or run necessary appliances and lights.

Until the grid supply is restored, there are some alternatives, such as candles, torches, lanterns or even diesel generators. However, all of these have serious disadvantages such as; risk of fire, insufficient power, or expensive diesel bills and unpleasant fumes and noise, which makes their use inpractical on a regular basis.

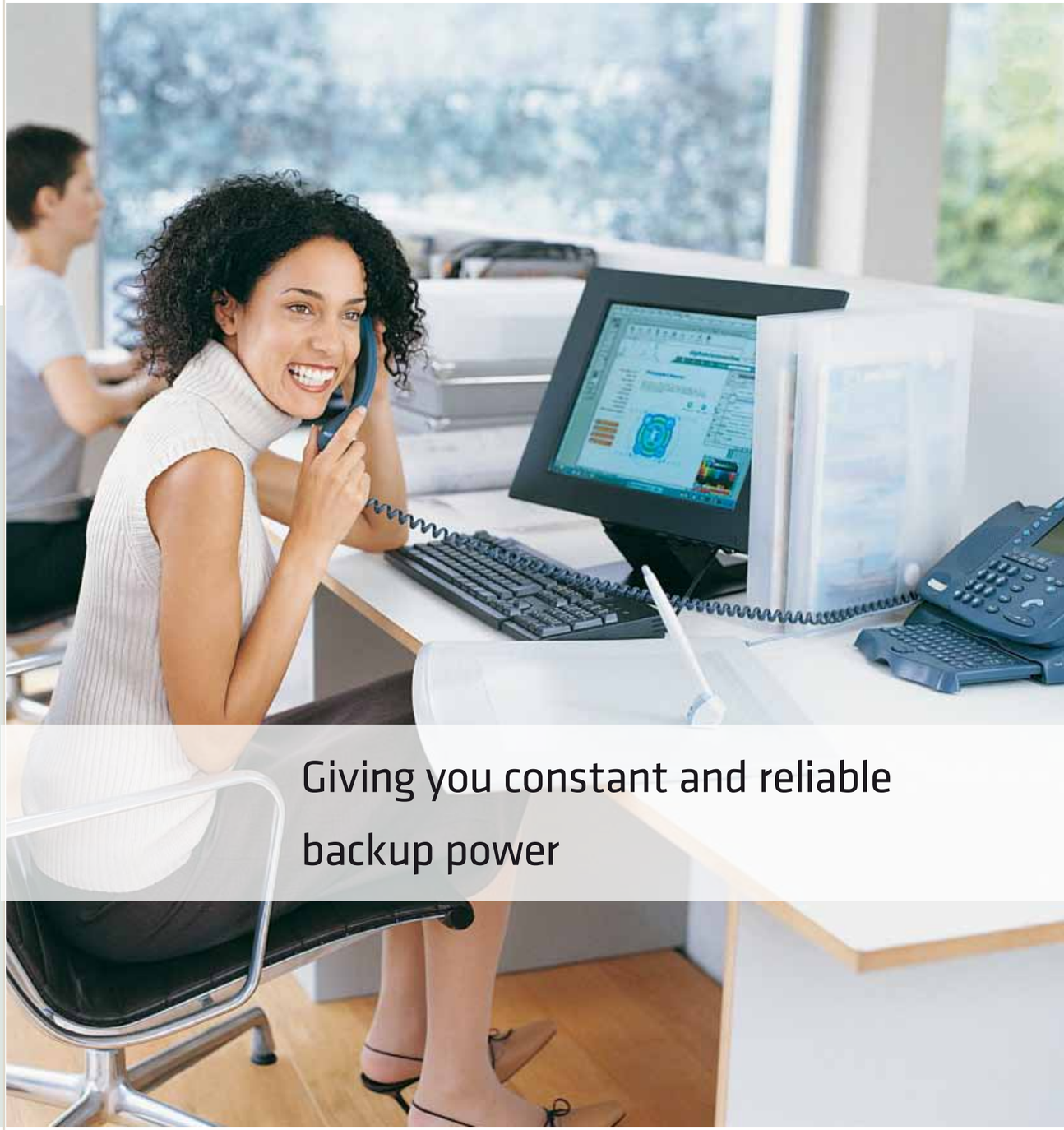
The Sollatek PowerBack is an emergency backup system that makes it possible for homes or offices to have continued access to electrical service during power outages. The Sollatek PowerBack is a battery-based system that will provide simple and silent operation.

The PowerBack is made up of two basic components; an inverter/charger and a set of DC batteries. The inverter/charger converts AC power from the grid to DC to charge the batteries. When power from the grid is lost, the inverter converts the DC battery power to AC for use in the home or office. The PowerBack can provide mains-like power for all your essential appliances and lights as long as the power consumed does not exceed the rating of the PowerBack (please refer to the specifications table).

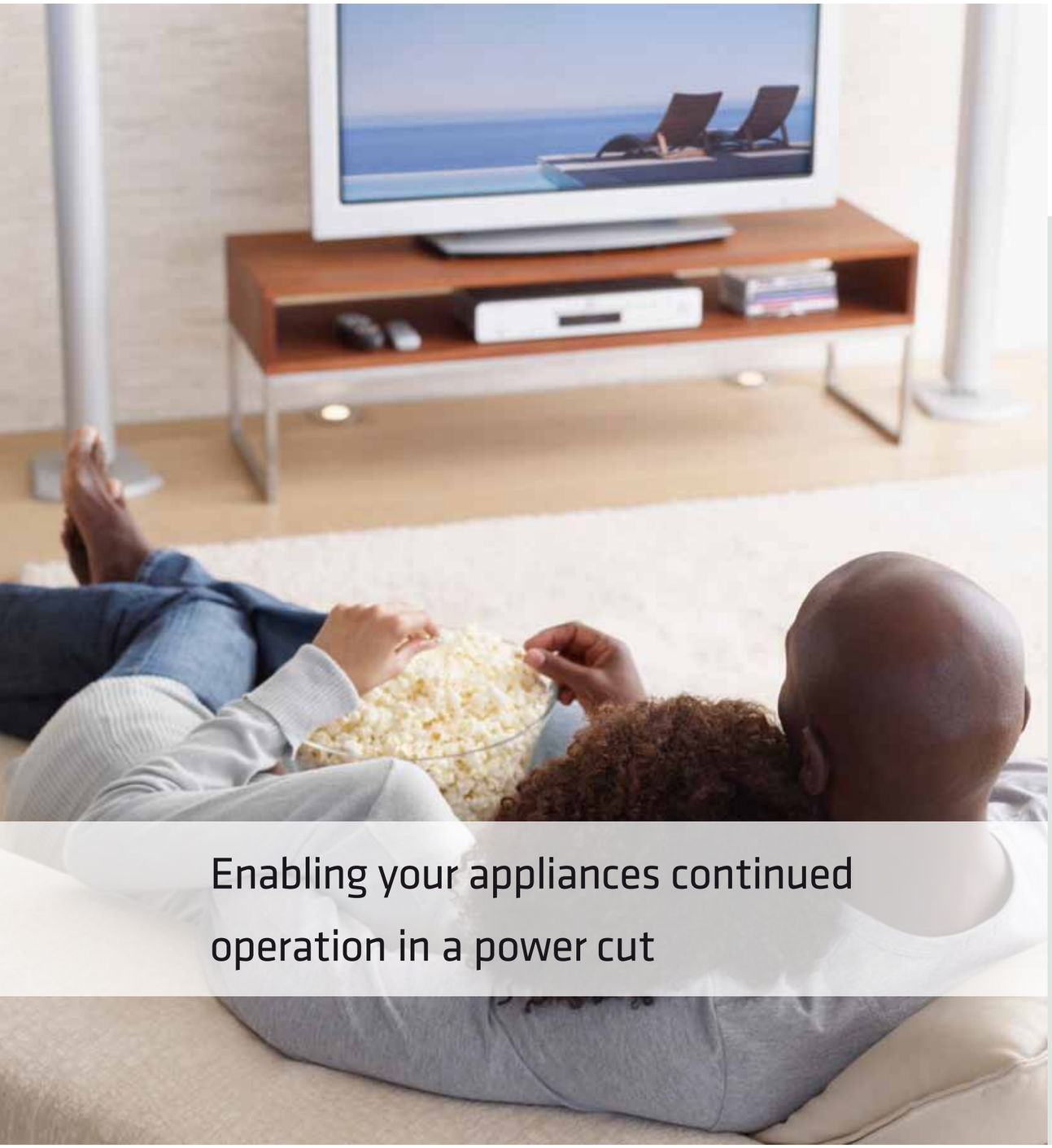
The PowerBack charges the batteries when mains power is available. However, it will also accept other sources of power like Generator power and/or DC power (e.g. from Solar System).

The back up time the PowerBack can provide in a power cut depends on its overall capacity (determined by the number of the batteries connected and their state of charge), as well as the type and number of appliances connected to it.

Voltsure™ PowerBack Transformerless non linear range



Giving you constant and reliable backup power



Enabling your appliances continued operation in a power cut

Voltsure™ PowerBack Transformerless non linear range

THE SOLLATEK POWERBACK NON-LINEAR RANGE

THE SOLLATEK PB5000

THE SOLLATEK PB500

THE SOLLATEK PB3000

Main features and benefits

- Suitable for all type of appliances and electrical and electronic equipment
- Elegant modern design
- Compact size (excluding batteries and installation accessories)
- Highly efficient back up when critically needed
- Clean, reliable, Pure Sinewave power
- Fast transfer time (15millisecond) comparable to off-line/ line interactive UPS
- Transfer time configurable to cope with Genset output power.
- Three step intelligent charging to reduce recharge time.
- Intelligent fan cooling determined by the load
- Supports heavy duty appliances e.g. air conditioners*
- Comprehensive LCD display *
- Fully configurable by end user*
- Power Saving Mode*
- Overload, short circuit, high temperature protection
- Low battery alarm*

* PowerBack5000 and PowerBack3000

FEATURES

The PowerBack is designed to provide power when it is needed most. Once installed by a qualified electrician and fitted with the recommended battery, it will provide many years of maintenance free operation. Sollatek recommends that you use deep cycle batteries. Smallest batteries that can be used are 100Ah per battery. 4 Batteries of 12Vdc wired in series are required to provide 100Ah @ 48V (PB5000). However, 200Ah is the recommended minimum ampere hour capacity per battery to provide a realistic autonomy.

Modern, efficient and reliable

ThePowerBack is available in a modern desktop-like enclosure that will blend with house and office equipment. The operation of the unit is transparent to the user and will operate automatically in case of power cut. With a fast, 15millsecond transfer time, the PowerBack ensures that your critical equipment such as computers, dish receivers or televisions are not interrupted and continue to operate normally.

Clean, reliable AC power

Unlike diesel generators, the output power is clean, stable and safe to use with all sensitive equipment from household electronics to medical electronic equipment such as ultrasound machines, x-ray machines etc.

Robust & versatile

The PowerBack is robust and can cope with output (for charging) from diesel generators and other sources such as biomass fuels, solar power or wind power. It is also robust in handling heady duty loads such as air conditioners or other household motor appliances.

Totally configurable & informative display (PB5000 and PB3000 only)

The PowerBack is equipped with a comprehensive LCD showing input voltage, frequency, output voltage, loading in percentage, mode (whether charging or on inverter), rated voltage and fault indication. The configuration switches allow you to easily change a number of key parameters such as: Input range (whether used with normal, generator or wide voltage range), Output range (220, 230, 240V), battery type, and energy save mode.

PB5000

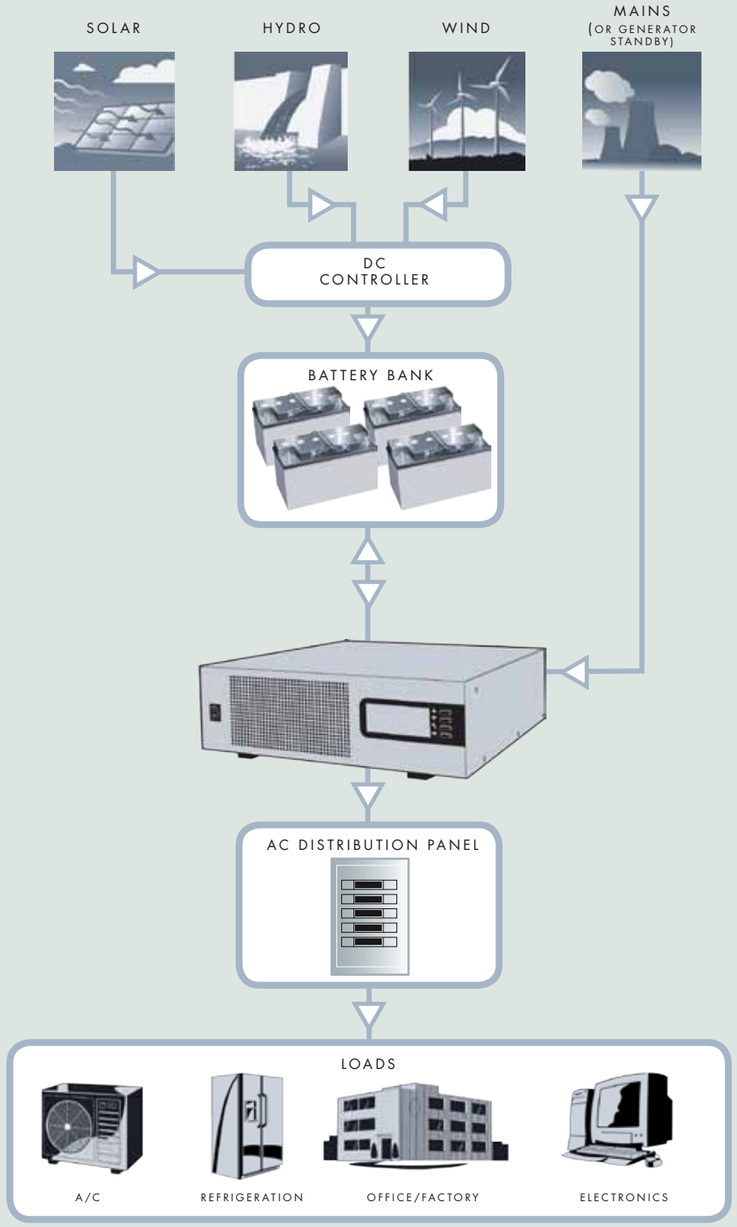
PB3000

Safe and secure

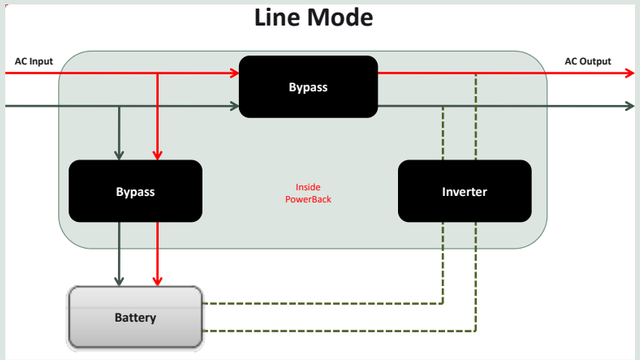
The PowerBack is fitted with comprehensive alarms to indicate a number of conditions such as site faults, bad battery, over load, output short circuit, fan faults, abnormal output voltage, etc.

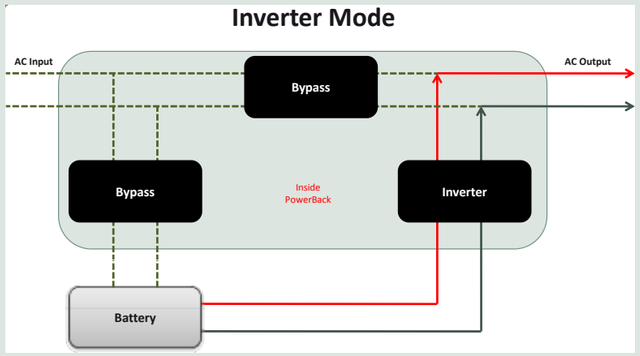
Voltsure™ PowerBack Transformerless non linear range

A TYPICAL INSTALLATION DIAGRAM OF THE SOLLATEK POWERBACK



OPERATION MODES





APPROXIMATE BACK-UP TIMES

	Autonomy in minutes	
Load (VA)	100Ah 48V	200Ah 48V
500	245	490
1000	122	245
1500	82	163
2000	61	122
2500	49	98
3000	41	82
3500	35	70
4000	31	61
4500	27	54
5000	24	49

Back-up times depend on the quality of the battery, age of battery and type of battery. Specifications of batteries varies from one manufacturer to another.

RECOMMENDED ACCESSORIES

• **Sollatek deep cycle batteries.** Batteries are subjected to high and low temperatures, unpredictable charging, daily cycling as well as potentially partial states of discharge. Therefore it is of utmost importance to choose the right battery for the right application in order to maximise battery life. Sollatek not only offers the complete range of batteries available in the market but also provides expert advice on the choice of battery to suit a customer's particular application.

• **Sollatek AVS30 Appliance Guard** (Automatic Voltage Switcher). Essential when the PowerBack is in an area that suffers from excessive voltage fluctuations. Rated at 30 amps, the AVS30 incorporates intelligent time delay for protection of refrigeration equipment and complete circuits.

• **Sollatek DSP1P-0.** For areas subject to frequent lightning related damage, Sollatek advise the use the DSP1P 20kA mains surge and spike protection device.


BATTERY

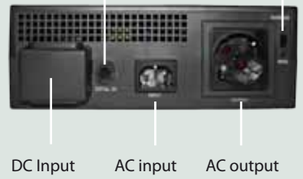

AVS30 DSP1P-0

CONTROLS AND CONNECTIONS

PB5000

PB3000

PB200/1000/500



Voltsure™ PowerBack Transformerless non linear range

SPECIFICATIONS

Model type	PB5000	PB3000	PB2000	PB1000	PB500
Specification. Mains power					
Rated output power	5000VA / 4200W	3000VA / 2520W	2000VA / 1200W	1000VA / 600W	500VA / 300W
Input voltage waveform	sinusoidal (utility or generator)				
Nominal input voltage	230Vac				
Input voltage range	90-280Vac				
Low line disconnect	170Vac (normal), 90Vac (Generator/wide range)		170Vac (normal), 90Vac (wide range)		
Low line re-connect	180Vac (normal), 100Vac (Generator/wide range)		180Vac (normal), 100Vac (wide range)		
High line disconnect	280Vac				
High line re-connect	270Vac				
Max AC input voltage	300Vac rms				
Nominal input frequency	50Hz / 60Hz (Auto detection)				
Low line frequency disconnect	40±1Hz		40Hz±1Hz		
High line frequency disconnect	65±1Hz		No limit		
Output voltage waveform	same as input waveform				
Output short circuit protection	circuit breaker 40A	circuit breaker 30A	No protection on line mode		
Efficiency (line mode)	>95%				
Transfer switch rating	40A	30A	16A		
Transfer time (AC to DC)	10ms (typical), 20ms (Gen Mode)		Typical 15-20ms, 40ms max		
Transfer time (DC to AC)	10ms (typical), 20ms (Gen Mode)		Typical 15-20ms, 40ms max		
Inverter Mode Specifications					
Output voltage waveform	pure sine wave		Modified sine wave		
Power factor	0.84	0.8	0.6		
Nominal output voltage(V)	230 (+/-10%)	231 (+/-10%)	230 (+10/-18%)	231 (+10/-18%)	232 (+10/-18%)
Output frequency(Hz)	50Hz / 60Hz ± 1Hz				
Nominal efficiency	>90%		>80%		
Overload protection	fault after 5s@≥150% load		fused		
	fault after 10s@110%~150% load		fused		
Surge rating	10000VA	6000VA	None		
Capable of starting electric motor	2.5HP	1.5HP	None		
Output short circuit protection	current limit (fault after 4 cycles max)current limit (fault after 4 cycles max)		Deep discharge, overcharge, short circuit, overload.		
Nominal DC input voltage	48V	24V	24V	12V	
Low DC alarm	42.0 ± 1.2Vdc	21.0 ± 0.6Vdc	21.0 ± 0.8Vdc	10.5 ± 0.4Vdc	
Low DC alarm recovery	43.2 ± 1.2Vdc	21.6 ± 0.6Vdc	21.6 ± 0.8Vdc	10.8 ± 0.4Vdc	
Low DC shut-down	40.0±1.2Vdc	20.0 ± 0.6Vdc	20.0 ± 0.8Vdc	10.0 ± 0.4Vdc	
Low DC shut-down recovery	44.0±1.2Vdc	22.0 ± 0.6Vdc	unit cannot auto recovery		
High DC Shut-down	60.0±1.2Vdc	30.0 ± 0.6Vdc	32.0 ± 0.8Vdc	16.0 ± 0.4Vdc	
High DC shut-down recovery*	58.0±1.2Vdc	29.0 ± 0.6Vdc	unit cannot auto recovery		
Power saver setting	0W (Set "OFF" at LCD)		Without this function, but unit idle power consumption is less than 10W		
Charge Mode Specifications					
Input voltage range	180V~ 270Vac(Normal range) 100V~ 270Vac(gen/wide range)	100V~ 270Vac(wide range)	100V~ 280Vac(wide range)	180V~ 280Vac(Normal range) 100V~ 280Vac(wide range)	100V~ 280Vac(gen/wide range)
Nominal output voltage(V)	Depending on battery type				
Nominal charge current	20A(95-175v,gen/wide,only), 35A(175-275v)@35A setting, 20A(175v-275v)@20A setting	10A @ Vi/p <170Vac 20A @ Vi/p =230Vac 10A @ Vi/p >280Vac	10A max		
Charger short circuit protection	automatic unit shutdown				
Over charge protection	Bat. V ≥60Vdc, Fault, Buzzer alarm	Bat. V ≥30Vdc, Fault, Buzzer alarm	32V +/-0.8V, Fault, Buzzer alarm	16V +/-0.4V, Fault, Buzzer alarm	
Charge algorithm	Three stage. CC.CV AND FLOAT				
Battery nom voltage	48V	24V	24V	12V	
Flooded	CC/CV 58.4 - Float 53.6	CC/CV 29.2 - Float 27	CC/CV 28.8 - Float 27.4	CC/CV 14.4 - Float 13.7	
AGM/Gel	CC/CV 56.4 - Float 54	CC/CV 28.2 - Float 27	CC/CV 28.8 - Float 27.4	CC/CV 14.4 - Float 13.7	
General Specifications					
Safety certification	CE (EN60950)				No
EMI classification	EN62040-2 C2				No
Environment operating temp. Deg C.	0~40				
Storage temperature. Deg C.	-15~50				
Altitude, operational.	Elevation <1500m				
Relative Humidity	5% to 95% non condensing				
Audible noise	60dB max		50dB max		
Cooling	Forced air, variable speed fan		Forced air, fan.		
Dimension WxHxD	350x110x407	330x268x76	224x255x80		
Weight Kg	9	5	2.5	2.3	2

Sollatek's **global infrastructure** is delivered through a network with **local presence**

Global and Local

With a customers across the world and a local presence in more than 50 countries, Sollatek is able provide support services wherever you are.

Algeria	Egypt	Jordan	Nigeria	Sweden	USA
Angola	Finland	Kenya	Norway	Sudan	Venezuela
Australia	Ghana	Kazakhstan	Pakistan	Taiwan	Yemen
Azerbijan	Greece	Libya	Philippines	Turkey	Zambia
Benin	Holland	Malawi	Qatar	Tanzania	Zimbabwe
Cameroon	Hong Kong	Mexico	Saudi Arabia	UAE	
Croatia	India	Mozambique	Sierra Leone	Uganda	
Denmark	Iraq	Nepal	South Africa	United Kingdom	

Sollatek™

the power to protect

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ISO9001: 2008 accredited company

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