

Green Power UPS

from 100 to 200 kVA
High efficiency



40 YEARS
OF
UPS
SUCCESS

 **socomec**
Innovative Power Solutions **UPS**

Three-phase
UPS system

Green Power

from 100 to 200 kVA

the solution that combines high availability
with energy efficiency

Given the present context, with soaring energy costs and urgent environmental issues, there is no surprise that users are on the look out for new cost-effective, efficient and adaptable technical solutions.

Data Centres, prodigious consumers of electrical energy for their operational functions and air-con systems, are among

the economic sectors that are first and foremost concerned.

SOCOMEc, with 40 years of specialist experience, is one of the first manufacturers to undertake an active approach to improving the energy efficiency of its UPS systems.

As a concrete example of this commitment, SOCOMEc was one of the first to sign up

to the European Commission's "Code of Conduct" covering UPS equipment. The purpose of this charter is to make sustainable reductions in energy consumption whilst maximising the output efficiency of the UPS system.



Green Power UPS
from 100 to 200 kVA

UP TO
96%

The highest efficiency
performance on the market



The **Green Power** efficiency
is certified by TÜV SÜD



Your protection for

- > Data Centres
- > Telecommunications
- > Service sector



Our commitment to *Green Power*

The charter that SOCOMEC promises to respect is based on the following 3 themes:

- to reduce electrical infrastructure costs by improving output, reducing equipment space, and better management and optimisation of the battery (energy saver),
- to improve exploitation of the electrical infrastructure upstream and downstream by using a “clean” rectifier and equipment functioning that is adapted to leading loads (e.g. servers),
- to define “best practices” when designing and building the Data Centre, especially concerning airflow.

Your *Green Power* advantages



Significant cost savings (TCO)

- **Maximum energy saving**
The 96% output efficiency means you can save thousands euros of on your annual energy bill
- **Highly compact UPS and battery**
The reduced footprint of the UPS and its battery saves you valuable floor space
- **Extended battery life and performance**
 - **EBS** battery charging management improves the battery lifespan
 - DC bus optimum voltage



High availability and flexibility

- **Second generation global IGBT controlled technology**
- **Flexible modular upgrades**
Easy to add supplementary (units up to 8)
- **Battery health check (BHC)**
For optimum battery reliability
- **High availability architectures**
 - Parallel redundant architecture
 - Internal Automatic Cross Synchronisation (**ACS**)



Electrical network optimised

- **Smaller upstream installation, due to very low input current**
Input power factor > 0.99 and input current harmonic distortion < 3 %
- **12% more active power for servers**
Due to the 0.9 output power factor, all the power can be used with the latest servers
- **Designed to work with latest-generation servers**
Suitable for leading power factor loads of up to 0.9 without derating



User-friendly and advanced communication facility

- **User-friendly interface with graphic colour display**
- **Remote monitoring via standard network connection**
Web server, SNMP agent, email reporting, MODBUS TCP protocol
- **Flexible communication boards (com-slot), with up to 6 options**
Dry contacts, MODBUS serial link, PROFIBUS, DEVICE NET...
- **Tele-maintenance connection via modem to our T-SERVICE centre**
- **SMS alert**
- **Advanced server shutdown option**
For stand-alone and virtual servers
- **Language customization by the user**
Via USB memory key



Reduce costs and help save the environment

The high efficiency of the **Green Power** UPS reduces energy loss and requirement of air conditioning systems. The **Green Power** range gives the highest efficiency performance on the market: up to 96% over a wide range of uses. The graphs aside show the annual savings with 96% efficiency as against 93% and 94%, based on the average kWh cost within the European Community under typical load conditions, including the lower air conditioning costs.

The excellent power factor and harmonic content avoid over rating the supply system: i.e. switches, generator sets and protection devices.

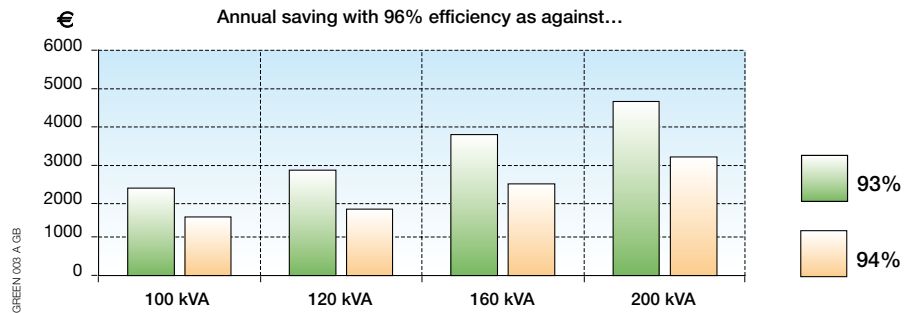
The battery is a very important part of the investment; its service life depends not only on the frequency of use but is also influenced by the charging and trickle-charge.

The **Green Power** range integrates an intelligent system that manages the charging method based on battery room temperature, thus lengthening the life of the batteries.

The **Green Power** range with its high power density occupies a foot print of 700 x 800 mm, leaving the server room to the servers.

The pull-up ventilation system (front and below air intake - outlet at top) means that it can be installed against a wall and between other cabinets.

Reducing our carbon footprint is an aim for everyone for the future of the earth and of the human race. Replacing an UPS of 93% efficiency with a product from the **Green Power** range means that the CO₂ emissions are reduced by 45%.

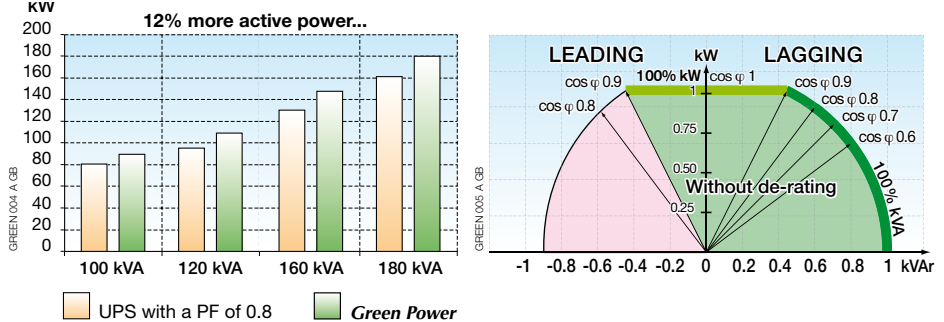


More high quality power for latest-generation leading IT loads

The **Green Power** range is designed to supply latest-generation leading servers without over rating the UPS power.

The 0.9 rated output leading to lagging power factor responds perfectly to computer system high power factor load requirements.

12% more active power, and without downgrading up to a power factor value of 0.9 for the latest generation of servers



“Clean” rectifier, for a reduced upstream installation and reduced input current

With an upstream constant power factor of 0.99 and extremely low harmonic distortion (< 3%), the SOCOMEC range of **Green Power** UPS systems significantly optimises the upstream infrastructure:

- no over-sizing of gen-sets (up to 3 times, in certain cases),
- the distribution control boards and upstream cables are also reduced in size,
- the overall installation output power is noticeably improved.

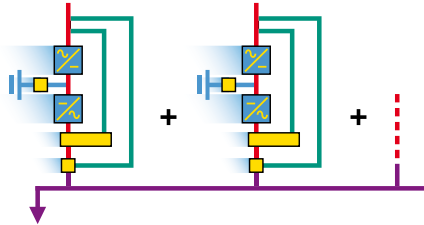




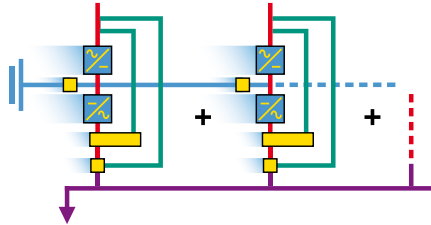
Innovative architectures

- **Green Power modular parallel**, an easy evolution up to 8 modules.

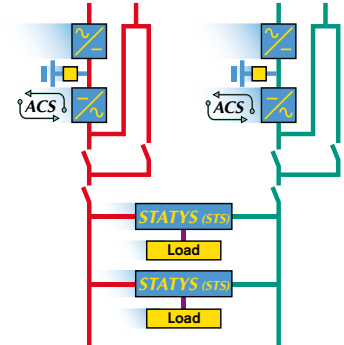
DEFYS 093 A - GREEN 006 A - GREEN 012 A GB



- **Shared battery**, optimisation of the battery size.



- **Double bus architecture**, for a very high availability (TIER III or TIER IV classification)



ACS: Automatic Cross Synchronisation
STS: Statys Transfer Switch



Advanced interface

- **User-friendly graphic colour display**
Gives a clear view of the UPS subassemblies status and provides the user with a full array of controls for their management.
- **USB connection with front access**
For downloading or uploading of files from a memory key such as reports, custom language, software releases...
- **LED status bar**
Gives the UPS status in 3 colours: green, yellow, or red.
- **Easy procedures for start and shutdown of the UPS**
The display gives operators a step-by-step explanation of the procedures.

- **Wide range of network connections**
Extensive communication possibilities are on offer, including: HTML page for remote monitoring, SNMP agent sending TRAP to network management station, email sent according to events selection, MODBUS TCP for BMS data transfer in MODBUS format, SMS alert.
- **Shutdown agent**
Allows sending a shutdown command to stand-alone or virtual servers.



GREEN 009 A GB



Peace of mind

Easy-to-use human interface with clear pictograms and fast menus. The instructions, alarms and settings are easily and clearly available for every user.

Simplicity means human error prevention.

T.SERVICE offers round-the-clock, 7 days-a-week control of the UPS from the SOCOMEC operational centre. The **Green Power** range sends periodical statistical reports on the network operating quality and significant events automatically, via GSM modem or the Internet. If an anomaly occurs, the sending of the information in real time allows the cause to be diagnosed immediately, with the immediate call-out of specialist engineers, if necessary.

The **Green Power** range communication solutions mean that the UPS can be integrated with the infrastructure for monitoring and control in the same way as any other IT peripherals.

The **Green Power** range can notify via mail or text message, and can integrate two physically independent Ethernet interfaces. The shutdown of the servers can be controlled, with the simultaneous remote monitoring of the UPS systems, keeping the network and sensitive data entirely safe.

Minimum MTTR and fast maintenance are also a feature thanks to the front access and the smart internal components. 24/7/365 monitoring, an extensive after sales network and modular components available in stock for a quick replacement are the answer of SOCOMEC UPS to your business's critical systems requirements.



Storage solutions

The flexibility typical of the **Green Power** UPS range opens new possibilities on the energy storage aspect of your installation to get the maximum from the high quality power supply.

The following features allow minimizing the amount of battery cabinets for an equivalent back-up time:

- ultra high efficiency of 96 %,
- very wide input voltage (-40 %/+20 %) and frequency (45 Hz to 65 Hz) rectifier acceptance without battery use,
- wide selection of battery configurations, thanks to a very flexible DC bus voltage,

SOCOMECS UPS battery solutions advantages:

- only approved and tested battery manufacturers,
- strong and safe battery cabinets or racks
- available in lead acid, Ni-Cd or battery free,
- perfectly monitored by the onboard battery monitoring system (optional),
- battery sharing possibilities (optional),
- several lifespan batteries available (3, 5 or 12 years).



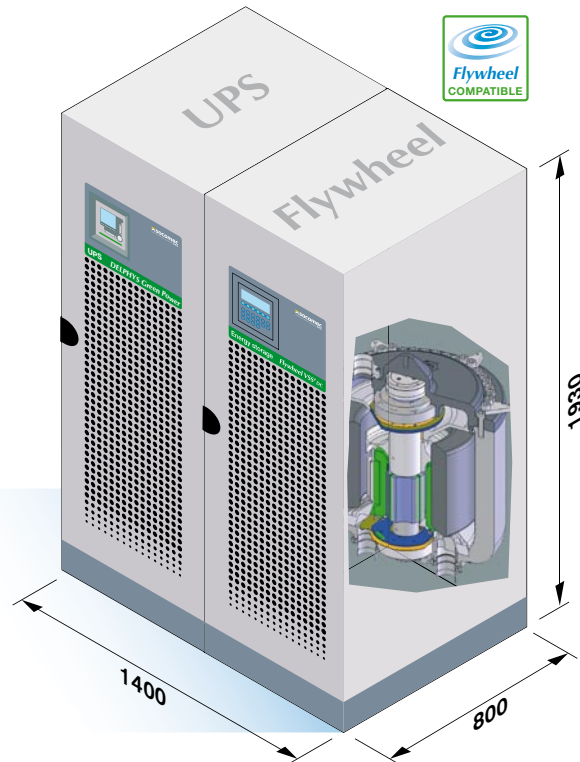
High efficiency Green UPS... A green concept without battery...

As an alternative energy storage solution, the **Flywheel** VSS⁺DC stores kinetic energy by means of a rotating set. A perfect solution for GREEN environments where lead acids batteries or other chemical compounds are not accepted.

- Low standby power losses
- Reduced maintenance: no bearing or pumps
- Half the footprint of VRLA batteries
- Silent operation 45 dB
- Strong cycling capability
- Recharged in 5 minutes
- No concrete pad needed or floor loading issues
- Environmentally responsible, sustainable, no explosive gas emissions or hazardous materials, no acid vapours, spillage or other safety issues
- High reliability: 20 years lifetime

The flywheel is a key element for a battery free, Genset-UPS systems for Industrial, Data Center, banking, broadcasting, or any "green" environments.

GREEN 011 A GB



Standard communication kit

- 2 slots for communication options.
- RS 232 serial port for modem.

Standard electrical kit

- Integrated maintenance bypass.
- Double input network.
- External backfeed control.
- Smart battery recharge temperature dependent (**EBS**).

Standard mechanical and environmental kit

- IP 20.
- Battery temperature sensor.
- Cable entrance from underside.

Communication options

- 4 additional com slots.
- Remote panel.
- ADC interface (configurable voltage-free contacts).
- **GSS** interface (generator management).
- JBUS/MODBUS tunneling.
- PROFIBUS and DEVICENET.

Electrical options

- External maintenance bypass.
- Extended back-up time.
- Additional battery chargers.
- Isolation transformer.
- Integrated backfeed protection.
- Output synchronisation (**ACS**).

Mechanical and environmental options

- IP 32.
- Antidust filter.
- Cable entrance from top.

Remote maintenance

- **T.SERVICE** program for continuous monitoring of **Green Power** range with the SOCOMEC UPS maintenance service

Technical data

Sn [kVA]	100	120	160	200
Pn [kW]	90	108	144	180
INPUT				
Rectifier rated voltage	400 V 3ph + N		400 V 3ph	
Voltage tolerances	±20% without derating, -40% with 50% of Pn			
Input frequency	50 / 60 Hz ± 10%			
Power factor / THDI	> 0.99 / < 3%			
Bypass rated voltage	400 V 3ph + N			
OUTPUT				
Voltage	400 V 3ph + N ±1%			
Voltage tolerance	static load ±1% dynamic load in accordance with VFI-SS-111			
Frequency	50 / 60 Hz ±0.02 Hz			
Automatic bypass	rated voltage output ±15% (configurable with generator from 10% to 20%)			
Total harmonic voltage distortion	< 1% with linear load/< 4% with non linear load			
Overload for 10 minutes	100 kW	120 kW	180 kW	225 kW
Overload for 5 minutes	112 kW	135 kW	200 kW	250 kW
Overload for 1 minutes	120 kW	144 kW	216 kW	270 kW
Overload for 30 secondes	135 kW	162 kW	216 kW	270 kW
Crest factor	3:1			
Short circuit current	up to 3.7 x In			
EFFICIENCY (TÜV SÜD tested)				
Online mode @ 50 % of load	96%	96%	96%	96%
Online mode @ 75 % of load	96%	96%	96%	96%
Online mode @ 100 % of load	96%	95.5%	96%	95.5%
ECO MODE	98%		-	
ENVIRONMENT				
Operating environment temperature	from 0 °C up to +40 °C (from 15 °C to 25 °C for maximum battery life)			
Relative humidity	0% - 95% without condensation			
Maximum altitude	1 000 m without derating (max. 3 000 m)			
Noise level (ISO 3746)	< 65 dB (A)			
Paralleling units	up to 8			
FLYWHEEL ready	-		•	
UPS CABINET				
Dimensions (W x D x H) [mm]	700 x 800 x 1930			
Weight	380 kg		460 kg	
Degree of protection	IP 20 (other IP in option)			
Colours	dark grey, silver grey frontal door			
STANDARDS				
Safety (TÜV SÜD tested)	EN 62040-1-1, EN 60950-1-1		EN 62040-1-2, EN 60950-1-2	
Performance	EN 62040-3 (VFI-SS-111)			
Electromagnetic compatibility (EMC)	EN 62040-2			
Product declaration	CE			

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