

Three-phase
UPS

DELPHYS Green Power

from 160 to 400 kVA

the solution that combines high availability
with energy efficiency

In the current climate with soaring energy costs and urgent environmental issues, it is no surprise that users are on the lookout 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 business sectors that are concerned first and foremost.

SOCOMECS, with more than 40 years of specialist experience, is one of the first manufacturers to take an active approach to improving the energy efficiency of its UPS systems.

As a concrete example of this commitment, SOCOMECS 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.

RANGE ENLARGED
to 320 kVA and 400 kVA
& NEW FUNCTIONS

96%
TRUE ON-LINE
DOUBLE
CONVERSION



Better performance
than the EU Code of Conduct
on efficiency of AC UPS



BUREAU
VERITAS

DELPHYS Green Power series
is attested by Bureau Veritas.



GAMME 194 A

Your protection
for

- > Data centres
- > Telecommunications
- > Service sector
- > IT Networks/Infrastructures



Your DELPHYS Green Power advantages



Significant cost savings (TCO)

- Maximum energy savings thanks to 96% output efficiency:
 - reduced energy loss and requirements for air conditioning systems,
 - significant savings in operational and energy bills.
- 0.9 power factor and harmonic content avoid over rating the supply system (i.e. switches, generator sets and protection devices).
- Highly compact UPS and battery cabinet (reduced footprint) saves valuable floor space.
- Extended battery life and performance:
 - EBS battery charging management improves battery lifespan,
 - DC bus optimum voltage,
 - **BHC Interactive**, battery monitoring system that proactively interacts with the battery charger to optimise battery lifetime,
 - very wide input voltage and frequency rectifier, acceptance without battery use.



Optimised electrical network

- Smaller upstream installation, due to very low input current.
 - Input power factor > 0.99 and the lowest.
 - Input current harmonic distortion < 2.5%.
- High active power availability for servers thanks 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.



Advanced communication facility

- User-friendly multilingual interface with graphic display.
- Flexible communication for:
 - remote monitoring and management by the system administrator,
 - integration in automatic centralised supervision systems.
- 24/7/365 SOCOMEC monitoring.
- **T.service** realtime remote surveillance.
- Advanced server shutdown options.
 - For stand-alone and virtual servers.



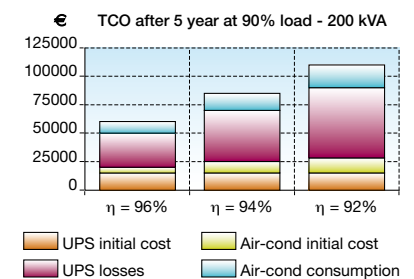
High availability

- Advanced battery monitoring and management for optimum battery reliability.
- High availability architectures:
 - parallel redundant architecture,
 - internal Automatic Cross Synchronisation (ACS).
- Internal redundancy thanks to the redundant cooling system to ensure a permanent power supply even in the event of system failure.
- **BHC Universal** (Battery Health Check), stand-alone battery monitoring system to provide permanent monitoring of the battery system.



Flexibility

- Shared battery
 - Optimisation of battery size
- Flexible modular upgrades.
 - Easy-to-add supplementary units for power extension and redundancy.

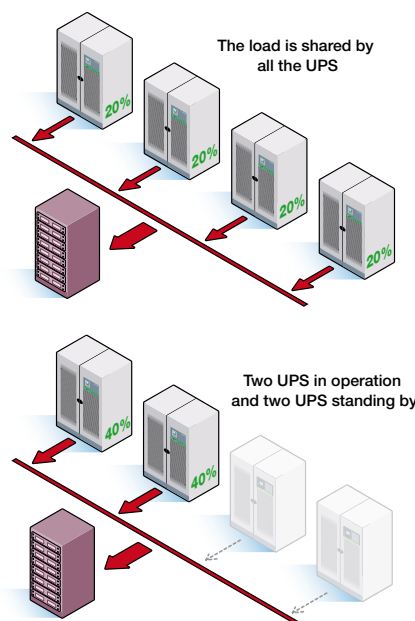
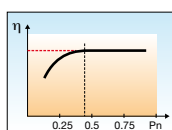
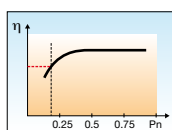


GREEN 076 A GB

Energy Saver

Optimum energy management

- This function optimises the efficiency (η) of your parallel UPS system when operating with a partial load.
- Only the UPS units needed to supply the energy required by the applications are in operation.
- Redundancy can be ensured by maintaining an additional unit in operation.
- When the power consumed by applications increases, the UPS units needed to meet the increased power requirements intervene immediately.
- This type of operation is perfectly suited to applications subjected to frequent variations in power.
- Energy Saver enables the increased efficiency of the whole system to be maintained.



GREEN 065 A GB

Advanced interface

- **User-friendly graphic display**

Gives a clear view of the UPS subassemblies status and provides the user with a full array of controls for their management.



GREEN 009 A GB

- **High visibility LED status bar**

Gives the UPS status in 3 colours: green, yellow or red.

- **Easy procedures for start-up and shutdown of the UPS**

The display gives operators step-by-step multilingual descriptions of the operating procedures.

- **Wide range of network connections**

Extensive communication possibilities are available, including: HTML page for remote monitoring, SNMP agent sending TRAP to network management station, e-mail sent according to events selection, MODBUS TCP for BMS data transfer, e-mail and SMS alerts.

- **Shutdown agent**

Makes it possible to send a shutdown command to stand-alone or virtual servers.

BHC Interactive

- **Safeguarding the battery**

The battery is a key element in UPS operation. If load is the most critical factor, battery system availability and efficiency are very important to avoid shutdown. To meet both requirements fully, SOCOMEC has developed **BHC Interactive** (Battery Health Check). Permanently connected to **DELPHYS Green Power**, it optimises battery lifetime, provides permanent monitoring of the battery system and simplifies maintenance (either preventative or curative).

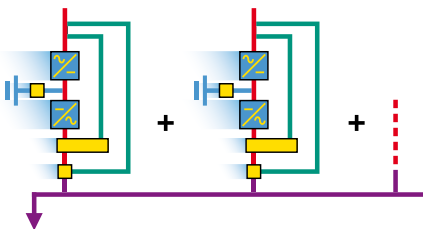


BHC 001 A

UPS and system architectures

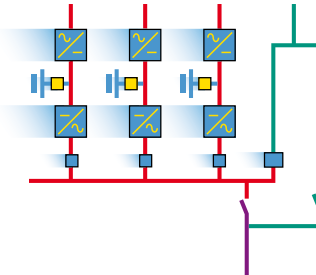
To meet the most demanding availability requirements and the need for a flexible and upgradable installation, **DELPHYS Green Power** with different system architectures.

- **DELPHYS Green Power modular, parallel development without constraints**



DEFYS 003 A

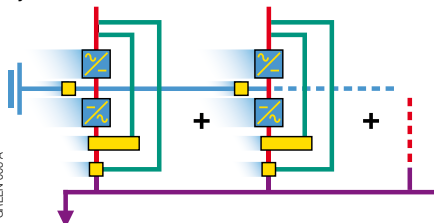
- **DELPHYS Green Power centralised bypass, parallel progressive development**



DEFYS 004 A

- **Shared battery**

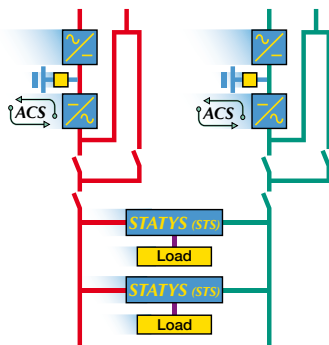
optimisation of battery size for parallel systems.



GREEN 006 A

- **Double bus architecture,**

for very high availability (TIER III or TIER IV classification).



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ACS: Automatic Cross Synchronisation
STS: Static Transfer System

- **Have confidence in the battery system**

BHC Interactive continually provides accurate diagnosis of battery condition and generates warning messages allowing the scheduling of preventative maintenance.



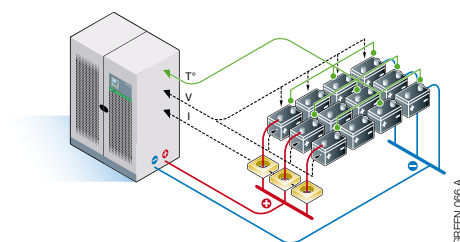
BHC 006 A

- **A reactive and proactive system**

BHC Interactive operates directly with the UPS battery recharging system (EBS). It optimises battery capacity and maximises battery life and return on investment.

- **Gain efficiency in maintenance**

BHC Interactive helps maintenance engineers and technicians to plan and prepare targeted preventative and curative maintenance operations.



GREEN 006 A

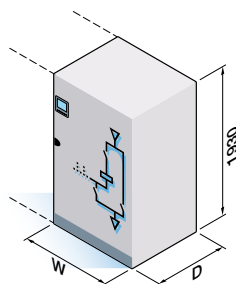
Central bypass cabinet

Coupling cabinet including the central static switch and the maintenance bypass.

Power ⁽¹⁾ kVA	W mm	D mm	Weight kg
500	800	800	370
600	1000	800	420
800	1000	800	420
1000	1200	800	600
1200	1200	800	600
1600	2600	1200	2100

(1) For other power ranges, please consult us.

GREEN 077 A GB



Technical data

Sn [kVA]	160	200	320	400
Pn [kW]	144	180	288	360

Input/output: 3/3				
	•	•	•	•

INPUT

Rectifier rated voltage	400 V 3ph
Voltage tolerances	±20% without derating, -40% with 50% of Pn
Input frequency	50/60 Hz ± 10%
Power factor / THDI	> 0.99 / < 2.5%
Bypass rated voltage	400 V 3ph + N

OUTPUT

Voltage	400 V 3ph + N ± 1% (380 / 415 V configurable)
Voltage tolerance	static load ± 1% dynamic load in accordance with VFI-SS-111
Frequency	50/60 Hz ± 2% (configurable for GenSet compatibility)
Autonomous frequency tolerance	0.02%
Automatic bypass	rated voltage output ± 15% (configurable with generator from 10% to 20%)
Total harmonic voltage distortion	< 2% with linear load / < 4% with non linear load
Overload for 10 minutes (kW)	180 225 360 450
Overload for 1 minutes (kW)	216 270 432 540
Crest factor	3:1
Short circuit current	up to 3.4 x In

EFFICIENCY (BUREAU VERITAS attested)

Online mode @ 50% of load	96%
Online mode @ 75% of load	96%
Online mode @ 100% of load	95.5%

ENVIRONMENT

Operating ambient temperature	from 0 °C up to +35 °C (from 15 °C to 25 °C for maximum battery life)
Relative humidity	0% - 95% without condensation
Maximum altitude	1000 m without derating (max. 3000 m)
Noise level (ISO 3746)	< 65 dB (A) < 68 dB (A)
Paralleling units	up to 8 up to 4

UPS CABINET

Dimensions W x D x H (mm)	700 x 800 x 1930 1400 x 800 x 1930
Weight (kg)	460 980
Degree of protection	IP 20 (other IP in option)
Colours	dark grey, silver grey frontal door

STANDARDS

Safety	EN 62040-1, EN 60950-1
Performance	EN 62040-3 (VFI-SS-111)
Electromagnetic compatibility (EMC)	EN 62040-2
Product declaration	CE

Standard communication kit

- 2 slots for communication options.
- RS 232 serial port for modem.
- Ethernet connection (WEB / SNMP / MODBUS TCP / e-mail).

Standard electrical kit

- Integrated maintenance bypass.
- External backfeed control.
- Smart battery recharge temperature dependent (**EBS**).
- Redundant cooling.

Standard mechanical and environmental kit

- IP 20.
- Battery temperature sensor.

Communication options

- 4 additional slots for communication options.
- ADC (Advanced Dry Contact) interface.
- PROFIBUS.
- SMS alert.

Electrical options

- External maintenance bypass.
- Extended back-up time.
- Extended battery charger capability.
- Shared battery.
- Flywheel compatible.
- Isolation transformer.
- Backfeed isolation device.
- Synchronisation with an external source (**ACS**).
- **BHC Interactive**.
- Cold start.

Mechanical and environmental options

- IP31 or higher.
- Antidust filter.

Remote maintenance

- **T.SERVICE** program for continuous 24/7 monitoring of **Green Power** range with the SOCOMEC UPS maintenance service.