

MODULYS *Green Power*

from 20 to 240 kVA

Modularity and energy efficiency
for evolving data centres



Three-phase
UPS system

MODULYS Green Power

from 20 to 240 kVA

A modular, scalable UPS solution
for the latest virtual data centres

Information technology is an invisible layer that is increasingly touching every aspect of our lives and business. Power grids, traffic control, healthcare, water supplies, food, industries and services, along with most of the world's financial transactions, now depend on information technology and IT infrastructures.

Today's business environment is characterized by rapid, unpredictable changes. Some of these changes present opportunities, others introduce

challenges, but sometimes even threats. IT infrastructures must scale rapidly and automatically to address marketplace changes.

At the same time, every organisation is facing a dilemma: how to generate more business and lower costs, demonstrating environmentally friendly practices to customers and stakeholders.

An energy efficient dynamic infrastructure can reduce operational costs, resolve space limitations, increase agility and eliminate power and cooling

constraints. The result is an IT infrastructure that is able to support growth, improve flexibility and help sustain a green corporate strategy.

In line with its commitment to develop innovative solutions to improve energy efficiency and minimising impact on the environment, SOCOMEC UPS has introduced **MODULYS Green Power**, a new modular UPS range especially designed for the latest data centre infrastructure generation and mission critical applications.



GREEN 039 A

96%

The highest performance
efficiency on the market



MODULYS Green Power efficiency
is certified by TÜV SÜD



MODULYS Green Power is certified by NEMKO
with regard to product safety (EN 62040-1)

Your protection for

- > Virtual data centres
- > IT Networks/Infrastructures
- > Mission critical applications



Data centre requirements have changed.

Power management strategies and data centre complexities require new solutions to maximise **availability**, increase **flexibility** and lower **TCO** (Total Cost of Ownership).

Data centres face continual change: consolidation processes, infrastructure virtualisation, power density rapid boost, unstable power consumption and energy cost increases.



Designed for continual change

- Dynamic power infrastructure able to closely align power capacity required by ICT businesses (aptitude to grow quickly).
- Fully modular architecture based on power and battery modules.
- Less complexity for system deployment with repeatable hot pluggable and hot swap modules.

Change management without affecting availability

- No risk of downtime to upgrade power capacity or battery capacity.
- Superior availability during normal operation and even under maintenance by using redundant and independent components.
- Self-diagnosis both at module and system levels, remote monitoring and alert capability to manage operational parameters in real time and decide when an upgrade is necessary.

Performance optimisation while changing

- Power granularity to deploy the right number of modules and get all the necessary power protection at the right time.
- Extensive upgradability to maintain maximum power quality and manage costs simultaneously from now on.
- Reduced complexity, enhanced serviceability, and responsiveness in the case of module failure for a very low MTTR (Mean Time To Repair).

Energy savings and granularity of investment

- Modularity and energy efficiency design meet the new ROI (Return Of Investment) metric perfectly, based on TCO that incorporates initial investment, full lifecycle infrastructures and facility costs.
- Energy efficiency means reduced energy losses, electricity operation costs, heat dissipation, cooling resources required and operational costs: significant cost savings in energy bills.
- Modularity minimises capital and expenses: no prior expenditure required for spare capacity or additional installation costs for future extensions.

Virtualisation

Optimising the energy efficiency of IT infrastructures requires a comprehensive approach that includes energy management, virtualisation, IT and data centre facility services, along with server and storage products.

Virtualisation makes it possible to increase the utilisation rates of computing resources, while managing them to offer more resource flexibility and much better architecture for availability and ongoing maintenance. Hardware and software solutions for virtualisation help to move towards a dynamic infrastructure that requires fewer physical servers, reduces energy demand and expands IT capacity.

Virtualisation has the potential to deliver dramatic savings though the advantages bring some challenges:

- Overall power consumption will be lower, but it will be highly variable;
- There will be fewer servers, but each one will be more critical than before;
- Applications can be dynamically reallocated as required, but the support infrastructure cannot do the same.

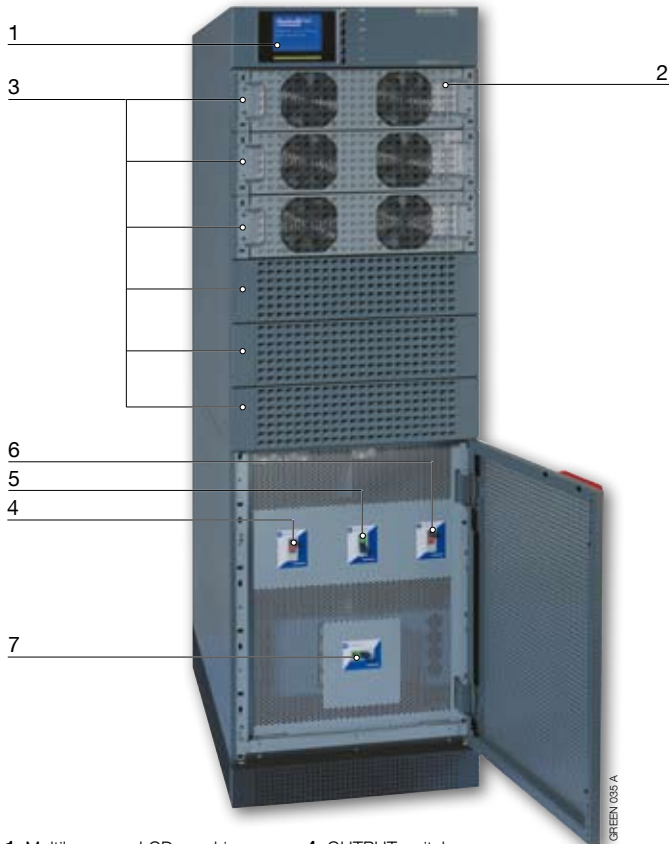
These changing computing paradigms are impacting power and cooling infrastructures, which may have been quite sufficient for pre-virtualisation requirements but could now easily become inadequate when data centre performance patterns are radically altered.

Only the most up-to-date UPS based on modular and scalable technologies can rise to these challenges, with practical, consistent, affordable methods to address these efficiency improvement processes.

techinfo

Totally modular

... modular UPS system



- 1. Multilanguage LCD graphic mimic panel.
- 2. LED showing power module status.
- 3. Bays for plug-in hot swap Power Modules.
- 4. OUTPUT switch.
- 5. AUX MAINS switch.
- 6. INPUT switch.
- 7. Manual BY-PASS switch.

Availability

- **Redundant N+1** architecture based on parallelable plug-in power modules providing full power supply to load even if a module fails.
- **No single point of failure** thanks to built-in redundant system design: redundant power supply, charger, etc.
- **Reduced MTTR**: power system remains in on-line mode and a module can be easily replaced or added in a few minutes without compromising load protection.
- Self-configuration ensures agility while changing, and **maximum availability** during maintenance operations (load not transferred to by-pass mode).
- Built-in fan speed control and individual fan efficiency check.
- **Dual input feed** (Mains and Aux Mains) guarantees maximum availability of emergency bypass line.

Flexibility

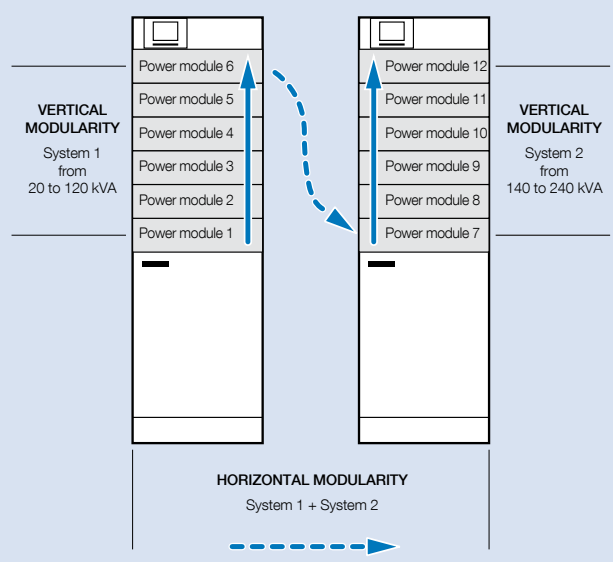
- **MODULYS Green Power** vertical and horizontal modularity easily and quickly supports the **wide range of evolving load requirements**.
- Repeatabe and standardised scalable architecture based on **real hot pluggable power modules**.
- **Vertical modularity** for power scalability up to 120 kVA by simply plugging a power module into the system.
- **Horizontal modularity** for scalability up to 240 kVA by coupling two modular systems.
- **Power granularity** to meet detailed **power on demand** for incremental steps of 20 kVA.

Total Cost of Ownership (TCO)

- Modularity and power granularity make it possible to invest only **for the functionality required in the short-term**, and to plug in new capacity or functionality when the time is right.
- **Savings in operational costs and energy bills** by combining the maximum level of protection (true on-line double conversion) with certified 96% efficiency.
- Vertical modularity maintains a **small footprint** while system power capacity increases.
- **Fast deployment** thanks to the vertical modular architecture. Fast power increase without any new electrical work.
- High efficiency minimises heating and **cooling requirements**, reduces air conditioning investments, and cuts related energy bills.

Power scalability up to 240 kVA

MODULYS Green Power suits perfectly, either with unscheduled site upgrades or upgrading in successive steps, thanks to its modularity.



STANDARD BATTERIES
LONG LIFE

1

2

3



GREEN 054 A

- 1. Four hot swap battery packs for each string.
- 2. Six bays for battery hosting.
- 3. Battery protection for each string.

for the best...

... modular battery solution

∞ Availability

- Battery system based on **independent strings** connected in parallel to maximise system availability.
- Individual battery string protection for safe running, installation and maintenance of the battery system, and **to ensure continuous back-up protection**.
- **Long-life battery** provided as standard, to increase quality and reliability.
- On-going maintenance of each battery string is performed from the front, with **MTRR reduction** as result.
- **Hot swap battery pack solution** allows backup time increases according to power requirements, without switching off the battery cabinet.

Flexibility

- **Scalable battery strings** (up to 6) to maintain equivalent autonomy while power increases.
- **Preset for on-site fast autonomy extension** without any electrical system modification.
- Battery scalability based on unique **battery packs** (up to 24).
- **Powerful battery charger** integrated within each power module to enable long autonomy (up to 120 minutes).

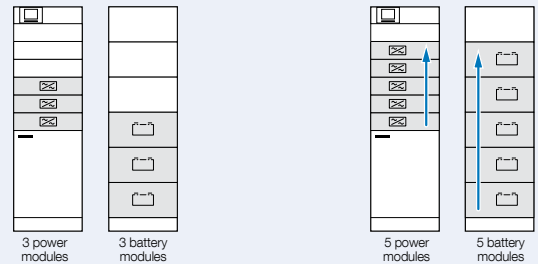
€ Total Cost of Ownership (TCO)

- **Standard long-life battery** technology improves system reliability, maximises return on investment and reduces maintenance costs associated with expected battery life.
- A standard temperature sensor optimises the battery recharging parameters according to environment temperature **to extend battery life and investment**.
- Vertical modularity in a **small footprint battery cabinet** allows an increase in backup without occupying further space on the site.
- **Shared Battery Bus** architecture minimises battery investment without compromising availability.

Scalable battery solutions

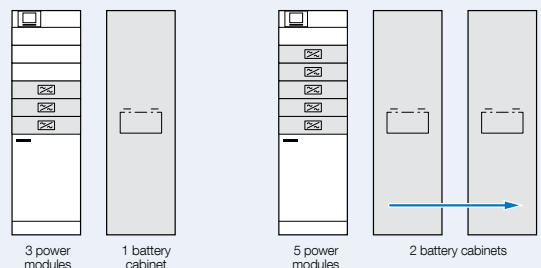
VERTICAL MODULARITY

Maintain equivalent autonomy while power increases with the modular battery cabinet. Autonomy range: from 10 to 60 minutes



HORIZONTAL MODULARITY

Provides very high and scalable autonomy with the high capacity battery cabinet. Autonomy range: up to 120 minutes

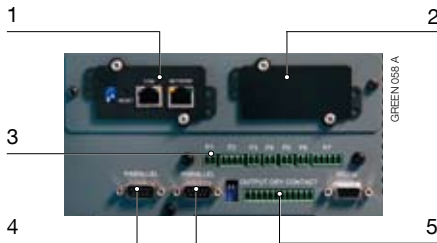


GREEN 056 A - GREEN 056 A

Communication and connectivity

MODULYS Green Power integrates network management functionality to enable **supervision of the UPS** by connecting it directly to the LAN.

- **On board SNMP adapter** allows the UPS to be monitored over networks as a peripheral. The adapter sends out traps on UPS alarms that can be monitored using a Network Management Software or via web browser. It can be used in conjunction with JNC client to perform an orderly shutdown of critical and virtual servers within the enterprise network.



1. SNMP adapter
2. Slot for optional communication boards
3. EPO input
4. Parallel port
5. Built-in dry contact

- **Built-in dry contact interface** for electrical remote monitoring of UPS status.
- **Environmental Monitoring Device** (option), integrated digital environmental monitoring system to oversee IT cabinet's temperature, humidity and security alerts.
- **MODBUS interface**, available as an option, to communicate with BMS (Building Management System).



Multilanguage LCD graphic mimic panel with multicoloured luminous bar to monitor the system and condition of the power supply

Modular UPS system - Technical data

| NUMBER OF MODULES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|---|----|----|----|-----|-----|------------------|-----|-----|-----|-----|-----|
| POWER [kVA] | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 |
| REDUNDANT CONFIGURATION | N+x | | | | | | | | | | | |
| ELECTRICAL SPECIFICATION - INPUT | | | | | | | | | | | | |
| Nominal voltage [V] | (3ph + N) 400 V -25% + 20% (up to -50% at 70% Pn) | | | | | | | | | | | |
| Input frequency [Hz] | 50/60 Hz ± 10% | | | | | | | | | | | |
| Input power factor / THDI ⁽¹⁾ | 0.99 / < 3% | | | | | | | | | | | |
| ELECTRICAL SPECIFICATION - OUTPUT | | | | | | | | | | | | |
| Output voltage [V] | (3ph + N) 400 V ± 1% (380/415 configurable) | | | | | | | | | | | |
| Output frequency [Hz] | 50/60 Hz | | | | | | | | | | | |
| Automatic bypass | Nominal output voltage ±15% (configurable from 8% to 15%) Nominal output frequency ±1 Hz (configurable from 0,5 to 5 Hz) | | | | | | | | | | | |
| Overload ⁽²⁾ | 125% for 10', 150% for 60" | | | | | | | | | | | |
| Crest factor | 3:1 | | | | | | | | | | | |
| Voltage distortion | < 1% | | | | | | | | | | | |
| MODULE | | | | | | | | | | | | |
| Power [kVA] | 20 | | | | | | | | | | | |
| Power ⁽³⁾ [kW] | 18 | | | | | | | | | | | |
| Battery charging current [A] | 1.2 - 5 | | | | | | | | | | | |
| Efficiency (on-line mode) | up to 96% | | | | | | | | | | | |
| Efficiency (eco mode) | up to 98% | | | | | | | | | | | |
| Weight [kg] | 30 | | | | | | | | | | | |
| ENVIRONMENT | | | | | | | | | | | | |
| Operating temperature [°C] | 0 to +40 (15 to 25 for best battery life) | | | | | | | | | | | |
| Storage temperature [°C] | -5 to +45 (15 to 25 for best battery life) | | | | | | | | | | | |
| Relative humidity [%] | 0 to 95 without condensation | | | | | | | | | | | |
| Altitude (max) [m] | 1000 without de-rating (3000 max) | | | | | | | | | | | |
| Acoustic noise [dB] | 60 - 66 | | | | | | | | | | | |
| Required cooling capacity [m³/h] | 440 - 5980 | | | | | | | | | | | |
| Dissipated power (max) [W] | 1000 - 12000 | | | | | | | | | | | |
| Dissipated power (max) [BTU/h] | 3400 - 41250 | | | | | | | | | | | |
| DIMENSIONS AND WEIGHT - SINGLE CABINET | | | | | | | | | | | | |
| Dimensions (W x D x H) [mm] | 520 x 975 x 1695 | | | | | | 520 x 975 x 1695 | | | | | |
| Weight (empty cabinet) [kg] | 200 | | | | | | 200 | | | | | |
| STANDARDS | | | | | | | | | | | | |
| Safety | EN 62040-1 (NEMKO certified), EN 60950-1 | | | | | | | | | | | |
| Type and performance | EN 62040-3 [VFI-SS-111] | | | | | | | | | | | |
| EMC | EN 62040-2 | | | | | | | | | | | |
| Product certification | CE | | | | | | | | | | | |
| Degree of protection | IP20 | | | | | | | | | | | |

(1) For source THDV <2% and nominal load - (2) From inverter - (3) @ 25 °C

Battery cabinets - Technical data

| MODULAR BATTERY CABINET | | HIGH CAPACITY BATTERY CABINET | |
|------------------------------|------------------|-------------------------------|------------------|
| DIMENSIONS AND WEIGHT | | | |
| Dimensions (W x D x H) [mm] | 600 x 900 x 1695 | Dimensions (W x D x H) [mm] | 600 x 900 x 1695 |
| Weight (empty cabinet) [kg] | 161 | Weight [kg] | 599 |
| Weight (battery string) [kg] | 121 | | |

Module installation



GREEN038 A

The SOCOMEC Group: manufacturing at your service



CORPO 331 A

Specialists guaranteed

Founded in 1922, SOCOMEC is an industrial group with a workforce of 2,700 people. Our independence allows us to have long-term vision and complete control over any decisions affecting our development.

The company is organised into two independent divisions: SOCOMEC SCP, experts in switching components and protection solutions, and SOCOMEC UPS, specialists in critical system power supply.

The company's standard turnover, operating profit and net profit consistently show steady growth. These figures allow the company to make prudent yet ambitious plans for the future: plans which guarantee profitability and which also aim to capture new market share, by setting up new subsidiaries worldwide.

Renowned expertise

Having already received the 2004 Award for Customer Service Excellence and the

2006 Award for Product Innovation from Frost & Sullivan, SOCOMEC UPS recently excelled once again by winning the 2009 Best Practice Award for "European Energy & Power Systems Product Line Strategy". This prestigious accolade was awarded in recognition of the company's ability to offer an extensive product range, demonstrating the most insight into the needs and product demands of its customers.



SOCOMECS UPS
UPS from 550 VA to 5400 kVA



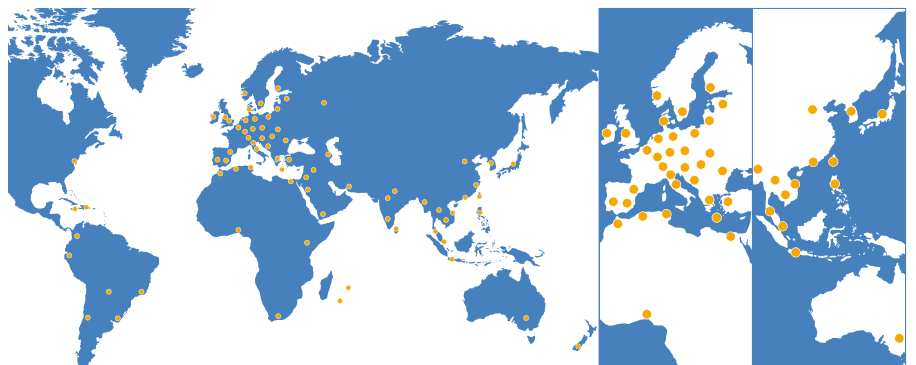
SOCOMECS SCP
Switching and Protection Systems

An organisation focused on customer satisfaction

Our equipment is designed and produced to meet ISO 9001:2000 standards. SOCOMEC UPS systems provide you with a fully protected electrical power supply and first-rate service.

A worldwide presence

With a strong international presence in over 70 countries and subsidiaries in 22 countries, SOCOMEC is a major player in the global market of electrical equipment.



CARTE 043 A

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