

Central power supply systems are designed for buildings subject to fire safety regulations

Designed and built in compliance with standard EN 50171 CPSS (Central Power Supply Systems) are designed principally to provide emergency lighting in the event of the normal utility power supply outage, but can also be used for other emergency systems, such as:

- automatic fire sprinkler systems,
- emergency detection and warning units,
- smoke extraction equipment,
- carbon monoxide detection systems,
- specific systems for safety-sensitive areas.

A central power supply system offers key benefits

- Reduces the cost of your investment.
- Reduces installation costs.
- Reduces operating costs (long term reliability).
- Simplifies mandatory periodic testing procedures.
- Eliminates the drawbacks associated with thermal stress on back-up batteries at high elevations.



Your protection
for

- > Tertiary sector
- > Industry
- > Small enterprises
- > Museums, hospitals

* Please check the product availability for your country.



Fully compliant product ranges

The CPSS **EMergency** range has been developed to meet your critical needs, while ensuring compliance with European standards.

Batteries

- VRLA (Valved Regulated Lead Acid).
- Long life expectancy: 10 years operating at 20 °C.
- Compliant with EN 50272-2.
- Back-up time between 30 and 180 minutes.

Slow-discharge protection

- Inverter shutdown function, designed to prevent deep-discharge battery damage.
- Preventive alarm and manual reset after shutdown.

Battery charger

- Compliant with EN 50272-2 and EN 60146-1-1.
- Recharge to 80 % capacity within 12 hours, in conformity with EN 50171.
- Low AC ripple currents for maximum battery life, and in conformity with EN 50171.
- Battery voltage regulated automatically according to temperature.

Test

- Automatic and manual battery test.
- Input switch for mandatory periodic verification of battery back-up time.

Enclosure

- Metal structure responding to EN 60598-1.
- Minimum protection category IP 20.
- Compact dimensions (small footprint).

Inverter

- Low harmonic distortion (THDU %) on output side.
- Protection against battery polarity inversion, in conformity with EN 50171.

Transformers

- Double wound with safety earth screen, conforms to EN 61558-2-6 (option).

On request

- Galvanic isolation transformer responding to EN 61558-2-6.
- Prewired for isolated neutral (IT).
- Permanent Isolation Controller.

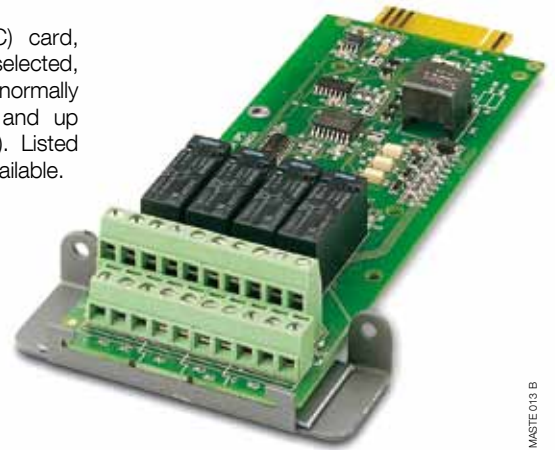
Remote indication

The Advanced Dry Contact (ADC) card, available depending on the model selected, allows the management of up to four normally open or normally closed outputs and up to three digital inputs (configurable). Listed below are some of the indications available.

- Operating status.
- Battery charge low.
- Battery charger fault.
- General alarm.
- Earth leakage fault.

Local signalling

- Input voltage out of tolerance.
- Output voltage present.
- Battery mode.
- Battery circuit interrupted.
- Floating voltage fault.
- On battery when mains present.
- Slow discharge pre-alarm.
- Slow discharge protection alarm.
- Charger fault.
- Earth leakage fault (option).



MASTE 013 B

Local indication

LCD synoptic panels show all items of information relative to operating status, electrical measurements, access to control functions and configuration parameters. These are some of the indicators available:

- Input voltage out of tolerance.
- Output voltage present.
- No mains power.
- Battery circuit broken.
- Battery maintenance voltage fault.
- Battery output operational with mains power present.
- Slow discharge pre-alarm.
- Slow discharge protection alarm.
- Battery charger fault.
- Earth leakage fault (option).



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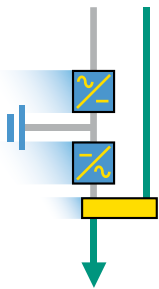
GREEN 019 A

EN 50171-compliant system control and operating modes

It is a requirement of any well-designed emergency lighting system that the back-up power source will activate both in the case of a complete a.c. mains failure and in the case of a local power supply fault.

The emergency lighting system can be equipped with lamps classified as permanent or non-permanent. Similarly, the central power supply system can operate in changeover or parallel stand-by mode.

Changeover mode

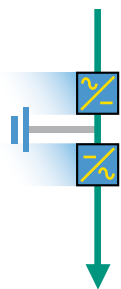


The CPSS Systems supply power to the load using the by-pass circuit and maintaining battery charge, the output being permanently mains-powered (AR).

In the event of a supply outage, the load is switched by an automatic transfer switching device (ATSD) to the inverter, which supplies a filtered and stabilized output voltage.

The battery energizes the inverter and guarantees a steady power source for the duration of the specified back-up time.

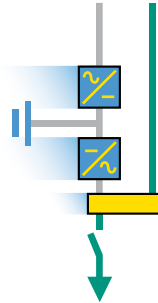
Parallel stand-by mode



The load is connected continuously to the inverter, so that the output is permanently under power (SA).

In the event of a supply outage, the battery takes over without interruption, supplying power to the load for the duration of the specified back-up time.

Changeover mode with additional control switch for central load switching



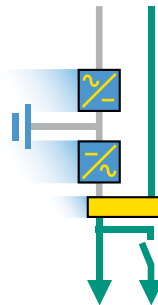
In normal operating mode, with healthy a.c. mains, the CPSS remains on stand-by, and the output is 'emergency-only' (SE).

A general control switch device (CSD) is connected between the load and the CPSS. The CSD switch relay is operated manually or automatically (according to the state of the utility supply). Its function is to guarantee that the emergency supply will never be connected during normal operation of the system.

Power is supplied to the load via the by-pass circuit, closing the relay.

In the event of a utility power failure, the load is connected to the inverter and the battery will supply power for the duration of the specified back-up time.

Changeover mode with additional control switch for partial load switching



In normal operating mode, the CPSS supplies power to certain services, which are split between a permanently connected output (SA) and an emergency-only output (SE).

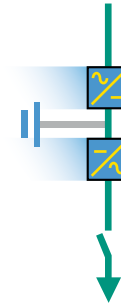
A control switch device (CSD) is connected to one part of the load and the CPSS.

The CSD switch relay is operated manually or automatically (according to the state of the utility supply).

Its function is to guarantee that the emergency supply will never be disconnected during normal operation.

The remaining services are powered permanently by the CPSS. Accordingly, part of the load is powered constantly by the inverter, whereas the remaining part is connected to the inverter only in the event of a utility power failure.

Non-maintained changeover mode



In this instance, essential safety equipment is powered only in the event of a supply outage (emergency only output – SE).

A control switch device (CSD) is connected between the load and the CPSS.

The battery guarantees a steady power supply to the load for the duration of the specified back-up time.

MODULYS EL single-phase

from 3 to 6 kVA



Advantages of CPSS E

- Main power source compliant with EN 50171.
- On-line double conversion technology (VFI-SS-111).
- Accurate voltage and frequency.
- Fully digital controls.
- Integrated batteries (up to 60 minutes).
- High capacity batteries with a 10-year life expectancy.
- Batteries tested automatically.
- Control panel with alphanumeric display.
- RS 232 serial interface.
- RS 485 serial interface on 4.5 and 6 kVA models.
- Interface with voltage-free contacts.

Operating modes

- Changeover mode.
- Parallel stand-by mode.
- Changeover mode with additional control switch for central and partial load switching (on request).
- Non-maintained changeover mode.

Range and dimensions

Model	Input/output	kVA	kW	Dimensions ⁽¹⁾ W x D x H (mm)	Weight kg
MODULYS EL 130	1/1	3	2.1	444 x 795 x 1000	240
MODULYS EL 145	1/1	4.5	3.15	444 x 795 x 1000	330
MODULYS EL 160	1/1	6	4.2	444 x 795 x 1000	340

(1) Back-up time 60 min, other times on request.

Optional accessories

- Galvanic isolation transformer.
- Permanent isolation control.

Communication options

- LCD remote access panel.
- **NET VISION** interface allowing control via Ethernet network.

Performance

RECTIFIER INPUT

Voltage	single-phase 230 V (L + N) ± 20 %
Permissible tolerance	-30 % to 70 % of nominal load
Frequency	50 - 60 Hz ± 10 %
Current draw	THDI < 5 %
Input power factor	> 0.98

OUTPUT

Voltage	single-phase 230 V
Tolerance in static conditions	± 3 %
Frequency (configurable)	50 - 60 Hz
Frequency tolerance	± 0.1 %
Permissible crest factor without derating	3:1
Back-up time	60 min ⁽¹⁾
Maximum permissible overload	130 % for 10 sec

ENVIRONMENT

IP protection category (IEC 60529)	IP 20
Noise level (ISO3746)	< 52 dBA at 1 metre
Compliant with	
Central power supply system	EN 50171
Reference standards	EN/IEC 62040-1 safety EN 50091-2 EMC IEC 62040-3 performance
Classification (IEC 62040-3)	VFI ⁽²⁾ - SS - 111

(1) Other back-up times on request. - (2) Voltage Frequency Independent.

MASTERYS EL Green Power single and three-phase

from 10 to 80 kVA



Advantages of CPSS EMergency

- Main power source compliant with EN 50171.
- On-line double conversion technology (VFI-SS-111).
- Suitable for leading loads up to PF 0.9 without derating.
- High capacity batteries with a 10-year life expectancy.
- Batteries with two independent and redundant units.
- Manual and automatic battery test.
- Control panel with graphic display.
- LAN interface (Ethernet).
- RS 232 / 485 serial interface.
- Interface with voltage-free contacts.

Operating modes

- Changeover mode.
- Parallel stand-by mode.
- Changeover mode with additional control switch for central and partial load switching (on request).
- Non-maintained changeover mode.

Range and dimensions

Model	Input/output	kVA	kW	Dimensions W x D x H (mm)	Weight kg
MASTERYS EL 110 ⁽¹⁾	3/1	10	9	444 x 795 x 1400	118
MASTERYS EL 115 ⁽¹⁾	3/1	15	13.5	444 x 795 x 1400	123
MASTERYS EL 120 ⁽¹⁾	3/1	20	18	444 x 795 x 1400	126
Three-phase operation					
MASTERYS EL 310 ⁽¹⁾	3/3	10	9	444 x 795 x 1400	118
MASTERYS EL 315 ⁽¹⁾	3/3	15	13.5	444 x 795 x 1400	123
MASTERYS EL 320 ⁽¹⁾	3/3	20	18	444 x 795 x 1400	126
MASTERYS EL 330 ⁽¹⁾	3/3	30	27	444 x 795 x 1400	137
MASTERYS EL 340 ⁽¹⁾	3/3	40	36	444 x 795 x 1400	157
MASTERYS EL 360	3/3	60	48	444 x 795 x 1400	200
MASTERYS EL 380	3/3	80	64	444 x 795 x 1400	210

(1) TÜV SÜD. Battery dimensions and weight, dependent on back-up time; please contact SOCOMEC UPS.

Optional accessories

- Galvanic isolation transformer.
- Permanent isolation control.

Communication options

- LCD remote access panel.
- **NET VISION** interface allowing control via Ethernet network.
- Advanced Dry Contact interface.
- GSS interface allowing advanced management of generator set connected to UPS input.

Performance

RECTIFIER INPUT	
Voltage	three-phase 400 V (3L + N) ± 20% ⁽¹⁾
Permissible tolerance	-35% to 70% of nominal load
Frequency	50 - 60 Hz ± 10%
Current draw	THDI < 6%
Input power factor	> 0.99
OUTPUT	
Voltage	single-phase 230 V - three-phase 400 V ⁽¹⁾
Tolerance in static conditions	± 1%
Frequency (configurable)	50 - 60 Hz
Frequency tolerance	± 0.1%
Permissible crest factor without derating	3:1
Overload	150% for 60 sec
ENVIRONMENT	
IP protection category (IEC 60529)	IP 20
Noise level (ISO3746)	< 62 dB at 1 metre
Compliant with	
Central power supply system	EN 50171
Reference standards	EN / IEC 62040-1 safety EN 50091-2 EMC IEC 62040-3 performance
Classification (IEC 62040-3)	VFI [®] - SS - 111

(1) Three-phase 220-230-240 V on request. - (2) Voltage Frequency Independent.

DELPHYS elite EL three-phase

from 100 to 200 kVA



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Advantages of CPSS EMergency

- Main power source with EN 50171.
- On-line double conversion technology (VFI-SS-111).
- Accurate voltage and frequency (digital control).
- Suitable for capacitive loads up to PF 0.9 without derating.
- Rectifier giving sinusoidal current draw.
- High capacity batteries with a 10-year life expectancy.
- Batteries tested automatically.
- Galvanic isolation between the DC circuit and the load.
- Control panel with alphanumeric display.
- Interface with voltage-free contacts.

Operating modes

- Changeover mode.
- Mode without interruption.

Range and dimensions

Model ⁽¹⁾	Input/output	kVA	kW	Dimensions ⁽¹⁾ W x D x H (mm)	Weight kg
DELPHYS EL 100	3/3	100	80	1000 x 845 x 1930	820
DELPHYS EL 120	3/3	120	96	1000 x 845 x 1930	840
DELPHYS EL 160	3/3	160	128	1000 x 845 x 1930	970
DELPHYS EL 200	3/3	200	160	1000 x 845 x 1930	1000

(1) Higher rated powers on request.

Battery dimensions and weight, dependent on back-up time: please contact SOCOMEC UPS.

Optional accessories

- Galvanic isolation transformer on by-pass circuit.
- Permanent isolation control.

Communication options

- LCD remote access panel.
- JBUS/MODBUS serial interface.
- **NET VISION** interface allowing control via Ethernet network.

Performance

RECTIFIER INPUT

Voltage	three-phase 400 V (3L + N) ± 15% ⁽¹⁾
Frequency	50 - 60 Hz ± 5 Hz
Current draw	THDI: 2.5%

OUTPUT

Voltage (configurable)	three-phase 400 V (3L + N) ⁽¹⁾
Tolerance in static conditions	± 1%
Frequency (configurable)	50 - 60 Hz
Frequency tolerance	± 0.1%
Permissible crest factor without derating	3:1
Overload	150% for 60 sec

ENVIRONMENT

IP protection category (IEC 60529)	IP 20
Noise level (ISO3746)	< 68 dB(A) at 1 metre
Compliant with	
Central power supply system	EN 50171
Reference standards	EN/IEC 62040-1 safety EN 50091-2 EMC IEC 62040-3 performance
Classification (IEC 62040-3)	UPS VFI ⁽²⁾ - SS - 111

(1) Three-phase 220-230-240 V on request. - (2) Voltage Frequency Independent.