



SUNSYS **PCS²**

Power Conversion System and Storage
from 33 kW to MW



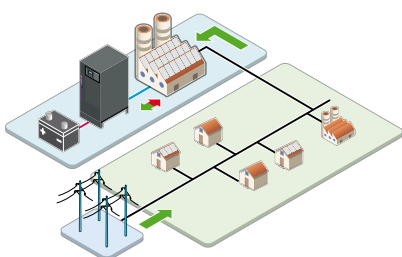
The storage solution for energy management on Smart Grids

Energy storage is the core element for the transition of the electric utility system to Smart Grids. Whatever the application in this new environment, Socomec SUNSYS PCS² - Power Conversion System and Storage - is the concrete answer.

Smart building and cities

Reduce the impact of increases in the electricity retail price.

- SUNSYS PCS² **maximizes the PV energy self-consumption** at building or community level. Any energy surplus is stored in the SUNSYS PCS² battery system. This stored energy is used later to supply the load.
- When the electricity retail cost is low, SUNSYS PCS² **stores the energy** to supply the loads during peak demand when prices are high.



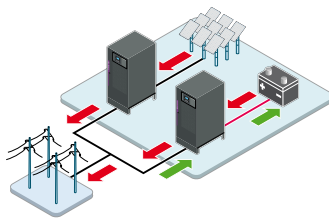
SUNSYS 146 B

Solar parks

Manage the intermittence of renewable energy production.

SUNSYS PCS² **ensures the production profile** of an intermittent renewable energy plant by:

- limiting the production to a predefined value,
- injecting energy to compensate solar variations,
- fixing a constant ramp up and ramp down.



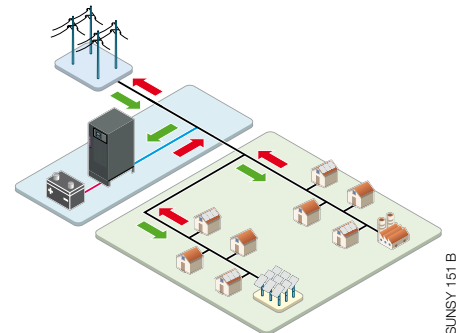
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Grid support

Meet the challenge of demand-response energy balance.

When directly connected to the grid, SUNSYS PCS² **improves the stability and the management** by grid operators thanks to:

- voltage & frequency regulation,
- load shifting,
- peak shaving,
- ancillary services for grid support.



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The Socomec Group, partner of the Smart grid demonstrator



An innovative project for the future, organized by French electricity distribution company ERDF as part of a consortium comprising Alstom, Saft, EDF, Armines, RTE, Netseenergy, Daikin, Watteco and Socomec.

Aims of the pilot program:

- > to optimise the massive integration of decentralised renewable energy,
- > to reduce peak electricity consumption across the city,
- > to give consumers an active role in controlling their production-consumption-storage balance.

www.socomec.com/nice-grid_en.html

www.nicegrid.fr

Why choose Socomec ?

- **Independent manufacturer**
Founded in 1922, the company employs over 3000 staff at 30 subsidiaries across five continents.
- **Specialist**
Solutions for power availability, control, safety and energy efficiency.
- **Expert**
Manufacturer of energy conversion solutions for over 40 years.
- **At your service**
A global network of consulting, inspection and maintenance teams.
- **Flexible**
We adapt our solutions to suit the specific needs of our customers.
- **Innovative**
Socomec ring-fences almost 10 % of its turnover to R&D.



The benefit of the **SUNSYS PCS²** solution



High performance

- Power from a few kW to MW.
- 97 % maximum efficiency.
- Energy shifting and peak shaving.
- Grid stabilizing (active and reactive power).



Flexible

- Can be integrated into existing photovoltaic installations.
- Modular “hot swap” scalable system for both power and back-up time.
- Compatible with different battery technologies and ultra-capacitor energy storage systems.



Intuitive

- Front access for easy installation, use and maintenance.
- Graphic display for ergonomic operation and monitoring.
- AC/DC power breaker for each power module.



Choosing the right battery technology

LITHIUM

- High performance during rapid discharge (peak shaving applications).
- High energy density.
- Highly compact.
- Easy scalability.
- Easy to maintain.
- Long life cycle.
- Maintenance free.
- Environmentally-friendly.

LEAD

- High performance.
- Solution suitable for rapid charging systems.
- Suitable for installations in harsh environments.
- Highly compact.
- Easy to service.

Technical features

Configuration	With transformer			Without transformer				
Model	33TR	66TR	100TR	66TL	100TL	132TL	166TL	200TL
Input (DC)								
Battery voltage	Full power from 450 to 825 VDC - 350 to 850 VDC with derating							
Number of independent power modules	1	2	3	2	3	4	5	6
Maximum discharging current	80 A	160 A	240 A	160 A	240 A	160 A + 160 A	240 A + 160 A	240 A + 240 A
Maximum recharging current	80 A	160 A	240 A	160 A	240 A	160 A + 160 A	240 A + 160 A	240 A + 240 A
Output (AC)								
Rated power	33 kW	66 kW	100 kW	66 kW	100 kW	132 kW	166 kW	200 kW
Rated apparent power	33 kVA	66 kVA	100 kVA	66 kVA	100 kVA	132 kVA	166 kVA	200 kVA
Rated voltage	400 Vrms 3ph			280 Vrms ⁽¹⁾ 3ph				
Voltage tolerance	320 - 480 Vrms 3ph			224 - 336 Vrms ⁽¹⁾ 3ph				
Rated frequency	50 Hz ⁽¹⁾							
Frequency range	47.5 - 51.5 Hz ⁽¹⁾							
Rated current	48 Arms	96 Arms	144 Arms	136 Arms	206 Arms	272 Arms	342 Arms	412 Arms
THDI (%)	< 3 %							
Topology	Single conversion							
Symmetrical overload	110 % for 30 min							
Efficiency								
Maximum efficiency	96.1 %	96.3 %	96.4 %	97.6 %				
Environment								
Environmental category	Non-air-conditioned indoor space							
Degree of protection	IP 20							
Operating ambient temperature	-5 °C to +50 °C							
Rated temperature	0 °C to +40 °C							
Storage temperature	-5 °C to +60 °C							
Relative humidity	5 % to 95 % without condensation							
Cooling system	Smart cooling							
Acoustic level at 1 m	< 60 dB	< 64 dB				< 67 dB		
Altitude	0 to 1000 m (full power)							
Mechanical specifications								
Dimensions W x D x H (mm)	600 x 795 x 1400		1200 x 795 x 1400	600 x 795 x 1400		805 x 806 x 2150		
Weight (kg)	330	525	770	160	190	426	456	486

(1) Depending on the specific country and regulations.

HEAD OFFICE

SOCOMEK GROUP

SAS SOCOMEK capital 10 633 100 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse
F-67235 Benfeld Cedex
Tel. +33 3 88 57 41 41 - Fax +33 3 88 57 78 78
info.scp.isd@socomec.com

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www.socomec.com

