



SUNSYS *PCS²*

Power Conversion System and Storage
from 33 kW to MW
UL1741



your energy
our expertise



socomec
Innovative Power Solutions

The **energy storage** solution for power management on Smart Grids

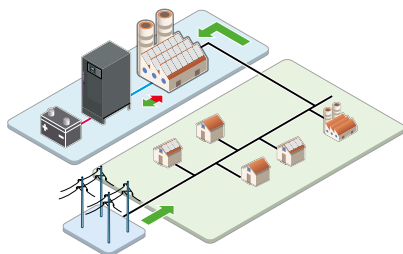
Energy storage is the core element for the transition of the electric utility system to Smart Grids. Whatever the application in this new environment, Socomec SUNSYS PCS² - Power Conversion System and Storage - is the concrete solution.

Behind-the-meter

Reduce peak consumption and maximize PV energy self-consumption.

SUNSYS PCS² can limit the impact of increases in the electricity retail price by:

- supplying the load to cut peak demand (peak shaving),
- **maximizing the PV energy self-consumption** at building or community level. Any PV energy surplus is stored in the SUNSYS PCS² battery system. This stored energy is used later to supply the load.



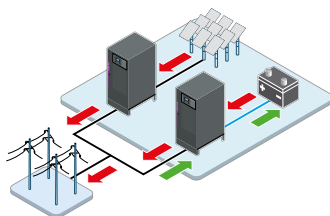
SUNSY 146 B

Power Generation

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 or a constant ramp down.



SUNSY 150 B

Why choose Socomec ?

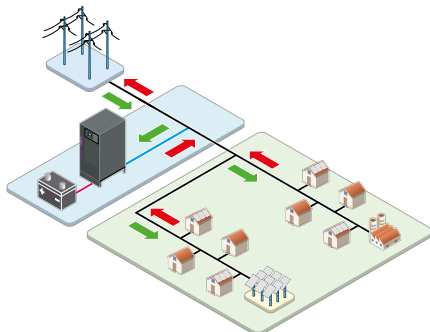
- **Independent manufacturer**
Founded in 1922, 3000+ employees, 30 subsidiaries across five continents.
- **Specialist**
Solutions for power availability, control, safety and energy efficiency.
- **Expert**
Manufacturer of energy conversion solutions for over 40 years.
- **At your service**
A global network of consulting, inspection and maintenance teams.
- **Flexible**
Adapted solutions to suit the specific needs of our customers.
- **Innovative**
Nearly 10% of the sales turnover is dedicated to R&D.

Grid Support

Meet the challenges 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.



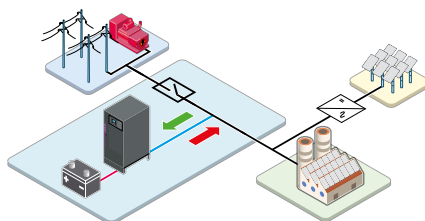
SUNSY 151 B

Microgrids (SUNSYS PCS² IM model only)

Supply power to isolated and urban microgrids.

SUNSYS PCS² IM offers solutions to increase the operational performance and reliability of off-grid microgrids, grid-connected microgrids and smart buildings by:

- supplying high quality and stable energy, ensuring the balance between demand & response,
- avoiding power interruptions during on-grid/islanding transition.



SUNSY 169 B

SUNSYS PCS² for commercial behind-the-meter projects

Socomec delivers 2 MW / 4 MWh energy storage systems to US intelligent energy leader Stem - for lower electricity bills.

Twenty intelligent energy storage systems composed of:

- 100 kW SUNSYS PCS²,
- 200 kWh lithium-ion batteries,
- switching and protections.



The benefits of the **SUNSYS PCS²** solution



Total flexibility

- Modular scalable system from 33 kW to MW.
- All combinations possible with one module and one frame.
- For LV and MV grids.
- Compatible with different electrochemical & electromechanical storage technologies.

Conformity and Standards

- UL1741 2nd edition
- CSA-C22.2 No. 107.1-01
- IEEE 1547
- UL 1998
- MET file E113907



Maximum availability

- Modular & independent architecture.
- Easy, fast & safe maintenance thanks to hot-swappable power modules.
- No downtime during maintenance.



High performance

- 98 % maximum efficiency.
- High efficiency at low power thanks to DPC (Dynamic Power Control).
- Full circular P/Q capability.



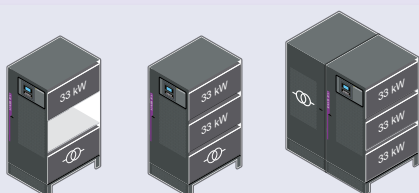
Easy to install

- Fully integrated protection.
- Fewer standardized parts.
- Front access operations.

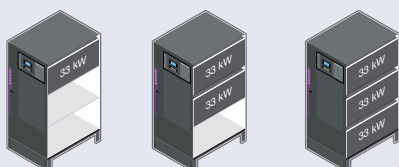
Totally flexible to fit your installation

The SUNSYS PCS² range
33 kW 66 kW 100 kW

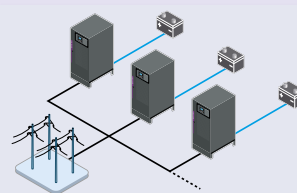
Internal transformer



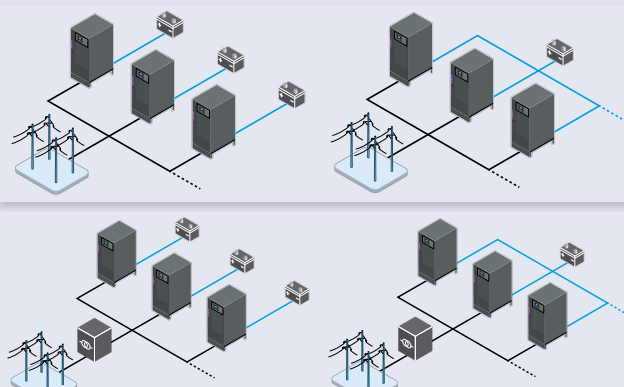
External transformer



Parallel configuration with separate battery



Parallel configuration with common battery



Technical data

SUNSYS PCS ²						
Model	33 kW TR	66 kW TR	100 kW TR	33 kW TL	66 kW TL	100 kW TL
Configuration	with integrated transformer			with external transformer		
INPUT (DC)						
Voltage tolerance	from 350 to 850 VDC (full power: from 450 to 800 VDC; power derating: from 350 to 450 VDC and from 800 to 850 VDC)					
Number of independent converters	1	2	3	1	2	3
Maximum discharging current	80 A	160 A	240 A	80 A	160 A	240 A
Maximum recharging current	80 A	160 A	240 A	80 A	160 A	240 A
OUTPUT (AC)						
Rated power	33000 W	66000 W	100000 W	33000 W	66000 W	100000 W
Maximum power (30 minutes max)	36300 W	72600 W	110000 W	36300 W	72600 W	110000 W
Rated apparent power	33000 VA	66000 VA	100000 VA	33000 VA	66000 VA	100000 VA
Maximum apparent power (30 minutes max)	36300 VA	72600 VA	110000 VA	36300 VA	72600 VA	110000 VA
Rated voltage	480 Vrms 3ph			280 Vrms 3ph		
Voltage tolerance	423 to 528 Vrms 3ph			252 to 308 Vrms 3ph (LV or MV external transformer required)		
Rated frequency	60 Hz					
Frequency tolerance	59.3 to 60.5 Hz					
Rated current	40 Arms	80 Arms	120 Arms	69 Arms	137 Arms	206 Arms
Maximum current	46 Arms	91 Arms	137 Arms	78 Arms	157 Arms	235 Arms
Power factor	-1.00 to +1.00					
THDI (%)	< 3%					
Topology	3-level, single conversion, integrated output transformer			3-level, single conversion, external output transformer		
EFFICIENCY						
Maximum efficiency	96.0%	96.2%	96.3%	97.6%		
COMMUNICATION						
Interfaces	MODBUS TCP/IP (Ethernet) and MODBUS RTU (RS485)					
ENVIRONMENT						
Environmental category	non-air conditioned indoor space (NEMA 3R protection case available as option)					
Operating ambient temperature	°C	-5 to +50 °C (-5 to 0 °C and +40 to +50 °C with derating)				
	°F	23 to 122 °F (23 to 32 °F and 104 to 122 °F with derating)				
Storage temperature	-5 °C to +60 °C / 23 °F to 140 °F					
Relative humidity	5% to 95% without condensation					
Cooling system	smart cooling					
Required cooling capacity	480 m³/h	1280 m³/h	1760 m³/h	480 m³/h	960 m³/h	1440 m³/h
Acoustic noise at 1 m	< 60 dB	< 64 dB		< 60 dB	< 64 dB	
Maximum altitude	1000 m/3300 ft. (full power)					
MECHANICAL SPECIFICATIONS						
Dimensions W x D x H	600 x 795 x 1400 mm 23.62 x 31.30 x 55.12 in.		1200 x 795 x 1400 mm 47.24 x 31.30 x 55.12 in.	600 x 795 x 1400 mm 23.62 x 31.30 x 55.12 in.		
Weight	330 kg/727.52 lbs.	525 kg/1157.43 lbs.	770 kg/1697.56 lbs.	130 kg/286.60 lbs.	160 kg/352.74 lbs.	190 kg/418.88 lbs.
Enclosure Type	NEMA 1 (NEMA 3R protection case available as option)					
CONFORMITY TO STANDARDS						
Safety	UL 1741					
EMC	FCC Part 1					
Grid Code	IEEE 1547-2003, IEEE 1547a-2014, IEEE 1547.1-2005					
Software	UL 1998					

HEADQUARTERS

SOCOMEK GROUP

SAS SOCOMEC capital 10 686 000 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse
F-67235 Benfeld Cedex - FRANCE

NORTH AMERICA

USA, CANADA & MEXICO

Boston
9 Galen Street, Suite 120
Watertown, MA 02472
Tel. 617 245 0447
Fax 617 245 0437
info.us@socomec.com

Livermore
365 North Canyons Parkway - Suite 219
Livermore, CA 94551
Tel. 925 294 0440
Fax 925 273-9432
info.us@socomec.com

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