

Product Environmental Profile



SUNSYS C-Cab L 50 - 600kVA

DC/AC Converter for Energy Storage Systems, from 50kVA to 600kVA



Socomec is member of :



Member of WEEE Europe



Environment and sustainable development commissions



The commitments of Socomec to respect the environment

As part of its environmental policy, Socomec is committed to:

- Incorporate the principles of the circular economy into the design of new products and services
- Promote longer product lifetimes
- Promote the use of environmentally responsible materials
- Design and develop solutions to further improve the energy efficiency of our products and services
- Inform our customers in a transparent manner about the environmental impact of our products throughout their life cycle.

To this end, Socomec is committed to constantly monitoring, anticipating and complying with environmental regulations as well as customer expectations relating to its products, and to ensuring that all those involved adhere to and take responsibility for its commitments.

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• Product information :

Reference product	
Model	SUNSYS C-Cab L 300kVA
Sales reference	71LSEZZ31C01000 & 6*SUN-HES-MOD50
Description	DC/AC Converter for Energy Storage Systems, from 50kVA to 600kVA
General data	
Power [W]	300000
Apparent power [VA]	300000
Efficiency	
Weighted STS efficiency [%]	97,47%
Weight & dimensions	
Mass without packaging [kg]	914,75
Mass of the packaging [kg]	81,25

Functional unit

Convert bidirectionally AC/DC power for Energy Storage Systems (ESS) from 100kVA to 600kVA rated power during a useful life time of 15 years.

References covered by this PEP with extrapolation rules:

SUNSYS C-Cab concept covers a wide range of solutions, based on 3 standardized bricks

- System: 71LSEZZ31C01000; 71LSEZZ31C010P1; 71LSEZZ31C01001
- Power modules: SUN-HES-MOD50

Solution	System		Power modules	
	Quantity	Part number	Quantity	Part number
SUNSYS C-Cab L 300kVA	1	71LSEZZ31C01000	6	SUN-HES-MOD50
SUNSYS C-Cab L 50kVA	1	71LSEZZ31C01000	1	SUN-HES-MOD50
SUNSYS C-Cab L 100kVA	1	71LSEZZ31C01000	2	SUN-HES-MOD50
SUNSYS C-Cab L 150kVA	1	71LSEZZ31C01000	3	SUN-HES-MOD50
SUNSYS C-Cab L 200kVA	1	71LSEZZ31C01000	4	SUN-HES-MOD50
SUNSYS C-Cab L 250kVA	1	71LSEZZ31C01000	5	SUN-HES-MOD50
SUNSYS C-Cab L 350kVA	1	71LSEZZ31C010P1	7	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50
SUNSYS C-Cab L 400kVA	1	71LSEZZ31C010P1	8	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50
SUNSYS C-Cab L 450kVA	1	71LSEZZ31C010P1	9	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50
SUNSYS C-Cab L 500kVA	1	71LSEZZ31C010P1	10	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50
SUNSYS C-Cab L 550kVA	1	71LSEZZ31C010P1	11	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50
SUNSYS C-Cab L 600kVA	1	71LSEZZ31C010P1	12	SUN-HES-MOD50
	1	71LSEZZ31C01001		SUN-HES-MOD50

• Materials and substances

Declaration of the constitutives materials

Total mass of the reference product (including packaging): 996 kg among which packaging: 81,25 kg

For the reference product:

Plastics as % of weight		Metals as % of weight		Other as % of weight	
Polyester	1,86%	Steel	39,38%	Wood	6,93%
Polyamide	1,31%	Aluminium and its alloys	24,17%	Electronic components	4,33%
PVC	0,95%	Copper and its alloys	12,47%	Cardboard	0,73%
PET	0,74%	Other ferrous alloys	3,74%	Miscellaneous	0,65%
PE	0,32%	Tin and its alloys	<0,1%	Other inorganics	0,31%
Epoxy resin	0,49%	Stainless steel	<0,1%	Paper	<0,1%
PC	0,31%	Precious metals	<0,1%	Other organics	<0,1%
ABS	0,10%	Nickel and its alloys	<0,1%		
Phenolic resin	<0,1%	Zinc and its alloys	<0,1%		
PBT	<0,1%	Other metals	<0,1%		
PTFE	<0,1%				
Other plastics	1,08%				
Total Plastics: 71,59 kg		Total Metals: 795,4 kg		Total Others: 129,01 kg	
	7,19%		79,86%		12,95%

Substances management

Socomec is leading a program to limit the use of hazardous substances in the design of new products and to monitor the presence of substances of concern in its supplies to anticipate future use restrictions.



Directive 2011/65/EU : Product references covered by this PEP meet the requirements of the RoHS Directive on the restriction of substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ethers (PBDEs) and phthalates (DIBP, DEHP, BBP, DBP).



REACH 1907/2006 regulation: To the best of our knowledge, based on the supplier declarations, at the publication date of this document, the product do not contain any SVHC in a concentration above 0,1% per weight.

• Manufacturing



The products covered by this PEP are manufactured on the production site of Isola Vincentina, Italy whose environmental management system has been ISO 14001 certified. Impacts on the environment are reduced by optimizing its energy consumption and by practicing a rigorous waste management.

• Distribution

As part of its distribution policy aiming to respect the environment, Socomec is in favor of groupage transports and ISO 14001 certified logistic partners.

No reconditionning is planned for the product. This phase is consequently neglected.

The sizing of the packaging has been optimized to ensure the best possible protection of the product at the lowest possible volume in order to reduce the impact of the transport stage on the environment.

• Installation

The installation stage consists in connecting the product to the existing electrical installation.

The installation does not generate any significant impacts on the environment, except impacts from packaging waste.

• Use phase

Consumption scenario, based on one battery cycle per day

Use phase scenario: European energy mix

Converter power capability [%]	0%	100%
Proportion of time spent [%]	83%	17%
Converter efficiency [%]	Up to 97,47%	

Auxiliary consumption [kW]	1,3
Proportion of time spent [%]	100%

Total energy consumption during 15 years

Total average energy consumption	337041 kWh
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Care and maintenance

It is recommended to carry out periodic specialized maintenance in order to keep the equipment at the maximum level of efficiency and to avoid the installation being out of service with possible damage/risks.

Typical consumables which are subjects to maintenance:

Consumables	Fans	PCBa	Capacitors	Control Module Power Supply	SPDs	UPS (C- CAB supply)	Air filter	Measurement instruments
Number of replacement	2	2	2	1	1	5	14	1

Consumables	Auxiliary power supply	PLC boxes
Number of replacement	2	1

• End of life

End of life treatment

The following parts require specific care and selective treatment in accordance with Annex VII of the WEEE Directive 2012/19/EU:

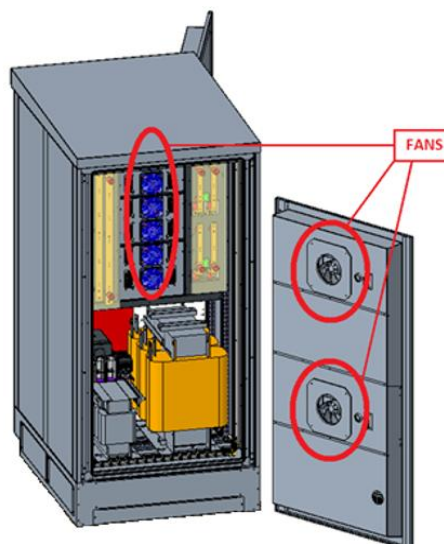
Waste of electrical and electronic equipment. Maintenance and disassembly should always be conducted by qualified personnel.

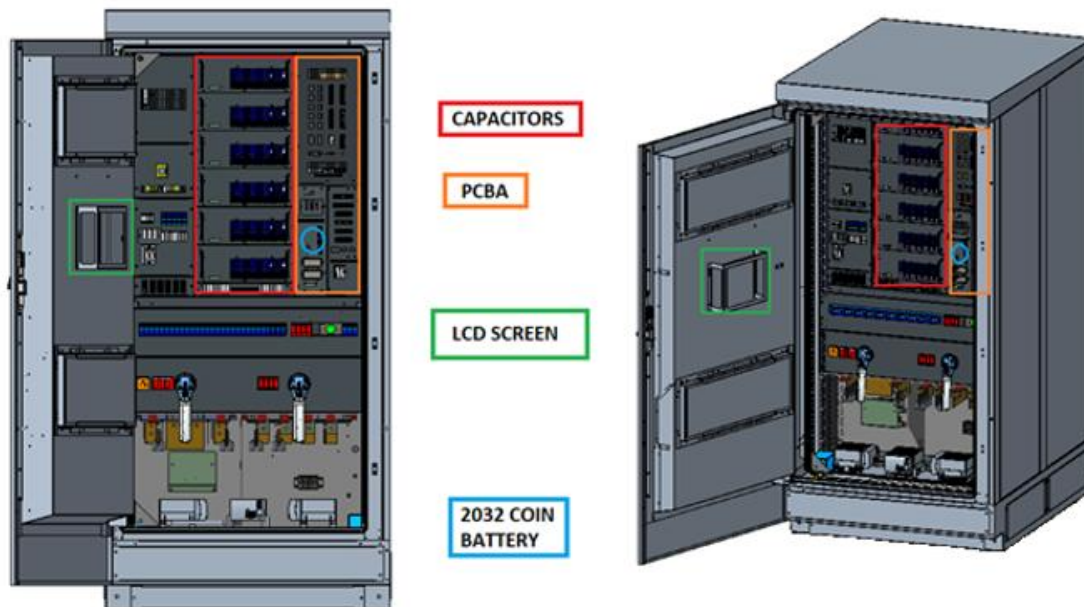
Type of component	Item
Potential security hazard for operators	LCD Screen
	Coin Battery
Necessity of a selective treatment	Capacitors
	PCBA
	LCD Screen
	Coin Battery
	Fans

Recyclability potential of the product according to IEC TR 62635

The recyclability potential of the product is 76,88%.

This covers material and energy recovery potentials.





• Environmental impacts

Calculation methodology: life cycle assessment (LCA)



The calculation of the impacts on the environment was made using a life cycle assessment methodology in accordance with the ISO 14040 requirements and with PEP eco passport product category rules.

For more details follow the link:

www.pep-ecopassport.org

This study was carried out with the following version of the software EIME and of the database:

EIME version: EIME v6.3.1

Database version: CODDE-2025-04

For biogenic carbon storage the following methodology was used : 0/0

The whole life cycle has been taken into account:

Step	Geographical representativeness	Scenario
Manufacturing (M) (A1-A3)	Production of electronic components : Asia Production of other components and packaging : Europe Assembly : France	From the raw material extraction to the last Socomec logistic platform, including packaging Waste generated during manufacturing phase are taken into account.
Distribution (D) (A4)	Distribution scenario : Europe	From the last Socomec logistic platform to the final customer.
Installation (I) (A5)	Transport and treatment of packaging wastes : Local	Local road transport of 1000 km of generated wastes to the treatment site, end of life treatment.
Use phase (U) (B1-B7)	Energy mix : Europe Production of maintenance components: analog to manufacturing phase	Power consumption required during 15 years and maintenance according to consumption scenario above mentioned.
End of life (EOL) (C1-C4)	Transport and treatment : Local	Road transport of 1000 km from the final customer to the treatment sites. End of life treatment.

Environmental impacts of the SUNSYS C-Cab L 300kVA, per FU

The following impacts have been calculated to best represent geographically, temporally and technologically each step of the life cycle.

Indicators	Unit	Total impact	M (A1-A3)	D (A4)	I (A5)	U (B1-B7)	EOL (C1-C4)
Climate change	kg CO2 eq.	1,46E+05	8,79E+03	2,21E+02	1,29E+02	1,37E+05	2,70E+02
Climate change-Biogenic	kg CO2 eq.	3,22E+03	8,04E+01	0*	1,21E+02	3,01E+03	0*
Climate change-Fossil	kg CO2 eq.	1,43E+05	8,70E+03	2,21E+02	0*	1,34E+05	2,70E+02
Climate change-Land use and land use change	kg CO2 eq.	6,76E-03	6,15E-03	3,34E-04	8,31E-06	2,55E-04	1,43E-05
Ozone depletion	kg CFC-11 eq.	1,71E-03	1,05E-03	2,68E-06	4,35E-07	6,46E-04	4,14E-06
Acidification	mol H+ eq.	8,08E+02	9,17E+01	3,52E-01	0*	7,16E+02	0*
Eutrophication, freshwater	kg P eq.	3,73E-01	4,29E-02	8,27E-04	5,48E-05	3,29E-01	4,10E-04
Eutrophication, marine	kg N eq.	9,27E+01	8,86E+00	6,48E-02	0*	8,37E+01	2,40E-02
Eutrophication, terrestrial	mol N eq.	1,44E+03	9,87E+01	7,11E-01	0*	1,34E+03	2,04E-01
Photochemical ozone formation - human health	kg NMVOC eq.	2,98E+02	3,16E+01	2,28E-01	0*	2,66E+02	1,26E-01
Resource use, minerals and metals	kg SB eq.	8,88E-01	7,62E-01	0*	0*	1,26E-01	0*
Resource use, fossils	MJ	3,56E+06	2,78E+05	3,93E+03	0*	3,28E+06	0*
Water use	m3 eq.	1,62E+04	5,32E+03	7,95E+00	0*	1,08E+04	9,79E+00
Particulate matter	Disease occurrence	6,26E-03	6,35E-04	3,00E-06	0*	5,62E-03	0*
Ionising radiation, human health	kBq U235 eq.	1,83E+05	4,28E+03	0*	0*	1,79E+05	0*
Ecotoxicity, freshwater	CTUe	6,70E+05	4,48E+05	6,43E+03	1,90E+02	2,15E+05	5,29E+02
Human toxicity, cancer	CTUh	3,08E-04	1,92E-04	4,32E-08	0*	1,16E-04	0*
Human toxicity, non-cancer	CTUh	9,37E-04	5,09E-04	8,24E-07	0*	4,27E-04	3,96E-07
Land use	No dimension	3,72E+03	8,72E+01	9,44E-01	0*	3,63E+03	0*
Renewable primary energy used as energy	MJ	7,74E+05	7,91E+03	0*	0*	7,66E+05	0*
Renewable primary energy used as raw material	MJ	2,06E+03	2,04E+03	0*	0*	1,76E+01	0*
Total renewable primary energy	MJ	7,76E+05	9,95E+03	0*	0*	7,66E+05	0*
Non renewable primary energy used as energy	MJ	3,55E+06	2,74E+05	3,93E+03	0*	3,28E+06	0*
Non renewable primary energy used as raw material	MJ	3,68E+03	3,40E+03	0*	0*	2,77E+02	0*
Total non renewable primary energy	MJ	3,56E+06	2,78E+05	3,93E+03	0*	3,28E+06	0*
Total primary energy	MJ	4,33E+06	2,88E+05	3,94E+03	0*	4,04E+06	0*
Use of secondary material	kg	0,00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*
Use of non renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*
Net use of fresh water	m3	3,77E+02	1,24E+02	1,85E-01	0*	2,53E+02	4,13E-02
Hazardous waste disposed	kg	3,34E+04	2,76E+04	0*	0*	5,85E+03	0*
Non hazardous waste disposed	kg	3,04E+04	9,54E+03	2,05E+01	0*	2,08E+04	0*
Radioactive waste disposed	kg	1,26E+01	7,49E+00	1,62E-02	0*	5,04E+00	1,66E-03
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for recycling	kg	6,34E-01	4,99E-01	0*	0*	1,35E-01	0*
Materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*
Exported Energy	MJ	0,00E+00	0*	0*	0*	0*	0*
Biogenic carbon content - Product	kg of C	0,00E+00	0*	0*	0*	0*	0*
Biogenic carbon content - Packaging	kg of C	3,05E+01	3,02E+01	0*	0*	2,96E-01	0*

NB : 0* means that this impact either represents less than 0.01% of the total life cycle of the reference flow, or has no impact (in the case where the total impact is zero).

PRODUCT ENVIRONMENTAL PROFILE

For the products covered by the PEP other than the reference product, the environmental impacts of each phase of the lifecycle are calculated with the following extrapolation factors :

Model	M (A1-A3)	D (A4)	I (A5)	U (B1-B7)	EOL (C1-C4)
SUNSYS C-Cab L 300kVA	1,00	1,00	1,00	1,00	1,00
SUNSYS C-Cab L 50kVA	0,86	0,86	0,69	0,17	0,88
SUNSYS C-Cab L 100kVA	0,89	0,89	0,76	0,33	0,90
SUNSYS C-Cab L 150kVA	0,92	0,92	0,82	0,50	0,92
SUNSYS C-Cab L 200kVA	0,94	0,94	0,89	0,67	0,95
SUNSYS C-Cab L 250kVA	0,97	0,97	0,96	0,83	0,97
SUNSYS C-Cab L 350kVA	1,86	1,86	1,72	1,17	1,87
SUNSYS C-Cab L 400kVA	1,89	1,89	1,78	1,33	1,90
SUNSYS C-Cab L 450kVA	1,92	1,92	1,85	1,50	1,92
SUNSYS C-Cab L 500kVA	1,94	1,94	1,92	1,67	1,95
SUNSYS C-Cab L 550kVA	1,97	1,97	1,99	1,83	1,97
SUNSYS C-Cab L 600kVA	2,00	2,00	2,06	2,00	2,00

Extrapolation factors were determined as follows:

- For the Manufacturing and Distribution phases they are proportional to the mass of the product with its packaging;
- For the Installation phase they are proportional to the mass of the packaging;
- For the Use phase they are proportional to the output power.
- For the End of Life phase they are proportional to the mass of the product without its packaging;

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Verifier accreditation number : VH12	Information and reference documents : www.pep-ecopassport.org
Date of issue: 09-2025	Validity period : 5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006	
Internal : ☒ External : ☐	
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)	
PEPs are compliant with XP C08-100-1 : 2016 or EN 50693:2019	
The components of the present PEP may not be compared with components from any other program.	
Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"	

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