Product Environmental Profile

ISO 14025 COMPLIANT

SUNSYS C-Cab L 50 - 300kVA

DC/AC Converter for Energy Storage Systems

Socomec is member of :

ecosystem
Membre de WEEE Europe

THE GLOBAL COMPACT

Gimélec
Environment and sustainable development commissions

PEP ecopassport®

The commitments of Socomec to respect the environment

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

- Develop innovating solutions primarily focused on energy efficiency to help its customer in the design of less energy-consuming, better managed and ecofriendly installations,
- Diversify its product offer in the renewable energy and energy efficiency sectors,
- Minimize the environmental impact of its industrial activities through the progressive ISO 14001 certification of its production sites,
- Minimize at the preliminary design stage the environmental impacts of its products taking into account their whole life cycle,
- Provide its customers with reliable data on the environmental performance of the products.

PEP ecopassport® N° Enregistrement : SOCO-00049-V01.02-EN

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Innovative Power Solutions

Product information

Reference product
The representative product is the **SUNSYS C-Cab L 300kVA** composed of one SUN-HES-L-400 (converter cabinet) – commercial reference 71LSEZZ31C01000- and six SUN-HES-MOD50 (power module).

Functional unit
Convert bidirectionally AC/DC power for Energy Storage Systems (ESS) from 50kVA to 300kVA rated power during a useful life time of 15 years.

Material and substances

Declaration of the constitutive materials according to IEC 62474
Total mass of the reference product (including packaging): **996kg**
Total mass of packaging: **81,27kg**
The packaging is composed of carton, paper, film packaging and a wooden pallet

For the SUNSYS C-Cab L 300kVA

Metals, 82,5% weight		**Plastics, 8,18% weight**		**Others, 9,32% weight**	
Other ferrous alloys – non stainless	44,29%	Others thermoplastics	5,34%	Others Organics	8,29%
Aluminium and its alloys	24,49%	Other plastics	2,08%	Others Inorganics	0,63%
Copper and its alloys	13,24%	PVC	0,76%	Ceramics and Glass	0,40%
Other non-ferrous metals and alloys	0,47%				
Nickel and its alloys	<0,1%				
Zinc and its alloys	<0,1%				
Precious Metals	<0,1%				
Stainless steels	<0,1%				

The estimated content of recycled materials is **17,5%**, based on a Life Cycle Analysis model with EIME software.

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.

RoHS2 COMPLIANT

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 COMPLIANT

To the best of our knowledge, based on the supplier declarations, at the publication date of this document, the products do not contain any other SVHC in a concentration above 0,1% per weight.

Manufacturing

The products covered by this PEP are manufactured on the production site whose environmental management system has been ISO 14001 certified.

The products covered by this PEP are manufactured on a site where impacts on the environment are reduced by optimizing its energy consumption and by practicing a rigorous waste management.

Moreover, Socomec is committed to the progressive ISO 14001 certification of its manufacturing sites.

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.

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 : Peak shaving
Use phase scenario: USA energy mix

Converter power capability (%)	100%	0%
Proportion of time spent (%)	67%	33%

Total energy consumption during 15 years

Total average energy consumption	668208 kWh
Converter efficiency	Up to 97,47%

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 parts which are subject to maintenance:

Components	**Fan**	**PCBa**	**Capacitors**	**Control Module Power Supply**	**SPDs**
Number of replacements	2	2	2	1	1
Components	**UPS (C-CAB supply)**	**Air filter**	**Measurement instruments**	**Auxiliary Power supply**	**PLC boxes**
Number of replacements	5	14	1	2	1

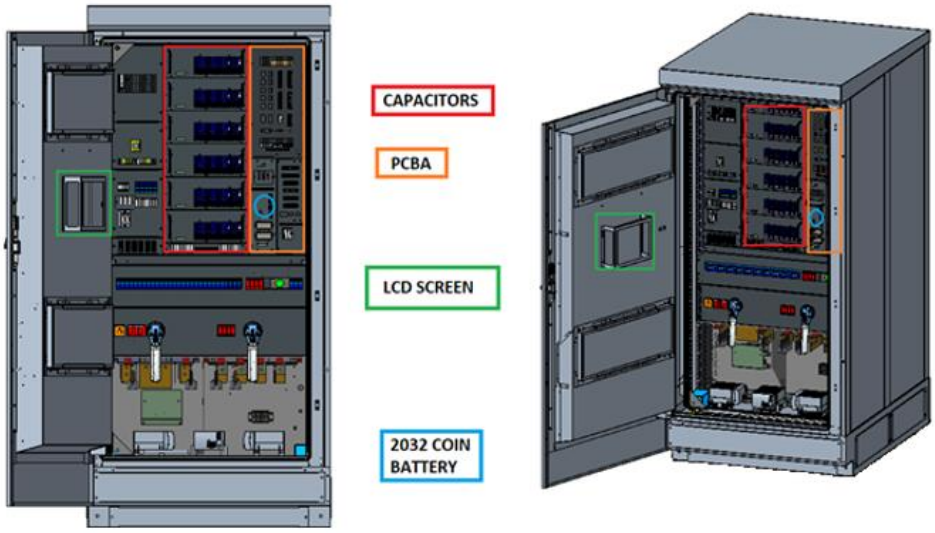
Consumables

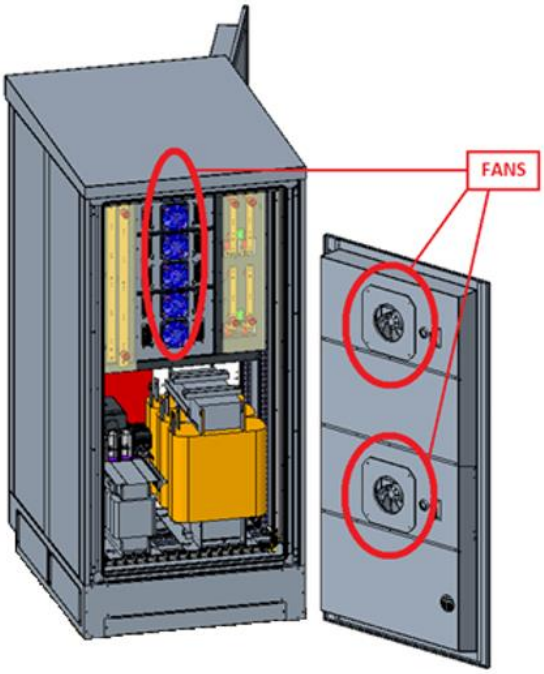
The product does not require consumables.

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





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 version 5.9.3 of the software EIME with version database CODDE-2020-12. The software is distributed by CODDE which is a subsidiary of Bureau Veritas.

The whole life cycle has been taken into account:

Step	Geographical representativeness	Scenario
Manufacturing (M)	Production of electronic components : Asia Production of other components and packaging : Europe Final assembly : Italy	From the raw material extraction to the last Socomec logistic platform, including packaging Waste generated during manufacturing phase are taken into account.
Distribution (D)	Distribution scenario : International	From the last Socomec logistic platform to the final customer. No product reconditioning. 19000 km by boat + 3500 km by truck
Installation (I)	Transport and treatment of packaging wastes : Local	Local road transport of 1000 km of generated wastes to the treatment site, and landfilling
Use phase (U)	Energy mix : US Production of maintenance components : analog to manufacturing phase	Power consumption required during 15 years and maintenance according to consumption scenario described on page 3.
End Of Life (EOL)	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
The following impacts have been calculated to best represent geographically and technologically each step of the life cycle.

Indicators	Unit	Total impact	M	D	I	U	EOL
Contribution to global warming	kg CO_2 eq.	4,70E+05	6,17E+03	7,68E+02	0*	4,63E+05	1,97E+02
Contribution to ozone layer depletion	kg CFC-11 eq.	9,45E-03	9,76E-04	1,46E-06	0*	8,47E-03	2,94E-06
Contribution to the soil and water acidification	kg SO_2 eq.	4,89E+02	3,34E+01	1,05E+01	7,35E-02	4,44E+02	8,12E-01
Contribution to water eutrophication	kg $(PO_4)^{3-}$ eq.	1,22E+02	3,09E+00	1,32E+00	5,07E-02	1,17E+02	5,60E-01
Contribution to photochemical ozone formation	kg C_2H_4 eq.	7,39E+01	2,22E+00	5,68E-01	0*	7,10E+01	6,06E-02
Contribution to the depletion of abiotic resources - elements	kg Sb eq.	5,56E-01	4,92E-01	0*	0*	6,43E-02	0*
Contribution to the depletion of abiotic resources - fossil fuels	MJ	5,70E+06	5,57E+04	1,04E+04	0*	5,64E+06	2,31E+03
Contribution to water pollution	m^3	2,35E+07	5,23E+05	1,22E+05	2,43E+03	2,28E+07	2,69E+04
Contribution to air pollution	m^3	4,07E+07	1,27E+06	6,00E+04	0*	3,93E+07	1,65E+04
Use of renewable primary energy (excl. raw materials)	MJ	3,78E+05	4,00E+03	0*	0*	3,74E+05	0*
Use of renewable primary energy used as raw materials	MJ	1,62E+03	1,61E+03	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	3,80E+05	5,61E+03	0*	0*	3,74E+05	0*
Use of non-renewable primary energy (excl. raw materials)	MJ	6,03E+06	1,54E+05	1,04E+04	0*	5,86E+06	2,41E+03
Use of non-renewable primary energy used as raw materials	MJ	2,91E+03	2,70E+03	0*	0*	0*	0*
Total use of non-renewable primary energy resources	MJ	6,03E+06	1,57E+05	1,04E+04	0*	5,86E+06	2,41E+03
Use of secondary materials	kg	1,98E+02	1,94E+02	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	m^3	1,56E+03	6,13E+02	0*	0*	9,45E+02	0*
Hazardous waste disposed of	kg	3,19E+04	1,82E+04	0*	0*	1,37E+04	0*
Non-hazardous waste disposed of	kg	8,05E+04	8,33E+03	2,59E+01	9,11E+01	7,11E+04	1,01E+03
Radioactive waste disposed of	kg	1,57E+01	7,79E+00	1,83E-02	3,32E-03	7,81E+00	3,67E-02
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for recycling	kg	3,73E-01	2,76E-01	0*	0*	0*	0*
Materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*
Exported energy	MJ by energy vector	0,00E+00	0*	0*	0*	0*	0*
Total use of primary energy during the life cycle	MJ	6,41E+06	1,63E+05	1,05E+04	0*	6,23E+06	2,44E+03

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

Registration number : ***SOCO-00049-V01.02-EN***	Drafting Rules : **PCR-ed3-FR-2015 04 02**
Verifier accreditation number : ***VH12***	Information and reference documents : **www.pep-ecopassport.org**
Date of issue : ***03-2022***	Validity period : **5 years**
Independant verification of the declaration and data, in compliance with ISO 14025 : 2010	
Internal : ☒	**External :** ☐
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)	
PEP are compliant with XP C08-100-1 : 2016 The elements of the present PEP cannot be compared with elements from another program	
Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »	

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