Product Environmental Profile

FP ESS fuse - Frame 2

Fuses for energy storage systems - type 2 frame up to 800A and 1500Vdc

Socomec is member of :

ecosystem

Member of WEEE Europe

THE GLOBAL COMPACT

Gimélec

Environment and sustainable development commisions

PEP eco PASS PORT®

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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Innovative Power Solutions

PRODUCT ENVIRONMENTAL PROFILE

● Product information :

Reference product

The representative product is the FP ESS fuse - Frame 2 with sales reference 61S32080 with the following description: Fuses for energy storage systems - type 2 frame up to 800A and 1500Vdc

Other covered references

This PEP covers other references listed in the table at the end of the document.

Functional unit

Protect the installation against the overload of more than a rated current of 800A and rated voltage of 1500 Vdc and for the reference service life of 20 years.

● Materials and substances

Declaration of the constitutives materials

Total mass of the reference product (including packaging): 1,63 kg among which packaging: 0,25 kg

For the reference product:

Plastics as % of weight		Metals as % of weight		Other as % of weight	
PET	19,01%	Copper and its alloys	8,40%	Other inorganics	47,71%
PE	8,89%	Zinc and its alloys	1,74%	Wood	6,81%
Polyamide	1,96%	Stainless steel	0,27%	Cardboard	5,01%
				Paper	0,20%
Total Plastics: 0,49 kg	**29,86%**	**Total Metals: 0,17 kg**	**10,41%**	**Total Others: 0,97 kg**	**59,73%**

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

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 at a production site in China 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.

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 phase 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

Use phase was modelised according to the following scenario:

Geography: European energy mix
Load rate: 40% of 800A (In)
Use time rate: 30% of the time over 20 years (RLT)

Care and maintenance
The product does not require any maintenance under normal conditions of use.

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 : *none.*
Maintenance and disassembly should always be conducted by qualified personnel.

Recyclability potential of the product according to IEC TR 62635
The recyclability potential of the product is 16,83%.
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 v6.2.4
Database version: CODDE -2024-04 updated on 2024-06-04
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 components and packaging : Asia Assembly : China	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	Power consumption required during 20 years and maintenance according to consumption scenario above mentionned.
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 61S32080, 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.	7,58E+02	5,51E+00	4,91E-01	7,53E-01	7,51E+02	1,18E-01
Climate change-Biogenic	kg CO2 eq.	1,58E+00	0*	0*	3,67E-01	1,38E+00	0*
Climate change-Fossil	kg CO2 eq.	7,56E+02	5,68E+00	4,91E-01	3,85E-01	7,50E+02	1,18E-01
Climate change-Land use and land use change	kg CO2 eq.	0,00E+00	0*	0*	0*	0*	0*
Ozone depletion	kg CFC-11 eq.	4,13E-06	4,87E-07	6,39E-10	7,35E-10	3,64E-06	1,33E-09
Acidification	mol H+ eq.	3,94E+00	7,58E-02	1,71E-02	0*	3,85E+00	6,28E-04
Eutrophication, freshwater	kg P eq.	2,05E-03	5,53E-05	0*	2,59E-06	1,98E-03	1,48E-05
Eutrophication, marine	kg N eq.	4,83E-01	9,48E-03	4,03E-03	2,20E-04	4,69E-01	2,75E-04
Eutrophication, terrestrial	mol N eq.	7,68E+00	1,02E-01	4,41E-02	0*	7,53E+00	2,80E-03
Photochemical ozone formation - human health	kg NMVOC eq.	1,52E+00	3,55E-02	1,14E-02	3,11E-04	1,48E+00	7,27E-04
Resource use, minerals and metals	kg SB eq.	5,76E-04	3,10E-04	0*	0*	2,66E-04	0*
Resource use, fossils	MJ	1,91E+04	1,19E+02	6,21E+00	0*	1,90E+04	0*
Water use	m3 eq.	5,98E+01	2,23E+00	0*	0*	5,75E+01	0*
Particulate matter	Disease occurrence	3,15E-05	4,72E-07	8,99E-08	0*	3,10E-05	4,64E-09
Ionising radiation, human health	kBq U235 eq.	1,14E+03	5,99E+01	0*	0*	1,08E+03	0*
Ecotoxicity, freshwater	CTUe	2,21E+03	7,91E+02	2,93E-01	1,46E+00	1,42E+03	7,16E-01
Human toxicity, cancer	CTUh	1,79E-06	1,69E-06	0*	0*	9,44E-08	0*
Human toxicity, non-cancer	CTUh	3,03E-06	7,71E-07	0*	4,20E-10	2,26E-06	0*
Land use	No dimension	2,10E+01	2,04E-01	0*	0*	2,08E+01	0*
Renewable primary energy used as energy	MJ	5,02E+03	2,31E+00	0*	0*	5,02E+03	0*
Renewable primary energy used as raw material	MJ	5,19E+00	5,19E+00	0*	0*	0*	0*
Total renewable primary energy	MJ	5,03E+03	7,50E+00	0*	0*	5,02E+03	0*
Non renewable primary energy used as energy	MJ	1,91E+04	9,69E+01	6,21E+00	0*	1,90E+04	0*
Non renewable primary energy used as raw material	MJ	2,19E+01	2,19E+01	0*	0*	0*	0*
Total non renewable primary energy	MJ	1,91E+04	1,19E+02	6,21E+00	0*	1,90E+04	0*
Total primary energy	MJ	2,41E+04	1,26E+02	6,22E+00	0*	2,40E+04	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	1,40E+00	5,18E-02	0*	0*	1,35E+00	0*
Hazardous waste disposed	kg	5,77E+01	2,48E+01	0*	0*	3,29E+01	0*
Non hazardous waste disposed	kg	1,33E+02	4,87E+00	1,50E-02	2,65E-01	1,27E+02	1,45E+00
Radioactive waste disposed	kg	3,23E-02	3,14E-03	1,04E-05	6,41E-06	2,91E-02	2,16E-05
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for recycling	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*
Exported Energy	MJ	1,38E-01	4,18E-02	0*	9,67E-02	0*	0*
Biogenic carbon content - Product	kg of C	0,00E+00	0*	0*	0*	0*	0*
Biogenic carbon content - Packaging	kg of C	8,02E-02	8,02E-02	0*	0*	0*	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).*

For the use stage (U), the product does not require maintenance therefore the impacts values are representatives of the B6 phase from the use stage : "Energy requirements during the use stage"

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Verifier accreditation number : VH12	Information and reference documents : www.pep-ecopassport.org
Date of issue: 02-2025	Validity period : 5 years
Independant 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”	

This document is intended to be only informative and non-contractual and does not create any right or obligation or commitment for Socomec towards its associates, customers or any other person or entity. All the values indicated in this document may change depending on many factors (use conditions, applications, installations, environment…). The life time mentioned in this document is only indicative and is not intended to be the minimal, maximal or average life time of the product.

Other references covered and extrapolation factors

For the products covered by the PEP other than the reference product, the environmental impacts of each phase of the lifecycle may be calculated with extrapolation factors following the proportionnality rules that you can find below.

Extrapolation factors are determined as follows and can be provided upon request:

- 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 power losses of the product;
- For the End of Life phase they are proportional to the mass of the product without its packaging.

Model	Reference
FP ESS FRAME 2 FLUSH 800A	61S32080
FP ESS Frame 2 CDB 160A	61S62016
FP ESS Frame 2 CDB 200A	61S62020
FP ESS Frame 2 CDB 250A	61S62025
FP ESS Frame 2 CDB 280A	61S62028
FP ESS Frame 2 CDB 315A	61S62032
FP ESS Frame 2 CDB 350A	61S62035
FP ESS Frame 2 CDB 400A	61S62040
FP ESS Frame 2 CDB 450A	61S62045
FP ESS Frame 2 CDB 500A	61S62050
FP ESS Frame 2 CDB 550A	61S62055
FP ESS Frame 2 CDB 630A	61S62063
FP ESS Frame 2 CDB 700A	61S62070
FP ESS Frame 2 CDB 800A	61S62080
FP ESS Frame 2 CUB 160A	61S42016
FP ESS Frame 2 CUB 200A	61S42020
FP ESS Frame 2 CUB 250A	61S42025
FP ESS Frame 2 CUB 280A	61S42028
FP ESS Frame 2 CUB 315A	61S42032
FP ESS Frame 2 CUB 350A	61S42035
FP ESS Frame 2 CUB 400A	61S42040
FP ESS Frame 2 CUB 400A	61S42040
FP ESS Frame 2 CUB 450A	61S42045
FP ESS Frame 2 CUB 500A	61S42050
FP ESS Frame 2 CUB 550A	61S42055
FP ESS Frame 2 CUB 630A	61S42063
FP ESS Frame 2 CUB 700A	61S42070
FP ESS Frame 2 CUB 800A	61S42080
FP ESS FRAME 2 DIN 160A	61S12016
FP ESS FRAME 2 DIN 200A	61S12020
FP ESS FRAME 2 DIN 250A	61S12025
FP ESS FRAME 2 DIN 280A	61S12028
FP ESS FRAME 2 DIN 315A	61S12032
FP ESS FRAME 2 DIN 350A	61S12035
FP ESS FRAME 2 DIN 400A	61S12040
FP ESS FRAME 2 DIN 450A	61S12045
FP ESS FRAME 2 DIN 500A	61S12050
FP ESS FRAME 2 DIN 550A	61S12055
FP ESS FRAME 2 DIN 630A	61S12063
FP ESS FRAME 2 DIN 700A	61S12070

FP ESS FRAME 2 DIN 800A	61S12080
FP ESS FRAME 2 FLUSH 160A	61S32016
FP ESS FRAME 2 FLUSH 200A	61S32020
FP ESS FRAME 2 FLUSH 250A	61S32025
FP ESS FRAME 2 FLUSH 280A	61S32028
FP ESS FRAME 2 FLUSH 315A	61S32032
FP ESS FRAME 2 FLUSH 350A	61S32035
FP ESS FRAME 2 FLUSH 400A	61S32040
FP ESS FRAME 2 FLUSH 450A	61S32045
FP ESS FRAME 2 FLUSH 500A	61S32050
FP ESS FRAME 2 FLUSH 550A	61S32055
FP ESS FRAME 2 FLUSH 630A	61S32063
FP ESS FRAME 2 FLUSH 700A	61S32070
FP ESS FRAME 2 BOLTED 160A	61S22016
FP ESS FRAME 2 BOLTED 200A	61S22020
FP ESS FRAME 2 BOLTED 250A	61S22025
FP ESS FRAME 2 BOLTED 280A	61S22028
FP ESS FRAME 2 BOLTED 315A	61S22032
FP ESS FRAME 2 BOLTED 350A	61S22035
FP ESS FRAME 2 BOLTED 400A	61S22040
FP ESS FRAME 2 BOLTED 450A	61S22045
FP ESS FRAME 2 BOLTED 500A	61S22050
FP ESS FRAME 2 BOLTED 550A	61S22055
FP ESS FRAME 2 BOLTED 630A	61S22063
FP ESS FRAME 2 BOLTED 700A	61S22070
FP ESS FRAME 2 BOLTED 800A	61S22080
FP ESS Frame 2 UB0 160A	61S52016
FP ESS Frame 2 UB0 200A	61S52020
FP ESS Frame 2 UB0 250A	61S52025
FP ESS Frame 2 UB0 280A	61S52028
FP ESS Frame 2 UB0 315A	61S52032
FP ESS Frame 2 UB0 350A	61S52035
FP ESS Frame 2 UB0 400A	61S52040
FP ESS Frame 2 UB0 450A	61S52045
FP ESS Frame 2 UB0 500A	61S52050
FP ESS Frame 2 UB0 550A	61S52055
FP ESS Frame 2 UB0 630A	61S52063
FP ESS Frame 2 UB0 700A	61S52070
FP ESS Frame 2 UB0 800A	61S52080