

Product Environmental Profile



SIRCO MC PV up to 1500VDC

Disconnect switches for photovoltaic applications, with and without enclosure



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.

Socomec is member of :

ecosystem



Member of WEEE Europe

Gimélec

Environment and sustainable development commissions



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socomec
Innovative Power Solutions

• Product information :

Reference product

The representative product is the SIRCO MC PV 4P 32A 1500VDC with sales reference 21PV4132 with the following description:
Disconnect switches for photovoltaic applications

Other covered references

This PEP covers other products, including enclosed version. All covered product codes are listed in the table at the end of the document.

Functional unit

Make and break currents by separating part of the installation from a source of electrical energy, with a rated current of 32A and rated voltage up to 1500Vdc, for wall-mounted or enclosure / cabinet installation, in industrial applications areas, according to the appropriate use scenario, and during the reference life of 20 years of the product.

Provide isolation to ensure the disconnection of the circuit according to the appropriate use scenario.

• Materials and substances

Declaration of the constitutives materials

For the reference product with the following part number 21PV4132:

Total mass of the reference product (including packaging): 0,257 kg among which packaging: 0,045 kg

Plastics as % of weight		Metals as % of weight		Other as % of weight	
Polyamide	42,21%	Stainless steel	21,90%	Cardboard	15,93%
PBT	4,78%	Copper and its alloys	9,55%	Paper	1,59%
PVC	2,85%	Other ferrous alloys	0,40%		
POM	0,40%	Precious metals	<0,1%		
Other plastics	0,40%				
Total Plastics: 0,13 kg		Total Metals: 0,08 kg		Total Others: 0,05 kg	
	50,63%		31,85%		17,52%

For the enclosed version with the following part number 21PV4133:

Total mass of the reference product (including packaging): 0,63 kg among which packaging: 0,071 kg

Plastics as % of weight		Metals as % of weight		Other as % of weight	
PC	25,15%	Stainless steel	10,09%	Cardboard	10,73%
ABS	25,15%	Copper and its alloys	3,84%	Paper	0,64%
Polyamide	20,51%	Other ferrous alloys	0,16%		
PBT	1,92%	Precious metals	<0,1%		
PVC	1,15%				
POM	0,16%				
Other plastics	0,48%				
Total Plastics: 0,47 kg		Total Metals: 0,09 kg		Total Others: 0,07 kg	
	74,53%		14,10%		11,38%

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 a production site in Germany 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 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: 50% of 32A (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

Part numbers covered by this PEP do not contain hazardous components a defined in 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.

Recyclability potential of the product according to IEC TR 62635

The recyclability potential of the product is 39,79%.

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 v6.2.5

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 other components and packaging : Europe Assembly : Germany	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.

PRODUCT ENVIRONMENTAL PROFILE

Environmental impacts of the SIRCO MC PV 4P 32A 1500VDC, 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.	3,05E+01	1,83E+00	4,53E-02	6,27E-02	2,84E+01	1,35E-01
Climate change-Biogenic	kg CO2 eq.	1,45E-02	0*	0*	1,13E-02	5,23E-02	0*
Climate change-Fossil	kg CO2 eq.	3,05E+01	1,88E+00	4,53E-02	5,13E-02	2,84E+01	1,35E-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.	2,22E-07	8,18E-08	6,95E-11	6,36E-10	1,38E-07	1,55E-09
Acidification	mol H+ eq.	1,61E-01	1,43E-02	2,87E-04	1,50E-04	1,46E-01	3,56E-04
Eutrophication, freshwater	kg P eq.	1,25E-04	4,78E-05	1,70E-08	6,78E-07	7,49E-05	2,12E-06
Eutrophication, marine	kg N eq.	2,04E-02	2,24E-03	1,35E-04	7,15E-05	1,78E-02	2,15E-04
Eutrophication, terrestrial	mol N eq.	3,13E-01	2,37E-02	1,48E-03	4,74E-04	2,85E-01	2,36E-03
Photochemical ozone formation - human health	kg NMVOC eq.	6,41E-02	7,24E-03	3,72E-04	1,12E-04	5,59E-02	5,26E-04
Resource use, minerals and metals	kg SB eq.	5,09E-05	4,30E-05	0*	0*	1,01E-05	0*
Resource use, fossils	MJ	7,71E+02	5,15E+01	6,32E-01	4,97E-01	7,18E+02	0*
Water use	m3 eq.	2,74E+00	5,37E-01	0*	3,68E-03	2,18E+00	2,48E-02
Particulate matter	Disease occurrence	1,26E-06	8,62E-08	2,33E-09	9,25E-10	1,17E-06	5,27E-10
Ionising radiation, human health	kBq U235 eq.	4,88E+01	7,91E+00	0*	7,36E-03	4,09E+01	0*
Ecotoxicity, freshwater	CTUe	3,78E+03	3,73E+03	0*	7,12E-01	5,37E+01	0*
Human toxicity, cancer	CTUh	4,07E-08	3,16E-08	0*	5,45E-09	3,58E-09	5,64E-12
Human toxicity, non-cancer	CTUh	1,99E-07	1,13E-07	0*	1,59E-10	8,54E-08	3,31E-10
Land use	No dimension	8,17E-01	2,94E-02	0*	1,32E-04	7,87E-01	0*
Renewable primary energy used as energy	MJ	1,90E+02	1,57E-01	0*	6,25E-02	1,90E+02	0*
Renewable primary energy used as raw material	MJ	1,09E+00	1,09E+00	0*	0*	0*	0*
Total renewable primary energy	MJ	1,91E+02	1,25E+00	0*	6,25E-02	1,90E+02	0*
Non renewable primary energy used as energy	MJ	7,65E+02	4,63E+01	6,32E-01	4,97E-01	7,18E+02	0*
Non renewable primary energy used as raw material	MJ	5,28E+00	5,28E+00	0*	0*	0*	0*
Total non renewable primary energy	MJ	7,71E+02	5,15E+01	6,32E-01	4,97E-01	7,18E+02	0*
Total primary energy	MJ	9,62E+02	5,28E+01	6,33E-01	5,59E-01	9,08E+02	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	6,44E-02	1,25E-02	0*	8,58E-05	5,12E-02	5,77E-04
Hazardous waste disposed	kg	4,73E+00	3,53E+00	0*	1,20E-03	1,25E+00	0*
Non hazardous waste disposed	kg	5,34E+00	4,80E-01	1,59E-03	2,02E-02	4,80E+00	3,48E-02
Radioactive waste disposed	kg	1,43E-03	2,95E-04	1,13E-06	2,48E-06	1,10E-03	2,65E-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	4,00E-03	0*	0*	4,00E-03	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	1,88E-02	1,88E-02	0*	0*	0*	0*

PRODUCT ENVIRONMENTAL PROFILE

Environmental impacts of the ENCLOSED SIRCO MC PV 4P 32A 1500V, 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.	3,33E+01	4,04E+00	1,11E-01	1,09E-01	2,84E+01	5,66E-01
Climate change-Biogenic	kg CO2 eq.	1,32E-01	0*	0*	9,35E-02	5,23E-02	0*
Climate change-Fossil	kg CO2 eq.	3,31E+01	4,06E+00	1,11E-01	1,55E-02	2,84E+01	5,66E-01
Climate change-Land use and land use change	kg CO2 eq.	3,03E-04	3,03E-04	0*	0*	0*	0*
Ozone depletion	kg CFC-11 eq.	2,66E-07	1,25E-07	1,70E-10	2,96E-11	1,38E-07	2,67E-09
Acidification	mol H+ eq.	1,74E-01	2,56E-02	7,04E-04	3,28E-05	1,46E-01	1,58E-03
Eutrophication, freshwater	kg P eq.	1,37E-04	5,43E-05	4,17E-08	5,13E-08	7,49E-05	7,86E-06
Eutrophication, marine	kg N eq.	2,39E-02	5,02E-03	3,30E-04	1,51E-05	1,78E-02	8,27E-04
Eutrophication, terrestrial	mol N eq.	3,51E-01	5,31E-02	3,62E-03	1,62E-04	2,85E-01	9,09E-03
Photochemical ozone formation - human health	kg NMVOC eq.	7,46E-02	1,57E-02	9,13E-04	4,40E-05	5,59E-02	2,10E-03
Resource use, minerals and metals	kg SB eq.	5,08E-05	4,32E-05	0*	0*	1,01E-05	0*
Resource use, fossils	MJ	8,21E+02	1,01E+02	1,55E+00	0*	7,18E+02	5,79E-01
Water use	m3 eq.	3,34E+00	1,09E+00	4,22E-04	6,67E-04	2,18E+00	6,71E-02
Particulate matter	Disease occurrence	1,34E-06	1,59E-07	5,72E-09	2,42E-10	1,17E-06	4,25E-09
Ionising radiation, human health	kBq U235 eq.	4,93E+01	8,45E+00	0*	0*	4,09E+01	0*
Ecotoxicity, freshwater	CTUe	3,32E+03	3,26E+03	0*	0*	5,37E+01	0*
Human toxicity, cancer	CTUh	3,97E-08	3,60E-08	0*	4,81E-11	3,58E-09	1,21E-11
Human toxicity, non-cancer	CTUh	2,28E-07	1,42E-07	3,78E-11	0*	8,54E-08	4,16E-10
Land use	No dimension	1,74E+00	9,57E-01	0*	0*	7,87E-01	0*
Renewable primary energy used as energy	MJ	1,93E+02	2,26E+00	0*	8,35E-01	1,90E+02	0*
Renewable primary energy used as raw material	MJ	1,79E+00	1,79E+00	0*	0*	0*	0*
Total renewable primary energy	MJ	1,95E+02	4,05E+00	0*	8,35E-01	1,90E+02	0*
Non renewable primary energy used as energy	MJ	8,01E+02	8,04E+01	1,55E+00	0*	7,18E+02	5,79E-01
Non renewable primary energy used as raw material	MJ	2,09E+01	2,09E+01	0*	0*	0*	0*
Total non renewable primary energy	MJ	8,21E+02	1,01E+02	1,55E+00	0*	7,18E+02	5,79E-01
Total primary energy	MJ	1,02E+03	1,05E+02	1,55E+00	9,06E-01	9,08E+02	5,90E-01
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	7,81E-02	2,54E-02	9,82E-06	1,55E-05	5,12E-02	1,56E-03
Hazardous waste disposed	kg	4,75E+00	3,54E+00	0*	0*	1,25E+00	0*
Non hazardous waste disposed	kg	7,87E+00	2,64E+00	3,90E-03	1,29E-02	4,80E+00	4,05E-01
Radioactive waste disposed	kg	2,69E-03	1,54E-03	2,78E-06	3,37E-07	1,10E-03	4,50E-05
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for recycling	kg	5,80E-02	0*	0*	5,80E-02	0*	0*
Materials for energy recovery	kg	6,00E-03	0*	0*	6,00E-03	0*	0*
Exported Energy	MJ	5,22E-03	0*	0*	5,22E-03	0*	0*
Biogenic carbon content - Product	kg of C	0,00E+00	0*	0*	0*	0*	0*
Biogenic carbon content - Packaging	kg of C	3,03E-02	3,03E-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 : VH46	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 proportionality 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
SIRCO MC PV 4P 32A 1500VDC	21PV4132
SIRCO MC PV 6P 20 A 1500VDC	21PV6220
ENCLOSED SIRCO MC PV 4P 32A 1500V	21PV4133