Product Environmental Profile

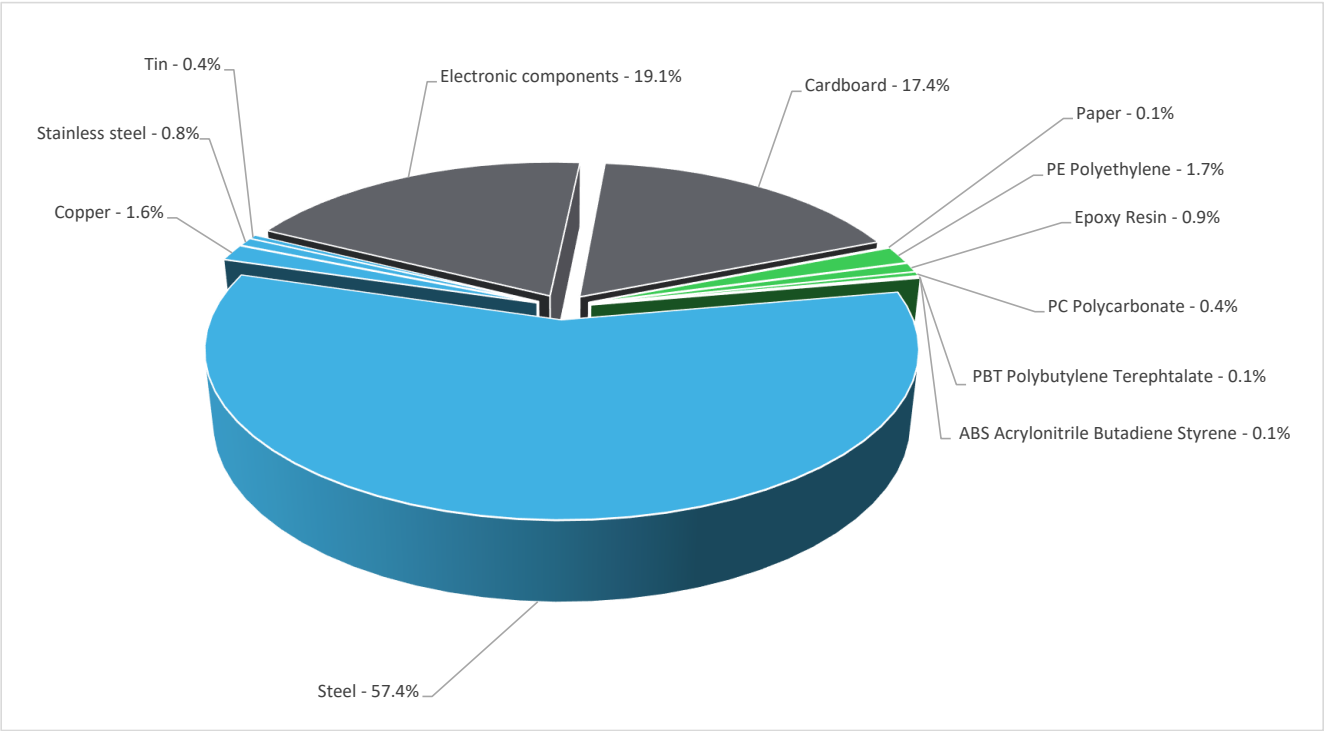
Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers

General information

Reference product	Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers - EPCEACEU1
Description of the product	Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers
Description of the range	Energy and Power Controller
Functional unit	Product nature and functions of the ECC energy conditioning control system: 1)Intelligent control of power in multiple operating modes such as light, storage and charging 2)Optimization control of integrated energy utilization strategy clusters 3)Intelligent switching and protection of energy storage systems 4)Control of start/stop and power for PV systems 5)Distribution network load oversubscription and data acquisition monitoring 6)Equipment fault wave recording, remote procedure update, remote O&M 7)Local charging station group power management, adaptive optimal control 8)Sequential grid charging scheduling terminal, execution of the sequential charging commands
Specifications are:	Charging an electrical vehicle with power 60 kW, with 2 CCS2 guns outlet during 10 years. EN IEC 61851-1:2019 EN 61851-23:2014 EN 61851-24:2014 EN IEC 62311:2020 EN 62479:2010 EN IEC 61851-21-2:2021 EN IEC 61000-6-2:2019 EN IEC 61000-6-4:2019 EN 301489-1 V 2.2.3:2019 EN 301489-3 V 2.1.1:2019 EN 301489-17 V 3.2.4:2020 EN 301489-52 V 1.2.1:2021 EN 300328 V 2.2.2:2019 EN 300330 V 2.1.1:2017 EN 301511 V 12.5.1:2017 EN 301908-1 V 15.2.1:2023 EN 301908-2 V 13.1.1:2020 EN 301908-13 V 13.2.1:2022

Constituent materials

Reference product mass	807 g	including the product, its packaging, additional elements and accessories



Plastics	3.2%
Metals	60.2%
Others	36.6%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric website

https://www.se.com

Additional environmental information

End Of Life	Recyclability potential:	**73%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	10 years
Product category	Other equipments - Passive product - continuous operation
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study
Electricity consumtion	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligable consumption
Installation elements	The product does not require any installation operations
Use scenario	The product is in active mode 100% of the time with a power use of 5W during 10 years
Time representativeness	The collected data are representative of the year 2025
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are Similar and représentaive of the actual type of technologies used to make the product.

Geographical representativeness	**Final assembly site**	**Use phase**		**End-of-life**
	China	France		France
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Low voltage; 2020; China, CN	No energy used	Electricity Mix; Low voltage; 2020; France, FR	Global, European and French datasets are used.

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.se.com/contact

Mandatory Indicators		**Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers - EPCEACEU1**						
Impact indicators	**Unit**	**Total (without Module D)**	**[A1 - A3] - Manufacturing**	**[A4] - Distribution**	**[A5] - Installation**	**[B1 - B7] - Use**	**[C1 - C4] - End of life**	**[D] - Benefits and loads**
Contribution to climate change	kg CO2 eq	6.45E+01	2.32E+01	2.90E-01	3.75E-01	3.94E+01	1.25E+00	-1.84E+00
Contribution to climate change-fossil	kg CO2 eq	6.20E+01	2.31E+01	2.90E-01	1.87E-01	3.72E+01	1.24E+00	-2.00E+00
Contribution to climate change-biogenic	kg CO2 eq	2.44E+00	4.58E-02	0*	1.88E-01	2.20E+00	7.63E-03	1.63E-01
Contribution to climate change-land use and land use change	kg CO2 eq	7.06E-06	6.81E-06	0*	0*	0*	2.50E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.18E-06	3.46E-06	2.57E-07	2.18E-09	4.37E-07	2.69E-08	-2.89E-07
Contribution to acidification	mol H+ eq	3.06E-01	1.15E-01	1.26E-03	5.08E-04	1.84E-01	4.38E-03	-1.37E-02
Contribution to eutrophication, freshwater	kg P eq	1.31E-03	7.01E-05	0*	3.71E-06	1.23E-03	5.71E-06	-5.56E-06
Contribution to eutrophication, marine	kg N eq	3.97E-02	1.27E-02	5.81E-04	2.16E-04	2.54E-02	8.80E-04	-1.33E-03
Contribution to eutrophication, terrestrial	mol N eq	5.83E-01	1.41E-01	6.29E-03	1.57E-03	4.24E-01	9.74E-03	-1.47E-02
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.22E-01	4.22E-02	2.06E-03	3.60E-04	7.44E-02	2.67E-03	-5.08E-03
Contribution to resource use, minerals and metals	kg Sb eq	5.46E-03	5.42E-03	0*	0*	4.44E-05	0*	-6.00E-04
Contribution to resource use, fossils	MJ	5.46E+03	2.76E+02	3.62E+00	1.64E+00	5.17E+03	1.14E+01	-4.52E+01
Contribution to water use	m3 eq	1.65E+01	9.12E+00	1.48E-02	1.67E-02	7.23E+00	1.20E-01	-9.39E-01

Inventory flows Indicators		Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers - EPCEACEU1						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to renewable primary energy used as energy	MJ	6.06E+02	1.86E+01	0*	2.31E-01	5.87E+02	5.67E-01	1.04E-01
Contribution to renewable primary energy used as raw material	MJ	3.68E+00	3.68E+00	0*	0*	0*	0*	-2.16E+00
Contribution to total renewable primary energy	MJ	6.10E+02	2.22E+01	0*	2.31E-01	5.87E+02	5.67E-01	-2.06E+00
Contribution to non renewable primary energy used as energy	MJ	5.46E+03	2.73E+02	3.62E+00	1.64E+00	5.17E+03	1.14E+01	-4.49E+01
Contribution to non renewable primary energy used as raw material	MJ	3.21E+00	3.21E+00	0*	0*	0*	0*	-2.70E-01
Contribution to total non renewable primary energy	MJ	5.46E+03	2.76E+02	3.62E+00	1.64E+00	5.17E+03	1.14E+01	-4.52E+01
Contribution to use of secondary material	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of fresh water	m^3	3.85E-01	2.10E-01	3.43E-04	1.13E-03	1.69E-01	3.59E-03	-2.19E-02
Contribution to hazardous waste disposed	kg	1.25E+02	1.23E+02	0*	0*	1.61E+00	1.59E-01	-4.73E+01
Contribution to non hazardous waste disposed	kg	1.93E+01	1.11E+01	0*	8.24E-02	7.43E+00	6.28E-01	-1.59E+00
Contribution to radioactive waste disposed	kg	5.30E-03	3.43E-03	5.78E-05	1.10E-05	1.77E-03	3.03E-05	-7.16E-04
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	6.94E-01	7.57E-02	0*	1.26E-01	0*	4.93E-01	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	1.20E-02	7.31E-04	0*	6.40E-03	0*	4.87E-03	0.00E+00

* represents less than 0.01% of the total life cycle of the reference flow

Contribution to biogenic carbon content of the product	kg of C	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg of C	4.12E-02

** The calculation of the biogenic carbon is based on the Ademe for the Cardboard (28%), EN16485 for Wood (39,52%), and APESA/RECORD for Paper (37,8%)*

Mandatory Indicators		Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers - EPCEACEU1							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	3.94E+01	0*	0*	0*	0*	0*	3.94E+01	0*
Contribution to climate change-fossil	kg CO2 eq	3.72E+01	0*	0*	0*	0*	0*	3.72E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	2.20E+00	0*	0*	0*	0*	0*	2.20E+00	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	4.37E-07	0*	0*	0*	0*	0*	4.37E-07	0*
Contribution to acidification	mol H+ eq	1.84E-01	0*	0*	0*	0*	0*	1.84E-01	0*
Contribution to eutrophication, freshwater	kg P eq	1.23E-03	0*	0*	0*	0*	0*	1.23E-03	0*
Contribution to eutrophication marine	kg N eq	2.54E-02	0*	0*	0*	0*	0*	2.54E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	4.24E-01	0*	0*	0*	0*	0*	4.24E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	7.44E-02	0*	0*	0*	0*	0*	7.44E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	4.44E-05	0*	0*	0*	0*	0*	4.44E-05	0*
Contribution to resource use, fossils	MJ	5.17E+03	0*	0*	0*	0*	0*	5.17E+03	0*
Contribution to water use	m3 eq	7.23E+00	0*	0*	0*	0*	0*	7.23E+00	0*

Inventory flows Indicators		Energy and Power Controller,Demand Side Flexibility Management for Battery, PV and EV chargers - EPCEACEU1							
Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	5.87E+02	0*	0*	0*	0*	0*	5.87E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	5.87E+02	0*	0*	0*	0*	0*	5.87E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	5.17E+03	0*	0*	0*	0*	0*	5.17E+03	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	5.17E+03	0*	0*	0*	0*	0*	5.17E+03	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m^3	1.69E-01	0*	0*	0*	0*	0*	1.69E-01	0*
Contribution to hazardous waste disposed	kg	1.61E+00	0*	0*	0*	0*	0*	1.61E+00	0*
Contribution to non hazardous waste disposed	kg	7.43E+00	0*	0*	0*	0*	0*	7.43E+00	0*
Contribution to radioactive waste disposed	kg	1.77E-03	0*	0*	0*	0*	0*	1.77E-03	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.2.4, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Registration number :	ENVPEP2507016_V1	*Drafting rules*	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed3-2023 06 06
Date of issue	7/1/2025	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years

Independent verification of the declaration and data, in compliance with ISO 14021 : 2016

Internal X 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 and EN 50693:2019 or NF E38-500 :2022

The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14021:2016 "Environmental labels and declarations. Type II environmental declarations"

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