Product Environmental Profile

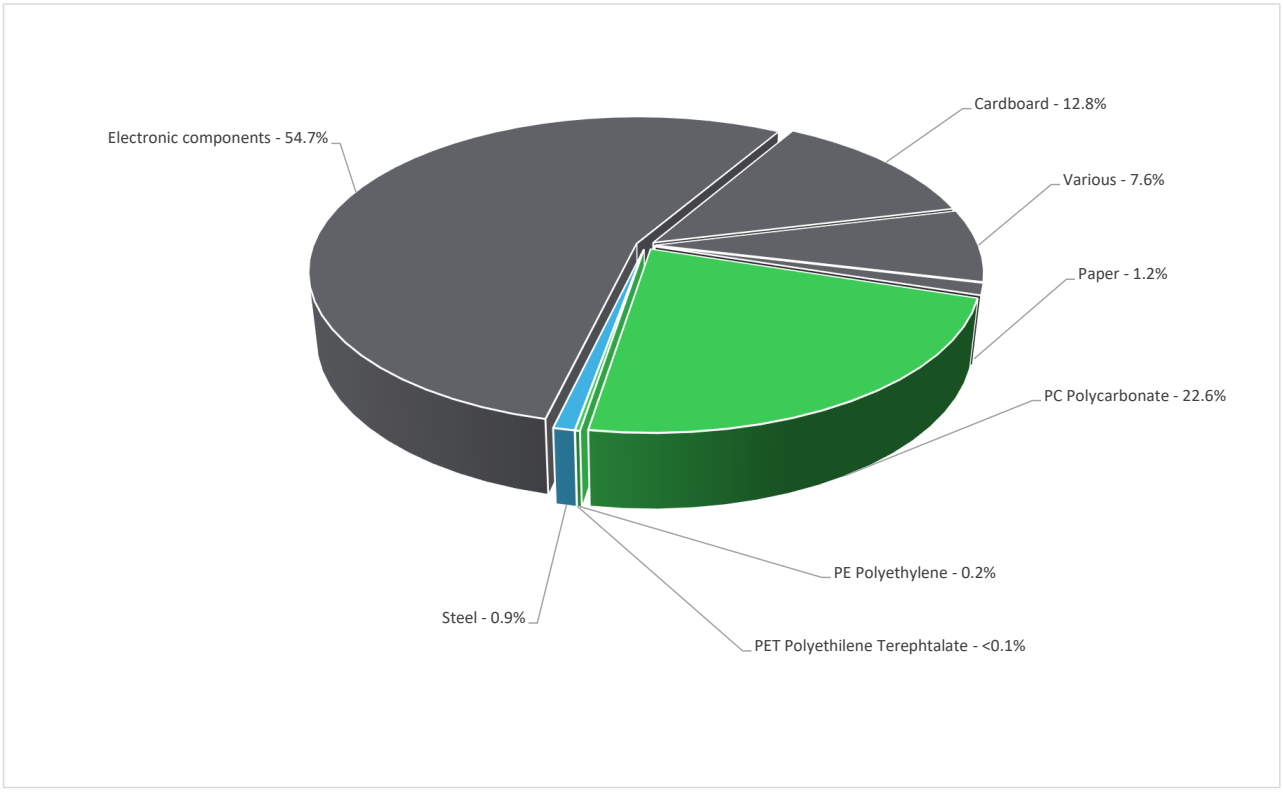
SURGE PROTECTION DEVICE HEPD T1

General information

Reference product	SURGE PROTECTION DEVICE HEPD T1 - HEPD80
Description of the product	HEPD are compact, whole-house surge protection solutions designed to safeguard the entire AC power system in a home. These devices protect all AC wiring from electrical surges, ensuring that home electronics and appliance especially those not connected to individual surge strip remain safe from damage caused by voltage spikes.
Description of the range	Single product
Functional unit	Protect, against direct and indirect effects of lightning or against transient overvoltages, electronic equipment connected to networks with a rated operational voltage of up to 1000 V AC or 1500 V DC, via a surge arrester of type T, with Np poles, according to the appropriate use scenario, and for the reference service life of the product of 20 years.
Specifications are:	T = Surge protective device type according to the standard IEC 61643-11. T= T1 Np,Number of poles = 2 Uc, Maximum continuous operating voltage (kV) = 150 V AC In, Rated discharge current for class 2 test (current waveshape 8/20µs) (kA) = 10 kA Up, Voltage protection level (kV) = 600 V (L-N), 600 V (L-G), 1000 V (L-L), 900 V (N-G) F, Frequency range of the low voltage system (d.c. or a.c. from xx Hz to xx Hz) = 50/60 Hz AC Voltage range = 120/240 V AC Current type = AC

Constituent materials

Reference product mass	435.33 g	including the product and its packaging.



	Others	76.3%
	Plastics	22.8%
	Metals	0.9%

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:	**10%**	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	20 years
Product category	Surge arresters - Type 1, 2 or 3 devices connected to low voltage power systems
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 consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligible consumption
Installation elements	The product installation requires little energy. The disposal of packaging materials is also accounted during the installation phase, including transport to disposal. The material constituents of the packaging are Cardboard (90.81%), Paper (8.53%) and Plastic (0.66%).
Use scenario	Power dissipation in active mode at a 100% load rate and 100% use time rate is 525.6 kWh for an RLT of 20 years.
Time representativeness	The collected data are representative of the year 2024
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 representative of the actual type of technologies used to make the product.

Geographical representativeness	**Final assembly site**	**Use phase**		**End-of-life**
	Reynosa, Mexico	NAM(Central, North, South)		NAM(Central, North, South)
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; RER, Electricity Mix; MX	Electricity Mix; RER	Electricity Mix; Low voltage; 2022; United States, US Electricity Mix; Low voltage; 2022; Canada, CA Electricity Mix; Low voltage; 2022; Mexico, MX	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 Centre - http://www.se.com/contact

Mandatory Indicators		**SPD HEPD Type 1 120/240V 1PH 3 Wire 80kA - HEPD80**						
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	2.40E+02	3.26E+00	2.08E-01	0*	2.36E+02	9.64E-01	-8.53E-02
Contribution to climate change-fossil	kg CO2 eq	2.39E+02	3.35E+00	2.08E-01	0*	2.34E+02	9.63E-01	-7.91E-02
Contribution to climate change-biogenic	kg CO2 eq	1.12E+00	0*	0*	0*	1.21E+00	2.04E-04	-6.13E-03
Contribution to climate change-land use and land use change	kg CO2 eq	1.59E-04	1.59E-04	0*	0*	0*	1.76E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	1.42E-06	5.09E-07	3.20E-10	0*	9.06E-07	4.25E-09	-2.24E-08
Contribution to acidification	mol H+ eq	1.10E+00	2.71E-02	2.15E-03	0*	1.07E+00	1.00E-03	-5.16E-03
Contribution to eutrophication, freshwater	kg P eq	4.95E-04	8.44E-05	6.57E-07	0*	4.07E-04	3.42E-06	-1.14E-07
Contribution to eutrophication, marine	kg N eq	1.39E-01	2.65E-03	1.01E-03	1.57E-05	1.35E-01	3.70E-04	-8.40E-05
Contribution to eutrophication, terrestrial	mol N eq	1.65E+00	2.93E-02	1.11E-02	0*	1.60E+00	3.96E-03	-9.87E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.59E-01	1.01E-02	2.72E-03	0*	4.45E-01	9.85E-04	-6.04E-04
Contribution to resource use, minerals and metals	kg Sb eq	3.11E-03	3.07E-03	0*	0*	4.38E-05	0*	-5.43E-05
Contribution to resource use, fossils	MJ	5.23E+03	6.10E+01	2.98E+00	0*	5.17E+03	2.34E+00	-1.50E+00
Contribution to water use	m3 eq	3.21E+01	1.92E+01	6.12E-03	6.07E-03	1.28E+01	4.59E-02	-2.54E-01

Inventory flows Indicators		SPD HEPD Type 1 120/240V 1PH 3 Wire 80kA - HEPD80						
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	7.68E+02	3.24E+00	0*	0*	7.65E+02	0*	-1.34E-01
Contribution to renewable primary energy used as raw material	MJ	1.28E+00	1.28E+00	0*	0*	0*	0*	0.00E+00
Contribution to total renewable primary energy	MJ	7.69E+02	4.52E+00	0*	0*	7.65E+02	0*	-1.34E-01
Contribution to non renewable primary energy used as energy	MJ	5.23E+03	5.36E+01	2.98E+00	0*	5.17E+03	2.34E+00	-1.50E+00
Contribution to non renewable primary energy used as raw material	MJ	7.41E+00	7.41E+00	0*	0*	0*	0*	0.00E+00
Contribution to total non renewable primary energy	MJ	5.23E+03	6.10E+01	2.98E+00	0*	5.17E+03	2.34E+00	-1.50E+00
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	m³	7.47E-01	4.47E-01	1.43E-04	1.41E-04	2.98E-01	1.13E-03	-5.92E-03
Contribution to hazardous waste disposed	kg	6.01E+00	1.41E+00	0*	0*	4.38E+00	2.17E-01	-4.21E+00
Contribution to non hazardous waste disposed	kg	3.78E+01	1.14E+00	0*	6.45E-02	3.65E+01	1.43E-01	-1.76E-02
Contribution to radioactive waste disposed	kg	8.94E-03	5.75E-04	0*	0*	8.35E-03	7.90E-06	-1.11E-05
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	3.59E-02	7.41E-04	0*	0*	0*	3.51E-02	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	0.00E+00	0*	0*	0*	0*	0*	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	1.66E-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		SPD HEPD Type 1 120/240V 1PH 3 Wire 80kA - HEPD80							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	2.36E+02	0*	0*	0*	0*	0*	2.36E+02	0*
Contribution to climate change-fossil	kg CO2 eq	2.34E+02	0*	0*	0*	0*	0*	2.34E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	1.21E+00	0*	0*	0*	0*	0*	1.21E+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	9.06E-07	0*	0*	0*	0*	0*	9.06E-07	0*
Contribution to acidification	mol H+ eq	1.07E+00	0*	0*	0*	0*	0*	1.07E+00	0*
Contribution to eutrophication, freshwater	kg P eq	4.07E-04	0*	0*	0*	0*	0*	4.07E-04	0*
Contribution to eutrophication marine	kg N eq	1.35E-01	0*	0*	0*	0*	0*	1.35E-01	0*
Contribution to eutrophication, terrestrial	mol N eq	1.60E+00	0*	0*	0*	0*	0*	1.60E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.45E-01	0*	0*	0*	0*	0*	4.45E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	4.38E-05	0*	0*	0*	0*	0*	4.38E-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	1.28E+01	0*	0*	0*	0*	0*	1.28E+01	0*

Inventory flows Indicators		SPD HEPD Type 1 120/240V 1PH 3 Wire 80kA - HEPD80							
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	7.65E+02	0*	0*	0*	0*	0*	7.65E+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	7.65E+02	0*	0*	0*	0*	0*	7.65E+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	2.98E-01	0*	0*	0*	0*	0*	2.98E-01	0*
Contribution to hazardous waste disposed	kg	4.38E+00	0*	0*	0*	0*	0*	4.38E+00	0*
Contribution to non hazardous waste disposed	kg	3.65E+01	0*	0*	0*	0*	0*	3.65E+01	0*
Contribution to radioactive waste disposed	kg	8.35E-03	0*	0*	0*	0*	0*	8.35E-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 v6.2.5-6, 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 :	ENVPEP2510004_V1-EN	*Drafting rules*	PEP-PCR-ed4-2021 09 06
Validity period	5 years	*Supplemented by*	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	10-2025	*Information and reference documents*	www.pep-ecopassport.org

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"

Schneider Electric Industries SAS

Country Customer Care Center
http://www.se.com/contact

Head Office
35, rue Joseph Monier
CS 30323
F- 92500 Rueil Malmaison Cedex
RCS Nanterre 954 503 439
Capital social 928 298 512 €

www.se.com

Published by Schneider Electric

ENVPEP2510004_V1-EN 10-2025