

Product Environmental Profile

PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit

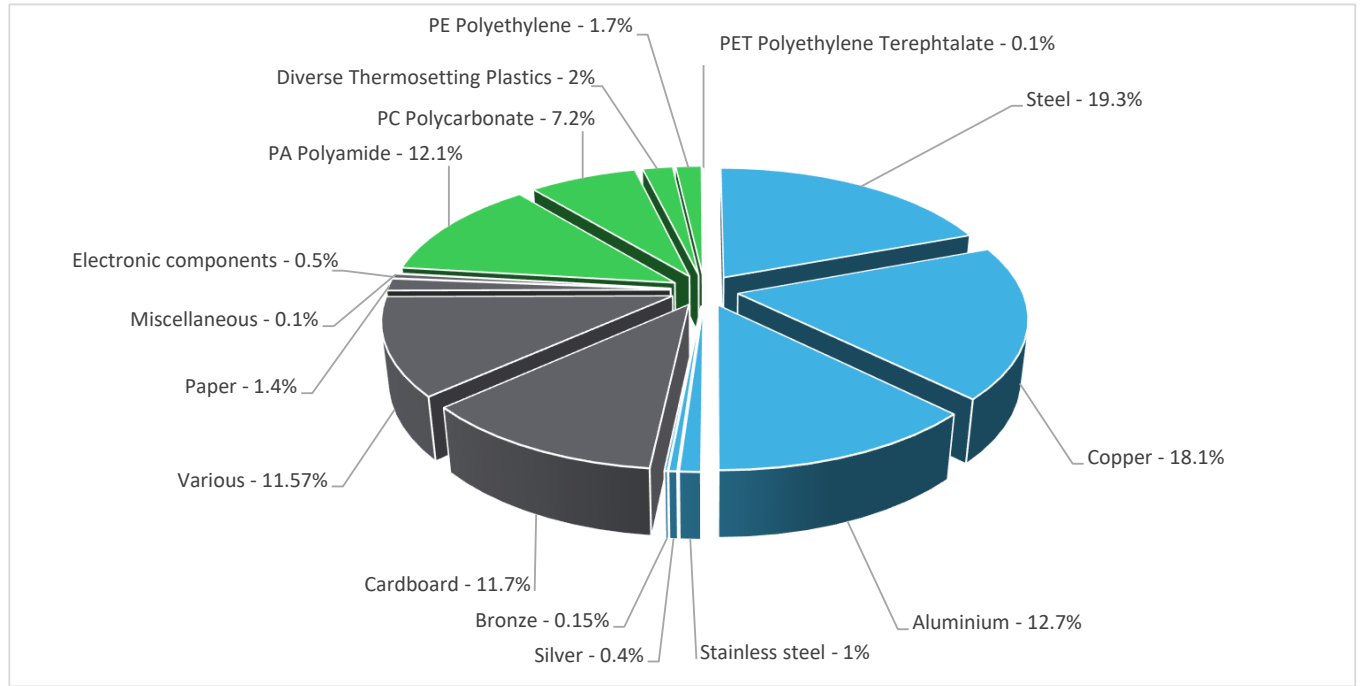


General information

Representative product	PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit - LLL36600U31X
Description of the product	The main purpose of the PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit is to protect electrical systems from damages caused by overloads and short circuits.
Functional unit	Protect during 20 years the installation against overloads and short-circuits in circuit with assigned voltage 600 V and rated current 600 A. This protection is ensured in accordance with the following parameters: - Number of poles Np : 3 P - Rated breaking capacity Icn : 50KA @ 600VAC - Tripping curve Cd : LI - Long-Time and Instantaneous

Constituent materials

Reference product mass 8040 g including the product, its packaging and additional elements and accessories



Plastics	23.1%
Metals	51.7%
Others	25.3%

Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 2 January 2013, amended in March 2015, 2015/863/EU and in November 2017, 2017/2102/EU) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers – PBDE), Bis (2-ethylhexyl)phthalate - DEHP, Benzyl butyl phthalate– BBP, Dibutyl phthalate - DBP, Diisobutyl phthalate - DIBP) as mentioned in the Directive.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website <http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>

Additional environmental information

The PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit presents the following relevant environmental aspects

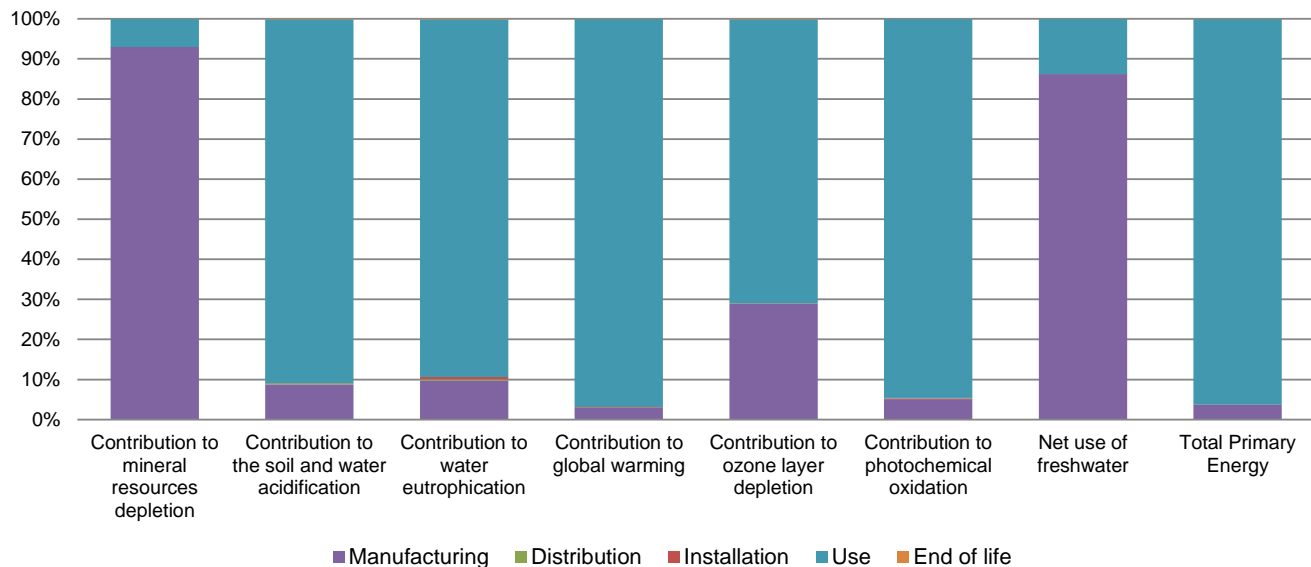
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified
Distribution	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 1089.5 g, consisting of Cardboard (86.46%), Plastic film(11.16%), Paper (2.38%) Product distribution optimised by setting up local distribution centres
Installation	Reference does not require any special installation operations.
Use	The end user must refer to maintenance guide of the product in order to do the appropriate maintenance operations. The MODULE T - U31 UL 3P 600A (3P3T MICROLOGIC 3.3 600A TRIP UNIT) and VISI-TRIP HANDLE C2 MODULE has to be replaced every 10 years and the battery (Lithium Coin) of every 5 years.
End of life	End of life optimized to decrease the amount of waste and allow recovery of the product components and materials This product contains 3 electronic card (BBV57591 - 35.59 g, GHD11541AA - 3.77 g, NNZ25209 - 4.13 g) and battery (2g) that should be separated from the stream of waste so as to optimize end-of-life treatment. The location of these components and other recommendations are given in the End of Life Instruction document which is available on the Schneider-Electric Green Premium website http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page Recyclability potential: 70% Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

Environmental impacts

Reference life time	20 years			
Product category	Circuit-breakers			
Installation elements	No special components needed			
Use scenario	Load rate: 50% of In Use time rate: 30% of RLT The energy consumption of the product is 113.4 W on full time load by confirmed from designer. According to PSR0005, load rate: 50 % of In; Use time rate: 30% of the RLT as 28.35 W			
Geographical representativeness	US			
Technological representativeness	The modules of technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA-EIME in this case) are similar and representative of the actual type of technologies used to make the product.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: US, Mexico	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US

Compulsory indicators		PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit - LLL36600U31X					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	2.90E-02	2.70E-02	0*	0*	2.04E-03	0*
Contribution to the soil and water acidification	kg SO ₂ eq	1.65E+00	1.46E-01	4.74E-03	3.08E-04	1.50E+00	2.08E-03
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	4.45E-01	4.35E-02	1.09E-03	2.77E-03	3.97E-01	5.54E-04
Contribution to global warming	kg CO ₂ eq	1.61E+03	4.77E+01	1.04E+00	1.44E+00	1.56E+03	9.81E-01
Contribution to ozone layer depletion	kg CFC11 eq	4.13E-05	1.20E-05	0*	0*	2.93E-05	4.66E-08
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	2.54E-01	1.30E-02	3.38E-04	3.48E-04	2.40E-01	2.19E-04

Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	2.98E+01	2.57E+01	0*	0*	4.11E+00	0*
Total Primary Energy	MJ	2.18E+04	7.89E+02	1.47E+01	0*	2.10E+04	1.02E+01



Optional indicators		PowerPact™ L-Frame Molded Case Circuit Breaker with Micrologic™ Trip Unit - LLL36600U31X					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	1.95E+04	4.99E+02	1.46E+01	0*	1.89E+04	8.20E+00
Contribution to air pollution	m³	1.48E+05	1.28E+04	4.41E+01	0*	1.35E+05	7.32E+01
Contribution to water pollution	m³	8.54E+04	7.33E+03	1.71E+02	8.28E+01	7.77E+04	8.56E+01
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.12E+00	1.03E+00	0*	0*	9.11E-02	0*
Total use of renewable primary energy resources	MJ	1.30E+03	4.54E+01	0*	0*	1.26E+03	0*
Total use of non-renewable primary energy resources	MJ	2.05E+04	7.44E+02	1.46E+01	0*	1.97E+04	1.02E+01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.28E+03	2.67E+01	0*	0*	1.25E+03	0*
Use of renewable primary energy resources used as raw material	MJ	2.35E+01	1.87E+01	0*	0*	4.81E+00	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.04E+04	6.78E+02	1.46E+01	0*	1.97E+04	1.02E+01
Use of non renewable primary energy resources used as raw material	MJ	7.46E+01	6.58E+01	0*	0*	8.78E+00	0*
Use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Waste categories	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	5.27E+02	3.75E+02	0*	0*	1.43E+02	9.13E+00
Non hazardous waste disposed	kg	3.65E+02	1.16E+02	3.69E-02	1.10E+00	2.48E+02	0*
Radioactive waste disposed	kg	6.34E-02	3.62E-02	2.63E-05	6.34E-06	2.72E-02	4.93E-05
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	6.25E+00	6.05E-01	0*	0*	8.08E-01	4.84E+00
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	1.42E-01	0*	0*	0*	3.45E-02	1.08E-01
Exported Energy	MJ	3.84E-03	2.88E-04	0*	2.77E-03	7.81E-04	0*

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

Life cycle assessment performed with EIME version EIME v5.9.3, database version 2020-12 in compliance with ISO14044.

The use phase and manufacturing phase (ADPe for EN15804; freshwater; secondary material) is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

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	ENVPEP2206029_V1	Drafting rules	PCR-ed3-EN-2015 04 02
Date of issue	07/2022	Supplemented by	PSR-0005-ed2-EN-2016 03 29
Validity period	5 years	Information and reference documents	www.pep-ecopassport.org
<i>Independent verification of the declaration and data</i>			
Internal	X	External	
<i>The elements of the present PEP cannot be compared with elements from another program.</i>			
<i>Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »</i>			

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