

Product Environmental Profile

DC Miniature Circuit Breaker

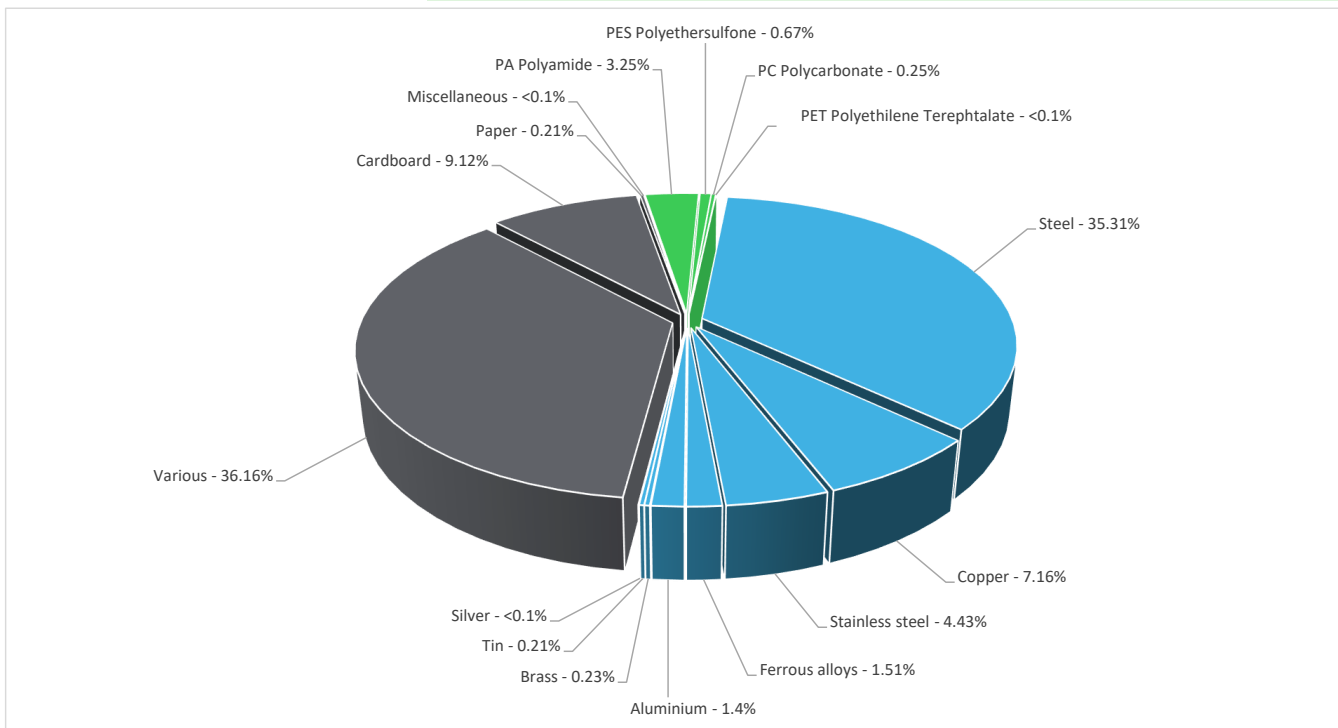


General information

Reference product	DC Miniature Circuit Breaker - A9K91216
Description of the product	The 2 - pole DC MCB provides protection against overcurrent and overload in low-voltage distribution systems.
Functional unit	<p>Protect the installation from overloads and short circuits in a circuit, in the Household/Commercial application area, according to the appropriate use scenario, and during the 20-year reference service life of the product and this protection is ensured in accordance with the following parameters:</p> <ul style="list-style-type: none"> - Rated voltage [Ue] = 500V - Rated current [In] = 16A - Number of poles [Np] = 2 poles - Rated breaking capacity [Icn] = 10kA

Constituent materials

Reference product mass	289 g including the product, its packaging and additional elements and accessories
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Plastics	4.2%
Metals	50.3%
Others	45.5%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
<https://www.se.com/ww/en/work/support/green-premium/>

Additional environmental information

End Of Life	Recyclability potential:	54%	Recyclability rate has been calculated based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the "ECO'DEEE recyclability and recoverability calculation method" was taken. If no data was found a conservative assumption was used (0% recyclability).
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Environmental impacts

Reference service life time	20 years			
Product category	Circuit-breakers			
Installation elements	The product does not require a special installation procedure and requires little to no energy to install.			
Use scenario	Load rate: 15% of [In] 16 A Use time rate: 30% over the 20 years of reference life time			
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 in production.			
Geographical representativeness	India			
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; Production mix; Low voltage; IN	Electricity Mix; Production mix; Low voltage; IN	Electricity Mix; Production mix; Low voltage; IN	Electricity Mix; Production mix; Low voltage; IN

Detailed results, including all 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.schneider-electric.com/contact>

Mandatory Indicators			DC Miniature Circuit Breaker - A9K91216					
Impact indicators	Unit	Total	Manufacturing [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to climate change	kg CO2 eq	7.65E+00	1.28E+00	3.78E-02	5.08E-02	5.86E+00	4.25E-01	-6.56E-01
Contribution to climate change-fossil	kg CO2 eq	7.63E+00	1.27E+00	3.78E-02	4.86E-02	5.86E+00	4.20E-01	-6.47E-01
Contribution to climate change-biogenic	kg CO2 eq	2.09E-02	1.37E-02	0*	2.26E-03	5.69E-04	4.36E-03	-8.96E-03
Contribution to climate change-land use and land use change	kg CO2 eq	7.30E-08	0*	0*	1.84E-10	0*	7.28E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	2.76E-07	2.34E-07	5.79E-11	3.37E-09	3.37E-08	4.67E-09	-1.00E-07
Contribution to acidification	mol H+ eq	5.90E-02	1.20E-02	2.43E-04	2.02E-04	4.48E-02	1.84E-03	-7.05E-03
Contribution to eutrophication, freshwater	kg (PO4) ³⁻ eq	1.60E-04	4.42E-06	0*	3.68E-07	5.17E-07	1.55E-04	-1.68E-06
Contribution to eutrophication marine	kg N eq	6.30E-03	1.05E-03	1.14E-04	5.34E-05	4.75E-03	3.26E-04	-4.38E-04
Contribution to eutrophication, terrestrial	mol N eq	7.15E-02	1.14E-02	1.25E-03	4.03E-04	5.47E-02	3.70E-03	-4.84E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.17E-02	4.22E-03	3.16E-04	1.08E-04	1.59E-02	1.19E-03	-1.82E-03
Contribution to resource use, minerals and metals	kg Sb eq	3.02E-04	2.97E-04	0*	0*	3.96E-08	4.38E-06	-1.75E-04
Contribution to resource use, fossils	MJ	1.42E+02	2.27E+01	5.27E-01	5.29E-01	9.22E+01	2.64E+01	-1.29E+01
Contribution to water use	m3 eq	1.16E+00	6.30E-01	1.43E-04	2.18E-02	2.59E-01	2.49E-01	-4.17E-01

Inventory flows Indicators			DC Miniature Circuit Breaker - A9K91216					
Inventory flows	Unit	Total	Manufact. [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	5.29E+00	1.45E-02	7.03E-04	3.80E-02	5.13E+00	1.05E-01	9.11E-02
Contribution to use of renewable primary energy resources used as raw material	MJ	5.56E-01	5.56E-01	0*	0*	0*	0*	-5.03E-01
Contribution to total use of renewable primary energy resources	MJ	5.85E+00	5.71E-01	7.03E-04	3.80E-02	5.13E+00	1.05E-01	-4.12E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.41E+02	2.13E+01	5.27E-01	5.29E-01	9.22E+01	2.64E+01	-1.29E+01

Contribution to use of non renewable primary energy resources used as raw material	MJ	1.41E+00	1.41E+00	0*	0*	0*	0*	-1.57E-03
Contribution to total use of non-renewable primary energy resources	MJ	1.42E+02	2.27E+01	5.27E-01	5.29E-01	9.22E+01	2.64E+01	-1.29E+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 freshwater	m³	2.70E-02	1.47E-02	3.34E-06	5.07E-04	6.04E-03	5.80E-03	-9.70E-03
Contribution to hazardous waste disposed	kg	1.58E+01	1.52E+01	0*	0*	1.80E-01	3.84E-01	-1.41E+01
Contribution to non hazardous waste disposed	kg	2.72E+00	1.53E+00	1.32E-03	1.65E-01	1.02E+00	1.06E-02	-1.21E+00
Contribution to radioactive waste disposed	kg	5.04E-04	4.42E-04	9.44E-07	2.22E-05	3.65E-05	2.26E-06	-2.89E-04
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.75E-01	0*	0*	2.80E-02	0*	1.47E-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	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the product	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	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

Life cycle assessment performed with EIME version 5.9.4, database version 2022-01 in compliance with ISO14044.

Detailed results, including all 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.schneider-electric.com/contact>

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.

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Validity period	5 years	Supplemented by	PSR-0005-ed3-EN-2023 06 06
Date of issue	12/2023	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)			
PEP are compliant with XP C08-100-1 :2016 or EN 50693:2019			
The elements of the present PEP cannot be compared with elements from another program.			
Document in compliance with ISO 14021 : 2016 « Environmental labels and declarations. Type II environmental declarations »			

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