Product Environmental Profile

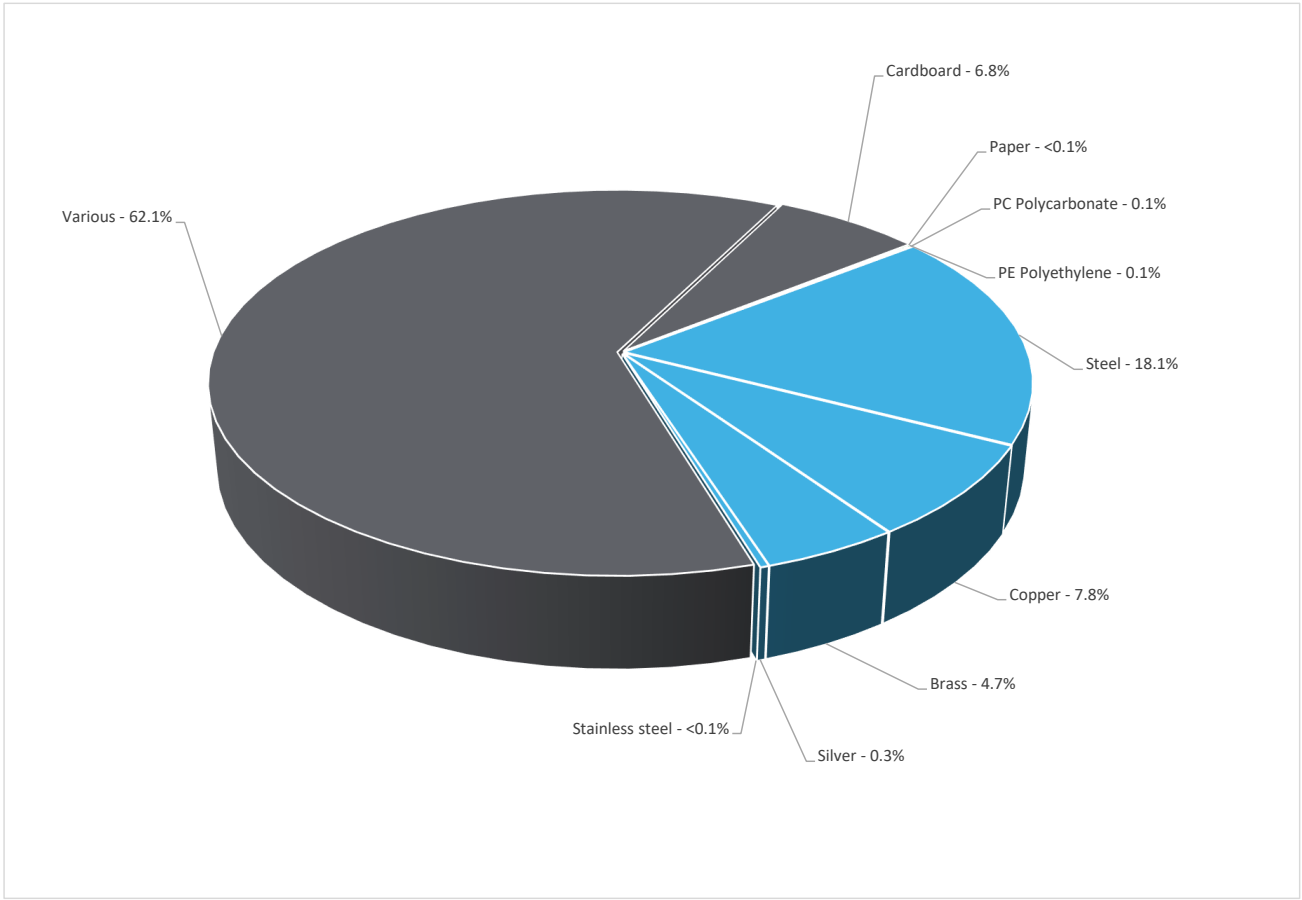
QO MINIATURE CIRCUIT BREAKER

General information

Reference product	QO MINIATURE CIRCUIT BREAKER - QO120
Description of the product	The main function of this product is to ensure protection of low voltage electrical installations
Description of the range	Single product
Functional unit	Protect the installation from overloads and short circuits in a circuit with rated voltage Ue, rated current In, with Np poles, a rated breaking capacity Icn, and the tripping curve Cd in the Household and Commercial application area, according to the appropriate use scenario, and during the reference service life of the product of 20 years.
Specifications are:	Ue ,Rated operating voltage (V) = 120/240 V AC In,Rated current (A) = 20 A Np,Number of poles / number of protected poles = 1 Icn,Rated breaking capacity (A) = 10,000 A (10 KA) AT 120/240 V AC Cd ,Tripping curve (B, C, D or other) = D Voltage range = 120-240 V AC (50-60 Hz) Current type = AC

Constituent materials

Reference product mass	133.48 g including the product and packaging



Others	68.9%
Metals	30.9%
Plastics	0.2%

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:	32%	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	Circuit-breakers - Household / Commercial
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 to no 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 (97.73%), Plastics (1.95%) and Paper (0.32%).
Use scenario	The passive product has a 20 year lifetime, operates at a 15% load rate and 30% use rate, with a total power dissipation of 2.90 KWh
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 representative of the actual type of technologies used to make the product.

Geographical representativeness	Final assembly site	Use phase	End-of-life
	America and India	USA, Canada, Mexico and Costa Rica	USA, Canada, Mexico and Costa Rica

Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; US, Electricity Mix; RER, Electricity Mix; GLO	No energy is used	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 American 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		MINIATURE CIRCUIT BREAKER 120/240V 20A - QO120						
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	2.48E+00	8.65E-01	8.97E-02	1.79E-02	1.38E+00	1.26E-01	-1.31E-01
Contribution to climate change-fossil	kg CO2 eq	2.48E+00	8.83E-01	8.94E-02	2.98E-03	1.38E+00	1.25E-01	-1.28E-01
Contribution to climate change-biogenic	kg CO2 eq	3.50E-03	-1.81E-02	3.50E-04	1.49E-02	5.59E-03	8.02E-04	-3.51E-03
Contribution to climate change-land use and land use change	kg CO2 eq	7.13E-07	2.37E-07	3.22E-07	6.58E-10	9.38E-09	1.43E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	6.78E-08	5.30E-08	2.15E-09	1.19E-10	5.37E-09	7.15E-09	-2.47E-08
Contribution to acidification	mol H+ eq	1.30E-02	7.18E-03	1.87E-04	1.78E-05	4.95E-03	6.35E-04	-3.30E-03
Contribution to eutrophication, freshwater	kg P eq	3.91E-06	1.51E-06	3.70E-07	5.55E-09	1.48E-06	5.43E-07	-1.91E-07
Contribution to eutrophication, marine	kg N eq	1.47E-03	7.95E-04	3.05E-05	4.43E-06	5.29E-04	1.15E-04	-9.47E-05
Contribution to eutrophication, terrestrial	mol N eq	1.63E-02	8.20E-03	3.35E-04	5.93E-05	6.20E-03	1.46E-03	-1.11E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	5.14E-03	2.76E-03	1.10E-04	1.24E-05	1.89E-03	3.57E-04	-5.28E-04
Contribution to resource use, minerals and metals	kg Sb eq	3.24E-03	3.24E-03	0*	0*	1.43E-06	0*	-5.68E-05
Contribution to resource use, fossils	MJ	4.92E+01	1.69E+01	1.89E+00	6.11E-02	2.75E+01	2.82E+00	-2.82E+00
Contribution to water use	m3 eq	3.89E-01	3.17E-01	6.32E-03	1.69E-04	4.85E-02	1.71E-02	-1.74E-01

Inventory flows Indicators		MINIATURE CIRCUIT BREAKER 120/240V 20A - QO120						
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	7.83E+00	3.48E-01	1.54E-02	1.12E-02	7.20E+00	2.57E-01	-8.82E-02
Contribution to renewable primary energy used as raw material	MJ	1.93E-01	1.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to total renewable primary energy	MJ	8.02E+00	5.41E-01	1.54E-02	1.12E-02	7.20E+00	2.57E-01	-8.82E-02
Contribution to non renewable primary energy used as energy	MJ	4.74E+01	1.51E+01	1.89E+00	6.11E-02	2.75E+01	2.82E+00	-2.82E+00
Contribution to non renewable primary energy used as raw material	MJ	1.84E+00	1.84E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to total non renewable primary energy	MJ	4.92E+01	1.69E+01	1.89E+00	6.11E-02	2.75E+01	2.82E+00	-2.82E+00
Contribution to use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to net use of fresh water	m^3	9.15E-03	7.38E-03	1.47E-04	3.88E-06	1.15E-03	4.66E-04	-4.06E-03
Contribution to hazardous waste disposed	kg	5.71E+00	5.61E+00	8.88E-04	3.60E-03	2.16E-02	7.63E-02	-4.44E+00
Contribution to non hazardous waste disposed	kg	4.88E-01	2.26E-01	1.97E-02	4.24E-04	1.85E-01	5.70E-02	-8.02E-02
Contribution to radioactive waste disposed	kg	1.62E-04	6.85E-05	1.56E-05	1.99E-07	6.74E-05	1.04E-05	-3.78E-05
Contribution to components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to materials for recycling	kg	4.75E-02	5.68E-03	0*	0*	0*	4.19E-02	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	2.66E-03

** 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		MINIATURE CIRCUIT BREAKER 120/240V 20A - QO120							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1.38E+00	0	0.00E+00	0	0	0	1.38E+00	0
Contribution to climate change-fossil	kg CO2 eq	1.38E+00	0	0.00E+00	0	0	0	1.38E+00	0
Contribution to climate change-biogenic	kg CO2 eq	5.59E-03	0	0.00E+00	0	0	0	5.59E-03	0
Contribution to climate change-land use and land use change	kg CO2 eq	9.38E-09	0	0.00E+00	0	0	0	9.38E-09	0
Contribution to ozone depletion	kg CFC-11 eq	5.37E-09	0	0.00E+00	0	0	0	5.37E-09	0
Contribution to acidification	mol H+ eq	4.95E-03	0	0.00E+00	0	0	0	4.95E-03	0
Contribution to eutrophication, freshwater	kg P eq	1.48E-06	0	0.00E+00	0	0	0	1.48E-06	0
Contribution to eutrophication marine	kg N eq	5.29E-04	0	0.00E+00	0	0	0	5.29E-04	0
Contribution to eutrophication, terrestrial	mol N eq	6.20E-03	0	0.00E+00	0	0	0	6.20E-03	0
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.89E-03	0	0.00E+00	0	0	0	1.89E-03	0
Contribution to resource use, minerals and metals	kg Sb eq	1.43E-06	0	0.00E+00	0	0	0	1.43E-06	0
Contribution to resource use, fossils	MJ	2.75E+01	0	0.00E+00	0	0	0	2.75E+01	0
Contribution to water use	m3 eq	4.85E-02	0	0.00E+00	0	0	0	4.85E-02	0

Inventory flows Indicators		MINIATURE CIRCUIT BREAKER 120/240V 20A - QO120							
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	7.20E+00	0	0.00E+00	0	0	0	7.20E+00	0
Contribution to use of renewable primary energy resources used as raw material	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to total use of renewable primary energy resources	MJ	7.20E+00	0	0.00E+00	0	0	0	7.20E+00	0
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.75E+01	0	0.00E+00	0	0	0	2.75E+01	0
Contribution to use of non renewable primary energy resources used as raw material	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to total use of non-renewable primary energy resources	MJ	2.75E+01	0	0.00E+00	0	0	0	2.75E+01	0
Contribution to use of secondary material	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to net use of freshwater	m^3	1.15E-03	0	0.00E+00	0	0	0	1.15E-03	0
Contribution to hazardous waste disposed	kg	2.16E-02	0	0.00E+00	0	0	0	2.16E-02	0
Contribution to non hazardous waste disposed	kg	1.85E-01	0	0.00E+00	0	0	0	1.85E-01	0
Contribution to radioactive waste disposed	kg	6.74E-05	0	0.00E+00	0	0	0	6.74E-05	0
Contribution to components for reuse	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to materials for recycling	kg	0*	0	0.00E+00	0	0	0	0*	0
Contribution to materials for energy recovery	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to exported energy	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0

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

Life cycle assessment performed with EIME version v6.3.2, database version 2026-04 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 :	ENVPEP2111016EN	*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	09-2026	*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 €

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