

Product Environmental Profile

Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T

ComPacT new generation





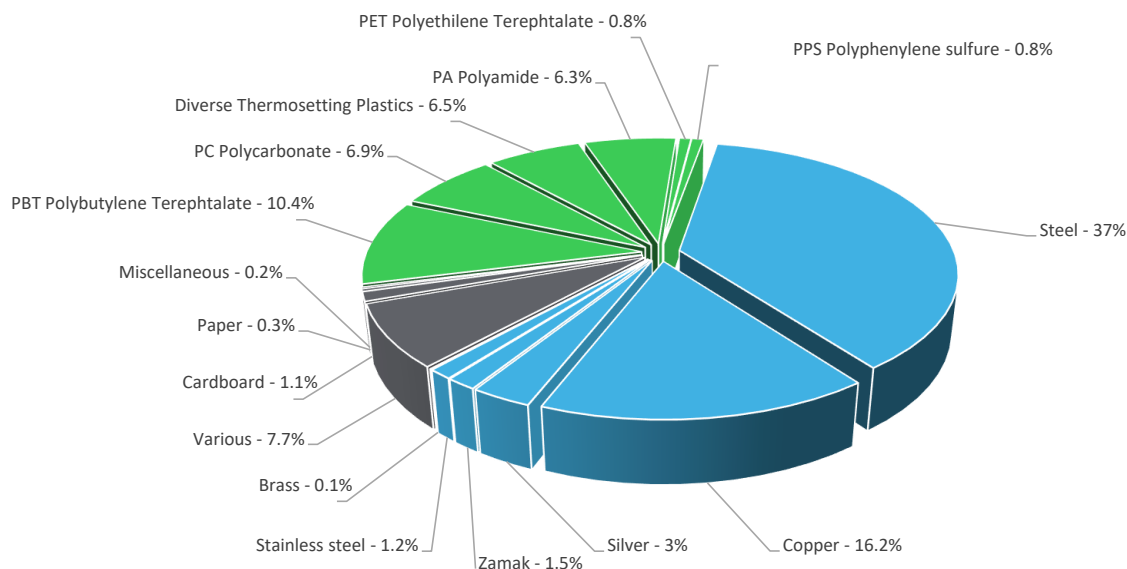
General information

Reference product	Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T - C25F3TM250R
Description of the product	The Compact NSX250F 3 pole circuit breaker equipped with Thermal-magnetic (TM-D) trip units is designed to provide protection against overloads and short-circuits for industrial and commercial electrical distribution systems with assigned voltage upto 690V AC and rated current of 250A.
Description of the range	The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology. This range consists of ComPacT NSX100-250A assigned voltage relays 415-750 V DC class, the representative product used for analysis is ComPacT NSX 250A thermal overload relays(C25F3TM250R).
Functional unit	Protect the installation from overloads and short circuits in a circuit with rated voltage U_e , rated current I_n , with N_p poles, a rated breaking capacity I_{cn} , and, if applicable, the specific specifications, in the Industrial application area, according to the appropriate use scenario, and during the reference service life of the product of 20 years.
Specifications are:	<p>This product is to protect during 20 years the installation against overloads and short-circuits in circuit with assigned voltage 690VAC and rated current 250A. This protection is ensured in accordance with the following parameters:</p> <ul style="list-style-type: none"> - $U_e=690V$ AC - $I_n=250A$ - $N_p= 3P$ - Rated breaking capacity $I_{cn}=36$ kA (415 VAC) <p>(according to IEC 60947-2)</p> <ul style="list-style-type: none"> - Tripping curve = Long time and instantaneous protections



Constituent materials

Reference product mass 2214 g including the product, its packaging, additional elements and accessories



Plastics	31.7%
Metals	59.0%
Others	9.3%

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:	57%	The recyclability rate was calculated from the recycling rates of each material making up the product based on REECYLAB 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).
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Environmental impacts

Reference service life time	20 years			
Product category	Circuit-breakers - Industrial			
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 does not require any installation operations.			
Use scenario	Load rate = 50 % In Use rate = 30% RLT			
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
	China	China		China
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; Low voltage; 2020; China, CN	Electricity Mix; Low voltage; 2020; China, CN	Electricity Mix; Low voltage; 2020; China, CN	Electricity Mix; Low voltage; 2020; China, CN

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		Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T - C25F3TM250R						
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	6.29E+02	1.45E+01	2.67E-01	0*	6.11E+02	3.70E+00	-4.12E+00
Contribution to climate change-fossil	kg CO2 eq	6.29E+02	1.46E+01	2.67E-01	0*	6.10E+02	3.67E+00	-4.04E+00
Contribution to climate change-biogenic	kg CO2 eq	5.26E-01	0*	0*	0*	5.34E-01	2.97E-02	-7.42E-02
Contribution to climate change-land use and land use change	kg CO2 eq	1.77E-04	1.77E-04	0*	0*	0*	6.11E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	5.98E-06	2.38E-06	0*	0*	3.53E-06	7.01E-08	-7.64E-07
Contribution to acidification	mol H+ eq	4.80E+00	1.79E-01	1.70E-03	0*	4.61E+00	1.17E-02	-7.52E-02
Contribution to eutrophication, freshwater	kg P eq	3.05E-04	1.43E-04	1.00E-07	0*	1.56E-04	6.31E-06	-6.55E-06
Contribution to eutrophication, marine	kg N eq	5.09E-01	1.35E-02	7.95E-04	0*	4.92E-01	2.58E-03	-2.75E-03
Contribution to eutrophication, terrestrial	mol N eq	5.83E+00	1.49E-01	8.72E-03	0*	5.64E+00	2.98E-02	-3.21E-02
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.71E+00	5.89E-02	2.20E-03	0*	1.64E+00	7.81E-03	-1.41E-02
Contribution to resource use, minerals and metals	kg Sb eq	9.22E-02	9.22E-02	0*	0*	6.19E-05	0*	-1.57E-03
Contribution to resource use, fossils	MJ	1.03E+04	2.80E+02	3.73E+00	0*	1.00E+04	3.04E+01	-8.84E+01
Contribution to water use	m3 eq	4.31E+01	6.43E+00	0*	0*	3.54E+01	1.25E+00	-4.16E+00

Inventory flows Indicators		Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T - C25F3TM250R						
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	1.08E+03	1.53E+01	0*	0*	1.06E+03	1.65E+00	-2.03E+00
Contribution to renewable primary energy used as raw material	MJ	6.06E-01	6.06E-01	0*	0*	0*	0*	0.00E+00
Contribution to total renewable primary energy	MJ	1.08E+03	1.59E+01	0*	0*	1.06E+03	1.65E+00	-2.03E+00
Contribution to non renewable primary energy used as energy	MJ	1.03E+04	2.62E+02	3.73E+00	0*	1.00E+04	3.04E+01	-8.84E+01
Contribution to non renewable primary energy used as raw material	MJ	1.74E+01	1.74E+01	0*	0*	0*	0*	0.00E+00
Contribution to total non renewable primary energy	MJ	1.03E+04	2.80E+02	3.73E+00	0*	1.00E+04	3.04E+01	-8.84E+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	m³	1.05E+00	1.50E-01	0*	0*	8.25E-01	7.50E-02	-9.69E-02
Contribution to hazardous waste disposed	kg	3.03E+02	2.84E+02	0*	0*	1.90E+01	2.80E-01	-1.22E+02
Contribution to non hazardous waste disposed	kg	1.22E+02	6.14E+00	0*	3.26E-02	1.14E+02	2.02E+00	-2.69E+00
Contribution to radioactive waste disposed	kg	7.67E-03	2.95E-03	6.69E-06	0*	4.61E-03	9.54E-05	-1.25E-03
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.26E+00	5.68E-02	0*	0*	0*	1.21E+00	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	1.25E-02	5.99E-04	0*	0*	0*	1.19E-02	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	9.30E-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		Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T - C25F3TM250R							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	6.11E+02	0*	0*	0*	0*	0*	6.11E+02	0*
Contribution to climate change-fossil	kg CO2 eq	6.10E+02	0*	0*	0*	0*	0*	6.10E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	5.34E-01	0*	0*	0*	0*	0*	5.34E-01	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	3.53E-06	0*	0*	0*	0*	0*	3.53E-06	0*
Contribution to acidification	mol H+ eq	4.61E+00	0*	0*	0*	0*	0*	4.61E+00	0*
Contribution to eutrophication, freshwater	kg P eq	1.56E-04	0*	0*	0*	0*	0*	1.56E-04	0*
Contribution to eutrophication marine	kg N eq	4.92E-01	0*	0*	0*	0*	0*	4.92E-01	0*
Contribution to eutrophication, terrestrial	mol N eq	5.64E+00	0*	0*	0*	0*	0*	5.64E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.64E+00	0*	0*	0*	0*	0*	1.64E+00	0*
Contribution to resource use, minerals and metals	kg Sb eq	6.19E-05	0*	0*	0*	0*	0*	6.19E-05	0*
Contribution to resource use, fossils	MJ	1.00E+04	0*	0*	0*	0*	0*	1.00E+04	0*
Contribution to water use	m3 eq	3.54E+01	0*	0*	0*	0*	0*	3.54E+01	0*

Inventory flows Indicators		Circuit breaker ComPacT NSX250F, TMD 250 A, 3P3T - C25F3TM250R							
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	1.06E+03	0*	0*	0*	0*	0*	1.06E+03	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	1.06E+03	0*	0*	0*	0*	0*	1.06E+03	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.00E+04	0*	0*	0*	0*	0*	1.00E+04	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	1.00E+04	0*	0*	0*	0*	0*	1.00E+04	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	m³	8.25E-01	0*	0*	0*	0*	0*	8.25E-01	0*
Contribution to hazardous waste disposed	kg	1.90E+01	0*	0*	0*	0*	0*	1.90E+01	0*
Contribution to non hazardous waste disposed	kg	1.14E+02	0*	0*	0*	0*	0*	1.14E+02	0*
Contribution to radioactive waste disposed	kg	4.61E-03	0*	0*	0*	0*	0*	4.61E-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

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

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 :	ENVPEP2106016_V2	Drafting rules	PEP-PCR-ed4-2021 09 06
Date of issue	15/05/2025	Supplemented by	PSR-0005-ed3-2023 06 06
		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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