

Product Environmental Profile

GoPact™ Molded Case Circuit Breaker





General information

Representative product

GoPact™ Molded Case Circuit Breaker - G20F3A160

Description of the product

The GoPact MCCB 200F 3 pole MCCB equipped with a thermal magnetic trip unit is designed to provide protection against overloads and short-circuits for electrical distribution systems for operational voltages upto 415 V and available from 40 A - 200 A. It conforms to EN 60947-2 / IEC 60947-2 .

Impulse Withstand Voltage U_{imp} (kV) = 6
 Rated Operational Voltage U_e (V AC) (MAX) @ 50 / 60 Hz = 415
 Rated Insulation Voltage U_i (V AC) = 440
 IP Class = IP40 (Front cutout)
 Thermal Magnetic Release:-
 Overload Current Setting I_r ($I_r = x I_n$) = 0.7 to 1 x I_n
 Instantaneous Current Setting I_i ($I_i = x I_n$) = 12 x I_n

Functional unit

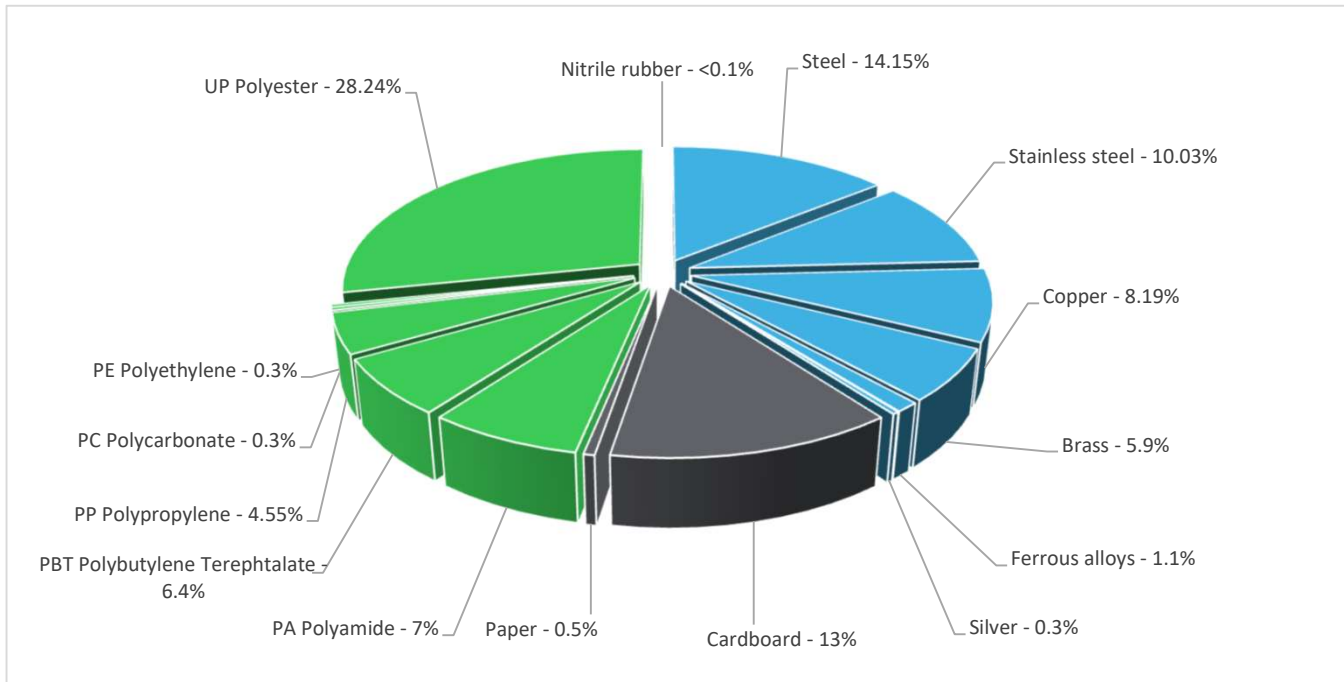
Protect during 20 years the installation against overloads and short-circuits in circuit with assigned voltage 415 V and rated current 160 A. This protection is ensured in accordance with the following parameters:-
 Number of poles N_p - 3
 Rated breaking capacity $I_{cs}=100\%$ I_{cu} - 36 kA at 415 V
 Tripping curve C_d - Inverse time-current and Instantaneous



Constituent materials

Reference product mass

1116 g including the product, its packaging



Plastics	46.8%
Metals	39.7%
Others	13.5%

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

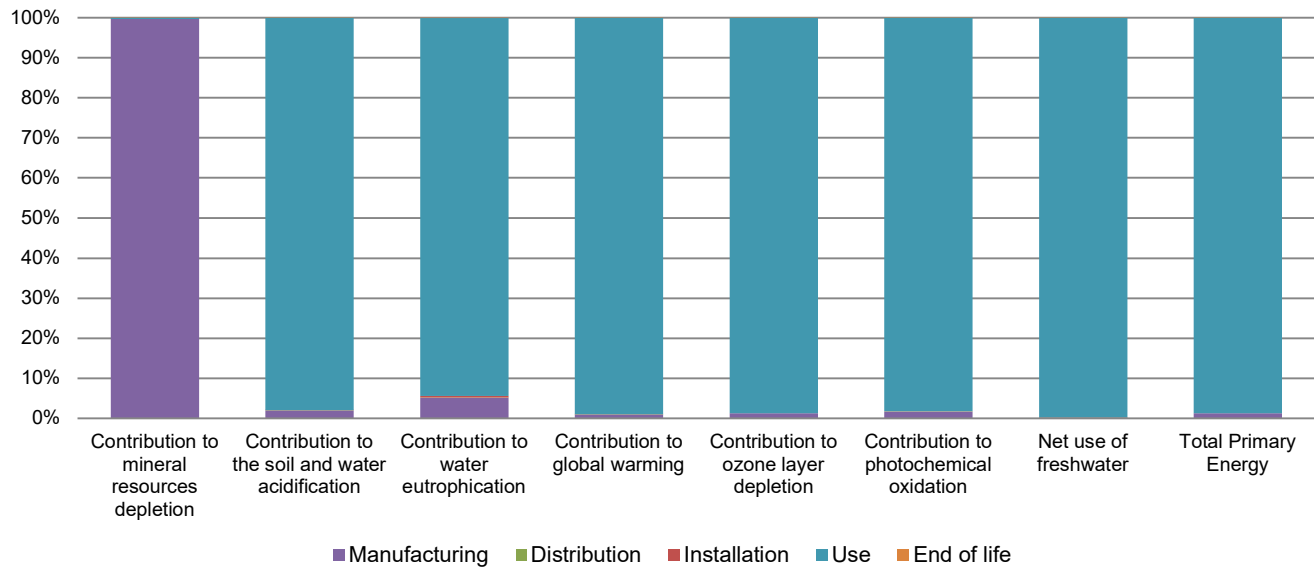
The GoPact™ Molded Case Circuit Breaker presents the following relevant environmental aspects

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 229.3 g, consisting of Cardboard (63%), PP (22%), Steel (11%), Paper (3%), PE (1%) Product distribution optimised by setting up local distribution centres
Installation	The product does not require special components included during installation operations.
Use	The product does not require special maintenance operations.
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 spring charged mechanism 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: 41% 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 Assumed service lifetime is 20 years and use scenario is : product dissipation is 10.56 W at 50% loading rate			
Geographical representativeness	Europe, Asia, South America			
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.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: India	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27
		Electricity mix; AC; consumption mix, at consumer; 127-230V; ID	Electricity mix; AC; consumption mix, at consumer; 127-230V; ID	Electricity mix; AC; consumption mix, at consumer; 127-230V; ID
Electricity mix AC; Europe consistent; consumption mix, at power plant; US		Electricity mix AC; Europe consistent; consumption mix, at power plant; US	Electricity mix AC; Europe consistent; consumption mix, at power plant; US	

Compulsory indicators		GoPact™ Molded Case Circuit Breaker - G20F3A160					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	3.42E-03	3.41E-03	0*	0*	1.00E-05	0*
Contribution to the soil and water acidification	kg SO ₂ eq	7.54E-01	1.54E-02	4.66E-04	0*	7.38E-01	2.71E-04
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	1.24E-01	6.43E-03	1.75E-05	5.02E-04	1.17E-01	7.80E-05
Contribution to global warming	kg CO ₂ eq	4.55E+02	4.57E+00	6.17E-02	2.54E-01	4.50E+02	1.55E-01
Contribution to ozone layer depletion	kg CFC11 eq	6.35E-05	8.03E-07	1.50E-08	0*	6.27E-05	0*
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	7.30E-02	1.20E-03	2.20E-05	6.19E-05	7.17E-02	2.80E-05
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m ³	3.36E+02	7.88E-01	0*	0*	3.36E+02	0*
Total Primary Energy	MJ	7.13E+03	8.83E+01	1.25E+00	0*	7.04E+03	1.30E+00



Optional indicators		GoPact™ Molded Case Circuit Breaker - G20F3A160					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	5.66E+03	4.97E+01	6.35E-01	0*	5.61E+03	1.05E+00
Contribution to air pollution	m ³	3.97E+04	1.27E+03	0*	0*	3.84E+04	9.49E+00
Contribution to water pollution	m ³	2.72E+04	2.60E+02	0*	1.49E+01	2.69E+04	1.17E+01
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	2.29E-01	2.29E-01	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	3.35E+02	2.34E+00	8.94E-02	0*	3.32E+02	0*
Total use of non-renewable primary energy resources	MJ	6.80E+03	8.59E+01	1.16E+00	0*	6.71E+03	1.30E+00
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	3.34E+02	1.32E+00	8.94E-02	0*	3.32E+02	0*
Use of renewable primary energy resources used as raw material	MJ	1.02E+00	1.02E+00	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	6.79E+03	7.72E+01	1.16E+00	0*	6.71E+03	1.30E+00
Use of non renewable primary energy resources used as raw material	MJ	8.75E+00	8.75E+00	0*	0*	0*	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	4.74E+01	3.27E+01	0*	0*	1.33E+01	1.41E+00
Non hazardous waste disposed	kg	3.92E+02	4.59E+00	2.31E-01	2.35E-01	3.87E+02	0*
Radioactive waste disposed	kg	2.52E-01	1.24E-03	1.88E-04	0*	2.51E-01	0*
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	4.21E-01	5.59E-02	0*	0*	0*	3.65E-01
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	2.34E-02	0*	0*	0*	0*	2.34E-02
Exported Energy	MJ	4.75E-04	4.47E-05	0*	4.31E-04	0*	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 Manufacturing phase is greatest impact on the Abiotic depletion (ADPe for EN15804) and rest of the indicators on use phase 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.

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Date of issue	06/2022	Information and reference documents	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010			
Internal		External	X
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)			
PEP are compliant with XP C08-100-1 :2016			
The elements of the present PEP cannot be compared with elements from another program.			
Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »			



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