

# Product Environmental Profile

**Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement**

**Representative of all MasterPact NT/NW & ComPact NS Control Units**





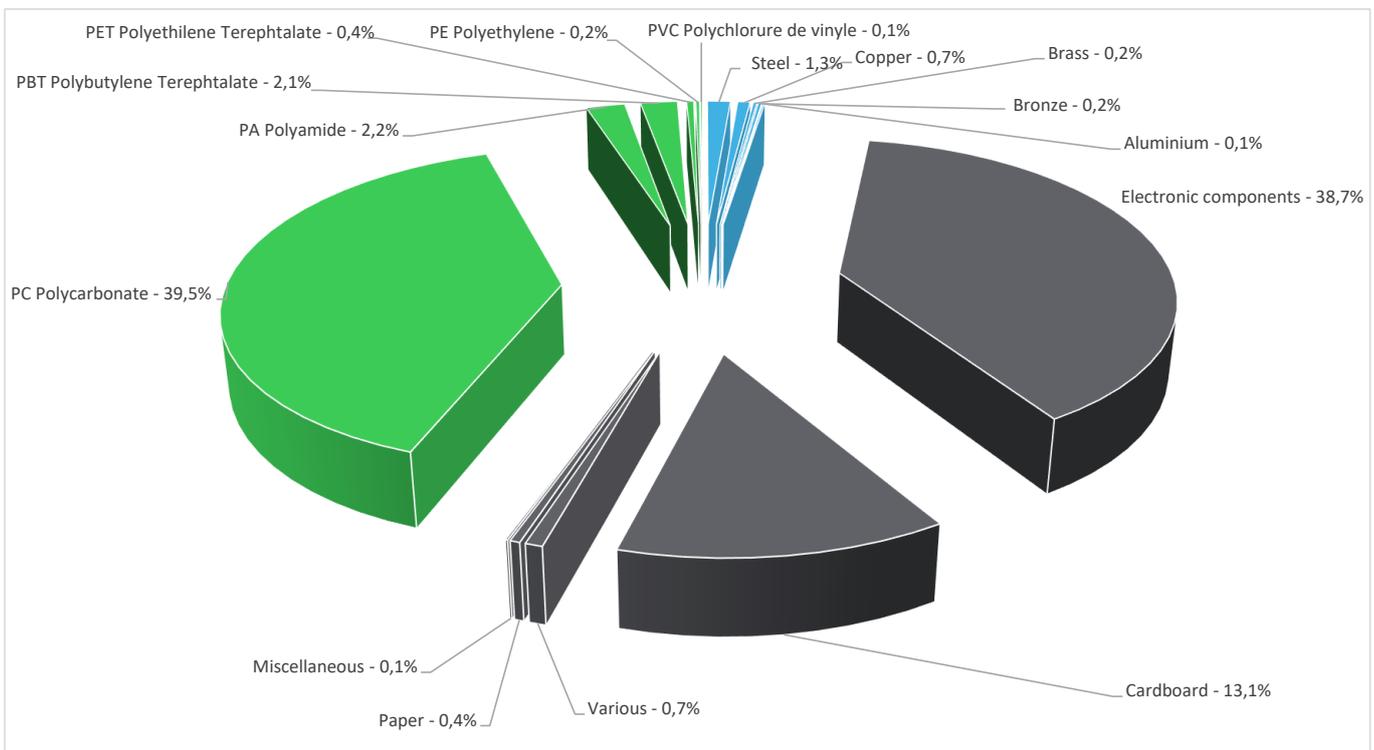
## General information

Reference product	Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement - 47603
Description of the product	<p>MasterPact NT/NW circuit breakers are designed to guarantee the protection of a low voltage electrical distribution system (industrial) with assigned voltage up to 690V AC and rated current up to 6300A. This protection is ensured thanks to the monitoring, control and action of the MicroLogic control units.</p> <p>The MicroLogic 6.0E control unit is a LSIG protection type control unit that offers 4 basic protection functions and some advanced protections:</p> <ul style="list-style-type: none"> <li>* L = long time protection against overloads</li> <li>* S = short time protection against short-circuits</li> <li>* I = instantaneous protection against short-circuits</li> <li>* G = ground fault protection</li> <li>* Additional measurement = energy</li> </ul>
Description of the range	<p>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.</p> <p>The products of the range are: All MasterPact NT/NW &amp; ComPact NS Control Units</p>
Functional unit	<p>Other switchgear and controlgear solutions mentioned in the scope (e.g. fuses TC32, all-or-nothing relays TC94, Measuring relays and protection equipment TC95), apply the general rules of PCR and mention in the accompanying report the functional unit, the reference product characteristics, the reference lifetime and the use scenario which are applied consistently with the relevant IEC technical standards.</p> <p>Protect the installation against overloads and short circuits and protect people and premises at risk of fire or explosion against insulation defects in a circuit with rated voltage up to 690V AC, rated current up to 6300A, with Np (3D, 3D + N/2, 4D) poles, a rated breaking capacity up to 150 kA rms, in the Industrial application area, according to the appropriate use scenario, and during the reference service life of the product of 10 years.</p>
Specifications are:	The specifications mentioned previously will vary depending on the type of circuit breaker (MasterPact NT/NW range of products) the control unit is connected to.



## Constituent materials

Reference product mass 251 g including the product, its packaging, additional elements and accessories



Others	53,0%
Plastics	44,5%
Metals	2,5%



## 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:	3%	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECYLAB 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	10 years
Product category	Other equipments - Active product
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	No special components needed
Use scenario	The control unit will be in active mode for 30% of the time and in standby mode for 70% of the time. Its reference lifetime is 10 years and its power consumption (during the active phase) is 0,98W. The consumption while in standby mode is not considered as it is included in the LCA of the battery.
Time representativeness	The collected data are representative of the year 2023
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.
Final assembly site	Les Agriers, FR
Geographical representativeness	Europe
Energy model used	[A1 - A3]
	Electricity Mix; Low voltage; 2020; France, FR
	[A5]
	Electricity Mix; Low voltage; 2020; Europe, EU-27
	[B6]
	Electricity Mix; Low voltage; 2020; Europe, EU-27
	[C1 - C4]
	Electricity Mix; Low voltage; 2020; Europe, EU-27

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		Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement - 47603						
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	2,50E+01	1,53E+01	2,84E-02	3,77E-02	9,08E+00	5,69E-01	-2,26E-02
Contribution to climate change-fossil	kg CO2 eq	2,50E+01	1,53E+01	2,84E-02	3,60E-02	9,06E+00	5,68E-01	-2,88E-02
Contribution to climate change-biogenic	kg CO2 eq	5,54E-03	0*	0*	1,72E-03	1,67E-02	5,76E-04	6,15E-03
Contribution to climate change-land use and land use change	kg CO2 eq	1,30E-04	1,30E-04	0*	0*	0*	0*	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	2,16E-06	2,11E-06	0*	4,74E-10	4,40E-08	7,39E-10	-4,89E-09
Contribution to acidification	mol H+ eq	1,51E-01	1,04E-01	1,80E-04	1,09E-04	4,65E-02	4,72E-04	-5,17E-04
Contribution to eutrophication, freshwater	kg (PO4) <sup>3-</sup> eq	9,19E-05	5,04E-05	1,07E-08	8,40E-07	2,39E-05	1,68E-05	-1,36E-07
Contribution to eutrophication marine	kg N eq	1,68E-02	1,09E-02	8,45E-05	4,71E-05	5,67E-03	1,90E-04	-2,54E-05
Contribution to eutrophication, terrestrial	mol N eq	2,09E-01	1,15E-01	9,27E-04	3,32E-04	9,10E-02	2,05E-03	-2,63E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	5,89E-02	4,02E-02	2,34E-04	7,61E-05	1,78E-02	5,03E-04	-1,05E-04
Contribution to resource use, minerals and metals	kg Sb eq	5,38E-03	5,38E-03	0*	0*	3,21E-06	0*	-7,76E-06
Contribution to resource use, fossils	MJ	4,43E+02	2,11E+02	3,97E-01	3,67E-01	2,29E+02	1,64E+00	-5,33E-01
Contribution to water use	m3 eq	7,51E+00	6,77E+00	0*	2,94E-03	6,95E-01	4,52E-02	-2,74E-02

Inventory flows Indicators		Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement - 47603						
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 use of renewable primary energy excluding renewable primary energy used as raw material	MJ	6,74E+01	6,70E+00	0*	4,83E-02	6,06E+01	1,47E-02	5,91E-03
Contribution to use of renewable primary energy resources used as raw material	MJ	4,27E-01	4,27E-01	0*	0*	0*	0*	-8,52E-02
Contribution to total use of renewable primary energy resources	MJ	6,78E+01	7,13E+00	0*	4,83E-02	6,06E+01	1,47E-02	-7,93E-02
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4,39E+02	2,07E+02	3,97E-01	3,67E-01	2,29E+02	1,64E+00	-5,33E-01
Contribution to use of non renewable primary energy resources used as raw material	MJ	4,26E+00	4,26E+00	0*	0*	0*	0*	0,00E+00
Contribution to total use of non-renewable primary energy resources	MJ	4,43E+02	2,11E+02	3,97E-01	3,67E-01	2,29E+02	1,64E+00	-5,33E-01
Contribution to use of secondary material	kg	2,61E-02	2,61E-02	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	m <sup>3</sup>	1,75E-01	1,57E-01	0*	6,85E-05	1,63E-02	1,05E-03	-6,38E-04
Contribution to hazardous waste disposed	kg	1,10E+02	1,09E+02	0*	0*	3,98E-01	8,30E-02	-6,50E-01
Contribution to non hazardous waste disposed	kg	5,92E+00	4,25E+00	9,99E-04	1,66E-02	1,53E+00	1,20E-01	-1,91E-02
Contribution to radioactive waste disposed	kg	2,72E-03	2,36E-03	7,11E-07	1,99E-06	3,52E-04	5,04E-06	-1,00E-05
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	1,01E-02	2,88E-03	0*	5,73E-04	0*	6,62E-03	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	1,56E-03	1,11E-05	0*	1,48E-03	0*	6,83E-05	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	9,57E-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		Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement - 47603							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	9,08E+00	0*	0*	0*	0*	0*	9,08E+00	0*
Contribution to climate change-fossil	kg CO2 eq	9,06E+00	0*	0*	0*	0*	0*	9,06E+00	0*
Contribution to climate change-biogenic	kg CO2 eq	1,67E-02	0*	0*	0*	0*	0*	1,67E-02	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	4,40E-08	0*	0*	0*	0*	0*	4,40E-08	0*
Contribution to acidification	mol H+ eq	4,65E-02	0*	0*	0*	0*	0*	4,65E-02	0*
Contribution to eutrophication, freshwater	kg (PO4) <sup>3-</sup> eq	2,39E-05	0*	0*	0*	0*	0*	2,39E-05	0*
Contribution to eutrophication marine	kg N eq	5,67E-03	0*	0*	0*	0*	0*	5,67E-03	0*
Contribution to eutrophication, terrestrial	mol N eq	9,10E-02	0*	0*	0*	0*	0*	9,10E-02	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	1,78E-02	0*	0*	0*	0*	0*	1,78E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	3,21E-06	0*	0*	0*	0*	0*	3,21E-06	0*
Contribution to resource use, fossils	MJ	2,29E+02	0*	0*	0*	0*	0*	2,29E+02	0*
Contribution to water use	m3 eq	6,95E-01	0*	0*	0*	0*	0*	6,95E-01	0*

Inventory flows Indicators		Control unit MicroLogic 6.0E, MasterPact NT/NW, selective and earth fault protections LSIG, energy meter measurement - 47603							
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	6,06E+01	0*	0*	0*	0*	0*	6,06E+01	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	6,06E+01	0*	0*	0*	0*	0*	6,06E+01	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2,29E+02	0*	0*	0*	0*	0*	2,29E+02	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	2,29E+02	0*	0*	0*	0*	0*	2,29E+02	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	m <sup>3</sup>	1,63E-02	0*	0*	0*	0*	0*	1,63E-02	0*
Contribution to hazardous waste disposed	kg	3,98E-01	0*	0*	0*	0*	0*	3,98E-01	0*
Contribution to non hazardous waste disposed	kg	1,53E+00	0*	0*	0*	0*	0*	1,53E+00	0*
Contribution to radioactive waste disposed	kg	3,52E-04	0*	0*	0*	0*	0*	3,52E-04	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 v6.2.2, 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.

