Product Environmental Profile

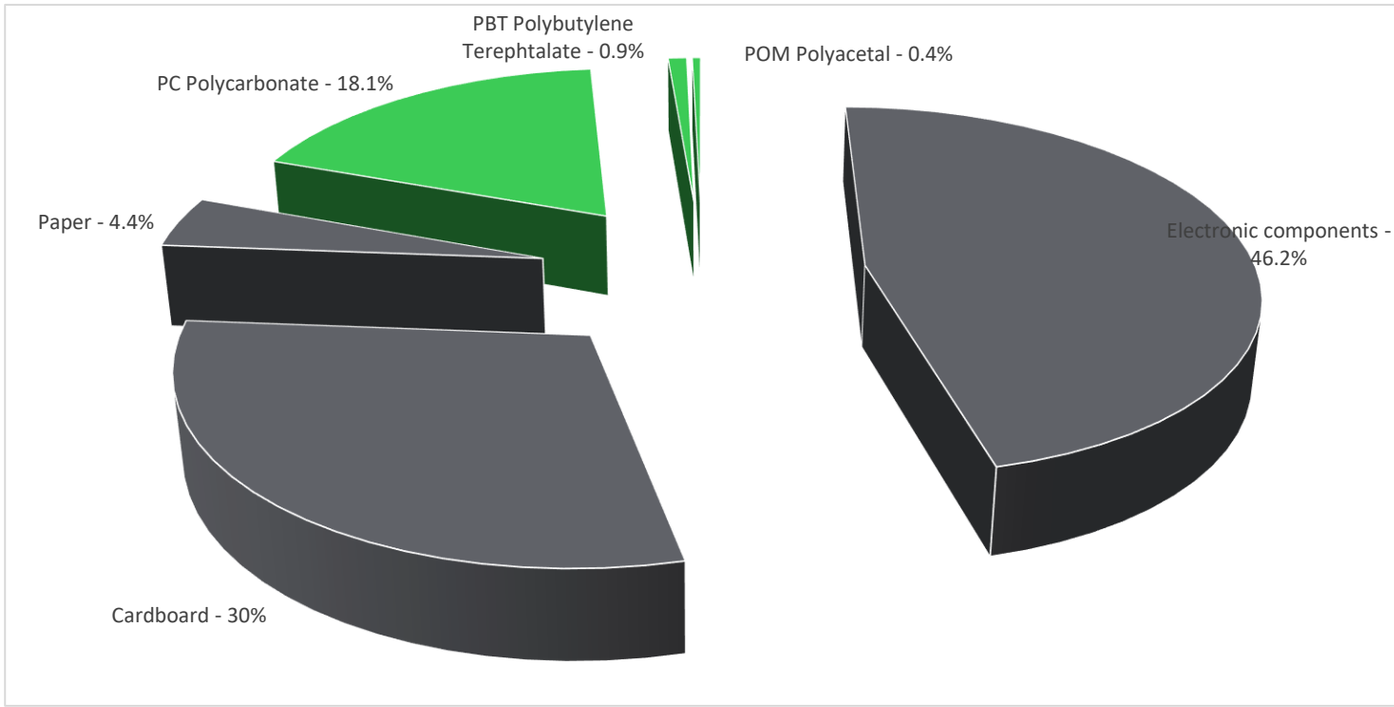
TM3 Safety Module

General information

Representative product	TM3 Safety Module - TM3SAK6R
Description of the range	The main purpose of the TM3 Safety Module is to monitor emergency stop and safe guarding for PLC TM221. The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology.
Functional unit	to enhance safety related functionality of the M221, M41 and M251 controllers 100% of the time for 10 years at 3.6W

Constituent materials

Reference product mass	285.5 g	including the product, its packaging and additional elements and accessories



Plastics	19.4%
Metals	0.0%
Others	80.6%

Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) 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) as mentioned in the Directive

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this 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

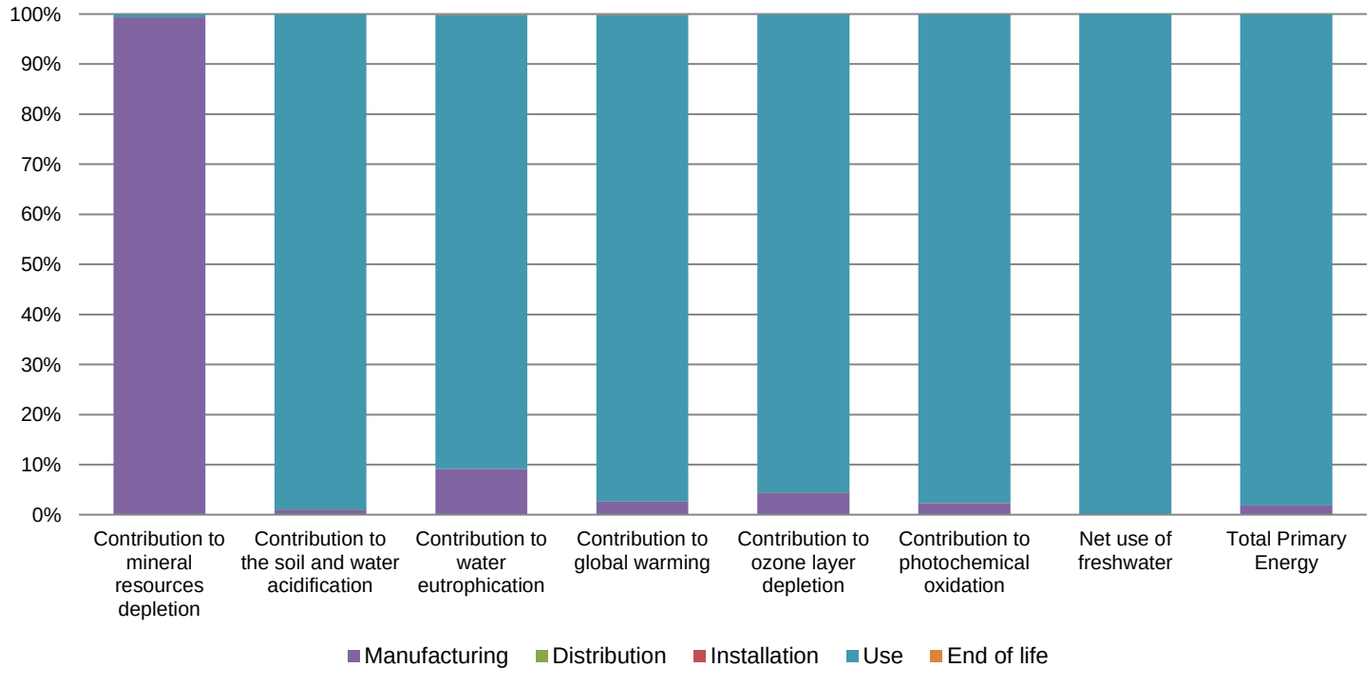
Additional environmental information

The TM3 Safety Module presents the following relevent 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 98.1 g, consisting of cardboard (87%) and paper (13%)		
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 PCBAs (95.2g) 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:	**10%**	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	10 years			
Installation elements	No special components needed			
Use scenario	The product is in active mode 100% of the time with a power use of 3.6W for 10 years			
Geographical representativeness	Europe			
Energy model used	**Manufacturing**	**Installation**	**Use**	**End of life**
	Energy model used: Germany	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

Compulsory indicators	TM3 Safety Module - TM3SAK6R						
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	2.05E-03	2.04E-03	0*	0*	1.34E-05	0*
Contribution to the soil and water acidification	kg SO_2 eq	6.51E-01	6.65E-03	1.68E-04	0*	6.45E-01	1.02E-04
Contribution to water eutrophication	kg PO_4^{3-} eq	4.29E-02	3.89E-03	3.87E-05	0*	3.89E-02	5.29E-05
Contribution to global warming	kg CO_2 eq	1.59E+02	4.19E+00	3.68E-02	0*	1.55E+02	1.70E-01
Contribution to ozone layer depletion	kg CFC11 eq	1.05E-05	4.60E-07	0*	0*	1.01E-05	5.90E-09
Contribution to photochemical oxidation	kg C_2H_4 eq	3.63E-02	8.35E-04	1.20E-05	0*	3.54E-02	8.16E-06
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	5.60E+02	0*	0*	0*	5.60E+02	0*
Total Primary Energy	MJ	3.15E+03	5.95E+01	5.21E-01	0*	3.09E+03	4.27E-01



Optional indicators		TM3 Safety Module - TM3SAK6R					
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	1.81E+03	5.50E+01	5.18E-01	0*	1.75E+03	4.01E-01
Contribution to air pollution	m³	7.15E+03	4.91E+02	1.57E+00	0*	6.65E+03	3.09E+00
Contribution to water pollution	m³	6.87E+03	4.78E+02	6.06E+00	0*	6.38E+03	7.08E+00
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.54E-02	1.54E-02	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	3.96E+02	3.26E+00	0*	0*	3.92E+02	0*
Total use of non-renewable primary energy resources	MJ	2.75E+03	5.62E+01	5.20E-01	0*	2.69E+03	4.26E-01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	3.94E+02	1.50E+00	0*	0*	3.92E+02	0*
Use of renewable primary energy resources used as raw material	MJ	1.76E+00	1.76E+00	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.75E+03	5.32E+01	5.20E-01	0*	2.69E+03	4.26E-01
Use of non renewable primary energy resources used as raw material	MJ	3.05E+00	3.05E+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	2.86E+00	2.32E+00	0*	7.03E-04	8.06E-02	4.60E-01
Non hazardous waste disposed	kg	5.77E+02	9.90E-01	0*	0*	5.76E+02	0*
Radioactive waste disposed	kg	3.85E-01	6.38E-04	0*	0*	3.85E-01	0*
Other environmental information	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	1.30E-01	1.42E-02	0*	9.74E-02	0*	1.85E-02
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	4.73E-02	4.02E-04	0*	0*	0*	4.69E-02
Exported Energy	MJ	0.00E+00	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 EIME v5.7.0.4, database version 2016-11 in compliance with ISO14044.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

Depending on the impact analysis, the environmental indicators (without Mineral Resources Depletion) of other products in this family may be proportional extrapolated by energy consumption values. For Mineral Resources Depletion, impact may be proportional extrapolated by mass of the product.

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	10/2018	*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 :2014

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 »

Schneider Electric Industries SAS

Country Customer Care Center
http://www.schneider-electric.com/contact

35, rue Joseph Monier

CS 30323

F- 92506 Rueil Malmaison Cedex

RCS Nanterre 954 503 439
Capital social 896 313 776 €

www.schneider-electric.com

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