

Product Environmental Profile

4703X IMFF MODULE





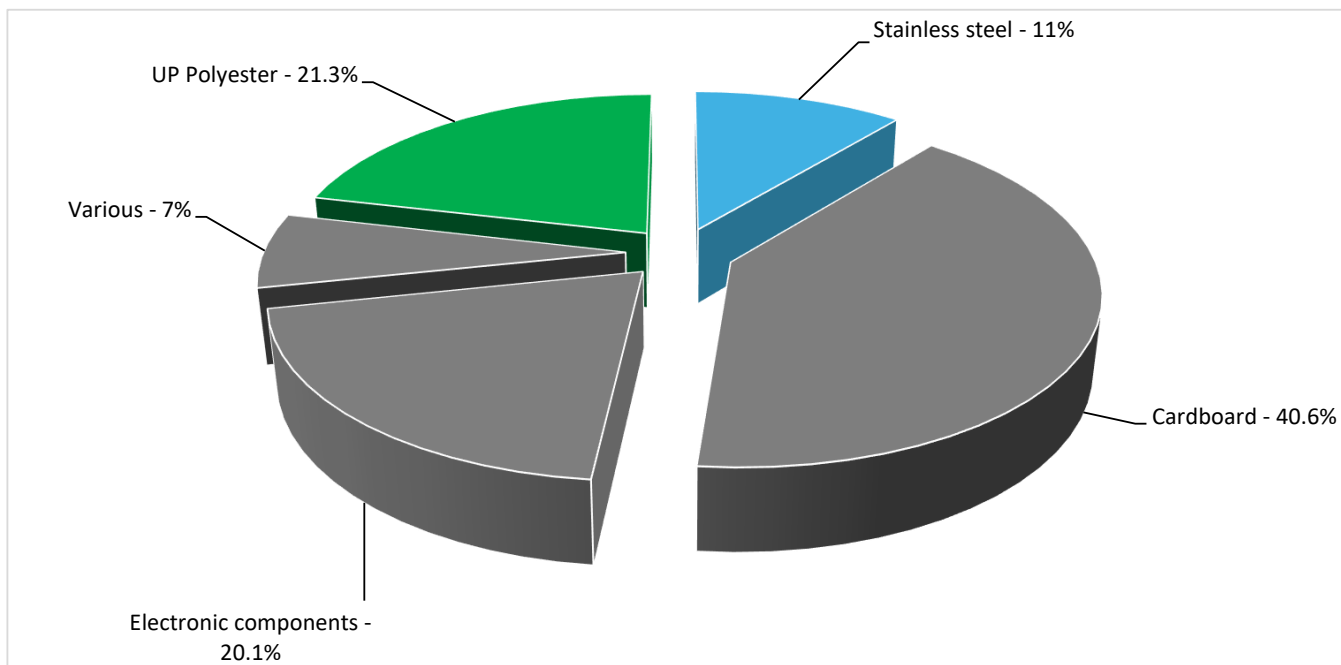
General information

Representative product	4703X IMFF MODULE - 4703X
Description of the product	IMFF Module is part of the Tricon CX safety system which act as an interface to provide communication between the main processor and I/O modules.
Description of the range	I/O Bus Module range includes IMFF (4703X) and IMSS (4701X) which will be used to expand I/O Bus communication to multiple I/O field inputs which resides on multiple I/O Chassis. IMFF modules are meant for fiber-fiber communication where as IMSS modules are meant for serial-serial communication. 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	The Ethernet I/O module design is compatible with Tricon CX 11.4 or later. It was designed to interface the I/O bus from the MP modules and HART interface from the TCM2 to the I/O modules. The Ethernet I/O module continuously operate for 10 years with 100% active lifecycle, consuming a system power of 8W.



Constituent materials

Reference product mass 736 g including the product, its packaging and additional elements and accessories



Plastics	21.3%
Metals	11.0%
Others	67.7%



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

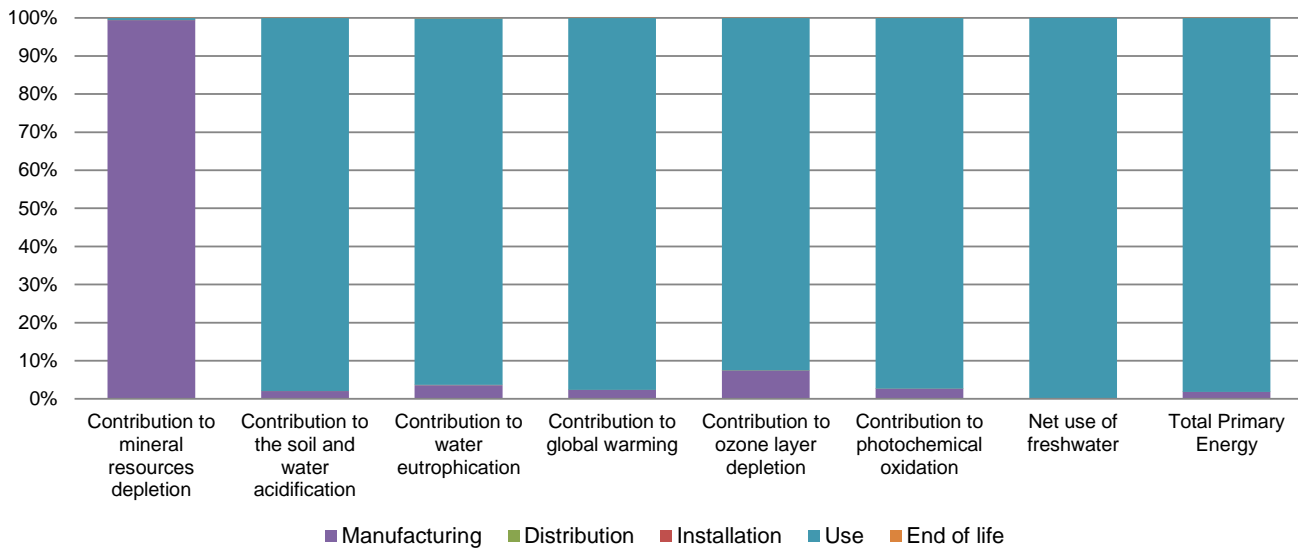
The 4703X IMFF MODULE presents the following relevant environmental aspects

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 300 g, consisting of cardboard (100%)
Installation	The System and Module installation instructions are given in the Tricon CX Installation Guide, Safety Considerations Guide and Field Terminations Guide as applicable.
Use	The product does not require special maintenance operations.
End of life	<p>End of life optimized to decrease the amount of waste and allow recovery of the product components and materials</p> <p>This product contains Electronic Board(148g) that should be separated from the stream of waste so as to optimize end-of-life treatment.</p> <p>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</p> <p>Recyclability potential: 22% 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).</p>

Environmental impacts

Reference life time	10 years for 100% ON			
Product category	Other equipments - Active product			
Installation elements	No special components are needed for user but an I/O chassis is needed to mount these modules. Assembly instructions will be given as a part of Tricon CX user guides like Tricon CX Addendum, Tricon CX installation guide etc.			
Use scenario	The product is for high availability applications for process safety. The product is in active mode "100% ON" for at 10 years with a power consumption of 8 W.			
Geographical representativeness	USA, Europe			
Technological representativeness	IMFF Module is part of the Tricon CX safety system which act as an interface to provide communication between the main processor and I/O modules.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: Mexico	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		4703X IMFF MODULE - 4703X					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	3.18E-03	3.17E-03	0*	0*	1.81E-05	0*
Contribution to the soil and water acidification	kg SO ₂ eq	9.88E-01	2.00E-02	4.34E-04	0*	9.67E-01	1.99E-04
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	1.14E-01	4.08E-03	9.99E-05	1.64E-05	1.10E-01	9.27E-05
Contribution to global warming	kg CO ₂ eq	4.36E+02	1.01E+01	9.50E-02	0*	4.25E+02	2.81E-01
Contribution to ozone layer depletion	kg CFC11 eq	2.32E-05	1.73E-06	0*	0*	2.14E-05	9.70E-09
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	8.68E-02	2.29E-03	3.09E-05	0*	8.45E-02	1.71E-05
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m ³	6.23E+02	1.26E-01	0*	0*	6.23E+02	0*
Total Primary Energy	MJ	8.02E+03	1.46E+02	1.34E+00	0*	7.87E+03	8.64E-01



Optional indicators		4703X IMFF MODULE - 4703X					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	5.33E+03	9.51E+01	1.33E+00	0*	5.23E+03	7.05E-01
Contribution to air pollution	m ³	3.47E+04	1.18E+03	4.04E+00	0*	3.35E+04	6.29E+00
Contribution to water pollution	m ³	2.00E+04	1.09E+03	1.56E+01	2.46E+00	1.89E+04	1.26E+01
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	2.72E-01	2.72E-01	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	4.49E+02	4.28E+00	0*	0*	4.45E+02	0*
Total use of non-renewable primary energy resources	MJ	7.57E+03	1.42E+02	1.34E+00	0*	7.43E+03	8.63E-01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	4.48E+02	3.21E+00	0*	0*	4.45E+02	0*
Use of renewable primary energy resources used as raw material	MJ	1.07E+00	1.07E+00	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	7.56E+03	1.35E+02	1.34E+00	0*	7.43E+03	8.63E-01
Use of non renewable primary energy resources used as raw material	MJ	7.01E+00	7.01E+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	3.14E+01	1.01E+01	0*	0*	2.04E+01	9.29E-01
Non hazardous waste disposed	kg	6.79E+02	3.38E+00	0*	0*	6.76E+02	0*
Radioactive waste disposed	kg	4.43E-01	2.42E-03	0*	0*	4.40E-01	0*
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	4.56E-01	5.96E-02	0*	2.99E-01	0*	9.76E-02
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	7.42E-02	0*	0*	0*	0*	7.42E-02
Exported Energy	MJ	9.48E-04	8.92E-05	0*	8.59E-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 v5.9.1, 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 of other products in this family 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.

<i>Registration number</i>	ENVPEP2008012	<i>Drafting rules</i>	PCR-ed3-EN-2015 04 02
<i>Date of issue</i>	08/2021		
<i>Validity period</i>	5 years	<i>Information and reference documents</i>	www.pep-ecopassport.org
<i>Independent verification of the declaration and data</i>			
Internal	X	External	
<i>The elements of the present PEP cannot be compared with elements from another program.</i>			
<i>Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »</i>			

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