

# Product Environmental Profile

**TM5C12D6T6L - reference product for compact I/O expansion block range for TM5 Terminal block**





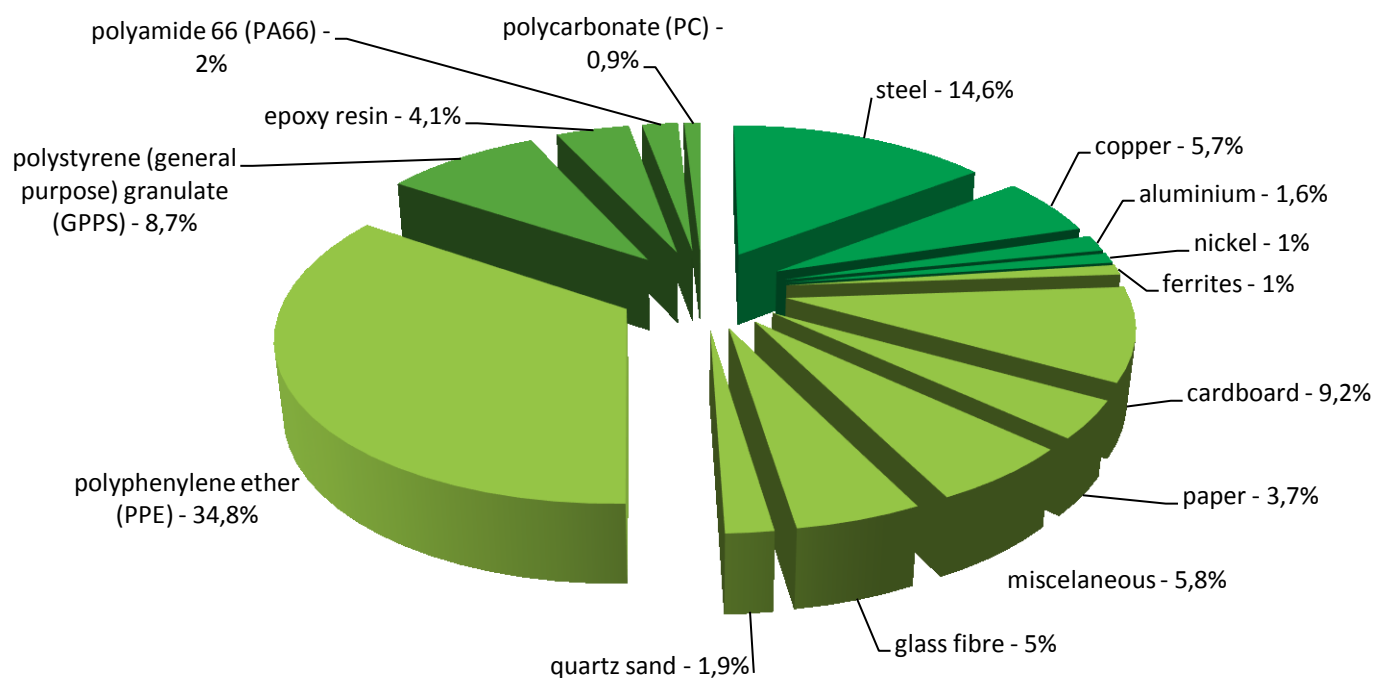
## General information

<b>Representative product</b>	TM5C12D6T6L - reference product for compact I/O expansion block range for TM5 Terminal block - TM5C12D6T6L compact I/O expansion block TM5 - 24 I/O - 12 DI - 6 DO transistor - 4 AI - 2 AO
<b>Description of the product</b>	The product is a compact I/O expansion block for Modicon TM5 Terminal Block It is having 24 analog or digital I/O adapted to a 24V DC, 3,75 mA current Electromagnetic properties comply with EN/IEC 61000-4-6 standard
<b>Description of the range</b>	The range covers Modicon TM5 compact expansion I/O blocks 20 to 42 I/O - 6 to 12 DI - 24 VDC/240 VAC / 110 V - 6 to 18 DO transistor or relay 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
<b>Functional unit</b>	To expand digital and/or analogue I/O control system configurations 100% of the time for 10 years at ambient temperature from -10°C to 60°C, max. altitude 2000 meters, 15Gn11ms (chock resistance), humidity from 5% to 95% (without condensation)



## Constituent materials

**Reference product mass** 286,26 g including the product, its packaging and additional elements and accessories



## 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 TM5C12D6T6L - reference product for compact I/O expansion block range for TM5 Terminal block presents the following relevant environmental aspects

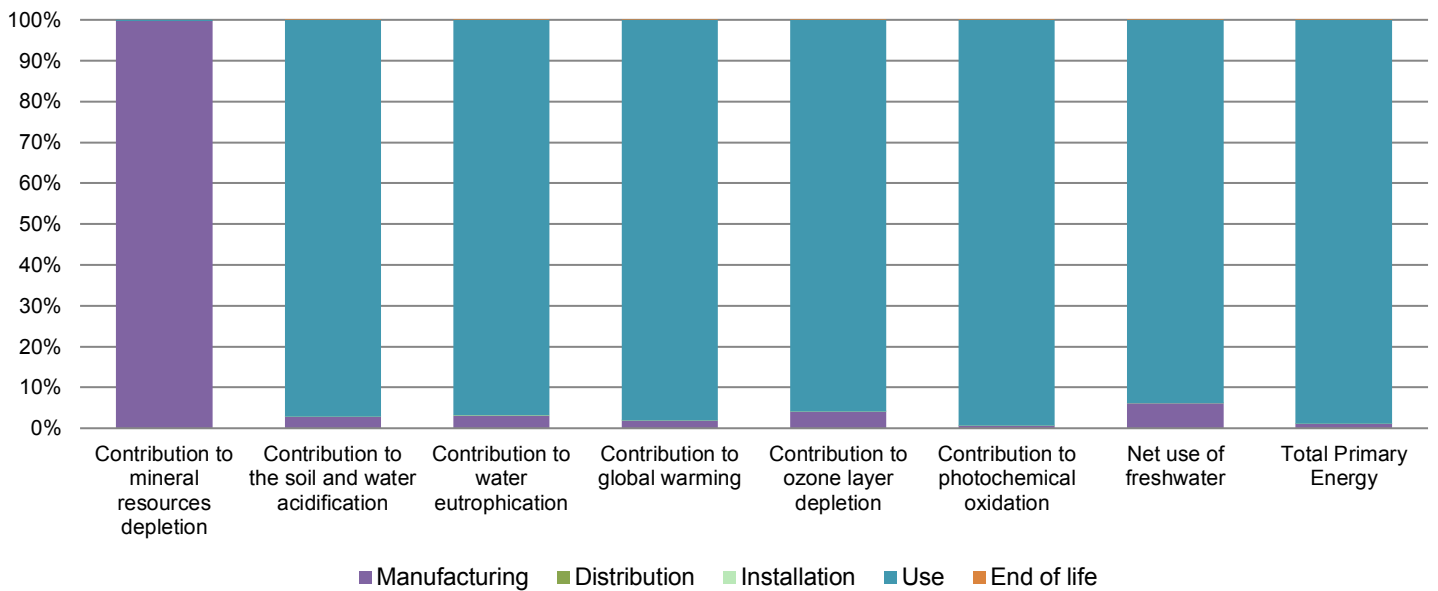
<b>Design</b>	Product is not ecodesigned
<b>Manufacturing</b>	Manufactured at a production site complying with the regulations
<b>Distribution</b>	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 36 g, consisting of cardboard (73%) and paper (27%)
<b>Installation</b>	The product range does not require any installation operation
<b>Use</b>	The product does not require special maintenance operation
<b>End of life</b>	<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 cards (38g, 2 units of 9,8g, 11,5g and 2 units of 15,1g) 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 <a href="http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page">http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page</a></p> <p>Recyclability potential: <b>17%</b> 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

<b>Reference life time</b>	10 years			
<b>Product category</b>	Active products			
<b>Installation elements</b>	There is no special component needed for the product range installation			
<b>Use scenario</b>	Consumed power is 12,8W, 100 % of the time in Active mode			
<b>Geographical representativeness</b>	Europe			
<b>Technological representativeness</b>	The product is a compact I/O expansion block for Modicon TM5 Terminal Block It is having 24 analog or digital I/O adapted to a 24V DC, 3,75 mA current Electromagnetic properties comply with EN/IEC 61000-4-6 standard			
<b>Energy model used</b>	<b>Manufacturing</b>	<b>Installation</b>	<b>Use</b>	<b>End of life</b>
	Energy model used: Austria	Electricity mix; AC; consumption mix, at consumer; 220V - 230V; RER	Electricity mix; AC; consumption mix, at consumer; 220V - 230V; RER	Electricity mix; AC; consumption mix, at consumer; 220V - 230V; RER

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Compulsory indicators		TM5C12D6T6L - reference product for compact I/O expansion block range for TM5 Terminal block					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	5,58E-03	5,56E-03	0*	0*	1,65E-05	0*
Contribution to the soil and water acidification	kg SO <sub>2</sub> eq	5,06E-01	1,46E-02	1,69E-04	0*	4,92E-01	1,12E-04
Contribution to water eutrophication	kg PO <sub>4</sub> <sup>3-</sup> eq	1,36E-01	4,20E-03	3,88E-05	0*	1,32E-01	4,72E-05
Contribution to global warming	kg CO <sub>2</sub> eq	6,48E+02	1,22E+01	0*	0*	6,36E+02	1,34E-01
Contribution to ozone layer depletion	kg CFC11 eq	3,67E-05	1,51E-06	0*	0*	3,52E-05	5,82E-09
Contribution to photochemical oxidation	kg C <sub>2</sub> H <sub>4</sub> eq	2,99E-01	1,94E-03	0*	0*	2,97E-01	0*
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	1,98E+00	1,23E-01	0*	0*	1,86E+00	0*
Total Primary Energy	MJ	1,55E+04	1,76E+02	0*	0*	1,54E+04	0*



Optional indicators	TM5C12D6T6L - reference product for compact I/O expansion block range for TM5 Terminal block						
	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
<b>Impact indicators</b>							
Contribution to fossil resources depletion	MJ	9,50E+03	1,46E+02	0*	0*	9,35E+03	0*
Contribution to air pollution	m³	1,10E+05	1,14E+03	0*	0*	1,09E+05	0*
Contribution to water pollution	m³	2,07E+04	9,75E+02	6,07E+00	0*	1,97E+04	6,59E+00
<b>Resources use</b>							
Use of secondary material	kg	1,50E-01	1,50E-01	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	1,55E+01	5,13E+00	0*	0*	1,04E+01	0*
Total use of non-renewable primary energy resources	MJ	1,55E+04	1,71E+02	0*	0*	1,54E+04	0*
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1,52E+01	4,82E+00	0*	0*	1,04E+01	0*
Use of renewable primary energy resources used as raw material	MJ	3,04E-01	3,04E-01	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1,55E+04	1,66E+02	0*	0*	1,54E+04	0*
Use of non renewable primary energy resources used as raw material	MJ	5,00E+00	5,00E+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*
<b>Waste categories</b>							
Hazardous waste disposed	kg	1,06E+02	1,79E+01	0*	3,61E-02	8,73E+01	5,53E-01
Non hazardous waste disposed	kg	4,70E+01	3,53E+00	0*	0*	4,35E+01	0*
Radioactive waste disposed	kg	6,26E-02	1,22E-03	0*	0*	6,14E-02	0*
<b>Other environmental information</b>							
Materials for recycling	kg	1,57E-01	7,75E-02	0*	3,60E-02	0*	4,33E-02
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	5,21E-02	1,88E-02	0*	0*	0*	3,33E-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 v5.5, database version 2015-04

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

To extrapolate the impact to another product from the range, apply the following extrapolation rules to each indicator per life cycle stage:

MANUFACTURING(i) = Mass of (electronics) in grams / 99,3


DISTRIBUTION (i) = END OF LIFE (i) = Mass of (product) in grams / 250,3

INSTALLATION (i) = 1

USE (i) = Power (dissipated + consumed) in Watts / 12,8

TOTAL (i) =  $\sum$  Life Cycle Stages (i)

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 N°</i>	SCHN-00092-V01.01-EN	<i>Drafting rules</i>	PCR-ed3-EN-2015 04 02
<i>Verifier accreditation N°</i>	VH08	<i>Information and reference documents</i>	<a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
<i>Date of issue</i>	01/05/2016	<i>Validity period</i>	5 years
<i>Independent verification of the declaration and data, in compliance with ISO 14025 : 2010</i>			
Internal	External X		
<i>The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN).</i>			
<i>PEP are compliant with XP C08-100-1 :2014</i>			
<i>The elements of the present PEP cannot be compared with elements from another program</i>			
<i>Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »</i>			

Schneider Electric Industries SAS

[Schneider Electric Country Customer Care Center](#)

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](http://www.schneider-electric.com)

Published by Schneider Electric

SCHN-00092-V01.01-EN

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01/09/2016