Product Environmental Profile

PacNet Bus Terminal BT-4/DIO1 16I / 16O

Logic Motion Controllers PacDrive LMC Pro and LMC Eco

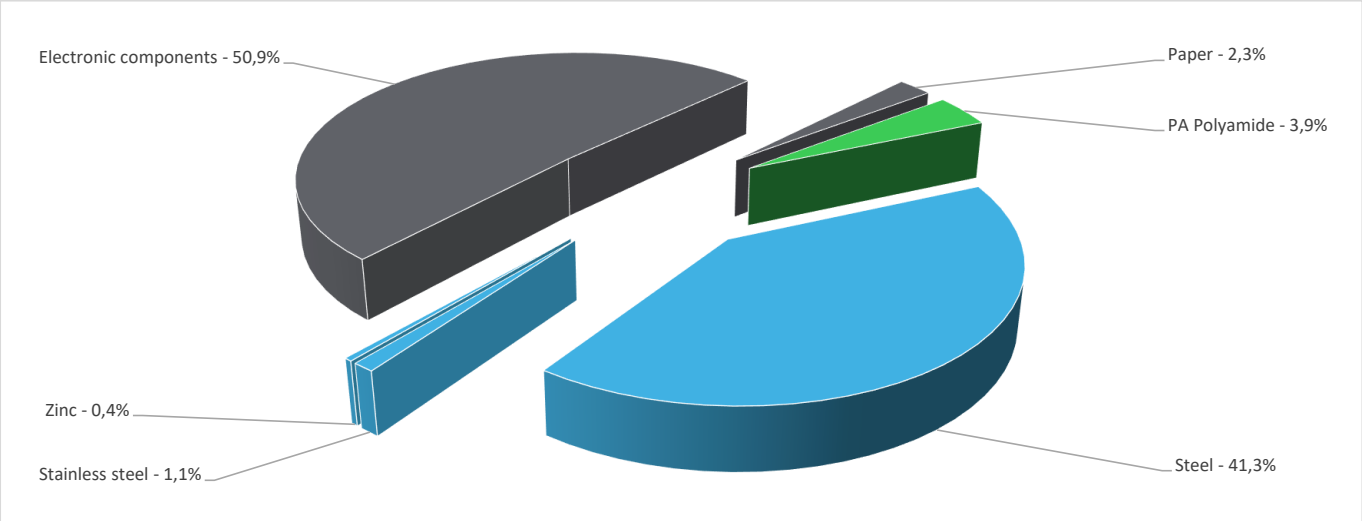


General information

Reference product	PacNet Bus Terminal BT-4/DIO1 16I / 16O - VBO04S001
Description of the product	PacNet is a high-speed bus system for I/O extension with which distributed digital inputs/outputs and encoders (incremental and SinCos encoders) can be networked with the PacDrive system. The bus is used for the communication between the controllers LMC Pro & Pro2 and the bus terminal BT-4/Digital IO or between the controllers LMC Pro & Pro2 and the bus terminal BT-4/Encoder.
Description of the range	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.The range integrates VBO04S01, Bus Terminal - 4 / Digital IO, PacNet bus terminal 16x digital inputs/16x digital outputs, and VBO05S00, Bus Terminal - 4 / Encoder. It provides very fast Inputs/Outputs for the controller LMC Eco or LMC Pro2, when very fast response time is required in an application.
Functional unit	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.
Specifications are:	Power Supply : DC 24V -15% / +20%, type 300mA (without outputs) 16 Digital Inputs 16 Digital Outputs

Constituent materials

Reference product mass	1207,52 g	including the product, its packaging, additional elements and accessories



Plastics	4,0%
Metals	42,8%
Others	53,2%

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:	**43%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB 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).

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	This product does not require any installation operations.
Use scenario	The product is in active mode 100% of the time with a power use of 4W for 10 years.
Time representativeness	The collected data are representative of the year 2026.
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	Use phase		End-of-life
Geographical representativeness	Carros, France	Germany : 86% ; Italy : 14%		Germany : 86% ; Italy : 14%
	[A1 - A3]	**[A5]**	**[B6]**	**[C1 - C4]**
Energy model used	Electricity mix; Consumption mix; Low voltage; 2022; France, FR	No energy used	Electricity mix; Consumption mix; Low voltage; 2022; Italy, IT Electricity mix; Consumption mix; Low voltage; 2022; Germany, DE	Global, European and French datasets are used.

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		PacNet Bus Terminal BT-4/DIO1 16I / 16O - VBO04S001						
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	2,12E+02	1,48E+01	1,69E-01	2,63E-02	1,96E+02	1,13E+00	-1,54E-02
Contribution to climate change-fossil	kg CO2 eq	2,08E+02	1,48E+01	1,69E-01	0*	1,92E+02	1,13E+00	-2,83E-02
Contribution to climate change-biogenic	kg CO2 eq	4,52E+00	-4,85E-02	0*	1,72E-02	4,55E+00	1,05E-03	1,30E-02
Contribution to climate change-land use and land use change	kg CO2 eq	9,65E-06	8,90E-06	2,08E-07	0*	0,00E+00	5,40E-07	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	2,97E-06	1,90E-06	1,75E-09	1,38E-09	1,05E-06	1,51E-08	-2,87E-09
Contribution to acidification	mol H+ eq	1,42E+00	7,82E-02	3,17E-04	0*	1,34E+00	1,98E-03	-1,61E-04
Contribution to eutrophication, freshwater	kg P eq	1,95E-04	5,39E-05	6,15E-07	1,57E-07	1,33E-04	7,33E-06	-2,04E-07
Contribution to eutrophication, marine	kg N eq	1,52E-01	7,50E-03	8,08E-05	0*	1,44E-01	3,27E-04	-2,81E-05
Contribution to eutrophication, terrestrial	mol N eq	2,32E+00	8,56E-02	8,86E-04	0*	2,23E+00	3,41E-03	-2,66E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	4,89E-01	2,61E-02	2,50E-04	0*	4,61E-01	9,77E-04	-7,91E-05
Contribution to resource use, minerals and metals	kg Sb eq	3,28E-03	3,22E-03	0*	0*	6,62E-05	0*	-5,48E-06
Contribution to resource use, fossils	MJ	3,69E+03	2,27E+02	2,89E+00	0*	3,45E+03	9,09E+00	-5,38E-01
Contribution to water use	m3 eq	2,42E+01	6,32E+00	5,31E-03	1,03E-02	1,78E+01	6,61E-02	-1,02E-02

Inventory flows Indicators		PacNet Bus Terminal BT-4/DIO1 16I / 16O - VBO04S001						
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 renewable primary energy used as energy	MJ	1,04E+03	1,56E+01	0*	0*	1,03E+03	2,53E-01	0*
Contribution to renewable primary energy used as raw material	MJ	1,04E+00	1,04E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,65E-01
Contribution to total renewable primary energy	MJ	1,05E+03	1,67E+01	0*	0*	1,03E+03	2,53E-01	-1,30E-01
Contribution to non renewable primary energy used as energy	MJ	3,69E+03	2,24E+02	2,89E+00	0*	3,45E+03	9,09E+00	-5,38E-01
Contribution to non renewable primary energy used as raw material	MJ	3,61E+00	3,61E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to total non renewable primary energy	MJ	3,69E+03	2,27E+02	2,89E+00	0*	3,45E+03	9,09E+00	-5,38E-01
Contribution to use of secondary material	kg	6,88E-03	6,88E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to use of renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to use of non renewable secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to net use of fresh water	m³	5,64E-01	1,46E-01	1,24E-04	2,66E-04	4,16E-01	1,87E-03	-2,37E-04
Contribution to hazardous waste disposed	kg	5,04E+01	4,29E+01	0*	0*	7,22E+00	2,54E-01	-4,33E-01
Contribution to non hazardous waste disposed	kg	3,69E+01	4,23E+00	1,28E-02	3,89E-03	3,24E+01	2,76E-01	-2,10E-02
Contribution to radioactive waste disposed	kg	5,52E-03	1,26E-03	1,01E-05	0*	4,22E-03	3,24E-05	-9,49E-06
Contribution to components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to materials for recycling	kg	2,42E-01	3,20E-02	0,00E+00	9,18E-03	0,00E+00	2,01E-01	0,00E+00
Contribution to materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Contribution to exported energy	MJ	2,83E-03	3,13E-04	0,00E+00	5,36E-04	0,00E+00	1,98E-03	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	6,83E-02

** 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		PacNet Bus Terminal BT-4/DIO1 16I / 16O - VBO04S001							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1,96E+02	0	0,00E+00	0	0	0	1,96E+02	0
Contribution to climate change-fossil	kg CO2 eq	1,92E+02	0	0,00E+00	0	0	0	1,92E+02	0
Contribution to climate change-biogenic	kg CO2 eq	4,55E+00	0	0,00E+00	0	0	0	4,55E+00	0
Contribution to climate change-land use and land use change	kg CO2 eq	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to ozone depletion	kg CFC-11 eq	1,05E-06	0	0,00E+00	0	0	0	1,05E-06	0
Contribution to acidification	mol H+ eq	1,34E+00	0	0,00E+00	0	0	0	1,34E+00	0
Contribution to eutrophication, freshwater	kg P eq	1,33E-04	0	0,00E+00	0	0	0	1,33E-04	0
Contribution to eutrophication marine	kg N eq	1,44E-01	0	0,00E+00	0	0	0	1,44E-01	0
Contribution to eutrophication, terrestrial	mol N eq	2,23E+00	0	0,00E+00	0	0	0	2,23E+00	0
Contribution to photochemical ozone formation - human health	kg COVNM eq	4,61E-01	0	0,00E+00	0	0	0	4,61E-01	0
Contribution to resource use, minerals and metals	kg Sb eq	6,62E-05	0	0,00E+00	0	0	0	6,62E-05	0
Contribution to resource use, fossils	MJ	3,45E+03	0	0,00E+00	0	0	0	3,45E+03	0
Contribution to water use	m3 eq	1,78E+01	0	0,00E+00	0	0	0	1,78E+01	0

Inventory flows Indicators		PacNet Bus Terminal BT-4/DIO1 16I / 16O - VBO04S001							
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	1,03E+03	0	0,00E+00	0	0	0	1,03E+03	0
Contribution to use of renewable primary energy resources used as raw material	MJ	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to total use of renewable primary energy resources	MJ	1,03E+03	0	0,00E+00	0	0	0	1,03E+03	0
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3,45E+03	0	0,00E+00	0	0	0	3,45E+03	0
Contribution to use of non renewable primary energy resources used as raw material	MJ	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to total use of non-renewable primary energy resources	MJ	3,45E+03	0	0,00E+00	0	0	0	3,45E+03	0
Contribution to use of secondary material	kg	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to use of renewable secondary fuels	MJ	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to use of non renewable secondary fuels	MJ	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to net use of freshwater	m³	4,16E-01	0	0,00E+00	0	0	0	4,16E-01	0
Contribution to hazardous waste disposed	kg	7,22E+00	0	0,00E+00	0	0	0	7,22E+00	0
Contribution to non hazardous waste disposed	kg	3,24E+01	0	0,00E+00	0	0	0	3,24E+01	0
Contribution to radioactive waste disposed	kg	4,22E-03	0	0,00E+00	0	0	0	4,22E-03	0
Contribution to components for reuse	kg	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to materials for recycling	kg	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to materials for energy recovery	kg	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0
Contribution to exported energy	MJ	0,00E+00	0	0,00E+00	0	0	0	0,00E+00	0

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.2.5-6, 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.

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		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	09-2026	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years

Independent verification of the declaration and data, in compliance with ISO 14021 : 2016

Internal X External

The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022

The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14021:2016 “Environmental labels and declarations. Type II environmental declarations”

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