

Product Environmental Profile

I/O (input/output) application module, Enerlin'X





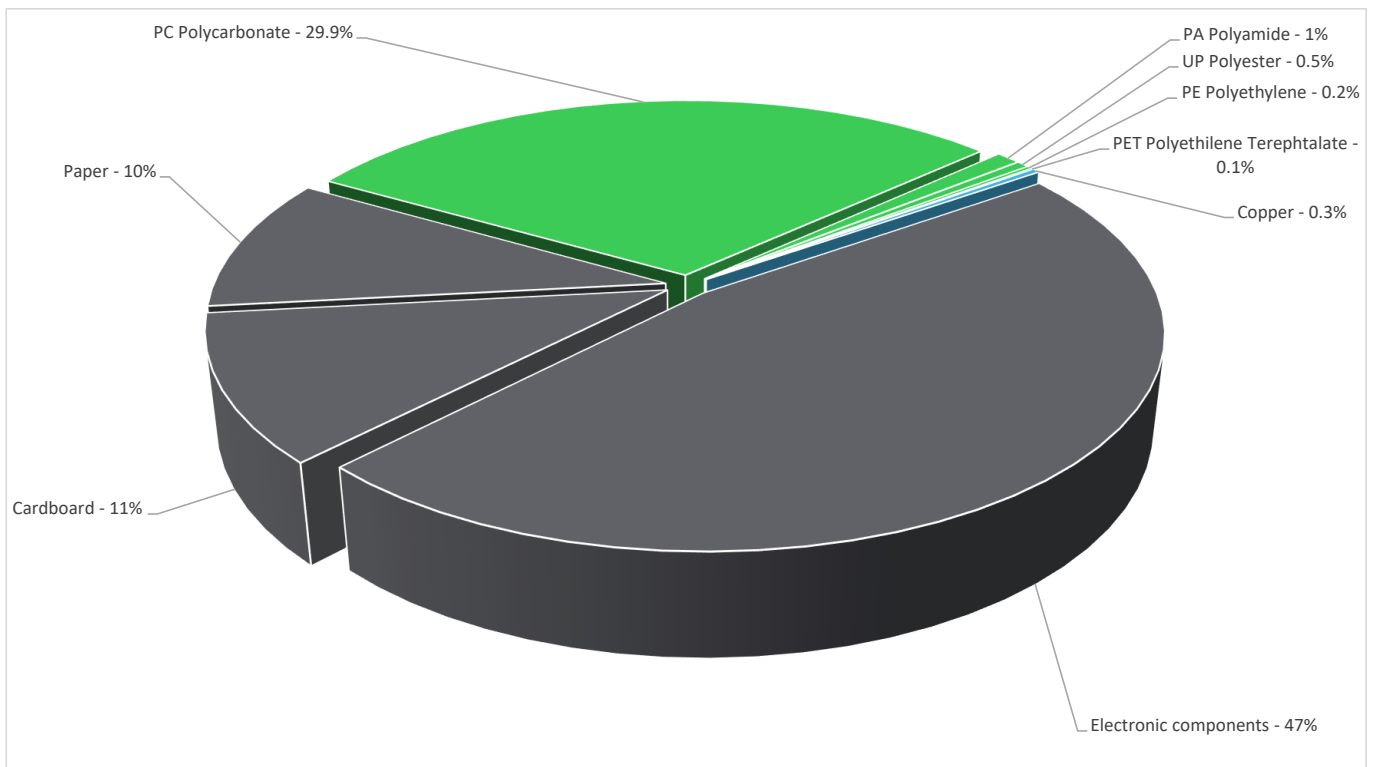
General information

Reference product	I/O (input/output) application module, Enerlin'X - LV434063
Description of the product	This I/O module is an Input/Output application module and it is part of EnerlinX communication system. This I/O module is compatible with Masterpact, Compact and PowerPact devices. It is used for protection, circuit breaker control, motor control, energy management and monitoring applications. It provides six digital inputs, three digital outputs and one analog input. It is equipped on the top with one 24VDC screw clamp terminal block and one terminal block for the 6 digital inputs. There are two RJ45 sockets on the bottom for ULP, and 4 terminal blocks for the digital outputs and analog input. The I/O module is a DIN rail mounting device and its dimensions are 72mm x 116mm x 71mm. The protection degree is IP4x on the front face and IP2x on the connectors. The I/O module is entirely part of the EcoStruxure Power architecture and Ethernet ready smart panels. The I/O module can be configured and updated (firmware) using EcoStruxure Power Commission software.
Description of the range	Single product
Functional unit	Monitor, control or perform predefined applications on the circuit breaker, with a rated operating voltage $U_s = 24 \text{ V DC}$ & a current consumption of 165 mA, in accordance with IEC 60947-6-2 standard during the lifetime of 10 years. The protection degree is IP4x on the front face, IP2x on the connectors & IP3x on the other parts.
Specifications are:	U_s = rated supply voltage = 24 VDC IP degree of protection = IP2X connectors, IP4X front panel, IP3X other parts Current consumption = 165 mA



Constituent materials

Reference product mass	298.5 g	including the product, its packaging, additional elements and accessories
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Others	68,0%
Plastics	31,7%
Metals	0,3%



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:	0%	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	The product does not require special installation procedure and requires little to no energy to install. The disposal of the packaging materials are accounted for during the installation phase (including transport to disposal).		
Use scenario	The product is in active mode 100% of the time with a power use of 3W for 10 years		
Time representativeness	The collected data are representative of the year 2024		
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.		
Geographical representativeness	Final assembly site	Use phase	
	Indonesia	USA, Europe, India	
Energy model used	[A1 - A3]	[A5]	[B6]
	Electricity Mix; Europe, EU Electricity Mix; China, CN	No energy used	Electricity Mix; Low voltage; 2020; United States, US Electricity Mix; Low voltage; 2020; Europe, EU-27 Electricity Mix; Low voltage; 2020; India, IN
			[C1 - C4]
			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		I/O (input/output) application module, Enerlin'X - LV434063						
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	1,63E+02	3,92E+01	8,14E-02	0*	1,23E+02	7,26E-01	-2,03E-03
Contribution to climate change-fossil	kg CO2 eq	1,62E+02	3,92E+01	8,14E-02	0*	1,22E+02	7,26E-01	-1,85E-03
Contribution to climate change-biogenic	kg CO2 eq	1,05E+00	0*	0*	0*	1,11E+00	0*	-1,76E-04
Contribution to climate change-land use and land use change	kg CO2 eq	1,04E-04	1,04E-04	0*	0*	0*	0*	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	5,95E-06	5,38E-06	7,21E-08	0*	4,96E-07	6,24E-10	-5,81E-10
Contribution to acidification	mol H+ eq	7,87E-01	1,93E-01	3,67E-04	0*	5,93E-01	4,92E-04	-1,46E-04
Contribution to eutrophication, freshwater	kg P eq	4,06E-04	1,82E-04	0*	0*	2,20E-04	3,33E-06	-2,63E-09
Contribution to eutrophication marine	kg N eq	9,58E-02	2,26E-02	1,70E-04	1,60E-05	7,28E-02	2,38E-04	-2,17E-06
Contribution to eutrophication, terrestrial	mol N eq	1,17E+00	2,37E-01	1,84E-03	1,64E-04	9,32E-01	2,47E-03	-2,55E-05
Contribution to photochemical ozone formation - human health	kg COVNM eq	3,11E-01	7,13E-02	5,97E-04	3,92E-05	2,38E-01	5,98E-04	-1,64E-05
Contribution to resource use, minerals and metals	kg Sb eq	6,14E-03	6,12E-03	0*	0*	2,33E-05	0*	-1,43E-06
Contribution to resource use, fossils	MJ	3,14E+03	4,23E+02	1,02E+00	0*	2,72E+03	9,10E-01	-3,32E-02
Contribution to water use	m3 eq	2,10E+01	1,40E+01	4,15E-03	6,09E-03	6,94E+00	2,84E-02	-7,14E-03

Inventory flows Indicators		I/O (input/output) application module, Enerlin'X - LV434063						
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	4,39E+02	3,36E+01	0*	0*	4,05E+02	0*	-3,77E-03
Contribution to use of renewable primary energy resources used as raw material	MJ	7,06E-01	7,06E-01	0*	0*	0*	0*	0,00E+00
Contribution to total use of renewable primary energy resources	MJ	4,39E+02	3,43E+01	0*	0*	4,05E+02	0*	-3,77E-03
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3,14E+03	4,18E+02	1,02E+00	0*	2,72E+03	9,10E-01	-3,32E-02
Contribution to use of non renewable primary energy resources used as raw material	MJ	4,87E+00	4,87E+00	0*	0*	0*	0*	0,00E+00
Contribution to total use of non-renewable primary energy resources	MJ	3,14E+03	4,23E+02	1,02E+00	0*	2,72E+03	9,10E-01	-3,32E-02
Contribution to use of secondary material	kg	3,39E-02	3,39E-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	m³	4,86E-01	3,23E-01	9,65E-05	1,42E-04	1,62E-01	6,63E-04	-1,66E-04
Contribution to hazardous waste disposed	kg	1,12E+02	1,09E+02	0*	0*	2,61E+00	1,48E-01	-1,10E-01
Contribution to non hazardous waste disposed	kg	2,80E+01	9,39E+00	0*	6,55E-02	1,84E+01	1,08E-01	-1,51E-04
Contribution to radioactive waste disposed	kg	8,28E-03	4,03E-03	1,62E-05	0*	4,23E-03	4,90E-06	-1,60E-07
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	8,46E-03	7,56E-03	0*	0*	0*	8,99E-04	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	1,57E-05	6,84E-06	0*	0*	0*	8,89E-06	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 2,12E-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		I/O (input/output) application module, Enerlin'X - LV434063							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1,23E+02	0*	0*	0*	0*	0*	1,23E+02	0*
Contribution to climate change-fossil	kg CO2 eq	1,22E+02	0*	0*	0*	0*	0*	1,22E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	1,11E+00	0*	0*	0*	0*	0*	1,11E+00	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	4,96E-07	0*	0*	0*	0*	0*	4,96E-07	0*
Contribution to acidification	mol H+ eq	5,93E-01	0*	0*	0*	0*	0*	5,93E-01	0*
Contribution to eutrophication, freshwater	kg P eq	2,20E-04	0*	0*	0*	0*	0*	2,20E-04	0*
Contribution to eutrophication marine	kg N eq	7,28E-02	0*	0*	0*	0*	0*	7,28E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	9,32E-01	0*	0*	0*	0*	0*	9,32E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	2,38E-01	0*	0*	0*	0*	0*	2,38E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	2,33E-05	0*	0*	0*	0*	0*	2,33E-05	0*
Contribution to resource use, fossils	MJ	2,72E+03	0*	0*	0*	0*	0*	2,72E+03	0*
Contribution to water use	m3 eq	6,94E+00	0*	0*	0*	0*	0*	6,94E+00	0*

Inventory flows Indicators		I/O (input/output) application module, Enerlin'X - LV434063							
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	4,05E+02	0*	0*	0*	0*	0*	4,05E+02	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	4,05E+02	0*	0*	0*	0*	0*	4,05E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2,72E+03	0*	0*	0*	0*	0*	2,72E+03	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	2,72E+03	0*	0*	0*	0*	0*	2,72E+03	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	m³	1,62E-01	0*	0*	0*	0*	0*	1,62E-01	0*
Contribution to hazardous waste disposed	kg	2,61E+00	0*	0*	0*	0*	0*	2,61E+00	0*
Contribution to non hazardous waste disposed	kg	1,84E+01	0*	0*	0*	0*	0*	1,84E+01	0*
Contribution to radioactive waste disposed	kg	4,23E-03	0*	0*	0*	0*	0*	4,23E-03	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 v6.2.4, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

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.

Registration number :	SCHN-01329-V01.01-EN	Drafting rules	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed3-2023 06 06
Verifier accreditation N°	VH08	Information and reference documents	www.pep-ecopassport.org
Date of issue	06-2025	Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal	External	X	
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 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			



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SCHN-01329-V01.01-EN

Published by Schneider Electric

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06-2025