Product Environmental Profile

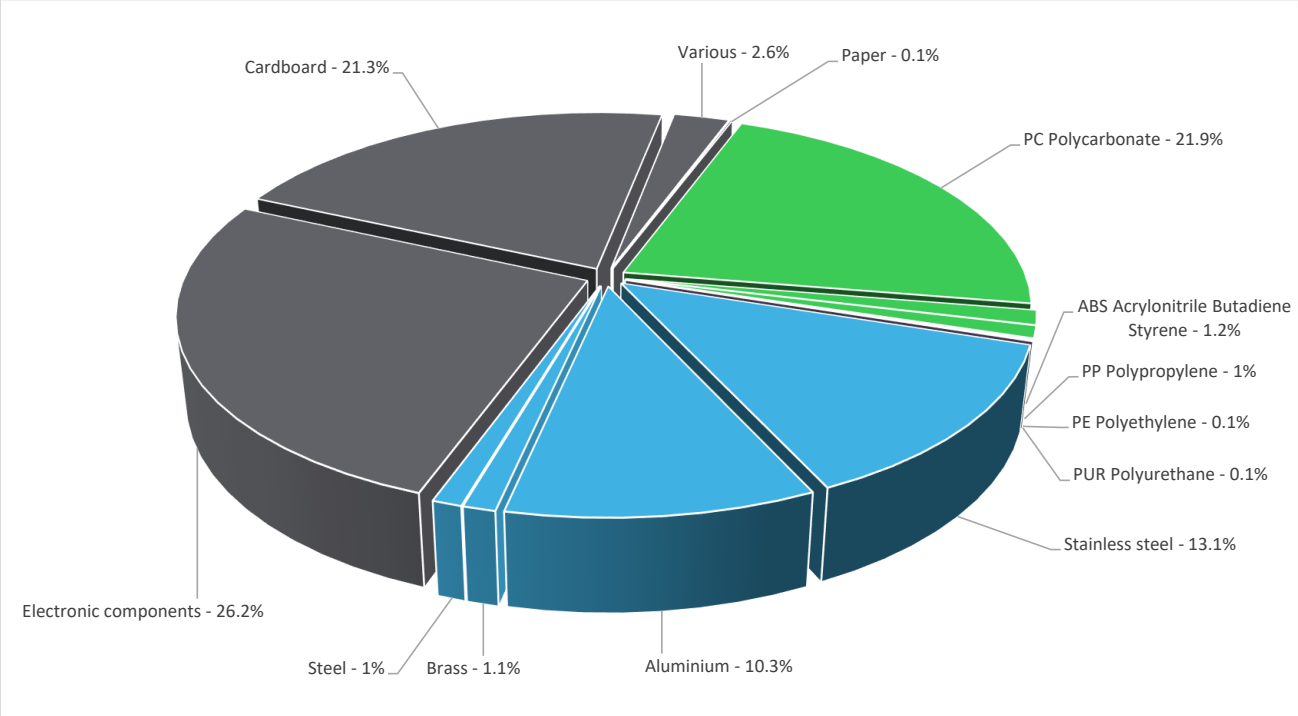
Ethernet control router

General information

Reference product	Ethernet control router - BMENOC0321
Description of the product	This network module is part of the Modicon M580 range, it act as an interface between the Modicon M580 PLC and other Ethernet network devices via the Modbus/TCP and EtherNet/IP communication protocols. It provides bridge transparency and connectivity with functions such as, IP forwarding, IPSec feature and time synchronization.
Functional unit	The Ethernet control router enables communication from the control network to the device network. This module as the Modicon M580 range has a long life cycle for about more than 10 years with a 100% use rate. Typical electrical power is 4.125W (1800 mA at 3.3 V DC). UL 61010-2-201 CSA C22.2 No 61010-2-201

Constituent materials

Reference product mass	256 g	including the product, its packaging and additional elements and accessories



	Plastics	24.3%
	Metals	25.5%
	Others	50.2%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
https://www.se.com/ww/en/work/support/green-premium/

Additional environmental information

End Of Life	Recyclability potential:	**32%**	Recyclability rate has been calculated based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the "ECO'DEEE recyclability and recoverability calculation method" 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			
Installation elements	No special installation components need during installation phase			
Use scenario	The product is in active mode 90% of the time with a power use of 4.125W and 0W in off mode for 10* years			
Technological representativeness	The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA-EIME in this case) are Similar and representative of the actual type of technologies used to make the product in production.			
Geographical representativeness	Europe (50%), Asia (22%), USA (18%), Australia (5%), China (5%)			
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Production mix; Low voltage; FR	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27
		Electricity Mix; Production mix; Low voltage; APAC	Electricity Mix; Production mix; Low voltage; APAC	Electricity Mix; Production mix; Low voltage; APAC
		Electricity Mix; Production mix; Low voltage; US	Electricity Mix; Production mix; Low voltage; US	Electricity Mix; Production mix; Low voltage; US
		Electricity Mix; Production mix; Low voltage; AUS	Electricity Mix; Production mix; Low voltage; AUS	Electricity Mix; Production mix; Low voltage; AUS
		Electricity Mix; Production mix; Low voltage; CN	Electricity Mix; Production mix; Low voltage; CN	Electricity Mix; Production mix; Low voltage; CN

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

Mandatory Indicators		**Ethernet control router - BMENOC0321**						
Impact indicators	**Unit**	**Total**	**Manufacturing** [A1 - A3]	**Distribution** [A4]	**Installation** [A5]	**Use** [B1 - B7]	**End of Life** [C1 - C4]	**Loads and Benefits** [D]
Contribution to climate change	kg CO2 eq	2.02E+02	1.74E+01	3.35E-02	1.02E-01	1.84E+02	4.12E-01	-6.64E-01
Contribution to climate change-fossil	kg CO2 eq	2.02E+02	1.74E+01	3.35E-02	9.74E-02	1.84E+02	4.05E-01	-6.49E-01
Contribution to climate change-biogenic	kg CO2 eq	1.88E-01	2.38E-02	0*	4.53E-03	1.54E-01	6.55E-03	-1.56E-02
Contribution to climate change-land use and land use change	kg CO2 eq	1.44E-08	1.44E-08	0*	0*	0*	0*	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	3.26E-06	2.38E-06	0*	6.75E-09	8.63E-07	1.02E-08	-8.17E-08
Contribution to acidification	mol H+ eq	1.26E+00	1.16E-01	2.15E-04	4.05E-04	1.14E+00	3.76E-03	-3.96E-03
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	2.89E-04	3.59E-05	0*	7.36E-07	2.50E-04	2.32E-06	-2.93E-06
Contribution to eutrophication marine	kg N eq	1.43E-01	1.30E-02	1.01E-04	1.07E-04	1.28E-01	2.47E-03	-4.47E-04
Contribution to eutrophication, terrestrial	mol N eq	1.77E+00	1.38E-01	1.11E-03	8.09E-04	1.62E+00	2.04E-03	-4.57E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.67E-01	4.55E-02	2.80E-04	2.16E-04	4.20E-01	7.80E-04	-1.45E-03
Contribution to resource use, minerals and metals	kg Sb eq	3.85E-03	3.84E-03	0*	0*	7.43E-06	0*	-4.66E-05
Contribution to resource use, fossils	MJ	3.98E+03	2.13E+02	4.66E-01	1.06E+00	3.76E+03	9.83E+00	-9.55E+00
Contribution to water use	m3 eq	5.55E+01	5.72E+00	0*	4.35E-02	7.02E+00	4.27E+01	-2.12E-01

Additional indicators for the French regulation are available as well

Inventory flows Indicators			Ethernet control router - BMENOC0321					
Inventory flows	Unit	Total	Manufact. [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	5.51E+02	6.51E+00	0*	7.61E-02	5.44E+02	1.87E-01	3.43E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	1.12E+00	1.12E+00	0*	0*	0*	0*	-1.01E+00
Contribution to total use of renewable primary energy resources	MJ	5.52E+02	7.63E+00	0*	7.61E-02	5.44E+02	1.87E-01	-6.69E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.98E+03	2.10E+02	4.66E-01	1.06E+00	3.76E+03	9.83E+00	-9.55E+00
Contribution to use of non renewable primary energy resources used as raw material	MJ	3.19E+00	3.19E+00	0*	0*	0*	0*	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	3.98E+03	2.13E+02	4.66E-01	1.06E+00	3.76E+03	9.83E+00	-9.55E+00
Contribution to use of secondary material	kg	1.43E-02	1.43E-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	m^3	1.42E+00	1.33E-01	0*	1.01E-03	1.64E-01	1.12E+00	-4.94E-03
Contribution to hazardous waste disposed	kg	7.67E+01	7.23E+01	0*	0*	4.18E+00	2.20E-01	-3.69E+00
Contribution to non hazardous waste disposed	kg	3.55E+01	6.74E+00	0*	3.32E-01	2.84E+01	7.05E-02	-2.21E+00
Contribution to radioactive waste disposed	kg	8.61E-03	4.60E-03	0*	4.45E-05	3.97E-03	4.07E-06	-6.27E-04
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.22E-01	0*	0*	5.60E-02	0*	6.59E-02	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	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the product	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00

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

Life cycle assessment performed with EIME version v5.9.4, database version 2022-01 in compliance with ISO14044.

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

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 :	ENVPEP2402021_V1	*Drafting rules*	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed2-2016 03 29
Date of issue	11/2023	*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)

PEP are compliant with XP C08-100-1 :2016 or EN 50693:2019

The elements of the present PEP cannot be compared with elements from another program.

Document in compliance with ISO 14021 : 2016 « Environmental labels and declarations. Type II environmental declarations »

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