

Product Environmental Profile

Ethernet Smart Communication Module





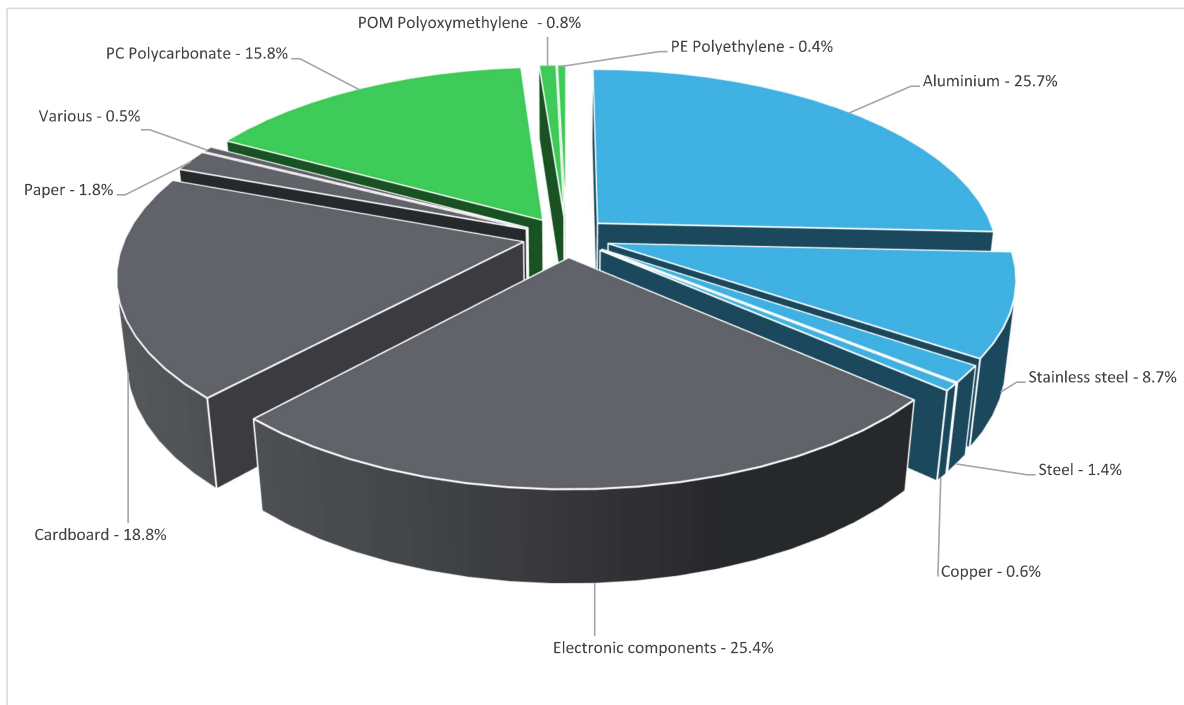
General information

Reference product	Ethernet Smart Communication Module - TMSES4
Description of the product	The TMSES4 smart communication module allows up to 4 additional Ethernet networks for the M262 Controllers: - 4x RJ45 switched ports as hub - IIoT-ready - Network isolation - Ethernet Gigabyte exchange - Cybersecurity Achilles L1 To allow easy intergration into plants, production lines, ERP, MES, SCADA with open protocols like OPC UA, PackML or SQL
Functional unit	For adding an Ethernet network Equipped with 4x RJ45 switched ports (EtherNet/IP Slave and Modbus TCP) to the M262 Controllers, at 4.8W 100% of the time for 10 years
Specifications are:	Technical data: RJ45 Ethernet Ports Self speed adaptation (10, 100, 1000mbps)



Constituent materials

Reference product mass	512 g	including the product, its packaging and additional elements and accessories
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Plastics	17.00%
Metals	36.40%
Others	46.60%



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:	45%	The recyclability rate was calculated from the recycling rates of each material making up the product with the exception of data using the ESR database. For materials or components using the ESR database or the absence of data the conservative hypothesis "0% recyclability" was used.
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Environmental impacts

Reference service life time	10 years			
Product category	Other equipments - Active product			
Installation elements	The product does not require any installation operations			
Use scenario	The product is in active mode 100% of the time with a power use of 4.8W 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 manufacture the product and provide it to the customers.			
Geographical representativeness	Europe			
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; High voltage; 2018; Indonesia, ID	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27

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.schneider-electric.com/contact>

Mandatory Indicators		Ethernet Smart Communication Module - TMSSES4						
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	1.93E+02	1.99E+01	6.20E-02	1.16E-01	1.72E+02	9.01E-01	-2.17E+00
Contribution to climate change-fossil	kg CO2 eq	1.93E+02	1.98E+01	6.20E-02	1.10E-01	1.72E+02	9.00E-01	-2.10E+00
Contribution to climate change-biogenic	kg CO2 eq	3.26E-01	8.97E-02	0*	5.47E-03	2.30E-01	1.02E-03	-6.84E-02
Contribution to climate change-land use and land use change	kg CO2 eq	9.49E-05	9.49E-05	0*	0*	0*	1.06E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	3.35E-06	2.60E-06	0*	1.52E-09	7.37E-07	4.99E-09	-2.81E-07
Contribution to acidification	mol H+ eq	1.13E+00	1.48E-01	3.92E-04	3.32E-04	9.83E-01	1.40E-03	-1.41E-02
Contribution to eutrophication, freshwater	kg (PO4) ³⁻ eq	5.41E-04	4.31E-05	0*	2.62E-06	4.72E-04	2.34E-05	-8.52E-06
Contribution to eutrophication marine	kg N eq	1.29E-01	1.63E-02	1.84E-04	1.44E-04	1.12E-01	4.48E-04	-1.29E-03
Contribution to eutrophication, terrestrial	mol N eq	1.86E+00	1.75E-01	2.02E-03	1.00E-03	1.68E+00	4.79E-03	-1.37E-02
Contribution to photochemical ozone formation - human health	kg COVNM eq	4.18E-01	5.74E-02	5.09E-04	2.30E-04	3.59E-01	1.33E-03	-4.51E-03
Contribution to resource use, minerals and metals	kg Sb eq	2.77E-03	2.75E-03	0*	0*	1.25E-05	6.34E-07	-6.66E-05
Contribution to resource use, fossils	MJ	4.67E+03	2.67E+02	8.64E-01	1.12E+00	4.39E+03	1.30E+01	-3.01E+01
Contribution to water use	m3 eq	1.45E+01	8.31E+00	0*	1.04E-02	6.10E+00	9.94E-02	-4.74E-01

Inventory flows Indicators		Ethernet Smart Communication Module - TMSES4						
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	8.52E+02	8.40E+00	0*	1.49E-01	8.43E+02	0*	-8.45E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	2.43E+00	2.43E+00	0*	0*	0*	0*	-1.56E+00
Contribution to total use of renewable primary energy resources	MJ	8.54E+02	1.08E+01	0*	1.49E-01	8.43E+02	0*	-2.41E+00
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4.67E+03	2.62E+02	8.64E-01	1.12E+00	4.39E+03	1.30E+01	-3.01E+01
Contribution to use of non renewable primary energy resources used as raw material	MJ	5.09E+00	5.09E+00	0*	0*	0*	0*	-8.47E-03
Contribution to total use of non-renewable primary energy resources	MJ	4.67E+03	2.67E+02	8.64E-01	1.12E+00	4.39E+03	1.30E+01	-3.01E+01
Contribution to use of secondary material	kg	9.05E-02	9.05E-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	3.39E-01	1.95E-01	0*	2.42E-04	1.42E-01	2.31E-03	-1.10E-02
Contribution to hazardous waste disposed	kg	5.57E+01	5.23E+01	0*	0*	3.22E+00	1.32E-01	-5.43E+00
Contribution to non hazardous waste disposed	kg	3.15E+01	6.51E+00	0*	4.98E-02	2.48E+01	1.15E-01	-3.29E+00
Contribution to radioactive waste disposed	kg	9.14E-03	3.94E-03	1.55E-06	6.08E-06	5.19E-03	7.23E-06	-2.54E-03
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	2.14E-01	2.98E-02	0*	9.43E-04	0*	1.84E-01	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	1.18E-02	5.38E-03	0*	4.61E-03	0*	1.81E-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 3.05E-02

Mandatory Indicators		Ethernet Smart Communication Module - TMSES4							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1.72E+02	0*	0*	0*	0*	0*	1.72E+02	0*
Contribution to climate change-fossil	kg CO2 eq	1.72E+02	0*	0*	0*	0*	0*	1.72E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	2.30E-01	0*	0*	0*	0*	0*	2.30E-01	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	7.37E-07	0*	0*	0*	0*	0*	7.37E-07	0*
Contribution to acidification	mol H+ eq	9.83E-01	0*	0*	0*	0*	0*	9.83E-01	0*
Contribution to eutrophication, freshwater	kg (PO4) ³⁻ eq	4.72E-04	0*	0*	0*	0*	0*	4.72E-04	0*
Contribution to eutrophication marine	kg N eq	1.12E-01	0*	0*	0*	0*	0*	1.12E-01	0*
Contribution to eutrophication, terrestrial	mol N eq	1.68E+00	0*	0*	0*	0*	0*	1.68E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	3.59E-01	0*	0*	0*	0*	0*	3.59E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	1.25E-05	0*	0*	0*	0*	0*	1.25E-05	0*
Contribution to resource use, fossils	MJ	4.39E+03	0*	0*	0*	0*	0*	4.39E+03	0*
Contribution to water use	m3 eq	6.10E+00	0*	0*	0*	0*	0*	6.10E+00	0*

Inventory flows Indicators		Ethernet Smart Communication Module - TMSES4							
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	8.43E+02	0*	0*	0*	0*	0*	8.43E+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	8.43E+02	0*	0*	0*	0*	0*	8.43E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4.39E+03	0*	0*	0*	0*	0*	4.39E+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	4.39E+03	0*	0*	0*	0*	0*	4.39E+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	1.42E-01	0*	0*	0*	0*	0*	1.42E-01	0*
Contribution to hazardous waste disposed	kg	3.22E+00	0*	0*	0*	0*	0*	3.22E+00	0*
Contribution to non hazardous waste disposed	kg	2.48E+01	0*	0*	0*	0*	0*	2.48E+01	0*
Contribution to radioactive waste disposed	kg	5.19E-03	0*	0*	0*	0*	0*	5.19E-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 v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 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 :	ENVPEP1904004_V2	Drafting rules	PCR-4-ed4-EN-2021 09 06
Date of issue	09-2024	Supplemented by	PSR-0005-ed3-EN-2023 06 06
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14021 : 2016			
Internal ☒ 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"			

Schneider Electric Industries SAS

Country Customer Care Center

<http://www.se.com/contact>

35, rue Joseph Monier

CS 30323

F- 92500 Rueil Malmaison Cedex

RCS Nanterre 954 503 439

Capital social 928 298 512 €

www.se.com

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