

Product Environmental Profile

Smart communication module, Modicon M262, CANopen, 1 SubD9



Schneider
Electric



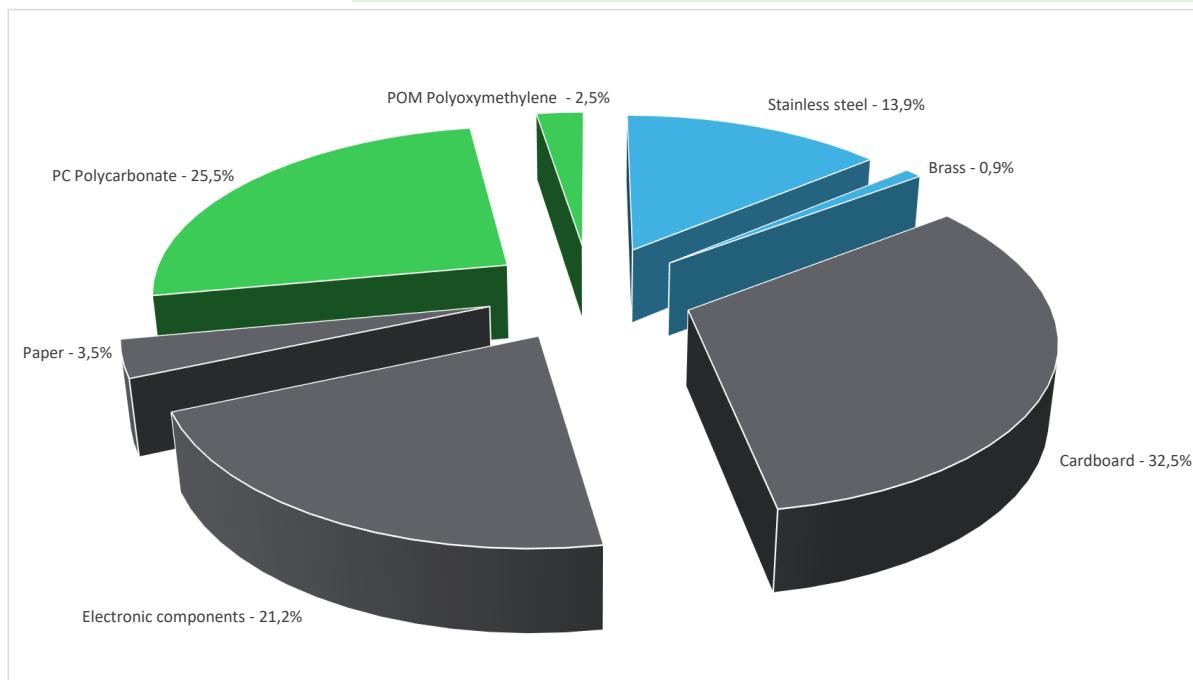
General information

Reference product	Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSCO1
Description of the product	<p>The TMSCO1 Smart Communication Module adds a CANopen port for CANopen master communication for the M262 Controllers:</p> <ul style="list-style-type: none"> - The link can be configured between 20 kbps and 1 Mbps and supports up to 63 slaves. - Architectures based on CANopen are used to distribute I/O modules as close to the sensors and actuators as possible, thus reducing wiring costs and times, and to communicate with different devices such as variable speed drives, servo drives, etc. - The CANopen configurator is integrated in the EcoStruxure Machine Expert software and can also be used to import standard description files in EDS format.
Description of the range	Single product
Functional unit	To convert 63 analog signals into numeric ones in order to communicate with a software in industrial atmosphere for 10 years at 100% of the time.
Specifications are:	<p>Power consumption: 50 mA at 24V Services : maximum 63 slave nodes Communication protocol: Ethernet TCP/IP Local signalling : for PWR 2 LEDs (green) for MOD STS 2 LEDs (green/red) for CAN RUN 2 LEDs (green) for CAN ERR 2 LEDs (red) IP degree of protection : IP20</p>



Constituent materials

Reference product mass 0,25 kg including the product, its packaging, additional elements and accessories



Plastics	28,0%
Metals	14,8%
Others	57,2%

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:	21%	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).
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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 consumtum	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 any installations operations.		
Use scenario	The product is in active mode 100% of the time with a power use of 1.2W for 10 years.		
Time representativeness	The collected data are representative of the year 2025.		
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 représentative of the actual type of technologies used to make the product.		
Geographical representativeness	Final assembly site	Use phase	End-of-life
	Batam Indonesia	China (48,74%) Europe (50%) United States (1,26%)	China (48,74%) Europe (50%) United States (1,26%)
Energy model used	[A1 - A3]	[A5]	[B6]
	Electricity Mix; Low voltage; 2020; Indonesia, ID	No energy used	Electricity Mix; Low voltage; 2020; China, CN Electricity Mix; Low voltage; 2020; Europe, EU-27 Electricity Mix; Low voltage; 2020; United States, US
			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		Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSC01						
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	7,13E+01	5,50E+00	3,85E-01	2,13E-01	6,48E+01	4,01E-01	-1,14E-01
Contribution to climate change-fossil	kg CO2 eq	7,08E+01	5,64E+00	3,85E-01	1,00E-01	6,43E+01	4,01E-01	-2,16E-01
Contribution to climate change-biogenic	kg CO2 eq	4,69E-01	0*	0*	1,13E-01	4,99E-01	1,66E-04	1,02E-01
Contribution to climate change-land use and land use change	kg CO2 eq	7,20E-05	7,20E-05	0*	0*	0*	1,70E-08	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	1,50E-06	8,15E-07	3,38E-07	1,37E-09	3,42E-07	2,11E-09	-2,16E-08
Contribution to acidification	mol H+ eq	4,71E-01	2,94E-02	1,58E-03	2,96E-04	4,39E-01	5,12E-04	-1,23E-03
Contribution to eutrophication, freshwater	kg P eq	8,23E-05	1,70E-05	4,49E-08	2,14E-06	6,17E-05	1,36E-06	-1,59E-06
Contribution to eutrophication, marine	kg N eq	5,27E-02	3,68E-03	7,20E-04	1,28E-04	4,80E-02	1,59E-04	-2,17E-04
Contribution to eutrophication, terrestrial	mol N eq	6,61E-01	4,17E-02	7,81E-03	9,17E-04	6,09E-01	1,73E-03	-2,05E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	1,74E-01	1,21E-02	2,60E-03	2,12E-04	1,58E-01	4,38E-04	-6,06E-04
Contribution to resource use, minerals and metals	kg Sb eq	8,33E-04	8,21E-04	0*	0*	1,12E-05	0*	-4,10E-05
Contribution to resource use, fossils	MJ	1,30E+03	6,98E+01	4,77E+00	9,41E-01	1,22E+03	1,18E+00	-4,07E+00
Contribution to water use	m3 eq	6,19E+00	2,02E+00	1,95E-02	9,43E-03	4,12E+00	2,50E-02	-7,70E-02

Inventory flows Indicators		Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSC01							
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	2,00E+02	6,53E+00	0*	1,35E-01	1,93E+02	3,91E-02	2,76E-01	
Contribution to renewable primary energy used as raw material	MJ	1,82E+00	1,82E+00	0*	0*	0*	0*	-1,30E+00	
Contribution to total renewable primary energy	MJ	2,02E+02	8,36E+00	0*	1,35E-01	1,93E+02	3,91E-02	-1,02E+00	
Contribution to non renewable primary energy used as energy	MJ	1,30E+03	6,67E+01	4,77E+00	9,41E-01	1,22E+03	1,18E+00	-4,07E+00	
Contribution to non renewable primary energy used as raw material	MJ	3,09E+00	3,09E+00	0*	0*	0*	0*	0,00E+00	
Contribution to total non renewable primary energy	MJ	1,30E+03	6,98E+01	4,77E+00	9,41E-01	1,22E+03	1,18E+00	-4,07E+00	
Contribution to use of secondary material	kg	1,39E-02	1,39E-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 fresh water	m³	1,44E-01	4,66E-02	4,53E-04	6,66E-04	9,61E-02	6,38E-04	-1,79E-03	
Contribution to hazardous waste disposed	kg	1,65E+01	1,46E+01	0*	2,50E-03	1,93E+00	5,45E-02	-3,23E+00	
Contribution to non hazardous waste disposed	kg	1,29E+01	1,39E+00	0*	4,38E-02	1,13E+01	1,16E-01	-1,59E-01	
Contribution to radioactive waste disposed	kg	1,81E-03	6,34E-04	7,62E-05	6,33E-06	1,09E-03	5,03E-06	-7,21E-05	
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	
Contribution to materials for recycling	kg	1,13E-01	7,22E-03	0*	7,22E-02	0*	3,35E-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	4,23E-03	5,70E-05	0*	3,84E-03	0*	3,31E-04	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 2,55E-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		Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSC01							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	6,48E+01	0*	0*	0*	0*	0*	6,48E+01	0*
Contribution to climate change-fossil	kg CO2 eq	6,43E+01	0*	0*	0*	0*	0*	6,43E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	4,99E-01	0*	0*	0*	0*	0*	4,99E-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	3,42E-07	0*	0*	0*	0*	0*	3,42E-07	0*
Contribution to acidification	mol H+ eq	4,39E-01	0*	0*	0*	0*	0*	4,39E-01	0*
Contribution to eutrophication, freshwater	kg P eq	6,17E-05	0*	0*	0*	0*	0*	6,17E-05	0*
Contribution to eutrophication marine	kg N eq	4,80E-02	0*	0*	0*	0*	0*	4,80E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	6,09E-01	0*	0*	0*	0*	0*	6,09E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	1,58E-01	0*	0*	0*	0*	0*	1,58E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	1,12E-05	0*	0*	0*	0*	0*	1,12E-05	0*
Contribution to resource use, fossils	MJ	1,22E+03	0*	0*	0*	0*	0*	1,22E+03	0*
Contribution to water use	m3 eq	4,12E+00	0*	0*	0*	0*	0*	4,12E+00	0*

Inventory flows Indicators		Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSC01							
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	1,93E+02	0*	0*	0*	0*	0*	1,93E+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	1,93E+02	0*	0*	0*	0*	0*	1,93E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1,22E+03	0*	0*	0*	0*	0*	1,22E+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	1,22E+03	0*	0*	0*	0*	0*	1,22E+03	0*

Inventory flows Indicators		Smart communication module, Modicon M262, CANopen, 1 SubD9 - TMSCO1							
Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
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	m ³	9,61E-02	0*	0*	0*	0*	0*	9,61E-02	0*
Contribution to hazardous waste disposed	kg	1,93E+00	0*	0*	0*	0*	0*	1,93E+00	0*
Contribution to non hazardous waste disposed	kg	1,13E+01	0*	0*	0*	0*	0*	1,13E+01	0*
Contribution to radioactive waste disposed	kg	1,09E-03	0*	0*	0*	0*	0*	1,09E-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.

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Date of issue	08/2025	Validity period	5 years
<i>Independent verification of the declaration and data, in compliance with ISO 14021 : 2016</i>			
Internal	X	External	
<p><i>The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDmain)</i> <i>PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022</i> <i>The components of the present PEP may not be compared with components from any other program.</i> <i>Document complies with ISO 14021:2016 "Environmental labels and declarations. Type II environmental declarations"</i></p>			

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