

# Product Environmental Profile

## M172 Secure Interface Plug-in

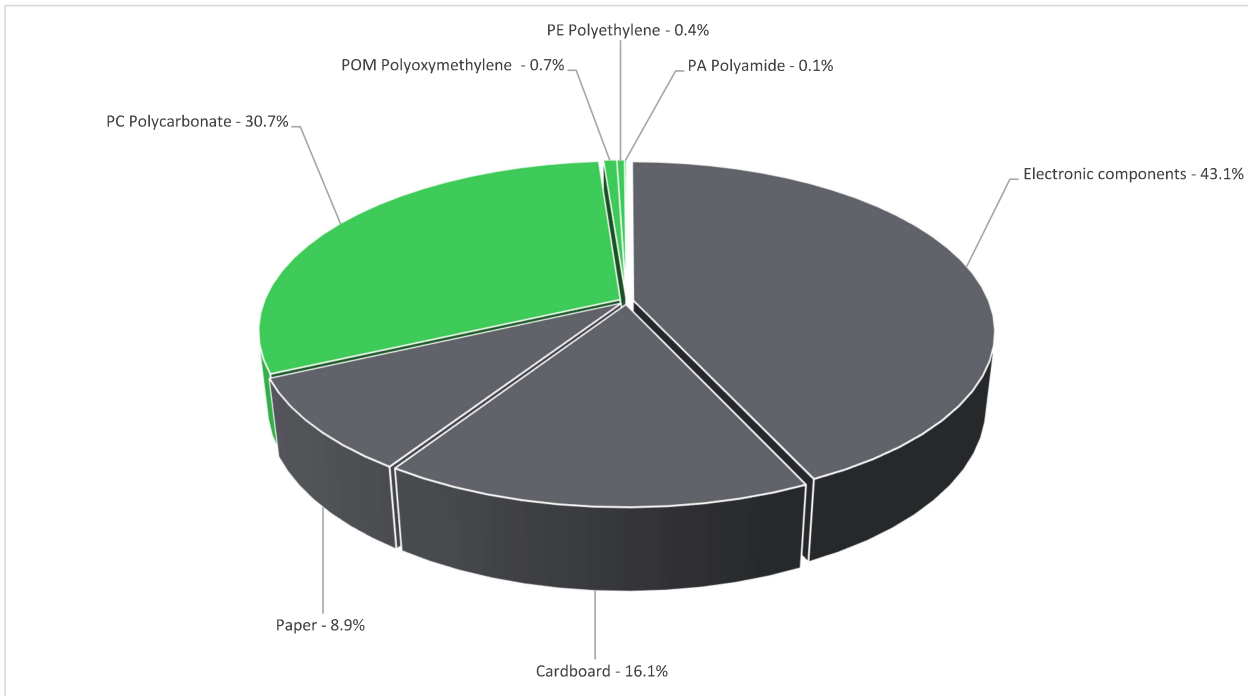


## General information

Reference product	M172 Secure Interface Plug-in - TM172SIP
Description of the product	Secure Interface is a communication module for HVAC-R. TM172SIP is the Plug-in version of the Secure Interface which is designed to establish a secure Internet connection and to connect unsafe devices to a secure Ethernet network. TM172SIP is compatible with logic controller for HVAC and Pumping applications, Modicon M172 and M173. Its functional unit is to manage in a cyber secure way the data flow between Modbus RTU slave devices and FTPs/HTTPs/SMTPs/SNMP servers or Clouds.
Functional unit	To manage in a cybersecure way the data flow between Modbus RTU slave devices and FTPs/HTTPs/SMTPs/SNMP servers or Clouds and a 100% of the time for 10 years.
Specifications are:	Technical Data: 2x RJ45 Ethernet Ports Self speed adaptation (10, 100, 1000mbps) ModBus RTU max.115.200 baud uSD slot for uSD card USB host type A USB device type mini-B RTC with backup Communication Port Protocols: Modbus TCP/IP, HTTPS, FTPS, NTP, SMTPS, SNMP v2, SNMP v3, MQTT over TLS

## Constituent materials

Reference product mass: 218.35 g including the product, its packaging and additional elements and accessories



Plastics	31.90%
Metals	0.00%
Others	68.10%

## 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

<b>End Of Life</b>	Recyclability potential:	<b>9%</b>	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

<b>Reference service life time</b>	10 years			
<b>Product category</b>	Other equipments - Active product			
<b>Installation elements</b>	The installation requires cables			
<b>Use scenario</b>	The product is in active mode 100% of the time with a real power use of 3W, for 10 years			
<b>Time representativeness</b>	The collected data are representative of the year 2024			
<b>Technological representativeness</b>	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.			
<b>Geographical representativeness</b>	Rest of the World			
<b>Energy model used</b>	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; Low voltage; 2018; Italy, IT	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27
		Electricity Mix; Low voltage; 2018; Asia Pacific, APAC	Electricity Mix; Low voltage; 2018; Asia Pacific, APAC	Electricity Mix; Low voltage; 2018; Asia Pacific, APAC
		Electricity Mix; Low voltage; 2018; Egypt, EG	Electricity Mix; Low voltage; 2018; Egypt, EG	Electricity Mix; Low voltage; 2018; Egypt, EG
		Electricity Mix; Low voltage; 2018; United States, US	Electricity Mix; Low voltage; 2018; United States, US	Electricity Mix; Low voltage; 2018; United States, US

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		M172 Secure Interface Plug-in - TM172SIP						
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	1.40E+02	2.02E+01	6.76E-02	0*	1.19E+02	5.25E-01	-2.18E-02
Contribution to climate change-fossil	kg CO2 eq	1.40E+02	2.02E+01	6.76E-02	0*	1.19E+02	5.03E-01	-1.94E-02
Contribution to climate change-biogenic	kg CO2 eq	2.01E-01	3.53E-02	0*	3.19E-04	1.43E-01	2.23E-02	-2.39E-03
Contribution to climate change-land use and land use change	kg CO2 eq	3.87E-07	3.87E-07	0*	0*	0*	0*	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	3.16E-06	2.64E-06	0*	0*	5.14E-07	4.72E-09	-5.98E-10
Contribution to acidification	mol H+ eq	8.25E-01	1.34E-01	4.51E-04	0*	6.90E-01	4.93E-04	-1.03E-04
Contribution to eutrophication, freshwater	kg (PO4) <sup>3-</sup> eq	3.17E-04	4.94E-05	0*	0*	2.65E-04	2.30E-06	-3.04E-07
Contribution to eutrophication marine	kg N eq	9.31E-02	1.44E-02	2.13E-04	0*	7.83E-02	1.91E-04	-3.12E-05
Contribution to eutrophication, terrestrial	mol N eq	1.27E+00	1.53E-01	2.33E-03	0*	1.12E+00	1.98E-03	-2.58E-04
Contribution to photochemical ozone formation - human health	kg COVNM eq	3.05E-01	5.03E-02	5.91E-04	0*	2.54E-01	4.93E-04	-6.65E-05
Contribution to resource use, minerals and metals	kg Sb eq	2.08E-03	2.07E-03	0*	0*	7.33E-06	0*	-2.06E-09
Contribution to resource use, fossils	MJ	3.05E+03	2.33E+02	9.41E-01	0*	2.81E+03	8.66E-01	-2.35E-01
Contribution to water use	m3 eq	1.27E+01	8.34E+00	0*	3.53E-03	4.27E+00	5.08E-02	-4.82E-03

Inventory flows Indicators		M172 Secure Interface Plug-in - TM172SIP						
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	5.08E+02	8.37E+00	0*	0*	4.99E+02	4.64E-01	6.50E-02
Contribution to use of renewable primary energy resources used as raw material	MJ	4.46E-01	4.46E-01	0*	0*	0*	0*	-2.82E-01
Contribution to total use of renewable primary energy resources	MJ	5.09E+02	8.82E+00	0*	0*	4.99E+02	4.64E-01	-2.17E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.04E+03	2.29E+02	9.41E-01	0*	2.81E+03	8.66E-01	-2.35E-01
Contribution to use of non renewable primary energy resources used as raw material	MJ	3.49E+00	3.49E+00	0*	0*	0*	0*	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	3.05E+03	2.33E+02	9.41E-01	0*	2.81E+03	8.66E-01	-2.35E-01
Contribution to use of secondary material	kg	3.53E-02	3.53E-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	2.95E-01	1.94E-01	0*	8.21E-05	9.94E-02	1.18E-03	-1.12E-04
Contribution to hazardous waste disposed	kg	3.92E+01	3.68E+01	0*	0*	2.32E+00	9.44E-02	-5.87E-04
Contribution to non hazardous waste disposed	kg	2.25E+01	5.01E+00	2.37E-03	3.66E-02	1.74E+01	8.22E-02	-1.17E-02
Contribution to radioactive waste disposed	kg	5.53E-03	2.17E-03	1.69E-06	0*	3.35E-03	3.52E-06	-5.35E-06
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.57E-02	0*	0*	0*	0*	1.57E-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	3.21E-02	3.11E-02	0*	0*	0*	9.85E-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	9.97E-03

Mandatory Indicators		M172 Secure Interface Plug-in - TM172SIP							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	1.19E+02	0*	0*	0*	0*	0*	1.19E+02	0*
Contribution to climate change-fossil	kg CO2 eq	1.19E+02	0*	0*	0*	0*	0*	1.19E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	1.43E-01	0*	0*	0*	0*	0*	1.43E-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	5.14E-07	0*	0*	0*	0*	0*	5.14E-07	0*
Contribution to acidification	mol H+ eq	6.90E-01	0*	0*	0*	0*	0*	6.90E-01	0*
Contribution to eutrophication, freshwater	kg (PO4) <sup>3-</sup> eq	2.65E-04	0*	0*	0*	0*	0*	2.65E-04	0*
Contribution to eutrophication marine	kg N eq	7.83E-02	0*	0*	0*	0*	0*	7.83E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	1.12E+00	0*	0*	0*	0*	0*	1.12E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.54E-01	0*	0*	0*	0*	0*	2.54E-01	0*
Contribution to resource use, minerals and metals	kg Sb eq	7.33E-06	0*	0*	0*	0*	0*	7.33E-06	0*
Contribution to resource use, fossils	MJ	2.81E+03	0*	0*	0*	0*	0*	2.81E+03	0*
Contribution to water use	m3 eq	4.27E+00	0*	0*	0*	0*	0*	4.27E+00	0*

Inventory flows Indicators		M172 Secure Interface Plug-in - TM172SIP							
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	4.99E+02	0*	0*	0*	0*	0*	4.99E+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	4.99E+02	0*	0*	0*	0*	0*	4.99E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.81E+03	0*	0*	0*	0*	0*	2.81E+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	2.81E+03	0*	0*	0*	0*	0*	2.81E+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	9.94E-02	0*	0*	0*	0*	0*	9.94E-02	0*
Contribution to hazardous waste disposed	kg	2.32E+00	0*	0*	0*	0*	0*	2.32E+00	0*
Contribution to non hazardous waste disposed	kg	1.74E+01	0*	0*	0*	0*	0*	1.74E+01	0*
Contribution to radioactive waste disposed	kg	3.35E-03	0*	0*	0*	0*	0*	3.35E-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 :	ENVPEP2207003_V2	Drafting rules	PCR-4-ed4-EN-2021 09 06
Date of issue	07-2024	Supplemented by	No PSR
		Information and reference documents	<a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
		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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