# Product Environmental Profile

## Safety controller XPS-MC 32 inputs, Modbus and CANopen

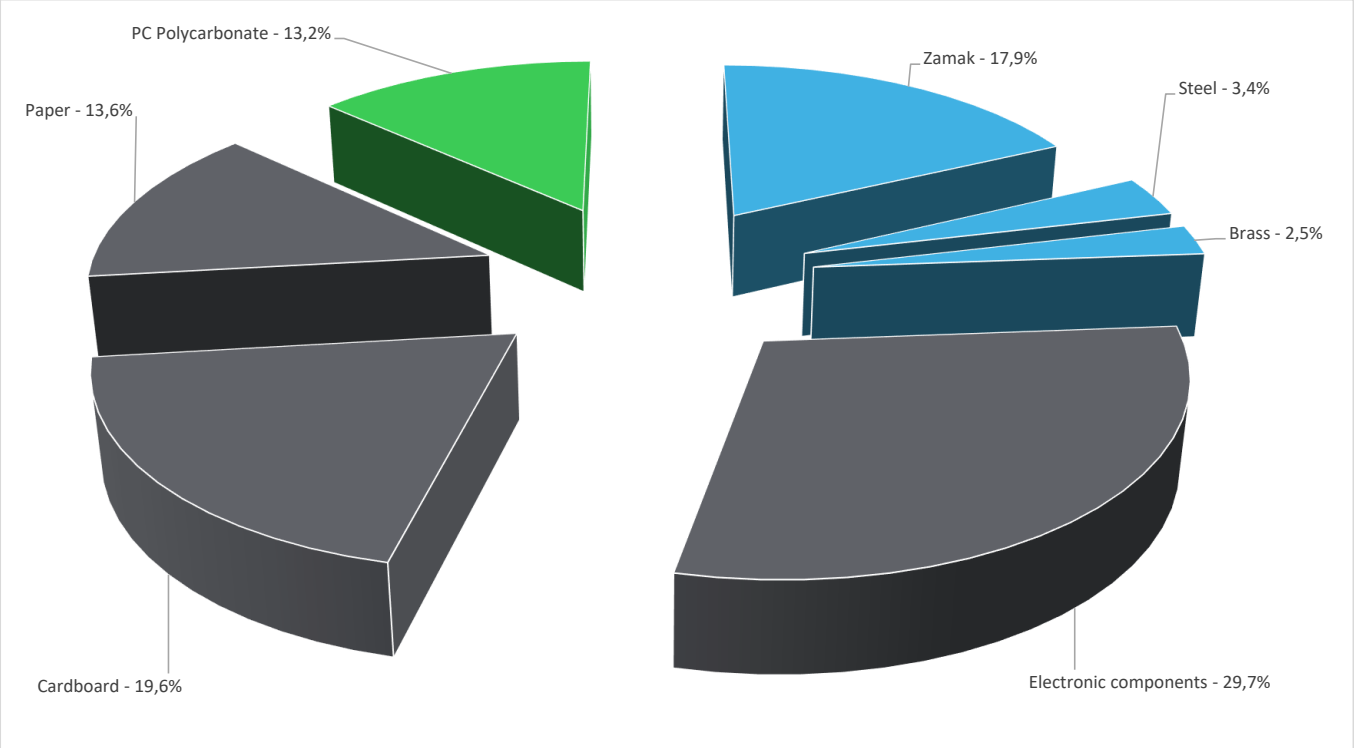
### Preventa configurable safety controllers

# General information

| | |
|---|---|
| **Reference product** | Safety controller XPS-MC 32 inputs, Modbus and CANopen XPSMC32ZC |
| **Description of the product** | It is a configurable safety controller. It is supplied with 24 V DC. It has 32 safety inputs. This safety controller is designed for monitoring multiple safety functions such as emergency stop, guard monitoring, perimeter guarding, position monitoring, speed monitoring and enabling movement. |
| **Description of the range** | The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology.The XPSMC family consists of configurable safety controllers, differentiated by count of inputs and field bus communication capabilities. This range consists of three safety controllers with 16 inputs and three safety controllers with 32 inputs. |
| **Functional unit** | To monitor with multiple safety means the presence of residual and hazardous voltage and short-circuits between each input and earth and between 32 inputs in an industrial environment at 100% of the time for 10 years. |
| **Specifications are:** | Input Protection Type: External fuse 16 A<br>Control Circuit Voltage [Uc]: 28.8 V<br>Output Type: 2 relays, 2 NO contacts (4 NO total), static, 6 circuits, no voltage |

# Constituent materials

| | |
|---|---|
| **Reference product mass** | 1.285 kg including the product, its packaging, additional elements and accessories |




| | | |
|---|---|---|
| | Plastics | 13,3% |
| | Metals | 23,8% |
| | Others | 62,9% |

# 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: | **35%** | 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). |

# 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 consumtion** | The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligable consumption. |
| **Installation elements** | This product does not require any installation operations. |
| **Use scenario** | The product is in active mode 100% of the time with a power use of 12W 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 représentaive of the actual type of technologies used to make the product. |

| **Geographical representativeness** | **Final assembly site** | **Use phase** | **End-of-life** |
|---|---|---|---|
| | Carros (France) | Europe (88%)<br>China (6%)<br>Brazil (3%)<br>United State (3%) | Europe (88%)<br>China (6%)<br>Brazil (3%)<br>United State (3%) |

| **Energy model used** | **[A1 - A3]** | **[A5]** | **[B6]** | **[C1 - C4]** |
|---|---|---|---|---|
| | Electricity Mix; Low voltage; 2020; France, FR | No energy used | Electricity Mix; Low voltage; 2020; Europe, EU-27<br>Electricity Mix; Low voltage; 2020; China, CN<br>Electricity Mix; Low voltage; 2020; Brazil, BR<br>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** | | **Safety controller XPS-MC 32 inputs, Modbus and CANopen - XPSMC32ZC** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 | 4,92E+02 | 4,41E+01 | 1,68E-01 | 0* | 4,46E+02 | 2,19E+00 | -3,27E-01 |
| Contribution to climate change-fossil | kg CO2 eq | 4,84E+02 | 4,42E+01 | 1,68E-01 | 0* | 4,38E+02 | 2,18E+00 | -3,26E-01 |
| Contribution to climate change-biogenic | kg CO2 eq | 8,36E+00 | 0* | 0* | 0* | 8,46E+00 | 1,55E-03 | -7,49E-04 |
| Contribution to climate change-land use and land use change | kg CO2 eq | 2,51E-04 | 2,51E-04 | 0* | 0* | 0* | 1,59E-07 | 0,00E+00 |
| Contribution to ozone depletion | kg CFC-11 eq | 9,56E-06 | 7,56E-06 | 0* | 0* | 1,98E-06 | 1,83E-08 | -7,36E-08 |
| Contribution to acidification | mol H+ eq | 2,65E+00 | 1,85E-01 | 1,08E-03 | 0* | 2,46E+00 | 3,72E-03 | -1,85E-03 |
| Contribution to eutrophication, freshwater | kg P eq | 1,29E-03 | 3,38E-04 | 0* | 0* | 9,38E-04 | 1,03E-05 | -7,40E-07 |
| Contribution to eutrophication, marine | kg N eq | 3,08E-01 | 2,28E-02 | 5,08E-04 | 1,10E-04 | 2,84E-01 | 1,02E-03 | -1,84E-04 |
| Contribution to eutrophication, terrestrial | mol N eq | 4,64E+00 | 2,54E-01 | 5,57E-03 | 1,12E-03 | 4,37E+00 | 1,09E-02 | -2,11E-03 |
| Contribution to photochemical ozone formation - human health | kg COVNM eq | 9,84E-01 | 7,37E-02 | 1,41E-03 | 2,68E-04 | 9,06E-01 | 2,84E-03 | -7,69E-04 |
| Contribution to resource use, minerals and metals | kg Sb eq | 9,71E-03 | 9,58E-03 | 0* | 0* | 1,36E-04 | 0* | -7,74E-05 |
| Contribution to resource use, fossils | MJ | 1,08E+04 | 5,32E+02 | 2,34E+00 | 0* | 1,02E+04 | 8,92E+00 | -6,17E+00 |
| Contribution to water use | m3 eq | 2,73E+01 | 0* | 0* | 4,08E-02 | 3,31E+01 | 1,26E-01 | -1,43E-01 |

| Inventory flows Indicators | | Safety controller XPS-MC 32 inputs, Modbus and CANopen - XPSMC32ZC | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 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 | 2,43E+03 | 5,17E+01 | 0* | 0* | 2,38E+03 | 3,58E-01 | -4,64E-02 |
| Contribution to renewable primary energy used as raw material | MJ | 9,62E+00 | 9,62E+00 | 0* | 0* | 0* | 0* | 0,00E+00 |
| Contribution to total renewable primary energy | MJ | 2,44E+03 | 6,13E+01 | 0* | 0* | 2,38E+03 | 3,58E-01 | -4,64E-02 |
| Contribution to non renewable primary energy used as energy | MJ | 1,08E+04 | 5,20E+02 | 2,34E+00 | 0* | 1,02E+04 | 8,92E+00 | -6,17E+00 |
| Contribution to non renewable primary energy used as raw material | MJ | 1,12E+01 | 1,12E+01 | 0* | 0* | 0* | 0* | 0,00E+00 |
| Contribution to total non renewable primary energy | MJ | 1,08E+04 | 5,32E+02 | 2,34E+00 | 0* | 1,02E+04 | 8,92E+00 | -6,17E+00 |
| Contribution to use of secondary material | kg | 0,00E+00 | 0* | 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 | 6,34E-01 | 0* | 0* | 9,50E-04 | 7,74E-01 | 3,45E-03 | -3,34E-03 |
| Contribution to hazardous waste disposed | kg | 1,62E+02 | 1,49E+02 | 0* | 0* | 1,24E+01 | 4,03E-01 | -5,97E+00 |
| Contribution to non hazardous waste disposed | kg | 8,50E+01 | 1,36E+01 | 0* | 4,46E-01 | 7,04E+01 | 5,83E-01 | -1,96E-01 |
| Contribution to radioactive waste disposed | kg | 2,04E-02 | 5,97E-03 | 4,20E-06 | 0* | 1,44E-02 | 2,79E-05 | -8,95E-05 |
| Contribution to components for reuse | kg | 0,00E+00 | 0* | 0* | 0* | 0* | 0* | 0,00E+00 |
| Contribution to materials for recycling | kg | 4,17E-01 | 1,04E-01 | 0* | 0* | 0* | 3,13E-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 | 3,53E-03 | 4,33E-04 | 0* | 0* | 0* | 3,10E-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 | 1,42E-01 |

** 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 | | Safety controller XPS-MC 32 inputs, Modbus and CANopen - XPSMC32ZC | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Impact indicators | Unit | [B1 - B7] - Use | [B1] | [B2] | [B3] | [B4] | [B5] | [B6] | [B7] |
| Contribution to climate change | kg CO2 eq | 4,46E+02 | 0* | 0* | 0* | 0* | 0* | 4,46E+02 | 0* |
| Contribution to climate change-fossil | kg CO2 eq | 4,38E+02 | 0* | 0* | 0* | 0* | 0* | 4,38E+02 | 0* |
| Contribution to climate change-biogenic | kg CO2 eq | 8,46E+00 | 0* | 0* | 0* | 0* | 0* | 8,46E+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 | 1,98E-06 | 0* | 0* | 0* | 0* | 0* | 1,98E-06 | 0* |
| Contribution to acidification | mol H+ eq | 2,46E+00 | 0* | 0* | 0* | 0* | 0* | 2,46E+00 | 0* |
| Contribution to eutrophication, freshwater | kg P eq | 9,38E-04 | 0* | 0* | 0* | 0* | 0* | 9,38E-04 | 0* |
| Contribution to eutrophication marine | kg N eq | 2,84E-01 | 0* | 0* | 0* | 0* | 0* | 2,84E-01 | 0* |
| Contribution to eutrophication, terrestrial | mol N eq | 4,37E+00 | 0* | 0* | 0* | 0* | 0* | 4,37E+00 | 0* |
| Contribution to photochemical ozone formation - human health | kg COVNM eq | 9,06E-01 | 0* | 0* | 0* | 0* | 0* | 9,06E-01 | 0* |
| Contribution to resource use, minerals and metals | kg Sb eq | 1,36E-04 | 0* | 0* | 0* | 0* | 0* | 1,36E-04 | 0* |
| Contribution to resource use, fossils | MJ | 1,02E+04 | 0* | 0* | 0* | 0* | 0* | 1,02E+04 | 0* |
| Contribution to water use | m3 eq | 3,31E+01 | 0* | 0* | 0* | 0* | 0* | 3,31E+01 | 0* |

| Inventory flows Indicators | | Safety controller XPS-MC 32 inputs, Modbus and CANopen - XPSMC32ZC | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 | 2,38E+03 | 0* | 0* | 0* | 0* | 0* | 2,38E+03 | 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 | 2,38E+03 | 0* | 0* | 0* | 0* | 0* | 2,38E+03 | 0* |
| Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ | 1,02E+04 | 0* | 0* | 0* | 0* | 0* | 1,02E+04 | 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 | 1,02E+04 | 0* | 0* | 0* | 0* | 0* | 1,02E+04 | 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 | $m^3$ | 7,74E-01 | 0* | 0* | 0* | 0* | 0* | 7,74E-01 | 0* |
| Contribution to hazardous waste disposed | kg | 1,24E+01 | 0* | 0* | 0* | 0* | 0* | 1,24E+01 | 0* |
| Contribution to non hazardous waste disposed | kg | 7,04E+01 | 0* | 0* | 0* | 0* | 0* | 7,04E+01 | 0* |
| Contribution to radioactive waste disposed | kg | 1,44E-02 | 0* | 0* | 0* | 0* | 0* | 1,44E-02 | 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*

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

*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 :* | ENVPEP1406025_V3 | *Drafting rules* | PCR-ed4-2021 09 06 |
| | | *Supplemented by* | PSR-0005-ed3-2023 06 06 |
| *Date of issue* | 12/02/2026 | *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)*

*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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