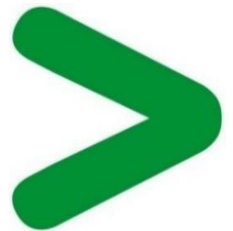


# Product Environmental Profile

## RZM●●● Protection Module





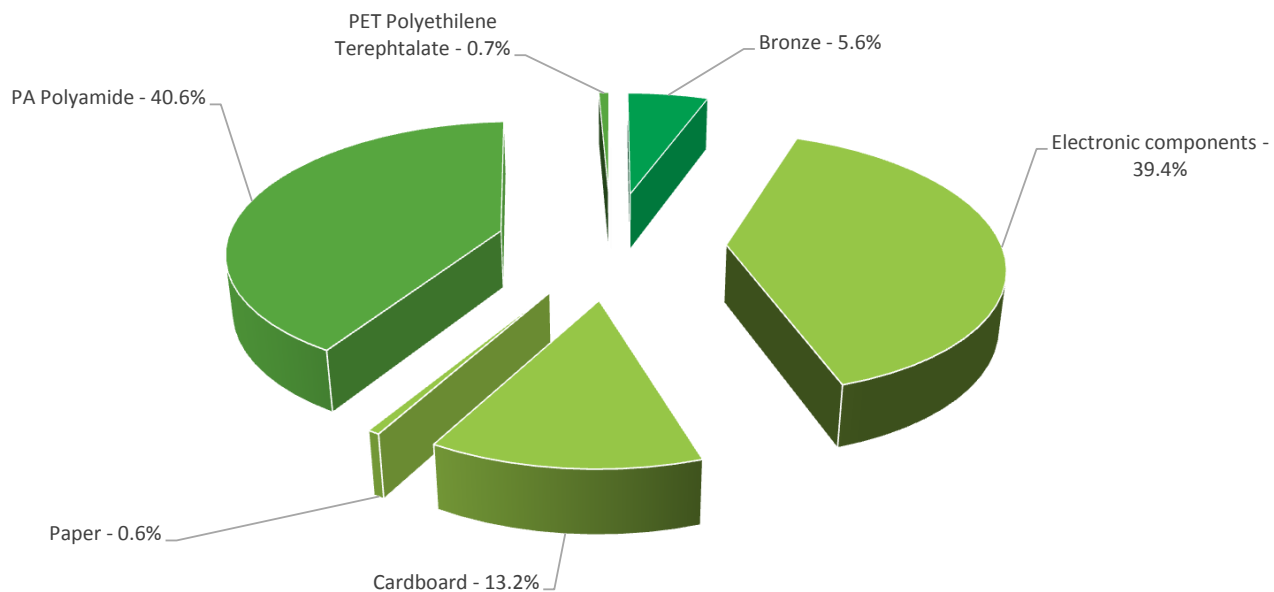
## General information

|                            |                                                                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Representative product     | RZM Protection Module -RZM021FP                                                                                                                                             |
| Description of the product | Protection module with Varistor and green LED, Control circuit voltage: 110~230 V AC/DC                                                                                     |
| Functional unit            | Protect during 20 years against transient overvoltages electrical equipments connected to electrical networks with a rated operational voltage up to 1000 V AC or 1500 V DC |



## Constituent materials

|                        |       |                                                                              |
|------------------------|-------|------------------------------------------------------------------------------|
| Reference product mass | 3.6 g | including the product, its packaging and additional elements and accessories |
|------------------------|-------|------------------------------------------------------------------------------|



## Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this Directive.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website

<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>



## Additional environmental information

The RZM Protection Module presents the following relevant environmental aspects

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturing | Manufactured at a production site complying with the regulations                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Distribution  | Weight and volume of the packaging optimized, based on the European Union's packaging directive<br>Packaging weight is 0.5 g, consisting of Cardboard(95%), PET film(5%)<br><br>Product distribution optimised by setting up local distribution centres                                                                                                                                                                                                                                        |
| Installation  | RZM021FP does not require any installation operations                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Use           | The product does not require special maintenance operations.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| End of life   | End of life optimized to decrease the amount of waste and allow recovery of the product components and materials<br><br>No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process.<br><br>Recyclability potential: <b>6%</b> Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME). |



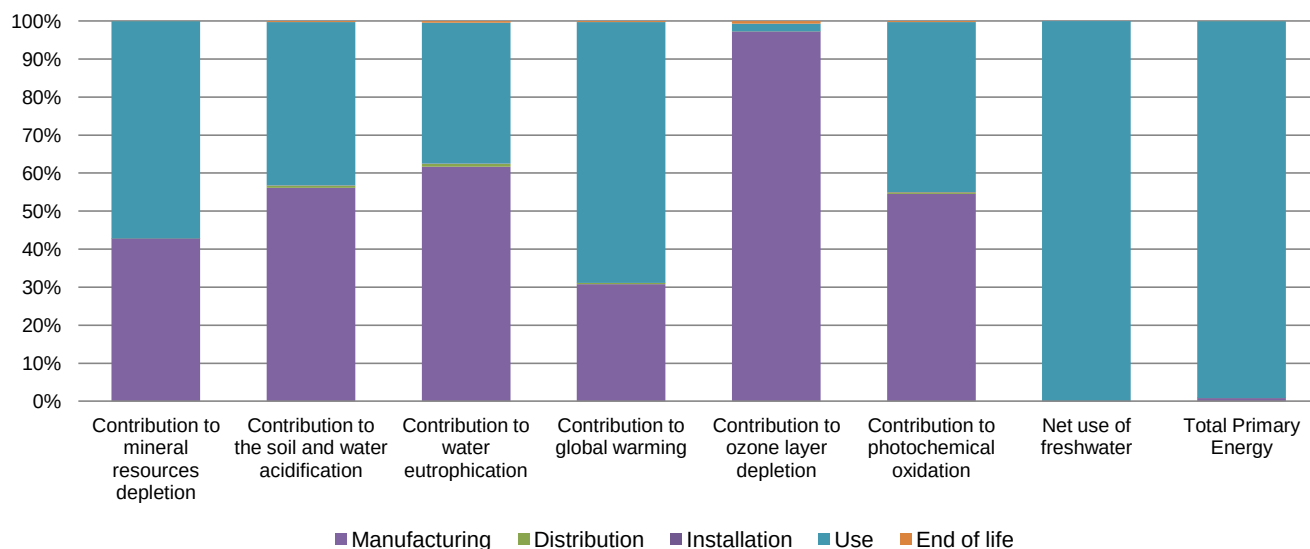
## Environmental impacts

|                                  |                                                                                                      |                                                                             |                                                                             |                                                                             |
|----------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Reference life time              | 20 years                                                                                             |                                                                             |                                                                             |                                                                             |
| Product category                 | Passive products - continuous operation                                                              |                                                                             |                                                                             |                                                                             |
| Installation elements            | No special components needed                                                                         |                                                                             |                                                                             |                                                                             |
| Use scenario                     | Product dissipation is 0.105 W full load, loading rate is 100% and service uptime percentage is 100% |                                                                             |                                                                             |                                                                             |
| Geographical representativeness  | Europe                                                                                               |                                                                             |                                                                             |                                                                             |
| Technological representativeness | Protection module with Varistor and green LED, Control circuit voltage: 110~230 V AC/DC              |                                                                             |                                                                             |                                                                             |
| Energy model used                | Manufacturing                                                                                        | Installation                                                                | Use                                                                         | End of life                                                                 |
|                                  | Energy model used: China                                                                             | Electricity from hydro power; AC; production mix, at power plant; 230V; RER | Electricity from hydro power; AC; production mix, at power plant; 230V; RER | Electricity from hydro power; AC; production mix, at power plant; 230V; RER |

| Compulsory indicators                            |                       | RZM Protection Module - RZM021FP |               |              |              |          |             |
|--------------------------------------------------|-----------------------|----------------------------------|---------------|--------------|--------------|----------|-------------|
| Impact indicators                                | Unit                  | Total                            | Manufacturing | Distribution | Installation | Use      | End of Life |
| Contribution to mineral resources depletion      | kg Sb eq              | 8,27E-06                         | 3,54E-06      | 0*           | 0*           | 4,72E-06 | 0*          |
| Contribution to the soil and water acidification | kg SO <sub>2</sub> eq | 3,46E-04                         | 1,94E-04      | 2,12E-06     | 1,48E-07     | 1,49E-04 | 9,46E-07    |

|                                         |                                     |          |          |          |          |          |          |
|-----------------------------------------|-------------------------------------|----------|----------|----------|----------|----------|----------|
| Contribution to water eutrophication    | kg PO <sub>4</sub> <sup>3-</sup> eq | 6,11E-05 | 3,77E-05 | 4,88E-07 | 3,48E-08 | 2,26E-05 | 2,67E-07 |
| Contribution to global warming          | kg CO <sub>2</sub> eq               | 1,60E-01 | 4,92E-02 | 4,64E-04 | 4,80E-05 | 1,09E-01 | 5,11E-04 |
| Contribution to ozone layer depletion   | kg CFC11 eq                         | 3,53E-09 | 3,43E-09 | 9,41E-13 | 3,05E-12 | 7,16E-11 | 2,37E-11 |
| Contribution to photochemical oxidation | kg C <sub>2</sub> H <sub>4</sub> eq | 3,09E-05 | 1,68E-05 | 1,51E-07 | 1,60E-08 | 1,38E-05 | 9,70E-08 |

| Resources use         | Unit | Total    | Manufacturing | Distribution | Installation | Use      | End of Life |
|-----------------------|------|----------|---------------|--------------|--------------|----------|-------------|
| Net use of freshwater | m3   | 4,80E+02 | 0*            | 0*           | 0*           | 4,80E+02 | 0*          |
| Total Primary Energy  | MJ   | 7,92E+01 | 6,78E-01      | 0*           | 0*           | 7,85E+01 | 0*          |



| Optional indicators                                                                             |                | RZM Protection Module - RZM021FP |               |              |              |          |             |
|-------------------------------------------------------------------------------------------------|----------------|----------------------------------|---------------|--------------|--------------|----------|-------------|
| Impact indicators                                                                               | Unit           | Total                            | Manufacturing | Distribution | Installation | Use      | End of Life |
| Contribution to fossil resources depletion                                                      | MJ             | 1,21E+00                         | 7,09E-01      | 6,53E-03     | 6,80E-04     | 4,91E-01 | 4,15E-03    |
| Contribution to air pollution                                                                   | m <sup>3</sup> | 9,13E+00                         | 4,98E+00      | 1,98E-02     | 5,27E-03     | 4,10E+00 | 3,31E-02    |
| Contribution to water pollution                                                                 | m <sup>3</sup> | 8,70E+00                         | 5,47E+00      | 7,64E-02     | 5,63E-03     | 3,11E+00 | 4,02E-02    |
| Resources use                                                                                   | Unit           | Total                            | Manufacturing | Distribution | Installation | Use      | End of Life |
| Use of secondary material                                                                       | kg             | 4,49E-04                         | 4,49E-04      | 0*           | 0*           | 0*       | 0*          |
| Total use of renewable primary energy resources                                                 | MJ             | 7,80E+01                         | 2,10E-02      | 0*           | 0*           | 7,80E+01 | 0*          |
| Total use of non-renewable primary energy resources                                             | MJ             | 1,21E+00                         | 6,57E-01      | 6,56E-03     | 7,46E-04     | 5,37E-01 | 4,54E-03    |
| Use of renewable primary energy excluding renewable primary energy used as raw material         | MJ             | 7,80E+01                         | 2,10E-02      | 0*           | 0*           | 7,80E+01 | 0*          |
| Use of renewable primary energy resources used as raw material                                  | MJ             | 0,00E+00                         | 0*            | 0*           | 0*           | 0*       | 0*          |
| Use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ             | 1,14E+00                         | 5,87E-01      | 6,56E-03     | 7,46E-04     | 5,37E-01 | 4,54E-03    |
| Use of non renewable primary energy resources used as raw material                              | MJ             | 6,96E-02                         | 6,96E-02      | 0*           | 0*           | 0*       | 0*          |
| Use of non renewable secondary fuels                                                            | MJ             | 0,00E+00                         | 0*            | 0*           | 0*           | 0*       | 0*          |
| Use of renewable secondary fuels                                                                | MJ             | 0,00E+00                         | 0*            | 0*           | 0*           | 0*       | 0*          |
| Waste categories                                                                                | Unit           | Total                            | Manufacturing | Distribution | Installation | Use      | End of Life |
| Hazardous waste disposed                                                                        | kg             | 2,94E-02                         | 4,11E-03      | 0*           | 5,38E-04     | 1,88E-02 | 5,96E-03    |
| Non hazardous waste disposed                                                                    | kg             | 1,12E+00                         | 1,25E-02      | 0*           | 0*           | 1,11E+00 | 0*          |
| Radioactive waste disposed                                                                      | kg             | 2,75E-05                         | 8,74E-06      | 1,18E-08     | 3,52E-09     | 1,88E-05 | 2,25E-08    |

| Other environmental information | Unit | Total    | Manufacturing | Distribution | Installation | Use | End of Life |
|---------------------------------|------|----------|---------------|--------------|--------------|-----|-------------|
| Materials for recycling         | kg   | 7,59E-04 | 9,38E-05      | 0*           | 4,95E-04     | 0*  | 1,70E-04    |
| Components for reuse            | kg   | 0,00E+00 | 0*            | 0*           | 0*           | 0*  | 0*          |
| Materials for energy recovery   | kg   | 8,30E-05 | 1,05E-05      | 0*           | 0*           | 0*  | 7,25E-05    |
| Exported Energy                 | MJ   | 0,00E+00 | 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 EIME v5.5, database version 2016-11.

The Modify manually the text to mention the equal impacting phases phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

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 N°                                                                                                             | ENVPEP1705013_V1 | Drafting rules            | PCR-ed3-EN-2015 04 02                                                |
| Date of issue                                                                                                               | 06/2017          | Supplemented by           | PSR-0005-ed2-EN-2016 03 29                                           |
| Validity period                                                                                                             | 5 years          | Information and reference | <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a> |
| Independent verification of the declaration and data, in compliance with ISO 14025 : 2010                                   |                  |                           |                                                                      |
| Internal                                                                                                                    | X                | External                  |                                                                      |
| The elements of the present PEP cannot be compared with elements from another program.                                      |                  |                           |                                                                      |
| Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations » |                  |                           |                                                                      |

Schneider Electric Industries SAS

Country Customer Care Center  
<http://www.schneider-electric.com/contact>

35, rue Joseph Monier  
CS 30323  
F- 92506 Rueil Malmaison Cedex  
RCS Nanterre 954 503 439  
Capital social 896 313 776 €

[www.schneider-electric.com](http://www.schneider-electric.com)

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