

Product Environmental Profile

RPF2... Power Relay





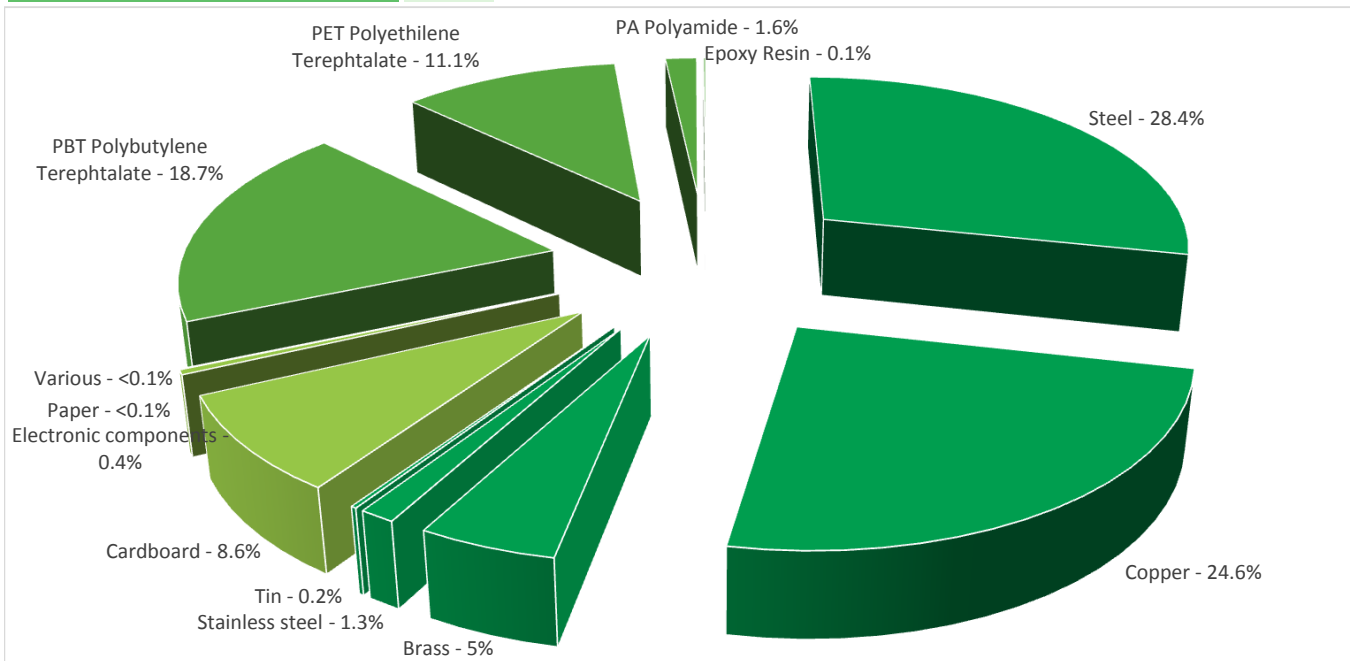
General information

| | |
|-----------------------------------|--|
| Representative product | Power Relay -RPF2AP7 |
| Description of the product | The product is an electrically operated switch which enables current to flow through it on one circuit and can switch a current on and off on a second circuit. |
| Description of the range | This range consists of RPF2A and RPF2B series designed with DIN rail mounting and two holes for direct mounting. Input voltage range from 12 Vdc to 24 Vdc and 12 Vac to 240 Vac. The RPF2A series consist of double pole single throw with 2 NO contacts, and RPF2B series consist of double pole double throw with 2 NO and 2 NC contacts. The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology. |
| Functional unit | To control a circuit by a low-power signal with complete electrical isolation between control and controlled circuits, or where several circuits must be controlled by one signal during 20 years with a 30% use rate, in compliance with French standards. |



Constituent materials

Reference product mass 88.25 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 Power Relay 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 Packaging weight is 7.7 g, consisting of cardboard (99.7%), paper (0.3%) Product distribution optimised by setting up local distribution centres |
| Installation | Ref RPF2AP7 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 No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process. Recyclability potential: 48% 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). |



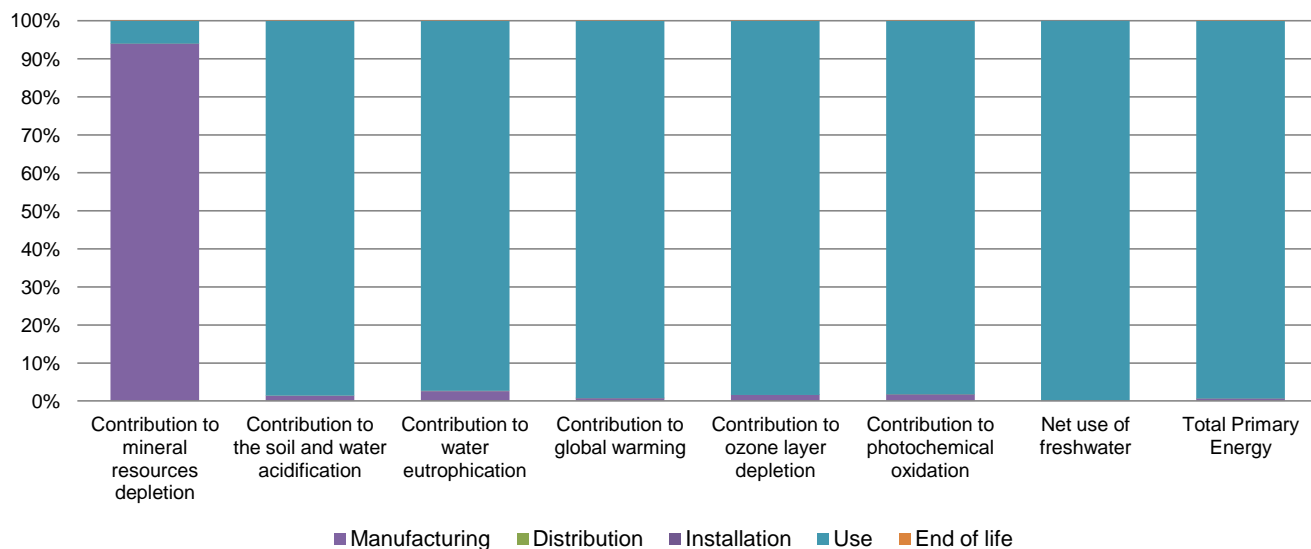
Environmental impacts

| | | | | |
|---|--|--|--|--|
| Reference life time | 20 years | | | |
| Product category | Passive products - non-continuous operation | | | |
| Installation elements | No special components needed | | | |
| Use scenario | Product dissipation is 2.24 W full load, loading rate is 30% and service uptime percentage is 30% The product is in active mode 30% of the time with a power use of 2.24W and 70% of the time in OFF mode, for 20 years | | | |
| Geographical representativeness | World | | | |
| Technological representativeness | The product is an electrically operated switch which enables current to flow through it on one circuit and can switch a current on and off on a second circuit. | | | |
| Energy model used | Manufacturing | Installation | Use | End of life |
| | Energy model used: China | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 | Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27 |

| Compulsory indicators | | Power Relay - RPF2AP7 | | | | | |
|--|-------------------------------------|-----------------------|---------------|--------------|--------------|----------|-------------|
| Impact indicators | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to mineral resources depletion | kg Sb eq | 8,30E-05 | 7,80E-05 | 0* | 0* | 5,01E-06 | 0* |
| Contribution to the soil and water acidification | kg SO ₂ eq | 2,44E-01 | 3,34E-03 | 5,20E-05 | 0* | 2,41E-01 | 2,45E-05 |
| Contribution to water eutrophication | kg PO ₄ ³⁻ eq | 1,49E-02 | 3,84E-04 | 1,20E-05 | 0* | 1,45E-02 | 6,62E-06 |
| Contribution to global warming | kg CO ₂ eq | 5,82E+01 | 4,43E-01 | 1,14E-02 | 0* | 5,77E+01 | 1,19E-02 |
| Contribution to ozone layer depletion | kg CFC11 eq | 3,82E-06 | 6,21E-08 | 0* | 0* | 3,76E-06 | 5,61E-10 |

Contribution to photochemical oxidation kg C₂H₄ eq 1,35E-02 2,37E-04 3,71E-06 0* 1,32E-02 2,56E-06

| Resources use | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
|-----------------------|------|----------|---------------|--------------|--------------|----------|-------------|
| Net use of freshwater | m3 | 2,09E+02 | 0* | 0* | 0* | 2,09E+02 | 0* |
| Total Primary Energy | MJ | 1,16E+03 | 7,59E+00 | 1,61E-01 | 0* | 1,15E+03 | 1,20E-01 |



| Optional indicators | | Power Relay - RPF2AP7 | | | | | |
|---|----------------|-----------------------|---------------|--------------|--------------|----------|-------------|
| Impact indicators | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Contribution to fossil resources depletion | MJ | 6,61E+02 | 6,35E+00 | 1,60E-01 | 0* | 6,55E+02 | 1,09E-01 |
| Contribution to air pollution | m ³ | 2,69E+03 | 2,06E+02 | 4,84E-01 | 0* | 2,48E+03 | 8,62E-01 |
| Contribution to water pollution | m ³ | 2,41E+03 | 3,15E+01 | 1,87E+00 | 0* | 2,38E+03 | 1,02E+00 |
| Resources use | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Use of secondary material | kg | 1,61E-02 | 1,61E-02 | 0* | 0* | 0* | 0* |
| Total use of renewable primary energy resources | MJ | 1,47E+02 | 3,60E-01 | 0* | 0* | 1,47E+02 | 0* |
| Total use of non-renewable primary energy resources | MJ | 1,01E+03 | 7,23E+00 | 1,61E-01 | 0* | 1,01E+03 | 1,20E-01 |
| Use of renewable primary energy excluding renewable primary energy used as raw material | MJ | 1,47E+02 | 2,01E-01 | 0* | 0* | 1,47E+02 | 0* |
| Use of renewable primary energy resources used as raw material | MJ | 1,59E-01 | 1,59E-01 | 0* | 0* | 0* | 0* |
| Use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ | 1,01E+03 | 6,76E+00 | 1,61E-01 | 0* | 1,01E+03 | 1,20E-01 |
| Use of non renewable primary energy resources used as raw material | MJ | 4,69E-01 | 4,69E-01 | 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 | 5,93E+00 | 5,76E+00 | 0* | 1,55E-02 | 3,01E-02 | 1,24E-01 |
| Non hazardous waste disposed | kg | 2,15E+02 | 2,58E-01 | 0* | 0* | 2,15E+02 | 0* |
| Radioactive waste disposed | kg | 1,44E-01 | 2,79E-04 | 0* | 0* | 1,44E-01 | 0* |
| Other environmental information | Unit | Total | Manufacturing | Distribution | Installation | Use | End of Life |
| Materials for recycling | kg | 4,52E-02 | 5,73E-03 | 0* | 0* | 0* | 3,94E-02 |
| Components for reuse | kg | 0,00E+00 | 0* | 0* | 0* | 0* | 0* |
| Materials for energy recovery | kg | 1,60E-03 | 2,04E-04 | 0* | 0* | 0* | 1,40E-03 |
| 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 use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

Depending on the impact analysis, the environmental indicators (without Contribution to mineral resources depletion) of other products in this family may be proportional extrapolated by energy consumption values. For Contribution to mineral resources depletion, impact may be proportional extrapolated by mass of the product.

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° | ENVPEP130203EN_V1 | Drafting rules | PCR-ed3-EN-2015 04 02 |
| Date of issue | 02/2017 | Supplemented by | PSR-0005-ed2-EN-2016 03 29 |
| Validity period | 5 years | Information and reference documents | www.pep-ecopassport.org |
| <i>Independent verification of the declaration and data, in compliance with ISO 14025 : 2010</i> | | | |
| Internal | X | External | |
| <i>The elements of the present PEP cannot be compared with elements from another program.</i> | | | |
| <i>Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »</i> | | | |

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