Product Environmental Profile
Rotary switches

Company information
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A question concerning the Product Environmental Profile:
infopep@hager.com

References covered
Rotary Push Button 2-Pole (381103*, 381113*, 384103, 53384103, 53384203, 384603, 385103, 386103, 386113, 387503, 387603, 387703, 381203, 381213, 384203, 385203, 389303, 38112145*, 38112189*, 38122145*, 38122189*, 38122189, 3384203)
* These products are composed of the mechanism, covered by this PEP, with a centre plate, which covered by another PEP.

Methodology
PEP has been performed according to the PCR version PEP–PCR–ed3-2015 04 02 and PSR version PSR-0005-ed2-FR-2016 03 29 issued by the PEP ecopassport program.
For further information, please see the website of the program www.pep-ecopassport.org
For the considered scenario, the product has an average power of 0.061 W in active mode during 30% of the time. This corresponds to a total energy consumption of 3.193 kWh for the use span of 20 years.

Reference product

Reference product identification
Group spring-return push-button 2p, with neutral-pos., Serie 1930/Glas/R.classic (383803)

Functional unit

Establish, support and interrupt for 20 years rated currents in normal conditions of circuit characterized by the current 10A, for the operating voltage 250V.

The functional unit is based on the use scenario recommended by the PCR for the category of the reference product.

Materials and substances

All useful measures have been adopted to ensure that the materials used in the composition of the product do not contain any substances banned by the legislation in force at the time of marketing.

<table>
<thead>
<tr>
<th>Plastics</th>
<th>Metals</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g</td>
<td>%</td>
</tr>
<tr>
<td>PA 6</td>
<td>7.11</td>
<td>9.14%</td>
</tr>
<tr>
<td>PP</td>
<td>5.64</td>
<td>7.26%</td>
</tr>
<tr>
<td>PC</td>
<td>2.69</td>
<td>3.46%</td>
</tr>
<tr>
<td>PTFE</td>
<td>0.30</td>
<td>0.38%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total mass of reference product : 76.97 g

Manufacturing

These products are manufactured by a site that has received an environmental certification ISO 14001.

Installation

Installation processes
The processes to install the product are not considered in this study because of their weak impact compared to the other life cycles steps.

Installation elements (non delivered with the product)
Elements non delivered with the product and needed to install the product are not considered.

Use

For the considered scenario, the product has an average power of 0.061 W in active mode during 30% of the time. This corresponds to a total energy consumption of 3.193 kWh for the use span of 20 years.

Energy model of the use phase :
Europe

Consumables and maintenance :
None

PEP ecopassport

2/4

HAGE-00419-V01.01-EN
Environmental impacts

Evaluation of the environmental impact covers the following life cycle stages: raw materials + manufacturing (RMM), distribution (D), installation (I), use (U) and end of life (EoL).

Considering the complexity and the lack of knowledge of the electric and electronic recycling channel and processes, the standard scenario set in the PCR is considered.

The recycling potential of the product is: 29%. The calculation of this rate is based on the method of the IEC/TR 62635.

End of life

All calculations are done with EIME software version 5.8.1 with the database version HAGER 2014 V1.
Verifier accreditation N°: VH03

Document in compliance with ISO 14025:2010 « Environmental labels and declarations. Type III environmental declarations »

The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)

The elements of the present PEP cannot be compared with elements from another program

Nota:

Independent verification of the declaration and data, in compliance with ISO 14025: 2010

Information and reference documents: www.pep-ecopassport.org

Validity period: 5 years

To evaluate the environmental impact of another product covered by this PEP, multiply the impact figures by the corresponding factors:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>Manufacturing RMM</th>
<th>Distribution D</th>
<th>Installation I</th>
<th>Use U</th>
<th>End Of Life EoL</th>
<th>GLOBAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous waste disposed</td>
<td>kg</td>
<td>8.93E-01</td>
<td>0.00E+00</td>
<td>3.90E-06</td>
<td>0.00E+00</td>
<td>3.18E-05</td>
<td>8.93E-01</td>
</tr>
<tr>
<td>Non-hazardous waste disposed</td>
<td>kg</td>
<td>3.74E-01</td>
<td>4.76E-04</td>
<td>1.77E-02</td>
<td>1.81E+01</td>
<td>6.68E-02</td>
<td>1.85E+01</td>
</tr>
<tr>
<td>Radioactive waste disposed</td>
<td>kg</td>
<td>1.27E-04</td>
<td>3.39E-07</td>
<td>9.09E-08</td>
<td>1.47E-02</td>
<td>2.29E-06</td>
<td>1.48E-02</td>
</tr>
</tbody>
</table>

Output flow indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>Manufacturing RMM</th>
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<th>Use U</th>
<th>End Of Life EoL</th>
<th>GLOBAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components for re-use</td>
<td>kg</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Materials for recycling</td>
<td>kg</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Materials for energy recovery</td>
<td>kg</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
</tr>
<tr>
<td>Exported energy</td>
<td>MJ</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
<td>0.00E+00</td>
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To evaluate the environmental impact of another product covered by this PEP, multiply the impact figures by the corresponding factors:

Factor for the Use phase

<table>
<thead>
<tr>
<th>Factor for the Use phase</th>
<th>2 poles</th>
<th>1 pole</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Factor for other phases

<table>
<thead>
<tr>
<th>Factor for other phases</th>
<th>1</th>
<th>1</th>
</tr>
</thead>
</table>

Verification

Registration N°: HAGE-00419-V01.01-EN
Drafting Rules PEP–PCR–ed3-2015 04 02
Supplemented by PSR-0005-ed2-FR-2016 03 29

Verifier accreditation N°: VH03
Information and reference documents: www.pep-ecopassport.org

Date of issue: 09-2019
Validity period: 5 years

Internal ● External ○

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Document in compliance with ISO 14025: 2010 « Environmental labels and declarations. Type III environmental declarations »

Nota:
The picture has no contractual value.
All numerical values indicated in this document may vary and depend on many factors such as the tolerance related to materials, the usage and environment conditions of the products, installation characteristics ... real values for a product in a concrete application may therefore change.
The usage time mentioned in this document is an average duration chosen for the need of the calculations. This value cannot be assimilated to the minimum, average or real life time.
The responsibility of the company, issuing this document, can never be engaged if differences would be noticed between the values given by this document and real ones, whatever the causes and/or consequences would be.