Product Environmental Profile

PowerPact J-frame Molded Case Circuit Breaker with Thermal-magnetic Trip Unit
**General information**

**Representative product**
PowerPact J-frame Molded Case Circuit Breaker with Thermal-magnetic Trip Unit - JGL36250

**Description of the product**
This product with thermal-magnetic Trip Unit is designed to protect electrical systems from damage caused by overloads and short circuits.

**Functional unit**
Protect during 20 years the installation against overloads and short-circuits in circuit with assigned voltage 600 VAC and rated current 250 A. This protection is ensured in accordance with the following parameters:
- Number of poles : 3P
- Rated breaking capacity : 18 kA
- Tripping curve : D

**Constituent materials**

**Reference product mass**
2060 g including the product, its packaging and additional elements and accessories

![Pie chart showing the constituent materials of the product](chart.png)

- **Plastics** 23.9%
- **Metals** 47.8%
- **Others** 28.4%

**Substance assessment**

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 2 January 2013, amended in March 2015, 2015/863/EU and in November 2017, 2017/2102/EU) 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), Bis (2-ethylhexyl)phthalate - DEHP, Benzyl butyl phthalate– BBP, Dibutyl phthalate - DBP, Diisobutyl phthalate - DIBP) as mentioned in the Directive.

The PowerPact J-frame Molded Case Circuit Breaker with Thermal-magnetic Trip Unit presents the following relevant environmental aspects:

**Manufacturing**
- Manufactured at a Schneider Electric production site ISO14001 certified

**Distribution**
- Weight and volume of the packaging optimized, based on the European Union's packaging directive
- Packaging weight is 202.8 g, consisting of Cardboard (94.70%), Paper (5.13%), PE Polyethylene (0.17%)
- Product distribution optimized by setting up local distribution centres

**Installation**
- The product does not require special installation procedure and requires little to no energy to install. The disposal of the packaging materials are accounted for during the installation phase (including transport to disposal).

**Use**
- The end user must refer to maintenance guide of the product in order to do the appropriate maintenance operations. If the VISI-TRIP HANDLE C1 MODULE of 2.5 g have to be changed every 10 years, and 1 battery of 2 g have to changed every 5 years

**End of life**
- End of life optimized to decrease the amount of waste and allow recovery of the product components and materials
- Recyclability potential: 58%

**Environmental impacts**

**Reference life time**
- 20 years

**Product category**
- Circuit-breakers

**Installation elements**
- End of Life of the Packaging

**Use scenario**
- Load rate: 50% of In
- Use time rate: 30% of RLT
- Assumed service lifetime is 20 years and use scenario is : product dissipation is 21.95 W at 50% loading rate

**Geographical representativeness**
- US

**Technological representativeness**
- The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA-EIME in this case) are Similar and representative of the actual type of technologies used to make the product in production.

**Energy model used**
- Energy model used: US
- Electricity mix; AC; consumption mix, at consumer; 120V; US
- Electricity mix; AC; consumption mix, at consumer; 120V; US
- Electricity mix; AC; consumption mix, at consumer; 120V; US

**Compulsory indicators**

<table>
<thead>
<tr>
<th>Impact indicators</th>
<th>Unit</th>
<th>Total</th>
<th>Manufacturing</th>
<th>Distribution</th>
<th>Installation</th>
<th>Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to mineral resources depletion</td>
<td>kg Sb eq</td>
<td>1.16E-02</td>
<td>1.15E-02</td>
<td>0*</td>
<td>0*</td>
<td>5.34E-05</td>
<td>0*</td>
</tr>
<tr>
<td>Contribution to the soil and water acidification</td>
<td>kg SO2 eq</td>
<td>1.18E+00</td>
<td>3.15E-02</td>
<td>1.21E-03</td>
<td>0*</td>
<td>1.15E+00</td>
<td>5.58E-04</td>
</tr>
<tr>
<td>Contribution to water eutrophication</td>
<td>kg PO4-3 eq</td>
<td>3.19E-01</td>
<td>1.56E-02</td>
<td>2.80E-04</td>
<td>5.50E-04</td>
<td>3.03E-01</td>
<td>1.53E-04</td>
</tr>
<tr>
<td>Contribution to global warming</td>
<td>kg CO2 eq</td>
<td>1.21E+03</td>
<td>1.01E+01</td>
<td>2.66E-01</td>
<td>2.88E-01</td>
<td>1.20E+03</td>
<td>2.80E-01</td>
</tr>
<tr>
<td>Contribution to ozone layer depletion</td>
<td>kg CFC11 eq</td>
<td>2.28E-05</td>
<td>1.02E-06</td>
<td>0*</td>
<td>0*</td>
<td>2.18E-05</td>
<td>1.25E-08</td>
</tr>
<tr>
<td>Contribution to photochemical oxidation</td>
<td>kg C2H4 eq</td>
<td>1.87E-01</td>
<td>3.04E-03</td>
<td>8.66E-05</td>
<td>6.97E-05</td>
<td>1.84E-01</td>
<td>5.86E-05</td>
</tr>
</tbody>
</table>
### Resources use

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Unit</th>
<th>Total</th>
<th>Manufacturing</th>
<th>Distribution</th>
<th>Installation</th>
<th>Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net use of freshwater</td>
<td>m³</td>
<td>5.14E+00</td>
<td>3.00E+00</td>
<td>0*</td>
<td>0*</td>
<td>2.14E+00</td>
<td>0*</td>
</tr>
<tr>
<td>Total Primary Energy</td>
<td>MJ</td>
<td>1.63E+04</td>
<td>1.58E+02</td>
<td>3.76E+00</td>
<td>0*</td>
<td>1.61E+04</td>
<td>2.73E+00</td>
</tr>
</tbody>
</table>

### Impact indicators

- Contribution to mineral resources depletion
- Contribution to the soil and water acidification
- Contribution to water eutrophication
- Contribution to global warming
- Contribution to ozone layer depletion
- Contribution to photochemical oxidation
- Net use of freshwater
- Total Primary Energy

### Optional indicators

**PowerPact J-frame Molded Case Circuit Breaker with Thermal-magnetic Trip Unit - JGL36250**

<table>
<thead>
<tr>
<th>Impact Indicators</th>
<th>Unit</th>
<th>Total</th>
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<th>Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contribution to fossil resources depletion</td>
<td>MJ</td>
<td>1.47E+04</td>
<td>1.07E+02</td>
<td>3.73E+00</td>
<td>0*</td>
<td>1.46E+04</td>
<td>2.19E+00</td>
</tr>
<tr>
<td>Contribution to air pollution</td>
<td>m³</td>
<td>1.05E+05</td>
<td>2.96E+03</td>
<td>1.13E+01</td>
<td>0*</td>
<td>1.02E+05</td>
<td>1.97E+01</td>
</tr>
<tr>
<td>Contribution to water pollution</td>
<td>m³</td>
<td>6.08E+04</td>
<td>1.61E+03</td>
<td>4.37E+01</td>
<td>1.65E+01</td>
<td>5.91E+04</td>
<td>2.33E+01</td>
</tr>
</tbody>
</table>

### Resources use

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Unit</th>
<th>Total</th>
<th>Manufacturing</th>
<th>Distribution</th>
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<th>Use</th>
<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of secondary material</td>
<td>kg</td>
<td>2.62E-01</td>
<td>2.57E-01</td>
<td>0*</td>
<td>0*</td>
<td>5.52E-03</td>
<td>0*</td>
</tr>
<tr>
<td>Total use of renewable primary energy resources</td>
<td>kg</td>
<td>9.77E+02</td>
<td>8.38E+00</td>
<td>0*</td>
<td>0*</td>
<td>9.69E+02</td>
<td>0*</td>
</tr>
<tr>
<td>Total use of non-renewable primary energy resources</td>
<td>kg</td>
<td>1.53E+04</td>
<td>1.50E+02</td>
<td>3.75E+00</td>
<td>0*</td>
<td>1.52E+04</td>
<td>2.73E+00</td>
</tr>
<tr>
<td>Use of renewable primary energy excluding non-renewable primary energy used as raw material</td>
<td>kg</td>
<td>9.73E+02</td>
<td>4.57E+00</td>
<td>0*</td>
<td>0*</td>
<td>9.69E+02</td>
<td>0*</td>
</tr>
<tr>
<td>Use of renewable primary energy resources used as raw material</td>
<td>kg</td>
<td>3.81E+00</td>
<td>3.81E+00</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>Use of non renewable primary energy excluding non-renewable primary energy used as raw material</td>
<td>kg</td>
<td>1.53E+04</td>
<td>1.29E+02</td>
<td>3.75E+00</td>
<td>0*</td>
<td>1.52E+04</td>
<td>2.73E+00</td>
</tr>
<tr>
<td>Use of non renewable primary energy resources used as raw material</td>
<td>kg</td>
<td>2.03E+01</td>
<td>2.01E+01</td>
<td>0*</td>
<td>0*</td>
<td>2.27E-01</td>
<td>0*</td>
</tr>
<tr>
<td>Use of non renewable secondary fuels</td>
<td>kg</td>
<td>0.00E+00</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
</tbody>
</table>

### Waste categories

- Hazardous waste disposed
- Non hazardous waste disposed
- Radioactive waste disposed
- Materials for recycling
- Components for reuse
- Materials for energy recovery
- Exported Energy

* represents less than 0.01% of the total life cycle of the reference flow
Life cycle assessment performed with EIME version EIME v5.9.3, database version 2020-12 in compliance with ISO14044.

The use phase and manufacturing phase (ADPe for EN15804; freshwater; secondary material) 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.

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Drafting rules</th>
<th>Validity period</th>
<th>Supplemented by</th>
<th>Information and reference documents</th>
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</thead>
<tbody>
<tr>
<td>ENVPEP2206031_V1</td>
<td>PCR-ed3-EN-2015 04 02</td>
<td>5 years</td>
<td>PSR-0005-ed2-EN-2016 03 29</td>
<td><a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a></td>
</tr>
</tbody>
</table>

Independent verification of the declaration and data

Internal X External

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

Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »

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