Product Environmental Profile

ABL1R•M••• Regulated Switch Mode Power Supply
(at the exclusion of ABL8REM24030 and ABL8REM24050)
General information

Representative product
ABL1R-M-M Regulated Switch Mode Power Supply (at the exclusion of ABL8REM24030 and ABL8REM24050) - ABL1RPM24100

Description of the product
Referent product is a regulated switch mode power supply single phase - 100..240 V input - 24 V output - 240 W

Description of the range
Product range consists in regulated switch mode power supplies ABL1REM/1RPM included in active product category, 60 to 240 W - Mounting on panel
The range does not include ABL8REM24030 and ABL8REM24050

The environmental impacts of the reference product are representative of the impacts of the other products of the range which are developed with a similar technology.

Functional unit
To convert 6.96kW per day at nominal load from 100/240V AC input to Safety Extra Low Voltage DC output (from 12V to 24V) 100% active for 10 years

Constituent materials

Reference product mass
1424 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

alu - 21.1%
ferrites - 17.3%
copper - 12.6%
stainless steel with chrome - 2.9%
steel - 11.2%
alloy - 4.1%
various - 5.5%
cardboard - 7.6%
paper - 1.6%
electrolyte - 1.2%
epoxy resin - 3.5%
polyethylene terephthalate (PET) - 1.3%
polyamide 66 (PA66) - 1.2%
polyethylene terephthalate (PBT) - 4.9%
polyphenylene ether (PPE) - 2.5%
glass fibre - 1.5%
### Environmental impacts

<table>
<thead>
<tr>
<th>Reference life time</th>
<th>10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product category</td>
<td>Passive products - non-continuous operation</td>
</tr>
<tr>
<td>Installation elements</td>
<td>Installation requires a manual operation in conformity of the operating manual</td>
</tr>
<tr>
<td>Use scenario</td>
<td>Product dissipation is 50 W full load, loading rate is 30% and service uptime percentage is 30%</td>
</tr>
<tr>
<td>The dissipated power is 50 W on active mode (at nominal output power 240W)</td>
<td></td>
</tr>
<tr>
<td>This thermal dissipation represents less than 25% of the power which passes through the product in active mode</td>
<td></td>
</tr>
<tr>
<td>Geographical representativeness</td>
<td>Europe</td>
</tr>
<tr>
<td>Technological representativeness</td>
<td>Referent product is a regulated switch mode power supply single phase - 100..240 V input - 24 V output - 240 W</td>
</tr>
</tbody>
</table>

#### Energy model used

<table>
<thead>
<tr>
<th>Energy model used</th>
<th>Manufacturing</th>
<th>Installation</th>
<th>Use</th>
<th>End of life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electricity Mix; AC; consumption mix, at consumer; &lt; 1kV; EU-27</td>
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<td>Electricity Mix; AC; consumption mix, at consumer; &lt; 1kV; EU-27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy model used: China</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 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>7.97E-04</td>
<td>6.79E-04</td>
<td>0*</td>
<td>0*</td>
<td>1.18E-04</td>
<td>0*</td>
</tr>
<tr>
<td>Contribution to the soil and water acidification</td>
<td>kg SO₂ eq</td>
<td>1.96E+01</td>
<td>8.00E-02</td>
<td>0*</td>
<td>0*</td>
<td>1.96E+01</td>
<td>0*</td>
</tr>
<tr>
<td>Contribution to water eutrophication</td>
<td>kg PO₄³⁻ eq</td>
<td>7.43E-01</td>
<td>9.53E-03</td>
<td>1.93E-04</td>
<td>3.13E-04</td>
<td>7.33E-01</td>
<td>3.77E-04</td>
</tr>
<tr>
<td>Contribution to global warming</td>
<td>kg CO₂ eq</td>
<td>2.60E+03</td>
<td>1.35E+01</td>
<td>0*</td>
<td>0*</td>
<td>2.59E+03</td>
<td>1.20E+00</td>
</tr>
<tr>
<td>Contribution to ozone layer depletion</td>
<td>kg CFC11 eq</td>
<td>6.56E-04</td>
<td>2.73E-05</td>
<td>0*</td>
<td>0*</td>
<td>6.28E-04</td>
<td>0*</td>
</tr>
</tbody>
</table>

| Contribution to photochemical oxidation | kg C₃H₄ eq | 9.30E-01 | 5.27E-03 | 0* | 0* | 9.24E-01 | 0* |

The ABL1R-M-  Regulated Switch Mode Power Supply (at the exclusion of ABL8REM24030 and ABL8REM24050) 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 114.1 g, consisting of cardboard (95%) and paper (5%)

### Use

The product does not require special maintenance operations

### End of life

End of life is optimized to decrease the amount of waste and allow recovery of the product components and materials

This product contains electronic cards (807g) integrating electrolytic capacitors (19g) that should be separated from the stream of waste so as to optimize end-of-life treatment

The location of these components and other recommendations are given in the End of Life Instruction document which is available on the Schneider Electric Green Premium website


<table>
<thead>
<tr>
<th>Resources use</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>6.92E+00</td>
<td>1.76E-01</td>
<td>0*</td>
<td>0*</td>
<td>6.75E+00</td>
<td>0*</td>
</tr>
<tr>
<td>Total Primary Energy</td>
<td>MJ</td>
<td>5.26E+04</td>
<td>1.91E+02</td>
<td>0*</td>
<td>0*</td>
<td>5.24E+04</td>
<td>0*</td>
</tr>
</tbody>
</table>

**Contribution to fossil resources depletion**

```
| MJ 2.68E+04 1.74E+02 0* 0* 2.66E+04 2.91E+00 |
| MJ 1.14E+05 2.67E+03 0* 0* 1.11E+05 2.21E+01 |
```

**Use of secondary material**

```
| kg 9.39E-02 9.39E-02 0* 0* 0* 0* |
```

**Total use of renewable primary energy resources**

```
| MJ 3.76E+03 6.87E+00 0* 0* 3.75E+03 0* |
```

**Use of renewable primary energy excluding renewable primary energy used as raw material**

```
| MJ 4.88E+04 1.84E+02 0* 0* 4.86E+04 0* |
```

**Use of non-renewable primary energy resources used as raw material**

```
| MJ 3.75E+03 4.61E+00 0* 0* 3.75E+03 0* |
```

**Use of non renewable primary energy excluding non renewable primary energy used as raw material**

```
| MJ 2.25E+00 2.25E+00 0* 0* 0* 0* |
```

**Use of non renewable primary energy resources used as raw material**

```
| MJ 4.88E+04 1.77E+02 0* 0* 4.86E+04 0* |
```

**Use of renewable secondary fuels**

```
| MJ 0.00E+00 0* 0* 0* 0* 0* |
```

**Hazardous waste disposed**

```
| kg 2.83E+01 2.53E+01 0* 1.15E+01 0* 2.84E+00 |
```

**Non hazardous waste disposed**

```
| kg 9.68E+03 9.46E+00 0* 0* 9.67E+03 0* |
```

**Radioactive waste disposed**

```
| kg 7.89E+00 7.14E-03 0* 0* 7.89E+00 0* |
```

**Other environmental information**

```
| kg 5.98E-01 0* 0* 0* 0* 5.98E-01 |
| kg 0.00E+00 0* 0* 0* 0* 0* |
| kg 3.31E-01 0* 0* 0* 0* 3.31E-01 |
```

* represents less than 0.01% of the total life cycle of the reference flow
Life cycle assessment performed with EIME version EIME v5.6, 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).

To extrapolate the impact to another product from the range, apply the following extrapolation rules to each indicator per life cycle stage:

MANUFACTURING(i) = (i) referent x [0.9 x (Mass of product in g / 1310) + 0.09 x (Mass of packaging in g / 114)]

DISTRIBUTION(i) = (i) referent x [Mass of product & packaging in g / 1424]

INSTALLATION(i) = (i) referent constant

USE(i) = (i) referent x [Power dissipated in W / 50]

END OF LIFE(i) = (i) referent x [Mass of product in g / 1310]

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 N°</th>
<th>SCHN-00202-V01.01-EN</th>
<th>Drafting rules</th>
<th>PCR-ed3-EN-2015 04 02</th>
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<tbody>
<tr>
<td>Verifier accreditation N°</td>
<td>VH10</td>
<td>Supplemented by</td>
<td>PSR-0005-ed1-2012 12 11</td>
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<tr>
<td>Date of issue</td>
<td>05/2017</td>
<td>Information and reference documents</td>
<td><a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Independent verification of the declaration and data, in compliance with ISO 14025 : 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
</tr>
</tbody>
</table>

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.

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

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