Product Environmental Profile

Zelio control & analog relays

Schneider Electric
## General information

**Representative product**
Zelio control & analog relays - RMCA61BD

**Description of the product**
The product is a converter which change voltage to current or vice versa and allow conversion of electrical power signals, both AC and DC. The main purpose of the product is to allows the adaptation of electrical values for control and monitoring in the industrial application.

**Description of the range**
This range consists of RMC, RMPT and RMT series designed for converting electrical signal to standard electrical signals which allows the adaptation of electrical values for control and monitoring application.

**Functional unit**
To convert signals emitted by sensors or electrical measurement devices, into standard electrical signals that are compatible with automation platforms and controllers (thermal processes, speed, etc.). during 10 years with a 100% use rate, in compliance with French standard.

## Constituent materials

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

![Material Composition Chart]

- Copper - 12.5%
- Zinc - 3.5%
- Steel - 3.4%
- Ferrites - 2.3%
- Brass - 1.3%
- Glass - 10.2%
- Various - 8.4%
- Cardboard - 6.8%
- Glass fibre - 5.3%
- Melamine cyanurate - 4.2%
- Alumine - 1.9%
- Paper - 1.5%
- Polyamide resin 6 (PA6) - 22.3%
- Epoxy resin - 4.5%
- Polybutylene terephthalate (PBT) - 10.5%
- Polyamide resin 6 (PA6) - 22.3%

## 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:

## Additional environmental information

ENVPEP1607005_V1 - Product Environmental Profile - Zelio control analog relays
The Zelio control & analog relays presents the following relevant environmental aspects

**Design**
Product is not ecodesigned

**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 13.2 g, consisting of cardboard (83.1%), paper (16.9%)
Product distribution optimised by setting up local distribution centres

**Installation**
Ref RMCA61BD 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
This product contains electronic cards (48.5g) 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 http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page


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**Environmental impacts**

**Reference life time**
10 years

**Product category**
Passive products - continuous operation

**Installation elements**
No special components needed

**Use scenario**
Product dissipation is 2.2 W full load, loading rate is 30% and service uptime percentage is 100%
The product is in active mode 100% of the time with a power use of 2.2W, for 10 years

**Geographical representativeness**
World

**Technological representativeness**
The product is a converter which change voltage to current or vice versa and allow conversion of electrical power signals, both AC and DC. The main purpose of the product is to allow the adaptation of electrical values for control and monitoring in the industrial application.

**Energy model used**
- **Manufacturing**
  Energy model used: Indonesia (Schneider Electric Batam)
- **Installation**
  Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27
- **Use**
  Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27
- **End of life**
  Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27

**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>4.23E-04</td>
<td>4.18E-04</td>
<td>0*</td>
<td>0*</td>
<td>5.18E-06</td>
<td>0*</td>
</tr>
<tr>
<td>Contribution to the soil and water acidification</td>
<td>kg SO2 eq</td>
<td>8.67E-01</td>
<td>6.23E-03</td>
<td>9.56E-05</td>
<td>0*</td>
<td>8.60E-01</td>
<td>0*</td>
</tr>
<tr>
<td>Contribution to water eutrophication</td>
<td>kg PO₄³⁻ eq</td>
<td>3.41E-02</td>
<td>1.77E-03</td>
<td>2.20E-05</td>
<td>0*</td>
<td>3.23E-02</td>
<td>2.83E-05</td>
</tr>
<tr>
<td>-------------------------------------</td>
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</tr>
<tr>
<td>Contribution to global warming</td>
<td>kg CO₂ eq</td>
<td>1.18E+02</td>
<td>3.75E+00</td>
<td>2.09E-02</td>
<td>0*</td>
<td>1.14E+02</td>
<td>8.31E-02</td>
</tr>
<tr>
<td>Contribution to ozone layer depletion</td>
<td>kg CFC11 eq</td>
<td>2.80E-05</td>
<td>3.67E-07</td>
<td>0*</td>
<td>0*</td>
<td>2.76E-05</td>
<td>2.98E-09</td>
</tr>
<tr>
<td>Contribution to photochemical oxidation</td>
<td>kg C₂H₄ eq</td>
<td>4.14E-02</td>
<td>6.92E-04</td>
<td>6.82E-06</td>
<td>0*</td>
<td>4.07E-02</td>
<td>5.59E-06</td>
</tr>
</tbody>
</table>

### Resources use

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>Total</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Net use of freshwater</td>
<td>m³</td>
<td>3.15E-01</td>
<td>1.79E-02</td>
<td>0*</td>
<td>0*</td>
<td>2.97E-01</td>
<td>4.50E-05</td>
</tr>
<tr>
<td>Total Primary Energy</td>
<td>MJ</td>
<td>2.36E+03</td>
<td>5.80E+01</td>
<td>2.96E-01</td>
<td>0*</td>
<td>2.31E+03</td>
<td>3.12E-01</td>
</tr>
</tbody>
</table>

### Impact indicators

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Contribution to fossil resources depletion</td>
<td>MJ</td>
<td>1.22E+03</td>
<td>4.73E+01</td>
<td>2.94E-01</td>
<td>0*</td>
<td>1.17E+03</td>
<td>2.61E-01</td>
</tr>
<tr>
<td>Contribution to air pollution</td>
<td>m³</td>
<td>5.33E+03</td>
<td>4.45E+02</td>
<td>8.91E-01</td>
<td>0*</td>
<td>4.88E+03</td>
<td>2.04E+00</td>
</tr>
<tr>
<td>Contribution to water pollution</td>
<td>m³</td>
<td>5.12E+03</td>
<td>3.38E+02</td>
<td>3.44E+00</td>
<td>0*</td>
<td>4.77E+03</td>
<td>3.88E+00</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>Use of secondary material</td>
<td>kg</td>
<td>8.40E-03</td>
<td>8.40E-03</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>Total use of renewable primary energy resources</td>
<td>MJ</td>
<td>1.66E+02</td>
<td>1.28E+00</td>
<td>0*</td>
<td>0*</td>
<td>1.65E+02</td>
<td>0*</td>
</tr>
<tr>
<td>Total use of non-renewable primary energy resources</td>
<td>MJ</td>
<td>2.20E+03</td>
<td>5.68E+01</td>
<td>2.96E-01</td>
<td>0*</td>
<td>2.14E+03</td>
<td>3.12E-01</td>
</tr>
<tr>
<td>Use of renewable primary energy excluding renewable primary energy used as raw material</td>
<td>MJ</td>
<td>1.66E+02</td>
<td>1.06E+00</td>
<td>0*</td>
<td>0*</td>
<td>1.65E+02</td>
<td>0*</td>
</tr>
<tr>
<td>Use of renewable primary energy resources used as raw material</td>
<td>MJ</td>
<td>2.26E-01</td>
<td>2.26E-01</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>MJ</td>
<td>2.20E+03</td>
<td>5.43E+01</td>
<td>2.96E-01</td>
<td>0*</td>
<td>2.14E+03</td>
<td>3.12E-01</td>
</tr>
<tr>
<td>Use of non renewable primary energy resources used as raw material</td>
<td>MJ</td>
<td>2.47E+00</td>
<td>2.47E+00</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>Use of non renewable secondary fuels</td>
<td>MJ</td>
<td>0.00E+00</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
<td>0*</td>
</tr>
<tr>
<td>Use of renewable secondary fuels</td>
<td>MJ</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

<table>
<thead>
<tr>
<th>Waste categories</th>
<th>Unit</th>
<th>Total</th>
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<th>End of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous waste disposed</td>
<td>kg</td>
<td>3.27E+00</td>
<td>2.92E+00</td>
<td>0*</td>
<td>2.64E-02</td>
<td>0*</td>
<td>3.15E-01</td>
</tr>
<tr>
<td>Non hazardous waste disposed</td>
<td>kg</td>
<td>4.26E+02</td>
<td>5.43E-01</td>
<td>0*</td>
<td>0*</td>
<td>4.26E+02</td>
<td>0*</td>
</tr>
<tr>
<td>Radioactive waste disposed</td>
<td>kg</td>
<td>3.47E-01</td>
<td>2.99E-04</td>
<td>0*</td>
<td>0*</td>
<td>3.47E-01</td>
<td>0*</td>
</tr>
</tbody>
</table>
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.