

Product Environmental Profile – PEP

Product overview

The main purpose of the RXM.AB Miniature Plug-in Relay is 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

This range consists of RXM2AB, RXM3AB, RXM4AB/GB series. The range consists of miniature electromagnetic relays with 2, 3 or 4 C/O contacts with/without LED indicator and push button. The control voltage ranging from 24 Vac to 230 Vac and 12 Vdc.to 220Vdc with rated current 12A.

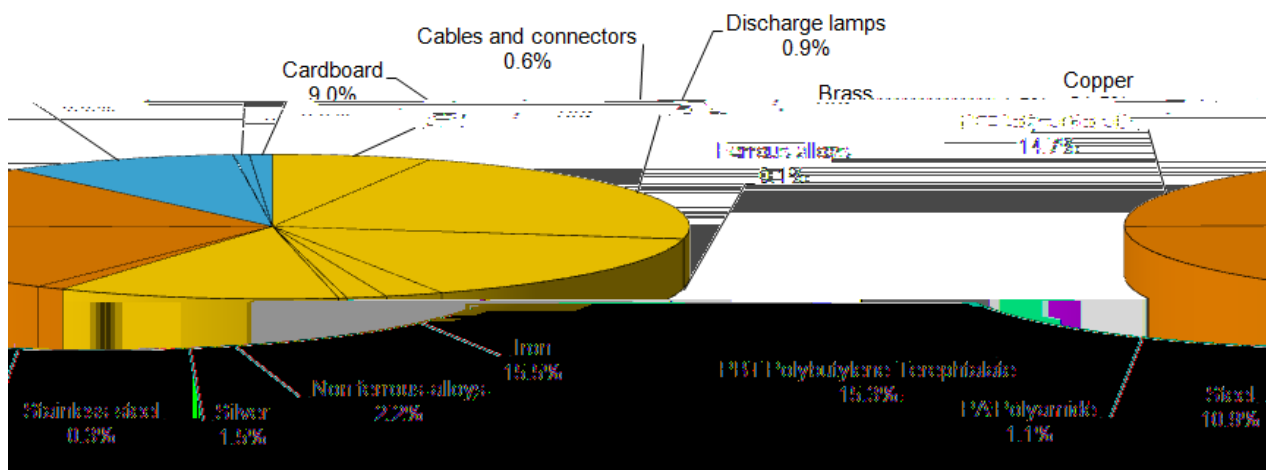
The representative product used for the analysis is RXM2AB2P7. The relay has 2 C/O contacts with LED indicator and push button. The control voltage is 230 Vac 50/60Hz.

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.

The environmental analysis was performed in conformity with ISO 14040.

Constituent materials

The mass of the product range is from 35 g and 41 g including packaging. It is 39 g for the RXM2AB2P7. The constituent materials are distributed as follows:



Substance assessment

Products of this range are designed in conformity with the requirements of the European RoHS Directive 2011/65/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) as mentioned in the 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) . (<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>)

Manufacturing

The RXM.AB Miniature Plug-in Relay product range is manufactured at a Schneider Electric production site on which an ISO14001 certified environmental management system has been established.

Product Environmental Profile – PEP

Distribution

The weight and volume of the packaging have been optimized, based on the European Union's packaging directive.

The RXM2AB2P7 packaging weight is 3.56 g. It consists of cardboard at 3.55 g and paper at 0.01 g.

Use

The products of the RXM.AB Miniature Plug-in Relay range do not generate environmental pollution (noise, emissions) requiring special precautionary measures in standard use.

The electrical power consumption depends on the conditions under which the product is implemented and used. The electrical power consumed by the RXM.AB Miniature Plug-in Relay range is between 0.8 W and 1.5 W. It is 40% of the time in active mode with a 1.2 W consumed power and 60% in standby mode with 0.8 W for the referenced RXM2AB2P7.

End of life

At end of life, the products in the RXM.AB Miniature Plug-in Relays have been optimized to decrease the amount of waste and allow recovery of the product components and materials.

This product range doesn't need any special end-of-life treatment. According to countries' practices this product can enter the usual end-of-life treatment process.

The recyclability potential of the products has been evaluated using the "ECO DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

According to this method, the potential recyclability ratio without packaging is: 48.6%.

As described in the recyclability calculation method this ratio includes only metals and plastics which have proven industrial recycling processes.

Product Environmental Profile – PEP

Environmental impacts

Life cycle assessment has been performed on the following life cycle phases: Materials and Manufacturing (M), Distribution (D), Installation (I) Use (U), and End of life (E).

Modeling hypothesis and method:

- The calculation was performed on RXM2AB2P7.
- Product packaging is included.
- Installation components: no special components included.
- Scenario for the Use phase: this product range is included in the category Energy consuming product. Assumed service lifetime is 10 years and use scenario is 40% of the time in active mode with a 1.2 W consumed power and 60% of the time in standby mode with a 0.8 W consumed power.
- The geographical representative area for the assessment is worldwide and the electrical power model used for calculation is European model.
- End of life impacts are based on a worst case transport distance to the recycling plant (1000km).

Presentation of the product environmental impacts

Environmental indicators	Unit	RXM2AB2P7					
		S = M + D + I + U + E	M	D	I	U	E
Air Acidification (AA)	kg H+ eq	1.08E-02	1.01E-04	1.67E-06	0*	1.07E-02	5.05E-07
Air toxicity (AT)	m ³	1.27E+07	2.04E+05	2.48E+03	0*	1.24E+07	7.52E+02
Energy Depletion (ED)	MJ	1.01E+03	4.70E+00	1.51E-01	0*	1.01E+03	3.62E-02
Global Warming Potential (GWP)	kg CO ₂ eq.	5.00E+01	2.59E-01	1.16E-02	0*	4.97E+01	2.57E-03
Hazardous Waste Production (HWP)	kg	1.54E-02	6.91E-03	3.11E-06	0*	8.52E-03	3.18E-09
Ozone Depletion Potential (ODP)	kg CFC-11 eq.	1.14E-05	2.83E-08	5.91E-09	0*	1.13E-05	4.87E-12
Photochemical Ozone Creation Potential (POCP)	kg C H eq.	3.21E-03	1.30E-04	8.20E-06	0*	3.07E-03	6.40E-07
Raw Material Depletion (RMD)	Y-1	3.78E-14	3.72E-14	2.09E-19	0*	6.70E-16	5.25E-20
Water Depletion (WD)	dm ³	1.33E+02	3.74E+00	1.04E-02	0*	1.30E+02	2.67E-04
Water Eutrophication (WE)	kg PO ₄ ³⁻ eq.	5.37E-04	6.49E-05	1.45E-07	0*	4.72E-04	4.78E-09
Water Toxicity (WT)	m ³	2.25E+01	3.29E-01	2.53E-03	0*	2.21E+01	1.10E-03

Life cycle assessment has been performed with the EIME software (Environmental Impact and Management Explorer), version 5.5 and with its database version 2015-10.

The Use phase is the life cycle phase which has the greatest impact on the majority of environmental 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 RMD) of other products in this family may be proportional extrapolated by energy consumption values. For RMD, impact may be proportional extrapolated by the mass of the product. For HWP, 50% of the impact may be proportional to the energy consumption values and 50% proportional to the mass of the product.

System approach

As the products of the range are designed in accordance with the European RoHS Directive 2011/65/EU, they can be incorporated without any restriction in an assembly

