Product Environmental Profile

Harmony RPF Power Relay

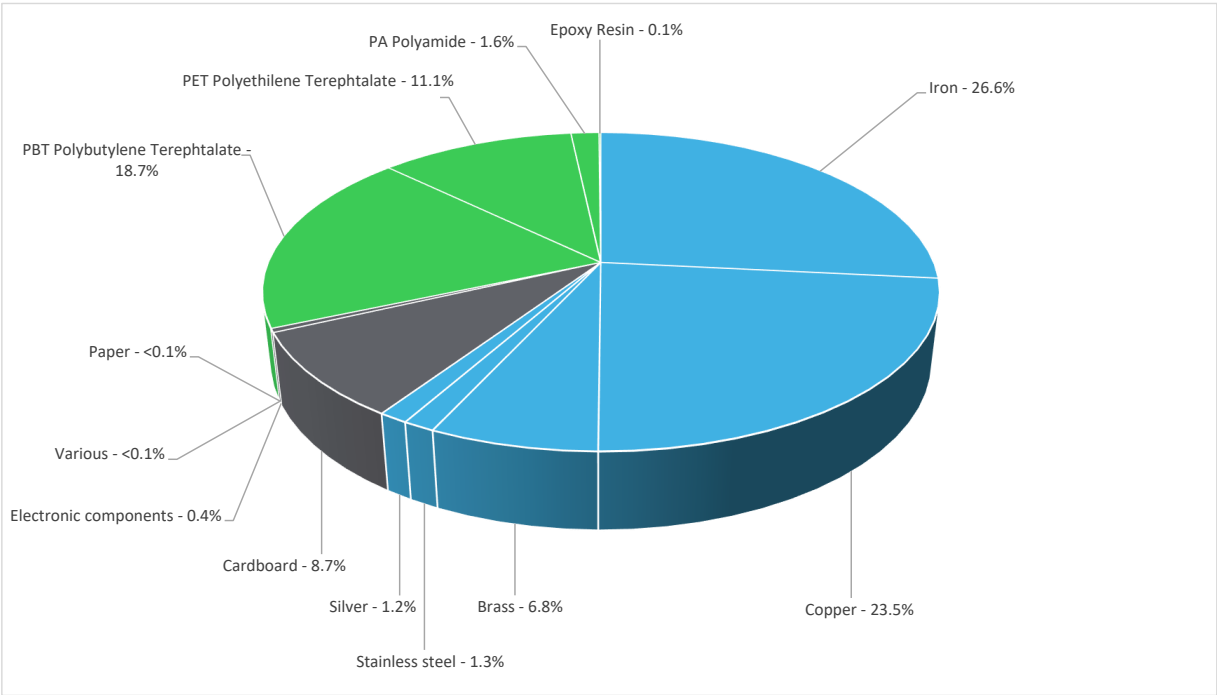
Range Consists of RPF2A and RPF2B Series Relays

General information

Reference product	Harmony RPF Power Relay - RPF2AP7
Description of the product	The product is an electrically operated switch which enables current to flow through it on one circuit and can switch a current on and off on a second circuit.
Description of the range	This range consists of RPF2A and RPF2B series designed with DIN rail mounting and two holes for direct mounting. Input voltage range from 12 Vdc to 24 Vdc and 12 Vac to 240 Vac.The RPF2A series consist of double pole single throw with 2 NO contacts, and RPF2B series consist of double pole double throw with 2 NO and 2 NC contacts. The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology.
Functional unit	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 majorly in industrial applications. Product has lifetime of 10 years with a 30% use rate and product is adhering to international standards IEC 61810-1.
Specifications are:	Rated Operational Current; 30 A at 277 V (AC) NO conforming to UL 20 A at 28 V (DC) NO conforming to UL 30 A at 250 V (AC) NO conforming to IEC 25 A at 28 V (DC) NO conforming to IEC Operating rate: <= 1200 cycles/hour under load <= 18000 cycles/hour no-load Mechanical durability; 5000000 cycles

Constituent materials

Reference product mass	88.25 g	including the product, its packaging and additional elements and accessories



Plastics	31.50%	
Metals	59.40%	
Others	9.10%	

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
https://www.se.com/ww/en/work/support/green-premium/

Additional environmental information

End Of Life	Recyclability potential:	**64%**	The recyclability rate was calculated from the recycling rates of each material making up the product with the exception of data using the ESR database. For materials or components using the ESR database or the absence of data the conservative hypothesis "0% recyclability" was used.

Environmental impacts

Reference service life time	10 years
Product category	Other equipments - Active product
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study
Electricity consumtion	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligable consumption
Installation elements	The product does not require any installation operations
Use scenario	The product is in active mode 30% of the time with a power use of 2.24 W and 70% of the time with off mode with power use of 0W for 10 years
Time representativeness	The collected data are representative of the year 2024
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are Similar and représentaive of the actual type of technologies used to make the product.
Geographical representativeness	Rest of the World

Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; High voltage; 2018; China, CN	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27	Electricity Mix; Low voltage; 2018; Europe, EU-27
		Electricity Mix; Low voltage; 2018; Asia Pacific, APAC	Electricity Mix; Low voltage; 2018; Asia Pacific, APAC	Electricity Mix; Low voltage; 2018; Asia Pacific, APAC
		Electricity Mix; Low voltage; 2018; United States, US	Electricity Mix; Low voltage; 2018; United States, US	Electricity Mix; Low voltage; 2018; United States, US
		Electricity Mix; Low voltage; 2018; Brazil, BR	Electricity Mix; Low voltage; 2018; Brazil, BR	Electricity Mix; Low voltage; 2018; Brazil, BR

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

Mandatory Indicators		**Harmony RPF Power Relay - RPF2AP7**						
Impact indicators	**Unit**	**Total (without Module D)**	**[A1 - A3] - Manufacturing**	**[A4] - Distribution**	**[A5] - Installation**	**[B1 - B7] - Use**	**[C1 - C4] - End of life**	**[D] - Benefits and loads**
Contribution to climate change	kg CO2 eq	3.03E+01	7.67E-01	1.09E-01	0*	2.92E+01	2.05E-01	-1.98E-01
Contribution to climate change-fossil	kg CO2 eq	3.03E+01	7.59E-01	1.09E-01	0*	2.92E+01	2.00E-01	-1.93E-01
Contribution to climate change-biogenic	kg CO2 eq	4.34E-02	8.94E-03	0*	0*	2.99E-02	4.49E-03	-4.36E-03
Contribution to climate change-land use and land use change	kg CO2 eq	8.81E-08	1.70E-08	0*	0*	0*	7.11E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.22E-07	1.94E-07	9.56E-08	0*	1.30E-07	2.29E-09	-5.94E-08
Contribution to acidification	mol H+ eq	1.83E-01	1.05E-02	4.47E-04	0*	1.71E-01	8.93E-04	-4.27E-03
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	2.13E-04	2.95E-05	0*	0*	4.93E-05	1.34E-04	-5.16E-07
Contribution to eutrophication marine	kg N eq	2.08E-02	9.95E-04	2.03E-04	0*	1.95E-02	1.48E-04	-1.34E-04
Contribution to eutrophication, terrestrial	mol N eq	2.73E-01	1.07E-02	2.21E-03	0*	2.58E-01	1.79E-03	-1.53E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	6.88E-02	3.92E-03	7.35E-04	0*	6.37E-02	5.00E-04	-7.42E-04
Contribution to resource use, minerals and metals	kg Sb eq	9.84E-04	9.78E-04	0*	0*	1.43E-06	4.23E-06	-4.97E-05
Contribution to resource use, fossils	MJ	6.52E+02	1.15E+01	1.35E+00	0*	6.32E+02	7.26E+00	-2.85E+00
Contribution to water use	m3 eq	1.70E+00	4.65E-01	5.49E-03	7.08E-04	1.07E+00	1.52E-01	-2.29E-01

Inventory flows Indicators		Harmony RPF Power Relay - RPF2AP7						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.11E+02	4.07E-01	0*	0*	1.11E+02	1.02E-01	-1.00E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	1.60E-01	1.60E-01	0*	0*	0*	0*	0.00E+00
Contribution to total use of renewable primary energy resources	MJ	1.11E+02	5.67E-01	0*	0*	1.11E+02	1.02E-01	-1.00E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	6.52E+02	1.08E+01	1.35E+00	0*	6.32E+02	7.26E+00	-2.85E+00
Contribution to use of non renewable primary energy resources used as raw material	MJ	7.37E-01	7.37E-01	0*	0*	0*	0*	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	6.52E+02	1.15E+01	1.35E+00	0*	6.32E+02	7.26E+00	-2.85E+00
Contribution to use of secondary material	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to net use of freshwater	m^3	3.95E-02	1.08E-02	1.28E-04	1.65E-05	2.50E-02	3.53E-03	-5.32E-03
Contribution to hazardous waste disposed	kg	6.53E+00	5.92E+00	0*	0*	6.07E-01	0*	-4.15E+00
Contribution to non hazardous waste disposed	kg	4.78E+00	3.44E-01	0*	7.74E-03	4.39E+00	3.26E-02	-5.73E-02
Contribution to radioactive waste disposed	kg	8.61E-04	9.43E-05	2.15E-05	0*	7.44E-04	1.39E-06	-2.93E-05
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	5.98E-02	7.94E-03	0*	0*	0*	5.19E-02	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	5.93E-04	8.01E-05	0*	0*	0*	5.13E-04	0.00E+00
* represents less than 0.01% of the total life cycle of the reference flow								
Contribution to biogenic carbon content of the product	kg de C	0.00E+00						
Contribution to biogenic carbon content of the associated packaging	kg de C	2.17E-03						

Mandatory Indicators		Harmony RPF Power Relay - RPF2AP7							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	2.92E+01	0*	0*	0*	0*	0*	2.92E+01	0*
Contribution to climate change-fossil	kg CO2 eq	2.92E+01	0*	0*	0*	0*	0*	2.92E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	2.99E-02	0*	0*	0*	0*	0*	2.99E-02	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	1.30E-07	0*	0*	0*	0*	0*	1.30E-07	0*
Contribution to acidification	mol H+ eq	1.71E-01	0*	0*	0*	0*	0*	1.71E-01	0*
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	4.93E-05	0*	0*	0*	0*	0*	4.93E-05	0*
Contribution to eutrophication marine	kg N eq	1.95E-02	0*	0*	0*	0*	0*	1.95E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	2.58E-01	0*	0*	0*	0*	0*	2.58E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	6.37E-02	0*	0*	0*	0*	0*	6.37E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	1.43E-06	0*	0*	0*	0*	0*	1.43E-06	0*
Contribution to resource use, fossils	MJ	6.32E+02	0*	0*	0*	0*	0*	6.32E+02	0*
Contribution to water use	m3 eq	1.07E+00	0*	0*	0*	0*	0*	1.07E+00	0*

Inventory flows Indicators		Harmony RPF Power Relay - RPF2AP7							
Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.11E+02	0*	0*	0*	0*	0*	1.11E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	1.11E+02	0*	0*	0*	0*	0*	1.11E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	6.32E+02	0*	0*	0*	0*	0*	6.32E+02	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	6.32E+02	0*	0*	0*	0*	0*	6.32E+02	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m^3	2.50E-02	0*	0*	0*	0*	0*	2.50E-02	0*
Contribution to hazardous waste disposed	kg	6.07E-01	0*	0*	0*	0*	0*	6.07E-01	0*
Contribution to non hazardous waste disposed	kg	4.39E+00	0*	0*	0*	0*	0*	4.39E+00	0*
Contribution to radioactive waste disposed	kg	7.44E-04	0*	0*	0*	0*	0*	7.44E-04	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 is used

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.

Registration number :	ENVPEP2502021_V1	*Drafting rules*	PCR-4-ed4-EN-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	02-2025	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years

Independent verification of the declaration and data, in compliance with ISO 14021 : 2016

Internal X External

The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022

The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14021:2016 "Environmental labels and declarations. Type II environmental declarations"

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