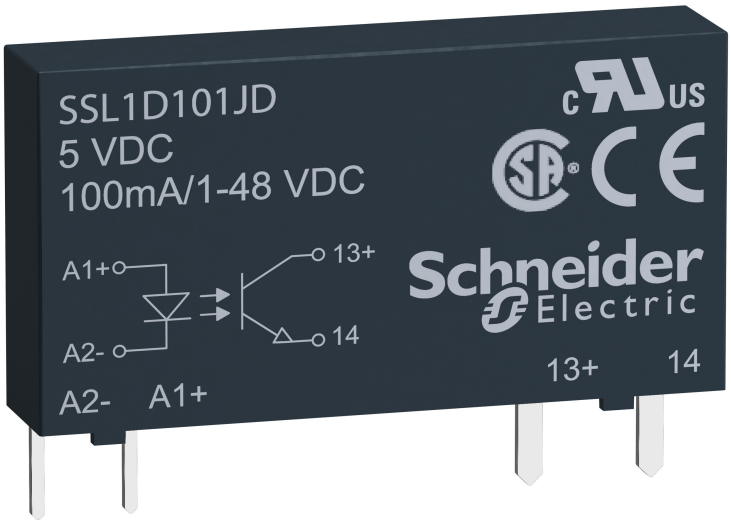
Product Environmental Profile

ZELIO Relays
Solid State Relays, Plug-in
1 Phase



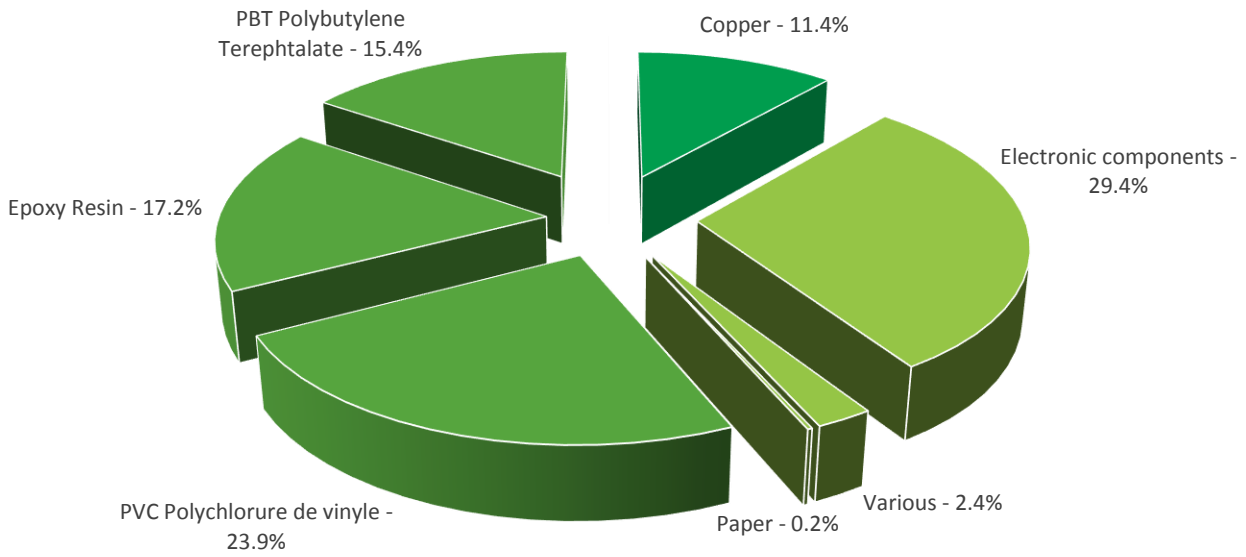
Schneider Electric

General information

Representative product	Solid State Relay_Plug-in -SSL1D101JD
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 SSL1D and SSL1A series designed for single-phase with DIN rail mounting socket and direct mounting on PCB. The range provide with DC switching, Zero Voltage switching for resistive load and Random switching for inductive load applications. The range consist of 1 NO contact with input voltage range from 3 Vdc to 72 Vdc; output voltage range from 1 Vdc to 48Vdc and 24 Vac to 280 Vac. 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.
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 during 20 years with a 30% use rate, in compliance with French standards.

Constituent materials

Reference product mass	5.21 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
http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page

Additional environmental information

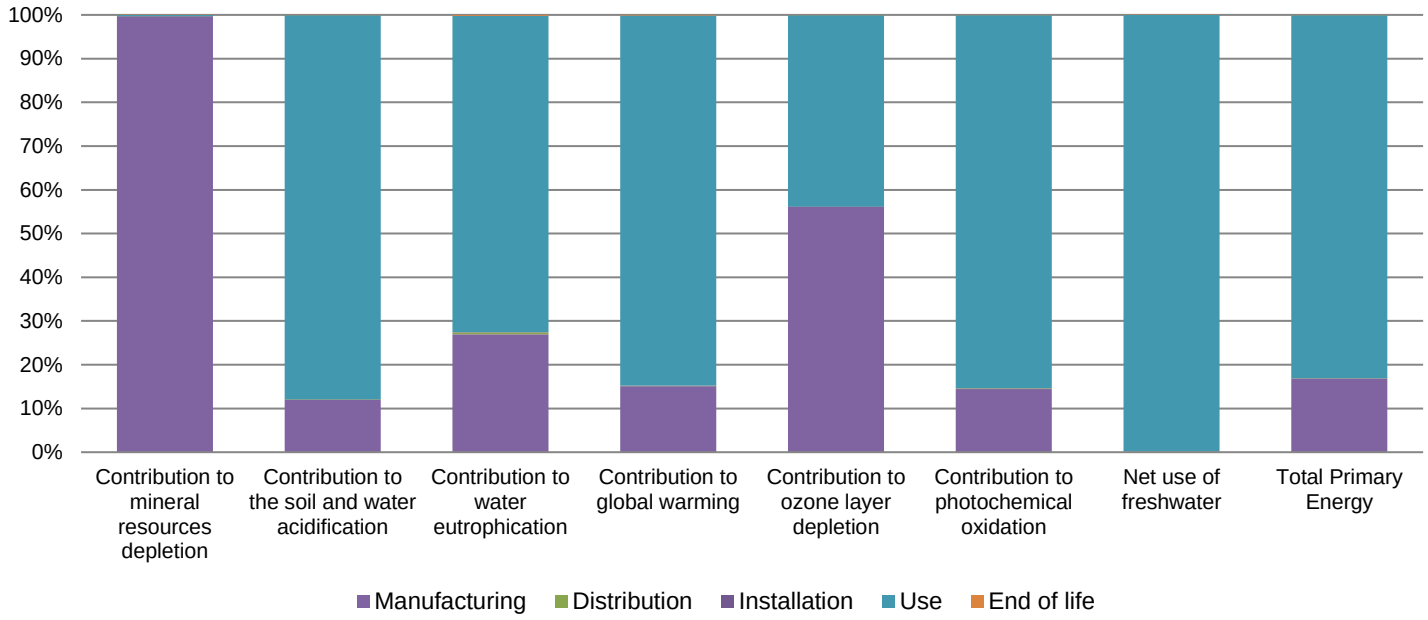
The Solid State Relay_Plug-in presents the following relevent environmental aspects			
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified		
Distribution	Weight and volume of the packaging optimized, based on the European Union's packaging directive Packaging weight is 1.4 g, consisting of PVC (90%), Elastomer (9%), paper (1%) Product distribution optimised by setting up local distribution centres		
Installation	Ref SSL1D101JD 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 No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process.		
	Recyclability potential:	**11%**	Based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

Environmental impacts

Reference life time	20 years			
Product category	Passive products - non-continuous operation			
Installation elements	No special components needed			
Use scenario	Product dissipation is 0.04 W full load, loading rate is 30% and service uptime percentage is 30% The product only have ON-OFF mode and 30% of the time in active mode with a power use of 0.04W for 20 years.			
Geographical representativeness	Europe			
Technological representativeness	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.			
Energy model used	**Manufacturing**	**Installation**	**Use**	**End of life**
	Energy model used: Mexico	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity grid mix; AC; consumption mix, at consumer; < 1kV; EU-27

Compulsory indicators	**Solid State Relay_Plug-in - SSL1D101JD**						
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	1.44E-05	1.44E-05	0*	0*	4.48E-08	0*
Contribution to the soil and water acidification	kg SO_2 eq	2.45E-03	2.92E-04	3.07E-06	4.45E-07	2.15E-03	1.21E-06
Contribution to water eutrophication	kg PO_4^{3-} eq	1.79E-04	4.84E-05	7.07E-07	1.47E-07	1.30E-04	3.64E-07
Contribution to global warming	kg CO_2 eq	6.09E-01	9.19E-02	6.72E-04	3.41E-04	5.15E-01	7.62E-04
Contribution to ozone layer depletion	kg CFC11 eq	7.66E-08	4.31E-08	0*	1.07E-11	3.36E-08	2.94E-11
Contribution to photochemical oxidation	kg C_2H_4 eq	1.38E-04	2.00E-05	2.19E-07	4.45E-08	1.18E-04	1.22E-07

Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	1.87E+00	1.29E-03	0*	0*	1.87E+00	0*
Total Primary Energy	MJ	1.24E+01	2.09E+00	9.50E-03	2.07E-03	1.03E+01	5.72E-03



Optional indicators	Solid State Relay_Plug-in - SSL1D101JD						
Impact indicators	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	6.81E+00	9.50E-01	9.44E-03	1.90E-03	5.85E+00	5.23E-03
Contribution to air pollution	m³	3.30E+01	1.07E+01	2.86E-02	1.54E-02	2.22E+01	4.20E-02
Contribution to water pollution	m³	4.01E+01	1.87E+01	1.11E-01	2.11E-02	2.13E+01	5.36E-02
Resources use	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.35E-04	1.35E-04	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	1.39E+00	7.71E-02	0*	0*	1.31E+00	0*
Total use of non-renewable primary energy resources	MJ	1.10E+01	2.01E+00	9.49E-03	2.07E-03	8.98E+00	5.71E-03
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.39E+00	7.71E-02	0*	0*	1.31E+00	0*
Use of renewable primary energy resources used as raw material	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.09E+01	1.92E+00	9.49E-03	2.07E-03	8.98E+00	5.71E-03
Use of non renewable primary energy resources used as raw material	MJ	9.39E-02	9.39E-02	0*	0*	0*	0*
Use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*
Waste categories	**Unit**	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	1.65E-01	1.55E-01	0*	2.67E-03	2.69E-04	7.30E-03
Non hazardous waste disposed	kg	1.96E+00	4.34E-02	0*	0*	1.92E+00	0*
Radioactive waste disposed	kg	1.71E-03	4.27E-04	0*	0*	1.28E-03	0*

Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	6.19E-04	7.86E-05	0*	1.20E-04	0*	4.20E-04
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	2.28E-04	2.90E-05	0*	6.90E-05	0*	1.31E-04
Exported Energy	MJ	0.00E+00	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 EIME v5.6, database version 2017-03.

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 and Contribution to Ozone layer 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 the mass of the product. For Contribution to Ozone layer depletion, impact may be 44% of the energy consumption values and 56% of the 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.

Registration N°	ENVPEP1307068_V2	*Drafting rules*	PCR-ed3-EN-2015 04 02
Date of issue	04/2017	*Supplemented by*	PSR-0005-ed2-EN-2016 03 29
Validity period	5 years	*Information and reference documents*	www.pep-ecopassport.org

Independent verification of the declaration and data, in compliance with ISO 14025 : 2010

Internal X External

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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