

# Product Environmental Profile

## Solid State Relay SSL1



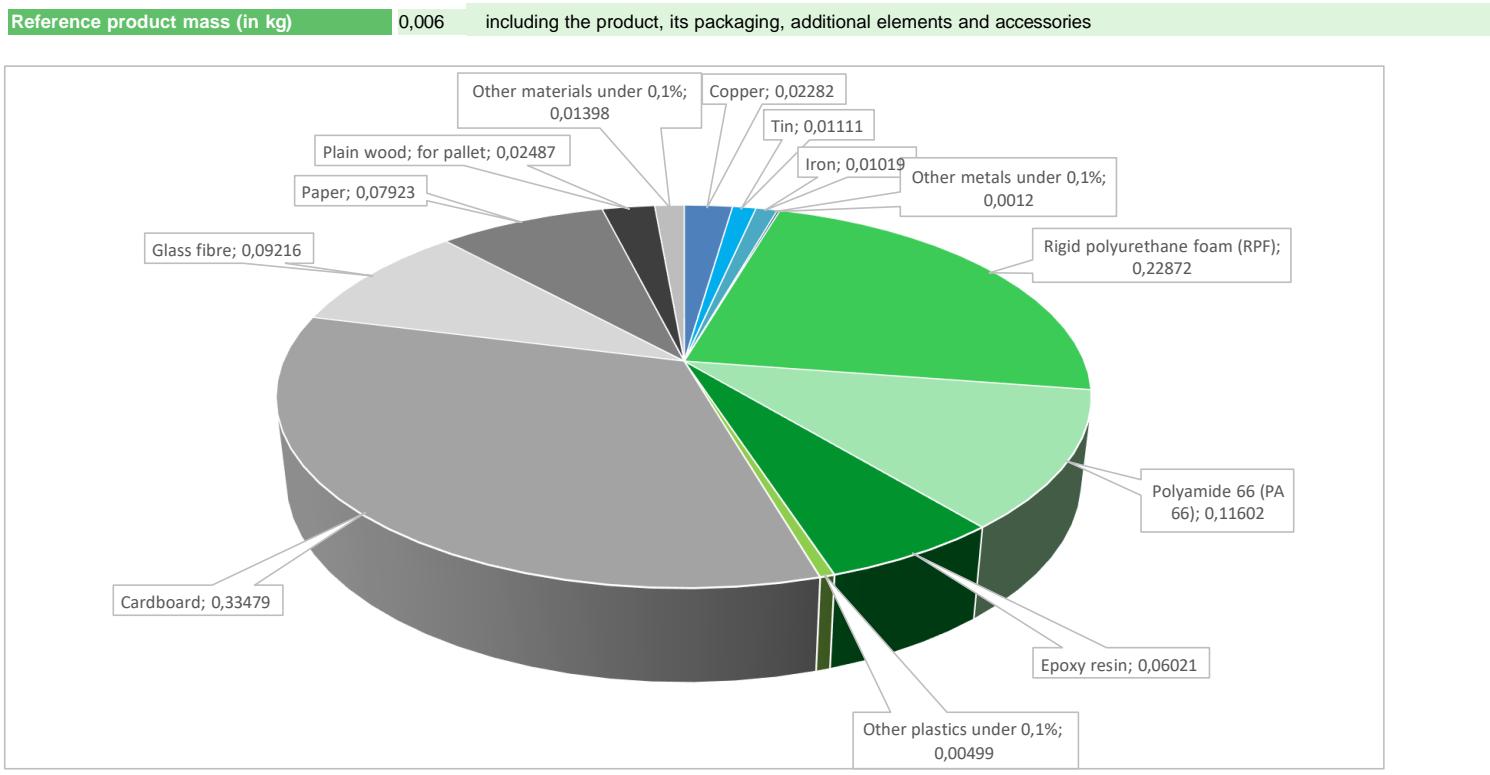


## General information

Reference product	Solid State Relay SSL1 - SSL1A12JD																																	
Description of the product	A relay protects electronic devices by switching the current from one path to another one. The 5 mm SSR series offers options for both AC and DC output switching. The AC output variants offer both zero-cross and random switching whilst the DC output variants provide switching frequencies of up to 500 Hz.																																	
Description of the range	All the product under the reference of SSL1 are included. DC and AC switching are included with different rated output voltages, control voltages, max rated currents.																																	
Functional unit	1 product Description: Protect during 10 years against overvoltage electrical equipment by switching the current on and off; with the rated operational current: up to 6 ADC and 2 AAC, rated operation voltage: up to 48 VDC and 280 VAC and control voltage ranges: 3 - 12 VDC / 15 - 30 VDC.																																	
Product's final assembly site	China																																	
	<table border="1"> <thead> <tr> <th colspan="3">Characteristics of covered products</th> </tr> <tr> <th></th> <th>Total power dissipation in W</th> <th>Weight in kg</th> </tr> <tr> <th>Products Names</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>SSL1D03JD</td> <td>2.03</td> <td>0,00598</td> </tr> <tr> <td>SSL1D03BD</td> <td>2.01</td> <td>0,00598</td> </tr> <tr> <td>SSL1D101JD</td> <td>0.22</td> <td>0,00598</td> </tr> <tr> <td>SSL1D101BD</td> <td>0.30</td> <td>0,00598</td> </tr> <tr> <td>SSL1A12JD</td> <td>3.23</td> <td>0,00598</td> </tr> <tr> <td>SSL1A12BD</td> <td>3.21</td> <td>0,00598</td> </tr> <tr> <td>SSL1A12JDR</td> <td>3.23</td> <td>0,00598</td> </tr> <tr> <td>SSL1A12BDR</td> <td>3.21</td> <td>0,00598</td> </tr> </tbody> </table>	Characteristics of covered products				Total power dissipation in W	Weight in kg	Products Names			SSL1D03JD	2.03	0,00598	SSL1D03BD	2.01	0,00598	SSL1D101JD	0.22	0,00598	SSL1D101BD	0.30	0,00598	SSL1A12JD	3.23	0,00598	SSL1A12BD	3.21	0,00598	SSL1A12JDR	3.23	0,00598	SSL1A12BDR	3.21	0,00598
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## Constituent materials



## Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric website  
<https://www.se.com>



## Additional environmental information

End Of Life	Recyclability potential:	27%	The recyclability rate was calculated using EIME tool based on the Eco'DEE method (2008) and the CODDE database (including recyclability potential data)
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## Environmental impacts

Reference service lifetime	10 years			
Product category	Other equipment's - 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 consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates also consumption that is take into account separately.			
Installation elements	No special components needed			
Use scenario	Active Product: Energy Consumption Active 20% and Off 80%			
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 representative of the actual type of technologies used to make the product.			
Geographical representativeness	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	China	Global	Global	Global
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; Low voltage; 2020; China, CN	Global: only European modules available	Global	No primary energy model used

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.se.com/contact>

Mandatory Indicators		Solid state relay SSL1 - SSL1A12JD						
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	3,68E+01	5,06E-01	0*	4,56E-03	3,63E+01	4,21E-03	-8,36E-04
Contribution to climate change-fossil	kg CO2 eq	3,68E+01	5,11E-01	0*	0*	3,62E+01	4,20E-03	-8,21E-04
Contribution to climate change-biogenic	kg CO2 eq	2,74E-02	0*	0*	3,73E-03	2,86E-02	1,11E-05	-1,50E-05
Contribution to climate change-land use and land use change	kg CO2 eq	2,47E-09	1,29E-09	5,47E-10	3,25E-11	0*	5,93E-10	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	1,79E-07	7,98E-09	0*	2,97E-11	1,71E-07	1,83E-10	-8,25E-11
Contribution to acidification	mol H+ eq	2,30E-01	3,74E-03	6,12E-05	0*	2,26E-01	0*	-1,76E-05
Contribution to eutrophication, freshwater	kg (PO4)3- eq	2,76E-05	8,39E-07	0*	0*	2,62E-05	5,32E-07	-2,82E-09
Contribution to eutrophication marine	kg N eq	2,58E-02	4,12E-04	1,40E-05	0*	2,54E-02	0*	-9,06E-07
Contribution to eutrophication, terrestrial	mol N eq	3,09E-01	4,62E-03	1,53E-04	0*	3,04E-01	0*	-1,01E-05
Contribution to photochemical ozone formation - human health	kg COVNM eq	8,55E-02	1,39E-03	3,95E-05	0*	8,41E-02	0*	-3,69E-06
Contribution to resource use, minerals and metals	kg Sb eq	1,24E-05	7,37E-06	0*	0*	5,00E-06	1,79E-08	-2,22E-06
Contribution to resource use, fossils	MJ	6,67E+02	1,06E+01	0*	0*	6,56E+02	0*	-1,25E-02
Contribution to water use	m3 eq	2,19E+00	1,91E-01	0*	0*	2,00E+00	4,14E-04	-6,68E-04

Inventory flows Indicators		Solid state relay SSL1 - SSL1A12JD						
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	8,31E+01	7,36E-01	0*	0*	8,24E+01	0*	-5,49E-04
Contribution to use of renewable primary energy resources used as raw material	MJ	4,60E-02	4,60E-02	0*	0*	0*	0*	0,00E+00
Contribution to total use of renewable primary energy resources	MJ	8,32E+01	7,82E-01	0*	0*	8,24E+01	0*	-5,49E-04

Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	6,67E+02	1,05E+01	0*	0*	6,56E+02	0*	-1,25E-02
Contribution to use of non renewable primary energy resources used as raw material	MJ	7,28E-02	7,28E-02	0*	0*	0*	0*	0,00E+00
Contribution to total use of non-renewable primary energy resources	MJ	6,67E+02	1,06E+01	0*	0*	6,56E+02	0*	-1,25E-02
Contribution to use of secondary material	kg	4,72E-07	4,72E-07	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	m³	5,09E-02	4,38E-03	0*	0*	4,65E-02	1,00E-05	-1,56E-05
Contribution to hazardous waste disposed	kg	9,68E-01	5,12E-02	0*	8,80E-04	9,09E-01	7,14E-03	-1,63E-02
Contribution to non hazardous waste disposed	kg	6,26E+00	9,58E-02	0*	0*	6,16E+00	1,16E-03	-5,90E-05
Contribution to radioactive waste disposed	kg	7,62E-04	1,16E-05	0*	0*	7,50E-04	3,91E-07	-4,22E-08
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	2,12E-04	6,85E-05	0*	0*	0*	1,44E-04	-4,02E-12
Contribution to materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to exported energy	MJ	0,00E+00	0*	0*	0*	0*	0*	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 of C	0,00E+00
Contribution to biogenic carbon content of the associated packaging	kg of C	1,02E-03

\* The calculation of the biogenic carbon is made with EIME v6.2

Mandatory Indicators	Unit	Solid state relay SSL1 - SSL1A12JD							
		[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	3,63E+01	0*	0*	0*	0*	0*	3,63E+01	0*
Contribution to climate change-fossil	kg CO2 eq	3,62E+01	0*	0*	0*	0*	0*	3,62E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	2,86E-02	0*	0*	0*	0*	0*	2,86E-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	1,71E-07	0*	0*	0*	0*	0*	1,71E-07	0*
Contribution to acidification	mol H+ eq	2,26E-01	0*	0*	0*	0*	0*	2,26E-01	0*
Contribution to eutrophication, freshwater	kg (PO4)3- eq	2,62E-05	0*	0*	0*	0*	0*	2,62E-05	0*
Contribution to eutrophication marine	kg N eq	2,54E-02	0*	0*	0*	0*	0*	2,54E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	3,04E-01	0*	0*	0*	0*	0*	3,04E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	8,41E-02	0*	0*	0*	0*	0*	8,41E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	5,00E-06	0*	0*	0*	0*	0*	5,00E-06	0*
Contribution to resource use, fossils	MJ	6,56E+02	0*	0*	0*	0*	0*	6,56E+02	0*
Contribution to water use	m³ eq	2,00E+00	0*	0*	0*	0*	0*	2,00E+00	0*

Inventory flows Indicators	Inventory flows	Unit	Solid state relay SSL1 - SSL1A12JD						
			[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	8,24E+01	0*	0*	0*	0*	0*	8,24E+01	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	8,24E+01	0*	0*	0*	0*	0*	8,24E+01	0*
Contribution to use of non-renewable primary energy excluding non-renewable primary energy used as raw material	MJ	6,56E+02	0*	0*	0*	0*	0*	6,56E+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	6,56E+02	0*	0*	0*	0*	0*	6,56E+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	m³	4,65E-02	0*	0*	0*	0*	0*	4,65E-02	0*
Contribution to hazardous waste disposed	kg	9,09E-01	0*	0*	0*	0*	0*	9,09E-01	0*
Contribution to non hazardous waste disposed	kg	6,16E+00	0*	0*	0*	0*	0*	6,16E+00	0*
Contribution to radioactive waste disposed	kg	7,50E-04	0*	0*	0*	0*	0*	7,50E-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 v6.2.2, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1+1 is used

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

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:	SCHN-01412-V01.01-EN	Drafting rules	PEP-PCR-ed4-2021 09 06
			Supplemented by PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH08	Information and reference documents	<a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a>
Date of issue	03-2025	Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal	External <input checked="" type="checkbox"/>		
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 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			

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