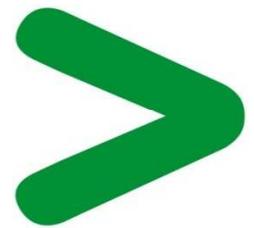


Product Environmental Profile

2-WIRE RS-485 INSULATED REPEATER





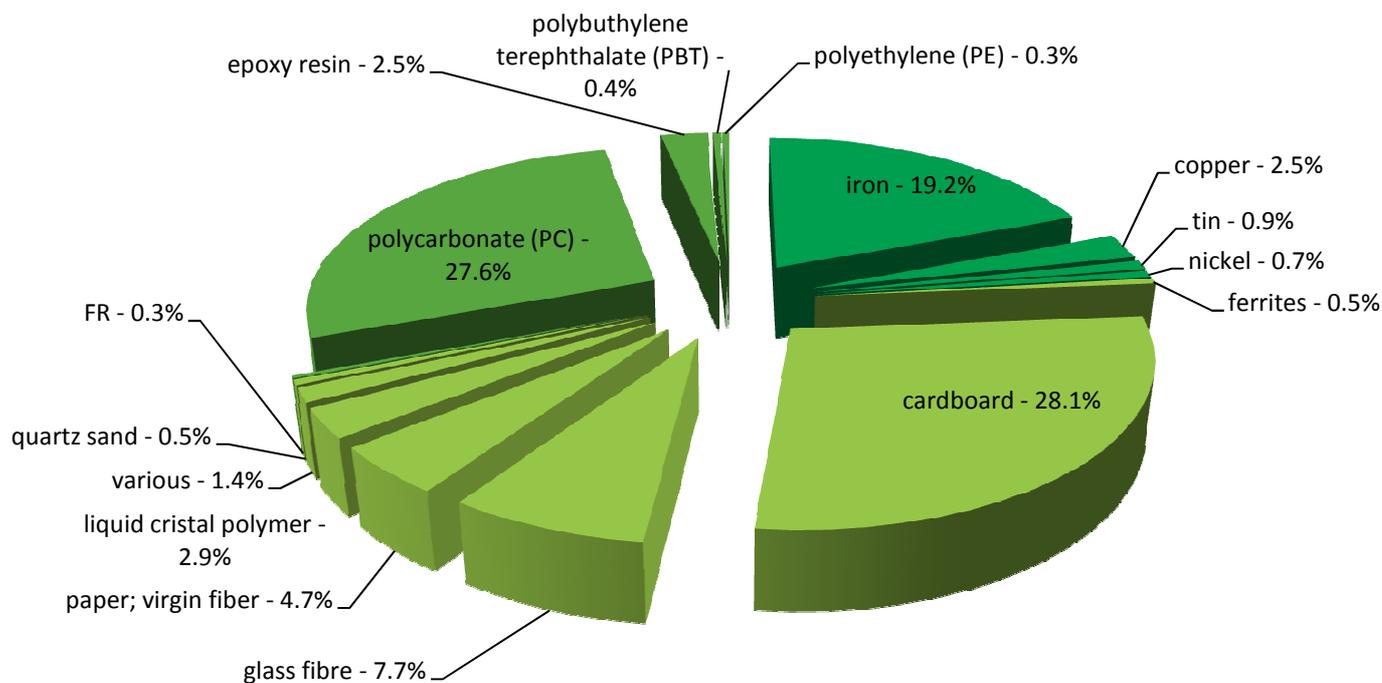
General information

Representative product	2-WIRE RS-485 INSULATED REPEATER -TRV00211
Description of the product	The product is a 2-WIRE RS-485 INSULATED REPEATER included in passive products - non-continuous operation category. The main purpose of the product is to monitor or control electrical values, alarm status, open/close signals in the ULP connection System which is isolated and inserted between the Modbus network inside the equipment and the Modbus network outside the equipment.
Functional unit	To monitor or control electrical values, alarm status, open/close signals in the ULP connection System which is isolated and inserted between the Modbus network inside the equipment and the Modbus network outside the equipment for 20 years.



Constituent materials

Reference product mass 105.9 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 2-WIRE RS-485 INSULATED REPEATER presents the following relevant environmental aspects

Design	
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 35.3 g, consisting of cardboard (30.0g) and paper (5.3g) Product distribution optimised by setting up local distribution centres
Installation	TRV00211 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 PCBA bigger than 10cm ² (7.0g) and Plastic parts with brominated FR (2.0g) 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 Recyclability potential: 4% 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 0.36 W full load, loading rate is 30% and service uptime percentage is 30%			
Geographical representativeness	Europe			
Technological representativeness	The product is a 2-WIRE RS-485 INSULATED REPEATER included in passive products - non-continuous operation category. The main purpose of the product is to monitor or control electrical values, alarm status, open/close signals in the ULP connection System which is isolated and inserted between the Modbus network inside the equipment and the Modbus network outside the equipment.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: China	Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27	Electricity Mix; AC; consumption mix, at consumer; < 1kV; EU-27

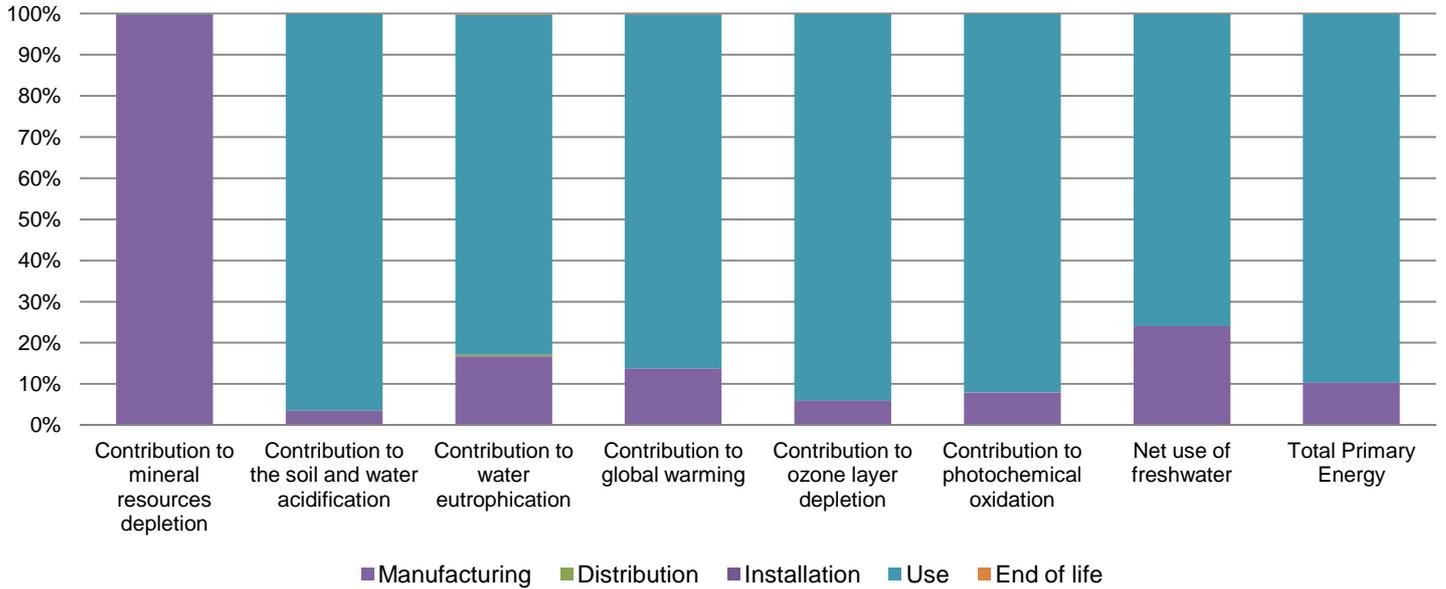
Compulsory indicators

2-WIRE RS-485 INSULATED REPEATER - TRV00211

Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	2.34E-04	2.34E-04	0*	0*	5.09E-07	0*
Contribution to the soil and water acidification	kg SO ₂ eq	8.76E-02	3.06E-03	6.24E-05	1.06E-05	8.45E-02	2.51E-05
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	3.83E-03	6.42E-04	1.44E-05	2.51E-06	3.17E-03	8.74E-06
Contribution to global warming	kg CO ₂ eq	1.30E+01	1.77E+00	1.37E-02	3.38E-03	1.12E+01	2.13E-02
Contribution to ozone layer depletion	kg CFC11 eq	2.89E-06	1.73E-07	0*	0*	2.71E-06	8.61E-10

Contribution to photochemical oxidation	kg C ₂ H ₄ eq	4.34E-03	3.41E-04	4.45E-06	1.11E-06	3.99E-03	2.42E-06
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Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	3.84E-02	9.24E-03	0*	4.13E-06	2.91E-02	1.40E-05
Total Primary Energy	MJ	2.53E+02	2.59E+01	1.93E-01	5.79E-02	2.26E+02	1.29E-01



Optional indicators		2-WIRE RS-485 INSULATED REPEATER - TRV00211					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	1.37E+02	2.12E+01	1.92E-01	4.78E-02	1.15E+02	1.07E-01
Contribution to air pollution	m ³	6.55E+02	1.74E+02	5.81E-01	3.74E-01	4.79E+02	8.47E-01
Contribution to water pollution	m ³	7.86E+02	3.14E+02	2.25E+00	4.00E-01	4.69E+02	1.25E+00
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	3.67E-04	3.67E-04	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	1.74E+01	1.16E+00	0*	0*	1.62E+01	0*
Total use of non-renewable primary energy resources	MJ	2.35E+02	2.47E+01	1.93E-01	5.78E-02	2.10E+02	1.29E-01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.67E+01	4.56E-01	0*	0*	1.62E+01	0*
Use of renewable primary energy resources used as raw material	MJ	7.07E-01	7.07E-01	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.34E+02	2.33E+01	1.93E-01	5.78E-02	2.10E+02	1.29E-01
Use of non renewable primary energy resources used as raw material	MJ	1.44E+00	1.44E+00	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	2.49E+00	2.27E+00	0*	7.07E-02	0*	1.48E-01
Non hazardous waste disposed	kg	4.20E+01	2.53E-01	0*	0*	4.18E+01	0*
Radioactive waste disposed	kg	3.42E-02	1.19E-04	0*	0*	3.41E-02	0*
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	3.03E-03	2.96E-04	0*	0*	0*	2.73E-03
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	4.78E-03	2.30E-04	0*	0*	0*	4.55E-03
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 v5.5, database version 2015-04.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

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°	SCHN-00010-V01.01-EN	Drafting rules	PCR-ed3-EN-2015 04 02
Verifier accreditation N°	VH08	Supplemented by	PSR-0005-ed1-EN -2012 12 11
Date of issue	03-2016	Information and reference documents	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010			
Internal	External	X	
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)			
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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