

Product Environmental Profile

SCADAPack 474 Smart RTU

Remote Programmable Smart RTUs 470 / 474





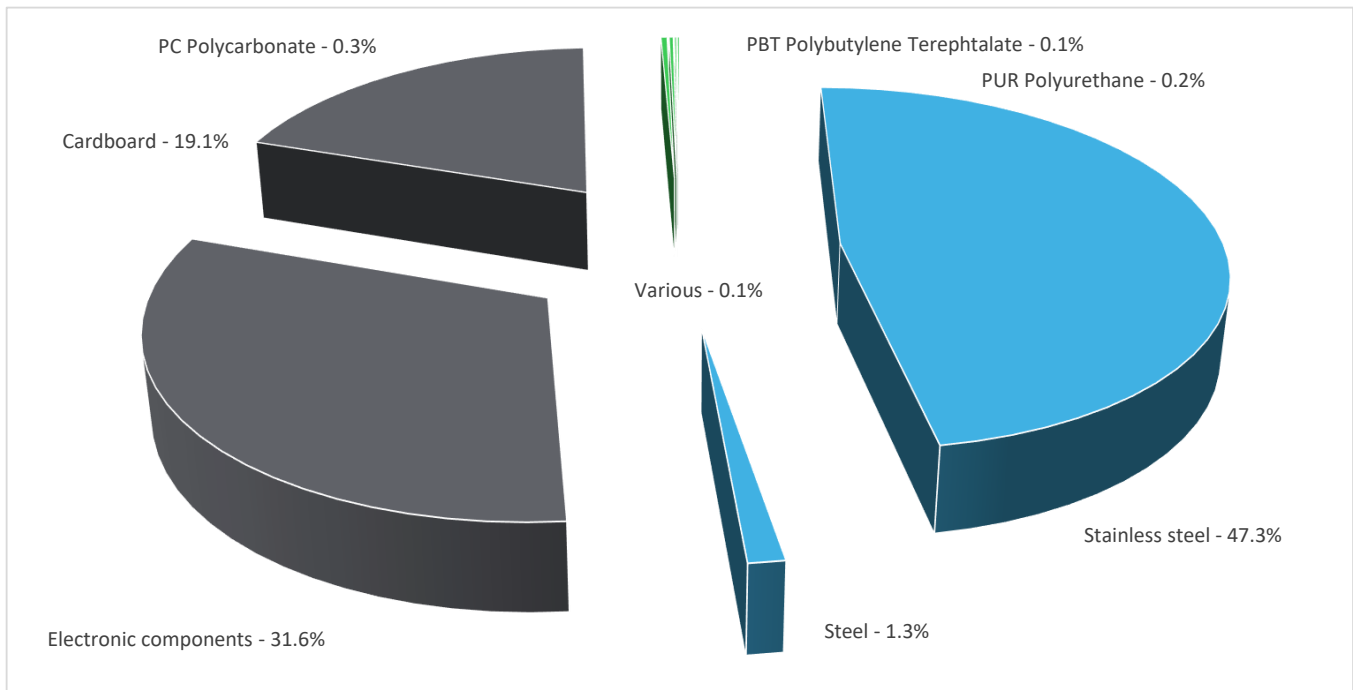
General information

Representative product	SCADAPack 474 Smart RTU - TBUP474-UA50-BB10S
Description of the product	The representative product used for the analysis is TBUP474-UA50-BB10S which is a compact Programmable RTU (Remote Terminal Unit) that provides Remote Telemetry functions for use in SCADA and telemetry applications.
Description of the range	<p>The main function of the Remote Programmable Smart RTUs 470 and 474 is to provide Remote Telemetry functions for use in SCADA and telemetry applications.</p> <p>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.</p>
Functional unit	Monitoring and transition of data from field instruments to a central monitoring system (up to 16 digital inputs, 10 digital outputs, 8 analog inputs and 2 digital outputs) plus I/O expansion. For operation in excess of 10 years and a 100% use rate; within adverse environments, wide ranging temperature and hazardous locations



Constituent materials

Reference product mass	1406 g including the product, its packaging and additional elements and accessories
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	Plastics	0.7%
	Metals	48.6%
	Others	50.7%

Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 2 January 2013, amended in March 2015, 2015/863/EU and in November 2017, 2017/2102/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), Bis (2-ethylhexyl)phthalate - DEHP, Benzyl butyl phthalate– BBP, Dibutyl phthalate - DBP, Diisobutyl phthalate - DIBP) 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>

Additional environmental information

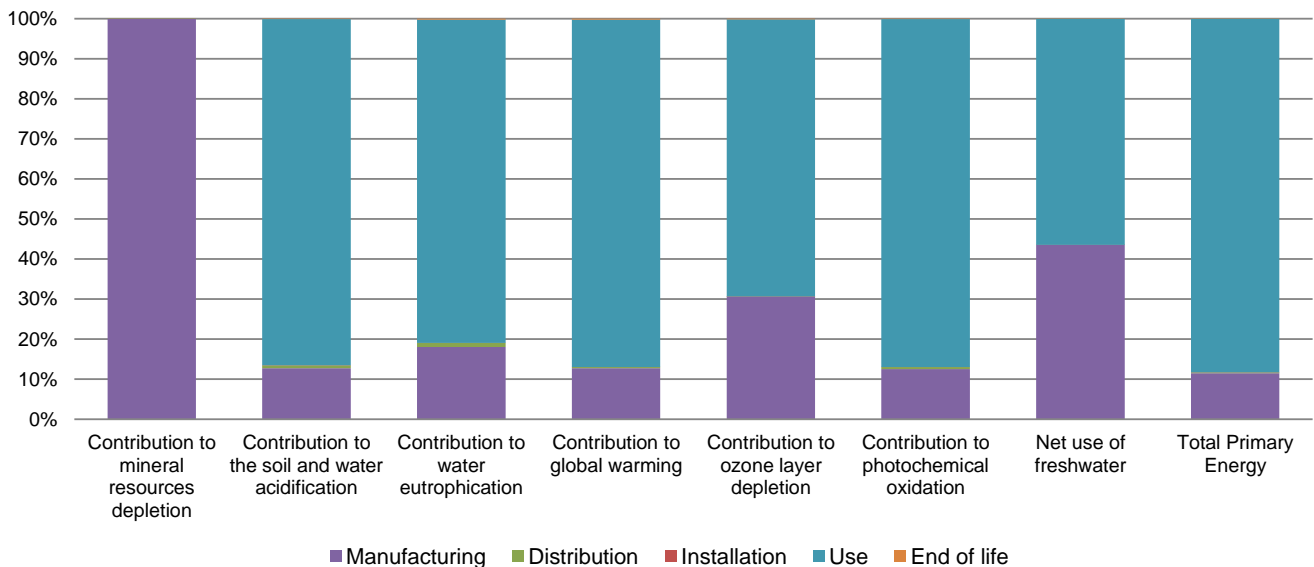
The SCADAPack 474 Smart RTU presents the following relevant environmental aspects

Design	This product is a low-power controller (relative to many other automation products such as standard PLCs). This results in a reduced need for batteries in solar powered installations. Applications also include production optimization in O&G production fields resulting in less use of energy per barrel or BOE to produce the fluids. Another common application is pump control which can be optimized to take advantage of VFD (Variable Frequency Drives) and reduce overall energy consumption when pumping water or waste water.
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 276.4 g, consisting of Cardboard box (99%) and CD (PC) (1%) Product distribution optimised by setting up local distribution centres
Installation	The product does not require any special installation materials or operations. Installation is to be performed by qualified personnel.
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 PCBAs (158.4g, 132g, 44g) and LiSoCl2 battery (6g) 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: 61% Based on "ECO'DEEEE 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	10 years			
Installation elements	No special components needed			
Use scenario	The product consumes an estimated average of < 4.7 W however actual consumption varies based on application specifics.			
	The NVRAM and clock/calendar on the controller board is powered by a lithium battery that is rated for 2 years of power-off time. Actual battery life time depends on environmental conditions and the amount of time the product is not under power. Estimated average usage is approx. 1.2 batteries over the product life-time.			
Geographical representativeness	The product can be used in all regions, but the majority of products are expected to be deployed in USA and Canada.			
Technological representativeness	The representative product used for the analysis is TBUP474-UA50-BB10S which is a compact Programmable RTU (Remote Terminal Unit) that provides Remote Telemetry functions for use in SCADA and telemetry applications.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: Mexico	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US	Electricity mix; AC; consumption mix, at consumer; 120V; US

Compulsory indicators		SCADAPack 474 Smart RTU - TBUP474-UA50-BB10S					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	1.11E-02	1.11E-02	0*	0*	4.05E-06	0*
Contribution to the soil and water acidification	kg SO ₂ eq	4.39E-01	5.59E-02	3.30E-03	6.23E-05	3.79E-01	4.87E-04
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	7.69E-02	1.39E-02	7.59E-04	1.51E-05	6.20E-02	2.07E-04
Contribution to global warming	kg CO ₂ eq	2.83E+02	3.60E+01	7.35E-01	0*	2.45E+02	5.96E-01
Contribution to ozone layer depletion	kg CFC11 eq	1.49E-05	4.57E-06	0*	0*	1.03E-05	2.25E-08
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	4.82E-02	6.04E-03	2.35E-04	0*	4.19E-02	4.37E-05
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	8.38E-01	3.64E-01	0*	0*	4.73E-01	3.36E-04
Total Primary Energy	MJ	4.16E+03	4.78E+02	1.04E+01	0*	3.67E+03	2.19E+00



Optional indicators		SCADAPack 474 Smart RTU - TBUP474-UA50-BB10S					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	3.28E+03	3.45E+02	1.03E+01	0*	2.92E+03	1.78E+00
Contribution to air pollution	m ³	2.35E+04	3.78E+03	3.01E+01	0*	1.97E+04	1.58E+01
Contribution to water pollution	m ³	1.57E+04	3.41E+03	1.21E+02	2.27E+00	1.22E+04	2.88E+01
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	2.66E-01	2.63E-01	0*	0*	3.40E-03	0*
Total use of renewable primary energy resources	MJ	4.50E+02	1.06E+01	0*	0*	4.39E+02	0*
Total use of non-renewable primary energy resources	MJ	3.71E+03	4.67E+02	1.04E+01	0*	3.23E+03	2.19E+00
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	4.49E+02	9.76E+00	0*	0*	4.39E+02	0*
Use of renewable primary energy resources used as raw material	MJ	8.23E-01	8.12E-01	0*	0*	1.08E-02	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	3.71E+03	4.62E+02	1.04E+01	0*	3.23E+03	2.19E+00
Use of non renewable primary energy resources used as raw material	MJ	5.65E+00	5.48E+00	0*	0*	1.70E-01	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	6.58E+01	5.79E+01	0*	0*	5.92E+00	1.94E+00
Non hazardous waste disposed	kg	1.44E+02	1.18E+01	2.61E-02	0*	1.32E+02	0*
Radioactive waste disposed	kg	8.24E-02	5.72E-03	1.86E-05	0*	7.67E-02	1.34E-05
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	1.08E+00	9.72E-02	0*	2.71E-01	7.00E-03	7.00E-01
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	1.50E-01	0*	0*	0*	0*	1.50E-01
Exported Energy	MJ	8.61E-04	8.10E-05	0*	7.80E-04	0*	0*

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

Life cycle assessment performed with EIME version EIME v5.8.1, database version 2016-11 in compliance with ISO14044.

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 Raw Material Depletion - RMD) of other products in this family may be proportionally extrapolated by energy consumption values. For RMD, impact may be proportionally extrapolated by 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.

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<i>Validity period</i>	5 years	<i>Information and reference documents</i>	www.pep-ecopassport.org
<i>Independent verification of the declaration and data</i>			
Internal	X	External	
<i>The elements of the present PEP cannot be compared with elements from another program.</i>			
<i>Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »</i>			

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