

Product Environmental Profile

TBUX297585X - Expansion Model 6601 I/O module,20mA, AO

SCADAPack 47x





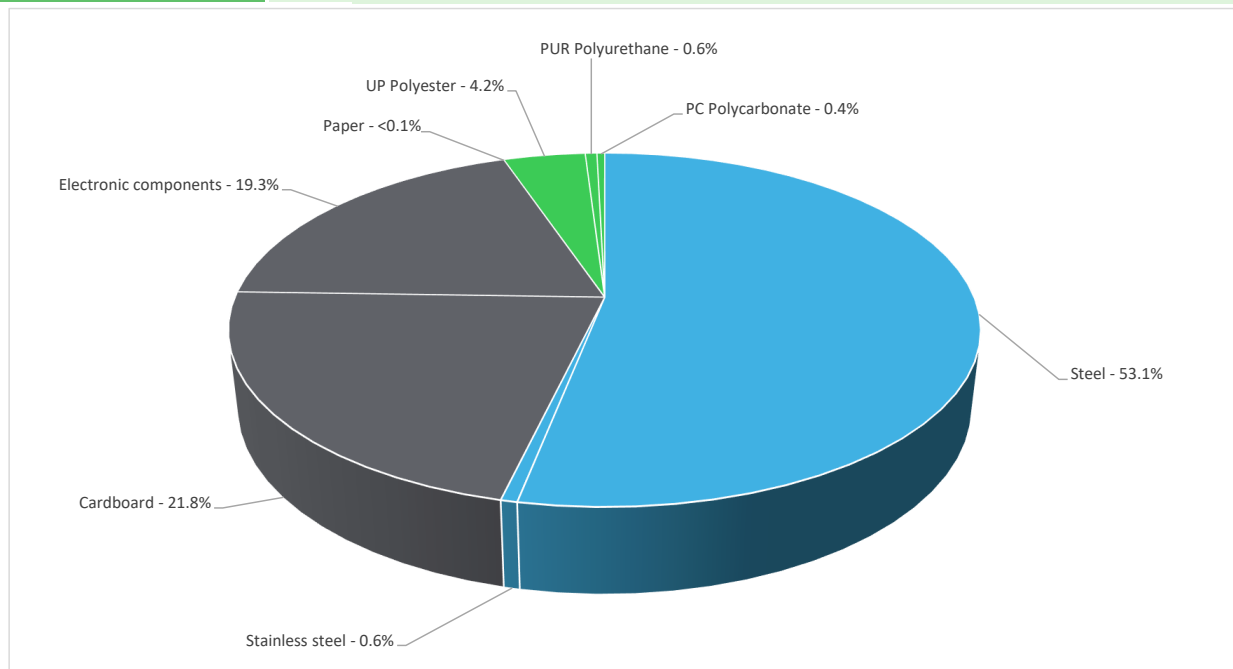
General information

Reference product	TBUX297585X - Expansion Model 6601 I/O module,20mA, AO
Description of the product	The SCADAPack™ Smart RTUs, the 6601 I/O Expansion Module provides a combination of I/O, including digital and analog inputs and outputs, and counter inputs. The maximum number of external expansion modules is dependent on the SCADAPack Smart RTU type
Description of the range	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. This PEP covers TBUX2958xx Expansion Model 6601 I/O
Functional unit	The 6601 Input Output Module increases the SCADAPack I/O capacity by providing 16 Digital Inputs (DI) for monitoring status signals from switches, alarms, contacts, and field devices, 8 Relay Digital Outputs (DO) for controlling equipment such as pumps, motors, valves, and relays, 6 Analog Inputs (AI) configurable for 0/4-20 mA signals, used to acquire measurements from transmitters (pressure, flow, level, temperature, etc) . during its 10 years lifetime with a power use of 1.1W at 100% use rate.



Constituent materials

Reference product mass	1016 g including the product, its packaging, additional elements and accessories
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Plastics	5.2%
Metals	53.7%
Others	41.1%



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:	68%	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECYLAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).
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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 consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligible consumption		
Installation elements	Installation will vary based on the client's specific situation. It is not expected to involve significant physical operations or materials.		
Use scenario	The Expansion Model 6601 I/O module is in active mode 100% of the time with a power use of 1.1 W for 10 years.		
Time representativeness	The collected data are representative of the year 2026		
Technological representativeness	Manufacturing process of Electronics parts by using soldering process, Metal parts by using forging and Casting process and Plastic parts by using Injection moulding process for Expansion Model 5415 O/P module		
Geographical representativeness	Final assembly site	Use phase	
	Reynosa, Mexico	NA-19%, LATAM-35%, MENA-8%, EU-25%, APAC-13%	
Energy model used	[A1 - A3]	[A5]	[B6]
	Electricity mix; Production mix; low voltage; 2022; Mexico, MX	Europe	Electricity Mix; Production mix; Low voltage; US, CA, MX, BR, APAC, UE-27, TR.
			[C1 - C4]
			Europe

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		TBUX297585X - Expansion Model 6601 I/O module,20mA, AO						
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	1.09E+02	4.47E+01	2.72E+01	4.14E-01	3.56E+01	1.49E+00	-1.99E+00
Contribution to climate change-fossil	kg CO2 eq	1.09E+02	4.51E+01	2.72E+01	7.54E-02	3.52E+01	1.48E+00	-1.98E+00
Contribution to climate change-biogenic	kg CO2 eq	4.04E-01	-3.22E-01	1.13E-02	3.39E-01	3.73E-01	2.84E-03	-4.83E-03
Contribution to climate change-land use and land use change	kg CO2 eq	1.06E-05	9.13E-06	4.94E-07	1.43E-08	0.00E+00	9.95E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	3.84E-06	3.65E-06	7.81E-09	2.74E-09	1.49E-07	3.69E-08	-2.95E-07
Contribution to acidification	mol H+ eq	4.89E-01	1.83E-01	8.65E-02	4.36E-04	2.14E-01	4.53E-03	-1.21E-02
Contribution to eutrophication, freshwater	kg P eq	1.52E-04	9.95E-05	4.63E-06	1.19E-07	4.00E-05	8.05E-06	-3.02E-06
Contribution to eutrophication, marine	kg N eq	9.07E-02	3.50E-02	3.12E-02	1.04E-04	2.38E-02	6.13E-04	-1.15E-03
Contribution to eutrophication, terrestrial	mol N eq	1.12E+00	3.86E-01	3.41E-01	1.39E-03	3.83E-01	6.88E-03	-1.35E-02
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.74E-01	1.07E-01	8.89E-02	2.94E-04	7.57E-02	2.03E-03	-4.71E-03
Contribution to resource use, minerals and metals	kg Sb eq	5.58E-03	5.56E-03	9.32E-07	0*	1.45E-05	0*	-6.42E-04
Contribution to resource use, fossils	MJ	1.70E+03	6.10E+02	3.81E+02	1.48E+00	6.88E+02	1.88E+01	-4.67E+01
Contribution to water use	m3 eq	1.54E+01	1.19E+01	3.75E-01	4.55E-03	3.01E+00	1.45E-01	-8.72E-01

Inventory flows Indicators		TBUX297585X - Expansion Model 6601 I/O module,20mA, AO						
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 renewable primary energy used as energy	MJ	3.05E+02	2.43E+01	4.90E-01	1.18E-01	2.79E+02	6.54E-01	-3.79E-01
Contribution to renewable primary energy used as raw material	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to total renewable primary energy	MJ	3.05E+02	2.43E+01	4.90E-01	1.18E-01	2.79E+02	6.54E-01	-3.79E-01
Contribution to non renewable primary energy used as energy	MJ	1.70E+03	6.07E+02	3.81E+02	1.48E+00	6.88E+02	1.88E+01	-4.67E+01

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 non renewable primary energy used as raw material	MJ	3.47E+00	3.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to total non renewable primary energy	MJ	1.70E+03	6.10E+02	3.81E+02	1.48E+00	6.88E+02	1.88E+01	-4.67E+01
Contribution to use of secondary material	kg	2.44E-01	2.44E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to net use of fresh water	m³	3.58E-01	2.75E-01	8.74E-03	1.04E-04	7.02E-02	4.23E-03	-2.03E-02
Contribution to hazardous waste disposed	kg	8.31E+01	8.19E+01	0*	8.01E-02	8.93E-01	2.38E-01	-5.07E+01
Contribution to non hazardous waste disposed	kg	1.44E+01	5.70E+00	6.58E-01	1.04E-02	7.30E+00	6.94E-01	-1.65E+00
Contribution to radioactive waste disposed	kg	4.02E-03	2.51E-03	3.79E-04	4.63E-06	1.06E-03	6.48E-05	-7.41E-04
Contribution to components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to materials for recycling	kg	6.05E-01	8.14E-02	0.00E+00	0.00E+00	0.00E+00	5.24E-01	0.00E+00
Contribution to materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Contribution to exported energy	MJ	5.94E-03	7.85E-04	0.00E+00	0.00E+00	0.00E+00	5.16E-03	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	6.05E-02						

* The calculation of the biogenic carbon is based on the Ademe for the Cardboard (28%), EN16485 for Wood (39,52%), and APESA/RECORD for Paper (37,8%)

Mandatory Indicators		TBUX297585X - Expansion Model 6601 I/O module,20mA, AO							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	3.56E+01	0	0.00E+00	0	0	0	3.56E+01	0
Contribution to climate change-fossil	kg CO2 eq	3.52E+01	0	0.00E+00	0	0	0	3.52E+01	0
Contribution to climate change-biogenic	kg CO2 eq	3.73E-01	0	0.00E+00	0	0	0	3.73E-01	0
Contribution to climate change-land use and land use change	kg CO2 eq	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to ozone depletion	kg CFC-11 eq	1.49E-07	0	0.00E+00	0	0	0	1.49E-07	0
Contribution to acidification	mol H+ eq	2.14E-01	0	0.00E+00	0	0	0	2.14E-01	0
Contribution to eutrophication, freshwater	kg P eq	4.00E-05	0	0.00E+00	0	0	0	4.00E-05	0
Contribution to eutrophication marine	kg N eq	2.38E-02	0	0.00E+00	0	0	0	2.38E-02	0
Contribution to eutrophication, terrestrial	mol N eq	3.83E-01	0	0.00E+00	0	0	0	3.83E-01	0
Contribution to photochemical ozone formation - human health	kg COVNM eq	7.57E-02	0	0.00E+00	0	0	0	7.57E-02	0
Contribution to resource use, minerals and metals	kg Sb eq	1.45E-05	0	0.00E+00	0	0	0	1.45E-05	0
Contribution to resource use, fossils	MJ	6.88E+02	0	0.00E+00	0	0	0	6.88E+02	0
Contribution to water use	m3 eq	3.01E+00	0	0.00E+00	0	0	0	3.01E+00	0

Inventory flows Indicators		TBUX297585X - Expansion Model 6601 I/O module,20mA, AO							
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	2.79E+02	0	0.00E+00	0	0	0	2.79E+02	0
Contribution to use of renewable primary energy resources used as raw material	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to total use of renewable primary energy resources	MJ	2.79E+02	0	0.00E+00	0	0	0	2.79E+02	0
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	6.88E+02	0	0.00E+00	0	0	0	6.88E+02	0
Contribution to use of non renewable primary energy resources used as raw material	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0

Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to total use of non-renewable primary energy resources	MJ	6.88E+02	0	0.00E+00	0	0	0	6.88E+02	0
Contribution to use of secondary material	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to use of renewable secondary fuels	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to use of non renewable secondary fuels	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to net use of freshwater	m³	7.02E-02	0	0.00E+00	0	0	0	7.02E-02	0
Contribution to hazardous waste disposed	kg	8.93E-01	0	0.00E+00	0	0	0	8.93E-01	0
Contribution to non hazardous waste disposed	kg	7.30E+00	0	0.00E+00	0	0	0	7.30E+00	0
Contribution to radioactive waste disposed	kg	1.06E-03	0	0.00E+00	0	0	0	1.06E-03	0
Contribution to components for reuse	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to materials for recycling	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to materials for energy recovery	kg	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0
Contribution to exported energy	MJ	0.00E+00	0	0.00E+00	0	0	0	0.00E+00	0

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

Life cycle assessment performed with EIME version v6.2.5-6, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

The Manufacturing phase has the largest impact on the environment followed by the Use phase. The Resource use, minerals and metals indicator 99.7% effected by the manufacturing phase and Acidification indicator effected 43.8% in the Use phase.

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.

To estimate the impact on the environment of other products in this family, you can use two different methods. For the Manufacturing, Distribution, and End-Of-Life phases, you can extrapolate the impact of each indicator based on the product weight (extrapolation by mass). And for the Usage phase, you can estimate the impact by looking at the amount of energy consumed.

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Date of issue	07-2026	Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
		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"			

Schneider Electric Industries SAS

Country Customer Care Center <http://www.se.com/contact>

+001 508 549 3992

Head Office
70 Mechanic Street

MA 02035

Foxboro

USA

www.se.com

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