Product Environmental Profile

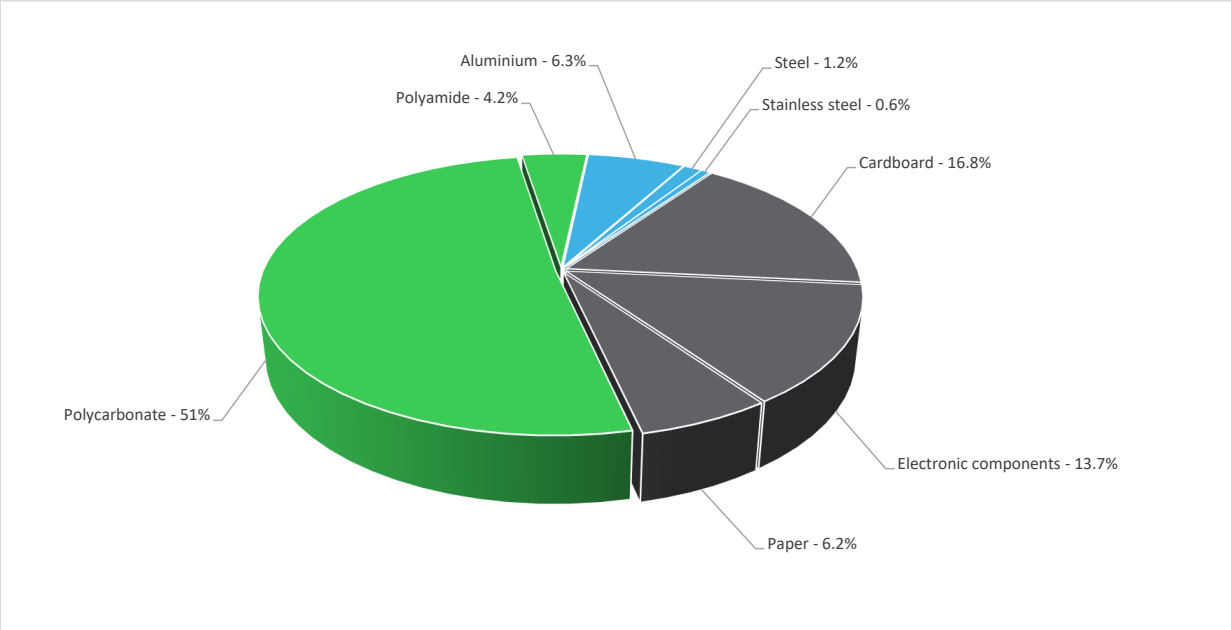
BRIGHTNESS & TEMPERATURE SENSOR

General information

Reference product	KNX brightness- a. temperature sensor - MTN663991
Description of the product	The product records brightness and temperature and transmits these values to the controller and control the action of connected devices automatically with sensors and programs.
Description of the range	Single product
Functional unit	Measure brightness and temperature and transmits the values to KNX bus to control the blinds/roller shutter automatically with a temperature and brightness sensor with IP54 degree of protection against ingress of solid foreign objects and water with harmful effects in accordance with the standard IEC 60529 & IK04 degrees of protection against external mechanical impacts in accordance with the standard IEC 62262 for the reference life time of 10 years with the dimension 110 x 72 x 82 mm.
Specifications are:	Rated current, In: ≤5 mA Rated voltage,U: KNX bus voltage (21...32V DC - 30V DC generally) Number of connected sensors: 2 Temperature measurement range: - 25 °C to + 55 °C (±5 % or ±1 degree) Brightness measurement range: 1 to 100,000 lux (±20% or ±5 lux)

Constituent materials

Reference product mass	164 g	including the product and its packaging



	Plastics	55.2%
	Others	36.7%
	Metals	8.1%

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:	**10%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB 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).

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 negligable consumption
Installation elements	The product installation requires little to no energy. The disposal of packaging materials is also accounted during the installation phase, including transport to disposal. The material constituents of the packaging are Cardboard 73% and Paper 27%.
Use scenario	The product is in active mode at all times with a total energy consumption of 13.14 kWh throughout its lifetime of 10 years
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	**Final assembly site**	**Use phase**		**End-of-life**
	Germany	Europe, China, Rest of the world		Europe, China, Rest of the world
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Low voltage; Germany, DE Electricity Mix; Low voltage; China, CN	Electricity Mix; RER	Electricity Mix; Low voltage; 2022; Europe, EU-27 Electricity Mix; Low voltage; 2022; China, CN Electricity Mix; Low voltage; 2022; Global, GLO	Global, European and French datasets are 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		**KNX brightness- a. temperature sensor - MTN663991**						
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	1.02E+01	3.48E+00	8.41E-02	9.94E-02	6.42E+00	1.39E-01	-1.48E-01
Contribution to climate change-fossil	kg CO2 eq	1.01E+01	3.52E+00	8.41E-02	4.47E-02	6.33E+00	1.38E-01	-1.88E-01
Contribution to climate change-biogenic	kg CO2 eq	1.03E-01	-4.16E-02	0*	5.46E-02	8.96E-02	3.81E-04	4.01E-02
Contribution to climate change-land use and land use change	kg CO2 eq	9.93E-05	9.91E-05	1.58E-07	0*	0	4.77E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.66E-07	4.32E-07	1.22E-09	6.05E-10	3.00E-08	2.80E-09	-2.21E-08
Contribution to acidification	mol H+ eq	5.82E-02	2.01E-02	1.45E-04	1.31E-04	3.75E-02	3.57E-04	-1.20E-03
Contribution to eutrophication, freshwater	kg P eq	3.65E-05	2.40E-05	3.20E-07	9.37E-07	1.05E-05	7.05E-07	-1.17E-06
Contribution to eutrophication marine	kg N eq	6.54E-03	2.10E-03	2.71E-05	5.51E-05	4.27E-03	8.42E-05	-1.46E-04
Contribution to eutrophication, terrestrial	mol N eq	8.42E-02	2.29E-02	2.98E-04	3.97E-04	5.95E-02	1.05E-03	-1.44E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.13E-02	7.06E-03	9.60E-05	9.06E-05	1.39E-02	2.36E-04	-4.41E-04
Contribution to resource use, minerals and metals	kg Sb eq	1.25E-04	1.23E-04	6.89E-08	0*	1.54E-06	1.74E-08	-3.64E-06
Contribution to resource use, fossils	MJ	1.86E+02	4.53E+01	1.54E+00	4.31E-01	1.37E+02	1.31E+00	-2.66E+00
Contribution to water use	m3 eq	2.16E+00	1.71E+00	3.52E-03	3.61E-03	4.36E-01	7.00E-03	-4.15E-02

Inventory flows Indicators		KNX brightness- a. temperature sensor - MTN663991						
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	2.97E+01	3.20E+00	5.84E-03	5.87E-02	2.64E+01	7.01E-02	3.66E-02
Contribution to use of renewable primary energy resources used as raw material	MJ	7.58E-01	7.58E-01	0	0	0	0	-5.65E-01
Contribution to total use of renewable primary energy resources	MJ	3.05E+01	3.96E+00	5.84E-03	5.87E-02	2.64E+01	7.01E-02	-5.29E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.82E+02	4.17E+01	1.54E+00	4.31E-01	1.37E+02	1.31E+00	-2.66E+00
Contribution to use of non renewable primary energy resources used as raw material	MJ	3.62E+00	3.62E+00	0	0	0	0	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	1.86E+02	4.53E+01	1.54E+00	4.31E-01	1.37E+02	1.31E+00	-2.66E+00
Contribution to use of secondary material	kg	0.00E+00	0	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	5.04E-02	3.97E-02	8.19E-05	2.79E-04	1.02E-02	1.84E-04	-9.67E-04
Contribution to hazardous waste disposed	kg	1.95E+00	1.71E+00	4.36E-04	2.37E-03	1.78E-01	5.73E-02	-2.98E-01
Contribution to non hazardous waste disposed	kg	2.47E+00	1.39E+00	9.69E-03	1.58E-02	1.04E+00	1.39E-02	-2.76E-01
Contribution to radioactive waste disposed	kg	8.62E-04	6.73E-04	7.67E-06	2.85E-06	1.74E-04	4.59E-06	-2.08E-04
Contribution to components for reuse	kg	0.00E+00	0	0	0	0	0	0.00E+00
Contribution to materials for recycling	kg	4.77E-02	3.04E-03	0	3.14E-02	0	1.32E-02	0.00E+00
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	3.78E-05
Contribution to biogenic carbon content of the associated packaging	kg of C	1.17E-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		KNX brightness- a. temperature sensor - MTN663991							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	6.42E+00	0	0	0	0	0	6.42E+00	0
Contribution to climate change-fossil	kg CO2 eq	6.33E+00	0	0	0	0	0	6.33E+00	0
Contribution to climate change-biogenic	kg CO2 eq	8.96E-02	0	0	0	0	0	8.96E-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	3.00E-08	0	0	0	0	0	3.00E-08	0
Contribution to acidification	mol H+ eq	3.75E-02	0	0	0	0	0	3.75E-02	0
Contribution to eutrophication, freshwater	kg P eq	1.05E-05	0	0	0	0	0	1.05E-05	0
Contribution to eutrophication marine	kg N eq	4.27E-03	0	0	0	0	0	4.27E-03	0
Contribution to eutrophication, terrestrial	mol N eq	5.95E-02	0	0	0	0	0	5.95E-02	0
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.39E-02	0	0	0	0	0	1.39E-02	0
Contribution to resource use, minerals and metals	kg Sb eq	1.54E-06	0	0	0	0	0	1.54E-06	0
Contribution to resource use, fossils	MJ	1.37E+02	0	0	0	0	0	1.37E+02	0
Contribution to water use	m3 eq	4.36E-01	0	0	0	0	0	4.36E-01	0

Inventory flows Indicators		KNX brightness- a. temperature sensor - MTN663991							
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	2.64E+01	0	0	0	0	0	2.64E+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	2.64E+01	0	0	0	0	0	2.64E+01	0
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.37E+02	0	0	0	0	0	1.37E+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	1.37E+02	0	0	0	0	0	1.37E+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	m^3	1.02E-02	0	0	0	0	0	1.02E-02	0
Contribution to hazardous waste disposed	kg	1.78E-01	0	0	0	0	0	1.78E-01	0
Contribution to non hazardous waste disposed	kg	1.04E+00	0	0	0	0	0	1.04E+00	0
Contribution to radioactive waste disposed	kg	1.74E-04	0	0	0	0	0	1.74E-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 v6.3.2, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

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-02223-V01.01-EN	*Drafting rules*	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH42	*Information and reference documents*	www.pep-ecopassport.org
Date of issue	12-2025	*Validity period*	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal	External X		
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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