

Product Environmental Profile

3 * TH110 Wireless Thermal Sensor - Self Powered + 3*Energy harvesting & fixing kits





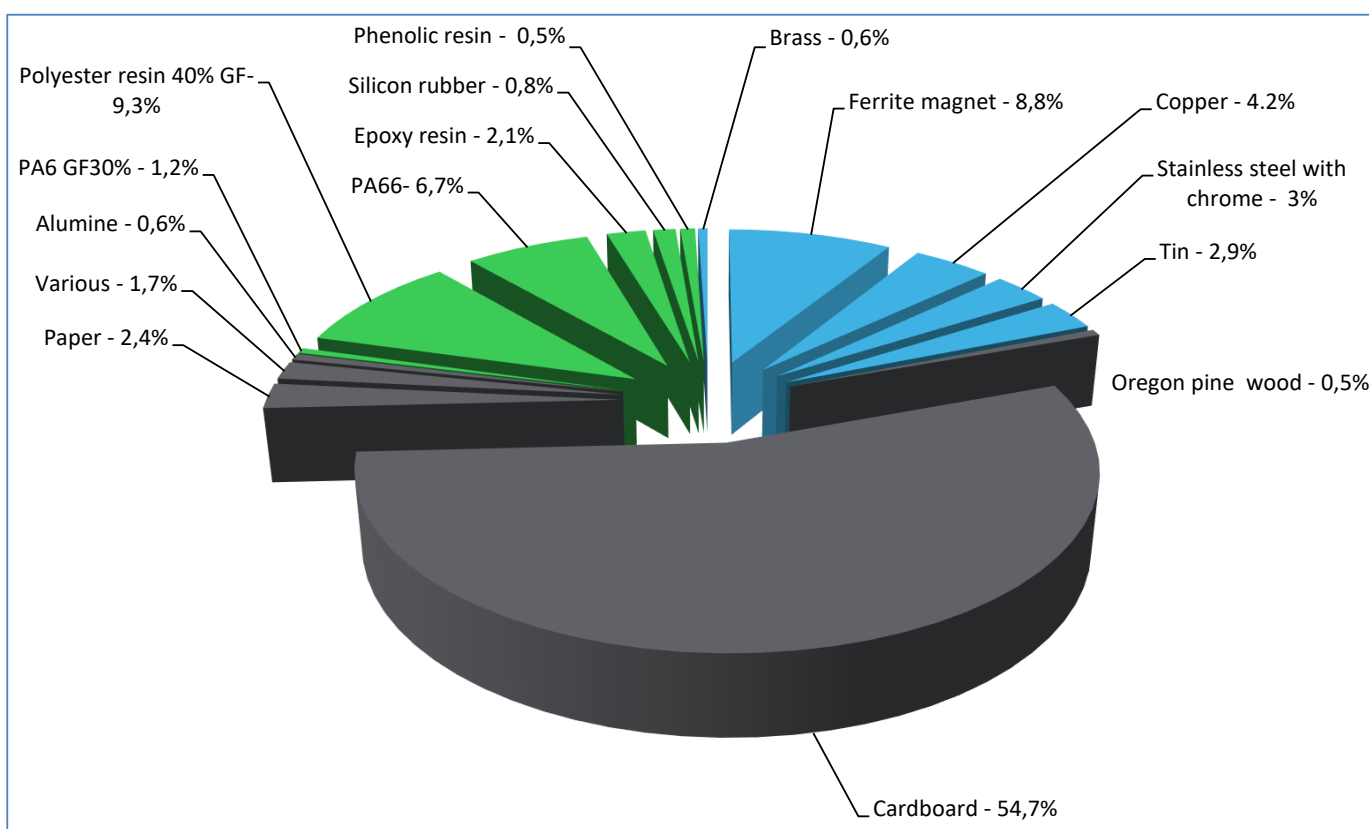
General information

Representative product	3 * TH110 Wireless Thermal Sensor - Self Powered + 3*Energy harvesting & fixing kits -3 * TH110 Capteur Thermique Sans Fil - Auto-alimenté +3*Capture d'énergie & kits de fixation
Description of the product	The Easergy TH110 is an energy harvesting and wireless communication sensor using Zigbee Greenpower 2.4GHz protocol according to the IEEE 802.15.4. The Easergy TH110 is a mobile device as defined by FCC.
Functional unit	To transmit measured temperature each 60s during 20 years up to 100 m as air free distance. Consumption when device is in sleeping mood 1,5 to 2 microA, which is an available energy harvested from the field generated by power line. Maximum current during radio transmission 20mA peak equivalent with 10mA during 10ms.



Constituent materials

Reference product mass 205.58 g including the product, its packaging and additional elements and accessories



	Plastics	20.6%
	Metals	19.5%
	Others	59.9%



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 3 * TH110 Wireless Thermal Sensor - Self Powered + 3*Energy harvesting & fixing kits presents the following relevant environmental aspects

Design	The product has been designed to be sustainable as well by its low consumption of its communication protocol (Zigbee Green Power) and battery less. If we consider an equivalence of properties of the device we have divided its volume more than 2,95 during the pre-design phase.
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 121.3 g, consisting of Paper (36%), Cardboard (62,8%), PE film (1,2%). Product distribution optimised by setting up local distribution centres
Installation	EMS59440 & EMS59441 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 an electronic card (13,86 g) and a strapping Velcro in nylon (14,14 g) 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: 47% 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).



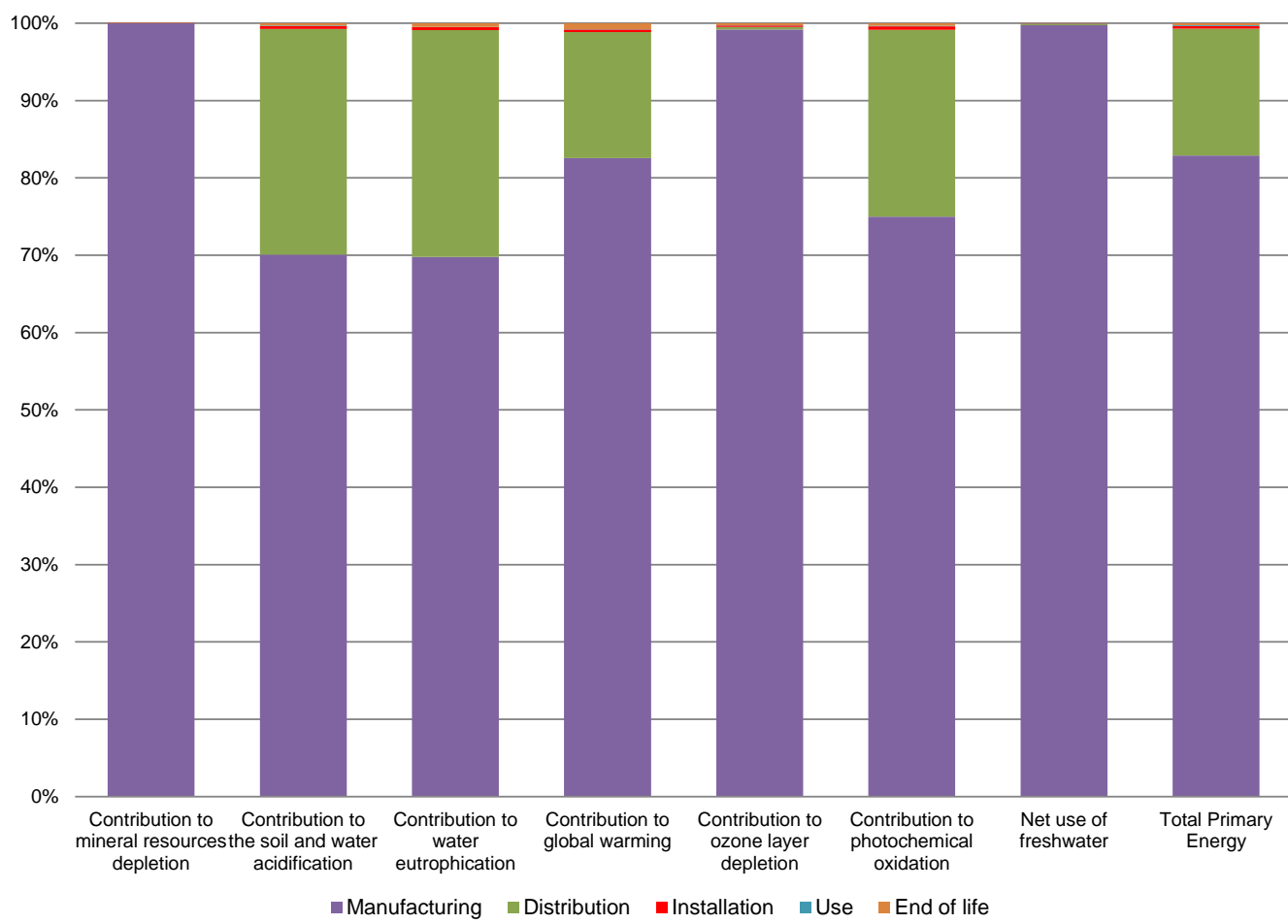
Environmental impacts

Reference life time	20 years			
Product category	Passive products - non-continuous operation			
Installation elements	No special components needed			
Use scenario	Product dissipation is 0.06 W full load, loading rate is 30% and service uptime percentage is 30%			
Geographical representativeness	WorldWide with APAC(30%) & US(35%) & EU(35%)			
Technological representativeness	The Easergy TH110 is an energy harvesting and wireless communication sensor using Zigbee Greenpower 2.4GHz protocol according to the IEEE 802.15.4. The Easergy TH110 is a mobile device as defined by FCC.			
Energy model used	Manufacturing	Installation	Use	End of life
	Energy model used: Indonesia (Batam)	Electricity mix AC; Europe consistent; consumption mix, at power plant; US	Electricity mix AC; Europe consistent; consumption mix, at power plant; US	Electricity mix AC; Europe consistent; consumption mix, at power plant; US

Compulsory indicators **3 * TH110 Wireless Thermal Sensor - Self Powered + 3*Energy harvesting & fixing kits - 3 * TH110 Capteur Thermique Sans Fil - Auto-alimenté +3*Capture d'énergie & kits de fixation**

Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to mineral resources depletion	kg Sb eq	1.11E-03	1.11E-03	0*	0*	0*	0*
Contribution to the soil and water acidification	kg SO ₂ eq	9.60E-03	6.73E-03	2.80E-03	3.47E-05	6.26E-06	2.93E-05
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	2.21E-03	1.54E-03	6.49E-04	8.16E-06	6.71E-07	1.08E-05
Contribution to global warming	kg CO ₂ eq	3.64E+00	3.00E+00	5.93E-01	1.13E-02	2.42E-03	2.79E-02
Contribution to ozone layer depletion	kg CFC11 eq	3.90E-07	3.87E-07	1.20E-09	7.09E-10	1.82E-10	1.03E-09
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	8.35E-04	6.26E-04	2.02E-04	3.77E-06	4.79E-07	2.80E-06

Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m3	3.31E-02	3.30E-02	5.30E-05	1.38E-05	4.06E-06	1.74E-05
Total Primary Energy	MJ	4.84E+01	4.01E+01	7.94E+00	1.71E-01	4.10E-02	1.32E-01




Optional indicators		3 * TH110 Wireless Thermal Sensor - Self Powered + 3*Energy harvesting & fixing kits - 3 * TH110 Capteur Thermique Sans Fil - Auto-alimenté +3*Capture d'énergie & kits de fixation					
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Contribution to fossil resources depletion	MJ	4.39E+01	3.53E+01	8.32E+00	1.60E-01	3.48E-02	1.24E-01
Contribution to air pollution	m³	3.22E+02	2.92E+02	2.73E+01	1.24E+00	2.14E-01	9.78E-01
Contribution to water pollution	m³	4.56E+02	3.55E+02	9.74E+01	1.32E+00	1.13E-01	1.54E+00
Resources use	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	1.44E-03	1.44E-03	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	1.77E+00	1.76E+00	1.12E-02	1.97E-04	1.78E-03	0*
Total use of non-renewable primary energy resources	MJ	4.66E+01	3.83E+01	7.93E+00	1.70E-01	3.92E-02	1.31E-01
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	-7.11E-01	-7.24E-01	0*	0*	0*	0*
Use of renewable primary energy resources used as raw material	MJ	2.48E+00	2.48E+00	0*	0*	0*	0*
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	4.52E+01	3.70E+01	7.93E+00	1.70E-01	3.92E-02	1.31E-01
Use of non renewable primary energy resources used as raw material	MJ	1.38E+00	1.38E+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	2.90E+00	2.64E+00	0*	1.23E-01	0*	1.35E-01
Non hazardous waste disposed	kg	4.66E+00	4.63E+00	2.10E-02	5.42E-04	2.49E-03	0*
Radioactive waste disposed	kg	1.11E-03	1.09E-03	1.50E-05	8.27E-07	1.84E-06	7.43E-07
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	1.82E-01	2.29E-02	0*	1.20E-01	0*	3.84E-02
Components for reuse	kg	1.16E-03	1.16E-03	0*	0*	0*	0*
Materials for energy recovery	kg	6.60E-03	2.50E-04	0*	1.50E-06	0*	6.35E-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 manufacturing 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-00127-V01.01-EN	Drafting rules	PCR-ed3-EN-2015 04 02
Verifier accreditation N°	VH26	Supplemented by	PSR-0005-ed2-EN-2016 03 29
Date of issue	11/2016	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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