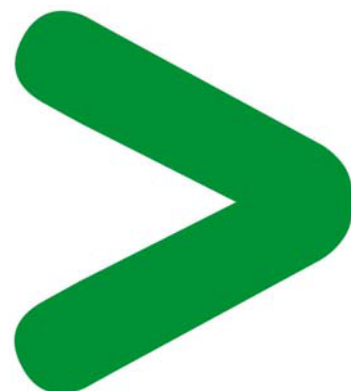


Product Environmental Profile

Harmony XB5R - ZBRA1 relay antenna



Product Environmental Profile - PEP

Product overview

The main purpose of the ZBRA1 antenna is to increase the movements' area of the XB5R cordless and battery less pushbuttons range.

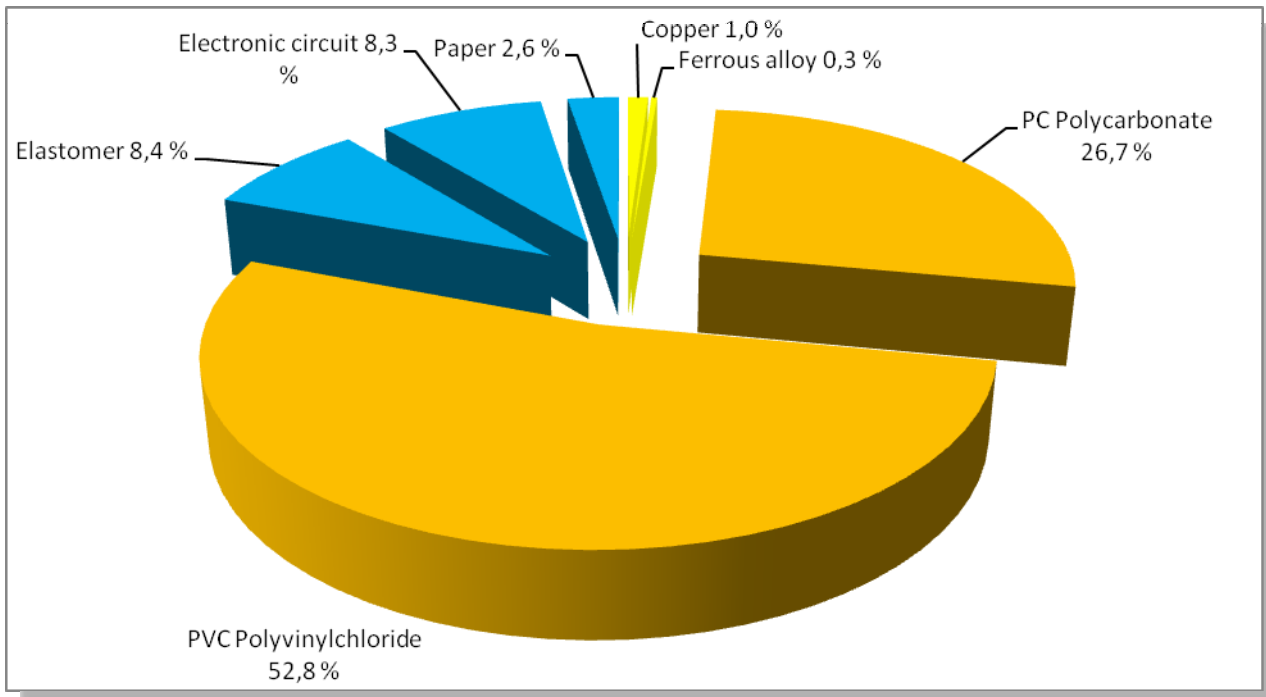
This product consists of a relay antenna.

The environmental analysis was performed in conformity with ISO 14040.

This analysis takes in account the complete life cycle of the product.

Constituent materials

The mass of the product is 207 g, no including packaging. The constituent materials are distributed as follows:



Substance assessment

This product is designed in conformity with the requirements of the European RoHS Directive 2011/65/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) 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) .
(<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>)

Manufacturing

The ZBRA1 product is manufactured at a Schneider Electric production site on which an ISO14001 certified environmental management system has been established.

Distribution

The weight and volume of the packaging have been optimized, based on the European Union's packaging directive.

The ZBRA1 packaging weight is 39.7 g. It consists of cardboard.

The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

Use

The ZBRA1 product does not generate environmental pollution (noise, emissions) requiring special precautionary measures in standard use.

The product does not require special maintenance operations.

The electrical power consumption depends on the conditions under which the product is implemented and used.

The electrical power consumed by the ZBRA1 is approximately 4 W. It is 4 W in active mode and 100 % in standby

The dissipated power depends on the conditions under which the product is implemented and used.

The electromagnetic and thermal dissipation represents 100% of the power which passes through the product.

Product Environmental Profile - PEP

End of life

At end of life, the ZBRA1 has been optimized to decrease the amount of waste and allow recovery of the product components and materials. This product contains one electronic circuit that should be separated from the stream of waste so as to optimize the end of life treatment by a special treatment. The location of this component and the other recommendations are given in the End of Life instruction available for this product.

The recyclability potential of the products has been evaluated using the "ECO DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

According to this method, the potential recyclability ratio without packaging is: 12 %.

As described in the recyclability calculation method this ratio includes only metals and plastics which have proven industrial recycling processes.

Environmental impacts

Life cycle assessment has been performed on the following life cycle phases: Materials and Manufacturing (M), Distribution (D), and Use (U). Modeling hypothesis and method:

- the calculation was performed on the ZBRA1
- product packaging: is included
- installation components: no special components included.
- scenario for the Use phase: this product range is included in the category energy consuming product (assumed service life is 10 years and using scenario is: 4 W in active and standby modes, 4 W is for 100 % uptime).
- the geographical representative area for the assessment is Europe and the electrical power model used for calculation is European model.

Presentation of the product environmental impacts

Environmental indicators	Unit	For ZBRA1			
		S=M+D+U	M	D	U
Raw Material Depletion	Y-1	2,44 . 10-14	1,99 . 10-14	4,747 . 10-18	4,498 . 10-15
Energy Depletion	MJ	4030	61,95	7,425	3961
Water Depletion	dm ³	593,2	16,3	4,295	572,6
Global Warming	g ~CO2	203600	3484	186,3	199930
Ozone Depletion	mg ~CFC-11	11,485	0,5678	0,05846	10,86
Air Toxicity	hm ³	34,27	0,983	0,122	33,17
Photochemical Ozone Creation	g ~C2H4	69,825	2,054	0,1002	67,67
Air Acidification	g ~H+	27,87	0,785	0,0944	26,99
Water Toxicity	dm ³	57910	785,7	71,845	57050
Water Eutrophication	g ~PO4	0,6716	0,1716	0,03	0,4698
Hazardous Waste Production	kg	3,34	0,0224	0,0002	3,317

Life cycle assessment has been performed with the EIME software (Environmental Impact and Management Explorer), version 4 and with its database version 10.

Between Manufacturing, Distribution and Using, the Using phase is the life cycle phase which has the greatest impact on the majority of environmental indicators.

System approach

The antenna relay ZBRA1 uses much less electricity cables.

As the product is designed in accordance with the European RoHS Directive 2011/65/EU, it can be incorporated without any restriction in an assembly or an installation subject to this Directive.

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.

Glossary

Raw Material Depletion (RMD)	This indicator quantifies the consumption of raw materials during the life cycle of the product. It is expressed as the fraction of natural resources that disappear each year, with respect to all the annual reserves of the material.
Energy Depletion (ED)	This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources. This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.
Water Depletion (WD)	This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in dm ³ .
Global Warming (GW)	The global warming of the planet is the result of the increase in the greenhouse effect due to the sunlight reflected by the earth's surface being absorbed by certain gases known as "greenhouse-effect" gases. The effect is quantified in gram equivalent of CO ₂ .
Ozone Depletion (OD)	This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in gram equivalent of CFC-11.
Air Toxicity (AT)	This indicator represents the air toxicity in a human environment. It takes into account the usually accepted concentrations for several gases in the air and the quantity of gas released over the life cycle. The indication given corresponds to the air volume needed to dilute these gases down to acceptable concentrations.
Photochemical Ozone Creation (POC)	This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of ethylene (C ₂ H ₄).
Air Acidification (AA)	The acid substances present in the atmosphere are carried by rain. A high level of acidity in the rain can cause damage to forests. The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in mode equivalent of H ⁺ .
Water Toxicity (WT)	This indicator represents the water toxicity. It takes into account the usually accepted concentrations for several substances in water and the quantity of substances released over the life cycle. The indication given corresponds to the water volume needed to dilute these substances down to acceptable concentrations.
Hazardous Waste Production (HWP)	This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilization). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc. It is expressed in kg.

PEP achieved with Schneider-Electric TT01 V4.5 and TT02 V16 procedures in compliance with ISO14040 series standards.

PEP in line with PEPecopassport PCR : PEP-PCR-ed 2.1-EN-2012 12 11

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