BTicino SpA
Viale Borri, 231
21100 - Varese - Italy

Your usual Sales office
www.bticino.com

Product Environmental Profile

Bipolar switch
Axolute series

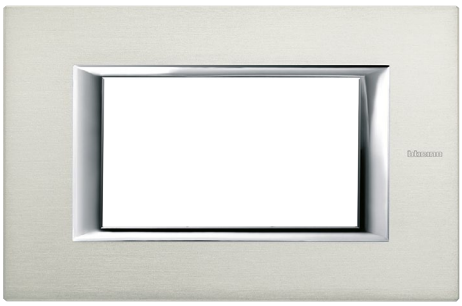
BTICINO'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group for more than five years).

• Offer our customers environmentally friendly solutions
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

• Involve the environment in product design and provide informations in compliance with ISO 14025
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

REFERENCE PRODUCT

Function	The product, installed in a cover plate with a screws equipped support, allows, in the domestic and tertiary sectors, the command and interruption of a low voltage electrical circuit (250 V), carrying a load current not exceeding 16 A. It can be completed with LEDs for the backlighting. PCR category: passive product. The life span considered for the study is 20 years and the use scenario is 30 % time of use at 30 % of load current.	
Reference Product		
	BT-H4703	BT-HA4803XC
	3 modules support - screws equipped	3 modules square cover plate - brushed aluminium
		
	2 x BT-HC4950	BT-HC4002
	1 module Blank plate	Bipolar switch 16 AX - 250 V a.c.

PRODUCTS CONCERNED

The environmental data is representative of the following products:

BT-HA4803XC	BT-H4703	BT-HC4950	BT-HC4002
BT-HA4803XS - NX - CR -BR - AZ - HD - HC - HS - BG - RC - BM - VS - SAN BT-HB4803XC - XS - NR - SAN - HD - OR - TC - OSN BT-HW4803HC - HD - HS - AW BT-HA4803VNN - VZS - VKA - VSA - VBB - VNB - VSW	BT-H4703W	BT-HD4950 BT-HS4950	BT-HD4002 BT-HS4002

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PEP ecopassport®

CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/EU.

Total weight of Reference Product	**196 g** (with unit packaging)

Plastics as % of weight		**Metals as % of weight**		**Other (packaging) as % of weight**	
Polycarbonate*	32,8 %	Aluminium*	26,1 %	Paper / cardboard	20,0 %
Polyamide	0,2 %	Steel	5,4 %	Wood	11,0 %
Other plastics	0,5 %	Copper alloys	1,7 %	PVC	1,6 %
		Silver alloys	< 0,1 %	Polyethylene	0,4 %
		Other metals	0,2 %	Polypropylene	0,1 %
Total plastics	**33,5 %**	**Total metals**	**33,4 %**	**Total other (packaging)**	**33,1 %**

Estimated recycled material content: 31 % by mass.

* For the bipolar switch with zamak elliptical cover plate (total weight 230 g): Polycarbonate: 24,1% - Zamak: 41,0%.

For the lighting outlet position with glass rectangular cover plates:

Total weight of products:	**326 g** (unit packaging included)

Plastics as % of weight		**Metals as % of weight**		**Other as % of weight**	
Polycarbonate	18,6 %	Steel	3,2 %	Glass	22,1 %
ABS	3,1 %	Copper alloys	1,0 %	**Packaging as % of weight**	
Polyamide	0,1 %	Silver alloys	< 0,1 %	Paper / cardboard	43,6 %
Other plastics	0,3 %			Wood	6,6 %
				PVC	1,0 %
				Polyethylene	0,3 %
				Polypropylene	0,1 %
				PET	< 0,1 %
Total plastics	**22,1 %**	**Total metals**	**4,2 %**	**Total other and packaging**	**73,7 %**

Estimated recycled material content: 38 % by weight

MANUFACTURE

This Reference Product comes from sites that have received ISO14001 certification.

DISTRIBUTION

The Group's products are distributed from logistics centres located to optimize transport efficiency. The Reference Product is therefore transported over an average distance of 780 km, essentially by road, representing a marketing in Europe.

Packaging is compliant with with european directive 2004/12/EC concerning packaging and packaging waste. At the packaging end of life, its recycling rate is of 92 % (as % of packaging weight).

INSTALLATION

For the installation of the product, only standard tools are needed.

USE

Under normal conditions of use, this product requires no servicing, no maintenance or additional products.

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END OF LIFE

The product end-of-life factors are taken into account during the design phase. Dismantling and sorting of components or materials is made as easy as possible with a view to recycling or failing that, another form of reuse.

• Recyclability rate of the Reference Product:
Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 95 %. This value is based on data collected from a technological channel operating on an industrial basis. It does not pre-validate the effective use of this channel for the end of life of this product.

Separated into:
- plastic materials (excluding packaging) : 31 %
- metal materials (excluding packaging) : 34 %
- packaging (all types of materials) : 30 %

• Recyclability rate for the bipolar switches with zamak elliptical cover plates:
Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 96 %. This value is based on data collected from a technological channel operating on an industrial basis. It does not pre-validate the effective use of this channel for the end of life of this product.

Separated into:
- plastic materials (excluding packaging) : 23 %
- metal materials (excluding packaging) : 47 %
- packaging (all types of materials) : 26 %

• Recyclability rate for the bipolar switches with glass rectangular cover plates:
Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 97 %. This value is based on data collected from a technological channel operating on an industrial basis. It does not pre-validate the effective use of this channel for the end of life of this product.

Separated into:
- plastic materials (excluding packaging) : 21 %
- metal materials (excluding packaging) : 4 %
- other materials (excluding packaging) : 22 %
- packaging (all types of materials) : 50 %

ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end-of-life. It is representative from products marketed and used in Europe, in compliance with the local current standards.

For each phase, the following modelling elements were taken in account:

Manufacture	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing.
Distribution	Transport between the last Group distribution centre and an average delivery point in the sales area.
Installation	The end of life of the packaging.
Use	• Product category: passive product. • Use scenario: non-continuous operation for 20 years at 30% of rated load, during 30% of the time. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity Mix, Europe 27 - 2002.
End of life	The default end of life scenario maximizing the impacts.
Software and database used	EIME V5 and its database «CODDE-2015-04»

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SELECTION OF ENVIRONMENTAL IMPACTS

	Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Global warming	**7.16E+00**	**kgCO_2 eq.**	2.05E+00	**29%**	7.61E-03	**< 1%**	4.00E-03	**< 1%**	5.09E+00	**71%**	1.20E-02	**< 1%**
Ozone depletion	**1.44E-06**	**kgCFC-11 eq.**	2.00E-07	**14%**	1.54E-11	**< 1%**	3.19E-11	**< 1%**	1.24E-06	**86%**	2.26E-10	**< 1%**
Acidification of soils and water	**4.38E-02**	**kgSO_2 eq.**	5.24E-03	**12%**	3.42E-05	**< 1%**	1.86E-05	**< 1%**	3.85E-02	**88%**	4.74E-05	**< 1%**
Water eutrophication	**2.42E-03**	**kg$(PO_4)^{3-}$ eq.**	8.90E-04	**37%**	7.86E-06	**< 1%**	1.61E-05	**< 1%**	1.44E-03	**60%**	6.35E-05	**3%**
Photochemical ozone formation	**2.22E-03**	**kgC_2H_4 eq.**	3.96E-04	**18%**	2.43E-06	**< 1%**	1.33E-06	**< 1%**	1.82E-03	**82%**	3.65E-06	**< 1%**
Depletion of abiotic resources - elements	**8.71E-05**	**kgSb eq.**	8.69E-05	**100%**	3.05E-10	**< 1%**	1.81E-10	**< 1%**	2.32E-07	**< 1%**	6.78E-10	**< 1%**
Total use of primary energy	**1.35E+02**	**MJ**	3.18E+01	**24%**	1.08E-01	**< 1%**	5.77E-02	**< 1%**	1.03E+02	**76%**	1.77E-01	**< 1%**
Net use of fresh water	**3.90E-02**	**m^3**	2.57E-02	**66%**	6.81E-07	**< 1%**	1.31E-06	**< 1%**	1.33E-02	**34%**	7.93E-06	**< 1%**
Depletion of abiotic resources - fossil fuels	**7.34E+01**	**MJ**	2.06E+01	**28%**	1.07E-01	**< 1%**	5.60E-02	**< 1%**	5.24E+01	**71%**	1.66E-01	**< 1%**
Water pollution	**8.55E+02**	**m^3**	6.38E+02	**75%**	1.25E+00	**< 1%**	6.08E-01	**< 1%**	2.14E+02	**25%**	1.48E+00	**< 1%**
Air pollution	**3.72E+02**	**m^3**	1.52E+02	**41%**	3.12E-01	**< 1%**	4.11E-01	**< 1%**	2.18E+02	**59%**	1.16E+00	**< 1%**

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website.

For products covered by the PEP other than the Reference Product: the environmental impacts are calculated for a configuration composed by Bipolar switch, 2 Blank plates, Support and Cover plate. To obtain the environmental impacts for each phase of the lifecycle, multiply those of Reference Product for these coefficients:

Bipolar switch with cover plates:	**Total**			**Manufacturing**			**Distribution**	**Installation**	**Use**	**End of life**
	Depletion abiotic resources	Air pollution	Other indicators	Depletion abiotic resources	Air pollution	Other indicators	All indicators	All indicators	All indicators	All indicators
Zamak elliptical	1,7	2,7	0,9	1,8	5,1	0,8	1,2	1,0	1,0	1,1
Axolute AIR	1,6	2,4	0,9	1,6	4,3	0,7	1,2	1,3	1,0	1,0

Bipolar switch with cover plates:	**Total**	**Manufacturing**		**Distribution**	**Installation**	**Use**	**End of life**
	All indicators	Acidification soils and water	All indicators	All indicators	All indicators	All indicators	All indicators
Glass rectangular	0,9	0,2	0,7	1,7	2,7	1,0	1,6

Registration N°: LGRP-00252-V01.01-EN	Drafting rules: PEP-PCR-ed3-EN-2015 04 02 Supplemented by PSR-0005-ed1-2012 12 11
Verifier accreditation N°: VH02	Information and reference documents : **www.pep-ecopassport.org**
Date of issue: 09-2016	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal ☒ External ☐	
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»	
Environmental data in alignment with EN 15804 : 2012 + A1 : 2013	