

FLUSH MOUNTING JUSSI SWITCHES

Product Environmental Profile

Environmental Product Declaration



Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
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ABB Purpose & Embedding Sustainability

ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow. With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

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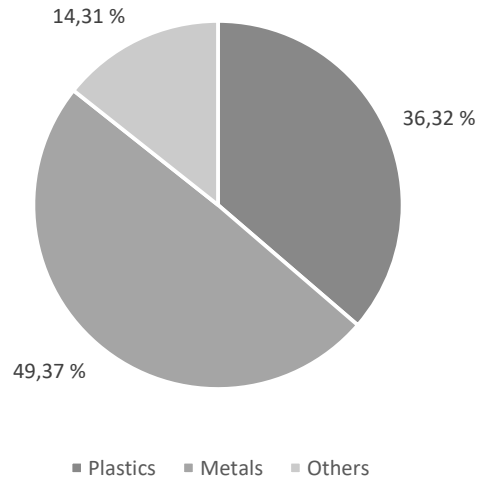
General Information

Reference product	2TKA000194G1 - 1066U
Description of the product	1-gang 2-way Jussi switch for flush mounting. Switch with screwless terminals and rocker with clip-on fastening. The terminals are for max 2 rigid wires. X-terminals are for extending the wires.
Functional unit	Establish, support and interrupt for 20 years rated currents in normal conditions of circuit characterized by the current 16 AX, for the operating voltage 250 V.
Other products covered	Other products covered in this PEP are listed in pages 9-10.

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Constituent materials



Total weight of Reference product

77,78 g including the product and its main packaging materials

Plastics as % of weight		Metals as % of weight		Others as % of weight	
Description	Weight-%	Description	Weight-%	Description	Weight-%
Polycarbonate	17,23	Stainless steel	41,64	Carton	14,31
Polyamide 6 GF20	10,14	Bronze	4,17	–	–
PC GF10	6,76	Brass	3,48	–	–
Polyamide 6 GF30	2,02	Silver-zinc oxide	0,07	–	–
Polyamide 66 GF30	0,18	–	–	–	–

Of the products weight, the switch insert is about 64% of the total weight, the rocker about 22% and the rest is carton.

The reference product and the other products in this range comply with the RoHS Directive 2011/65/EU (covering 2015/863 (EU)) and national legislation. The plastic materials used in products are also halogen free materials (IEC/61249-2-21) and recyclable.

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Additional Environmental Information

Manufacturing	Manufactured at ABB Oy, Wiring Accessories ISO 14001 certified production site, with renewable energy: Hydro- and wind power (50/50)
Distribution	Product distribution optimised by setting up local distribution centres. Packaging weight 11,13g, consisting of cardboard (100%).
Installation	The product does not require special installation procedure and requires little to no energy to install. The disposal of the packaging materials is accounted during the installation phase.
Use	The product does not require special maintenance operations
End of life	The product falls within the scope of the WEEE directive (2012/19/EU). Therefore it must be processed through local WEEE recycling/recovery channels.
Benefits and loads beyond the system boundaries	Net benefits and loads calculated according to PCR ed 4 and formulas given in Annex G of the EN 50693



Environmental impacts

Reference lifetime	20 years
Product category	Switches
Installation elements	No additional elements needed
Use scenario	Load rate: 50% of In Use rate: 30% of RLT
Geographical representativeness	Europe, with great emphasis on Finland and other Nordic countries
Technological representativeness	The manufacturing processes considered are representative of the products production
Software and database used	Software: SimaPro version 9.4.0.2 Database: ecoinvent 3.8, Industry data 2.0, and ELCD

Energy model used

Manufacturing	Manufacturing plant: Porvoo, Finland
Installation	Electricity, low voltage {FI} market for Cut-off, S
Use	Electricity, low voltage {FI} market for Cut-off, S
End of life	Electricity, low voltage {FI} market for Cut-off, S

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Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
PERE	MJ	9,634E+00	1,027E+00	1,031E-05	1,609E-02	8,472E+00	1,188E-01	-3,450E-01
PERM	MJ	4,288E-02	4,288E-02	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
PERT	MJ	9,677E+00	1,070E+00	1,031E-05	1,609E-02	8,472E+00	1,188E-01	-3,450E-01
PENRE	MJ	4,016E+01	5,373E+00	9,117E-03	1,002E-01	3,411E+01	5,699E-01	-3,273E+00
PENRM	MJ	7,419E-01	7,419E-01	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
PENRT	MJ	4,091E+01	6,115E+00	9,117E-03	1,002E-01	3,411E+01	5,699E-01	-3,273E+00
PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials								
PERM = Use of renewable primary energy resources used as raw materials								
PERT = Total Use of renewable primary energy resources								
PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials								
PENRM = Use of non-renewable primary energy resources used as raw materials								
PENRT = Total Use of non-renewable primary energy resources								

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy resources

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
SM	kg	1,148E-02	1,148E-02	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
RSF	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
NRSF	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00
FW	m ³	2,990E-02	7,025E-03	8,045E-08	5,684E-05	2,207E-02	7,473E-04	-4,096E-03
SM = Use of secondary material								
RSF = Use of renewable secondary fuels								
NRSF = Use of non-renewable secondary fuels								
FW = Use of net fresh water								

Inventory flows indicator – Waste category indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Hazardous waste disposed	kg	3,118E-05	1,609E-05	0,000E+00	1,406E-07	1,447E-05	4,766E-07	-1,195E-05
Non-hazardous waste disposed	kg	6,649E-02	5,686E-02	2,293E-05	1,078E-04	7,058E-03	2,442E-03	-2,469E-02
Radioactive waste disposed	kg	4,048E-04	3,871E-05	1,627E-08	2,212E-07	3,626E-04	3,213E-06	-1,862E-05

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Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Components for re-use	kg	7,699E-04	0,000E+00	0,000E+00	7,699E-04	0,000E+00	0,000E+00	0,000E+00
Materials for recycling	kg	4,937E-02	0,000E+00	0,000E+00	1,093E-02	0,000E+00	3,844E-02	0,000E+00
Materials for energy recovery	kg	3,025E-02	1,668E-03	0,000E+00	1,165E-02	0,000E+00	1,694E-02	0,000E+00
Exported energy	MJ	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00	0,000E+00

Inventory flow indicator – other indicators

Indicator	Unit	Total
Biogenic carbon content of the product	kg of C	0,000E+00
Biogenic carbon content of the associated packaging	kg of C	5,011E-03

Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Total use of primary energy during the life cycle	MJ	5,058E+01	7,184E+00	9,128E-03	1,163E-01	4,258E+01	6,887E-01	-3,434E+00
Emissions of fine particles	inci- dence of dis- eases	5,979E-08	2,695E-08	3,491E-11	3,289E-10	2,840E-08	4,079E-09	9,282E-11
Ionizing radiation, human health	kBq U235 eq.	1,703E+00	3,437E-02	1,591E-06	5,994E-04	1,657E+00	1,106E-02	-1,936E-02
Ecotoxicity (fresh water)	CTUe	7,860E+01	4,981E+01	4,400E-04	1,456E-01	2,153E+01	7,117E+00	-6,583E+01
Human toxicity, carcinogenic effects	CTUh	3,029E-09	1,586E-09	1,148E-14	4,527E-12	6,524E-10	7,863E-10	7,791E-11
Human toxicity, non-carcinogenic effects	CTUh	8,266E-08	4,773E-08	2,800E-13	9,803E-11	1,500E-08	1,983E-08	-1,062E-07
Impact related to land use/soil quality		1,617E+01	4,516E+00	0,000E+00	4,557E-02	1,105E+01	5,594E-01	-2,433E+00

Other indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
No Other indicators used								

For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

Product name	Manufacturing	Distribution	Installation	Use	End of life	Benefits
2TKA000167G1 1065U	1,13	1,02	1,00	1,00	1,05	0,97
2TKA000127G1 1061U	0,66	1,13	1,00	0,67	1,01	0,89
2TKA000196G1 1066U4	1,02	4,02	1,48	1,00	1,45	1,01
2TKA00001290 1066UP	1,00	1,20	1,79	1,00	1,00	1,00
2TKA000170G1 1065U4	1,29	4,12	1,48	1,00	1,50	1,05
2TKA000195G1 1066U2	1,26	4,27	1,48	1,00	1,46	1,19
2TKA00001266 1065UP	1,13	1,20	1,79	1,00	1,05	0,98
2TKA000169G1 1065U2	1,54	4,37	1,48	1,00	1,51	1,23
2TKA000182G1 10666U	1,67	1,10	1,00	1,00	1,04	1,09
2TKA000128G1 1061U4	0,88	3,97	1,48	0,67	1,46	0,96
2TKA000205G1 1067U	1,41	1,02	1,00	1,00	1,01	1,06
2TKA00002656 1066U4P	1,02	4,36	1,79	1,00	1,45	1,01
2TKA000149G1 10631U	1,41	1,14	1,00	0,67	1,06	1,02
2TKA000168G1 1065U.1	1,27	0,99	1,00	1,00	1,05	1,04
2TKA000184G1 10666U4	1,69	4,18	1,48	1,00	1,49	1,10
2TKA00001492 10666UP	1,68	1,24	1,79	1,00	1,04	1,09
2TKA00002616 1065U4P	1,29	4,51	1,79	1,00	1,50	1,05
2TKA000183G1 10666U2	1,94	4,42	1,48	1,00	1,50	1,27
2TKA000197G1 1066UK	1,15	1,48	1,00	1,56	1,01	0,97
2TKA00001154 10631UP	1,41	1,20	1,79	0,67	1,06	1,02

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* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

Product name	Manufacturing	Distribution	Installation	Use	End of life	Benefits
2TKA00002657 10666U4P	1,69	4,57	1,79	1,00	1,49	1,10
2TKA000151G1 10631U4	1,43	4,16	1,48	0,67	1,51	1,03
2TKA00002652 10631U4P	1,43	4,50	1,79	0,67	1,51	1,03
2TKA00003581 1065U4PP	12,89	41,22	14,77	10,00	15,00	10,48
2TKA00003583 1066U4PP	10,15	40,20	14,77	10,00	14,51	10,09
2TKA000150G1 10631U2	1,67	4,40	1,48	0,67	1,51	1,21
2TKA00003582 10666U4PP	16,90	41,76	14,77	10,00	14,90	10,96
2TKA00002331 1066UM	85,35	102,11	116,51	100,00	99,78	93,63
2TKA000198G1 1066UK2	1,41	4,30	1,48	1,56	1,46	1,16
2TKA00002332 1065UM	112,77	105,19	116,51	100,00	104,75	97,50
2TKA00002241 1061UM	65,80	100,52	116,51	67,24	100,87	88,89
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Internal	☐	External ☒
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain) PEP are compliant with XP C08-100-1:2016 or EN 50963:2019 The elements of the present PEP cannot be compared with elements from another program Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"		



Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Unit
Global warming potential (GWP) - total	Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. The total global warming potential (GWP-total) is the sum of three sub-categories of climate change. GWP-total = GWP-fossil + GWP-biogenic + GWP- land use and land use change	kg CO ₂ eq.
Ozone depletion (ODP)	Emissions to air that contribute to the destruction of the stratospheric ozone layer	kg CFC-11 eq.
Acidification of soil and water (A)	Acidification of soils and water caused by the release of certain gases to the atmosphere, such as nitrogen oxides and sulphur oxides	H+ eq.
Eutrophication (E)	Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc. This indicator is divided to three: freshwater, marine and terrestrial.	kg P eq., kg N eq., mole N eq.
Photochemical ozone creation (POCP)	Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun.	kg NMVOC eq.
Depletion of abiotic resources – elements (ADPe)	Indicator of the depletion of natural non-fossil resources	kg Sb eq.
Depletion of abiotic resources – fossil fuels (ADPf)	The use of non-renewable fossil resources in an unsustainable way (e.g. from material to waste)	MJ (lower heating value)
Water Deprivation potential (WDP)	Deprivation-weighted water consumption. Assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived.	m ³ e depr.

Resource use indicators

Indicator	Description	Unit
Total use of primary energy	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy re-sources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

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