

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			
ABB Oy, Wiring Accessories		ella.helynranta@fi.abb.com			
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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.

Scan QR code for more information



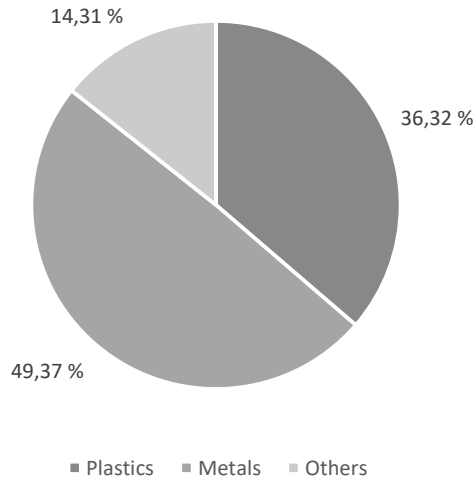
## General Information

<b>Reference product</b>	2TKA000194G1 - 1066U
<b>Description of the product</b>	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.
<b>Functional unit</b>	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.
<b>Other products covered</b>	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

<b>Manufacturing</b>	Manufactured at ABB Oy, Wiring Accessories ISO 14001 certified production site, with renewable energy: Hydro- and wind power (50/50)
<b>Distribution</b>	Product distribution optimised by setting up local distribution centres. Packaging weight 11,13g, consisting of cardboard (100%).
<b>Installation</b>	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.
<b>Use</b>	The product does not require special maintenance operations
<b>End of life</b>	The product falls within the scope of the WEEE directive (2012/19/EU). Therefore it must be processed through local WEEE recycling/recovery channels.
<b>Benefits and loads beyond the system boundaries</b>	Net benefits and loads calculated according to PCR ed 4 and formulas given in Annex G of the EN 50693



## Environmental impacts

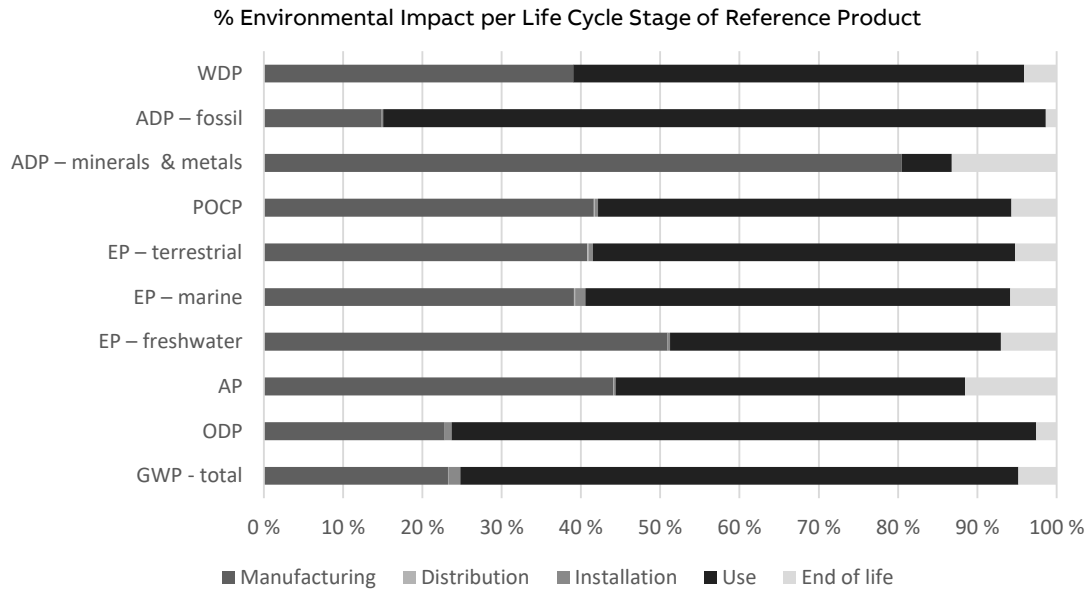
<b>Reference lifetime</b>	20 years
<b>Product category</b>	Switches
<b>Installation elements</b>	No additional elements needed
<b>Use scenario</b>	Load rate: 50% of In Use rate: 30% of RLT
<b>Geographical representativeness</b>	Europe, with great emphasis on Finland and other Nordic countries
<b>Technological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

### Energy model used

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

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## Common base of mandatory indicators



### Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
GWP-total	kg CO <sub>2</sub> eq.	1,661E+00	3,858E-01	6,549E-04	2,539E-02	1,168E+00	8,040E-02	-2,313E-01
GWP-fossil	kg CO <sub>2</sub> eq.	1,633E+00	4,012E-01	6,550E-04	7,428E-03	1,144E+00	7,997E-02	-2,302E-01
GWP-biogenic	kg CO <sub>2</sub> eq.	1,648E-02	-1,610E-02	-9,003E-08	1,791E-02	1,431E-02	3,557E-04	-7,671E-04
GWP-luluc	kg CO <sub>2</sub> eq.	1,114E-02	6,989E-04	0,000E+00	4,660E-05	1,031E-02	7,840E-05	-2,942E-04
GWP-fossil = Global Warming Potential fossil fuels GWP-biogenic = Global Warming Potential biogenic GWP-luluc = Global Warming Potential land use and land use change								
ODP	kg CFC-11 eq.	8,756E-08	1,991E-08	1,001E-12	8,223E-10	6,455E-08	2,272E-09	-1,187E-08
ODP = Depletion potential of the stratospheric ozone layer								
AP	H+ eq.	1,136E-02	5,003E-03	4,376E-06	3,109E-05	5,006E-03	1,314E-03	-3,948E-03
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	kg P eq.	9,644E-04	4,908E-04	2,452E-10	3,341E-06	4,024E-04	6,788E-05	-4,235E-04
EP-marine	kg N eq.	1,695E-03	6,635E-04	1,985E-06	2,248E-05	9,081E-04	9,933E-05	-4,668E-04
EP-terrestrial	mol N eq.	1,780E-02	7,263E-03	2,178E-05	1,038E-04	9,476E-03	9,327E-04	-5,568E-03
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment EP-terrestrial = Eutrophication potential, Accumulated Exceedance								
POCP	kg NMVOC eq.	4,860E-03	2,022E-03	5,449E-06	2,109E-05	2,533E-03	2,774E-04	-1,526E-03
POCP = Formation potential of tropospheric ozone								
ADP-minerals & metals	kg Sb eq.	2,257E-04	1,814E-04	2,573E-11	4,034E-08	1,439E-05	2,982E-05	-1,720E-04
ADP-fossil	MJ	4,131E+01	6,108E+00	9,117E-03	1,002E-01	3,452E+01	5,710E-01	-3,273E+00
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
WDP	m <sup>3</sup> e depr.	7,010E-01	2,738E-01	2,481E-06	2,481E-06	3,986E-01	2,867E-02	-1,413E-01
WDP = Water Deprivation potential								
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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 <sup>3</sup>	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

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## 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-10
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								

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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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Validity period:	5 years	Independent verification of the declaration and data, in compliance with ISO 14025: 2006	
<input type="radio"/> Internal		<input checked="" type="radio"/> 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"			



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## 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 <sub>2</sub> 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 <sup>3</sup> 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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