SCHUKO® SOCKET (20 EUC…)

Product Environmental Profile

Environmental Product Declaration

Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
Busch-Jaeger Elektro GmbH		lide.brito@es.abb.com			
ADDRESS		WEBSITE			
Freisenbergstraße 2, 58513 Lüdenscheid, Germany		https://www.busch-jaeger.de/en/product/future-linear/schuko-socket-outlet			
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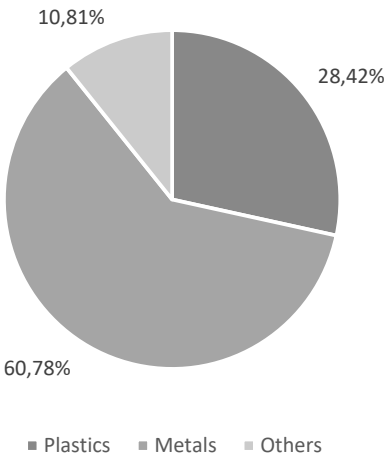
ABB Purpose & Embedding Sustainability

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.

General Information

Reference product	SCHUKO® socket outlet with screwless terminals (2CKA002011A3725)
Description of the product	The product is a white square socket outlet (71x71x41 mm) which consists of two main parts (Insert + centre plate). The insert is mostly the same in each design range, whereas the central plate can vary in size and shape. The SCHUKO® socket outlet is designed to provide electricity to electrical consumers with a plug of a load consuming 16A under a voltage of 250V. The socket outlet is designed for the indoor installation, such as private homes, hotels, retail, commercial buildings and more. The SCHUKO® socket is installed into a flush-mounted wall box, by a professional installer. For exact environmental details, please refer to VDE 0620-1. The intended market is Europe, and more specifically Germany, Austria and The Netherlands.
Functional unit	Connect/Disconnect the plug of a load consuming 16A under a voltage of 250V for 20 years while protecting the user from direct contact with live parts and with a protection class IP20 and IK02.
Other products covered	SCHUKO® socket outlet with screwless terminals (2CKA002011A3725) SCHUKO® socket outlet (2CKA002011A1888) SCHUKO® socket outlet with screwless terminals (2CKA002011A6232)

Constituent materials



Total weight of Reference product	111,99 g including the product and its packaging

Plastics as % of weight		**Metals as % of weight**		**Others as % of weight**	
Name and CAS number	Weight-%	Name and CAS number	Weight-%	Name and CAS number	Weight-%
Polycarbonate	15,90	Steel	47,73	Cardboard	8,13
Duroplast	11,51	Brass	13,05	Paper	2,68
Glue	0,03	–	–	–	–
Low density Polyethylene	0,98	–	–	–	–

The product is in conformity with the provisions of RoHS directive 2011/65/EU, covering 2015/863(EU), REACH regulation No 1907/2006, and national legislation.

Additional Environmental Information

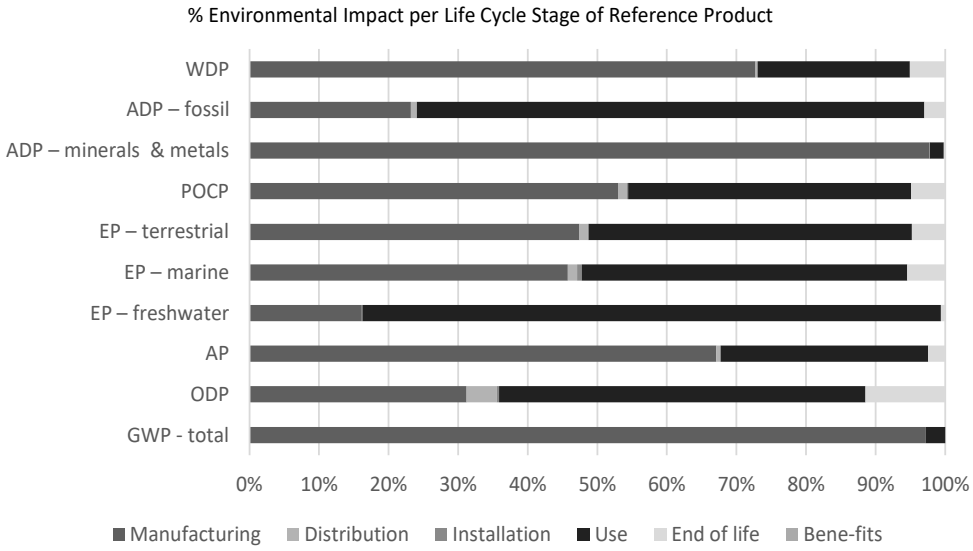
Manufacturing	While most metal parts are manufactured in Lüdenscheid, the thermoplast and thermoset molding happen in Bad Berleburg/Aue. From there, all following steps including the final assembly, product packaging and distribution happen at the Lüdenscheid site. All components are transported by lorry from the supplier to these manufacturing sites. No recycled material content is assumed. All components are transported by lorry from the supplier to these manufacturing sites. The electricity mix on both manufacturing sites is largely renewable from Scandinavian hydropower and rooftop solar power on the Lüdenscheid site (together 82% in Bad Berleburg/Aue and 77% in Lüdenscheid). Instead of hydropower, a German electricity market mix was modelled to avoid double counting of renewable energy. The remaining power and heating demand is met by combustion of natural gas, for which all CO2 emissions are compensated through ClimatePartner. Nevertheless, this compensation is not accounted for in the model of this EPD. Production waste is assumed to be transported by lorry (1000 km by default in the PCR) and treated by incineration. Specific one-year data from 2021 on manufacturing site level was collected and allocated to the product by economic partitioning following the requirements of ISO 14044.
Distribution	The transport scenario is estimated based on the distance to the capital city of the countries it is sold to, according to the sales data for 2021.
Installation	Installation is done manually, without using energy or other auxiliary materials. Treatment of packaging waste is included in this stage, assuming an incineration scenario.
Use	The power dissipation is 0,062 W and the product has a reference lifetime of 20 years. The use scenario described in the PSR is followed. At a load rate of 50% of the current and a use time rate of 50%, the power consumption over the lifetime of the product is 1,36 kWh. A regional electricity mix is used to model the fraction of the product to each country it is sold to according to sales data.
End of life	Considering the complexity and the lack of knowledge of the electric and electronic recycling processes, the standard scenario set in the PCR is considered.
Benefits and loads beyond the system boundaries	Not applicable

Environmental impacts

Reference lifetime	20 years
Product category	3.13 "Other equipment" (exception: the functional unit and use scenario of the PSR 3.8 "Sockets" was used).
Installation elements	Not applicable
Use scenario	Load rate is 50% of In, use time rate is 50% or RLT
Geographical representativeness	Production site data is for Germany, power consumption during the use stage is related to the country it is sold to (European), all other data has a European scope.
Technological representativeness	Materials and process data are specific for the production of the SCHUKO® socket.
Software and database used	SimaPro 9.4.0.2., ecoinvent 3.8

Energy model used	
Manufacturing	Electricity, high voltage {SE}| electricity production, hydro, reservoir, non-alpine region | Cut-off, U Electricity, low voltage {DE}| electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted | Cut-off, U Natural gas, high pressure {DE}| market for | Cut-off, S
Installation	Not applicable
Use	Electricity, medium voltage {DE}| market for | Cut-off, U Electricity, medium voltage {AT}| market for | Cut-off, U Electricity, medium voltage {NL}| market for | Cut-off, U
End of life	Not applicable

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_2 eq.	2,29E+00	5,44E-01	1,55E-02	2,53E-02	1,60E+00	1,07E-01	-
GWP-fossil	kg CO_2 eq.	2,13E+00	5,33E-01	1,55E-02	1,81E-03	1,48E+00	1,06E-01	-
GWP-biogenic	kg CO_2 eq.	1,52E-01	1,02E-02	1,40E-05	2,35E-02	1,17E-01	1,20E-03	-
GWP-luluc	kg CO_2 eq.	2,34E-03	4,23E-04	7,28E-06	4,46E-07	1,87E-03	4,33E-05	-
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.	7,98E-08	2,49E-08	3,48E-09	2,45E-10	4,20E-08	9,14E-09	-
ODP = Depletion potential of the stratospheric ozone layer								
AP	H+ eq.	1,13E-02	7,57E-03	6,15E-05	7,08E-06	3,36E-03	2,74E-04	-
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	kg P eq.	2,69E-04	4,35E-05	1,26E-07	1,73E-08	2,24E-04	1,64E-06	-
EP-marine	kg N eq.	1,33E-03	6,07E-04	1,77E-05	9,05E-06	6,21E-04	7,21E-05	-
EP-terrestrial	mol N eq.	1,65E-02	7,82E-03	1,96E-04	2,16E-05	7,66E-03	7,89E-04	-
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.	4,70E-03	2,49E-03	6,01E-05	9,39E-06	1,91E-03	2,30E-04	-
POCP = Formation potential of tropo-spheric ozone								
ADP-minerals & metals	kg Sb eq.	1,52E-04	1,48E-04	7,05E-08	3,13E-09	3,04E-06	3,00E-07	-
ADP-fossil	MJ	2,80E+01	6,50E+00	2,31E-01	1,68E-02	2,04E+01	8,36E-01	-
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic deple-tion for fossil resources potential								
WDP	m^3 e depr.	3,16E-01	2,30E-01	7,65E-04	3,02E-04	6,91E-02	1,61E-02	-
WDP = Water Deprivation potential								

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	4,29E+00	5,77E-01	3,91E-03	2,80E-04	3,65E+00	5,24E-02	-
PERM	MJ	1,47E-01	1,47E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
PERT	MJ	4,43E+00	7,24E-01	3,91E-03	2,80E-04	3,65E+00	5,24E-02	-
PENRE	MJ	2,56E+01	4,04E+00	2,31E-01	1,68E-02	2,04E+01	8,36E-01	-
PENRM	MJ	2,45E+00	2,45E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
PENRT	MJ	2,80E+01	6,50E+00	2,31E-01	1,68E-02	2,04E+01	8,36E-01	-

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 re-sources)

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy re-sources

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life	Bene-fits
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
FW	m³	1,71E-02	6,04E-03	2,92E-05	9,81E-06	1,05E-02	5,40E-04	-

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	2,39E-04	2,39E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
Non- hazardous waste disposed	kg	1,28E-01	1,62E-02	0,00E+00	1,32E-02	0,00E+00	9,88E-02	-
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
Materials for recycling	kg	5,15E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,15E-02	-
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-

Inventory flow indicator – other indicators

Indicator	Unit	Total						
Biogenic carbon content of the product	kg of C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-
Biogenic carbon content of the associated packaging	kg of C	0,00E+00	5,45E-03	0,00E+00	-5,45E-03	0,00E+00	0,00E+00	-

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	3,25E+01	7,22E+00	2,35E-01	1,71E-02	2,41E+01	8,88E-01	-
Emissions of fine particles	inci-dence of dis-eases	6,26E-08	4,38E-08	1,15E-09	1,83E-10	1,12E-08	6,31E-09	-
Ionizing radiation, human health	kBq U235 eq.	8,51E-02	1,32E-02	1,00E-03	6,75E-05	6,64E-02	4,40E-03	-
Ecotoxicity (fresh water)	CTUe	7,37E+01	5,80E+01	1,88E-01	3,33E-01	1,23E+01	2,85E+00	-
Human toxicity, car-cinogenic effects	CTUh	4,04E-09	2,51E-09	6,89E-12	5,82E-12	2,97E-10	1,22E-09	-
Human toxicity, non-carcinogenic effects	CTUh	1,00E-07	8,77E-08	1,91E-10	7,49E-11	1,08E-08	1,30E-09	-
Impact related to land use/soil quality	Pt	6,83E+00	3,34E+00	1,36E-01	7,15E-03	2,98E+00	3,68E-01	-

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	Instal-lation	Use	End of life	Benefits
SCHUKO® socket outlet with screwless terminals	1	1	1	1	1	-
SCHUKO® socket outlet	0,964	0,961	0,986	1	0,958	-
SCHUKO® socket outlet with screwless terminals	0,964	0,961	0,982	1	0,958	-

Registration number:		Drafting Rules:	PCR-ed4-EN-2021 09 06
ABBG-00126-V01.01-EN		Supplemented by:	PSR-0005-ed2-EN-2016 03 29
Verifier accreditation number:		Information and reference documents:	
VH32		www.pep-ecopassport.org	
Date of issue:	03/2023	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
Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019
The components of the present PEP may not be compared with components from any other 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)