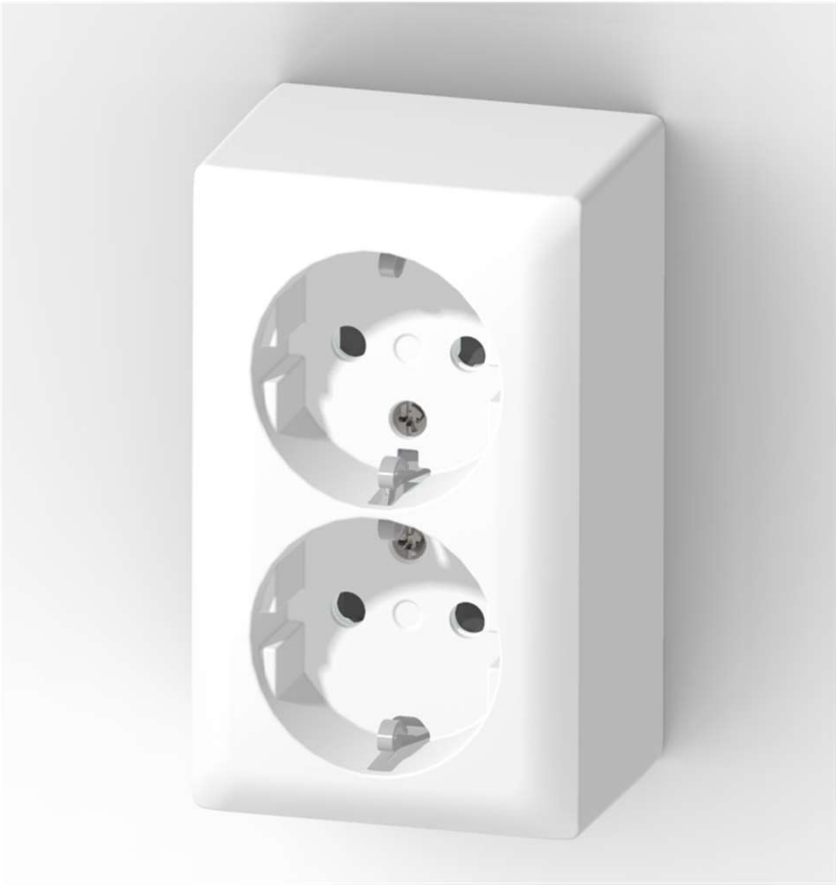
BUSCH-BALANCE® AP SOCKETS

PEP ecopassport®

Product Environmental Profile



Product Environmental Profile - PEP Ecopassport.
Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
Busch-Jaeger Elektro GmbH		Ella Helynranta (ella.helynranta@fi.abb.com)			
ADDRESS		WEBSITE			
Freisenbergstr. 2 58513 Lüdenscheid		busch-jaeger.com			
STATUS	SECURITY LEVEL	REGISTRATION NUMBER	REV.	LANG.	PAGE
Approved	Public	ABBG-00651-V01.01-EN	1	en	1/11

ABB Purpose & Embedding Sustainability

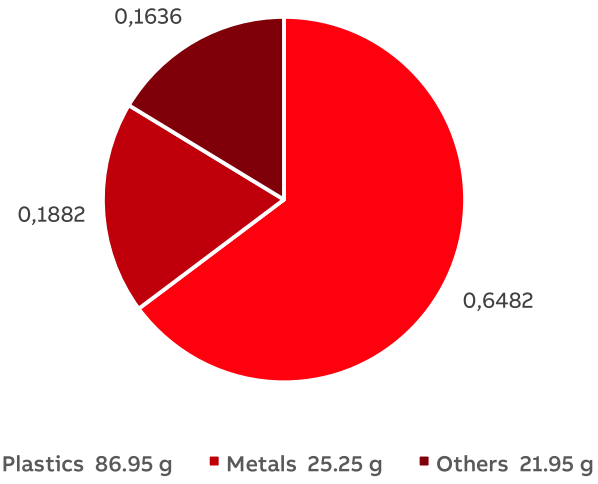
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow. With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

Scan QR code for more information

General Information

Reference product	2TKA00005531 Double socket schuko safety+ The content of this PEP cannot be compare with content from another program.
Description of the product	The reference product is 2TKA00005531 Double socket schuko safety+, whose dimensions are 51 x 63 x 100 mm. The reference product belongs to Busch-balance ® AP Sockets family, which are surface-mounted socket outlets used for connecting and disconnecting the plug of an electrical load.
Functional unit	Connect/disconnect the plug of a load consuming 16 A maximum under a voltage of 230 V with IP20 degree of protection in the Household/Commercial application areas, according to the appropriate use scenario, and for the reference service life of the product of 20 years
Other products covered	The PEP covers other products from Busch-balance AP Socket family. All the products covered by this PEP are listed on page 9.

Constituent Materials



Total weight of Reference product with packaging	134,14	g

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%
Bio-circular polycarbonate	46,8	**Brass**	16,4	**Glass fibres**	0,2
Polyamide	9,1	**Steel**	1,2	**Paint and coating**	0,0
Polycarbonate	8,9	**Stainless steel**	1,2	**Cardboard packaging**	14,4
–	x	**–**	x	**Polyethylene packaging**	1,8

The reference product and other products in this range are in conformity with the provisions of Low Voltage Directive 2014/35/EU, RoHS directive 2011/65/EU, covering 2015/863(EU), REACH regulation No 1907/2006, and national legislation. Plastics used for the reference product are halogen-free materials (IEC/61249-2-21) and they are also recyclable.

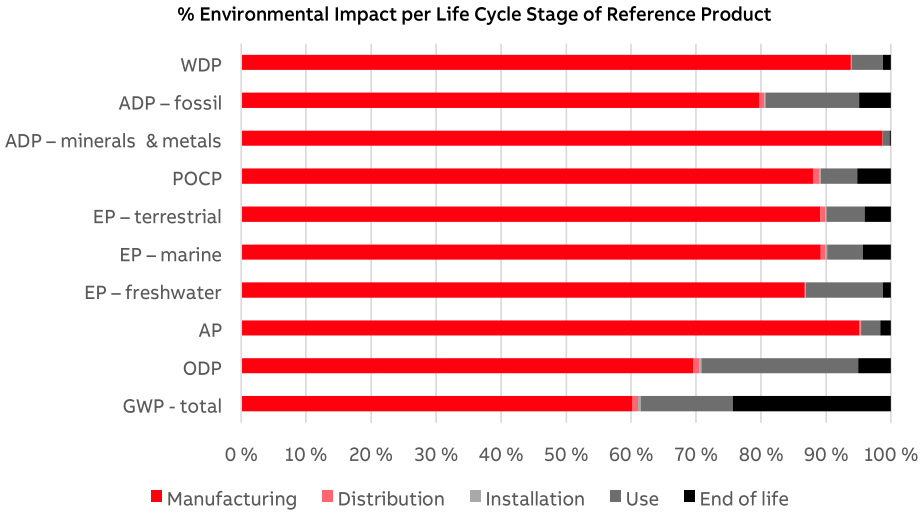
Additional Environmental Information

Manufacturing	Includes the environmental impacts associated with the extraction and processing of the raw materials making up the product and its packaging, as well as their transport to the manufacturing site. Additionally, its includes the electricity consumption required for the product assembly and the wastes generated during the manufacturing process.
Distribution	Includes the transportation in its packaging from the manufacturer's last logistics platform to the customer.
Installation	Installation stage includes the manual installation of the products by the customer (no energy consumption is required during installation) and the disposal of the packaging.
Use	Includes the energy consumption due to electrial lossed during the RLT in the customer´s locations.
End of life	Includes the transportation of the product from the installation site to the final end of life treatment site, as well as the end of life treatment processes. A value of 1,000 km transport by lorry is used for the transportation.
Benefits and loads beyond the system boundaries	Potential for reuse, recovery and/or recycling, expressed as net benefits and impacts

Environmental Impacts

Reference lifetime	20 years
Product category	Sockets
Installation elements	Manual installation by the customer.
Use scenario	Defined by the PSR (10% of the load rate with a use time rate of 30% during 20 years)
Geographical representativeness	Global.
Technological representativeness	Materials and processes data are representative of the production of 2TKA00005531 and other products of its homogeneous environmental Busch-balance® AP Sockets family.
Software and database used	SimaPro 9.5.0.1 & Ecoinvent 3.9
Energy model used	
Manufacturing	Electricity mixes of Estonia, Finland, Lithuania and Germany.
Installation	No energy required.
Use	Electricity mixes of the Netherlands, Germany and Austria.
End of life	Product recycling

Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Installation	Use	End of life	Bene-fits
GWP-total	**kg CO_2 eq.**	1,01E+00	6,08E-01	8,29E-03	4,11E-03	1,43E-01	2,46E-01	-5,31E-01
GWP-fossil	**kg CO_2 eq.**	1,01E+00	7,66E-01	8,28E-03	3,96E-03	1,43E-01	8,50E-02	-5,28E-01
GWP-biogenic	**kg CO_2 eq.**	2,79E-03	-1,59E-01	2,63E-06	1,52E-04	3,85E-04	1,61E-01	-2,06E-03
GWP-luluc	**kg CO_2 eq.**	1,10E-03	9,92E-04	4,02E-06	8,37E-07	6,50E-05	4,04E-05	-7,50E-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.**	1,79E-08	1,24E-08	1,80E-10	4,79E-11	4,32E-09	9,07E-10	-3,59E-08
ODP = Depletion potential of the stratospheric ozone layer								
AP	**H+ eq.**	1,15E-02	1,09E-02	2,70E-05	8,25E-06	3,39E-04	1,86E-04	-1,35E-02
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	**kg P eq.**	5,81E-05	5,03E-05	6,63E-08	2,51E-08	6,92E-06	7,22E-07	-6,49E-05
EP-marine	**kg N eq.**	1,26E-03	1,12E-03	9,18E-06	3,17E-06	6,94E-05	5,42E-05	-8,61E-04
EP-terrestrial	**mol N eq.**	1,41E-02	1,25E-02	9,81E-05	3,29E-05	8,27E-04	5,70E-04	-1,13E-02
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.**	4,46E-03	3,93E-03	4,03E-05	1,19E-05	2,51E-04	2,30E-04	-3,80E-03
POCP = Formation potential of tropospheric ozone								
ADP-minerals & metals	**kg Sb eq.**	1,21E-04	1,19E-04	2,66E-08	7,11E-09	1,33E-06	2,41E-07	-1,55E-04
ADP-fossil	**MJ**	1,43E+01	1,14E+01	1,17E-01	2,10E-02	2,07E+00	7,02E-01	-9,99E+00
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
WDP	**m^3 eq. depr.**	4,06E-01	3,80E-01	4,79E-04	1,79E-04	1,94E-02	5,09E-03	-3,77E-01
WDP = Water Deprivation potential								

Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Installation	Use	End of life	Bene-fits
PERE	**MJ**	1,44E+00	9,89E-01	1,82E-03	7,50E-04	4,13E-01	3,23E-02	-9,46E-01
PERM	**MJ**	1,96E+00	1,96E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	**MJ**	3,40E+00	2,95E+00	1,82E-03	7,50E-04	4,13E-01	3,23E-02	-9,46E-01
PENRE	**MJ**	1,07E+01	7,76E+00	1,17E-01	2,10E-02	2,07E+00	7,02E-01	-9,99E+00
PENRM	**MJ**	1,02E+00	1,02E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	**MJ**	1,17E+01	8,78E+00	1,17E-01	2,10E-02	2,07E+00	7,02E-01	-9,99E+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	Installation	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	0,00E+00
RSF	**MJ**	0,00E+00	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	0,00E+00
FW	**m^3**	1,05E-02	9,16E-03	1,67E-05	7,49E-06	1,12E-03	1,81E-04	-9,76E-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	Installation	Use	End of life	Bene-fits
Hazardous waste disposed	**kg**	1,08E-04	9,75E-05	7,48E-07	1,20E-07	6,57E-06	3,40E-06	-1,84E-05
Non- hazardous waste disposed	**kg**	2,07E-01	1,47E-01	5,74E-03	3,07E-03	8,17E-03	4,28E-02	-9,78E-02
Radioactive waste disposed	**kg**	1,84E-05	1,32E-05	3,81E-08	1,73E-08	4,51E-06	6,35E-07	-1,29E-05

Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Installation	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	0,00E+00
Materials for recycling	kg	9,50E+00	9,39E+00	0,00E+00	1,68E-02	0,00E+00	9,43E-02	0,00E+00
Materials for energy recovery	kg	1,63E+01	1,63E+01	0,00E+00	2,62E-03	0,00E+00	5,17E-03	0,00E+00
Exported energy	MJ	0,00E+00	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	Manu-facturing	Distri-bution	Installation	Use	End of life	Bene-fits
Biogenic carbon content of the product	kg of C	4,45E-02	4,45E-02	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	9,65E-03	9,65E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Extrapolation Factors

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	Manu-facturing	Distri-bution	Installation	Use	End of life	Benefits
2TKA00005531	1,00	1,00	1,00	1,00	1,00	1,00
2TKA00005528	0,81	0,81	0,94	1,35	0,79	0,81
2TKA00005529	0,65	0,65	0,94	1,35	0,59	0,65
2TKA00005530	0,65	0,65	0,94	1,35	0,59	0,65
2TKA00005527	0,81	0,81	0,94	1,35	0,79	0,81
2TKA00005532	1,00	1,00	1,00	1,00	1,00	1,00
2TKA00005533	0,98	0,98	1,00	1,00	0,97	0,98
2TKA00005534	0,98	0,98	1,00	1,00	0,97	0,98
2TKA00005535	1,65	1,65	1,11	2,00	1,76	1,65

Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Distri-bution
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 eq. depr.

Resource use indicators

Indicator	Description	Distri-bution
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)

Registration number: **ABBG-00651-V01.01-EN**	Drafting Rules: ***PCR-ed4-EN-2021 09 06*** ***Supplemented by:*** ***PSR-0005-ed3-EN-2023 06 06***
Verifier accreditation number: ***VH45***	Information and reference documents: **www.pep-ecopassport.org**
Date of issue: ***09-2024***	Validity period: **5 years**

Independent verification of the declaration and data, in compliance with ISO 14025: 2006

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 50693:2019 or NE E38-500 :2022
The components of the present PEP may not be compared with elements from any other program.

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