

S2C-H6R AUXILIARY CONTACT

PEP ecopassport®

Product Environmental Profile



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.



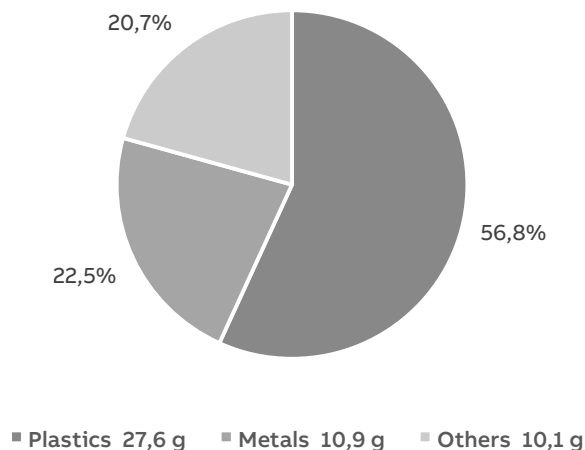
General Information

Product	Product identification: S2C-H6R PSR product category: Other Equipment
Description of the product	The function of the auxiliary contact S2C-H6R is to indicate the contacts position (open or closed) of the associated device.
Functional unit	The functional unit used in this study for the S2C-S/H6R is to indicate the contacts position (open or closed) of the associated device with a rated current of 1.67A, at a load rate of 30% (usage scenario) for a period of 20 years in accordance with the IEC 60947-5-1 standard.
Other products covered	no

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Constituent Materials



Total weight of Reference product

48,6

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%
Glass-fibre reinforced plastic	49,0	Copper alloys	14,7	Cardboard	20,7
Other plastic	7,8	Steel	6,2	Paper	<0,1
–	x	Copper	1,5	–	x
–	x	Other metals	<0,1	–	x

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Additional Environmental Information

Manufacturing	The product is assembled in Germany. The production site of the products is certified according to ISO 14001.
Distribution	Specific transport distances based on sales data are applied to model the distribution.
Installation	As installation is performed manually, no environmental burdens are associated to this phase besides the disposal of product packaging.
Use	No consumables and maintenance. The energy consumption during 20 years is 0.0398 kWh for the default use rate of 30%.
End of life	Due to the lack of knowledge of the disposal pathway, landfilling as proposed standard scenario in the PCR is considered.
Benefits and loads beyond the system boundaries	Not considered

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Environmental Impacts

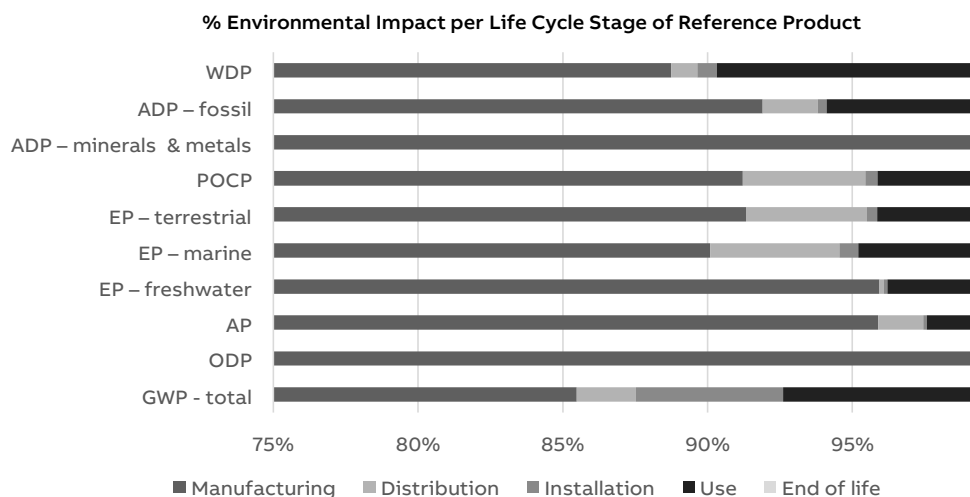
Reference lifetime	20 years
Product category	Electrical switchgear and control gear solutions
Installation elements	Does not require any special installation elements.
Use scenario	Load time: 30% of rated current Use time rate: 30% of reference lifetime
Geographical representativeness	Production in Germany, sold globally.
Technological representativeness	Represents S2C-H6R
Software and database used	SimaPro 9.5 with ecoinvent 3.9.1, cut-off and industry data 2.0

Energy model used

Manufacturing	Electricity, medium voltage {DE} market for electricity, medium voltage Cut-off, S
Installation	{RoW}
Use	Electricity, low voltage {GLO} market for electricity, low voltage Cut-off, S
End of life	{RoW}

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Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life
GWP-total	kg CO ₂ eq.	4,48E-01	3,83E-01	9,16E-03	2,27E-02	2,98E-02	3,31E-03
GWP-fossil	kg CO ₂ eq.	4,40E-01	3,93E-01	9,15E-03	5,10E-03	2,97E-02	3,31E-03
GWP-biogenic	kg CO ₂ eq.	7,15E-03	-1,06E-02	3,35E-06	1,76E-02	7,77E-05	7,59E-07
GWP-luluc	kg CO ₂ eq.	4,81E-04	4,13E-04	4,99E-06	1,30E-06	6,13E-05	4,88E-07
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.	8,77E-08	8,73E-08	1,80E-10	2,77E-11	2,04E-10	1,72E-11
ODP = Depletion potential of the stratospheric ozone layer							
AP	H+ eq.	6,37E-03	6,11E-03	9,91E-05	7,51E-06	1,51E-04	4,44E-06
AP = Acidification potential, Accumulated Exceedance							
EP-freshwater	kg P eq.	3,96E-05	3,80E-05	6,25E-08	4,48E-08	1,49E-06	9,20E-09
EP-marine	kg N eq.	6,30E-04	5,67E-04	2,81E-05	4,05E-06	2,58E-05	4,44E-06
EP-terrestrial	mol N eq.	7,37E-03	6,73E-03	3,08E-04	2,57E-05	2,88E-04	1,75E-05
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.	2,24E-03	2,04E-03	9,48E-05	9,38E-06	8,58E-05	6,70E-06
POCP = Formation potential of tropospheric ozone							
ADP-minerals & metals	kg Sb eq.	9,18E-05	9,16E-05	2,00E-08	8,37E-09	1,62E-07	1,83E-09
ADP-fossil	MJ	6,62E+00	6,09E+00	1,25E-01	2,09E-02	3,76E-01	1,40E-02
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential							
WDP	m ³ eq. depr.	5,87E-02	5,21E-02	5,33E-04	3,89E-04	5,30E-03	3,90E-04
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	Installation	Use	End of life
PERE	MJ	7,20E-01	6,65E-01	1,61E-03	1,76E-03	5,22E-02	2,45E-04
PERM	MJ	1,29E-01	1,29E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	8,50E-01	7,94E-01	1,61E-03	1,76E-03	5,22E-02	2,45E-04
PENRE	MJ	5,98E+00	5,44E+00	1,25E-01	2,09E-02	3,76E-01	1,40E-02
PENRM	MJ	6,39E-01	6,39E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	6,62E+00	6,08E+00	1,25E-01	2,09E-02	3,76E-01	1,40E-02

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
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	N/A	N/A	N/A	N/A	N/A	N/A
NRSF	MJ	N/A	N/A	N/A	N/A	N/A	N/A
FW	m³	2,05E-03	1,80E-03	1,74E-05	1,46E-05	2,08E-04	9,72E-06

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
Hazardous waste disposed	kg	1,74E-02	1,74E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non- hazardous waste disposed	kg	2,50E-03	2,50E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life
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	1,51E-02	1,27E-03	0,00E+00	1,38E-02	0,00E+00	0,00E+00
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	Manu- facturing	Distri- bution	Installation	Use	End of life
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	4,28E-03	4,28E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life
Emissions of fine particles	incidence of diseases	2,62E-08	2,62E-08	2,40E-08	7,42E-10	1,24E-10	9,74E-11
Ionizing radiation, human health	kBq U235 eq.	3,75E-02	3,75E-02	3,58E-02	5,23E-05	6,44E-05	7,56E-06
Ecotoxicity (fresh water)	CTUe	1,02E+01	1,02E+01	1,00E+01	6,57E-02	2,06E-02	1,49E-02
Human toxicity, car-cinogenic effects	CTUh	1,19E-09	1,19E-09	1,18E-09	3,88E-12	1,58E-12	3,95E-13
Human toxicity, non-carcinogenic effects	CTUh	9,38E-08	9,38E-08	9,32E-08	1,04E-10	4,07E-11	1,21E-11
Impact related to land use/soil quality	kBq U235 eq.	4,64E+00	4,64E+00	4,44E+00	9,95E-02	1,18E-02	2,47E-02

Other indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life
No Other indicators used							

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Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Distribution
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	Distribution
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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References

- [1] Bussa et al. 2023
Bussa, M.; Ulrich, M. and Jungbluth, N. (2023) Product Environmental Profile for S2C Auxiliary Contacts, ESU-services Ltd., Schaffhausen
- [2] ecoinvent Centre 2023
ecoinvent Centre (2023) ecoinvent data v3.9.1, Cut-Off model. Swiss Centre for Life Cycle Inventories, Zurich, Switzerland, retrieved from: www.ecoinvent.org.
- [3] European Committee for Electrotechnical Standardisation (CENELEC) 2019
European Committee for Electrotechnical Standardisation (CENELEC) (2019) EN 50693 - Product category rules for life cycle assessments of electronic and electrical products and systems. European Committee for Electrotechnical Standardisation (CENELEC), Brussels.
- [4] European Committee for Standardisation (CEN) 2022
European Committee for Standardisation (CEN) (2022) EN 15804+A2:2020/AC2021 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products (includes Corrigendum :2021). European Committee for Standardisation (CEN), Brussels, retrieved from: <https://www.en-standard.eu/din-en-15804-sustainability-of-construction-works-environmental-product-declarations-core-rules-for-the-product-category-of-construction-products-includes-corrigendum-2021/>.
- [5] International Organization for Standardization (ISO) 2006a
International Organization for Standardization (ISO) (2006a) Environmental management - Life cycle assessment - Principles and framework. ISO 14040:2006; Second Edition 2006-06, Geneva.
- [6] International Organization for Standardization (ISO) 2006b
International Organization for Standardization (ISO) (2006b) Environmental management - Life cycle assessment - Requirements and guidelines. ISO 14044:2006; incl. Amd 1:2020, Geneva.
- [7] International Organization for Standardization (ISO) 2018
International Organization for Standardization (ISO) (2018) Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification. ISO 14067, retrieved from: www.iso.org/standard/71206.html.
- [8] PEP 2021
PEP (2021) Product Category Rules for Electrical, Electronic and HVAC-R Products - PCR-ed4-EN-2021 09 06. P.E.P. Association, retrieved from: <http://www.pep-ecopassport.org>.
- [9] PEP 2023
PEP (2023) SPECIFIC RULES FOR Electrical switchgear and control gear solutions - PSR-0005-ed3-EN-2023 06 06. Association P.E.P., retrieved from: <http://www.pep-ecopassport.org>.
- [10] SimaPro 2023
SimaPro (2023) SimaPro 9.5 LCA software package. PRÉ Sustainability, Amersfoort, NL, retrieved from: www.simapro.ch.

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Verifier accreditation number:	VH50	Information and reference documents:	www.pep-ecopassport.org
Date of issue:	11-2023	Validity period:	5 years
Independent verification of the declaration and data, in compliance with ISO 14025: 2006			
Internal: <input type="radio"/> External: <input checked="" type="radio"/>			
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 complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			

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