SCU200-W

# 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 | | | |
|---|---|---|---|---|---|
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| STATUS | SECURITY LEVEL | REGISTRATION NUMBER | REV. | LANG. | PAGE |
| Approved | Public | ABBG-00531-V01.01-EN | 1 | en | 1/12 |

# ABB Purpose & Embedding Sustainability

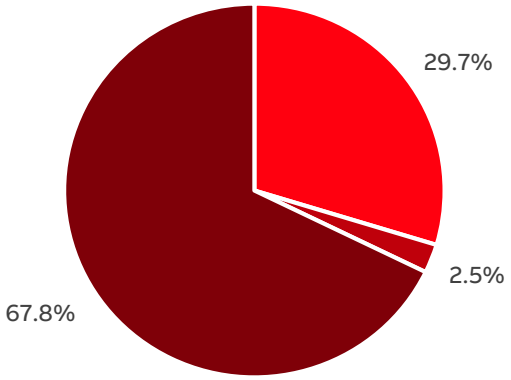
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow.
With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

"other points or for example a QR code or link to ABB website, where more information on the topic"

# General Information

| | |
|---|---|
| **Reference product** | 2CCG001157R0001 SCU200-W |
| **Description of the product** | The SCU200-W control unit is a part of the InSite pro M compact - a monitoring system which brings complete overview of the system performances and enables energy and asset management. The system consists of field devices connected to the SCU200 control unit: energy and power meters, current sensors, digital input and output modules (I/O modules) |
| **Functional unit** | The SCU200-W collects measurements and information simultaneously from up to 16 energy and power meters, in addition to 32 current sensors and digital channels, calculating the energy and number of operations at single line level and compares stored values by period or by device during 10 years with 100% use time rate, having the following dimensions 65 mm x 87 mm x 35.8 mm |
| **Other products covered** | SCU200 - 2CCG001158R0001 |

# Constituent Materials




| | | |
|---|---|---|
| **Total weight in reference product included packaging** | 150.5 | **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 fiber filled polycarbonate** | 28.6 | **Aluminium** | 2.5 | **Printed Circuit Board** | 36.2 |
| **Polyoxymethylene** | 0.8 | – | x | **Cardboard** | 26.6 |
| **Polycarbonate** | 0.3 | – | x | **Paper** | 4.0 |
| **Polyethylene Terephthalate** | <0.1 | – | x | **Degson Plug** | 0.8 |
| – | – | – | – | **Adhesive Paper** | 0.2 |

Total weight of the reference product 104.2 g plus  packaging is 150.5g.

# Additional Environmental Information

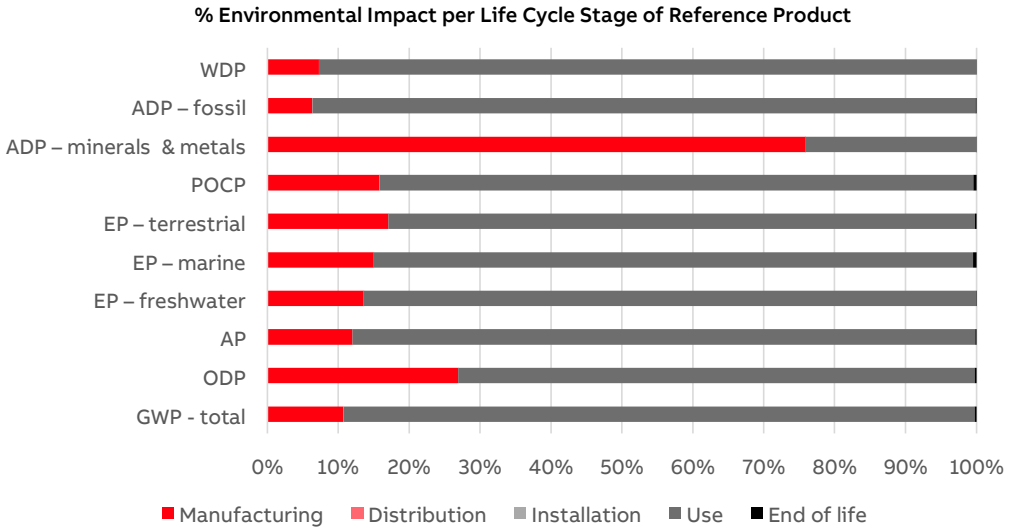
| | |
|---|---|
| **Manufacturing** | Product Manufacturing and packaging by external supplier in Thailand, transported to ABB Italy at Vignate |
| **Distribution** | European distribution from Vignate depending on current market needs |
| **Installation** | The installation phase only implies manual activities and no energy is consumed. The installation stage includes the disposal of the packaging and the transport of packaging materials to disposal |
| **Use** | The product uses some electricity due to power consumption. The average power loss of the switch has been calculated as follow:<br>- Nominal current load;<br>- RSL of 10 years;<br>- Functioning time of 100% of the RSL (α).Operating Modes : 2.5W (60% time-Idle), 8W (20% time-Medium), 15W (20% time- High)<br>No maintenance is planned for the product. |
| **End of life** | The end of life stage is modelled according to PCR-ed4-EN-2021 09 06,PSR-0005-ed3.1-EN-2023 08 12 and IEC/TR 62635 |
| **Benefits and loads beyond the system boundaries** | The potential benefits derives from the impacts prevented by recycling and waste to energy recovery of the product and packaging |

# Environmental Impacts

| | |
|---|---|
| **Reference lifetime** | 10 years |
| **Product category** | Other equipments - Active Products |
| **Installation elements** | No additional elements needed during installation |
| **Use scenario** | Reference Service Life - 10 years<br>ON operating mode - power consumption 6.1W - 100% use time rate 2.5W (60% time-Idle), 8W (20% time-Medium), 15W (20% time-High)<br>OFF operating mode - power consumption 0W - 0% use time rate |
| **Geographical representativeness** | Manufacturing: Thailand and Global<br>Other Stages: European |
| **Technological representativeness** | Technological representativeness refers to the specific production process for primary data for assembly |
| **Software and database used** | SimaPro 9.5.0 and ecoinvent 3.9.1 |

| **Energy model used** | |
|---|---|
| **Manufacturing** | Global and Thailand.<br>The energy-related processes used for the remaining inputs are those included in the ecoinvent v3.9.1 datasets. |
| **Installation** | No energy consumption occur during the installation stage. |
| **Use** | European low voltage |
| **End of life** | European medium volatge |

# 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.** | 2.14E+02 | 2.30E+01 | 5.28E-02 | 8.49E-03 | 1.90E+02 | 6.47E-01 | -2.47E-01 |
| **GWP-fossil** | **kg $CO_2$ eq.** | 2.13E+02 | 2.29E+01 | 5.28E-02 | 2.12E-03 | 1.89E+02 | 5.13E-01 | -2.44E-01 |
| **GWP-biogenic** | **kg $CO_2$ eq.** | 1.15E+00 | 5.53E-02 | 1.60E-05 | 6.36E-03 | 9.59E-01 | 1.33E-01 | -2.02E-03 |
| **GWP-luluc** | **kg $CO_2$ eq.** | 5.16E-01 | 4.38E-02 | 2.57E-05 | 9.48E-07 | 4.72E-01 | 7.47E-04 | -7.36E-04 |
| GWP-fossil = Global Warming Potential fossil fuels<br>GWP-biogenic = Global Warming Potential biogenic<br>GWP-luluc = Global Warming Potential land use and land use change | | | | | | | | |
| **ODP** | **kg CFC-11 eq.** | 4.95E-06 | 1.33E-06 | 1.20E-09 | 2.57E-11 | 3.61E-06 | 1.23E-08 | -1.91E-08 |
| ODP = Depletion potential of the stratospheric ozone layer | | | | | | | | |
| **AP** | **H+ eq.** | 1.24E+00 | 1.49E-01 | 1.31E-04 | 6.71E-06 | 1.08E+00 | 2.09E-03 | -1.18E-03 |
| AP = Acidification potential, Accumulated Exceedance | | | | | | | | |
| **EP-freshwater** | **kg P eq.** | 2.07E-01 | 2.82E-02 | 3.89E-06 | 3.40E-07 | 1.79E-01 | 1.90E-04 | -8.41E-05 |
| **EP-marine** | **kg N eq.** | 2.07E-01 | 3.09E-02 | 3.56E-05 | 1.00E-05 | 1.75E-01 | 9.84E-04 | -2.79E-04 |
| **EP-terrestrial** | **mol N eq.** | 1.92E+00 | 3.28E-01 | 3.65E-04 | 1.93E-05 | 1.59E+00 | 4.34E-03 | -2.50E-03 |
| EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment<br>EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment<br>EP-terrestrial = Eutrophication potential, Accumulated Exceedance | | | | | | | | |
| **POCP** | **kg NMVOC eq.** | 6.09E-01 | 9.61E-02 | 2.13E-04 | 8.86E-06 | 5.10E-01 | 2.73E-03 | -1.02E-03 |
| POCP = Formation potential of tropospheric ozone | | | | | | | | |
| **ADP-minerals & metals** | **kg Sb eq.** | 9.52E-03 | 7.23E-03 | 1.48E-07 | 1.06E-08 | 2.29E-03 | 6.79E-07 | -3.15E-06 |
| **ADP-fossil** | **MJ** | 4.60E+03 | 2.93E+02 | 8.01E-01 | 1.60E-02 | 4.30E+03 | 6.62E+00 | -4.85E+00 |
| ADP-minerals & metals = Abiotic depletion potential for non-fossil resources<br>ADP-fossil = Abiotic depletion for fossil resources potential | | | | | | | | |
| **WDP** | **$m^3$ eq. depr.** | 5.23E+01 | 3.82E+00 | 3.82E-03 | 3.58E-04 | 4.85E+01 | 1.92E-02 | -1.57E-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** | 9.94E+02 | 2.92E+01 | 1.17E-02 | 1.08E-03 | 9.64E+02 | 5.88E-01 | -1.36E+00 |
| **PERM** | **MJ** | 9.52E-01 | 9.52E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| **PERT** | **MJ** | 9.95E+02 | 3.02E+01 | 1.17E-02 | 1.08E-03 | 9.64E+02 | 5.88E-01 | -1.36E+00 |
| **PENRE** | **MJ** | 4.60E+03 | 2.92E+02 | 8.01E-01 | 1.60E-02 | 4.30E+03 | 6.62E+00 | -4.85E+00 |
| **PENRM** | **MJ** | 1.15E+00 | 1.15E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| **PENRT** | **MJ** | 4.60E+03 | 2.93E+02 | 8.01E-01 | 1.60E-02 | 4.30E+03 | 6.62E+00 | -4.85E+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** | **$m^3$** | 3.67E+00 | 1.82E-01 | 1.26E-04 | 1.27E-05 | 3.48E+00 | 1.64E-03 | -4.25E-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** | 2.49E-01 | 2.15E-02 | 2.23E-05 | 7.91E-05 | 2.22E-01 | 6.08E-03 | -8.45E-04 |
| **Non- hazardous waste disposed** | **kg** | 1.94E+01 | 1.71E+00 | 7.02E-02 | 5.36E-03 | 1.73E+01 | 2.90E-01 | -2.68E-02 |
| **Radioactive waste disposed** | **kg** | 3.16E-02 | 5.29E-04 | 2.44E-07 | 2.75E-08 | 3.10E-02 | 1.41E-05 | -6.19E-06 |

# 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 | 9.31E-02 | 0.00E+00 | 0.00E+00 | 3.77E-02 | 0.00E+00 | 5.54E-02 | 0.00E+00 |
| Materials for energy recovery | kg | 2.80E-02 | 0.00E+00 | 0.00E+00 | 4.14E-03 | 0.00E+00 | 2.39E-02 | 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 | 0.00E+00 | 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 | 2.13E-02 | 2.13E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

# Optional indicators

## Environmental indicators

| Indicator | Unit | Total | Manu-facturing | Distri-bution | Installation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| No Environmental indicators used | | | | | | | | |

## Other indicators

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

# 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

| Impact Category | Manufacturing | Distribution | Installation | Use | End of life | Benefits |
|---|---|---|---|---|---|---|
| GWP - total | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| GWP - fossil | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| GWP - biogenic | 1.01 | 0.99 | 1.00 | 1.00 | 0.99 | 1.00 |
| GWP - luluc | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.00 |
| ODP | 0.85 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| AP | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| EP - freshwater | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| EP – marine | 0.98 | 0.99 | 1.00 | 1.00 | 0.97 | 1.01 |
| EP - terrestrial | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| POCP | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| ADP – minerals | 0.97 | 0.99 | 1.00 | 1.00 | 0.96 | 1.02 |
| ADP – fossil | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| WDP | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| PERE | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.00 |
| PERM | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PERT | 0.98 | 0.99 | 1.00 | 1.00 | 0.96 | 1.00 |
| PENRE | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| PENRM | 1.02 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PENRT | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| SM | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| RSF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| NRSF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| FW | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| HWD | 0.99 | 0.99 | 1.00 | 1.00 | 0.96 | 1.00 |
| NHWD | 0.99 | 0.99 | 1.00 | 1.00 | 0.99 | 1.01 |
| RWD | 0.97 | 0.99 | 1.00 | 1.00 | 0.96 | 1.01 |
| CRU | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MFR | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| MER | 1.00 | 1.00 | 1.00 | 1.00 | 0.96 | 1.00 |
| EE | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

# 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.<br>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) |

**References**

PCR-ed4-EN-2021 09 06. Product Category Rules for Electrical, Electronic and HVAC-R Products. Paris: PEP Association.
PSR-0005-ed3.1-EN-2023 08 12. Specific Rules for Electrical switchgear and control gear Solutions.
ISO 14040: Life cycle assessment. Environmental management. Principles and Framework. International Organization for Standardization, 2006.
ISO 14044: Life cycle assessment. Environmental management. Requirements and guide-lines. International Organization for Standardization, 2006.
UNI EN 15804:2012+A2:2019/AC:2021 : Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
Ecoinvent, Allocation, cut-off by classification, ecoinvent database version 3.9.1 (2023)
ABB website with the detailed information of the reference product SCU200-W | ABB
IEC/TR 62635 Guidelines for end-of-life information provided by manufacturers and recy-clers and for recyclability rate calculation of electrical and electronic equipment

EN 50693:2019: Product category rules for life cycle assessments of electronic and electrical products and systems
Content evaluation of different waste PCBs to enhance basic metals recycling - ScienceDi-rect

| | |
|---|---|
| Registration number: **ABBG-00531-V01.01-EN** | Drafting Rules: ***PCR-ed4-EN-2021 09 06***<br>***Supplemented by:*** ***PSR-0005-ed3.1-EN-2023 08 12*** |
| Verifier accreditation number: ***VH50*** | Information and reference documents: **www.pep-ecopassport.org** |
| Date of issue: ***05/2024*** | 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 EN 50693:2019<br>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" | |