ABB JUNCTION AND MOUNTING BOX ACCESSORIES

# Product Environmental Profile

## Environmental Product Declaration

Document in compliance with ISO 14025: 2010 "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-00143-V01.01-EN | 1 | en | 1/11 |

# ABB Purpose & Embedding Sustainability

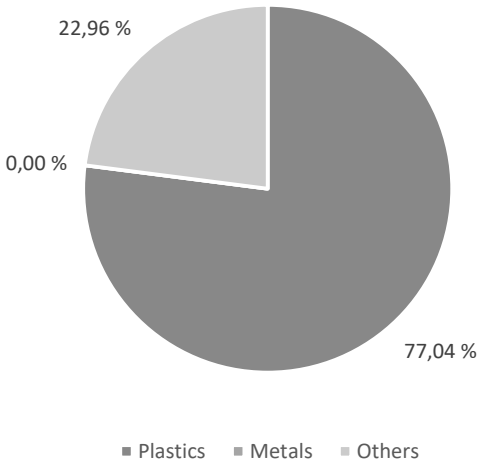
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow.
With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

Scan QR code for more information

# General Information

| | |
|---|---|
| **Reference product** | 2TKA00003876 - AS9.10 |
| **Description of the product** | Different types of accessories for ABB WA's junction and mounting boxes made from recycled polypropylene, to provide variabilty and support how the products are used and installed. The accessories can be for example strain relifes or box supports. |
| **Functional unit** | Provide installation support and use variability for different junction and mounting boxes during 20 years. |
| **Other products covered** | 2TKA001714G1 - AS27<br>2TKA001715G1 - AS27.12<br>2TKA00004251 - AS101 |

# Constituent materials




| | |
|---|---|
| **Total weight of Reference product** | 3,77 g including the product and its main packaging |

| **Plastics as % of weight** | | **Metals as % of weight** | | **Others as % of weight** | |
|---|---|---|---|---|---|
| Description | Weight-% | Description | Weight-% | Description | Weight-% |
| Recycled Polypropylene | 71,87 | – | – | Carton | 22,96 |
| PE-based red color | 1,33 | – | – | – | – |
| Plastic film | 3,84 | – | – | – | – |

The reference product and other products in this range comply with the RoHS Directive 2011/65/EU (covering 2015/863(EU)) and national legislation. The recycled plastic used in the product is from post-consumer plastic waste, which is collected from Finnish households

# Additional Environmental Information

| | |
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| **Manufacturing** | Manufactured at an ISO 14001 certified production site |
| **Distribution** | Product distribution optimised by setting up local distribution centres. |
| **Installation** | 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. |
| **Use** | The product does not require special maintanence operations |
| **End of life** | No special end-of-life treatment required. This product can enter the usual end-of-life treatment process according to countries' best practices. |
| **Benefits and loads beyond the system boundaries** | Net benefits and loads calculated according to PCR ed 4 and formulas given in Annex G of the EN 50693 |

# Environmental impacts

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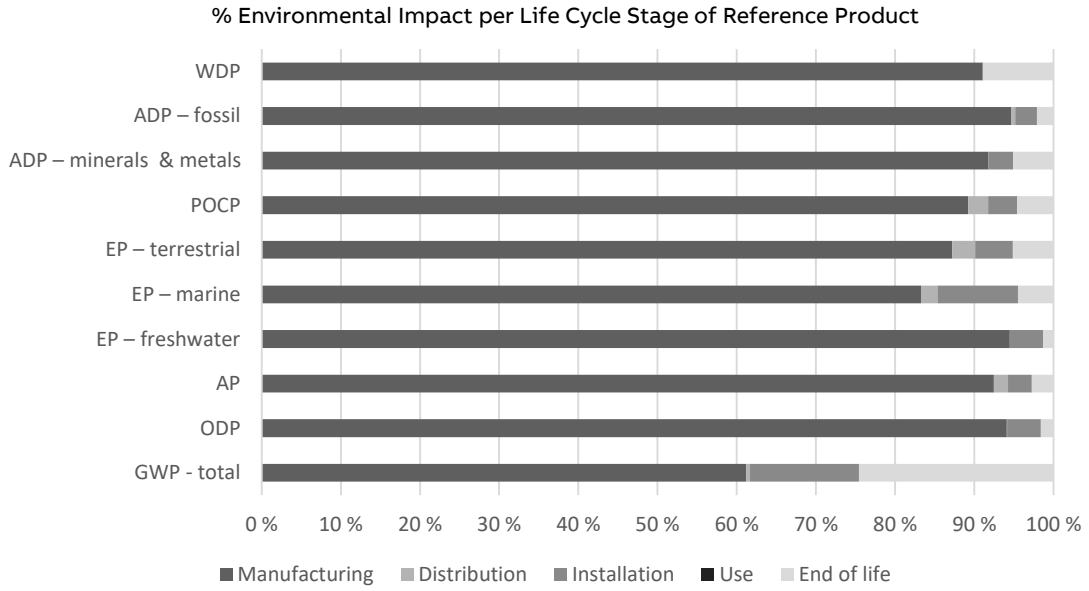
|---|---|
| **Reference lifetime** | 20 years |
| **Product category** | Other equipments |
| **Installation elements** | No additional installation elements needed |
| **Use scenario** | Non applicable |
| **Geographical representativeness** | Europe, with great emphasis on Nordic countries |
| **Technological representativeness** | The manufactruing processes considered are representative of the products production |
| **Software and database used** | Software: SimaPro version 9.4.0.2<br>Database: ecoinvent 3.8, Industry data 2.0, and ELCD |
| **Energy model used** | |
| **Manufacturing** | Electricity, low voltage {LT}\| market for \| Cut-off, S |
| **Installation** | Electricity, low voltage {SE}\| market for \| Cut-off, S |
| **Use** | - |
| **End of life** | Electricity, low voltage {SE}\| market for \| Cut-off, S |

# 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. | 2,01E-02 | 1,23E-02 | 9,19E-05 | 2,77E-03 | 0,00E+00 | 4,95E-03 | 2,94E-03 |
| GWP-fossil | kg $CO_2$ eq. | 1,97E-02 | 1,41E-02 | 9,19E-05 | 5,41E-04 | 0,00E+00 | 4,95E-03 | 2,96E-03 |
| GWP-biogenic | kg $CO_2$ eq. | 3,56E-04 | -1,87E-03 | -1,21E-08 | 2,22E-03 | 0,00E+00 | 7,77E-07 | -1,46E-05 |
| GWP-luluc | kg $CO_2$ eq. | 7,32E-05 | 6,83E-05 | 0,00E+00 | 3,01E-06 | 0,00E+00 | 1,88E-06 | -9,55E-06 |
| 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. | 1,23E-09 | 1,16E-09 | 1,35E-13 | 5,27E-11 | 0,00E+00 | 1,94E-11 | 6,77E-11 |
| ODP = Depletion potential of the stratospheric ozone layer | | | | | | | | |
| AP | H+ eq. | 7,01E-05 | 6,48E-05 | 1,25E-06 | 2,11E-06 | 0,00E+00 | 1,92E-06 | 8,42E-06 |
| AP = Acidification potential, Accumulated Exceedance | | | | | | | | |
| EP-freshwater | kg P eq. | 5,05E-06 | 4,77E-06 | 3,37E-11 | 2,14E-07 | 0,00E+00 | 6,50E-08 | -3,49E-08 |
| EP-marine | kg N eq. | 1,91E-05 | 1,59E-05 | 3,96E-07 | 1,94E-06 | 0,00E+00 | 8,56E-07 | 1,80E-06 |
| EP-terrestrial | mol N eq. | 1,50E-04 | 1,31E-04 | 4,34E-06 | 7,09E-06 | 0,00E+00 | 7,71E-06 | 2,07E-05 |
| 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. | 4,36E-05 | 3,89E-05 | 1,10E-06 | 1,59E-06 | 0,00E+00 | 2,00E-06 | 9,77E-06 |
| POCP = Formation potential of tropospheric ozone | | | | | | | | |
| ADP-minerals & metals | kg Sb eq. | 9,11E-08 | 8,36E-08 | 3,52E-12 | 2,83E-09 | 0,00E+00 | 4,65E-09 | -9,67E-09 |
| ADP-fossil | MJ | 2,41E-01 | 2,28E-01 | 1,25E-03 | 6,59E-03 | 0,00E+00 | 5,06E-03 | 1,18E-01 |
| ADP-minerals & metals = Abiotic depletion potential for non-fossil resources<br>ADP-fossil = Abiotic depletion for fossil resources potential | | | | | | | | |
| WDP | $m^3$ e depr. | 3,37E-03 | 3,07E-03 | 3,36E-07 | 3,36E-07 | 0,00E+00 | 3,00E-04 | 2,62E-03 |
| 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 | 5,48E-02 | 5,24E-02 | 1,40E-06 | 1,09E-03 | 0,00E+00 | 1,39E-03 | -5,98E-03 |
| PERM | MJ | 2,97E-02 | 2,97E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PERT | MJ | 8,46E-02 | 8,21E-02 | 1,40E-06 | 1,09E-03 | 0,00E+00 | 1,39E-03 | -5,98E-03 |
| PENRE | MJ | 3,25E-02 | 1,96E-02 | 1,25E-03 | 6,60E-03 | 0,00E+00 | 5,06E-03 | 1,18E-01 |
| PENRM | MJ | 2,09E-01 | 2,09E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| PENRT | MJ | 2,41E-01 | 2,28E-01 | 1,25E-03 | 6,60E-03 | 0,00E+00 | 5,06E-03 | 1,18E-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 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 | 5,62E-03 | 5,62E-03 | 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 | $m^3$ | 1,10E-04 | 9,65E-05 | 1,09E-08 | 3,67E-06 | 0,00E+00 | 9,92E-06 | 6,31E-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 | Instal-lation | Use | End of life | Bene-fits |
|---|---|---|---|---|---|---|---|---|
| Hazardous waste disposed | kg | 2,29E-07 | 2,11E-07 | 0,00E+00 | 9,34E-09 | 0,00E+00 | 8,47E-09 | 4,39E-08 |
| Non-hazardous waste disposed | kg | 1,70E-04 | 1,30E-04 | 3,11E-06 | 2,07E-05 | 0,00E+00 | 1,53E-05 | -5,47E-06 |
| Radioactive waste disposed | kg | 1,05E-06 | 9,77E-07 | 2,19E-09 | 1,76E-08 | 0,00E+00 | 5,24E-08 | -2,66E-07 |

# 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 | 2,12E-05 | 0,00E+00 | 0,00E+00 | 2,12E-05 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for recycling | kg | 1,45E-03 | 0,00E+00 | 0,00E+00 | 7,22E-04 | 0,00E+00 | 7,29E-04 | 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 | 0,00E+00 |
| Exported energy | MJ | 3,00E-02 | 0,00E+00 | 0,00E+00 | 6,55E-03 | 0,00E+00 | 2,35E-02 | 0,00E+00 |

### Inventory flow indicator – other indicators

| Indicator | Unit | Total |
|---|---|---|
| Biogenic carbon content of the product | kg of C | 0,00E+00 |
| Biogenic carbon content of the associated packaging | kg of C | 3,90E-04 |

# 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 | 3,26E-01 | 3,10E-01 | 1,25E-03 | 7,69E-03 | 0,00E+00 | 6,46E-03 | -3,43E+00 |
| Emissions of fine particles | inci-dence of dis-eases | 6,07E-10 | 5,58E-10 | 7,85E-12 | 2,25E-11 | 0,00E+00 | 1,87E-11 | 9,28E-11 |
| Ionizing radiation, human health | kBq U235 eq. | 3,94E-03 | 3,66E-03 | 2,15E-07 | 5,29E-05 | 0,00E+00 | 2,25E-04 | -1,94E-02 |
| Ecotoxicity (fresh water) | CTUe | 1,79E-01 | 1,54E-01 | 6,03E-05 | 1,04E-02 | 0,00E+00 | 1,43E-02 | -6,58E+01 |
| Human toxicity, car-cinogenic effects | CTUh | 1,25E-11 | 1,12E-11 | 1,55E-15 | 3,44E-13 | 0,00E+00 | 9,67E-13 | 7,79E-10 |
| Human toxicity, non-carcinogenic effects | CTUh | 1,63E-10 | 1,34E-10 | 3,89E-14 | 8,22E-12 | 0,00E+00 | 2,08E-11 | -1,06E-07 |
| Impact related to land use/soil quality | | 2,63E-01 | 2,56E-01 | 0,00E+00 | 3,19E-03 | 0,00E+00 | 3,74E-03 | -2,43E+00 |

### Other indicators

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

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:

* The manufacturing stages coefficient values take into account the different manufacturing location of the products, which for the three products listed below is ABB WA's factory in Porvoo, Finland

| Product name | Manufacturing | Distribution | Instal-lation | Use | End of life | Benefits |
|---|---|---|---|---|---|---|
| AS27 | 0,55 | 9,17 | 7,12 | 1,00 | 10,69 | 11,29 |
| AS27.12 | 0,83 | 6,66 | 7,10 | 1,00 | 6,09 | 5,51 |
| AS101 | 0,85 | 15,08 | 9,71 | 1,00 | 13,26 | 13,80 |
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|---|---|---|---|
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| Verifier accreditation number: | | Information and reference documents: | |
| VH32 | | www.pep-ecopassport.org | |
| Date of issue: | 05-2023 | 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)

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.<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. | $m^3$ 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) |