



INS-PS1

# 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"

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STATUS	SECURITY LEVEL	REGISTRATION NUMBER	REV.	LANG.	PAGE
Approved	Public	ABBG-00533-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"



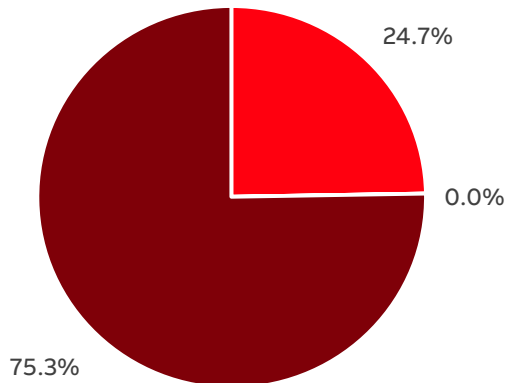
## General Information

Reference product	2CCG001160R0001 INS-PS-1
Description of the product	The INS-PS1 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 INS-PS1 serves as power supply and it gives power to the Control Unit SCU200 connected to it and in general to the system.
Functional unit	The INS-PS1 can generate power up 10A continuously (15W peaks, depending on the connected loads), during 10 years with 100% use time rate, having the following dimensions 17.5 x 87 x 64.9 mm
Other products covered	INS-PS-2 (2CCG001172R0001)

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# Constituent Materials



■ Plastics 30.33 g ■ Metals 0.00 g ■ Others 92.43 g

Total weight in reference product included packaging

122.8

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	23.6	–	0.0	Printed Circuit Board	37.0
Polyoxymethylene	1.1	–	0.0	Cardboard	33.4
Polycarbonate	<0.1	–	x	Paper	4.9

Total weight of the reference product 75.8 g plus packaging (47 g) is 122.8g.

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# Additional Environmental Information

<b>Manufacturing</b>	Product Manufacturing and packaging by external supplier in Poland, transported to ABB Italy at Vignate
<b>Distribution</b>	European distribution from Vignate depending on current market needs
<b>Installation</b>	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
<b>Use</b>	<p>The product consumes some electricity due to power loss. The average power loss of the switch has been calculated as follow:</p> <ul style="list-style-type: none"> <li>- Current load due to power loss;</li> <li>- RSL of 10 years;</li> <li>- Functioning time of 100% of the RSL (<math>\alpha</math>).</li> </ul> <p>No maintenance is planned for the product.</p>
<b>End of life</b>	The end of life stage is modelled according to PCR-ed4-EN-2021 09 06, PSR-0005-ed3.1-EN-2023 08 12and IEC/TR 62635
<b>Benefits and loads beyond the system boundaries</b>	The potential benefits derives from the impacts prevented by recycling and waste to energy recovery of the product and packaging

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# Environmental Impacts

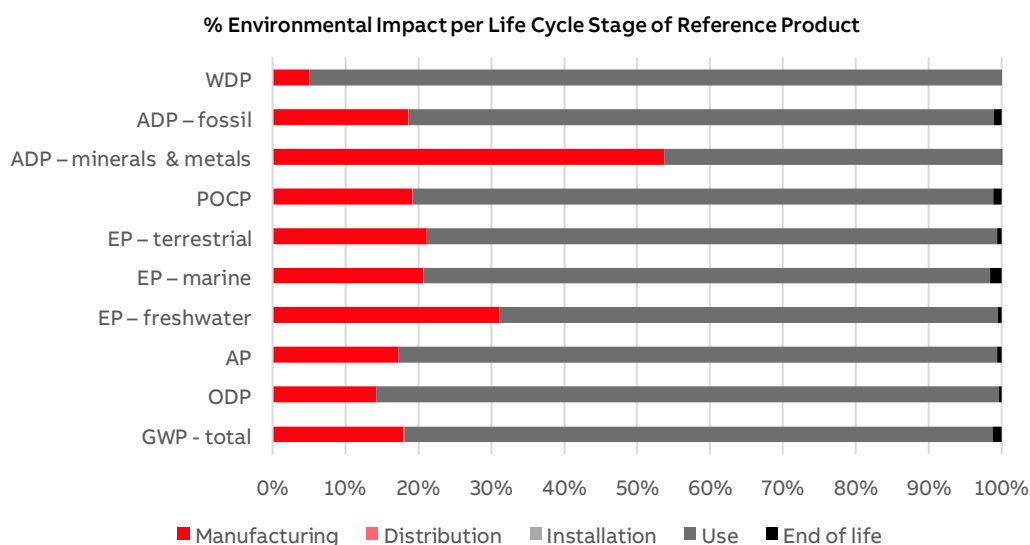
Reference lifetime	10 years
Product category	Other equipments - Active Products
Installation elements	No additional elements needed during installation
Use scenario	Reference Service Life - 10 years ON operating mode - power consumption 4.2W - 100% use time rate OFF operating mode - power consumption 0W - 0% use time rate
Geographical representativeness	Manufacturing: Poland and Global Other Stages: European
Technological representativeness	Technological representativeness refers to the specific production process for primary data.
Software and database used	SimaPro 9.5.0 and ecoinvent 3.9.1

## Energy model used

Manufacturing	Global and Poland. 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 as per mentioned in PSR as 2019
Use	European low voltage
End of life	European medium voltage

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## Common base of mandatory indicators



### Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
<b>GWP-total</b>	<b>kg CO<sub>2</sub> eq.</b>	4.50E+01	8.07E+00	4.31E-02	8.19E-03	3.63E+01	5.68E-01	-1.76E-01
<b>GWP-fossil</b>	<b>kg CO<sub>2</sub> eq.</b>	4.46E+01	8.04E+00	4.30E-02	1.68E-03	3.61E+01	4.57E-01	-1.73E-01
<b>GWP-biogenic</b>	<b>kg CO<sub>2</sub> eq.</b>	2.64E-01	1.84E-02	1.31E-05	6.50E-03	1.29E-01	1.10E-01	-1.95E-03
<b>GWP-luluc</b>	<b>kg CO<sub>2</sub> eq.</b>	8.58E-02	1.67E-02	2.10E-05	9.63E-07	6.84E-02	6.69E-04	-6.94E-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								
<b>ODP</b>	<b>kg CFC-11 eq.</b>	2.96E-06	4.19E-07	9.77E-10	2.57E-11	2.53E-06	1.10E-08	-1.33E-08
ODP = Depletion potential of the stratospheric ozone layer								
<b>AP</b>	<b>H<sup>+</sup> eq.</b>	3.36E-01	5.82E-02	1.07E-04	6.65E-06	2.76E-01	1.86E-03	-8.57E-04
AP = Acidification potential, Accumulated Exceedance								
<b>EP-freshwater</b>	<b>kg P eq.</b>	3.28E-02	1.02E-02	3.18E-06	3.45E-07	2.25E-02	1.71E-04	-6.41E-05
<b>EP-marine</b>	<b>kg N eq.</b>	5.41E-02	1.12E-02	2.90E-05	1.01E-05	4.21E-02	8.57E-04	-2.16E-04
<b>EP-terrestrial</b>	<b>mol N eq.</b>	5.65E-01	1.20E-01	2.98E-04	1.87E-05	4.41E-01	3.87E-03	-1.90E-03
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								
<b>POCP</b>	<b>kg NMVOC eq.</b>	2.00E-01	3.84E-02	1.74E-04	8.79E-06	1.59E-01	2.43E-03	-7.46E-04
POCP = Formation potential of tropospheric ozone								
<b>ADP-minerals &amp; metals</b>	<b>kg Sb eq.</b>	4.99E-03	2.68E-03	1.20E-07	1.08E-08	2.31E-03	6.03E-07	-2.24E-06
<b>ADP-fossil</b>	<b>MJ</b>	5.63E+02	1.05E+02	6.53E-01	1.62E-02	4.52E+02	5.91E+00	-3.38E+00
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
<b>WDP</b>	<b>m<sup>3</sup> eq. depr.</b>	3.28E+01	1.68E+00	3.12E-03	3.57E-04	3.11E+01	1.70E-02	-1.17E-01
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	Bene- fits
PERE	MJ	1.51E+03	1.21E+01	9.58E-03	1.10E-03	1.50E+03	5.27E-01	-1.30E+00
PERM	MJ	9.73E-01	9.73E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.51E+03	1.31E+01	9.58E-03	1.10E-03	1.50E+03	5.27E-01	-1.30E+00
PENRE	MJ	5.62E+02	1.04E+02	6.53E-01	1.62E-02	4.52E+02	5.91E+00	-3.37E+00
PENRM	MJ	7.62E-01	7.62E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	5.63E+02	1.05E+02	6.53E-01	1.62E-02	4.52E+02	5.91E+00	-3.37E+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 <sup>3</sup>	1.22E+00	6.90E-02	1.03E-04	1.26E-05	1.15E+00	1.46E-03	-3.19E-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	4.01E-01	8.72E-03	1.82E-05	6.44E-05	3.88E-01	5.08E-03	-7.93E-04
Non- hazardous waste disposed	kg	6.46E+00	7.62E-01	5.72E-02	5.46E-03	5.39E+00	2.44E-01	-2.08E-02
Radioactive waste disposed	kg	1.03E-03	2.31E-04	1.99E-07	2.81E-08	7.89E-04	1.26E-05	-4.62E-06

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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	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	6.91E-02	0.00E+00	0.00E+00	3.36E-02	0.00E+00	3.55E-02	0.00E+00
Materials for energy recovery	kg	2.36E-02	0.00E+00	0.00E+00	3.69E-03	0.00E+00	1.99E-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	2.18E-02	2.18E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

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## 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	Manu- facturing	Distri- bution	Installation	Use	End of life	Benefits
GWP - total	1.42	1.29	1.00	0.69	1.40	1.35
GWP - fossil	1.42	1.29	1.00	0.69	1.48	1.36
GWP - biogenic	1.37	1.29	1.00	0.69	1.07	1.05
GWP - luluc	1.41	1.29	1.00	0.69	1.49	1.07
ODP	1.41	1.29	1.00	0.69	1.49	1.40
AP	1.43	1.29	1.00	0.69	1.48	1.33
EP - freshwater	1.41	1.29	1.00	0.69	1.48	1.29
EP – marine	1.42	1.29	1.00	0.69	1.35	1.24
EP - terrestrial	1.42	1.29	1.00	0.69	1.48	1.28
POCP	1.43	1.29	1.00	0.69	1.48	1.33
ADP – minerals	1.41	1.29	1.00	0.69	1.48	1.38
ADP – fossil	1.42	1.29	1.00	0.69	1.48	1.39
WDP	1.42	1.29	1.00	0.69	1.46	1.28
PERE	1.41	1.29	1.00	0.69	1.48	1.06
PERM	1.00	1.00	1.00	1.00	1.00	1.00
PERT	1.38	1.29	1.00	0.69	1.48	1.06
PENRE	1.42	1.29	1.00	0.69	1.48	1.39
PENRM	1.45	1.00	1.00	1.00	1.00	1.00
PENRT	1.42	1.29	1.00	0.69	1.48	1.39
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	1.40	1.29	1.00	0.69	1.47	1.28
HWD	1.42	1.29	1.00	0.69	1.48	1.07
NHWD	1.43	1.29	1.00	0.69	1.25	1.27
RWD	1.43	1.29	1.00	0.69	1.49	1.32
CRU	1.00	1.00	1.00	1.00	1.00	1.00
MFR	1.00	1.00	1.15	1.00	1.47	1.00
MER	1.00	1.00	1.15	1.00	1.49	1.00
EE	1.00	1.00	1.00	1.00	1.00	1.00

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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 <sub>2</sub> 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 <sup>3</sup> 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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Approved	Public	ABBG-00533-V01.01-EN	1	en	11/12

**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 INS-PS-1 | ABB

IEC/TR 62635 Guidelines for end-of-life information provided by manufacturers and recyclers 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 - ScienceDirect

Registration number:	<b>ABBG-00533-V01.01-EN</b>	Drafting Rules:	<b>PCR-ed4-EN-2021 09 06</b>
		Supplemented by:	<b>PSR-0005-ed3.1-EN-2023 08 12</b>
Verifier accreditation number:	<b>VH50</b>	Information and reference documents:	<b>www.pep-ecopassport.org</b>
Date of issue:	<b>05/2024</b>	Validity period:	<b>5 years</b>
<b>Independent verification of the declaration and data, in compliance with ISO 14025: 2006</b>			
Internal: <input type="radio"/>		External: <input checked="" type="radio"/>	
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)			
PEP are compliant with 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"			

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