ENVIRONMENTAL PRODUCT DECLARATION

SITOP PSU100C
LOGO!Power
SIMATIC Power Supplies

Type II according to ISO 14021 including life cycle impact assessment (LCIA)

SIEMENS

General information

This environmental product declaration (EPD) is based on the international standard ISO 14021 (“Environmental labels and declarations – Self declared environmental claims – Type II environmental labelling”). The data in this EPD has been evaluated on a full-scale life cycle assessment (LCA) study according to ISO 14040/44, taking into account the product category rules (PCR) for electronic and electrotechnical products and systems defined in EN 50693.

Siemens is dedicated to an environmentally conscious design of its products in line with IEC 62430 and has implemented an integrated management system according to ISO 9001, ISO 14001 and ISO 45001.

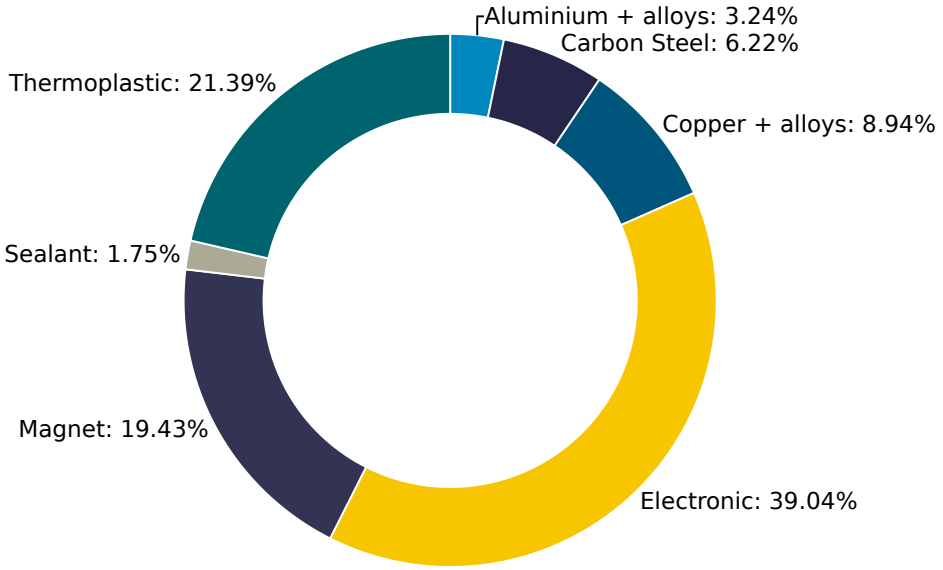
Products	Please refer to appendix
Represented by the reference product	6EP3333-6SB00-0AY0
Product Description	LOGO!Power 24 V / 4 A stabilized power supply input: 100-240 V AC output: 24 V DC / 4 A
Functional Unit	Production of 1 pc. LOGO!Power 24 V / 4 A and use over the reference service lifetime of 10 years.[1]

[1] The lifetime value used for calculation is a reference value and does not equate with the minimum, average or real life time.

Material composition

The following chart outlines the overall material composition of the calculated reference product without packaging. Product weight of 0.31 kg adds up with packaging weight of 0.04 kg to a total weight of 0.35 kg. Packaging consists of: Graphic paper, Corrugated box (average composition), Screws (galvanized).

Product Weight 0.31 kg



Substance assessment

At Siemens, we are committed to the development and production of environmentally sound and sustainably produced equipment. This includes avoiding hazardous substances in our products without compromising their benefits for our customers.

Life cycle stages and reference scenarios

Manufacturing

This stage covers the extraction of natural resources, production of raw materials, manufacturing, packaging, and transportation.

Distribution and Operation

This stage covers the product's distribution, installation, use, and maintenance. Different operating conditions can lead to deviations from the reference scenario.

End-of-Life

This stage covers the disassembly or shredding and material recycling of all recyclable materials, as well as energy recovery, thermal treatment and the disposal of all other materials.

Scenarios

Energy model used:
Europe (standard mix), Germany (standard mix)

Transportation model:
Truck-trailer (GLO), 34-40t gross weight, 3500 km default distance

Energy model used:
Europe (standard mix)

Distribution scenario:
Truck-trailer (34-40 t) 3500 km

Use Scenario:
Nominal output load 11.7W power dissipation, 100% service uptime: reference lifetime 10 years

Energy model used:
EMEA

End-of-Life methodology:
Modeled according to Cut-off methodology.

Key environmental performance indicators

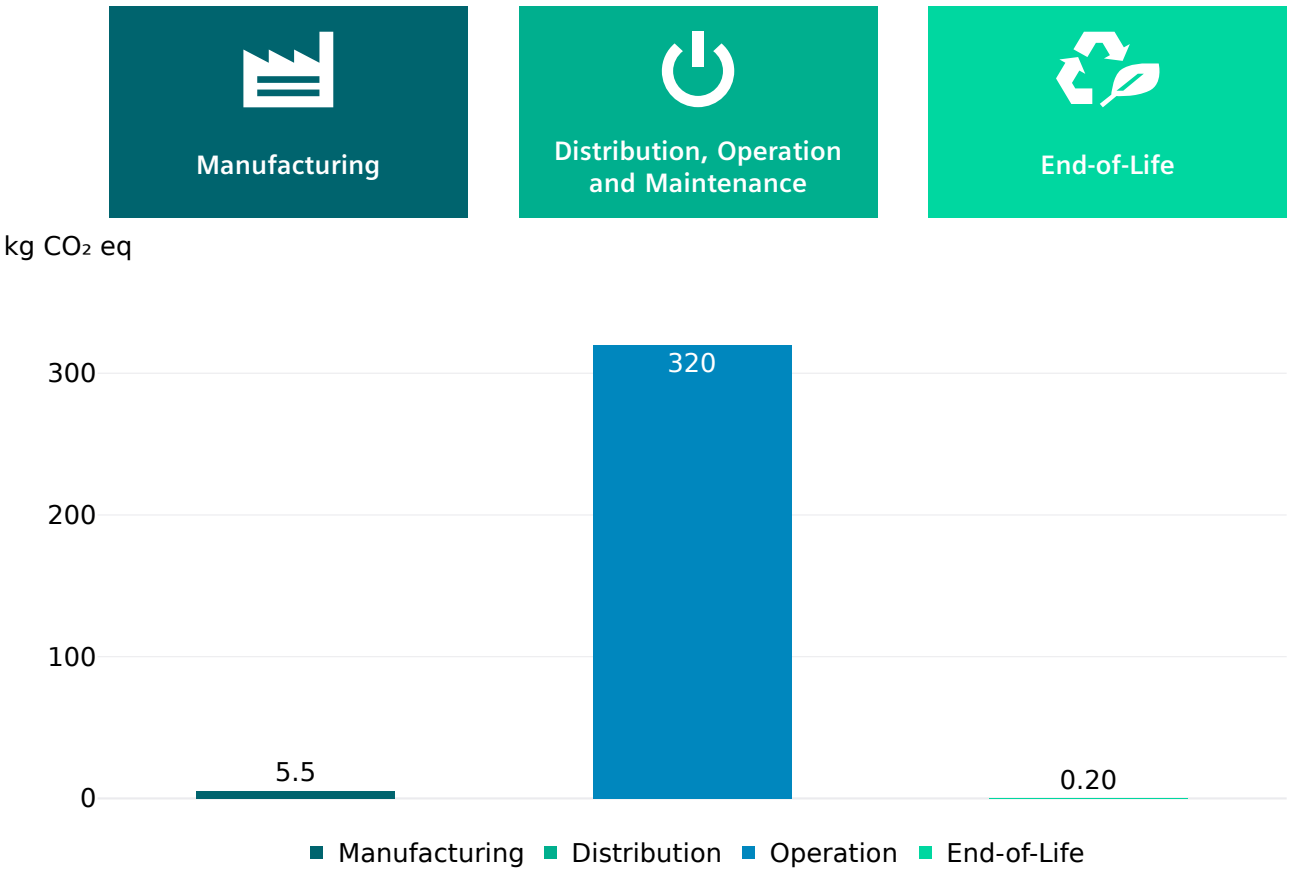
The following impact categories characterize the product's environmental footprint. They have been calculated with LCIA methodology EF3.0; LCA tool: Green Digital Twin (GDT), Database: One Siemens LCA Database (based on MLC CUP 2023.2, formerly GaBi).

To ensure the high quality and completeness of the LCA results, Primary Data have been used whenever possible. Datasets for resources, such as electrical energy or natural gas, are chosen from the region where the device is produced and assembled. If primary data are not available, datasets reflecting state-of-the-art manufacturing technology are considered.

Impact Category	Unit	Total	Manufacturing	Distribution	Operation	End of life
Acidification	Mole of H+ eq	7.37E-1	6.04E-2	1.11E-4	6.76E-1	8.82E-5
Climate change – total	kg CO_2 eq	3.26E+2	5.48E+0	8.65E-2	3.20E+2	2.00E-1
Climate change – fossil	kg CO_2 eq	3.23E+2	5.46E+0	8.55E-2	3.17E+2	1.99E-1
Climate change – biogenic	kg CO_2 eq	2.82E+0	1.62E-2	2.32E-4	2.81E+0	1.34E-4
Climate Change, land use and land use change	kg CO_2 eq	3.84E-2	3.81E-3	7.99E-4	3.46E-2	8.10E-6
Ecotoxicity, freshwater – total	CTUe	1.89E+3	4.05E+1	8.42E-1	1.85E+3	1.20E-1
Eutrophication, freshwater	kg P eq	1.21E-3	2.46E-5	3.15E-7	1.19E-3	2.44E-7
Eutrophication, marine	kg N eq	1.67E-1	4.79E-3	3.75E-5	1.62E-1	2.87E-5
Eutrophication, terrestrial	Mole of N eq	1.75E+0	5.18E-2	4.51E-4	1.69E+0	3.44E-4
Human toxicity, cancer – total	CTUh	1.01E-7	2.71E-9	1.71E-11	9.80E-8	8.48E-12
Human toxicity, non-cancer – total	CTUh	1.68E-6	1.19E-7	7.60E-10	1.56E-6	3.92E-10
Ionising radiation, human health	kBq U235 eq	1.76E+2	4.42E-1	3.29E-4	1.76E+2	7.61E-3
Land Use	dimensionless (pt)	2.65E+3	2.58E+1	4.91E-1	2.62E+3	1.25E-1
Ozone depletion	kg CFC-11 eq	6.03E-9	1.75E-10	1.12E-14	5.86E-9	2.62E-13
Particulate matter	Disease incidences	6.28E-6	5.93E-7	8.10E-10	5.69E-6	6.12E-10
Photochemical ozone formation, human health	kg NMVOC eq	4.49E-1	1.64E-2	9.54E-5	4.32E-1	7.78E-5
Resource use, fossils	MJ	6.74E+3	7.65E+1	1.18E+0	6.66E+3	3.79E-1
Resource use, mineral and metals	kg Sb eq	5.28E-4	4.79E-4	5.72E-9	4.90E-5	2.26E-9
Water use	m^3 water eq deprived water	7.11E+1	1.26E+0	1.04E-3	6.98E+1	1.93E-2

Climate change

This chart shows the overall impact of the product on climate change – total. The operations phase is the lifecycle phase with the biggest overall impact. Different operating conditions can lead to deviations from the references scenario. The distribution stage of the reference product is not shown in the chart due to its relatively small contribution to climate change and its impact is included in the operation bar.



End-of-Life results

The end-of-life stage was modelled by shredding of the device, followed by sorting and material separation process

It leads to:

- **an overall** product recyclability of up to 38% mainly due to metal content
- **an** energy recoverability of up to 25% from plastic materials
- **a** minimum disposal rate of 38%

The exact final values depend on the used recycling process and add up to 100%

Note: The device should not be disposed of as unsorted municipal waste. Special treatment for specific components may be mandated by law or recommended for environmental reasons. Observe all local and applicable laws

Appendix

For other Power Supplies „Key environmental performance indicators" please refer the following factors:

Product	Description	Manufacturing	Distribution	Operation	End-of-Life
6EP3333-6SB00-0AY0	LOGO!Power 24V 4A	1	1	1	1
6EP1321-5BA00	SITOP PSU100C 12V 2,0A	0,586	0,586	0,496	0,586
6EP1322-5BA10	SITOP PSU100C 12V 6,5A	1,103	1,103	1,068	1,103
6EP1331-5BA00	SITOP PSU100C 24V 0,6A	0,414	0,414	0,222	0,414
6EP1331-5BA10	SITOP PSU100C 24V 1,3A	0,586	0,586	0,385	0,586
6EP1332-1SH71	PM1207 24V/2,5A	1,034	1,034	1,026	1,034
6EP1332-4BA00	PM1507 3A	1,566	1,566	0,940	1,566
6EP1332-5BA00	SITOP PSU100C 24V 2,5A	0,759	0,759	0,769	0,759
6EP1332-5BA10	SITOP PSU100C 24V 4,0A	1,103	1,103	1,197	1,103
6EP1332-5BA20	SITOP PSU100C 24V 3,7A NEC Class 2	1,103	1,103	1,111	1,103
6EP1333-4BA00	PM1507 8A	2,552	2,552	1,795	2,552
6EP3310-6SB00-0AY0	LOGO!Power 5V 3A	0,414	0,414	0,402	0,414
6EP3311-6SB00-0AY0	LOGO!Power 5V 6,3A	0,69	0,69	0,684	0,69
6EP3320-6SB00-0AY0	LOGO!Power 12V 0,9A	0,241	0,241	0,256	0,241
6EP3321-6SB00-0AY0	LOGO!Power 12V 1,9A	0,414	0,414	0,453	0,414
6EP3321-6SB10-0AY0	LOGO!Power 15V 1,9A	0,414	0,414	0,487	0,414
6EP3322-6SB00-0AY0	LOGO!Power 12V 4,5A	0,69	0,69	0,684	0,69
6EP3322-6SB10-0AY0	LOGO!Power 15V 4A	0,69	0,69	0,675	0,69
6EP3330-6SB00-0AY0	LOGO!Power 24V 0,6A	0,241	0,241	0,291	0,241
6EP3331-6SB00-0AY0	LOGO!Power 24V 1,3A	0,414	0,414	0,436	0,414
6EP3332-6SB00-0AY0	LOGO!Power 24V 2,5A	0,69	0,69	0,598	0,69
6EP3333-4SB00-3AX0	SITOP PM1207 24V/5A	1,552	1,552	1,282	1,552
6EP3333-4SC00-3AX0	SITOP PM1207 24V/5A Ex	1,552	1,552	1,282	1,552

For other Power Supplies „Key environmental performance indicators" please refer the following factors:

6EP3333-6SC00-0AY0	LOGO!Power 24V 4A Ex	1	1	1	1
6EP7133-6AB00-0BN0	SIMATIC ET 200SP PS/1AC/DC24V/5A	1,724	1,724	1,453	1,724
6EP7133-6AE00-0BN0	SIMATIC ET 200SP PS/1AC/DC24V/10A	2,414	2,414	2,222	2,414
6ES7305-1BA80-0AA0	PS 305 Outdoor 24V/2A	1,966	1,966	1,368	1,966
6ES7307-1BA01-0AA0	PS 307 24V/2A	1,379	1,379	0,769	1,379
6ES7307-1EA01-0AA0	PS 307 24V/5A	2,069	2,069	1,538	2,069
6ES7307-1EA80-0AA0	PS 307 Outdoor 24V/5A	1,966	1,966	1,966	1,966
6ES7307-1KA02-0AA0	PS 307 24V/10A	2,759	2,759	2,308	2,759

Legal Disclaimer

This Environmental Product Declaration (EPD) is for information purposes only. It is based upon the standards mentioned above. This EPD does not warrant or guarantee the composition of a product or that the product will retain a particular composition for a particular period. Therefore, all warranties, representations, conditions, and all other terms of any kind whatsoever implied by statute or common law are – to the fullest extent permitted by applicable law – excluded.

Siemens therefore does not assume any liability for any error or for any consequence which may arise from the use of this information to the maximum extent under the law.

Please be aware that the data of this EPD cannot be compared with data calculated based upon product category rules (PCRs) other than the standards mentioned above. The values given are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Published by

Siemens AG

Digital Industries

Process Automation

Östliche Rheinbrückenstr. 50

76187 Karlsruhe

Deutschland

Subject to changes and errors.

The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. In particular no assurance is given that those descriptions and performance features stand under warranty or guarantee in sense of any liability for any error or for any consequence which may arise from the use of this information to the maximum extent under the law. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

All product designations may be trademarks or product names of Siemens AG or other companies whose use by third parties for their own purposes could violate the rights of the owners.

© 2024 by Siemens