ENVIRONMENTAL PRODUCT DECLARATION

ET 200SP HA
Standard modules

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

Products	All products from standard I/O modules - please refer annex
Represented by	6DL1134-6TH00-0PH1 - AI 16xI 2-wire HART HA
Product Description	SIMATIC ET 200SP HA, analog HART input module, AI 16xI 2-wire HART HA, suitable for terminal block H1, M1, color code CC01, channel diagnostics, 16-bit, +/-0.1%,
Functional Unit	To manage analog HART input (AI) signals over the reference service lifetime of 10 years

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General information

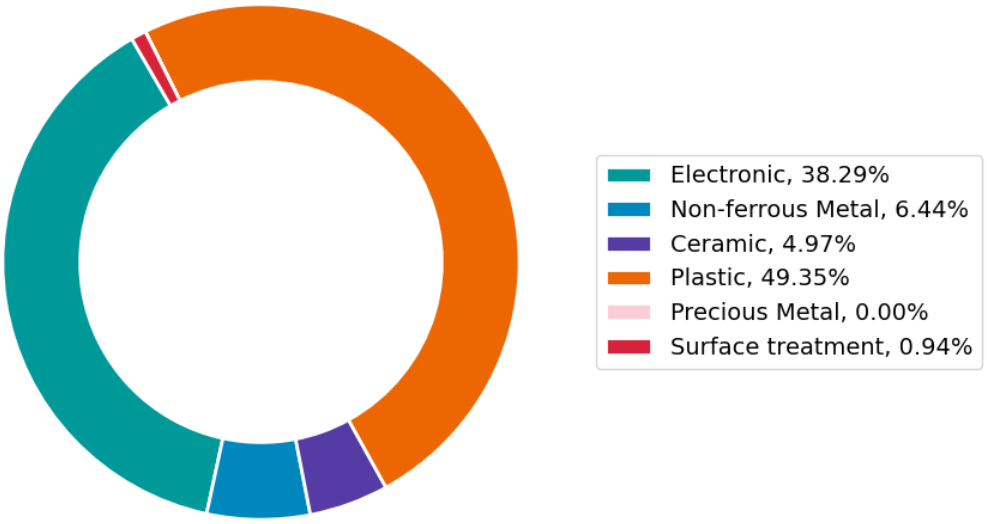
This environmental product declaration (EPD) is based on the international standard ISO 14021 (“Environmental labels and declarations – Self declared environmental claims – Type II”). The data in this EPD has been evaluated on a full-scale life cycle assessment (LCA) study according to ISO 14040/44,EN 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.

Material composition

The following chart outlines the overall material composition of the calculated reference product. Product weight of 0.16 kg adds up with packaging weight of 0.04 kg to a total weight of 0.2 kg. Packaging consists of Box, Paper.

Product Weight 0.16 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. Please visit the following website to learn more about how we comply with product-related environmental regulations like RoHS, REACH, WEEE and others: Product Related Environmental Protection

Life cycle stages and reference scenarios

Manufacturing

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

Operations

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

End-of-Life

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

Scenarios

Energy model used:

Germany (standard mix), Europe (standard mix)

Energy model used:

Europe (standard mix)

Use scenario:

4,5 W constantly, 100% service uptime, reference lifetime 10 years

Energy model used:

EMEA

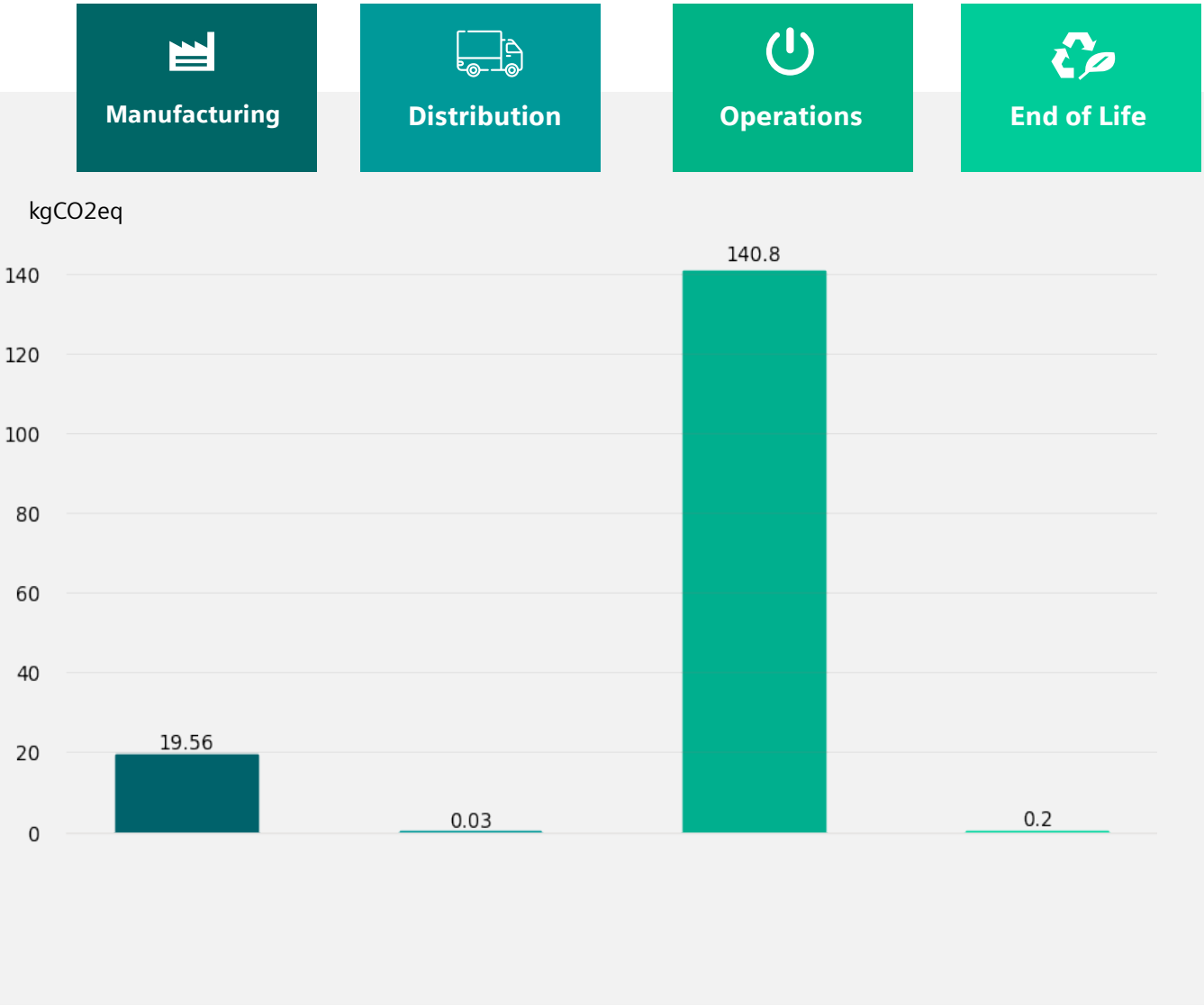
Key environmental performance indicators

The following impact categories characterize the product's environmental footprint. They have been calculated with LCIA methodology EF 3.0, GWP incl. Biogenic Carbon according to EN 15804 + A2; LCA tool: GaBi 10.6, Database content update package: 2022.2.

Impact Category	Unit	Total	Manufacturing	Distribution	Operation	End of Life
Acidification	Mole of H+ eq	4.40E-01	1.35E-01	3.75E-05	3.05E-01	4.64E-05
Global warming potential	kg CO2 eq	1.61E+02	1.96E+01	3.41E-02	1.41E+02	2.03E-01
Ecotoxicity, freshwater – total	CTUe	1.26E+03	1.57E+02	3.19E-01	1.11E+03	8.90E-02
Eutrophication, freshwater	kg P eq	4.74E-04	6.49E-05	1.22E-07	4.09E-04	1.56E-07
Eutrophication, marine	kg N eq	8.59E-02	1.72E-02	1.19E-05	6.86E-02	1.28E-05
Eutrophication, terrestrial	Mole of N eq	9.07E-01	1.86E-01	1.43E-04	7.20E-01	1.75E-04
Human toxicity, cancer – total	CTUh	3.64E-08	4.59E-09	6.57E-12	3.18E-08	4.38E-12
Human toxicity, non-cancer – total	CTUh	1.38E-06	2.16E-07	3.56E-10	1.16E-06	2.40E-10
Ionising radiation, human health	kBq U235 eq	6.97E+01	1.54E+00	1.27E-04	6.82E+01	4.03E-03
Land Use	Pt	9.74E+02	5.99E+01	1.90E-01	9.14E+02	6.22E-02
Ozone depletion	kg CFC-11 eq	7.49E-09	5.44E-09	3.37E-15	2.05E-09	1.29E-13
Particulate matter	Disease incidence s	3.91E-06	1.37E-06	2.62E-10	2.53E-06	3.78E-10
Photochemical ozone formation, human health	kg NMVOC eq	2.38E-01	5.23E-02	3.22E-05	1.85E-01	3.53E-05
Resource use, fossils	MJ	2.80E+03	2.72E+02	4.50E-01	2.53E+03	1.88E-01
Resource use, mineral and metals	kg Sb eq	1.87E-03	1.83E-03	3.47E-09	3.82E-05	2.53E-09
Water scarcity	m^3 world eq	3.48E+01	3.41E+00	3.83E-04	3.14E+01	1.96E-02

Global warming potential

This chart shows the overall global warming potential of the product. The operations phase is the lifecycle phase with the biggest overall impact. Different operating conditions can lead to deviations from the standard scenario.



End-of-Life scenario

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 18%** mainly due to metal content
- **an energy recoverability of up to 71%** from plastic materials
- **a minimum disposal rate of 11%**

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.

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

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Annex

For other modules "Key environmental performance indicators" please refer the following factors:

Product	Description	Manufacturing	Distribution	Operation based on power loss	End-of-Life
6DL1132-6BH00-0EH1	DQ 16X24VDC/0,5A	1	1	0,27	1
6DL1132-6BH00-0PH1	DQ 16X24VDC/0,5A	1	1	0,27	1
6DL1131-6BL00-0PH1	DI 32X24VDC	1	1	0,36	1
6DL1132-6BL00-0PH1	DQ 32X24VDC/0,5A	1	1	0,36	1
6DL1131-6GF00-0EK0	DI 8X230VAC	1	1	0,40	1
6DL1131-6GF00-0PK0	DI 8X230VAC	1	1	0,40	1
6DL1134-6JH00-0EH1	AI 16XTC/8XRTD 2-/3-/4-WIRE	1	1	0,40	1
6DL1134-6JH00-0PH1	AI 16XTC/8XRTD 2-/3-/4-WIRE	1	1	0,40	1
6DL1134-6UD00-0PK0	AI 4XI 2-/4-Wire HART ISOL	1	1	0,40	1
6DL1131-6TH00-0PH1	DI 16XNAMUR	1	1	0,53	1
6DL1132-6HD50-0EK0	RQ 4X120VDC-230VAC/5A CO	1	1	0,62	1
6DL1132-6HD50-0PK0	RQ 4X120VDC-230VAC/5A CO	1	1	0,62	1
6DL1135-6UD00-0PK0	AQ 4XI HART ISOL	1	1	0,67	1
6DL1135-6TF00-0EH1	AQ 8XI HART	1	1	0,71	1
6DL1135-6TF00-0PH1	AQ 8XI HART	1	1	0,71	1
6DL1131-6BH00-0EH1	DI 16X24VDC	1	1	0,80	1
6DL1131-6BH00-0PH1	DI 16X24VDC	1	1	0,80	1
6DL1131-6DF00-0EK0	DI 8X24 ... 125VDC	1	1	0,83	1
6DL1131-6DF00-0PK0	DI 8X24 ... 125VDC	1	1	0,83	1
6DL1138-6EA00-0EH1	FIO & Counter	1	1	0,89	1
6DL1138-6EB00-0EH1	Closed Loop Controller	1	1	0,89	1
6DL1138-6EC00-0EH1	Vibration protection	1	1	0,89	1
6DL1133-6EW00-0EH1	AI-DI16/DQ16X24VDC HART	1	1	1,00	1
6DL1133-6EW00-0PH1	AI-DI16/DQ16X24VDC HART	1	1	1,00	1