ENVIRONMENTAL PRODUCT DECLARATION

SIMATIC S7-400

CPU 410

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

SIEMENS

General information

Products	6ES7410-5HX08-4AB0 - CPU 410-5H V10 6ES7410-5HM08-0AB0 - CPU 410E 6ES7410-5HN08-0AB0 - CPU 410 SMART 6ES7410-5FM08-0AB0 - CPU 410SIS
Represented by	6ES7410-5HX08-0AB0 - CPU 410-5H
Product Description	Central processing unit, 5 interfaces: 2x PN, 1x DP, 2x for sync modules
Functional Unit	Central processing unit for S7-400 and S7-400H/F/FH over the reference service lifetime of 10 years.

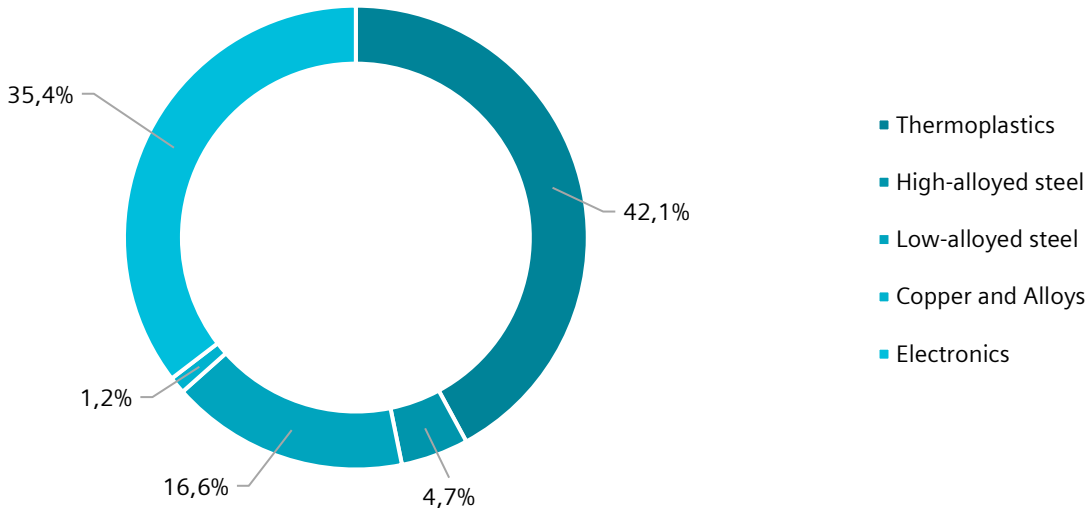
This environmental product declaration (EPD) is based on the international standard ISO 14021 (“Environmental labels and declarations – Self declared environmental claims – Type II”). The data in this EPD has been evaluated on a full-scale life cycle assessment (LCA) study according to ISO 14040/44,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

Material composition

The following chart outlines the overall material composition of the calculated reference product. Product weight of 1,15 kg adds up with packaging weight of 0,66 kg to a total weight of 1,81 kg. Packaging consists of cardboard (Corrugated Fiber Board; ~0,62 kg) leaflet and label (Graphic Paper, ~0,04 kg).

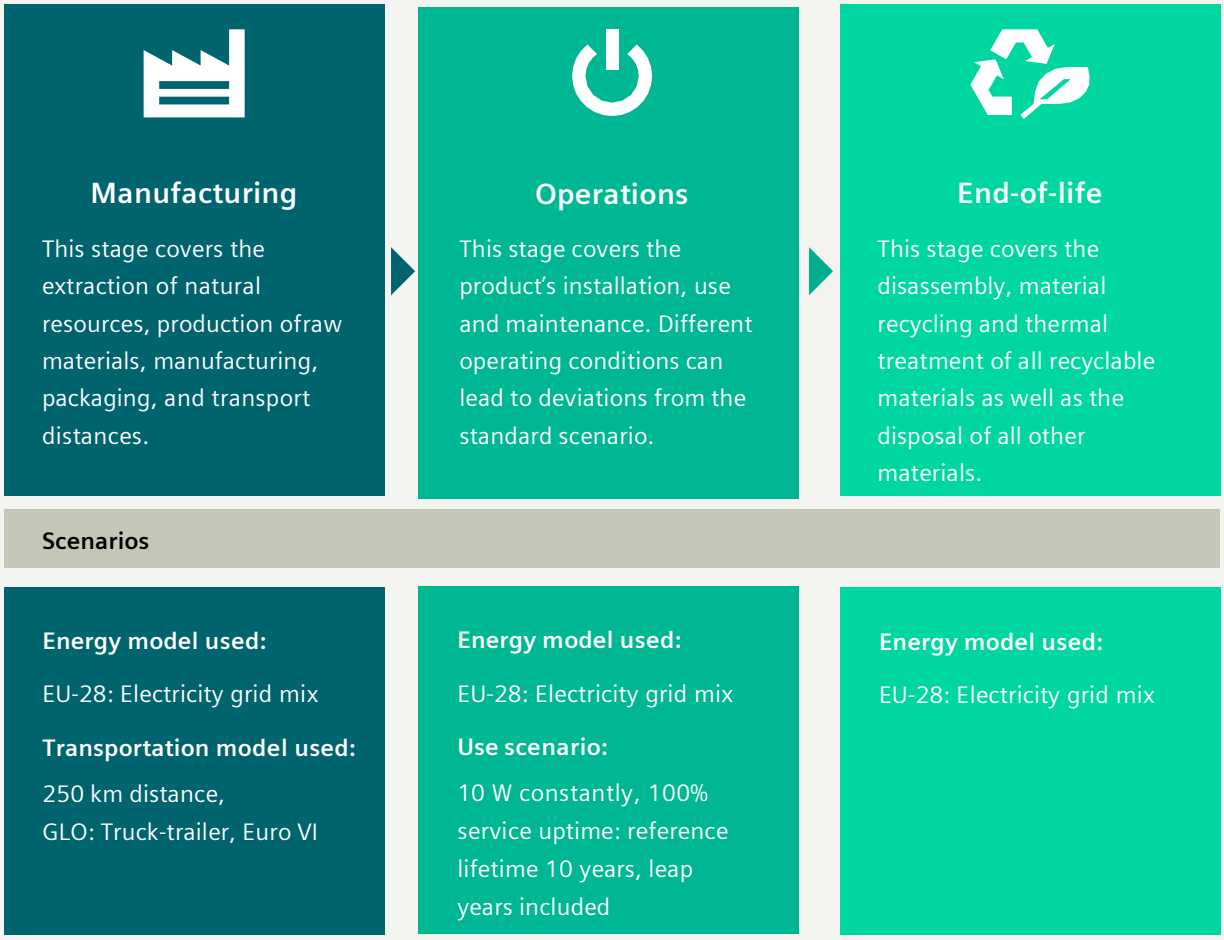
Product Weight 1,15 kg



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 Production

Life cycle stages and reference scenarios



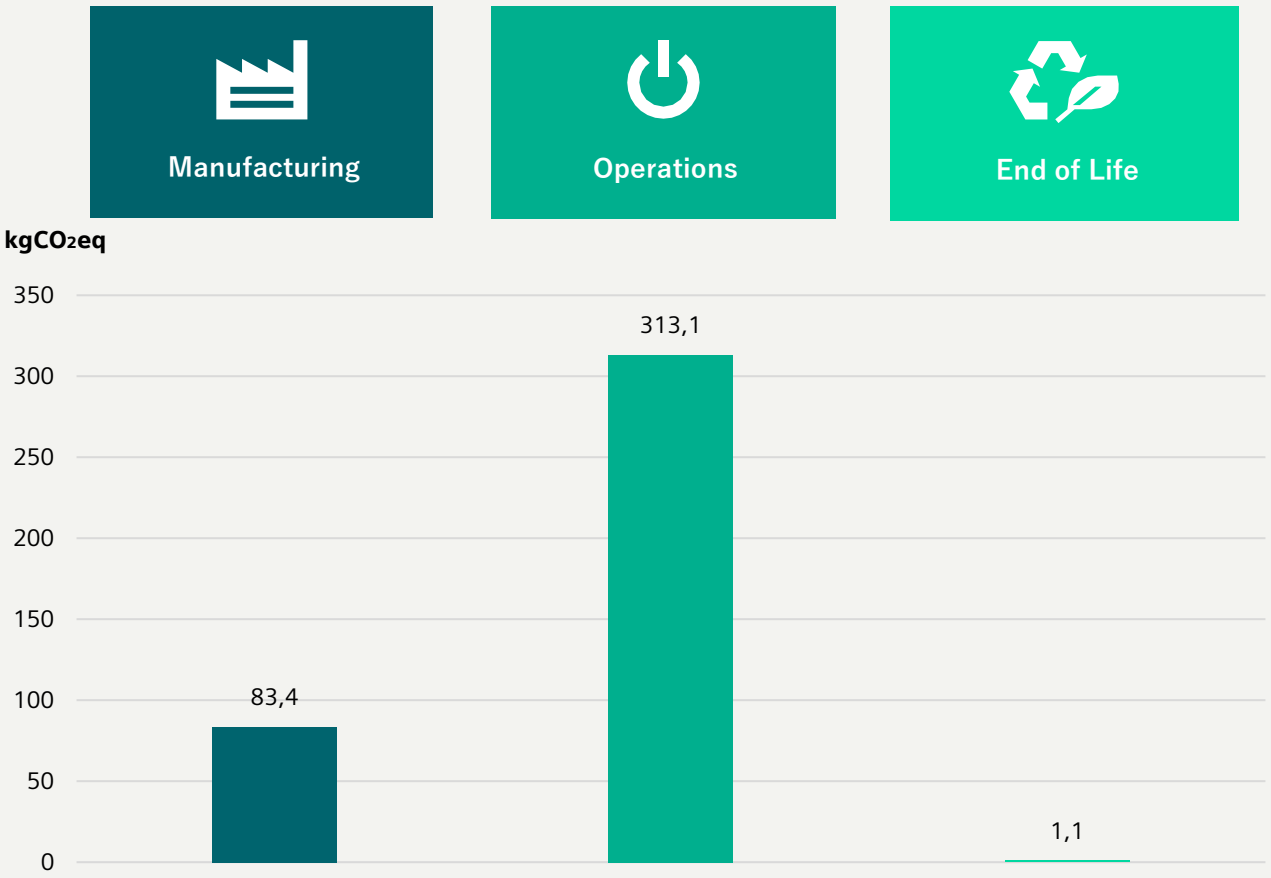
Key environmental performance indicators

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: GaBi Professional & Extensions, Content update package 2022.2.

Impact category	Unit	Total	Manufacturing	Operation	End of Life
Acidification	Mole of H+ eq	1,15E+00	4,70E-01	6,79E-01	-6,96E-04
Global warming potential	kg CO_2 eq	3,98E+02	8,34E+01	3,13E+02	1,15E+00
Ecotoxicity, freshwater – total	CTUe	3,05E+03	5,90E+02	2,46E+03	-2,57E+00
Eutrophication, freshwater	kg P eq	1,30E-03	3,89E-04	9,09E-04	-9,90E-07
Eutrophication, marine	kg N eq	2,24E-01	7,17E-02	1,53E-01	-1,62E-04
Eutrophication, terrestrial	Mole of N eq	2,37E+00	7,74E-01	1,60E+00	-1,33E-03
Human toxicity, cancer – total	CTUh	1,60E-07	8,99E-08	7,07E-08	-1,07E-10
Human toxicity, non-cancer – total	CTUh	3,69E-06	1,10E-06	2,59E-06	-3,67E-09
Ionising radiation, human health	kBq U235 eq	1,57E+02	5,28E+00	1,52E+02	-1,68E-01
Land Use	Pt	2,22E+03	1,92E+02	2,03E+03	-2,19E+00
Ozone depletion	kg CFC-11 eq	9,63E-09	5,09E-09	4,55E-09	-4,97E-12
Particulate matter	Disease incidences	1,07E-05	5,05E-06	5,63E-06	-5,58E-09
Photochemical ozone formation, human health	kg NMVOC eq	6,25E-01	2,13E-01	4,12E-01	-4,66E-04
Resource use, fossils	MJ	6,72E+03	1,11E+03	5,62E+03	-1,28E+01
Resource use, mineral and metals	kg Sb eq	9,24E-03	9,15E-03	8,49E-05	-1,13E-07
Water use	m^3 world eq	8,53E+01	1,55E+01	6,97E+01	1,14E-01

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 disassembling of the device, followed by sorting and material separation process. Plastic and electronic parts have been incinerated including electric (EU-28) and thermal (EU-28 Natural Gas) energy recovery. Cut-Off has been used for metal parts.

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.

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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.

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