



ENVIRONMENTAL PRODUCT DECLARATION

SIRIUS

Pushbutton 3SU1.0.

Type II according to ISO 14021 including life cycle impact assessment (LCIA)
[siemens.com](https://www.siemens.com)



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”). 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, as well as product specific rules (PSR) for low-voltage switchgear and controlgear equipment in IEC TS 63058 ED1.0.

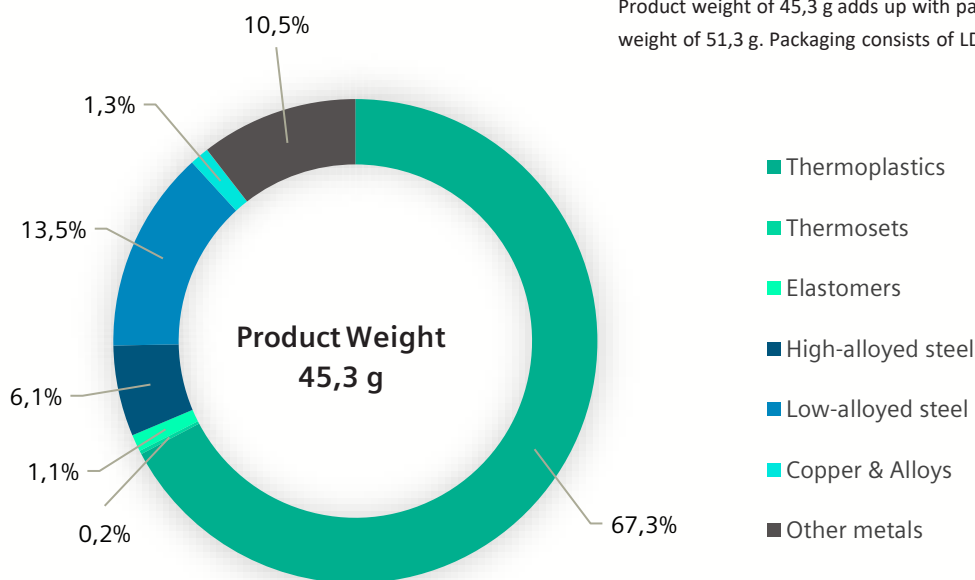
Siemens is dedicated to an environmentally conscious design of its products in line with IEC 62430 and has implemented an integrated management system according to ISO 9001, ISO 14001 and ISO 45001.



| | |
|----------------------------|---|
| Products | All variants in the range of 3SU1.0. |
| Represented by | 3SU1106-0AB20-3CA0 (Illuminated Pushbutton) |
| Product Description | Illuminated pushbutton, 22 mm, round, plastic, red, pushbutton, flat, momentary contact type, with holder, 1 NC, LED module with integrated LED 230 V AC, Spring-type terminal |
| Functional Unit | To establish, support and interrupt for 20 years an electrical signal characterized by its rated voltage U_e and rated operational current I_e , and switch the signal when mechanically actuated according to IEC 60947-5-1. |

Material composition

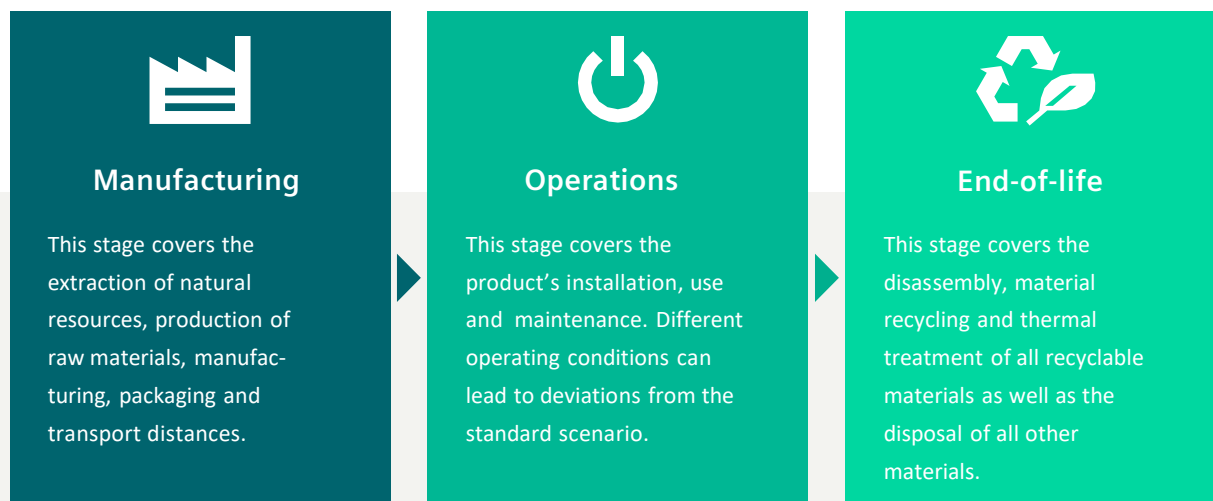
The following chart outlines the overall material composition of the calculated reference product.



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



Scenarios

Energy model used:

EU-28: Electricity grid mix
China: Electricity grid mix (partial)

Transportation model used:

1215 km, GLO: Truck-trailer, Euro IV
21000 km, GLO: Container ship

Energy model used:

EU-28: Electricity grid mix

Use scenario:

0,4 W full load,
10% loading rate of I_n : 20 mA,
90% service uptime,
20 years reference lifetime

Energy model used:

EU-28: Electricity grid mix

Key environmental performance indicators

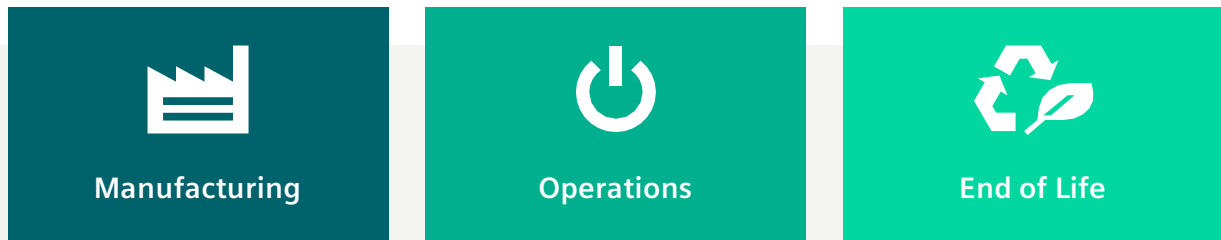
The following impact categories characterize the product's environmental footprint. They have been calculated with LCIA methodology EF3.0; LCA tool: GaBi 10.6.1.35, Database: GaBi Professional & Extensions, 2020.

| Impact category | Unit | Total* | Manufacturing | Operation | End of Life |
|------------------------------------|-------------------------|----------|---------------|-----------|-------------|
| Acidification | Mole of H+ eq | 2,29E-03 | 2,86E-03 | 5,11E-04 | -1,08E-03 |
| Global warming potential | kg CO ₂ eq | 7,87E-01 | 5,66E-01 | 2,35E-01 | -1,45E-02 |
| Ecotoxicity, freshwater – total | CTUe | 6,53E+00 | 5,00E+00 | 1,85E+00 | -3,26E-01 |
| Eutrophication, freshwater | kg P eq | 1,58E-06 | 9,42E-07 | 6,79E-07 | -4,17E-08 |
| Eutrophication, marine | kg N eq | 4,26E-04 | 3,83E-04 | 1,15E-04 | -7,17E-05 |
| Eutrophication, terrestrial | Mole of N eq | 4,60E-03 | 4,14E-03 | 1,20E-03 | -7,45E-04 |
| Human toxicity, cancer – total | CTUh | 4,11E-09 | 4,11E-09 | 5,31E-11 | -5,70E-11 |
| Human toxicity, non-cancer – total | CTUh | 9,95E-09 | 8,71E-09 | 1,95E-09 | -7,11E-10 |
| Ionising radiation, human health | kBq U235 eq | 1,71E-01 | 7,02E-02 | 1,14E-01 | -1,35E-02 |
| Land Use | dimensionless (pt) | 3,47E+00 | 1,76E+00 | 1,52E+00 | 1,95E-01 |
| Ozone depletion | kg CFC-11 eq | 4,92E-09 | 4,91E-09 | 3,40E-12 | 3,72E-12 |
| Particulate matter | Disease incidences | 2,33E-08 | 2,84E-08 | 4,23E-09 | -9,34E-09 |
| Photochemical ozone formation | kg NMVOC eq | 1,31E-03 | 1,25E-03 | 3,10E-04 | -2,51E-04 |
| Resource use, fossils | MJ | 1,20E+01 | 9,13E+00 | 4,22E+00 | -1,38E+00 |
| Resource use, mineral and metals | kg Sb eq | 8,60E-06 | 1,06E-05 | 6,35E-08 | -2,10E-06 |
| Water scarcity | m ³ world eq | 1,45E-01 | 9,14E-02 | 5,31E-02 | 9,57E-04 |

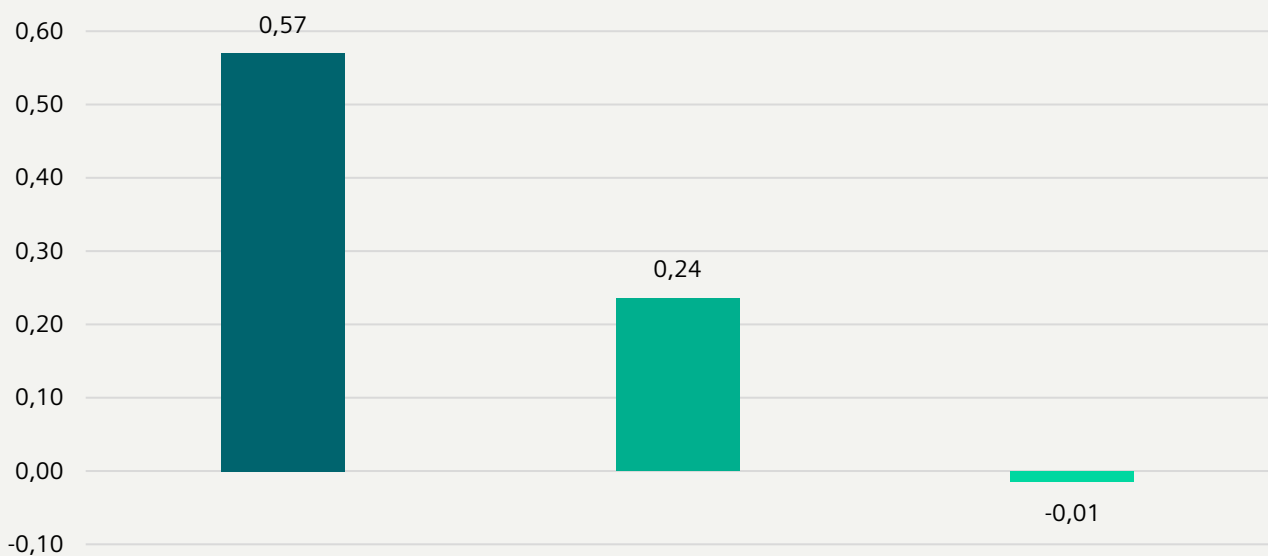
* Includes potential benefit of End-of-Life

Global warming potential

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



kg CO₂ eq



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 33%** mainly due to metal content
- an **energy recoverability of up to 74%** from plastic materials
- a **minimum landfill rate of 5%**

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 ecologically sensible. Observe all local and applicable laws.

I 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.

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.

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.

**Published by
Siemens AG**

Smart Infrastructure
Electrical Products
Werner-von-Siemens-Str. 48
92224 Amberg
Germany

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. 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.

© 2022 by Siemens AG, Berlin and Munich