

Environmental Product Declaration



Thermostat, KPS81 (060L311166)

| | |
|--------------------------------|--|
| EPD owner | Danfoss A/S |
| EPD registration number | EPD-IES-0031501:001 |
| Programme | The International EPD® System, www.environdec.com |
| Programme operator | EDP International AB |
| EPD Type | Cradle to gate with options, modules A4-A5, modules C1-C4, and module D, EPD for multiple products based on worse case results |
| Version date | 2026-05-05 |
| Validity date | 2031-05-05 |

Environmental Product Declaration in accordance with EN 15804:2012+A2:2019/AC:2021 and ISO 14025:2006

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



General information

| | |
|-----------------------------------|---|
| EPD author | Danfoss A/S |
| Declared unit | One product over its Reference Service Life |
| Product included | Thermostat, KPS81 (060L311166) |
| Product covered by the EPD | List of products covered located in annex |
| Manufacturing Location | Grodzisk, Poland |
| Use Location | Europe |
| Application | Suitable for use in monitoring alarm and control systems |
| Mass | [1,87] kg without packaging [1,89] kg with packaging |
| Dimensions (H×W×D) | 104 x 116 x 68 mm |
| Verification | [X] External [] Internal [] None |
| Produced to | PCR 2019:14 version 2.0.1 |
| External verifier | Bureau Veritas Certification Sweden, accredited by SWEDAC accr. No. 1236 |

Programme information

| | |
|------------------|---|
| Programme | The International EPD® System |
| Address | EPD International AB Box 210 60 SE-100 31 Stockholm Sweden |
| E-mail | support@environdec.com |



General information

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): Construction products PCR 2019:14 v. 2.0.1, CPC code: 439

PCR review was conducted by: The Technical Committee of the International EPD® System. Chair: Rob Rouwette, Greendesk (on behalf of EPD International AB). Contact via support@environdec.com

Verification

External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via:

✓ EPD verification through an EPD process certification without a pre-verified LCA/EPD tool

Third-party verifier Bureau Veritas Certification Sweden

Accredited by SWEDAC with accreditation number 1236

*EPD Process Certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.environdec.com. International EPD System

Procedure for follow-up of data during EPD validity involves third-party verifier: Yes No

Ownership and limitations on use of the EPD

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison

The EPD owner has the sole ownership, liability, and responsibility for the EPD.





Company Information

EPD owner information

| | |
|-----------|--|
| EPD owner | Danfoss A/S |
| Address | Nordborgvej 81 6430 Nordborg Denmark |
| E-mail | epd_danfoss@danfoss.com |

Danfoss is empowering its customers to make decisions in favor of decarbonization by providing an EPD on its products

By providing transparency in our products, Environmental Product Declarations support data driven decision-making for customers wishing to drive the green transition. Compliant with wide-reaching regulations, EPDs support the credibility of our products footprint through verification.

Find more on our annual report:

[Danfoss annual report 2025](#) | [Download the latest annual report](#) | [Danfoss](#)

Product information

The reference product used for this EPD is representative of, **Thermostat, KPS81 (060L311166)**. The production location is the Danfoss plant in Grodzisk, Poland. See more information on [Danfoss Product Store](#).

The KPS Series consists of a series of pressure and temperature-controlled switches. In this series, special attention has been given to meeting demands for a high level of enclosure, robust and compact construction, and resistance to shock and vibration. The series covers most outdoor as well as indoor application requirements and is suitable for use in monitoring alarm and control systems in factories, diesel plants, compressors, power stations and on-board ships.

Product information

UNPCPC code 439

The product does not contain any substances from the Candidate List of Substances of Very High Concern for Authorisation of the European Union's REACH Regulation (EC 1907/2006) above the threshold of 0.1% weight/weight.

This Environmental Product Declaration (EPD) follows the PCR 2.0.1 Construction products. These rules provide a consistent framework for calculating and reporting the environmental performance of Danfoss' product and is aligned with relevant standards, particularly ISO 14025:2006, EN 15804+A2: 2019 and EN 50598-3:2015.

This document has been produced by Danfoss A/S and an external third-party verification is conducted.



Figure 1: Thermostat, KPS81 (060L311166)

Content declaration

Table 1: Product composition

| Material | Mass (kg) | % | Post-consumer scrap (%) |
|-------------------------------|----------------|----------------|-------------------------|
| Metals | 1.3E+00 | 70.59% | 0% |
| Steel (excl. stainless steel) | 3.6E-01 | 19.52% | 0% |
| Stainless steel | 5.5E-01 | 29.47% | 0% |
| Aluminium and its alloys | 3.6E-01 | 19.09% | 0% |
| Iron | 4.6E-04 | 0.02% | 0% |
| Copper and its alloys (Brass) | 4.6E-02 | 2.44% | 0% |
| Plastics & Rubbers | 3.0E-02 | 1.63% | 0% |
| Plastic with no GF | 2.6E-02 | 1.38% | 0% |
| Rubbers | 4.6E-03 | 0.25% | 0% |
| Natural materials | 4.3E-03 | 0.23% | 0% |
| Paper and cardboard | 4.3E-03 | 0.23% | 0% |
| Electrical/electronic | 5.1E-01 | 27.38% | 0% |
| PCBA | 5.1E-01 | 27.38% | 0% |
| Total product | 1.9E+00 | 100.00% | |

Table 2: Packaging composition

| Material | Mass (kg) | Mass versus product (%) |
|------------------------------------|-----------------|-------------------------|
| Paper and cardboard | 2.04E-02 | 1.05% |
| Polyethylene | 5.00E-05 | 0.003% |
| Total packaging | 2.04E-02 | 100.00% |
| Total (Product + Packaging) | 1.9E+00 | |

Figure 2: Product material composition overview

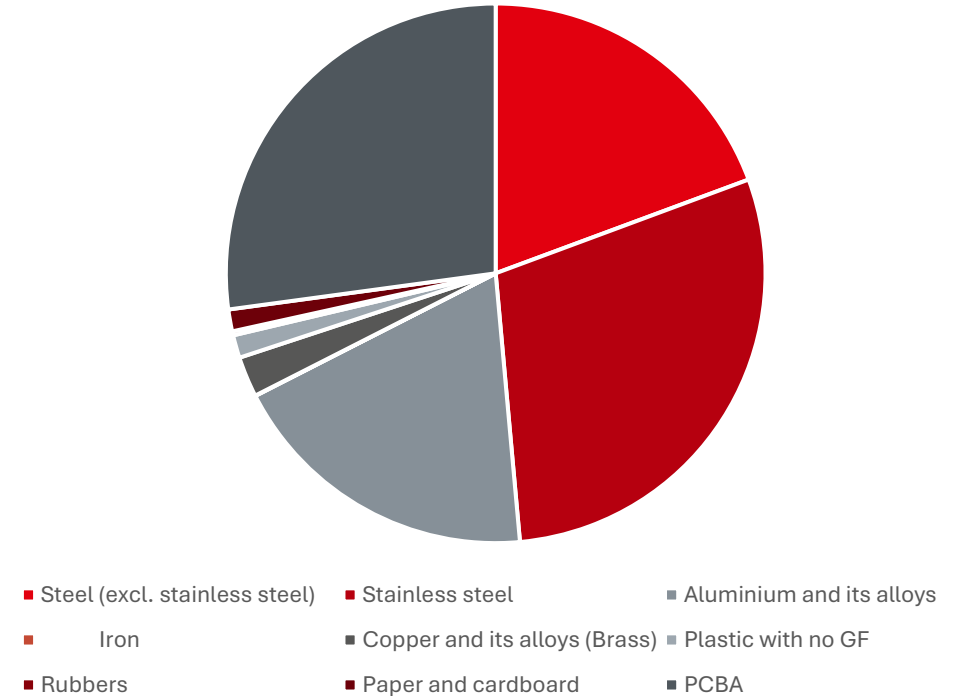


Table 3: Biogenic and recycled content overview

| | |
|---|----------------|
| Biogenic content in the product [kg] | 0 |
| Biogenic content in the packaging [kg] | 1.1E-02 |

LCA Information

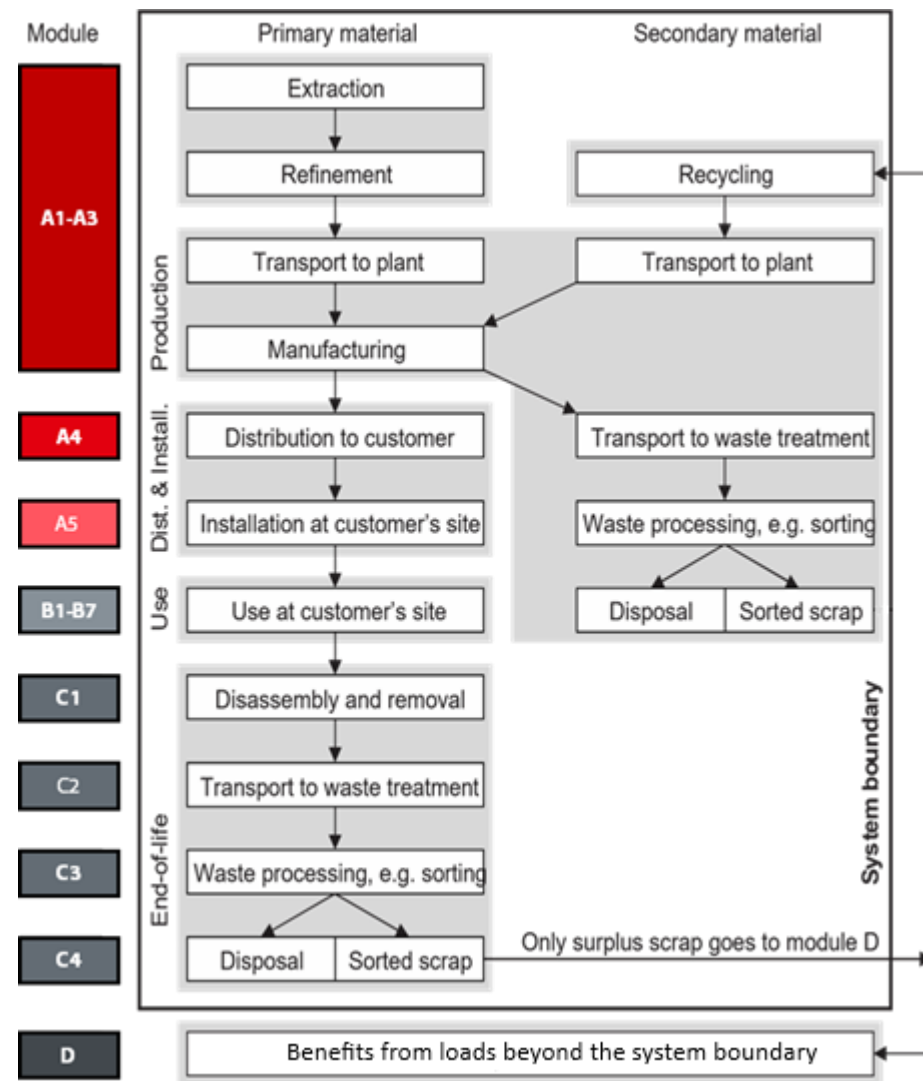
An EPD is a document used to communicate transparently, the quantified environmental impacts of a product over its lifecycle stages. This quantification is done by performing a Life Cycle Assessment (LCA) in line with a consistent set of rules known as a PCR (Product Category Rules).

This EPD is of the type 'cradle-to-gate with options' and includes all relevant modules: production (A1-A3), shipping (A4) and installation (A5); deconstruction (C1), waste collection and transport (C2), treatment (C3) and disposal (C4). It also includes potential net benefits to future products from recycling or reusing post-consumer waste (D). The codes in brackets are the module labels from EN 15804+A2. Modules concerning use, maintenance, repair, replacement, refurbishment (B1-B5), operational energy use (B6) and operational water use (B7) are excluded, following the cut-off rules from EN 15804.

Table 4: Module of the product's life cycle included in the EPD

| | Production stage | | Installation | | Use stage | | | | | | | End-of-life-stage | | | | Benefits | |
|--------------------|------------------|-----------|--------------|-----------|--------------|-----|-------------|--------|-------------|---------------|---------------------|--------------------|-----------------|-----------|------------------|----------|--|
| | Raw materials | Transport | Manufacture | Transport | Installation | Use | Maintenance | Repair | Replacement | Refurbishment | Optional energy use | Optional water use | De-installation | Transport | Waste processing | Disposal | Benefits and loads outside system boundaries |
| Module | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| Module declared | X | X | X | X | X | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |
| Geography | EU-27 | EU-27 | PL | EU-27 | EU-27 | - | - | - | - | - | - | - | EU-27 | EU-27 | EU-27 | EU-27 | EU-27 |
| Primary data used | 3.82% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation products | 36% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation sites | 0% | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Figure 3: Modular structure used in this EPD (EN15804+A2)



LCA Information

Product and packaging (A1-A3)

Final manufacturing occurs in the Grodzisk plant, Poland. The facility is certified according to IATF 16949, ISO 14001, ISO 45001, and ISO 9001. Where waste generated on-site is recyclable, it is separated and recycled. For further information, see here. The product is shipped in the packaging. All packaging materials can be safely recycled or incinerated if appropriate local facilities are available. The on-site data was gathered for 2024. The electricity use on site is photovoltaic and the GWP for site electricity is 2.74E-02 kgCO₂eq/kWh.

Shipping and installation (A4-A5)

Distribution is assumed to occur to customers within Europe. Transportation at 2000 km distance by truck is assumed between the factory and the final customer.

Module A5 includes disposal of packaging materials only. The product is assumed to be installed by hand. Energy use in handheld tools during installation is not included as it falls under the cut-off criteria.

Table 5: Overview of LCA study

| Assumptions | |
|--|---|
| Reference service life | 10 years |
| Intended market | Europe– The baseline scenario involves the distribution, installation, and end-of-life in Europe |
| Use of Proxy and supplier specific data | No supplier specific data was used . Datasets from Sphera LCA software were used for this LCA. EPDM has been assumed to be the rubber used in the product. |
| Data | |
| Data | LCA for Experts (Sphera) database version 2026.1. |
| Data quality | A data quality assessment that complies with EN 15941 and EN15804 annex E, was performed and reported in the LCA report per dataset. Data quality of the selected datasets is generally assessed as good and very good in terms of geographical, time and technology representativeness and applicability. The data was collected for a period from January to December 2024. |
| Allocation and cut-off criteria | The allocation is done in accordance with EN 15804+A2. All major raw materials and essential energy are included. All hazardous materials and substances are considered in the inventory. Data sets within the system boundary are complete and fulfil the criteria for the exclusion of inputs and output criteria. |

LCA Information

Table 6: Share of primary data, of GWP-GHG in A1-A3

| Process | Source type | Source | Reference year | Data category | Primary data share (%) |
|--|-------------|--|----------------|----------------|------------------------|
| Generation of electricity used in manufacturing of product | Database | Sphera my professional database 2025.2 | 2024 | Primary data | 0,06% |
| Transport of raw materials to manufacturing site | Database | Sphera my professional database 2025.2 | 2024 | Primary data | 3,76% |
| Other | Database | Sphera my professional database 2025.2 | 2024 | Secondary data | 0,00% |
| Total share of primary data, of GWP-GHG results for A1-A3 | | | | | 3,82% |

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

LCA Information

End-of-life (C1-C4)

In line with EN 15804+A2, only the 'net scrap' (i.e., the leftover recyclable materials remaining after inputs of recycled content required in the manufacturing phase are first satisfied) is used to calculate the benefits and loads beyond the system boundary (Module D). For this EPD the 100% recycling scenario has been applied, due to being the most conservative in comparison to 100% landfill (based on sensitivity analysis). This is due to the composition of the product, that results in lower GWPT from landfill in comparison to recycling (processing of waste).

Benefits and loads beyond the system boundary (D)

Module D considers the net benefit of recycling of materials in the product and packaging, taking account of losses in the recycling process and the recycled material used in the production of the product. Module D covers the end-of-life scenario, as described above.

Table 7: Characterization methods of environmental performance

| Environmental impact indicators | Characterization methods |
|---------------------------------|--|
| GWPT | Carbon footprint-total, GWP100, EN 15804. Version: August 2021 |
| GWPF | Carbon footprint-fossil, GWP100, EN 15804. Version: August 2021 |
| GWPB | Carbon footprint-biogenic, GWP100, EN 15804. Version: August 2021 |
| GWPLULUC | Carbon footprint-land use and land use change, GWP100, EN 15804. Version: August 2021 |
| ODP | Depletion potential of the stratospheric ozone layer, ODP, EN 15804. Version: August 2021 |
| AP | Acidification potential, AP, CML 2001 non baseline (fate not included). Version: January 2016 |
| EPfw | Eutrophication potential- aquatic freshwater, Ep, aquatic marine, EUTREND model EN 15804. Version: August 2021 |
| Epmar | Eutrophication potential- aquatic marine, EP, aquatic marine, EUTREND model EN 15804. Version: August 2021 |
| Epter | Eutrophication potential- terrestrial, EP, aquatic marine, EUTREND model EN 15804. Version: August 2021 |
| POCP | Photochemical ozone creation potential, POPCP, LOTOS-EUROS as applied in ReCiPe, EN15804. Version: August 2021 |
| ADPE | Depletion of abiotic resources – minerals and metals, EPD minerals & metals, EN 15804, Version: August 2021. |
| ADPF | Depletion of abiotic resources – fossil fuels, EPD fossil resources, EN 15804, Version: August 2021. |
| WDP | Water deprivation potential (deprivation-weighted water consumption), Water deprivation (Available water remaining (AWARE), EN 15804 |

Environmental performance

This section presents the environmental performance of one-unit **Thermostat, KPS81 (060L311166)**. Figure 4 presents the environmental impact of the Thermostat, KPS81 (060L311166) across a number of environmental impact categories (following EN 15804+A2:2019) per life cycle stage, over its full 10 years life cycle, including Global Warming Potential.

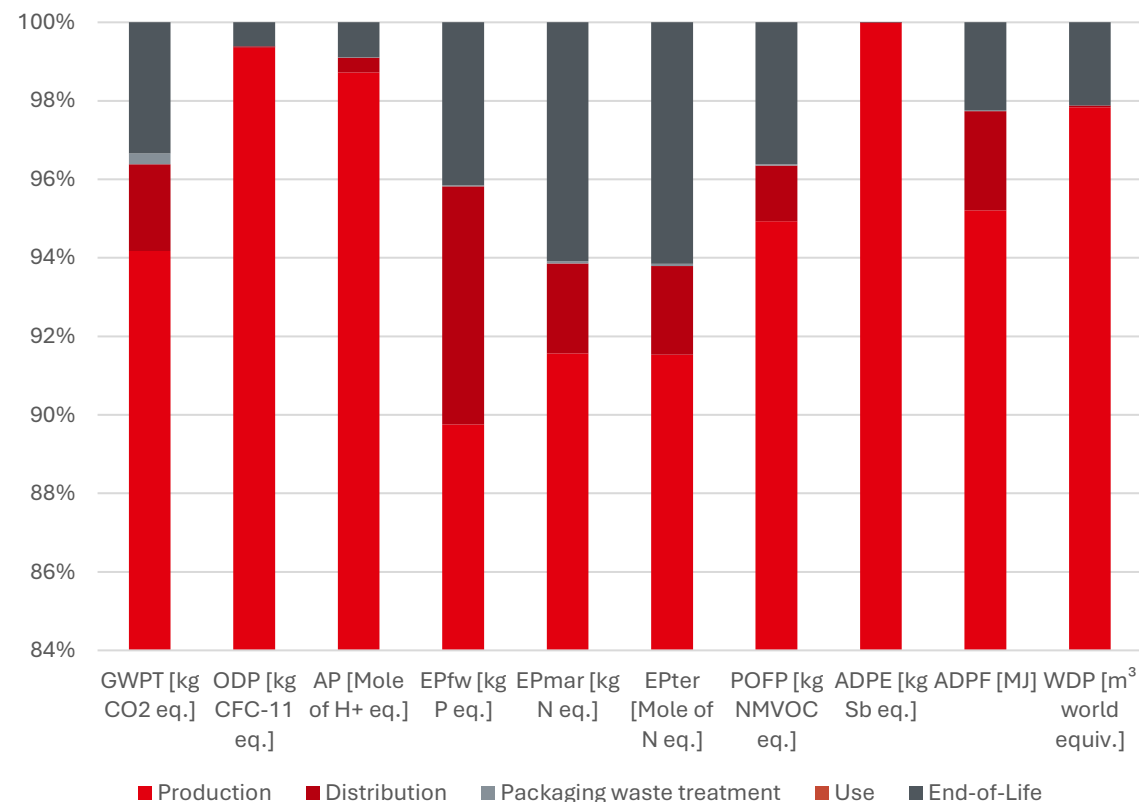
The environmental performance results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. The results of the end-of-life stage (module C) should be considered when using the results of the production stage (modules A1-A3).

Table 8: Environmental impact indicators results per declared unit

| Acronym | Indicator |
|--------------|--|
| GWPT | Carbon footprint (Global Warming Potential) – total |
| ODP | Depletion potential of the stratospheric ozone layer |
| AP | Acidification potential |
| EPfw | Eutrophication potential – aquatic freshwater |
| EPmar | Eutrophication potential – aquatic marine |
| EPter | Eutrophication potential – terrestrial |
| POFP | Summer smog (photochemical ozone formation potential) |
| ADPE* | Depletion of abiotic resources – minerals and metals |
| ADPF* | Depletion of abiotic resources – fossil fuels |
| WDP* | Water deprivation potential (deprivation-weighted water consumption) |

***Disclaimer for ADPE, ADPF, WDP:** The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Figure 4: Breakdown of environmental impacts by life cycle stages with Module D is not included. (See Table 8 for descriptions of environmental impact indicators)



Environmental performance

Of one-unit **Thermostat, KPS81 (060L311166)**

| Production | Distribution | Packaging waste treatment | End-of-Life | | | | Benefits & Loads |
|--|--|--|---|---|--------------------------------|---|--|
| A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| Manufacture of the product from 'cradle-to-gate' | Transport of the product to the customer | Installation of the product and disposal of used packaging | Deinstallation of the product from the site | Transport of the product to waste treatment | Processing waste for recycling | Disposal of waste that cannot be recycled (through landfill and incineration) | Potential benefits and loads beyond the system boundary due to reuse, recycling, and energy recovery |

| Impact category | Environmental Impact indicators | Unit | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
|----------------------------------|---------------------------------|-----------------------------|----------|---------|---------|---------|---------|---------|---------|----------|
| Global Warming Potential | Total (GWPT) | kg CO ₂ eq. | 1.4E+01 | 3.3E-01 | 4.1E-02 | 0.0E+00 | 1.9E-02 | 4.8E-01 | 0.0E+00 | -5.8E+00 |
| | Fossil (GWPF) | kg CO ₂ eq. | 1.4E+01 | 3.3E-01 | 2.1E-03 | 0.0E+00 | 1.9E-02 | 4.8E-01 | 0.0E+00 | -5.8E+00 |
| | Biogenic (GWPB) | kg CO ₂ eq. | -3.9E-02 | 0.0E+00 | 3.9E-02 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| | Land use & change (GWPLULUC) | kg CO ₂ eq. | 3.7E-02 | 3.4E-03 | 1.2E-06 | 0.0E+00 | 4.6E-07 | 2.0E-03 | 0.0E+00 | -7.7E-03 |
| | Greenhouse gases (GWP-GHG) | kg CO ₂ eq. | 1.4E+01 | 3.3E-01 | 2.1E-03 | 0.0E+00 | 1.9E-02 | 4.8E-01 | 0.0E+00 | -5.8E+00 |
| Ozone Depletion Potential | ODP | kg CFC-11 eq. | 1.4E-10 | 5.4E-14 | 4.5E-16 | 0.0E+00 | 2.2E-18 | 8.5E-13 | 0.0E+00 | -3.1E-11 |
| Acidification of soils and water | AP | Mole of H+ eq. | 1.7E-01 | 6.3E-04 | 1.3E-05 | 0.0E+00 | 2.7E-05 | 1.5E-03 | 0.0E+00 | -1.3E-01 |
| Eutrophication | Freshwater (EPfw) | kg P eq. | 1.3E-05 | 8.9E-07 | 4.0E-09 | 0.0E+00 | 4.1E-09 | 6.0E-07 | 0.0E+00 | -5.5E-06 |
| | Marine (EPmar) | kg N eq. | 1.1E-02 | 2.7E-04 | 6.4E-06 | 0.0E+00 | 1.0E-05 | 7.1E-04 | 0.0E+00 | -4.7E-03 |
| | Terrestrial (EPter) | Mole of N eq. | 1.2E-01 | 2.9E-03 | 6.9E-05 | 0.0E+00 | 1.2E-04 | 7.8E-03 | 0.0E+00 | -5.1E-02 |
| Photochemical ozone formation | POFP (POFP) | kg NMVOC eq. | 3.8E-02 | 5.7E-04 | 1.2E-05 | 0.0E+00 | 2.5E-05 | 1.4E-03 | 0.0E+00 | -2.1E-02 |
| Depletion of abiotic resources | Minerals, metals (ADPE) | kg Sb eq. | 8.7E-03 | 2.2E-08 | 3.5E-10 | 0.0E+00 | 6.8E-10 | 2.0E-08 | 0.0E+00 | -9.9E-04 |
| | Fossil fuels (ADPF) | MJ | 1.6E+02 | 4.2E+00 | 2.8E-02 | 0.0E+00 | 2.7E-01 | 3.5E+00 | 0.0E+00 | -7.5E+01 |
| Water deprivation | WDP | m ³ world equiv. | 3.0E+00 | 1.5E-03 | 3.0E-05 | 0.0E+00 | 3.2E-05 | 6.4E-02 | 0.0E+00 | -1.4E+00 |

Table 9: Environmental impact indicators results per declared unit

Environmental performance

Of one-unit **Thermostat, KPS81 (060L311166)**

| Resource Use indicator | Unit | Production | Distribution | Packaging waste treatment | End-of-Life | | | | Benefits & Loads |
|--|----------------|------------|--------------|---------------------------|-------------|---------|---------|---------|------------------|
| | | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| Use of renewable primary energy excluding renewable primary energy resources used as raw materials (PERE) | MJ | 5.4E+01 | 3.2E-01 | 1.1E-03 | 0.0E+00 | 9.0E-04 | 7.2E-01 | 0.0E+00 | -2.9E+01 |
| Use of renewable primary energy resources used as raw materials (PERM) | MJ | 6.4E-02 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PERT) | MJ | 5.4E+01 | 3.2E-01 | 1.1E-03 | 0.0E+00 | 9.0E-04 | 7.2E-01 | 0.0E+00 | -2.9E+01 |
| Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (PENRE) | MJ | 1.6E+02 | 4.2E+00 | 2.8E-02 | 0.0E+00 | 2.7E-01 | 3.5E+00 | 0.0E+00 | -7.5E+01 |
| Use of non-renewable primary energy resources used as raw materials (PENRM) | MJ | 9.5E-01 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) (PENRT) | MJ | 1.6E+02 | 4.2E+00 | 2.8E-02 | 0.0E+00 | 2.7E-01 | 3.5E+00 | 0.0E+00 | -7.5E+01 |
| Use of secondary material (SM) | kg | 9.8E-02 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Use of renewable secondary fuels (RSF) | MJ | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Use of non-renewable secondary fuels (NRSF) | MJ | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Net use of fresh water (FW) | m ³ | 7.7E-02 | 1.6E-04 | 1.2E-06 | 0.0E+00 | 1.5E-06 | 1.7E-03 | 0.0E+00 | -7.8E-02 |
| Waste categories and output flows indicators | Unit | | | | | | | | |
| Hazardous waste disposed (HWD) | kg | 1.8E-07 | 1.7E-10 | 4.8E-12 | 0.0E+00 | 1.9E-12 | 1.1E-09 | 0.0E+00 | -2.6E-04 |
| Non-hazardous waste disposed (NHWD) | kg | 6.2E-01 | 5.9E-04 | 2.9E-06 | 0.0E+00 | 2.8E-05 | 7.4E-01 | 0.0E+00 | -6.2E-01 |
| Radioactive waste disposed (RWD) | kg | 4.5E-03 | 7.9E-06 | 8.6E-08 | 0.0E+00 | 2.9E-07 | 1.2E-04 | 0.0E+00 | -2.3E-03 |
| Components for reuse (CRU) | kg | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Materials for recycling (MFR) | kg | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 1.5E+00 | 0.0E+00 | -9.8E-03 |
| Materials for energy recovery (MER) | kg | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Exported energy (electrical) (EEE) | MJ | 3.0E-04 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |
| Exported energy (thermal) (EET) | MJ | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 |

Table 10: Resource use, waste categories, and output flows result per declared unit.

Environmental performance

Of one-unit **Thermostat, KPS81 (060L311166)**

| | Unit | Production | Distribution | Packaging waste treatment | End-of-Life | | | | Benefits & Loads |
|--|--------------------|------------|--------------|---------------------------|-------------|---------|---------|---------|------------------|
| | | A1-A3 | A4 | A5 | C1 | C2 | C3 | C4 | D |
| Potential incidence of disease due to particulate matter emissions (PM) | Disease incidences | 1.4E-06 | 5.4E-09 | 7.7E-11 | 0.0E+00 | 1.6E-10 | 1.1E-08 | 0.0E+00 | -1.2E-06 |
| Potential human exposure efficiency relative to U235 (IRP)** | kBq U235 eq. | 5.9E-01 | 1.1E-03 | 7.2E-06 | 0.0E+00 | 4.2E-05 | 2.0E-02 | 0.0E+00 | -5.4E-01 |
| Potential Comparative Toxic Unit for ecosystems (fresh water) (ETPfw)* | [CTUe] | 5.4E+01 | 5.5E+00 | 2.0E-02 | 0.0E+00 | 2.0E-01 | 3.4E+00 | 0.0E+00 | -6.3E+01 |
| Potential Comparative Toxic Unit for humans (cancer) (HTPc)* | CTUh | 6.7E-09 | 7.4E-11 | 3.2E-13 | 0.0E+00 | 3.7E-12 | 6.9E-11 | 0.0E+00 | 1.1E-05 |
| Potential Comparative Toxic Unit for humans (non-cancer) (HTPnc)* | CTUh | 2.8E-07 | 4.1E-09 | 1.0E-11 | 0.0E+00 | 1.2E-10 | 3.4E-09 | 0.0E+00 | -2.8E-07 |
| Potential soil quality index (SQP)* | Dimensionless | 5.5E+01 | 1.9E+00 | 4.2E-03 | 0.0E+00 | 7.0E-04 | 1.4E+00 | 0.0E+00 | -7.7E+00 |

Table 11: Additional indicators* results per declared unit.

***Disclaimer for ADPE, ADPF, WDP, ETPfw, HTPc, HTPnc, SQP:** The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

****Disclaimer for ionizing radiation:** This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator

*****GWP-GHG** environmental indicator is calculated without the biogenic global warming potential (GWPB), the formula is $GWP-GHG = GWP + GWPLULUC$



References

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Abbreviations

Abbreviation

EPD

LCA

EoL

GHG

GWP

ISO

PCR

Definition

Environmental Product Declaration

Life Cycle Assessment

End-of-Life

Greenhouse Gas

Global Warming Potential

International Organization for
Standardization

Product Category Rule



SUMMARY



INTRO



PRODUCT



LCA



RESULTS



ADDITIONAL INFORMATION



REFERENCES





Annex

Table A1: Share of primary data, of GWP-GHG in A1-A3

| Process | Source type | Source | Reference year | Data category | Primary data share (%) |
|--|-------------|--|----------------|----------------|------------------------|
| Generation of electricity used in manufacturing of product | Database | Sphera my professional database 2025.2 | 2024 | Primary data | 0,06% |
| Transport of raw materials to manufacturing site | Database | Sphera my professional database 2025.2 | 2024 | Primary data | 3,76% |
| Other | Database | Sphera my professional database 2025.2 | 2024 | Secondary data | 0,00% |
| Total share of primary data, of GWP-GHG results for A1-A3 | | | | | 3,82% |

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.



Annex

Table A2: Products covered by this EPD

| Product code | Conversion Factor (GWPT) | GWPT (A1-A3) | GWPT(A1-C4) |
|-------------------|--------------------------|-----------------|-----------------|
| 060L311166 | 1.00 | 1.40E+01 | 1.49E+01 |
| 060L311266 | 0.68 | 9.58E+00 | 1.02E+01 |
| 060L310166 | 0.68 | 9.47E+00 | 1.01E+01 |
| 060L311966 | 0.85 | 1.19E+01 | 1.27E+01 |
| 060L310466 | 0.68 | 9.52E+00 | 1.01E+01 |
| 060L312266 | 0.85 | 1.19E+01 | 1.26E+01 |
| 060L312466 | 1.00 | 1.40E+01 | 1.49E+01 |
| 060L314366 | 0.71 | 9.96E+00 | 1.06E+01 |
| 060L312866 | 0.67 | 9.39E+00 | 9.97E+00 |
| 060L315666 | 0.72 | 1.00E+01 | 1.07E+01 |
| 060L313066 | 0.85 | 1.19E+01 | 1.26E+01 |
| 060L313266 | 0.96 | 1.34E+01 | 1.42E+01 |
| 060L313466 | 0.83 | 1.17E+01 | 1.24E+01 |
| 060L310866 | 0.64 | 9.00E+00 | 9.55E+00 |
| 060L313966 | 0.68 | 9.45E+00 | 1.00E+01 |

For other product code covered by this EPD document, a scale factor is used. The scalar factor is used to recalculate the environmental indicators (for example GWPT) for each product code. Since all the products are made from the same material and produced in the same location, the factor is calculated based on the gross weight difference.



Version history

Original version of the EPD, 2026-05-05

