# Carlo Gavazzi Controls S.p.A.

# Environmental Product Declaration

Product name:

**SH2MCG24** (FIELDBUS)

Site Plant:

via Safforze, 8
32100 – Belluno (BL)

**in compliance with ISO 14025 and EN 50693**

| | |
|---|---|
| Program Operator | EPDItaly |
| Publisher | EPDItaly |
| Declaration Number | CGC20240916004 |
| EPDItaly Registration Number | EPDITALY0846 |
| Issue Date | 05/12/2024 |
| Valid to | 05/12/2029 |

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# Environmental Product Declaration

## SH2MCG24

## General information

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|---|---|
| **EPD Owner** | Gavazzi Controls S.p.A., Viale Lunigiana, 46<br>20125 - Milano (MI) Italy<br>www.gavazzi-automation.com |
| **Reference production site(s)** | Belluno plant: via Safforze, 8, 32100 – Belluno (BL) |
| **Scope of application** | This document refers to the device of the **Fieldbus** family. |
| **Programme Operator** | EPDItaly - info@epditaly.it |
| **Independent Verification** | This declaration was developed according to the EPDItaly Regulations; further information and the Regulations themselves are available at www.epditaly.it<br><br>Independent verification of the declaration and data carried out according to ISO 14025:2010<br>☐ _Internal ☒ _External<br><br>Third-party verification performed by: ICMQ SpA, via De Castillia, 10 20124 - _Milan (www.icmq.it)<br>Accredited by Accredia |
| **CPC Code** | 46 "Electrical machinery and apparatus" |
| **Company contact** | Giampaolo Tormen, Certification Manager in Gavazzi Group. |
| **Technical support** | Aequilibria<br>**Aequilibria Srl - SB**<br>P.le della Stazione, 8<br>35131 – Padova (PD) - ITALIA |
| **Comparability** | Environmental statements published within the same product category, but from different programs, may not be comparable. In particular, EPDs of similar products may not be comparable if they do not comply with the relevant Technical Standard. |
| **Responsability** | Carlo Gavazzi Controls S.p.A. releases EPDItaly from any non-compliance with environmental legislation.<br>The holder of the declaration will be responsible for the supporting information and evidence; EPDItaly disclaims |

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| | any responsibility regarding the manufacturer's information, data and results of the life cycle assessment. |
| **Reference documents** | This statement was developed following the EPDItaly Program Regulations (Rev.6 of 30/10/2023 available at www.epditaly.it.<br><br>The EN 50693:2019 standard is the framework reference for PCR "Electronic and electrical products and systems" (PCR EPDItaly007). |
| **PCR – Product Category Rules** | **Core-PCR:** EPDITALY007 "*Electronic and electrical product and systems*" Rev. 3 of 13/01/2023 |
| **Date and revision of this document** | 05/12/2024 |

*Table 1. General information of EPD*

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# Environmental Product Declaration

## SH2MCG24

## Foreword

This document represents the EPD study conducted for the **SH2MCG24** device manufactured by Carlo Gavazzi Controls S.p.A., in accordance with the EPDItaly Program and its Regulations, developed in accordance with ISO 14025 and aimed at providing a tool for the development, verification and publication of Environmental Product Declarations.

The study was carried out in accordance with PCR EPDItaly007 (*PCR for electronic and electrical products and systems* ), which identifies and documents the objective and scope of LCA-based information for the product category, the rules for producing additional environmental information, the life cycle stages to be included, the parameters to be addressed, and the manner in which the parameters are to be collected and communicated in a report.

## Producer information and environmental policy

Carlo Gavazzi Controls SpA develops, manufactures and markets monitoring relays, timers, energy management systems, fieldbus systems, providing solutions for the industrial, residential and commercial automation markets, in the field of low voltage installations.

The products are marketed in Europe, North America and Asia-Pacific through a network of 22 own sales companies and about 60 independent national distributors. Carlo Gavazzi Controls has a production plant in Belluno (via Safforze 8, 32100 – Belluno).

The company already holds the following certifications, issued by accredited bodies:

- ISO9001 (since 1997)
- ISO14001 (since 2009)

Carlo Gavazzi Controls is committed to continuously reducing the environmental impact of its products throughout their life cycle, through the implementation of an environmentally conscious design process based on the principles of the EN 62430 standard and an ISO14001 certified environmental management system. The declared environmental claims have been assessed with a qualitative approach on the environmentally conscious design process.

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# Environmental Product Declaration

## SH2MCG24

## Product Information

The product under analysis is device **SH2MCG24**, belonging to the Fieldbus family, nominal consumption 6.5 W (0.0065 kW), weight 163 g (0.163 kg) including packaging and manual.
The adopted functional unit was defined, based on the reference PCR, as **a device, characterized by its own operating power at 0.0065 kW for a life time (RSL - Reference Service Life") of 10 years, including its packaging, and operating throughout its useful life.**

The assembly and testing of the product are carried out at the Carlo Gavazzi Controls production site.
Regarding the use phase, the product does not require periodic maintenance, it is considered continuously active throughout its estimated useful life of **10 years**, with a nominal consumption of 6.5 W at a voltage of 15–24VCC.
The finished device is then sent to the various Gavazzi distribution centers or, in some cases, directly to a specific customer.

| | | |
|---|---|---|
| **Product family** | Fieldbus | |
| **Product identification number** | SH2MCG24 |  |
| **Technical Data** | Power: 6.5 W (0.0065 kW)<br>Frequency: VCC<br>Weight: 0.11416 kg (packaging excluded)<br>Service Life Time (RLS): 10 years<br>Current Intensity: In = n.a. , Imax =n.a. | |
| **Packaging** | Weight: 0.04884 kg (48.84 g)<br>Material: Paper and Cardboard | |

*Table 2. Product related information SH2MCG24*

## Materials and constituents of the product

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# Environmental Product Declaration

## SH2MCG24

The declaration of materials is made in accordance with EN IEC 62474.

The products comply with substance restrictions in the EU RoHS directive (2011/65/EU).

Any recycled material content in the device is unknown.

Below is the total mass of the product (including packaging) and the weight percentages of each individual raw material to the total product.

| | |
|---|---|
| Total mass of the device | 0.163 **kg** (including packaging) |

| Raw Material Category SCLAM | SCLAM | SCLAM description | % of total weight | % of category to total weight |
|---|---|---|---|---|
| PCB | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 3.84% | 20.30% |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 3.87% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 4.84% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 4.89% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 2.86% | |
| Electronic Components | TRSMD | SMD - Transistors and mosfets | 0.005% | 12.644% |
| | TRSMD | SMD - Transistors and mosfets | 0.064% | |
| | RESMD | SMD Resistors | 0.002% | |
| | RESMD | SMD Resistors | 0.006% | |
| | RESMD | SMD Resistors | 0.001% | |
| | RESMD | SMD Resistors | 0.006% | |
| | RESMD | SMD Resistors | 0.006% | |
| | RESMD | SMD Resistors | 0.005% | |
| | RESMD | SMD Resistors | 0.005% | |
| | RESMD | SMD Resistors | 0.019% | |
| | RESMD | SMD Resistors | 0.147% | |
| | QUSMD | SMD - Quartzes and crystal resonators | 0.025% | |
| | CCERS | SMD - Ceramic capacitors | 0.005% | |
| | CCERS | SMD - Ceramic capacitors | 0.020% | |
| | CCERS | SMD - Ceramic capacitors | 0.006% | |
| | CCERS | SMD - Ceramic capacitors | 0.006% | |
| | CCERS | SMD - Ceramic capacitors | 0.006% | |
| | CCERS | SMD - Ceramic capacitors | 0.026% | |
| | ICSMD | SMD - Integrated circuits | 0.080% | |

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| | | | |
|---|---|---|---|
| | ICSMD | SMD - Integrated circuits | 0.006% |
| | MICRO | Microprocessors | 0.405% |
| | ICSMD | SMD - Integrated circuits | 0.079% |
| | ICSMD | SMD - Integrated circuits | 0.004% |
| | CNTRS | Connectors | 0.252% |
| | CNTRS | Connectors | 0.142% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.147% |
| | CCERS | SMD - Ceramic capacitors | 0.022% |
| | CCERS | SMD - Ceramic capacitors | 0.003% |
| | RESMD | SMD Resistors | 0.011% |
| | RESMD | SMD Resistors | 0.001% |
| | TRPTH | PTH - Transistors and mosfets | 1.190% |
| | SHUNT | Custom shunts | 0.256% |
| | RESTD | Resistors | 0.920% |
| | RESMD | SMD Resistors | 0.003% |
| | RESMD | SMD Resistors | 0.003% |
| | RESMD | SMD Resistors | 0.003% |
| | RESMD | SMD Resistors | 0.003% |
| | RESMD | SMD Resistors | 0.003% |
| | RESMD | SMD Resistors | 0.196% |
| | ICSMD | SMD - Integrated circuits | 0.006% |
| | CCERS | SMD - Ceramic capacitors | 0.010% |
| | CCERS | SMD - Ceramic capacitors | 0.039% |
| | CCERS | SMD - Ceramic capacitors | 0.031% |
| | CTANS | SMD - Tantalum capacitors | 0.064% |
| | CTANS | SMD - Tantalum capacitors | 0.141% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.045% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.005% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.086% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.121% |
| | TRSMD | SMD - Transistors and mosfets | 0.005% |
| | TRSMD | SMD - Transistors and mosfets | 0.025% |
| | ICSMD | SMD - Integrated circuits | 0.016% |
| | CNTRS | Connectors | 0.142% |

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| | | | |
|---|---|---|---|
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.064% |
| | CCERS | SMD - Ceramic capacitors | 0.039% |
| | CCERS | SMD - Ceramic capacitors | 0.102% |
| | CCERS | SMD - Ceramic capacitors | 0.002% |
| | CCERS | SMD - Ceramic capacitors | 0.003% |
| | CCERS | SMD - Ceramic capacitors | 0.001% |
| | RESMD | SMD Resistors | 0.012% |
| | RESMD | SMD Resistors | 0.000% |
| | RESMD | SMD Resistors | 0.001% |
| | RESMD | SMD Resistors | 0.000% |
| | RESMD | SMD Resistors | 0.000% |
| | RESMD | SMD Resistors | 0.000% |
| | RESMD | SMD Resistors | 0.001% |
| | RESMD | SMD Resistors | 0.000% |
| | CELEP | PTH - Electrolytic capacitors | 2.147% |
| | CELEP | PTH - Electrolytic capacitors | 1.669% |
| | TRPTH | PTH - Transistors and mosfets | 0.239% |
| | CCERS | SMD - Ceramic capacitors | 0.020% |
| | CCERS | SMD - Ceramic capacitors | 0.061% |
| | ICSMD | SMD - Integrated circuits | 0.076% |
| | INDCS | SMD - Inductors | 0.498% |
| | CNTRS | Connectors | 0.220% |
| | CNTRS | Connectors | 0.350% |
| | CNTRS | Connectors | 0.331% |
| | CNTRS | Connectors | 0.233% |
| | CNTRS | Connectors | 0.172% |
| | RESMD | SMD Resistors | 0.005% |
| | CCERS | SMD - Ceramic capacitors | 0.039% |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.005% |
| | ICSMD | SMD - Integrated circuits | 0.045% |
| | CCERS | SMD - Ceramic capacitors | 0.067% |
| | RESMD | SMD Resistors | 0.015% |
| | VARIP | PTH - Varistors | 0.252% |
| | RESTD | Resistors | 0.166% |
| | CNTRS | Connectors | 0.238% |
| | CNTRS | Connectors | 0.331% |
| | RESMD | SMD Resistors | 0.003% |

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| | | | | |
|---|---|---|---|---|
| | RESMD | SMD Resistors | 0.003% | |
| | RESMD | SMD Resistors | 0.003% | |
| | TRSMD | SMD - Transistors and mosfets | 0.013% | |
| | CNTRS | Connectors | 0.096% | |
| | CNTCB | Connectors for cables assembly | 0.147% | |
| | CNTCB | Connectors for cables assembly | 0.147% | |
| Sclam product specific | OPTOX | Optocouplers | 0.07% | 6.74% |
| | TRAFO | Transformers | 3.74% | |
| | OPTOX | Optocouplers | 0.25% | |
| | TBCUS | Custom terminal blocks | 2.67% | |
| | LEDXX | Leds - no infrared | 0.00% | |
| | LEDXX | Leds - no infrared | 0.00% | |
| Cables | CABLE-PVC | Cables, sleeves and wirings PVC | 1% | 2% |
| | CABLE-PVC | Cables, sleeves and wirings PVC | 1% | |
| Small metallic parts | MECUS-OT | Custom metal parts ottone | 5.47% | 7.96% |
| | MECUS-ST | Custom metal parts steel | 2.50% | |
| Plastics | PLCUS-NO | Custom parts Noryl | 6.24% | 26.85% |
| | PLCUS-NO | Custom parts Noryl | 10.81% | |
| | PLCUS-NO | Custom parts Noryl | 5.59% | |
| | PLCUS-HO | Custom parts Hostaform | 0.53% | |
| | PLCUS-NO | Custom parts Noryl | 0.29% | |
| | PLCUS-NO | Custom parts Noryl | 0.57% | |
| | PLCUS-NO | Custom parts Noryl | 0.28% | |
| | LAFRO-PC | Frontal labels | 0.17% | |
| | PLCUS-PE | Custom plastic parts polyethylene | 0.03% | |
| | PLSTD-PC | Standard plastic parts polycarbonate | 0.00% | |
| | LAPAC | Packaging labels | 2.33% | |
| | SHEET | Instruction sheets/ manuals | 5.62% | 29.96% |

# Environmental Product Declaration
## SH2MCG24

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|---|---|---|---|---|
| Paper primary packaging | BOXES | Carton boxes | 20.18% | |
| | BOXES | Carton boxes | 4.16% | |

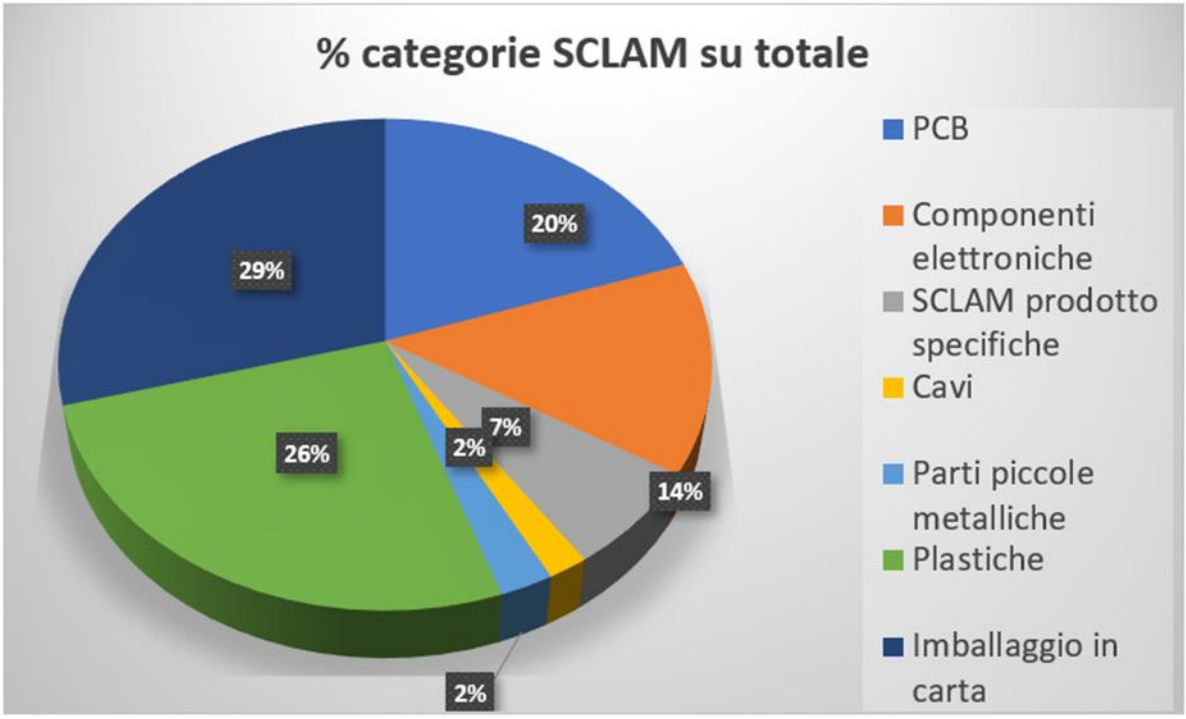


*Figure 1. Material breakdown of the **SH2MCG24** device*

## Information related to the study

| | |
|---|---|
| **System boundaries** | The boundaries of the study system are "**cradle-to-grave**". |
| **Geographical validity** | Global |
| **Reference year data** | 2023 |

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| **Reference tool** | This EPD was generated using the results automatically generated by the Excel tool "LCA tool_dati 2023_GAV – rev4" of 15/11/2024 |

*Table 4. Information related to the study*

The assessment of all potential environmental impacts above is based on the entire life cycle of the product under analysis: production, distribution, installation, use and end of life.
The elements and processes considered for the assessment of impacts related to each phase are described below:

<table>
<tr><td>Production</td><td>• Product and packaging raw materials (primary and secondary), auxiliary materials and related transportation<br>• production and processing processes (involving energy and water consumption, air emissions, waste generated by production)<br>• The energy sources behind the electricity grid used in manufacturing is the italian residual mix 0,649 kg CO2 eq./kWh (Ecoinvent 3.10)</td></tr>
<tr><td>Distribution</td><td>• transportation from the Gavazzi plant to the latest distribution logistics platforms<br><table><tr><th colspan="3">FINISHED PRODUCT DISTRIBUTION (CoD)</th></tr><tr><th>Distribution center finished product</th><th>% distributed to the CoD</th><th>Further distribution at the continental level?</th></tr><tr><td>CGC-CdD Italy</td><td>98.51%</td><td>Sì</td></tr><tr><td>CGC-CdD Spain</td><td>0.00%</td><td>Sì</td></tr><tr><td>CGC-CdD USA</td><td>0.65%</td><td>Sì</td></tr><tr><td>CGC-CdD Canada</td><td>0.00%</td><td>Sì</td></tr><tr><td>CGC-CdD Singapore</td><td>0.84%</td><td>Sì</td></tr></table>• transportation from Gavazzi's CdD to the specific customer (Company Name, Country)<br>• disposal of secondary packaging</td></tr>
<tr><td>Installation</td><td>• End of life of primary packaging.</td></tr>
</table>

# Environmental Product Declaration
## SH2MCG24

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| **Use and maintenance phase** | • Product Category: Fieldbus<br>• usage scenario: 10-year service life, continuous operation at 100% rated load, rated power 6.5 W. |
| **End of life** | • Device End of Life Scenario (WEEE). |

*Table 5. Processes considered at various stages of the study*

The LCA study was carried out according to ISO 14040/14044 standards, following the guidelines of IS EN 50693:2019.
The software used for impact assessment is SimaPro 9.6.0.1; Ecoinvent 3.10 database.
The methods used to calculate impacts refer to the CML baseline and IPCC method for the climate change impact category.

Site-specific data were used for all of the following processes:
- production and transportation of device raw materials, auxiliary materials and packaging materials;
- manufacturing processes, plant energy consumption, air emissions and waste;
- weight, power of the device;
- transportation to the distribution center (last logistics platform).

Generic data were used for:
- recycling, energy recovery and disposal rates for primary and secondary packaging materials and WEEE (global data).

Default scenarios described in PCR 007 were used for:
- transportation to the point of sale: intercontinental and local transportation scenario.
- Lifetime (RLS) of the device: 10 years.

## Environmental impact assessment

The potential environmental impacts assessed through an LCA of the **SH2MCG24** device are given in Table 6 below.
Impacts were calculated using SimaPro Developer 9.6.0.1 software and the Ecoinvent 3.10 database.

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*Table 6. Results for various environmental impact categories for device SH2MCG24*

| ENVIRONMENTAL IMPACT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Impact category | Unit of measurement | PRODUCTION phase | | DISTRIBUTION phase | INSTALLATION Phase | Use and Maintenance Phase | END OF LIFE phase | TOTAL |
| | | UPSTREAM module | CORE module | DOWNSTREAM module | | | | |
| **GWP (TOT)** | kg CO2 eq | 5.57E+00 | 2.13E+00 | 8.45E-02 | 3.40E-03 | 3.15E+02 | 3.03E-02 | **3.22E+02** |

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|---|---|---|---|---|---|---|---|---|
| **GWP - Fossil** | kg CO2 eq | 5.58E+00 | 2.13E+00 | 8.23E-02 | 1.93E-03 | 3.14E+02 | 3.03E-02 | **3.22E+02** |
| **GWP - Biogenic** | kg CO2 eq | -2.21E-02 | -8.53E-04 | 2.19E-03 | 1.47E-03 | 8.04E-01 | -1.10E-05 | **7.84E-01** |
| **GWP - Luluc Land use and Land use change** | kg CO2 eq | 1.01E-02 | 4.31E-04 | 2.60E-05 | 2.71E-06 | 6.50E-02 | 1.40E-05 | **7.56E-02** |
| **ODP (Ozone depletion)** | kg CFC11 eq | 1.64E-07 | 4.86E-08 | 1.51E-09 | 1.74E-11 | 5.51E-06 | 7.75E-11 | **5.72E-06** |
| **AP (Acidification)** | mol H+ eq | 5.52E-02 | 5.95E-03 | 3.04E-04 | 4.97E-06 | 1.36E+00 | 4.15E-05 | **1.42E+00** |
| **EP (Eutrophication, freshwater)** | kg P eq | 6.16E-03 | 2.85E-04 | 5.03E-06 | 1.64E-07 | 1.34E-01 | 2.45E-06 | **1.40E-01** |
| **EP (Eutrophication, marine)** | kg N eq | 8.05E-03 | 1.20E-03 | 1.13E-04 | 1.99E-06 | 2.41E-01 | 1.28E-05 | **2.50E-01** |
| **EP (Eutrophication, terrestrial)** | mol N eq | 8.57E-02 | 1.26E-02 | 1.23E-03 | 2.08E-05 | 2.39E+00 | 1.27E-04 | **2.49E+00** |
| **POCP (Photochemical ozone formation)** | kg NMVOC eq | 2.89E-02 | 6.01E-03 | 4.55E-04 | 6.99E-06 | 7.86E-01 | 3.76E-05 | **8.22E-01** |
| **ADPE (Resource use, minerals and metals)** | kg Sb eq | 1.54E-03 | 2.85E-06 | 2.36E-07 | 2.69E-09 | 2.43E-03 | 4.75E-08 | **3.97E-03** |
| **ADPF (Resource use, fossils)** | MJ | 7.44E+01 | 3.41E+01 | 1.12E+00 | 1.46E-02 | 6.27E+03 | 9.51E-02 | **6.38E+03** |
| **WDP (Water use)** | m3 depriv. | 1.49E+00 | 5.25E-01 | 4.38E-03 | 2.79E-04 | 5.20E+01 | 1.29E-03 | **5.40E+01** |

| **USE OF RESOURCES** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Impact category** | **Unit of measurement** | **PRODUCTION phase** | | **DISTRIBUTION phase** | **INSTALLATION Phase** | **Use and Maintenance Phase** | **END OF LIFE phase** | **Total** |
| | | **UPSTREAM module** | **CORE module** | **DOWNSTREAM module** | | | | |
| **PENRE** | MJ | 7.44E+01 | 3.40E+01 | 1.12E+00 | 1.46E-02 | 6.27E+03 | 9.51E-02 | **6.38E+03** |
| **PENRM** | MJ | 2.29E-03 | 1.09E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **1.11E-01** |
| **PENRT** | MJ | 7.44E+01 | 3.42E+01 | 1.12E+00 | 1.46E-02 | 6.27E+03 | 9.51E-02 | **6.38E+03** |

# Environmental Product Declaration
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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PERE** | MJ | 7.62E+00 | 8.77E-03 | 1.84E-02 | 2.13E-04 | 3.64E+02 | 7.76E-03 | **3.72E+02** |
| **PERM** | MJ | 7.65E-01 | 7.86E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **1.55E+00** |
| **PERT** | MJ | 8.39E+00 | 7.95E-01 | 1.84E-02 | 2.13E-04 | 3.64E+02 | 7.76E-03 | **3.73E+02** |
| **FW (Net use of fresh water)** | m3 | 4.96E-02 | 1.56E-02 | 1.52E-04 | 7.33E-06 | 4.46E+00 | 4.59E-05 | **4.53E+00** |
| **MS (use of secondaty materials)** | kg | 1.09E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **1.09E-03** |
| **RSF (use of renewable secondary fuels)** | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** |
| **NRSF (Use of non-renewable secondary fuels** | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** |

*Legend:* ***PENRE*** *= Use of non-renewable primary energy resources excluding non-renewable primary energy resources used as raw materials;* ***PENRM*** *= Use of non-renewable primary energy resources as raw materials;* ***PENRT*** *= Total use of non-renewable primary energy resources;* ***PERE*** *= Use of renewable primary energy resources excluding renewable primary energy resources used as raw materials;* ***PERM*** *= Use of renewable primary energy resources as raw materials;* ***PERT*** *= Total use of renewable primary energy resources.*

*Table 7 . Environmental impacts related to resource consumption for the SH2MCG24 device.*

| **WASTE PRODUCTION** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Impact category** | **Unit of measurement** | **PRODUCTION phase** | | **DISTRIBUTION phase** | **INSTALLATION Phase** | **Use and Maintenance Phase** | **END OF LIFE phase** | **TOTAL** |
| | | **UPSTREAM module** | **CORE module** | **DOWNSTREAM module** | | | | |
| **Hazardous waste disposal (HWD)** | kg | 5.98E-03 | 6.60E-04 | 7.07E-04 | 4.68E-04 | 1.88E-01 | 1.87E-03 | **1.98E-01** |
| **Non-hazardous waste disposal (NHWD)** | kg | 2.74E-01 | 6.34E-02 | 6.52E-02 | 2.27E-02 | 2.27E-02 | 2.78E-03 | **4.51E-01** |
| **Radioactive waste** | kg | 1.46E-04 | 2.02E-05 | 3.67E-07 | 3.16E-09 | 3.16E-09 | 1.47E-07 | **1.67E-04** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **disposal (RWD)** | | | | | | | | |
| **Materials for energy recovery (MER)** | kg | 0.00E+00 | 0.00E+00 | 2.95E-03 | 2.02E-03 | 0.00E+00 | 0.00E+00 | **4.97E-03** |
| **Materials for recycling (MFR)** | kg | 0.00E+00 | 2.94E-02 | 1.49E-02 | 2.28E-02 | 0.00E+00 | 2.55E-02 | **9.26E-02** |
| **Components for reuse (CRU)** | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | **0.00E+00** |
| **ETE (exported thermal energy)** | MJ | 0.00E+00 | 0.00E+00 | 8.41E-03 | 5.76E-03 | 0.00E+00 | 0.00E+00 | **1.42E-02** |
| **EEE (exported electricity energy)** | MJ | 0.00E+00 | 0.00E+00 | 4.10E-03 | 2.81E-03 | 0.00E+00 | 0.00E+00 | **6.91E-03** |

*Table 8 . Waste-related environmental impacts for the SH2MCG24 device.*

## References


- ISO 14040:2021 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2021 Environmental management - Life cycle assessment - Requirements and guidelines
- ISO 14020:2000 Environmental labels and declarations - General principles
- ISO 14025:2010, Environmental labels and declarations - Type III environmental statements - Principles and procedures
- EN 50693:2019 Product category rules for life cycle assessments of electronic and electrical products and systems

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# Environmental Product Declaration

## SH2MCG24

- EPDItaly Program Regulations Rev. 6 of 30/10/2023
- Core-PCR: EPDITALY007 " Electronic and electrical product and systems" Rev. 3 of 13/01/2023

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