

DICHIARAZIONE DI VERIFICA EPD

Declaration of verification of EPD

ATTESTATO N°

ATTESTATION N°

ICMQ – 24799EPD

ICMQ S.p.A., Organismo di verifica di terza parte,
ICMQ Third party verification body,

ha verificato la seguente Dichiarazione Ambientale di Prodotto (DAP):
has verified the following the Environmental Product Declaration (EPD):

Product EPD, Declaration n. "CGC20240916007" del 05/12/2024

emessa dall'organizzazione:
issued by organization:

Carlo Gavazzi Controls S.p.A.

Via Lunigiana, 46 - 20125 Milano (MI)

unità operativa:
operational unit:

Via Safforze 8 - 32100 Belluno (BL)

relativa ai prodotti riportati in allegato

relative to the products listed in Annex
sviluppata con l'uso dell'algoritmo di calcolo
developed using the calculation algorithm

"LCA Tool_dati 2023_GAV" rev. 4 del 15/11/2024

la cui corretta applicazione è stata verificata in fase di validazione dell'algoritmo
the correct application of which was verified during the algorithm validation

in conformità ai seguenti documenti:

is in compliance with the following document:

Regolamento EPDIItaly rev. 6 del 30/10/2023

Core PCR EPDIItaly007 rev. 3 del 13/01/2023

ISO 14025; EN 50693

L'uso e la validità del presente attestato sono soggetti al rispetto del Regolamento ICMQ per la convalida della Dichiarazione Ambientale di Prodotto
Use and validity of this reference are subject to ICMQ rules for EPD validation

La dichiarazione ambientale di prodotto è un documento emesso sotto la responsabilità dell'Organizzazione indicata;
The Environmental product declaration is emitted under responsibility of organization indicated



N° 0004VV
Membro degli Accordi di Mutuo
Riconoscimento EA, IAF e ILAC
*Signatory of EA, IAF and ILAC
Mutual Recognition Agreements*

PRIMA EMISSIONE

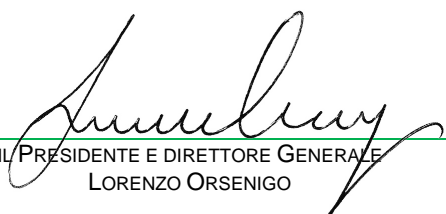
First issue

05/12/2024

EMISSIONE CORRENTE

Current issue

05/12/2024


IL PRESIDENTE E DIRETTORE GENERALE
LORENZO ORSENIKO

| | |
|--|--|
| PRODOTTO <i>Product</i> | Fieldbus UWP40RSEXXX UWP40RSEXXXSE |
| UN CPC | 46 |
| PROGRAM OPERATOR | EPDIItaly - Via de Castillia, 10 – 20124 Milano |
| CICLO DI VITA CONSIDERATO <i>Life cycle considered</i> | Cradle to grave |
| TIPO DI DATI IMPIEGATI <i>Type of data used</i> | Dati storici <i>Historical data</i> |
| CONFINE TEMPORALE <i>Time limits</i> | 2023 2023 |
| GIUDIZIO <i>Opinion</i> | Positivo (Report esito verifica del 23/11/2024) <i>Positive</i> |
| LIVELLO DI GARANZIA <i>Level of guarantee</i> | Ragionevole <i>Reasonable</i> |
| SOGLIA DI RILEVANZA <i>significance threshold</i> | 0 % |
| LIMITAZIONI E RISERVE <i>Limitations and reservations</i> | Nessuna <i>None</i> |

Carlo Gavazzi Controls S.p.A.



Environmental Product Declaration

Product: name:

UWP40RSEXXX UWP40RSEXXXSE
(FIELDBUS)

Site Plant:

via Safforze, 8
32100 – Belluno (BL)

in compliance with ISO 14025 and EN 50693


| | |
|------------------------------|----------------|
| Program Operator | EPDItaly |
| Publisher | EPDItaly |
| Declaration Number | CGC20240916007 |
| EPDItaly Registration Number | EPDITALY0849 |
| Issue Date | 05/12/2024 |
| Valid to | 05/12/2029 |



Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

General information

| | |
|-------------------------------------|---|
| EPD Owner | Gavazzi Controls S.p.A., Viale Lunigiana, 46 20125 - Milano (MI) Italy 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 | EPDIItaly - info@epditaly.it |
| Independent Verification | <p>This declaration was developed according to the EPDIItaly Regulations; further information and the Regulations themselves are available at www.epditaly.it</p> <p>Independent verification of the declaration and data carried out according to ISO 14025:2010 <input type="checkbox"/> _Internal <input checked="" type="checkbox"/> _External</p> <p>Third-party verification performed by: ICMQ SpA, via De Castillia, 10 20124 - _Milan (www.icmq.it) Accredited by Accredia</p> |
| CPC Code | 46 "Electrical machinery and apparatus" |
| Company contact | <u>Giampaolo Tormen</u> , Certification Manager in Gavazzi Group. |
| Technical support |  Aequilibria Srl - SB P.le della Stazione, 8 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 EPDIItaly from any non-compliance with environmental legislation. The holder of the declaration will be responsible for the supporting information and evidence; EPDIItaly disclaims |



Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | |
|---|---|
| | 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 . 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

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

Foreword

This document represents the EPD study conducted for the **UWP40RSEXXX UWP40RSEXXXSE** 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.

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

Product Information

The product under analysis is device **UWP40RSEXXX UWP40RSEXXXSE**, belonging to the Fieldbus family, nominal consumption 5.5 W (0.0055 kW), weight 212 g (0.212 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 0.0055 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 5.5 W at a voltage of 24 VDC.

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 | UWP40RSEXXX UWP40RSEXXXSE | |
| Technical Data | Power: 5.5 W (0.0055 kW) Frequency: VCC Weight: 0.15623 kg (packaging excluded) Service Life Time (RLS): 10 years Current Intensity: $I_n = n.a.$, $I_{max} = n.a.$ |  |
| Packaging | Weight: 0.04392 kg (43.92 g) Material: Paper and Cardboard | |

Table 2. Product related information UWP40RSEXXX UWP40RSEXXXSE

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

➡ Materials and constituents of the product

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 | 0,212 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) | 1.52% | 24.67% |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 1.50% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 4.54% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 2.70% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 4.55% | |
| | PCB-COM | Printed circuit boards complessi (piu di due strati) | 4.90% | |
| | PCB-SEM | Printed circuit boards semplici (fino a due strati) | 4.97% | |
| | Electronic Components | VARIP | PTH - Varistors | |
| RESTD | | Resistors | 0.156% | |
| CNTRS | | Connectors | 0.270% | |
| RESMD | | SMD Resistors | 0.005% | |
| SWSMD | | SMD - Switches and tact switches | 0.026% | |
| DDSMD | | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.002% | |
| CNTRS | | Connectors | 0.074% | |
| CNTRS | | Connectors | 0.036% | |



Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | | |
|-------|---|--------|
| DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.001% |
| CNTRS | Connectors | 3.425% |
| CNTRS | Connectors | 1.146% |
| RESMD | SMD Resistors | 0.000% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.001% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.001% |
| RESMD | SMD Resistors | 0.001% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.004% |
| CCERS | SMD - Ceramic capacitors | 0.009% |
| CCERS | SMD - Ceramic capacitors | 0.009% |
| CCERS | SMD - Ceramic capacitors | 0.002% |
| CCERS | SMD - Ceramic capacitors | 0.002% |
| CCERS | SMD - Ceramic capacitors | 0.002% |
| CCERS | SMD - Ceramic capacitors | 0.011% |
| CCERS | SMD - Ceramic capacitors | 0.017% |
| DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.003% |
| ICSMD | SMD - Integrated circuits | 0.017% |
| ICSMD | SMD - Integrated circuits | 0.008% |
| ICSMD | SMD - Integrated circuits | 0.020% |
| MICRO | Microprocessors | 1.538% |
| CNTRS | Connectors | 0.387% |
| CNTRS | Connectors | 0.156% |
| CNTRS | Connectors | 0.094% |
| CNTRS | Connectors | 0.236% |
| INDCS | SMD - Inductors | 0.019% |
| CCERS | SMD - Ceramic capacitors | 0.147% |
| CCERS | SMD - Ceramic capacitors | 0.005% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.001% |
| CNTRS | Connectors | 0.318% |
| CNTRS | Connectors | 0.074% |
| CNTRS | Connectors | 0.254% |
| RESMD | SMD Resistors | 0.003% |



Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | | |
|-------|---|--------|
| RESMD | SMD Resistors | 0.005% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.009% |
| QUSMD | SMD - Quartzes and crystal resonators | 0.008% |
| CCERS | SMD - Ceramic capacitors | 0.009% |
| CCERS | SMD - Ceramic capacitors | 0.020% |
| CCERS | SMD - Ceramic capacitors | 0.042% |
| CTANS | SMD - Tantalum capacitors | 0.099% |
| DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.004% |
| CNTRS | Connectors | 0.222% |
| CNTRS | Connectors | 0.073% |
| CNTRS | Connectors | 0.311% |
| INDCS | SMD - Inductors | 0.001% |
| CCERS | SMD - Ceramic capacitors | 0.031% |
| CCERS | SMD - Ceramic capacitors | 0.005% |
| CCERS | SMD - Ceramic capacitors | 0.003% |
| RESMD | SMD Resistors | 0.000% |
| RESMD | SMD Resistors | 0.003% |
| RESMD | SMD Resistors | 0.005% |
| RESMD | SMD Resistors | 0.003% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.008% |
| RESMD | SMD Resistors | 0.006% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.004% |
| RESMD | SMD Resistors | 0.005% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.002% |
| RESMD | SMD Resistors | 0.008% |
| QUSMD | SMD - Quartzes and crystal resonators | 0.009% |
| CCERS | SMD - Ceramic capacitors | 0.006% |
| CCERS | SMD - Ceramic capacitors | 0.002% |
| CCERS | SMD - Ceramic capacitors | 0.031% |

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | | | | |
|-----------------------|-----------|---|--------|-------|
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.013% | |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.004% | |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.140% | |
| | ICSMD | SMD - Integrated circuits | 0.005% | |
| | ICSMD | SMD - Integrated circuits | 0.038% | |
| | ICSMD | SMD - Integrated circuits | 0.031% | |
| | MICRO | Microprocessors | 0.011% | |
| | CNTRS | Connectors | 0.467% | |
| | INDCS | SMD - Inductors | 1.122% | |
| | INDCS | SMD - Inductors | 0.383% | |
| | CCERS | SMD - Ceramic capacitors | 0.018% | |
| | CCERS | SMD - Ceramic capacitors | 0.017% | |
| | CCERS | SMD - Ceramic capacitors | 0.208% | |
| | CCERS | SMD - Ceramic capacitors | 0.074% | |
| | CCERS | SMD - Ceramic capacitors | 0.491% | |
| | CCERS | SMD - Ceramic capacitors | 0.001% | |
| | CCERS | SMD - Ceramic capacitors | 0.004% | |
| | RESMD | SMD Resistors | 0.003% | |
| | RESMD | SMD Resistors | 0.004% | |
| | RESMD | SMD Resistors | 0.009% | |
| | CCERS | SMD - Ceramic capacitors | 0.005% | |
| | DDSMD | SMD - Diodes, zeners, leds, transils, rectifier bridges | 0.004% | |
| | CNTRS | Connectors | 0.311% | |
| | INDCS | SMD - Inductors | 0.001% | |
| | CCERS | SMD - Ceramic capacitors | 0.001% | |
| | CCERS | SMD - Ceramic capacitors | 0.002% | |
| | ICDIL | DIL - Integrated circuits | 0.123% | |
| Slam product specific | BATTR-LIB | Battery type Li Metal, button | 0.79% | 2.62% |
| | TBCUS | Custom terminal blocks | 1.03% | |
| | TBCUS | Custom terminal blocks | 0.34% | |
| | LEDXX | Leds - no infrared | 0.00% | |
| | LEDXX | Leds - no infrared | 0.00% | |
| | LEDXX | Leds - no infrared | 0.00% | |
| | OPTOX | Optocouplers | 0.23% | |
| | OPTOX | Optocouplers | 0.23% | |

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | | | | |
|-------------------------|-----------|---------------------------------|--------|--------|
| Cables | CABLE-PVC | Cables, sleeves and wirings PVC | 16% | 16% |
| Small metallic parts | MECUS-OT | Custom metal parts ottone | 3.06% | 4.45% |
| | MECUS-ST | Custom metal parts steel | 1.40% | |
| Plastics | PLCUS-NO | Custom parts Noryl | 4.80% | 20.08% |
| | PLCUS-NO | Custom parts Noryl | 4.30% | |
| | PLCUS-NO | Custom parts Noryl | 4.28% | |
| | PLCUS-NO | Custom parts Noryl | 3.33% | |
| | PLCUS-HO | Custom parts Hostaform | 0.41% | |
| | PLCUS-NO | Custom parts Noryl | 0.45% | |
| | PLCUS-NO | Custom parts Noryl | 0.22% | |
| | LAFRO-PC | Frontal labels | 0.14% | |
| | LAFRO-PC | Frontal labels | 0.05% | |
| | LAPAC | Packaging labels | 1.03% | |
| | PLBAG | Plastic bags | 1.08% | |
| Paper primary packaging | BOXES | Carton boxes | 15.52% | 26.92% |
| | BOXES | Carton boxes | 3.20% | |
| | SHEET | Instruction sheets/ manuals | 2.00% | |
| | SHEET | Instruction sheets/ manuals | 4.06% | |
| | SHEET | Instruction sheets/ manuals | 0.92% | |
| | SHEET | Instruction sheets/ manuals | 1.22% | |

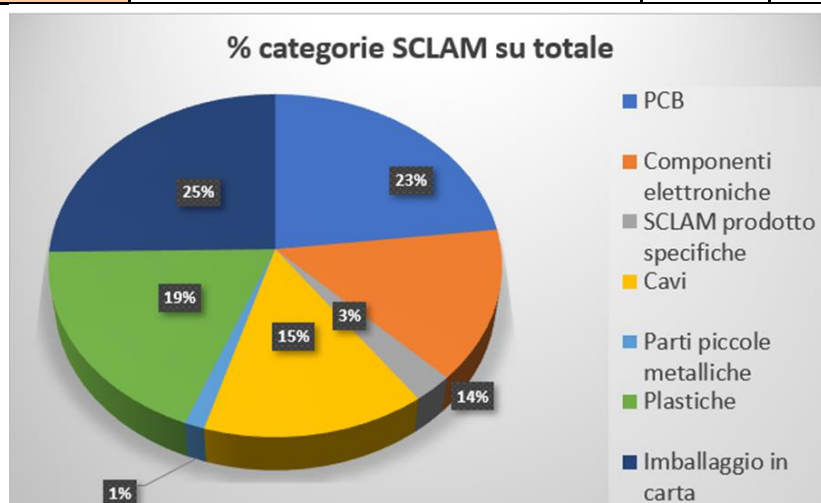


Figure 1. Material breakdown of the **UWP40RSEXXX UWP40RSEXXXSE** device

 **Information related to the study**



Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

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

| Production | <ul style="list-style-type: none"> • Product and packaging raw materials (primary and secondary), auxiliary materials and related transportation • production and processing processes (involving energy and water consumption, air emissions, waste generated by production) • The energy sources behind the electricity grid used in manufacturing is the italian residual mix 0,649 kg CO2 eq./kWh (Ecoinvent 3.10) | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|--|--|--|--|--------------------------------------|--------------------------|--|---------------|--------|----|---------------|-------|----|-------------|-------|----|----------------|-------|----|-------------------|-------|----|
| Distribution | <ul style="list-style-type: none"> • transportation from the Gavazzi plant to the latest distribution logistics platforms <table border="1" style="width: 100%; text-align: center;"> <thead> <tr style="background-color: #FFD700;"> <th colspan="3">FINISHED PRODUCT DISTRIBUTION (CoD)</th> </tr> <tr style="background-color: #FFF2CC;"> <th>Distribution center finished product</th> <th>% distributed to the CoD</th> <th>Further distribution at the continental level?</th> </tr> </thead> <tbody> <tr> <td>CGC-CdD Italy</td> <td>90.37%</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>7.41%</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>2.22%</td> <td>Sì</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • transportation from Gavazzi's CdD to the specific customer (Company Name, Country) | FINISHED PRODUCT DISTRIBUTION (CoD) | | | Distribution center finished product | % distributed to the CoD | Further distribution at the continental level? | CGC-CdD Italy | 90.37% | Sì | CGC-CdD Spain | 0.00% | Sì | CGC-CdD USA | 7.41% | Sì | CGC-CdD Canada | 0.00% | Sì | CGC-CdD Singapore | 2.22% | Sì |
| FINISHED PRODUCT DISTRIBUTION (CoD) | | | | | | | | | | | | | | | | | | | | | | |
| Distribution center finished product | % distributed to the CoD | Further distribution at the continental level? | | | | | | | | | | | | | | | | | | | | |
| CGC-CdD Italy | 90.37% | Sì | | | | | | | | | | | | | | | | | | | | |
| CGC-CdD Spain | 0.00% | Sì | | | | | | | | | | | | | | | | | | | | |
| CGC-CdD USA | 7.41% | Sì | | | | | | | | | | | | | | | | | | | | |
| CGC-CdD Canada | 0.00% | Sì | | | | | | | | | | | | | | | | | | | | |
| CGC-CdD Singapore | 2.22% | Sì | | | | | | | | | | | | | | | | | | | | |

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| | |
|----------------------------------|---|
| | <ul style="list-style-type: none"> disposal of secondary packaging |
| Installation | <ul style="list-style-type: none"> End of life of primary packaging. |
| Use and maintenance phase | <ul style="list-style-type: none"> Product Category: Fieldbus usage scenario: 10-year service life, continuous operation at 100% rated load, rated power 5.5 W. |
| End of life | <ul style="list-style-type: none"> 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 **UWP40RSEXXX UWP40RSEXXXSE** device are given in Table 6 below.

Impacts were calculated using SimaPro Developer 9.6.0.1 software and the Ecoinvent 3.10 database.

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| ENVIRONMENTAL IMPACT | | | | | | | | |
|---|---------------------|------------------|---------------|--------------------|--------------------|---------------------------|-------------------|--------------|
| Impact indicators | 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 | 1.04E+0 1 | 1.87E+0 0 | 2.32E-01 | 3.97E-03 | 2.64E+02 | 4.11E -02 | 2.76E+0 2 |
| GWP - Fossil | kg CO2 eq | 1.04E+0 1 | 1.89E+0 0 | 2.30E-01 | 2.25E-03 | 2.63E+02 | 4.11E -02 | 2.76E+0 2 |
| GWP - Biogenic | kg CO2 eq | -3.00E- 02 | -1.27E- 02 | 2.86E-03 | 1.72E-03 | 7.23E-01 | - 1.49E -05 | 6.85E-01 |
| GWP - Luluc Land use and Land use change | kg CO2 eq | 1.75E-02 | 4.88E-04 | 4.40E-05 | 3.16E-06 | 5.89E-02 | 1.90E -05 | 7.70E-02 |
| ODP (Ozone depletion) | kg CFC11 eq | 4.24E-07 | 4.42E-08 | 3.84E-09 | 2.04E-11 | 4.47E-06 | 1.05E -10 | 4.95E-06 |
| AP (Acidification) | mol H+ eq | 1.01E-01 | 5.40E-03 | 9.09E-04 | 5.81E-06 | 1.11E+00 | 5.63E -05 | 1.22E+0 0 |
| EP (Eutrophication, freshwater) | kg P eq | 1.43E-02 | 2.55E-04 | 8.78E-06 | 1.92E-07 | 1.14E-01 | 3.33E -06 | 1.29E-01 |
| EP (Eutrophication, marine) | kg N eq | 1.56E-02 | 1.10E-03 | 3.52E-04 | 2.33E-06 | 1.98E-01 | 1.74E -05 | 2.15E-01 |
| EP (Eutrophication, terrestrial) | mol N eq | 1.68E-01 | 1.15E-02 | 3.84E-03 | 2.43E-05 | 1.96E+00 | 1.72E -04 | 2.14E+0 0 |
| POCP (Photochemical ozone formation) | kg NMVOC eq | 5.05E-02 | 5.60E-03 | 1.32E-03 | 8.17E-06 | 6.53E-01 | 5.10E -05 | 7.10E-01 |
| ADPE (Resource use, minerals and metals) | kg Sb eq | 3.79E-03 | 2.79E-06 | 3.53E-07 | 3.14E-09 | 2.04E-03 | 6.45E -08 | 5.83E-03 |
| ADPF (Resource use, fossils) | MJ | 1.36E+0 2 | 3.13E+0 1 | 3.09E+00 | 1.70E-02 | 5.21E+03 | 1.29E -01 | 5.38E+0 3 |
| WDP (Water use) | m3 depriv. | 2.71E+0 0 | 4.59E-01 | 8.30E-03 | 3.26E-04 | 4.42E+01 | 1.75E -03 | 4.74E+0 1 |

Table 6. Results for various environmental impact categories for device UWP40RSEXXX UWP40RSEXXXSE

USE OF RESOURCES

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| Impact indicators | 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 | 1.36E+02 | 3.12E+01 | 3.09E+00 | 1.70E-02 | 5.21E+03 | 1.29E-01 | 5.38E+03 |
| PENRM | MJ | 9.80E-02 | 1.42E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.40E-01 |
| PENRT | MJ | 1.36E+02 | 3.15E+01 | 3.09E+00 | 1.70E-02 | 5.21E+03 | 1.29E-01 | 5.39E+03 |
| PERE | MJ | 1.47E+01 | -1.95E-01 | 3.05E-02 | 2.49E-04 | 3.19E+02 | 1.05E-02 | 3.34E+02 |
| PERM | MJ | 8.81E-01 | 1.02E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.90E+00 |
| PERT | MJ | 1.55E+01 | 8.27E-01 | 3.05E-02 | 2.49E-04 | 3.19E+02 | 1.05E-02 | 3.36E+02 |
| FW (Net use of fresh water) | m3 | 9.24E-02 | 1.37E-02 | 2.82E-04 | 8.57E-06 | 3.58E+00 | 6.24E-05 | 3.69E+00 |
| MS (use of secondary materials) | kg | 7.77E-04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.77E-04 |
| 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 UWP40RSEXXX UWP40RSEXXXSE device.

WASTE PRODUCTION

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

| Impact indicators | 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 | 7.96E-03 | 7.33E-04 | 9.38E-04 | 5.46E-04 | 1.62E-01 | 2.54E-03 | 1.75E-01 |
| Non-hazardous waste disposal (NHWD) | kg | 4.66E-01 | 6.52E-02 | 9.13E-02 | 2.65E-02 | 2.65E-02 | 3.77E-03 | 6.79E-01 |
| Radioactive waste disposal (RWD) | kg | 2.79E-04 | 1.79E-05 | 6.03E-07 | 3.70E-09 | 3.70E-09 | 1.99E-07 | 2.97E-04 |
| Materials for energy recovery (MER) | kg | 0.00E+00 | 0.00E+00 | 3.84E-03 | 2.36E-03 | 0.00E+00 | 0.00E+00 | 6.20E-03 |
| Materials for recycling (MFR) | kg | 0.00E+00 | 3.82E-02 | 1.94E-02 | 2.66E-02 | 0.00E+00 | 3.46E-02 | 1.19E-01 |
| 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 | 1.09E-02 | 6.73E-03 | 0.00E+00 | 0.00E+00 | 1.77E-02 |
| EEE (exported electricity energy) | MJ | 0.00E+00 | 0.00E+00 | 5.33E-03 | 3.28E-03 | 0.00E+00 | 0.00E+00 | 8.62E-03 |

Table 8. Waste-related environmental impacts for the UWP40RSEXXX UWP40RSEXXXSE device.

References

Environmental Product Declaration

UWP40RSEXXX UWP40RSEXXXSE

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