Carlo Gavazzi Ltd Malta

Environmental Product Declaration

Product: name:

RGC3A60D65GGEDFM
(SSR - Solid State Relay)

Site Plant:
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate,
Zejtun, Malta

in compliance with ISO 14025 and EN 50693

Program Operator	EPDItaly
Publisher	EPDItaly
Declaration Number	MLA2024RGC3
EPDItaly Registration Number	EPDITALY0910
Issue Date	2025/03/14
Valid to	2030/03/14

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

General information

EPD Owner	Carlo Gavazzi Ltd Malta, BLB042, Sqaq il-Merhla, Bulebel Industrial Estate, Zejtun, Malta www.gavazzi-automation.com info@carlogavazzi.com.mt
Reference production site(s)	Malta plant: BLB042, Sqaq il-Merhla, Bulebel Industrial Estate, Zejtun, Malta
Scope of application	This document refers to the device of the SSR – Solid State Relay 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 Independent verification of the declaration and data carried out according to ISO 14025:2010 ☐ _Internal ☒ _External Third-party verification performed by: ICMQ SpA, via De Castillia, 10 20124 - _Milan (www.icmq.it) Accredited by Accredia
CPC Code	4621 "Electricity distribution or control apparatus"
Company contact	Claude Damato, Quality Manager
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 Ltd Malta releases EPDItaly from any non-compliance with environmental legislation. The holder of the declaration will be responsible for the supporting information and evidence; EPDItaly disclaims any responsibility regarding the manufacturer's information, data and results of the life cycle assessment.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

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. 3.1 of 12/11/2024 **s-PCR 012** "Electronic and electrical products and systems – Switches" rev. 1 of 28/06/2024

Table 1. General information of EPD

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

Foreword

This document represents the EPD study conducted for the **RGC3A60D65GGEDFM** device manufactured by Carlo Gavazzi Ltd Malta, 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 LTD MALTA stays at the forefront in Solid State Relay and Motor Controllers manufacturing in Malta.

It belongs to the international CARLO GAVAZZI ACBU GROUP, one of the leading companies in the world, active in designing, manufacturing, and marketing electronic equipment such as solid-state relays, motor controllers, sensors, energy meters, monitoring relays, timers, safety devices and fieldbus systems, all of which provide automation solutions for the industrial and building automation markets.

To ensure the leading role, prosperity, and growth of CARLO GAVAZZI Ltd. MALTA, it is necessary to follow this integrated policy for Quality, Environment, Health and Safety, which underpin future activities of the company and to manufacture and supply products to the market that fully satisfy customer demands.

This policy shall be followed to achieve the objectives and in accordance with the principles:

- to create a quality, environmental and health and safety management system complying with the requirements of international standards ISO 9001, ISO 14001, ISO 45001 and to continuously improve it
- careful analysis of the business environment and risks, aimed at seeking continuous opportunities for improvement

Environmental Product Declaration

RGC3A60D65GGEDFM

- continuous attention to customers' satisfaction with prompt detection of their expectation
- commitment to environmental protection, including pollution prevention
- compliance with the requirements of the product to be delivered and guarantees on the punctuality of service
- compliance with environmental and worker safety mandatory requirements
- commitment to continuous improvement in environmental and safety performance
- pursuit of assiduous and constant collaboration with materials and service suppliers to activate relationships marked by continuous growth
- accurate control of the product realization stages as well as the performance of services offered, including attention to technological innovation and technical development of its resources
- care for the professional growth of all company employees
- increase the awareness in the working personnel about their contribution to the efficiency of the ISO Integrated Management System for quality, environment, health and safety
- constant improvement of the integrated management system to achieve higher levels of excellence
- development of new services/products that can better meet customers' needs and can ensure continued compliance with mandatory requirements
- effective and efficient review of the integrated management system by reducing costs associated with products and processes
- assure safe and healthy working conditions to avoid injuries and work-related illnesses
- commitment to consulting and participating workers

Management is aware that the above goals require constant commitment by all the personnel and that they can be successfully achieved, only through full participation.

Product Information

The product under analysis is the Solid- State Relay (SSR) with part number RGC3A60D65GGEDFM, making part of the SWITCHES product line. The product has a nominal consumption of 165 W and weight 980 g (0,980 kg) including packaging.

The adopted functional unit was defined, based on the reference PCR, as **a device characterized by its own 'maximum' operating power at 180W for a lifetime (RSL - Reference Service Life) of 20 years, including its packaging, and operating throughout its useful life.**

This SSR product is intended to replace mechanical contactors especially when switching is frequent. Apart from resistive and slightly inductive loads, the RGC is certified for motor switching with associated motor ratings. A green LED gives indication of control voltage presence. The

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

RGC3A60D65GGEDFM has additional LEDs for load status and alarm status indication. The RGC3A60D65GGEDFM has several features over other standard products, such as detection of SSR overheat and operation control of the integrated Fan, mains loss, SSR malfunction and load loss, EMR alarm output for remote signaling and an electronic auxiliary output.

Product assembly and testing are entirely carried out at the Carlo Gavazzi Ltd. Malta manufacturing site. After manufacturing, the finished device is then sent to the various Carlo Gavazzi distribution centres (warehouses), and eventually to the specific customer/s.

Regarding the use phase, the product does not require periodic maintenance and is considered to be active throughout its estimated useful life.

Product family	SOLID STATE RELAY	
Product identification number	RGC3A60D65GGEDFM	
Technical Data	Power: 165 W Weight: 0,980 kg (incluing packaging) Service Life Time (RLS): 20 years	
Packaging	Weight: 0,125kg (125,49 g) Material: Paper and plastic	

Table 2. Product related information RGC3A60D65GGEDFM

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).

The product does not contain batteries and any recycled material content in the device is unknown.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

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	**0,980 kg** (including packaging)

Raw Material Category SCLAM	SCLAM	SCLAM description	% of total weight	% of category to total weight
PCB	PCB_SMD	PCB_SMD - Printed Circuit Board FR4 SMD	0,57%	6,38%
	PCB_SMD	PCB_SMD - Printed Circuit Board FR4 SMD	1,45%	
	PCB_SMD	PCB_SMD - Printed Circuit Board FR4 SMD	1,49%	
	PCB_SMD	PCB_SMD - Printed Circuit Board FR4 SMD	2,87%	
Electronic Components	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,008%	4,462%
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,058%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,057%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,004%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,024%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,004%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,006%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,009%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,010%	
	CCERS_SMD	CCERS_SMD - Capacitors Ceramic SMD	0,072%	
	CNTRS_SMD	CNTRS_SMD - Connectors male & female and header-pins SMD	0,052%	
	CNTRS_SMD	CNTRS_SMD - Connectors male & female and header-pins SMD	0,116%	
	CNTRS_SMD	CNTRS_SMD - Connectors male & female and header-pins SMD	0,379%	
	CNTRS_SMD	CNTRS_SMD - Connectors male & female and header-pins SMD	0,403%	
	DDSMD_SMD	DDSMD_SMD - Diodes SMD	0,013%	

Environmental Product Declaration

RGC3A60D65GGEDFM

DDSMD_SMD	DDSMD_SMD - Diodes SMD	0,002%
DDSMD_SMD	DDSMD_SMD - Diodes SMD	0,020%
DDSMD_SMD	DDSMD_SMD - Diodes SMD	0,077%
DDSMD_SMD	DDSMD_SMD - Diodes SMD	0,054%
ICSMD_SMD	ICSMD_SMD - IC integrated circuit SMD	0,010%
ICSMD_SMD	ICSMD_SMD - IC integrated circuit SMD	0,052%
INDCS_SMD	INDCS_SMD - Inductors SMD	0,018%
LEDXX_SMD	LEDXX_SMD - LED light emitting diode SMD	0,001%
LEDXX_SMD	LEDXX_SMD - LED light emitting diode SMD	0,001%
LEDXX_SMD	LEDXX_SMD - LED light emitting diode SMD	0,001%
MICRO_SMD	MICRO_SMD - Micro-Controllers SMD	0,102%
OPTOX_SMD	OPTOX_SMD - Opto-couplers SMD	0,010%
OPTOX_SMD	OPTOX_SMD - Opto-couplers SMD	0,031%
OPTOX_SMD	OPTOX_SMD - Opto-couplers SMD	0,055%
OPTOX_SMD	OPTOX_SMD - Opto-couplers SMD	0,030%
OPTOX_SMD	OPTOX_SMD - Opto-couplers SMD	0,276%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,001%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,020%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,056%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,025%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,002%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,002%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,056%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,032%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,008%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,008%
RESMD_SMD	RESMD_SMD - Resistors SMD	0,029%
TRSMD_SMD	TRSMD_SMD - Transistors, Mosfets & IGBTs PTH	0,019%
TRSMD_SMD	TRSMD_SMD - Transistors, Mosfets & IGBTs PTH	0,008%
CNTRS_PTH	CNTRS_PTH - Connectors male & female and header-pins PTH	0,032%

Environmental Product Declaration

RGC3A60D65GGEDFM

	RELAY_PTH	RELAY_PTH - Electromechanical Relays PTH	0,612%	
	TRAFO_PTH	TRAFO_PTH - Transformers PTH	0,469%	
	VARIP_PTH	VARIP_PTH - Varistors metal-oxide PTH	0,713%	
	PWCHP_DIE	PWCHP_DIE - Power Chips Semiconductors bare Die	0,416%	
Sclam product specifications	PTTCP_CHEM_POT	PTTCP_CHEM_POT - Potting Compounds & Chemicals Potting, Silicones, Gel	0,01%	5,09%
	PTTCP_CHEM_POT	PTTCP_CHEM_POT - Potting Compounds & Chemicals Potting, Silicones, Gel	0,05%	
	PTTCP_CHEM_POT	PTTCP_CHEM_POT - Potting Compounds & Chemicals Potting, Silicones, Gel	0,07%	
	PTTCP_CHEM_POT	PTTCP_CHEM_POT - Potting Compounds & Chemicals Potting, Silicones, Gel	0,04%	
	PTTCP_CHEM_POT	PTTCP_CHEM_POT - Potting Compounds & Chemicals Potting, Silicones, Gel	0,50%	
	AUXRY_FAN	AUXRY_FAN - Axial Cooling Fans	4,43%	
Cables	-	-	-	-
Small metallic parts	MECUS_AL	MECUS_AL - Metal parts customised Aluminium	48,11%	73,24%
	MECUS_AL	MECUS_AL - Metal parts customised Aluminium	0,06%	
	MECUS_CU	MECUS_CU - Metal parts customised Copper	0,01%	
	MECUS_CU	MECUS_CU - Metal parts customised Copper	1,04%	
	MECUS_CU	MECUS_CU - Metal parts customised Copper	2,56%	
	MECUS_CUZN	MECUS_CUZN - Metal parts customised Brass	0,98%	
	MECUS_CUZN	MECUS_CUZN - Metal parts customised Brass	1,22%	
	MECUS_SOLD_PB	MECUS_SOLD_PB - Metal parts customised Solder Preforms high Lead	0,02%	
	MECUS_SOLD_PB	MECUS_SOLD_PB - Metal parts customised Solder Preforms high Lead	0,04%	

Environmental Product Declaration

RGC3A60D65GGEDFM

	MECUS_SOLD_PB	MECUS_SOLD_PB - Metal parts customised Solder Preforms high Lead	0,16%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,47%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,05%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,40%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,26%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	1,68%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	1,33%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	2,41%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,53%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	3,70%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	0,64%	
	MECUS_STEEL	MECUS_STEEL - Metal parts customised Steel	6,63%	
	SUBST_DCB	SUBST_DCB - Substrates Direct Copper Bonding with Ceramic & Copper	0,96%	
Plastics	PLCUS_INJ_PA6	PLCUS_INJ_PA6 - Plastic parts customised Injected with PA6	3,36%	15,34%
	PLCUS_INJ_PA6	PLCUS_INJ_PA6 - Plastic parts customised Injected with PA6	2,07%	
	PLCUS_INJ_PA6	PLCUS_INJ_PA6 - Plastic parts customised Injected with PA6	7,21%	
	PLCUS_INJ_PA6	PLCUS_INJ_PA6 - Plastic parts customised Injected with PA6	2,42%	
	PLSTD_NYL	PLSTD_NYL - Plastic parts standard Screws & Spacers Nylon	0,20%	
	LAFRO_FRONT	LAFRO_FRONT - Product Front Labels Polycarbonate	0,02%	
	PLSTD_SLEEVE	PLSTD_SLEEVE - Plastic parts standard Sleeves & Heat-Shrinkable Tubes	0,02%	

Environmental Product Declaration

RGC3A60D65GGEDFM

	PLSTD_SLEEVE	PLSTD_SLEEVE - Plastic parts standard Sleeves & Heat-Shrinkable Tubes	0,02%	
	PLSTD_SLEEVE	PLSTD_SLEEVE - Plastic parts standard Sleeves & Heat-Shrinkable Tubes	0,03%	
Plastic primary packaging	LAPAC_PKG	LAPAC_PKG - Product & Box Labels	0,01%	0,14%
	LAPAC_PKG	LAPAC_PKG - Product & Box Labels	0,13%	
Paper primary packaging	BOXES_PKG	BOXES_PKG - Carton Boxes, inserts, grids for finished products Packaging	2,90%	14,12%
	BOXES_PKG	BOXES_PKG - Carton Boxes, inserts, grids for finished products Packaging	10,51%	
	SHEET_LEAFLET	SHEET_LEAFLET - Instruction Leaflet folded Sheets	0,70%	

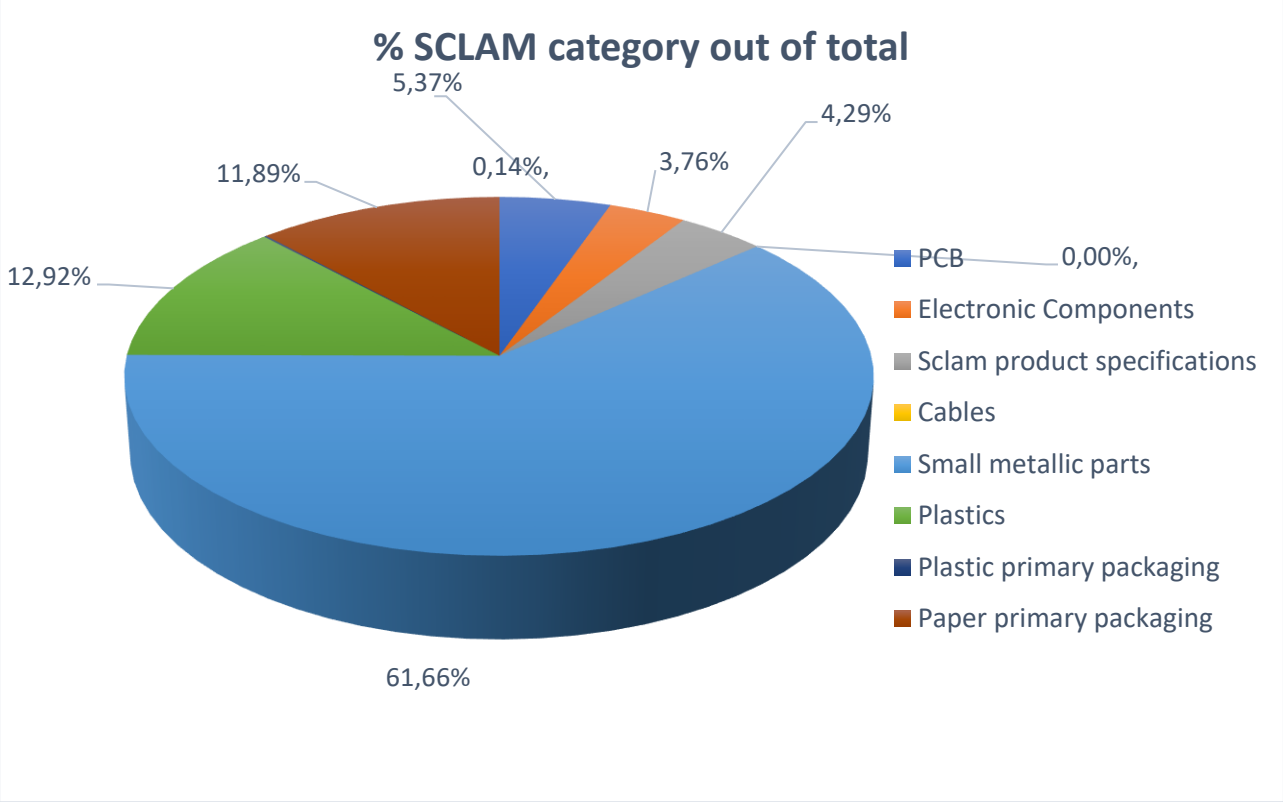

*Figure 1. Material breakdown of the **RGC3A60D65GGEDFM** device*

Environmental Product Declaration

RGC3A60D65GGEDFM

Information related to the study

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_data 2023_GAV_GAV Malta_2025 02 14 Rev. 1"

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	• 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) - Electricity Dataset elettricità: *Electricity, medium voltage {MT}| electricity, medium voltage, residual mix | Cut-off, U (Ecoinvent 3.10)*
Distribution	• transportation from the Gavazzi plant to the latest distribution logistics platforms

FINISHED PRODUCT DISTRIBUTION (CoD)		
Distribution center finished product	**% distributed to the CoD**	**Further distribution at the continental level?**
CGC-CdD Italy	57,5%	Yes
CGC-CdD USA	6,9%	Yes
CGC-CdD Canada	0,0%	Yes
CGC-CdD Singapore	35,6%	Yes

Environmental Product Declaration

RGC3A60D65GGEDFM

	• transportation from Gavazzi's CdD to the specific customer (Company Name, Country) • disposal of secondary packaging
Installation	• End of life of primary packaging.
Use and maintenance phase	• Product Category: SSR-Solid State Relay • usage scenario: 20-year service life, continuous operation at 100% rated load, rated power 165 W. The dataset chosen is the low voltage energy dataset; the dataset reference country is directly linked to the country that will be selected as the country of use of the device. In the case where the device is not used in the country where the Gavazzi Malta distribution center is located, but has a continental distribution, the basin emission factor is calculated, which can be European (and in this case the FE is the one linked to the dataset "*Electricity, low voltage {RER} | market group for electricity, low voltage | Cut-off, U*" which makes a weighted average of the various countries) or American, Canadian and Asian. In this case, the FE is the arithmetic average of the emission factors of individual nations belonging to those continents and thus does not consider the "weight" of individual nations.
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 UNI EN 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).

Environmental Product Declaration

RGC3A60D65GGEDFM

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: 20 years.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

Environmental impact assessment

The potential environmental impacts assessed through an LCA of the **RGC3A60D65GGEDFM** 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 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 - fossil	kg CO_2 eq	3,41E+01	3,59E+00	3,49E+00	3,62E-03	4,39E+03	2,34E-01	**4428,30**
GWP - biogenic	kg CO_2 eq	3,65E-02	-1,16E-01	1,22E-01	9,60E-02	6,29E+01	-8,96E-05	**63,04**
GWP Luluc (GWP land use and land use change)	kg CO_2 eq	2,43E-02	9,99E-04	2,43E-04	7,25E-06	7,49E+00	9,95E-05	**7,51**
GWP TOT (Global Warming Potential)	kg CO_2 eq	3,42E+01	3,47E+00	3,61E+00	9,96E-02	4,46E+03	2,34E-01	**4498,84**
Ozone layer depletion	kg CFC_{11} eq	8,35E-07	9,08E-08	5,40E-08	6,25E-11	7,09E-05	5,55E-10	**7,19E-05**
Acidification	mol H^+eq	2,76E-01	7,68E-03	1,47E-02	2,17E-05	2,33E+01	3,08E-04	**23,64**
Eutrophication, freshwater	kg P eq	2,63E-02	4,35E-04	5,42E-05	7,64E-07	2,46E+00	1,89E-05	**2,49**
Eutrophication, marine	Kg N eq	5,00E-02	2,00E-03	5,94E-03	1,13E-04	3,79E+00	9,39E-05	**3,85**
Eutrophication, terrestrial	mol N eq	5,30E-01	2,08E-02	6,43E-02	7,73E-05	3,69E+01	9,24E-04	**37,50**
Photochemical oxidation	kg NMVOC eq	1,62E-01	9,65E-03	2,07E-02	4,90E-05	1,33E+01	2,71E-04	**13,45**
Resource use, minerals and metals	kg Sb eq	3,78E-03	5,46E-06	9,13E-07	9,09E-09	3,81E-02	3,62E-07	**0,04**
Resource use, fossils	MJ	4,16E+02	5,45E+01	4,63E+01	4,97E-02	7,50E+04	6,98E-01	**75486,93**
Water use	m^3 depriv.	5,87E+00	2,55E-01	6,67E-02	-2,48E-04	7,93E+02	9,87E-03	**799,59**

Table 6. Results for various environmental impact categories for device RGC3A60D65GGEDFM.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

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	4,15E+02	5,44E+01	4,63E+01	4,97E-02	7,50E+04	6,98E-01	**75484,84**
PENRM	MJ	1,92E+00	1,76E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**2,09**
PENRT	MJ	4,16E+02	5,45E+01	4,63E+01	4,97E-02	7,50E+04	6,98E-01	**75486,93**
PERE	MJ	2,31E+01	2,31E-01	1,75E-01	2,89E-03	1,56E+04	5,99E-02	**15590,45**
PERM	MJ	2,21E+00	2,29E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**4,50**
PERT	MJ	2,53E+01	2,52E+00	1,75E-01	2,89E-03	1,56E+04	5,99E-02	**15594,94**
FW (Net use of fresh water)	m^3	1,89E-01	1,71E-02	2,11E-03	-2,69E-04	4,68E+01	3,52E-04	**47,03**
MS (use of secondary materials)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	**0,00**
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	**0,00**
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	**0,00**

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 RGC3A60D65GGEDFM device.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

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	2,35E-03	2,53E-04	3,20E-04	3,40E-07	2,26E-01	2,83E-06	**2,29E-01**
Non-hazardous waste disposal (NHWD)	kg	9,67E-01	3,68E-01	1,04E-01	6,59E-02	2,13E+02	3,37E-02	**2,15E+02**
Radioactive waste disposal (RWD)	kg	5,35E-04	5,41E-05	3,50E-06	3,71E-08	2,92E-01	1,14E-06	**2,93E-01**
Materials for energy recovery (MER)	kg	0,00E+00	0,00E+00	8,66E-03	6,00E-03	0,00E+00	0,00E+00	**1,47E-02**
Materials for recycling (MFR)	kg	0,00E+00	0,00E+00	4,39E-02	6,47E-02	0,00E+00	0,00E+00	**1,09E-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	2,47E-02	1,71E-02	0,00E+00	0,00E+00	**4,18E-02**
EEE (exported electricity energy)	MJ	0,00E+00	0,00E+00	1,20E-02	8,33E-03	0,00E+00	0,00E+00	**2,04E-02**

Table 8. Waste-related environmental impacts for the RGC3A60D65GGEDFM device.

Carlo Gavazzi Ltd Malta
BLB042, Sqaq il-Merhla,
Bulebel Industrial Estate, Zejtun,
Malta
http://www.gavazzi-automation.com/

Environmental Product Declaration

RGC3A60D65GGEDFM

References

- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2018 Environmental management - Life cycle assessment - Requirements and guidelines
- ISO 14020:2000 Environmental labels and declarations - General principles
- UNI EN 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. 3.1 of 12/11/2024
- s-PCR 012 “Electronic and electrical products and systems – Switches” rev. 1 of 28/06/2024
- LCA tool_data 2023_GAV_GAV Malta_2025 02 14 Rev. 1- RGC3A60D65GGEDFM

Published by Carlo Gavazzi