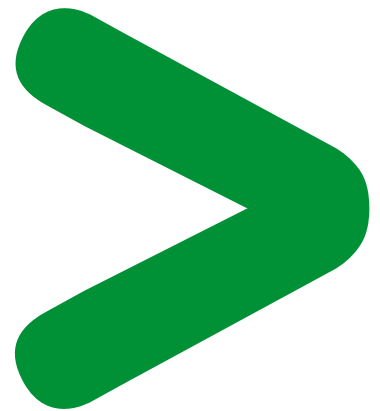


Product Environmental Profile

Temperature Control Relay
Zelio control REG



Product Environmental Profile - PEP

Product Overview

The Zelio Control REG range adds an essential temperature control element to Schneider's product range.

For greater simplicity and effectiveness, this range has been rationalised to meet all customer expectations and allow the function to be integrated into a simple or extended automation architecture.

The Zelio Control REG range is based on an energy-saving design providing low electricity consumption.

Due its high resistance to mechanical impacts and vibrations, LED technology can provide 100,000 maintenance-free hours of light and fully incorporates the display functions.

The Zelio Control REG range becomes an integral part of our "Solutions" for various sectors: agri-food, textiles, packaging, industrial machines such as presses, furnaces, paint booths, etc. This range consists of 40 models that differ mainly by product size, as well as by the number and type of process outputs.

The representative product used for the analysis was the Zelio Control REG48PUN1RHU. The environmental impacts of this referenced product are representative of the impacts of the other products in the range for which the same technology is used.

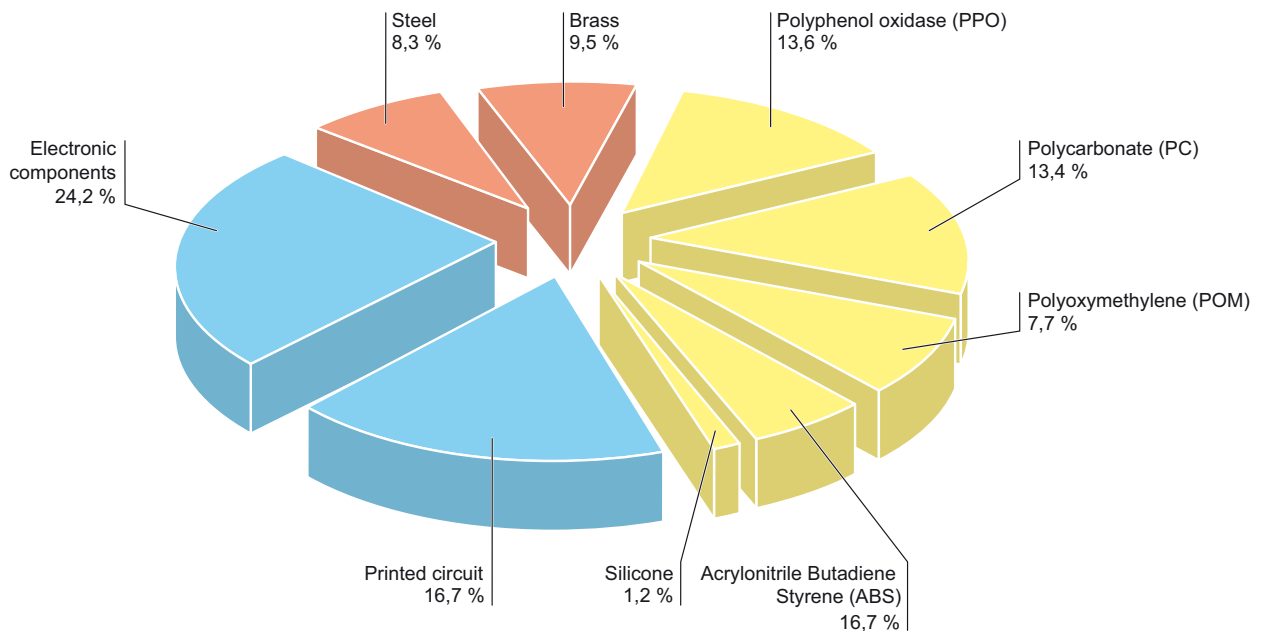
The environmental analysis was performed in conformity with ISO 14040 "Environmental management: Life cycle assessment – Principle and framework".

This analysis takes the stages in the life cycle of the product into account.

Constituent materials

The mass of the products in the range is from 95 g to 210 g, not including the packaging. It is 116 g for the Zelio Control REG48PUN1RHU analysed.

The constituent materials are distributed as follows:



All necessary steps have been taken with our services, suppliers and subcontractors to ensure that the materials used in the composition of the Zelio Control REG product range do not contain any substances prohibited by the legislation that was in force ⁽¹⁾ when it was put on the market.

(1) according to the list available on request.

The products in the range are designed in compliance with the requirements of the RoHS directive (directive 2002/95/EC of 27 January 2003) and do not contain levels of lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls PBB, polybrominated diphenyl ethers PBDE) above the permissible thresholds mentioned in the directive.

Product Environmental Profile - PEP

Manufacturing

The Zelio Control REG product range is manufactured at a Schneider Electric production site on which an ISO 14001 certified environmental management system has been established.

Distribution

The weight and volume of the packaging have been reduced in compliance with the European Union's packaging directive.

The weight of the packaging of the Zelio Control REG48PUN1RHU is 67.3 g. It is made of recyclable materials: cardboard (61.8 g), paper (5.1 g) and polyethylene (0.4 g).

The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

Use

The products in the Zelio Control REG range do not generate any environmental pollution requiring special precautionary measures (noise, emissions, etc.).

The dissipated power depends on the conditions under which the product is implemented and used.

The power consumed by the "Zelio Control REG" range is between 8 VA and 12 VA. It is 4.08 W in active mode and 0.96 W in standby mode for the Zelio Control REG48PUN1RHU referenced.

End of life

At end of life, the products in the Zelio Control REG range can either be dismantled or crushed to facilitate the recovery of the various constituent materials.

The recycling potential of the Zelio Control REG range is between 20% and 30%, according to the models.

The end-of-life data appears on the product end-of-life sheet.

Environmental impacts

The EIME (Environmental Impact and Management Explorer) software, version 4, and its database, version 10, were used for the Life Cycle Assessment (LCA).

The assumed service life of the product is 10 years, the utilisation rate of the installation is 92% and the European electrical power model is used.

The analysis focused on a Zelio Control REG48PUN1RHU.

The environmental impacts were analysed for the Manufacturing (M) phase, including the processing of raw materials, and for the Distribution (D) and Utilisation (U) phases.

Presentation of product environmental impacts:

Indicator	Unit	For a REG48PUN1RHU product			
		S = M+D+U	M (%)	D (%)	U (%)
Depletion of natural resources	Y-1	6.78 E-14	75.6	0	24.4
Depletion of water resources	dm ³	2300	1.9	0	98.1
Atmospheric warming potential	g≈CO ₂	759000	0.4	0.2	99.6
Destruction of the ozone layer	g≈CFC-11	0.065	0.9	0.1	99
Atmospheric ozone creation	g≈C ₂ H ₄	264	0.4	0.5	99.1
Air acidification	g≈H ⁺	120	0.5	0.1	99.4
Hazardous waste production	kg	12	0.5	0	99.5

The life cycle analysis showed that the Utilisation phase has the greatest impact on most of the environmental indicators; the environmental parameters of this phase were optimised at the design stage.

Product Environmental Profile - PEP

System approach

As the products in the range were designed in conformity with the RoHS directive (2002/95/EC of 27 January 2003), they can be integrated unrestrictedly in a device or installation directly governed by these regulations.

N.B.: the environmental impacts of the product depend on the conditions under which it is installed and used.

The environmental impact values listed in the above table are only valid within the specified context and cannot be used directly in the environmental report on the installation.

Glossary

Raw Material Depletion (RMD)

This indicator quantifies the consumption of raw materials during the life cycle of the product. It is expressed as the fraction of natural resources that disappear each year, with respect to all the annual reserves of the material.

Energy Depletion (ED)

This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources.

This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.

Water Depletion (WD)

This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in dm³.

Global Warming (GW)

The global warming of the planet is the result of the increase in the greenhouse effect due to the sunlight reflected by the earth's surface being absorbed by certain gases known as "greenhouse-effect" gases. The effect is quantified in gram equivalent of CO₂.

Ozone Depletion (OD)

This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in gram equivalent of CFC-11.

Photochemical Ozone Creation (POC)

This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of ethene (C₂H₄).

Air Acidification (AA)

The acid substances present in the atmosphere are carried by rain. A high level of acidity in the rain can cause damage to forests.

The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in mode equivalent of H⁺.

Hazardous Waste Production (HWP)

This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilization).

For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc.

It is expressed in kg.



We are committed to safeguarding our planet by "Combining innovation and continuous improvement to meet the new environmental challenges".

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It was produced according to the instructions in the PEP drafting guide, version 4.

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