

Product Environmental Profile

Surge Protective Device pluggable Type 2 : Quick Safe range

The Surge Protective devices type 2 protect electrical equipment against direct or indirect effect of lightning or against of transient overvoltage.

The Surge Protective devices type 2 designed to limit transient overvoltage and run-off lightning currents.

Main features of this range:

- Voltage value for network: 230V/400V or 400V/690V
- 5kA to 40kA rated discharge current I_n
- 20kA to 40 kA maximum discharge current I_{max}
- Up tension protection : 0,9kV à 4,6 kV
- Ic courant consum : <1 μ A
- Number protected lines : 1 to 4
- Surge protective device type : T2; T2-T3
- Degrees of protection : IP20
- Reference standard: IEC 61643-11



OVR T2 4L 40-275 P QS



Reference product and methodology

The representative product used to conduct this study is the OVR T2 4L 40-275 P QS (including packaging).

The reference product is that with the greatest environmental impact in the OVR T2 range.

- AC tree-phase network
- 230V /400V
- In 20 kA
- Imax 40 kA
- 4 protected lines

The environmental analysis was conducted with EIME software. The analysis accounts for all the stages in the product life cycle: manufacture, distribution, installation, use and end-of-life.

This document covers the T2 SPD range designated as:

OVR T2 **xx yy uuu P tt** QS
OVR T2-T3 **xx yy uuu P tt** QS

xx takes the following values:

- “ ” (1 protected line)
- “2L” (2 protected lines)
- “3L” (3 protected lines)
- “4L” (4 protected lines)

yy takes the following values:

- “20” or “40”

uuu takes the following values:

- “275” or “350” or “440” or “600”

tt takes the following values :

- “ ” “TS”

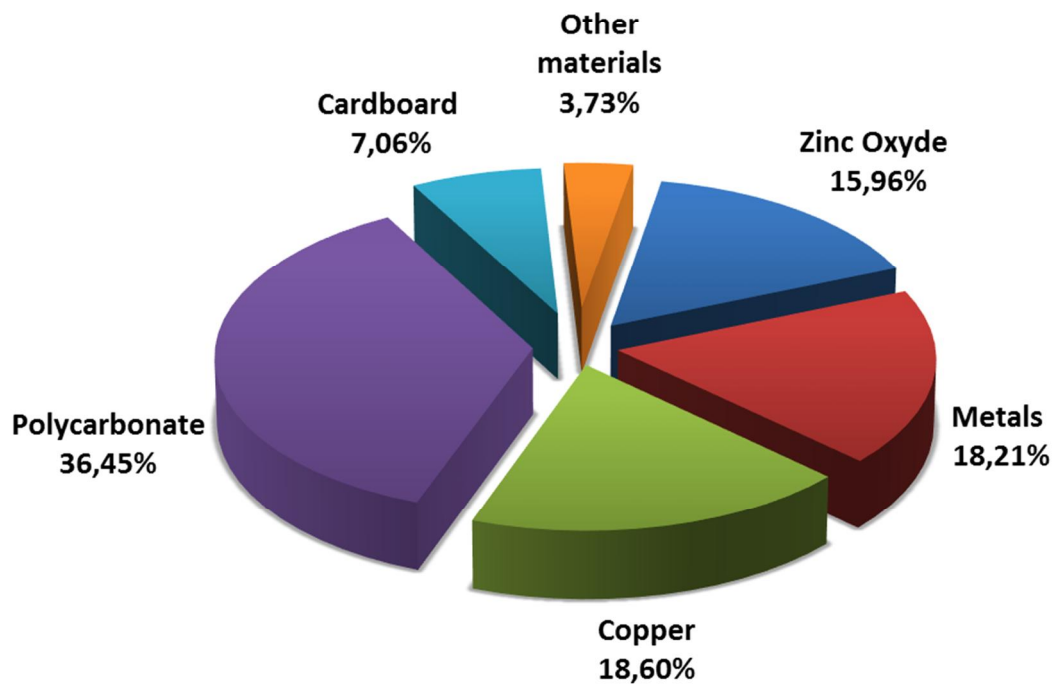


Constituent materials

The weight of the components of the product analysed is 467 grams including the packaging. The main materials used on a percentage basis are plastic, copper and metal.

The SPDs range are designed in compliance with the requirements of the RoHS directive (directive 2011/65/EU of 08 Jun 2011) and do not contain, above the authorised limits, lead, mercury, cadmium, hexavalent chromium, or flame retardants (polybrominated biphenyls PBB, polybrominated diphenyl ethers PBDE) as specified in the directive.

Bill of material OVR T2 4L 20-275 P QS



Additional environmental information

-Manufacture

The SPDs range is manufactured on an ABB factory site which has implemented an environmental management system.

-Distribution

The packaging consists of 100% cardboard, designed in compliance with current regulations.

(French application decree: 98-638).

-Use

The SPDs range do not involve any sources of nuisance giving rise to particular precautions for use (noise, emissions, etc.) The product status indicator is a mechanical indicator light.

-End of life

At the end of their service life, the products are suitable for crushing to recycle the various constituent materials.



Environmental impacts

We have conducted a product life cycle analysis for 11 types of major environmental impacts. This analysis accounts for all the stages in the product life cycle: manufacture, distribution, installation, use and end of life.

The modelling assumptions made are:

Product category: Passive.

« Passive » products dissipate energy, « active » products use energy.

Period of use (*): 20 years.

Use: Continuous power. Very low consumption, 0,30 W/h

Installation: Negligible impact. No specific tool is required to install the product.

Servicing and maintenance: Under normal conditions of use, this type of product requires no servicing or maintenance.

Applicable electric standard for this product: IEC 61 643-11.

(*)Period of use identified for the assessment of the environmental impacts.

This period may be different to the service life of the product which is dependent on operating and installation conditions.

The life cycle analysis (LCA) was conducted using EIME (Environmental Impact and Management Explorer) software version 5.0.7.3. Energy model used: Europe.

Overview of environmental impacts of reference product

Indicators		Unit	Sum	Manufacture	Distribution	Use	End of life
AA	Air Acidification	kg H ⁺ eq	2,79E-03	7,00E-04	4,87E-05	2,04E-03	4,22E-06
AT	Air Toxicity	m ³	4,13E+06	1,47E+06	1,40E+05	2,52E+06	6,92E+03
ED	Energy Depletion	MJ	3,47E+02	4,00E+01	5,58E+00	3,01E+02	5,03E-01
GW	Global Warming	kg CO ₂ eq.	1,83E+01	2,75E+00	3,22E-01	1,52E+01	2,91E-02
HWP	Hazardous Waste Production	kg	3,19E-01	6,57E-02	8,32E-04	2,52E-01	2,60E-04
OD	Ozone Depletion	kg CFC-11 eq.	1,63E-06	6,00E-07	1,94E-07	8,25E-07	1,05E-08
POC	Photochemical Ozone Creation	kg C ₂ H ₄ eq.	7,06E-03	1,19E-03	5,34E-04	5,31E-03	1,69E-05
RMD	Raw Material Depletion	Y-1	9,54E-15	9,19E-15	6,45E-18	3,42E-16	5,73E-19
WD	Water Depletion	dm ³	7,03E+01	2,47E+01	2,03E+00	4,35E+01	6,40E-02
WE	Water Eutrophication	kg PO ₄ ³⁻ eq.	2,76E-04	2,26E-04	1,40E-05	3,57E-05	2,60E-07
WT	Water Toxicity	m ³	5,58E+00	1,17E+00	5,80E-02	4,35E+00	5,69E-03

Extrapolation rule

For all the products covered by this PEP other than the reference product (4 poles), their environmental impacts are overall proportional to the number of pole.

- Ex:
- 1L product equipped with 1 pole: a coefficient of 0.25 (1/4) should be applied to each indicator.
 - 2L product equipped with 2 poles: a coefficient of 0.5 (2/4) should be applied to each indicator.
 - 3L product equipped with 3 poles: a coefficient of 0.75 (3/4) should be applied to each indicator.

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Independent verification of declaration and data, as per ISO 14025 : 2006

Internal ☒ External ☐

In conformity with the ISO 14025 standard 2006 Type III environmental declarations

The critical PCR review was conducted by a panel of experts chaired by J.Chevalier (CSTB)



The data from this PEP cannot be compared with the data from another programme

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Glossary

RMD	Raw Materiel Depletion Indicates the depletion of natural resources, by considering the quantity of world reserves (minerals, fossils, etc.) for these resources and the current level of consumption. Expressed as a fraction of the reserves that disappear each year.
ED	Energie Depletion Indicates the total primary energy consumption for the whole life cycle of the product.
WD	Water Depletion Indicates the total water consumption for the whole life cycle of the product.
GW	Global Warming Indicates, for all the life cycle phases of the product, identified greenhouse gas emissions in air as CO ₂ gram-equivalents. Example of the equivalence principle: 1g of CO ₂ = 1g~CO ₂ ; 1g of CH ₄ (methane) is equivalent to the effect of 64 g of CO ₂
GWP	Global Warming Potential Indicates what all the life cycle phases of the product release as CFC-11 gram-equivalents.
AT	Air Toxicity Indicates the quantity of air required to dilute the toxic substances emitted into the air for all the life cycle phases of the product. Expressed as M ₃ of air.
POC	Photochemical Ozone Creation Indicates as g~C ₂ H ₄ the gas emissions having an effect on the creation of photochemical ozone in the lower atmosphere (smog) under the effect of solar radiation.
AA	Air Acidification Indicates the potential for acidification of the air caused by the release of certain gases into the atmosphere. Expressed as H ⁺ ion gram-equivalent.
WT	Water Toxicity Indicates the quantity of water required to dilute the toxic substances discharged into water for all the life cycle phases of the product. Expressed as M ³ of water.
WE	Water Eutrophication Indicates as gram-equivalents PO ₄ ³⁻ (g~ PO ₄ ³⁻) the contribution to water eutrophication due to enrichments of the aquatic environment with nutrients, for example industrial, household effluents, agriculture, etc.
HWP	Hazardous Waste Production Indicates in kg the quantity of hazardous waste produced for the entire life cycle of the product.