



## **Fuse combination switch** FUSERBLOC 3x400 A (3x100A, 3x250A)



### The commitments of Socomec to respect the environment

As part of its environmental policy, Socomec is committed to:

- Develop innovating solutions primarily focused on energy efficiency to help its customer in the design of less energy-consuming, better managed and ecofriendly installations.
- Diversify its product offer in the renewable energy and energy efficiency sectors,
- Minimize the environmental impact of its industrial activities through the progressive ISO 14001 certification of its production sites,
- Minimize at the preliminary design stage the environmental impacts of its products taking into account their whole life cycle,
- Provide his customers with reliable data on the environmental performance of the products.

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## ■ Representative product

### Reference product

The representative product is the FUSERBLOC, modular version, 3x400A, fuse-combination-switch with sales reference 38313039. This FUSERBLOC can be used with high speed fuses (uR) size 2 rated 400A, in external right side or front operation version.

### References covered by this PEP

Sales references in 3P versions 38313024 - 3x250A, that can be used with high speed fuses (uR) size 1 rated 250A, and 38313010 - 3x100A, that can be used with 22x58 fuse size and rated 100A, are also covered by this PEP.

### Functional unit

Establish, support and interrupt for 20 years rated currents in normal conditions of circuit characterized by the current of 400A, including any conditions specified for overload in operation characterized by the current of 400A, for the operating voltage of 400VAC for the category of use AC-23 A

## ■ Material and substances

### Declaration of the constitutive materials according to IEC 62474

Total mass of the reference product (including packaging): 4 940 g (packaging: 654 g)  
The packaging is composed of cardboard and plastics.

The total mass for others the references covered by this PEP is

- For the 3x250 A (38313024) : 3 540 g
- For the 3x100 A (38313010) : 1 850 g

### For the FUSERBLOC 3x400A with sales reference 38313039 -

Metals, % weight		Plastics, % weight		Others, % weight	
Copper and its alloys	41,3 %	Other plastic and rubber	35,0 %	Others organics	13,4 %
Other ferrous alloys – non stainless	0,1 %	Others thermoplastics	9,1 %	Ceramics and Glass	1,1 %
Precious Metals	< 0,1 %				

FUSERBLOC 3x250A (38313024)	<b>Metals, % weight</b> : 34,3 %	<b>Plastics, % weight</b> : 51,0 %	<b>Others, % weight</b> : 14,6 %
FUSERBLOC 3x100A (38313010)	<b>Metals, % weight</b> : 22,5 %	<b>Plastics, % weight</b> : 48,0 %	<b>Others, % weight</b> : 29,5 %

The estimated content of recycled materials is 6,3%, based on a Life Cycle Analysis model with EIME software which is a software distributed by CODDE, a subsidiary of Bureau Veritas.

### Substances management

Socomec is leading a program to limit the use of hazardous substances in the design of new products and to monitor the presence of substances of concern in its supplies to anticipate future use restrictions.



ROHS directives 2011/65/EU and 2015/863 compliance: Product references covered by this PEP meet the requirements of the RoHS Directive on the restriction of substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), polybrominated diphenyl ethers (PBDEs) and phthalates (DEHP, DBP, BBP, DIBP).



REACH 1907/2006 regulation: to the best of our knowledge at the publication date of this document, none of the substance of the candidate list to authorization (SVHC) has been found in the references covered by this PEP.

## ■ Manufacturing

The products covered by this PEP are manufactured on a site where impacts on the environment are reduced by optimizing its energy consumption and by practicing a rigorous waste management.

Moreover, Socomec is committed to the progressive ISO 14001 certification of its manufacturing sites

## ■ Distribution

As part of its distribution policy aiming to respect the environment, Socomec is in favor of groupage transports and ISO14001 certified logistic partners.

The packaging is mainly made of : cardboard (545 g), plastic (109 g)

No reconditioning is needed for this product.



The packaging complies with Directive 94/62/EC. The sizing of the packaging has been optimized to ensure the best possible protection of the product at the lowest possible volume in order to reduce the impact of the transport stage on the environment.

Packaging design solutions favors mono-material recyclable cardboard without coloring or bleaching. The wedging of the packaged product is made of recycled cardboard, no polystyrene is used.

## ■ Installation

The installation stage consists in connecting the product to the existing electrical installation. The installation does not generate any significant impacts on the environment, except impacts from packaging waste.

## ■ Use phase

### Consumption scenario

Use phase scenario: European energy mix

Product	Dissipated power per pole at Ith	Total dissipated power at Ith	Total dissipated power at 50% of Ith	Total lifespan energy consumption (20 years) at 50% of Ith and 30% of usetime
<b>3x400</b> (38313039)	33 W	99 W	25,75 W	1 301 kWh
<b>3x250</b> (38313024)	19 W	57 W	14,25 W	749 kWh
<b>3x100</b> (38313010)	6,8 W	20,4 W	5,1 W	268 kWh

### Care and maintenance

The product does not require any maintenance under normal conditions of use.

### Consumables

The products, can be associated with high breaking capacity fuses, and make and break on load and provide safety isolation and protection against overcurrent and short-circuit for any low voltage electrical circuit.

## ■ End of life

### End of life treatment

The following parts require specific care and selective treatment in accordance with Annex VII of the WEEE Directive 2012/19/EU - Waste of electrical and electronic equipment:

Type of risk	Type of component	Mass (%)	Location	Comment
Potential security hazard for operators	<i>Springs</i>	1%	1	Mechanical risk



### Recovery potential of the product according to IEC TR 62635

The total potential value of this product is 45,1 %.  
This potential value takes into account the material recycling and energy recovery.

## ■ Environmental impacts

### Calculation methodology: life cycle assessment (LCA)



The calculation of the impacts on the environment was made using a life cycle assessment methodology in accordance with the ISO 14040 requirements and with PEP eco passport product category rules. For more details follow the link: [www.pep-ecopassport.org](http://www.pep-ecopassport.org)  
This study was carried out with the version 5.8.1 of the software EIME with version database CODDE\_2018\_11. The software is distributed by CODDE which is a subsidiary of Bureau Veritas. This product follows the rules defined in the PSR005.

The whole life cycle has been taken into account

Step	Geographical representativeness	Scenario
<b>Manufacturing (M)</b>	Production of components and packaging : Europe Assembly : France	From the raw material extraction to the last Socomec logistic platform, including packaging
<b>Distribution (D)</b>	Distribution scenario : Europe	From the last Socomec logistic platform to the final customer
<b>Installation (I)</b>	Transport and treatment of packaging wastes : Local	Local road transport of generated wastes to the treatment site, and landfilling
<b>Use phase (U)</b>	Energy mix : Europe Production of maintenance components : analog to manufacturing phase	Power consumption required during 20 years and maintenance according to consumption scenario described on page 3.
<b>End Of Life (EOL)</b>	Transport and treatment : Local	Road transport from the final customer to the treatment sites. End of life treatment.


### Environmental impacts of the FUSERBLOC 3x400A with sales reference 38313039

The following impacts have been calculated to best represent geographically and technologically each step of the life cycle.

The following impacts can be extrapolated to the other products covered by this PEP by applying a proportionality rule (K1 factor for the 3x100A and K2 for the 3x250A) to the impacts of the reference product.

Indicators	Unit	Total impact	M	D	I	U	EOL	K1	K2
Contribution to global warming	kg CO2 eq.	6,62E+02	2,10E+01	2,58E+00	1,44E-01	6,37E+02	9,42E-01	2,13E-01	5,77E-01
Contribution to ozone layer depletion	kg CFC11 eq.	4,40E-05	2,47E-06	5,23E-09	0*	4,15E-05	1,40E-08	2,10E-01	5,91E-01
Contribution to the soil and water acidification	kg SO2 eq.	2,77E+00	9,58E-02	1,16E-02	5,91E-04	2,66E+00	3,88E-03	2,12E-01	5,80E-01
Contribution to water eutrophication	kg (PO4)3- eq.	1,82E-01	1,59E-02	2,67E-03	4,08E-04	1,61E-01	2,67E-03	2,28E-01	6,38E-01
Contribution to photochemical ozone formation	kg C2H4 eq.	1,54E-01	6,27E-03	8,24E-04	4,41E-05	1,46E-01	2,89E-04	2,13E-01	5,78E-01
Contribution to the depletion of abiotic resources - elements	kg Sb eq.	2,98E-02	2,97E-02	0*	0*	5,54E-05	0*	5,32E-02	7,98E-02
Contribution to the depletion of abiotic resources - fossil fuels	MJ	7,45E+03	1,70E+02	3,63E+01	1,68E+00	7,23E+03	1,10E+01	2,10E-01	5,93E-01
Contribution to water pollution	m³	3,12E+04	4,35E+03	4,25E+02	1,96E+01	2,63E+04	1,28E+02	2,42E-01	5,88E-01
Contribution to air pollution	m³	3,93E+04	1,16E+04	1,06E+02	1,20E+01	2,74E+04	7,86E+01	2,10E-01	5,65E-01
Use of renewable primary energy (excl. raw materials)	MJ	1,64E+03	2,01E+01	0*	0*	1,62E+03	0*	2,05E-01	5,79E-01
Use of renewable primary energy used as raw materials	MJ	1,34E+01	1,34E+01	0*	0*	0*	0*	7,52E-01	1,11E-01
Total use of renewable primary energy resources	MJ	1,66E+03	3,34E+01	0*	0*	1,62E+03	0*	2,09E-01	5,75E-01
Use of non-renewable primary energy (excl. raw materials)	MJ	1,13E+04	1,69E+02	3,65E+01	1,75E+00	1,11E+04	1,15E+01	2,09E-01	5,98E-01
Use of non-renewable primary energy used as raw materials	MJ	6,43E+01	6,43E+01	0*	0*	0*	0*	3,95E-01	8,11E-01
Total use of non-renewable primary energy resources	MJ	1,14E+04	2,34E+02	3,65E+01	1,75E+00	1,11E+04	1,15E+01	2,10E-01	5,99E-01
Use of secondary materials	kg	3,56E-01	3,56E-01	0*	0*	0*	0*	1,91E-01	1,68E+00
Use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Use of non-renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Net use of fresh water	m³	2,31E+03	1,50E+00	0*	0*	2,31E+03	0*	2,06E-01	5,76E-01
Hazardous waste disposed of	kg	2,97E+02	2,97E+02	0*	0*	3,32E-01	0*	1,65E-01	3,95E-01
Non-hazardous waste disposed of	kg	2,41E+03	2,47E+01	0*	7,33E-01	2,38E+03	4,81E+00	2,11E-01	5,74E-01
Radioactive waste disposed of	kg	1,59E+00	3,78E-03	0*	0*	1,59E+00	1,75E-04	2,07E-01	5,76E-01
Components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Exported energy	MJ by energy vector	0,00E+00	0*	0*	0*	0*	0*	0,00E+00	0,00E+00
Total use of primary energy during the life cycle	MJ	1,30E+04	2,67E+02	3,65E+01	1,78E+00	1,27E+04	1,17E+01	2,10E-01	5,96E-01

NB : 0\* means that this impact either represents less than 0.01% of the total life cycle of the reference flow, or has no impact (in the case where the total impact is zero).

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The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)	
PEP are compliant with XP C08-100-1 :2014 The elements of the present PEP cannot be compared with elements from another program	
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