Product Environmental Profile

Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve

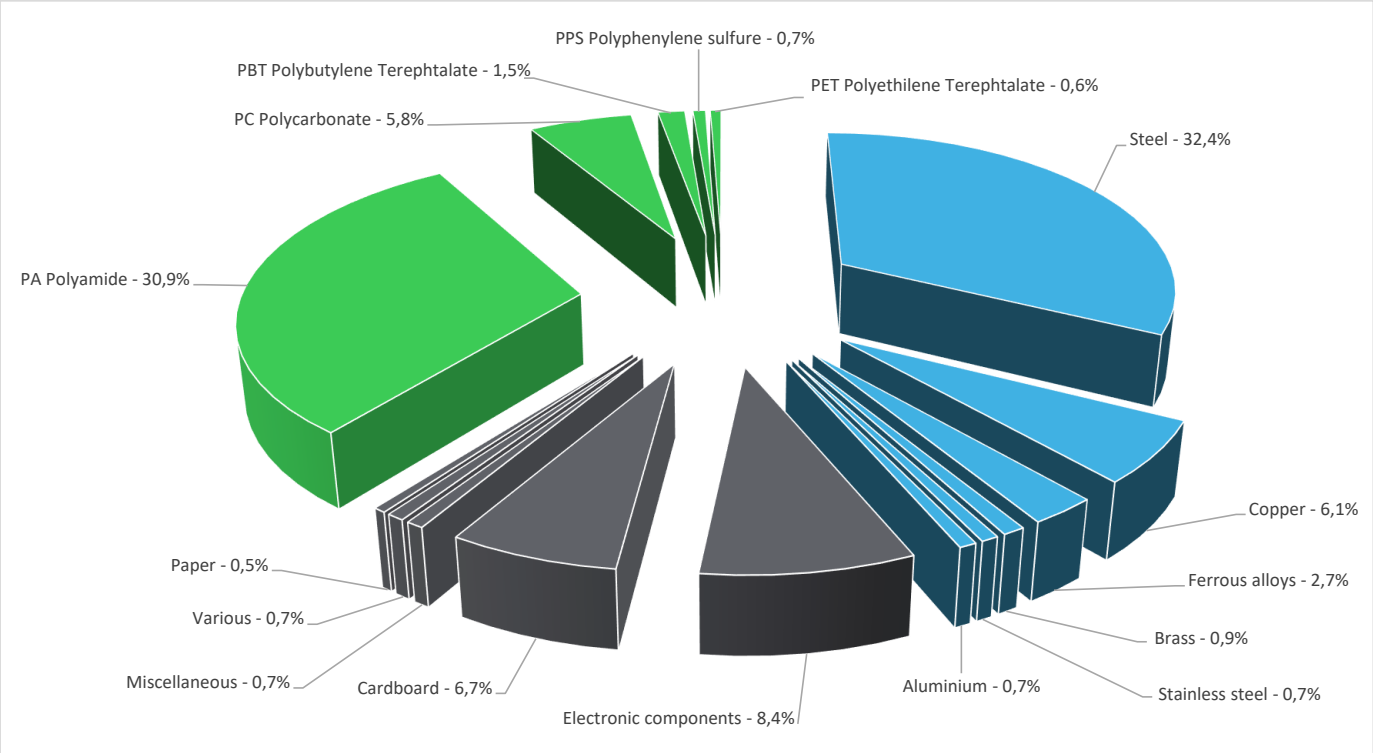
Representative of all Acti9 iCV60 ARC - RCBO - 2P - from 10A to 32A -C/B curve

General information

Reference product	Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve - A9TDF4216
Description of the product	This Acti9 iCV60 ARC product is an arc fault detection RCBO and protects against short circuit, cable overload, electrical shock by indirect contact and fire hazards.
Description of the range	The products of the range are: all the Acti9 iCV60 ARC - RCBO - 2P - from 10A to 32A -C/B curve The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology.
Functional unit	Provide for 20 years the following functions in final circuits with operational voltage 230VAC (Ue) and rated current 16A (In): ▪ circuit protection against overload and short-circuit currents (circuit breaker function) with the following characteristics : -number of poles : 2P -rated breaking capacity Icn = 10000A -tripping curve C ▪ protection for people against electric shocks by direct contacts and indirect contacts with the following characteristics : -sensitivity : 30mA, -type of differential protection : A-SI ▪ protection against fire hazards by detection of abnormal electric arcs, ▪ protection against load fire hazards due to slow overvoltages (network overvoltage), ▪ fire hazard tripping indication via the front panel indicator, ▪ tripping faults diagnosis by LED blinking in front face.
Specifications are:	Ue = 230V In = 16A Np = 12P Icn = 10000A Cd = Tripping curve C IP20 conforming to CEI 60529 IP40 conforming to CEI 60529 Low voltage (AC)

Constituent materials

Reference product mass	390 g	including the product, its packaging and additional elements and accessories



	Plastics	39,5%
	Metals	43,5%
	Others	17,0%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
https://www.se.com/ww/en/work/support/green-premium/

Additional environmental information

End Of Life	Recyclability potential:	**50%**	The recyclability rate was calculated from the recycling rates of each material making up the product with the exception of data using the ESR database. For materials or components using the ESR database or the absence of data the conservative hypothesis "0% recyclability" was used.

Environmental impacts

Reference service life time	20 years			
Product category	Combinations of functions			
Installation elements	No special components needed			
Use scenario	Load rate: 15% of 16A (In) Use time rate: 30% of the time over 20 years (RLT) Replacement of the product every 10 years because of the electronic card			
Time representativeness	The collected data are representative of the year 2024			
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are Similar and représentaive of the actual type of technologies used to make the product.			
Geographical representativeness	Europe			
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Low voltage; 2018; Spain, ES	Electricity Mix; High voltage; 2018; Europe, EU-27	Electricity Mix; High voltage; 2018; Europe, EU-27	Electricity Mix; High voltage; 2018; Europe, EU-27

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

Mandatory Indicators		**Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve - A9TDF4216**						
Impact indicators	**Unit**	**Total (without Module D)**	**[A1 - A3] - Manufacturing**	**[A4] - Distribution**	**[A5] - Installation**	**[B1 - B7] - Use**	**[C1 - C4] - End of life**	**[D] - Benefits and loads**
Contribution to climate change	kg CO2 eq	5,52E+01	4,54E+00	9,27E-02	2,92E-02	4,96E+01	9,42E-01	-6,68E-01
Contribution to climate change-fossil	kg CO2 eq	5,50E+01	4,48E+00	9,27E-02	2,78E-02	4,95E+01	9,38E-01	-6,58E-01
Contribution to climate change-biogenic	kg CO2 eq	1,84E-01	5,73E-02	0*	1,38E-03	1,21E-01	4,79E-03	-1,01E-02
Contribution to climate change-land use and land use change	kg CO2 eq	5,69E-05	2,83E-05	0*	0*	2,85E-05	1,43E-07	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	1,88E-06	8,41E-07	0*	3,78E-10	1,03E-06	3,49E-09	-1,12E-07
Contribution to acidification	mol H+ eq	3,23E-01	3,28E-02	6,18E-04	8,54E-05	2,87E-01	2,38E-03	-7,42E-03
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	5,52E-04	6,46E-05	0*	6,69E-07	3,36E-04	1,51E-04	-1,57E-06
Contribution to eutrophication marine	kg N eq	3,73E-02	3,53E-03	2,92E-04	3,72E-05	3,29E-02	5,24E-04	-4,34E-04
Contribution to eutrophication, terrestrial	mol N eq	5,23E-01	3,80E-02	3,20E-03	2,58E-04	4,76E-01	5,93E-03	-4,89E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	1,22E-01	1,27E-02	8,11E-04	5,92E-05	1,07E-01	1,76E-03	-1,88E-03
Contribution to resource use, minerals and metals	kg Sb eq	1,17E-03	5,77E-04	0*	0*	5,85E-04	4,77E-06	-1,91E-04
Contribution to resource use, fossils	MJ	1,33E+03	7,14E+01	1,29E+00	2,89E-01	1,22E+03	3,07E+01	-1,36E+01
Contribution to water use	m3 eq	3,37E+00	5,84E-01	3,51E-04	2,25E-03	2,47E+00	3,23E-01	-4,23E-01

Inventory flows Indicators		Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve - A9TDF4216						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2,19E+02	1,43E+00	0*	3,79E-02	2,17E+02	1,21E-01	-1,18E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	1,76E+00	8,80E-01	0*	0*	8,80E-01	0*	-4,03E-01
Contribution to total use of renewable primary energy resources	MJ	2,20E+02	2,31E+00	0*	3,79E-02	2,18E+02	1,21E-01	-5,22E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1,32E+03	6,72E+01	1,29E+00	2,89E-01	1,22E+03	3,07E+01	-1,36E+01
Contribution to use of non renewable primary energy resources used as raw material	MJ	8,44E+00	4,22E+00	0*	0*	4,22E+00	0*	0,00E+00
Contribution to total use of non-renewable primary energy resources	MJ	1,33E+03	7,14E+01	1,29E+00	2,89E-01	1,22E+03	3,07E+01	-1,36E+01
Contribution to use of secondary material	kg	4,28E-05	2,14E-05	0*	0*	2,14E-05	0*	0,00E+00
Contribution to use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to use of non renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to net use of freshwater	m^3	7,93E-02	1,39E-02	8,18E-06	5,25E-05	5,77E-02	7,53E-03	-9,85E-03
Contribution to hazardous waste disposed	kg	4,43E+01	2,17E+01	0*	0*	2,26E+01	3,22E-02	-1,54E+01
Contribution to non hazardous waste disposed	kg	1,23E+01	2,82E+00	3,25E-03	1,25E-02	9,32E+00	1,59E-01	-4,92E-01
Contribution to radioactive waste disposed	kg	3,34E-03	9,98E-04	2,31E-06	1,54E-06	2,33E-03	7,87E-06	-2,44E-04
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	4,00E-01	2,46E-02	0*	0*	2,00E-01	1,76E-01	0,00E+00
Contribution to materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to exported energy	MJ	8,74E-03	2,15E-03	0*	1,19E-03	3,77E-03	1,62E-03	0,00E+00

* represents less than 0.01% of the total life cycle of the reference flow

Contribution to biogenic carbon content of the product	kg de C	0,00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	7,82E-03

Mandatory Indicators		Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve - A9TDF4216						
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	4,96E+01	0*	0*	0*	5,57E+00	0*	4,40E+01	0*
Contribution to climate change-fossil	kg CO2 eq	4,95E+01	0*	0*	0*	5,51E+00	0*	4,40E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	1,21E-01	0*	0*	0*	6,21E-02	0*	5,87E-02	0*
Contribution to climate change-land use and land use change	kg CO2 eq	2,85E-05	0*	0*	0*	2,85E-05	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	1,03E-06	0*	0*	0*	8,45E-07	0*	1,88E-07	0*
Contribution to acidification	mol H+ eq	2,87E-01	0*	0*	0*	3,58E-02	0*	2,51E-01	0*
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	3,36E-04	0*	0*	0*	2,15E-04	0*	1,21E-04	0*
Contribution to eutrophication marine	kg N eq	3,29E-02	0*	0*	0*	4,34E-03	0*	2,85E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	4,76E-01	0*	0*	0*	4,72E-02	0*	4,29E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	1,07E-01	0*	0*	0*	1,53E-02	0*	9,16E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	5,85E-04	0*	0*	0*	5,82E-04	0*	3,19E-06	0*
Contribution to resource use, fossils	MJ	1,22E+03	0*	0*	0*	1,03E+02	0*	1,12E+03	0*
Contribution to water use	m3 eq	2,47E+00	0*	0*	0*	9,07E-01	0*	1,56E+00	0*

Inventory flows Indicators		Acti9 iCV60 ARC - Residual Current Breaker with Overcurrent - 2P - 16A - C curve - A9TDF4216							
Inventory flows	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2,17E+02	0*	0*	0*	1,55E+00	0*	2,15E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	8,80E-01	0*	0*	0*	8,80E-01	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	2,18E+02	0*	0*	0*	2,43E+00	0*	2,15E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1,22E+03	0*	0*	0*	9,91E+01	0*	1,12E+03	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	4,22E+00	0*	0*	0*	4,22E+00	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	1,22E+03	0*	0*	0*	1,03E+02	0*	1,12E+03	0*
Contribution to use of secondary material	kg	2,14E-05	0*	0*	0*	2,14E-05	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m³	5,77E-02	0*	0*	0*	2,15E-02	0*	3,63E-02	0*
Contribution to hazardous waste disposed	kg	2,26E+01	0*	0*	0*	2,18E+01	0*	8,22E-01	0*
Contribution to non hazardous waste disposed	kg	9,32E+00	0*	0*	0*	2,99E+00	0*	6,33E+00	0*
Contribution to radioactive waste disposed	kg	2,33E-03	0*	0*	0*	1,01E-03	0*	1,33E-03	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	2,00E-01	0*	0*	0*	2,00E-01	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	3,77E-03	0*	0*	0*	3,77E-03	0*	0*	0*

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 is used

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Registration number :	SCHN-01208-V01.01-EN	*Drafting rules*	PCR-4-ed4-EN-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH48	*Information and reference documents*	www.pep-ecopassport.org
Date of issue	06-2024	*Validity period*	5 years

Independent verification of the declaration and data, in compliance with ISO 14025 : 2006

Internal External X

The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 or NF E38-500 :2022

The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"

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