Product Environmental Profile

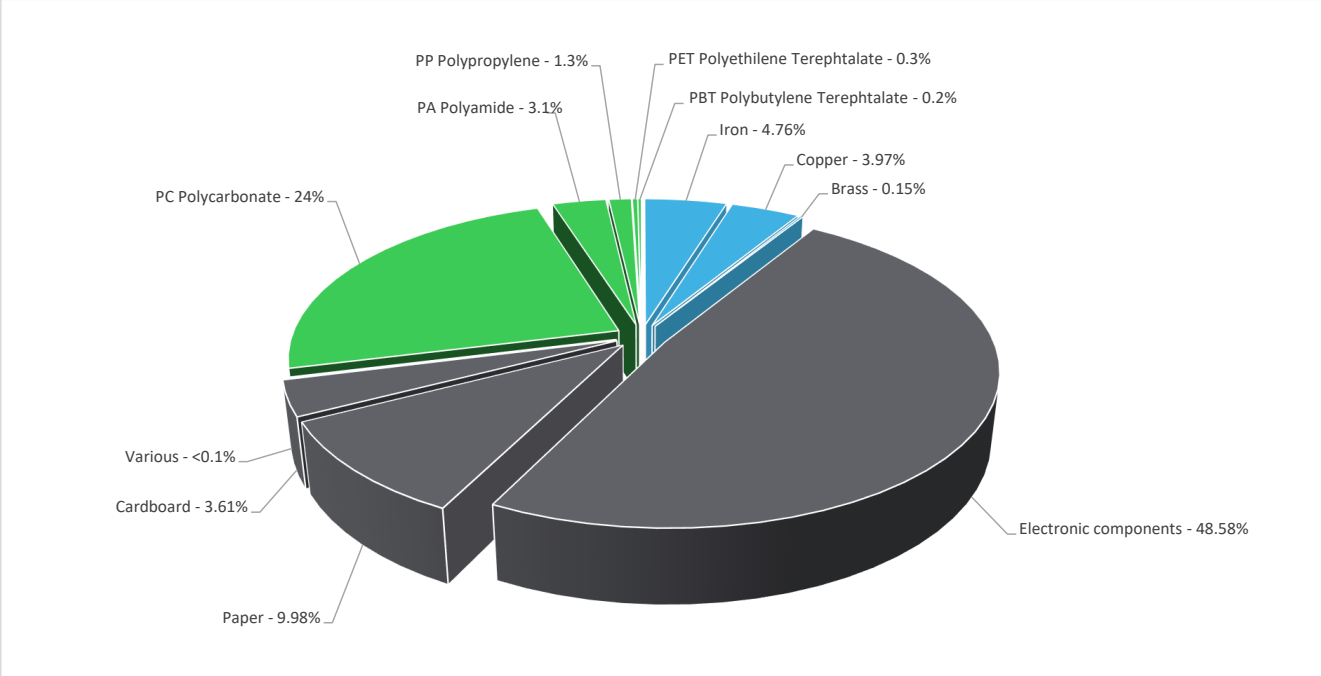
Earth-leakage relays: VIGIREX RH10M to RH99M with associated sensors

General information

Reference product	Earth-leakage relays: VIGIREX RH10M to RH99M with associated sensors - 56173 + 50437
Description of the product	The Vigirex RH10M to RH99M range of earth leakage protection relays with MA120 toroid sensor, which is designed to detect and measure the earth leakage current in an electrical installation. The relays interrupt the supply of power to the supervised network and protect the personnel against direct and indirect contact; they also protect property against fire hazards. The representative product used for the study is the Vigirex RH99M earth leakage protection relay with an MA120 toroid sensor.
Functional unit	Protect during 10 years people and premises at risk of fire or explosion with assigned voltage 220-240V by detecting and measuring the earth leakage current with sensitivity 0.3-30A.

Constituent materials

Reference product mass	609.41 g	including the product, its packaging and additional elements and accessories



	Plastics	28.9%
	Metals	8.9%
	Others	62.3%

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:	**10%**	Recyclability rate has been calculated based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the "ECO'DEEE recyclability and recoverability calculation method" was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	10 years			
Product category	Other equipments - Active product			
Installation elements	No special components needed during installation phase. The disposal of the packaging material is accounted for during this phase (Including transport to disposal).			
Use scenario	The product is in active mode 5% of the time with power use of 1W & in sleep mode with 1.2W for 10 years			
Technological representativeness	The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA-EIME in this case) are Similar and representative of the actual type of technologies used to make the product in production.			
Geographical representativeness	Europe			
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Production mix; Low voltage; FR	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27	Electricity Mix; Production mix; Low voltage; UE-27

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), 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		**Earth-leakage relays: VIGIREX RH10M to RH99M with associated sensors - 56173 + 50437**						
Impact indicators	**Unit**	**Total**	**Manufacturing**	**Distribution**	**Installation**	**Use**	**End of Life**	**Loads and Benefits**
			[A1 - A3]	**[A4]**	**[A5]**	**[B1 - B7]**	**[C1 - C4]**	**[D]**
Contribution to climate change	kg CO2 eq	9.48E+01	5.08E+01	7.97E-02	1.49E-01	4.27E+01	1.07E+00	-1.80E-01
Contribution to climate change-fossil	kg CO2 eq	9.47E+01	5.08E+01	7.97E-02	1.43E-01	4.27E+01	1.03E+00	-2.18E-01
Contribution to climate change-biogenic	kg CO2 eq	1.01E-01	4.06E-03	0*	6.63E-03	5.70E-02	3.30E-02	3.73E-02
Contribution to climate change-land use and land use change	kg CO2 eq	8.95E-08	2.20E-09	0*	5.15E-09	0*	8.22E-08	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	4.96E-06	4.73E-06	0*	9.89E-09	1.83E-07	3.98E-08	-4.81E-08
Contribution to acidification	mol H+ eq	6.44E-01	3.84E-01	5.13E-04	5.92E-04	2.44E-01	1.51E-02	-4.73E-03
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	3.14E-04	1.07E-05	0*	1.10E-06	1.17E-04	1.85E-04	-8.50E-07
Contribution to eutrophication marine	kg N eq	7.86E-02	4.02E-02	2.41E-04	1.57E-04	2.77E-02	1.04E-02	-1.87E-04
Contribution to eutrophication, terrestrial	mol N eq	8.65E-01	4.38E-01	2.64E-03	1.19E-03	4.16E-01	6.45E-03	-1.63E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	2.53E-01	1.61E-01	6.67E-04	3.17E-04	8.89E-02	2.40E-03	-7.00E-04
Contribution to resource use, minerals and metals	kg Sb eq	5.23E-03	5.22E-03	0*	0*	3.10E-06	4.94E-06	-5.20E-05
Contribution to resource use, fossils	MJ	2.12E+03	1.01E+03	1.11E+00	1.55E+00	1.09E+03	1.22E+01	-1.34E+00
Contribution to water use	m3 eq	1.92E+02	6.90E+00	0*	6.49E-02	1.51E+00	1.84E+02	-2.21E-01

Additional indicators for the French regulation are available as well

Inventory flows Indicators		Earth-leakage relays: VIGIREX RH10M to RH99M with associated sensors - 56173 + 50437						
Inventory flows	Unit	Total	Manufact. [A1 - A3]	Distribution [A4]	Installation [A5]	Use [B1 - B7]	End of Life [C1 - C4]	Loads and Benefits [D]
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2.12E+02	2.01E+00	0*	1.12E-01	2.09E+02	9.17E-01	6.33E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	1.49E-01	1.49E-01	0*	0*	0*	0*	-2.38E-01
Contribution to total use of renewable primary energy resources	MJ	2.12E+02	2.16E+00	0*	1.12E-01	2.09E+02	9.17E-01	3.95E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	2.11E+03	1.01E+03	1.11E+00	1.55E+00	1.09E+03	1.22E+01	-1.64E+00
Contribution to use of non renewable primary energy resources used as raw material	MJ	7.94E+00	7.94E+00	0*	0*	0*	0*	2.97E-01
Contribution to total use of non-renewable primary energy resources	MJ	2.12E+03	1.01E+03	1.11E+00	1.55E+00	1.09E+03	1.22E+01	-1.34E+00
Contribution to use of secondary material	kg	9.18E-02	9.18E-02	0*	0*	0*	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	5.00E+00	1.61E-01	0*	1.51E-03	3.52E-02	4.80E+00	-5.15E-03
Contribution to hazardous waste disposed	kg	2.07E+01	1.94E+01	0*	0*	7.98E-01	5.32E-01	-4.34E+00
Contribution to non hazardous waste disposed	kg	1.18E+01	4.96E+00	2.79E-03	4.85E-01	6.15E+00	1.90E-01	-1.77E+00
Contribution to radioactive waste disposed	kg	7.22E-03	5.85E-03	1.99E-06	6.51E-05	1.29E-03	9.73E-06	-1.07E-04
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	1.36E-01	0*	0*	8.28E-02	0*	5.30E-02	0.00E+00
Contribution to materials for energy recovery	kg	1.37E-08	1.37E-08	0*	0*	0*	0*	0.00E+00
Contribution to exported energy	MJ	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the product	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg de C	0.00E+00	0*	0*	0*	0*	0*	0.00E+00

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

Life cycle assessment performed with EIME version v5.9.4, database version 2022-01 in compliance with ISO14044.

Detailed results, including all the optional indicators mentioned in PCRed4, and the split of the Use Phase (B1 to B7), are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.schneider-electric.com/contact

The manufacturing phase has the greatest impacts contribution on the majority of environmental indicators, except for Climate change-Biogenic (PEF-GWPb), Climate change-Land use and land use change (PEF-GWPlu), Eutrophication, freshwater (PEF-Epf), Resource use, fossils (PEF-ADPf) and Water use (PEF-WU). This contribution is mainly due to the energy consumption throughout the product reference service lifetime

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.

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Verifier accreditation N°	VH08	*Supplemented by*	PSR-0005-ed2-2016 03 29
Date of issue	12/2023	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010			
Internal	External X		
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)			
PEP are compliant with XP C08-100-1 :2016 or EN 50693:2019			
The elements of the present PEP cannot be compared with elements from another program.			
Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Type III environmental declarations »			

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