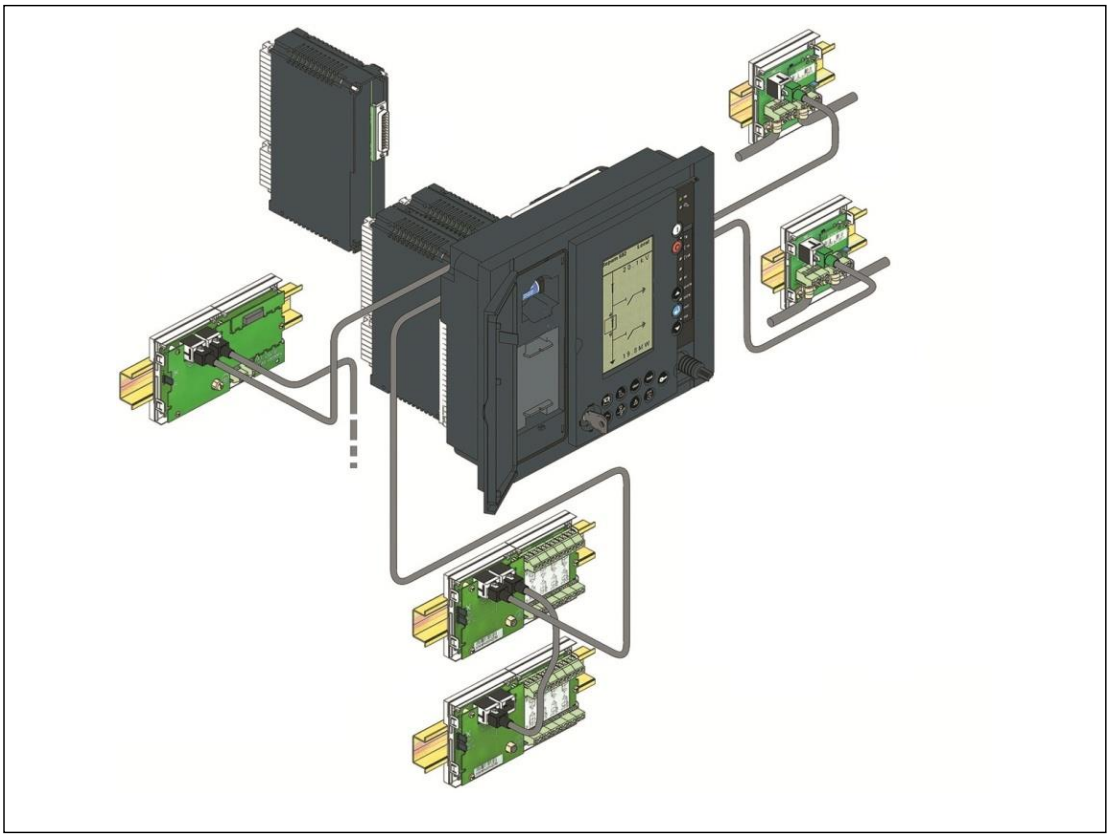
Product Environmental Profile

Sepam 80 - Advanced protection relay range

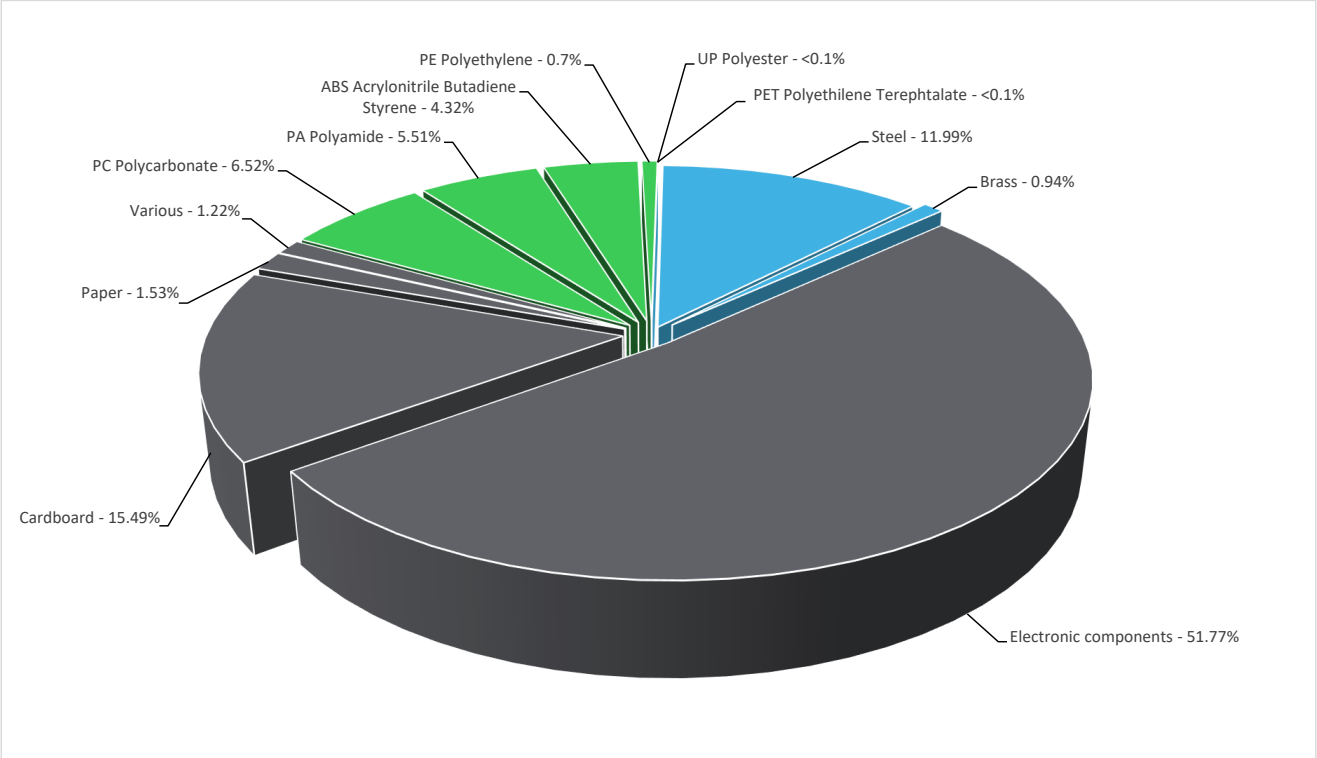


General information

Reference product	Sepam 80 - Advanced protection relay range - The Reference Product is an assembly of the following Commercial References 59705, 59707, 59715, 59630, 59723 and 59663
Description of the product	SEPAM 80 is a digital protection relay that can be used for advanced applications. It's designed for protection functions and applications for motors, generators, busbars, capacitors, substations, and transformers in any electrical distribution system.
Description of the range	Single product
Functional unit	To detect faults on electrical systems, according to the reference usage scenario and during a reference service life of 10 years of continuous operations
Specifications are:	SEPAM 80 is to provide advanced protection, control, and monitoring for electrical systems during the life time of 10 years . It helps ensure the reliability and safety of power distribution and industrial facilities by offering a wide range of protection functions, measurement capabilities, and communication options. Rated supply voltage (Us) range from 24 VDC to 250 VDC Supply inrush current : < 10 A for 10 ms at 24/250 V DC Rated impulse withstand voltage (Uimp) : 5 kV (1.2/50 µs) conforming to IEC 60255-5 User machine interface type : Mimic-based It is certified by CE, UL508, and CSA C22.2 NEMA degree of protection : Type 12 conforming to NEMA The degree of protection is IP52 on the front panel and IP20 on other parts conforming to IEC 60529

Constituent materials

Reference product mass	5716 g	including the product, its packaging, additional elements and accessories



Plastics	17.1%
Metals	12.9%
Others	70.0%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric website
https://www.se.com

Additional environmental information

End Of Life	Recyclability potential:	**17%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	10years			
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study			
Electricity consumption	The electricity consumed during manufacturing processes is considered for each part of the product individually. The final assembly generates a negligible consumption and was not considered in the analysis.			
Installation elements	This product doesnot require any installation operation			
Use scenario	The product is in active mode 100% of the time with a power use of 10.6W ,during life time of 10 years.			
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 representative of the actual type of technologies used to make the product.			
Geographical representativeness	**Final assembly site**	**Use phase**		**End-of-life**
	France	Global		Global
Energy model used	**[A1 - A3]**	**[A5]**	**[B6]**	**[C1 - C4]**
	Electricity Mix; Low voltage; 2020; France, FR Electricity Mix; Low voltage; 2020; China, CN	No energy used	Electricity Mix; Low voltage; 2020; Europe, EU-27 Electricity Mix; Low voltage; 2020; Asia Pacific, APAC Electricity Mix; Low voltage; 2020; United States, US	Global, European and French datasets are used.

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.se.com/contact

Mandatory Indicators		**Sepam 80 - Advanced protection relay range - The Reference Product is an assembly of the following Commercial References 59705, 59707, 59715, 59630, 59723 and 59663**						
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	7.86E+02	1.50E+02	3.34E+00	1.79E-01	6.20E+02	1.28E+01	-2.57E+00
Contribution to climate change-fossil	kg CO2 eq	7.84E+02	1.51E+02	3.34E+00	1.72E-01	6.17E+02	1.28E+01	-2.56E+00
Contribution to climate change-biogenic	kg CO2 eq	2.29E+00	0*	0*	7.21E-03	3.25E+00	4.82E-03	-5.69E-03
Contribution to climate change-land use and land use change	kg CO2 eq	5.83E-04	5.83E-04	0*	0*	0*	3.96E-07	0.00E+00
Contribution to ozone depletion	kg CFC-11 eq	2.73E-05	2.41E-05	5.13E-09	0*	3.16E-06	5.44E-08	-3.80E-07
Contribution to acidification	mol H+ eq	4.88E+00	7.51E-01	2.24E-02	5.34E-04	4.09E+00	1.45E-02	-1.52E-02
Contribution to eutrophication, freshwater	kg P eq	1.60E-03	1.16E-03	1.26E-06	5.35E-07	3.72E-04	6.60E-05	-3.91E-06
Contribution to eutrophication marine	kg N eq	5.53E-01	8.47E-02	1.05E-02	2.47E-04	4.53E-01	5.11E-03	-1.49E-03
Contribution to eutrophication, terrestrial	mol N eq	6.56E+00	9.52E-01	1.16E-01	2.56E-03	5.44E+00	5.34E-02	-1.73E-02
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.82E+00	2.79E-01	2.93E-02	6.06E-04	1.50E+00	1.34E-02	-6.05E-03
Contribution to resource use, minerals and metals	kg Sb eq	4.15E-02	4.14E-02	0*	0*	8.11E-05	0*	-8.27E-04
Contribution to resource use, fossils	MJ	1.32E+04	2.17E+03	4.67E+01	0*	1.09E+04	3.18E+01	-6.04E+01
Contribution to water use	m3 eq	1.64E+02	1.28E+02	0*	1.01E-01	3.55E+01	5.37E-01	-1.11E+00

Inventory flows Indicators		Sepam 80 - Advanced protection relay range - The Reference Product is an assembly of the following Commercial References 59705, 59707, 59715, 59630, 59723 and 59663						
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	1.48E+03	1.98E+02	0*	0*	1.28E+03	9.49E-01	-4.78E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	2.44E+01	2.44E+01	0*	0*	0*	0*	0.00E+00
Contribution to total use of renewable primary energy resources	MJ	1.51E+03	2.23E+02	0*	0*	1.28E+03	9.49E-01	-4.78E-01
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.31E+04	2.10E+03	4.67E+01	0*	1.09E+04	3.18E+01	-6.04E+01
Contribution to use of non renewable primary energy resources used as raw material	MJ	7.04E+01	7.04E+01	0*	0*	0*	0*	0.00E+00
Contribution to total use of non-renewable primary energy resources	MJ	1.32E+04	2.17E+03	4.67E+01	0*	1.09E+04	3.18E+01	-6.04E+01
Contribution to use of secondary material	kg	0.00E+00	0*	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	3.79E+00	2.95E+00	0*	2.35E-03	8.28E-01	1.38E-02	-2.58E-02
Contribution to hazardous waste disposed	kg	7.24E+02	7.03E+02	0*	0*	1.74E+01	2.92E+00	-6.53E+01
Contribution to non hazardous waste disposed	kg	1.64E+02	5.37E+01	1.17E-01	1.03E+00	1.07E+02	2.05E+00	-2.13E+00
Contribution to radioactive waste disposed	kg	4.19E-02	3.12E-02	8.37E-05	0*	1.05E-02	1.04E-04	-9.59E-04
Contribution to components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*	0.00E+00
Contribution to materials for recycling	kg	9.03E-01	1.23E-01	0*	0*	0*	7.80E-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	8.21E-03	1.03E-03	0*	0*	0*	7.18E-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 of C	0.00E+00
Contribution to biogenic carbon content of the associated packaging	kg of C	2.81E-01

* The calculation of the biogenic carbon is based on the Ademe for the Cardboard (28%), EN16485 for Wood (39,52%), and APESA/RECORD for Paper (37,8%)

Mandatory Indicators		Sepam 80 - Advanced protection relay range - The Reference Product is an assembly of the following Commercial References 59705, 59707, 59715, 59630, 59723 and 59663							
Impact indicators	Unit	[B1 - B7] - Use	[B1]	[B2]	[B3]	[B4]	[B5]	[B6]	[B7]
Contribution to climate change	kg CO2 eq	6.20E+02	0*	0*	0*	0*	0*	6.20E+02	0*
Contribution to climate change-fossil	kg CO2 eq	6.17E+02	0*	0*	0*	0*	0*	6.17E+02	0*
Contribution to climate change-biogenic	kg CO2 eq	3.25E+00	0*	0*	0*	0*	0*	3.25E+00	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	3.16E-06	0*	0*	0*	0*	0*	3.16E-06	0*
Contribution to acidification	mol H+ eq	4.09E+00	0*	0*	0*	0*	0*	4.09E+00	0*
Contribution to eutrophication, freshwater	kg P eq	3.72E-04	0*	0*	0*	0*	0*	3.72E-04	0*
Contribution to eutrophication marine	kg N eq	4.53E-01	0*	0*	0*	0*	0*	4.53E-01	0*
Contribution to eutrophication, terrestrial	mol N eq	5.44E+00	0*	0*	0*	0*	0*	5.44E+00	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	1.50E+00	0*	0*	0*	0*	0*	1.50E+00	0*
Contribution to resource use, minerals and metals	kg Sb eq	8.11E-05	0*	0*	0*	0*	0*	8.11E-05	0*
Contribution to resource use, fossils	MJ	1.09E+04	0*	0*	0*	0*	0*	1.09E+04	0*
Contribution to water use	m3 eq	3.55E+01	0*	0*	0*	0*	0*	3.55E+01	0*

Inventory flows Indicators		Sepam 80 - Advanced protection relay range - The Reference Product is an assembly of the following Commercial References 59705, 59707, 59715, 59630, 59723 and 59663							
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	1.28E+03	0*	0*	0*	0*	0*	1.28E+03	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	1.28E+03	0*	0*	0*	0*	0*	1.28E+03	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.09E+04	0*	0*	0*	0*	0*	1.09E+04	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	1.09E+04	0*	0*	0*	0*	0*	1.09E+04	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	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	m^3	8.28E-01	0*	0*	0*	0*	0*	8.28E-01	0*
Contribution to hazardous waste disposed	kg	1.74E+01	0*	0*	0*	0*	0*	1.74E+01	0*
Contribution to non hazardous waste disposed	kg	1.07E+02	0*	0*	0*	0*	0*	1.07E+02	0*
Contribution to radioactive waste disposed	kg	1.05E-02	0*	0*	0*	0*	0*	1.05E-02	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

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

Life cycle assessment performed with EIME version v6.2.4, database version 2024-01 in compliance with ISO14044, EF3.1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

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-01366-V01.01-EN	*Drafting rules*	PEP-PCR-ed4-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH42	*Information and reference documents*	www.pep-ecopassport.org
Date of issue	07-2025	*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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