Product Environmental Profile

Eaton Z-SCH 4 Pole Installation contactor with 40A rated current

Representative product	Z-SCH230/40-40 (Y7-248852) Product Category: Contactors, remote Control Switch
Description of the product	Eaton Z-SCH Installation contactor are designed to establish and cut off the supply of a downstream installation from an electrical and/or mechanical control in industrial application areas. The reference product has 4 poles and rated voltage of 440 V AC.
Homogeneous Environmental Families Covered	The PEP concerns following product offerings from Eaton Z-SCH Installation contactor as mentioned below: 248853 - Z-SCH230/40-22 248854 - Z-SCH230/40-31 218855 – Z-SCH230/40-20
Functional unit	Establish and cut off the supply of a downstream installation from an electrical and/or mechanical control characterised by the composition of 4 NO poles, a rated voltage of 440V AC, a rated current 40A at AC-1, a control circuit voltage 230V AC, with 4 poles, and IP20 rating in the in the Industrial application areas, according to the appropriate use scenario, and during the reference service life of the product of 20 years.
Company information	Eaton Industries (Austria) GmbH Eugenia 1, 3943 Schrems, Austria Email: productstewardship-es@eaton.com

Constituent Materials			
Reference product mass	4.10E-01 kg (With packaging)		
Category PEP Material	**Materials**	**Mass (kg)**	**Percentage (%)**
Metals	Stainless Steel with Chrome	1.51E-01	36.80%
Plastics	Polyamide 6	1.08E-01	26.40%
Metals	Copper	7.69E-02	18.80%
Others	Cardboard	6.07E-02	14.80%
Metals	Cast Iron	7.54E-03	1.80%
Metals	Nickel	2.24E-03	<1.0%
Plastics	Polyoxymethylene (POM)	1.29E-03	<1.0%
Metals	Brass	1.12E-03	<1.0%
Metals	Tin	3.03E-04	<1.0%
Metals	Bronze	1.80E-04	<1.0%
Plastics	Polycarbonate (PC)	1.70E-04	<1.0%
Others	Silicon Rubber	1.24E-04	<1.0%
Metals	Zinc	6.42E-05	<1.0%
Metals	Silver	1.21E-05	<1.0%
Total		**4.10E-01**	**100.00%**

Substance Assessment
The representative product is compliant with the EU-RoHS Directive (2011/65/EU) without exemption and the product does not contain substances as Substance-of-Very-High-Concern (SVHC) on the Candidate List of the EU-REACH Regulation (1907/2006/EC).

Additional Environmental Information	
Manufacturing	The reference product is manufactured at the direct source supplier plant in Austria which has set operational procedures for environmental protection and complies with local regulations.
Distribution	Eaton is committed to minimizing weight and volume of product and packaging with focus to optimize transport efficiency.
Installation	The installation process does not require any energy consumption and there is no waste other than the obsolete product packaging generated during this step.
Use	The product requires energy consumption during operation.
End of life	The recyclability rate of the overall product is 92.2% if it is properly dismantled prior to shredding. The rate is calculated based on “ECO’DEEE recyclability and recoverability calculation method” (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

Environmental Impacts	
The calculation of the environmental impacts is the result of the Product's Life Cycle Analysis in accordance with ISO 14040/44, covering the entire lifecycle, i.e., "Cradle-to-Grave" including the following life cycle phases: production, distribution, installation, use and end of life. System modelling was carried out using the commercial LCA software EIME v6.3.2-4 with database version CODDE-2025-04. Indicators Set: PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0	
Manufacturing Phase	The reference product is manufactured at the direct source supplier plant in Austria. Energy model used: Austria
Distribution Phase	Distribution of the product in its packaging from the Eaton's last logistics platform to the installation place in Europe is considered as per actual data.
Installation Phase	Product is installed in Europe. Installation of product and treatment of packaging waste are considered in this phase. There is no energy consumption for reference product. Energy model used: Europe
Use Phase	Reference lifetime: 20 Years Usage profile: The product has power loss of 14.6 W at full load condition. For industrial applications considering 50% of the loading rate and 50% use time rate, total losses are 319.74 kWh over the 20 years. Product do not require any maintenance/replacement during useful life. Energy Model Used: Europe
End of life Phase	Product disposed with WEEE guidelines. Energy model used: Europe
Module-D	Module D is calculated according to PCR-ed4-EN-2021 09 06 based on the materials recycled and the modelled end-of-life scenario. It expresses the net benefits and loads beyond the boundaries of the system and are not to be included in the life cycle totals.

Environmental Impact Indicators: Mandatory

Mandatory environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Climate change - total	kg CO2 eq.	1.33E+02	3.12E+00	9.21E-02	1.75E-01	1.29E+02	3.36E-01	1.29E+02	-1.56E+00
Climate change - fossil fuels	kg CO2 eq.	1.30E+02	3.16E+00	9.21E-02	7.60E-02	1.26E+02	3.33E-01	1.26E+02	-1.61E+00
Climate change - biogenics	kg CO2 eq.	2.91E+00	-4.37E-02	3.77E-07	9.89E-02	2.85E+00	2.40E-03	2.85E+00	5.43E-02
Climate change - land use and land use transformation	kg CO2 eq.	8.22E-07	5.61E-07	1.39E-07	8.47E-10	0.00E+00	1.21E-07	0.00E+00	-2.16E-07
Ozone depletion	kg eq. CFC-11	1.04E-06	4.70E-07	1.12E-09	9.68E-10	5.54E-07	1.47E-08	5.54E-07	-2.75E-07
Acidification (AP)	mole of H+ eq.	7.15E-01	3.61E-02	1.45E-04	2.05E-04	6.77E-01	1.84E-03	6.77E-01	-1.79E-02
Freshwater eutrophication	kg P eq.	3.55E-04	4.32E-05	3.44E-07	9.10E-07	3.10E-04	9.30E-07	3.10E-04	-3.35E-05
Marine aquatic eutrophication	kg of N eq.	8.17E-02	2.20E-03	2.64E-05	9.47E-05	7.92E-02	2.15E-04	7.92E-02	-1.16E-03

Mandatory environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Terrestrial eutrophication	mole of N eq.	1.30E+00	2.61E-02	2.89E-04	6.22E-04	1.27E+00	2.52E-03	1.27E+00	-1.26E-02
Photochemical ozone formation	kg of NMVOC eq.	2.61E-01	8.93E-03	9.36E-05	1.45E-04	2.51E-01	7.14E-04	2.51E-01	-4.59E-03
Depletion of abiotic resources - elements	kg eq. Sb	4.23E-04	3.81E-04	3.29E-08	3.46E-09	4.19E-05	6.54E-08	4.19E-05	-2.17E-04
Depletion of abiotic resources - fossil fuels	MJ	3.16E+03	5.14E+01	1.64E+00	6.74E-01	3.10E+03	5.84E+00	3.10E+03	-2.52E+01
Water scarcity	m3 of eq.. deprivation worldwide	1.20E+01	1.94E+00	3.32E-03	5.65E-03	9.80E+00	2.49E-01	9.80E+00	-9.86E-01

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	7.31E+02	4.54E+00	5.16E-03	9.28E-02	7.26E+02	5.94E-01	7.26E+02	-1.82E-01
Use of renewable primary energy resources used as raw materials	MJ	1.43E+00	1.43E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.96E-01
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	7.32E+02	5.98E+00	5.16E-03	9.28E-02	7.26E+02	5.94E-01	7.26E+02	-1.08E+00
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	3.16E+03	4.77E+01	1.64E+00	6.74E-01	3.10E+03	5.84E+00	3.10E+03	-2.21E+01
Use of non-renewable primary energy resources used as raw materials	MJ	3.70E+00	3.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.06E+00
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	3.16E+03	5.14E+01	1.64E+00	6.74E-01	3.10E+03	5.84E+00	3.10E+03	-2.52E+01
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m3	2.82E-01	4.55E-02	7.72E-05	4.41E-04	2.29E-01	6.68E-03	2.29E-01	-2.30E-02
Hazardous waste disposed of	kg	3.15E+01	2.76E+01	3.85E-04	3.76E-03	3.57E+00	3.55E-01	3.57E+00	-1.63E+01
Non-hazardous waste disposed of	kg	2.11E+01	1.31E+00	8.55E-03	2.45E-02	1.95E+01	2.85E-01	1.95E+01	-4.03E-01
Radioactive waste disposed of	kg	4.91E-03	2.73E-04	6.77E-06	4.35E-06	4.59E-03	3.27E-05	4.59E-03	-1.45E-04

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	5.24E-01	1.45E-01	0.00E+00	4.98E-02	0.00E+00	3.29E-01	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ by energy vector	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	kg of C.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg of C.	3.35E-02	3.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Environmental Impact Indicators: Optional

Optional Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B1-B7 - Use	C1-C4 - End of life	B6 - Operational energy use	D - Benefits and loads beyond the system boundaries
Emission of fine particles	incidence of diseases	5.78E-06	4.71E-07	1.25E-09	1.20E-09	5.30E-06	1.22E-08	5.30E-06	-2.57E-07
Ionizing radiation, human health	kBq of U235 eq.	1.70E+02	7.68E-01	3.26E-03	9.12E-03	1.69E+02	1.46E-01	1.69E+02	-2.58E-01
Ecotoxicity, fresh water	CTUe	3.22E+03	3.02E+03	2.69E+00	1.02E+00	1.94E+02	2.83E+00	1.94E+02	-2.56E+03
Human toxicity, cancer effects	CTUh	1.81E-06	1.79E-06	1.80E-11	7.28E-09	1.60E-08	2.26E-10	1.60E-08	-1.06E-06
Human toxicity, non-cancer effects	CTUh	7.25E-07	3.43E-07	3.44E-10	2.17E-10	3.79E-07	3.03E-09	3.79E-07	-2.06E-07
Impacts related to land use/soil quality	-	3.45E+00	1.53E-02	3.94E-04	2.05E-04	3.43E+00	7.99E-03	3.43E+00	-6.02E-04
Total use of primary energy during the life cycle	MJ	3.89E+03	5.73E+01	1.64E+00	7.67E-01	3.83E+03	6.44E+00	3.83E+03	-2.63E+01

To evaluate the environmental impact of other product covered by this PEP, multiply the impact figures by-

Factors for Manufacturing, Distribution, Installation, Use, End-of-Life, and Module-D Phase:

Part Number	Product Description	Multiplying Factor for different phases					
		Manufacturing	Distribution	Installation	Use	End of Life	Module D
248852 (reference)	Z-SCH230/40-40 (reference)	1.00					
248853	Z-SCH230/40-22	1.00			0.59	1.00	
248854	Z-SCH230/40-31	1.00			0.79	1.00	
248855	Z-SCH230/40-20	1.00			0.59	1.00	

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		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025: 2006			
Internal	X	External	
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 *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 »			