Product Environmental Profile

Harmony XALD
Empty or equipped control station enclosures

PEP ecoPASSPORT®

Schneider Electric

Product Environmental Profile - PEP

Product Overview

The range of control station enclosures designed for Harmony diameter 22 plastic control and signalling units is the best solution for mounting control and signalling units. It is watertight and dustproof and ensures optimum protection.
The XAL range consists of plastic enclosures with 1 to 5 cut-outs.

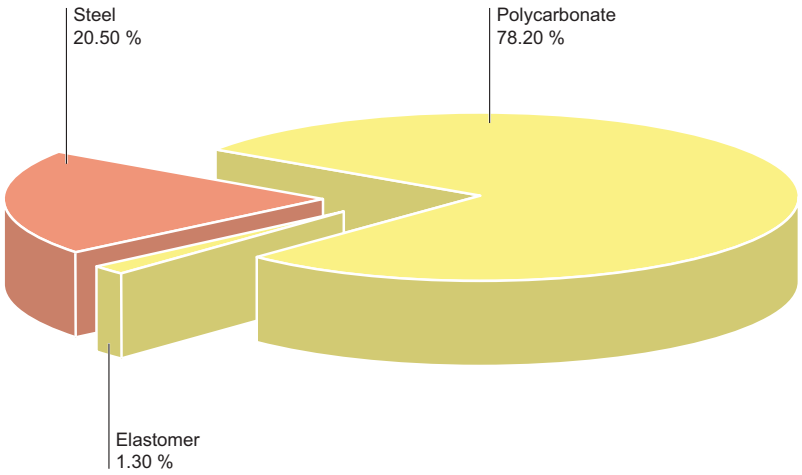
This table summarises the XB4 B control unit range:

Reference	Number of cut-outs	Service life
XAL D	1 to 5	30
XAL K	1	30

Products can be supplied empty or equipped with pushbuttons and / or pilot lights. In the second case, to determine the environmental impacts, use this PEP and add the impacts described in the buttons and / or pilot lights PEP.
The product chosen for the environmental analysis of the XAL range is the XALD01. It is representative of all the empty wall-mounted control station enclosures in the XAL range; the same manufacturing process is used for the other products in the range.
The environmental analysis was performed in conformity with ISO 14040 "Environmental management: Life cycle assessment – Principle and framework". This analysis takes all the stages in the life cycle of the product into account : extraction of raw materials and manufacture of materials, manufacture of the product, utilisation, distribution (transport and packaging), end of life.

Constituent materials

The mass of the XALD01 is 106 g, not including the packaging and it is distributed as follows:



Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2002/95/EC of 27 January 2003) and do not contain, or in the authorised proportions, lead, mercury, cadmium, chromium hexavalent, flame retardant (polybromobiphenyles PBB, polybromodiphenylthers PBDE) as mentioned in the Directive.

Manufacturing

The XAL product range is manufactured at a Schneider Electric production site operating an ISO 14001 certified environmental management system.

Product Environmental Profile - PEP

Distribution

The packaging was designed in compliance with the European Union's 94/62/EC packaging directive in order to reduce the weight and volume and consequently the environmental impact of the distribution phase of the life cycle of the product.
The packaging of the XALD01 weighs approximately 10 g and is made only of 100 % recyclable cardboard.
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

Utilization

The products in the XAL range generate no environmental pollution requiring special precautionary measures (noise, emissions, etc.); they do not use any energy.

End of life

The end of life of an empty enclosure in the XAL range is naturally related to that of the button(s) it contains: the two sub-assemblies must be considered independently.
However, at the end of life of this "enclosure + button" assembly, no component or sub-assembly requires any particular depollution or manual dismantling; the product can be crushed as is, without any special precautionary measures being required. Consequently, the recovery potential of the "enclosure" sub-assembly can nevertheless be calculated separately.
The recyclability potential of the products has been evaluated using the "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).
According to this method, the potential recyclability ratio is: 99 %.
As described in the recyclability calculation method this ratio includes only metals and plastics which have proven industrial recycling processes.

Environmental impacts

The EIME (Environmental Impact and Management Explorer) software, version 1.6, and its database, version 5.4, were used for the Life Cycle Assessment (LCA) of the XALD01 enclosure chosen as representative of the range.
The analysis focused on an XALD01 enclosure which uses no energy.
The EIME software was used to model the environmental impacts on the Manufacturing phase (including the extraction of raw materials and processing of basic materials) and on the Distribution and Utilisation phases of the life cycle. The results of the LCA performed with the EIME software are as follows:

Presentation of product environmental impacts:

Environmental indicators	Unit	Impacts for 1 x XALD01			
		S = M + D + U	M	D	U
Raw Material Depletion	**Y-1**	**$2.67\ 10^{-17}$**	$2.41\ 10^{-17}$	$2.54\ 10^{-18}$	0
Water Depletion	**dm^3**	**3.17**	2.66	$5.11\ 10^{-1}$	0
Global Warming Potential	**g≈CO_2**	**$7.34\ 10^{2}$**	$5.76\ 10^{2}$	$1.58\ 10^{2}$	0
Ozone Depletion	**g≈CFC-11**	**$4.71\ 10^{-5}$**	$1.51\ 10^{-5}$	$3.20\ 10^{-5}$	0
Photochemical Ozone Creation	**g≈C_2H_4**	**$8.91\ 10^{-1}$**	$6.20\ 10^{-1}$	$2.71\ 10^{-1}$	0
Air Acidification	**g≈H^+**	**$1.26\ 10^{-1}$**	$1.03\ 10^{-1}$	$2.21\ 10^{-2}$	0
Hazardous Waste Production	**kg**	**$4.22\ 10^{-3}$**	$4.20\ 10^{-3}$	$2.21\ 10^{-5}$	0

Most of the environmental impacts are caused by the Manufacturing phase. The Utilisation phase does not generate any such impacts, as the product does not use any electricity.

Product Environmental Profile - PEP

System approach

As the product of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction within an assembly or an installation submitted to this Directive.

N.B.: please note that the environmental impacts of the product depend on the use and installation conditions of the product.
Impacts values given above are only valid within the context specified and cannot be directly used to draw up the environmental assessment of the installation.

Glossary

Raw Material Depletion (RMD)

This indicator quantifies the consumption of raw materials during the life cycle of the product. It is expressed as the fraction of natural resources that disappear each year, with respect to all the annual reserves of the material.

Energy Depletion (ED)

This indicator gives the quantity of energy consumed, whether it be from fossil, hydroelectric, nuclear or other sources.
This indicator takes into account the energy from the material produced during combustion. It is expressed in MJ.

Water Depletion (WD)

This indicator calculates the volume of water consumed, including drinking water and water from industrial sources. It is expressed in dm^3.

Global Warming (GW)

The global warming of the planet is the result of the increase in the greenhouse effect due to the sunlight reflected by the earth's surface being absorbed by certain gases known as "greenhouse-effect" gases. The effect is quantified in gram equivalent of CO_2.

Ozone Depletion (OD)

This indicator defines the contribution to the phenomenon of the disappearance of the stratospheric ozone layer due to the emission of certain specific gases. The effect is expressed in gram equivalent of CFC-11.

Photochemical Ozone Creation (POC)

This indicator quantifies the contribution to the "smog" phenomenon (the photochemical oxidation of certain gases which generates ozone) and is expressed in gram equivalent of ethylene (C_2H_4).

Air Acidification (AA)

The acid substances present in the atmosphere are carried by rain.
A high level of acidity in the rain can cause damage to forests.
The contribution of acidification is calculated using the acidification potentials of the substances concerned and is expressed in mode equivalent of H^+.

Hazardous Waste Production (HWP)

This indicator calculates the quantity of specially treated waste created during all the life cycle phases (manufacturing, distribution and utilization). For example, special industrial waste in the manufacturing phase, waste associated with the production of electrical power, etc.
It is expressed in kg.

Registration No.: SCHN-2011-113-V0	Programme information: www.pep-ecopassport.org
PEP in compliance with PEPecopassport according to PEP-AP0011 rules	
ACV rules are available from PEP editor on request	

We are committed to safeguarding our planet by "Combining innovation and continuous improvement to meet the new environmental challenges".

Schneider Electric Industries SAS
35, rue Joseph Monier
CS30323
F - 92506 Rueil Malmaison Cedex

RCS Nanterre 954 503 439
Capital social 896 313 776 €
www.schneider-electric.com

Published by: Schneider Electric