Product Environmental Profile

Harmony XVB
70 mm diameter indicator bank

PEP ecoPASSPORT®

Schneider Electric

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Product Overview

The main purpose of the Harmony XVB product range is to provide optical or audible signalling, in particular in order to indicate the different states or sequences of a machine or installation from a distance and through 360°.
Examples: starting or stopping a machine, insufficient material, calling personnel, etc.

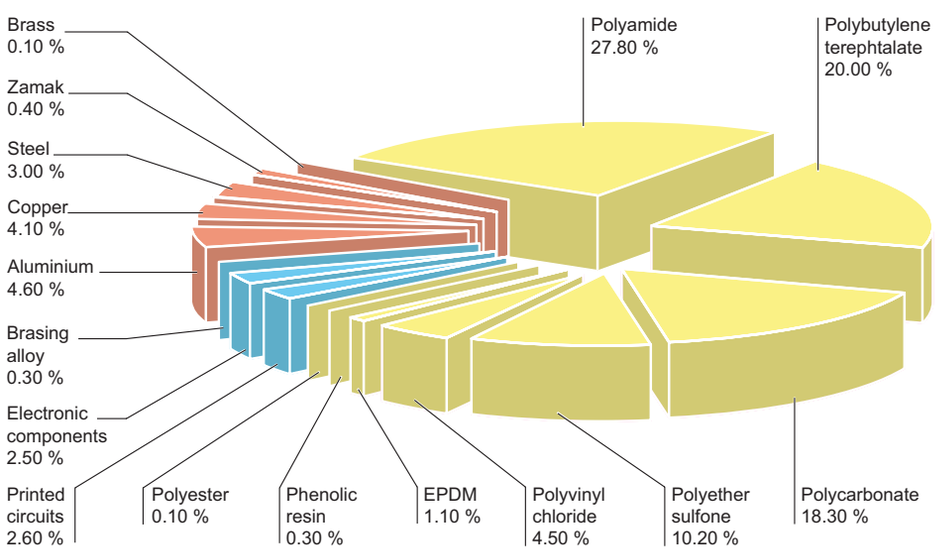
This range consists of the following components:

Description	Source	Type	Reference
Beacon	Steady, flashing or “flash” signal	Lamp, LED or discharge tube	XVB L
Illuminated unit	Steady, flashing or “flash” signal	Lamp, LED or discharge tube	XVB C
Audible unit	90 dB buzzer		XVB C9
Base uni			XVB C07 / XVB C21
Accessories	Assembled foot units and mounting bases		XVB Z 01/02/03/04 / XVB C12

The representative product used for the analysis is the illuminated LED indicator bank consisting of various units (XVB C21, XVB C2B4, XVB C2B3, XVB C5B8 and XVB Z02).
The environmental impacts of this referenced product are representative of the impacts of the other products in the range for which the same technology is used.
The environmental analysis was performed in conformity with ISO 14040 "Environmental management: Life cycle assessment – Principle and framework".
This analysis takes the stages in the life cycle of the product into account.

Constituent materials

The mass of the products in the range varies according to the model chosen. It is 674 g for the XVB (XVB C21, XVB C2B4, XVB C2B3, XVB C5B8 and XVB Z02) illuminated LED indicator bank analysed.
The constituent materials are 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 Harmony XVB product range is manufactured at a Schneider Electric production site operating an ISO 14001 certified environmental management system.

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Distribution

The weight and volume of the packaging have been reduced in compliance with the European Union's packaging directive.
The weight of the packaging of the XVB (XVB C21, XVB 2B4, XVB C2B3, XVB C5B8 and XVB Z02) illuminated LED indicator bank is 111 g.
It consists of cardboard and low density polyethylene, which are 100 % recyclable materials.
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

Utilization

The products in the Harmony XVB range do not generate any environmental pollution requiring special precautionary measures (noise, emissions, etc.).
The dissipated power depends on the conditions under which the product is implemented and used.

The power consumption of the "Harmony XVB" product range is 6 W in active mode and 0.72 W in standby mode for the XVB (XVB C21, XVB C2B4, XVB C2B3, XVB C5B8 and XVB Z02) illuminated LED indicator bank referenced.

End of life

At end of life, the products in the Harmony XVB range can either be dismantled or crushed to facilitate the recovery of the various constituent materials.
The recycling potential of the product is more than 41 %. This percentage includes mainly the metals as well as some plastics such as the polycarbonate and polyvinyl chloride.
The end of life data appears on the product end-of-life sheet.

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.
The assumed service life of the product is 10 years, the utilisation rate of the installation is 34 % and the European electrical power model is used.
The analysis focused on an XVB (XVB C21B, XVB C2B4, XVB C2B3, XVB C5B8 and XVB Z02) indicator bank.
The environmental impacts were analysed for the Manufacturing (M) phase, including the processing of raw materials, and for the Distribution (D) and Utilisation (U) phases..

Presentation of product environmental impacts

Environmental indicators	Unit	For an XVB (XVB C21B, XVB C2B4, XVB C2B3, XVB C5B8 and XVB Z02) illuminated Led indicator bank			
		S = M + D + U	M	D	U
Depletion of natural resources	Y-1	**$1.36\ 10^{-14}$**	$1.33\ 10^{-14}$	$1.97\ 10^{-17}$	$2.83\ 10^{-16}$
Water depletion	dm^3	**$6.34\ 10^{2}$**	$5.80\ 10^{2}$	5.66	48.5
Contribution to the greenhouse effect	g≈CO_2	**$9.18\ 10^{4}$**	$6.80\ 10^{4}$	$1.16\ 10^{3}$	$2.27\ 10^{4}$
Destruction of the ozone layer	g≈CFC-11	**$1.60\ 10^{-2}$**	$1.16\ 10^{-2}$	$2.42\ 10^{-4}$	$4.14\ 10^{-3}$
Atmospheric ozone creation	g≈C_2H_4	**73.9**	55.7	2.03	16.2
Air acidification	g≈H^+	**54.4**	50.3	$1.71\ 10^{-1}$	3.96
Hazardous waste production	kg	**1.54**	1.21	$3.50\ 10^{-4}$	$3.35\ 10^{-1}$

The life cycle analysis showed that the Manufacturing phase (phase M) has the greatest impact on most of the environmental indicators and the environmental parameters of this phase were optimised at the design stage.

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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 methane (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.

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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

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