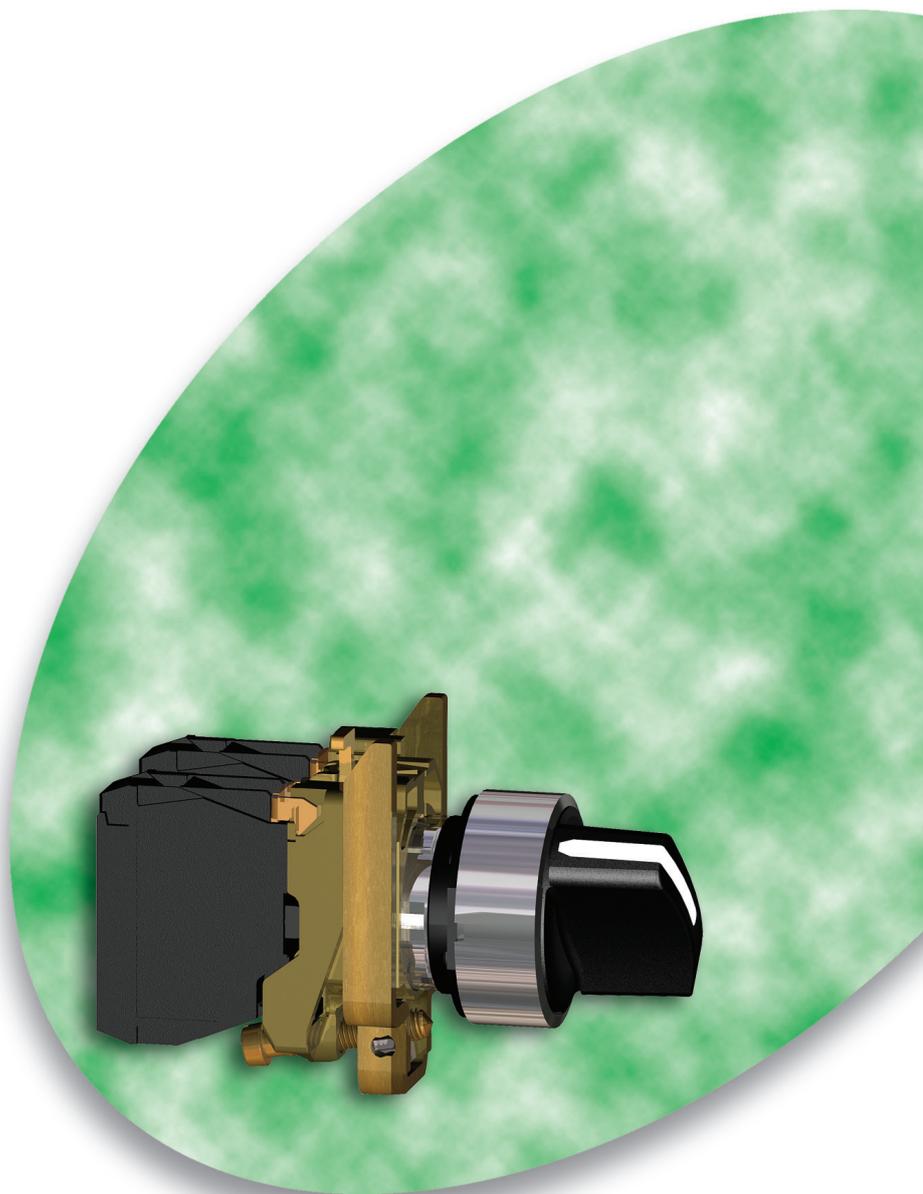


Ø 22 mm Control Units
Harmony XB4

Product Environmental Profile



Product Environmental Profile - PEP

Product overview

The control units in the *Harmony diameter 22* product range are used industrially for man-machine communication and in the construction industry (lighting or safety controls and for small automated controls).

The *Harmony XB4* range consists of metal products with pulsed or rotary actuators. The contacts are fixed to the body and vary from 1 to 6 in number.

This table summarises the *XB4 B* control units:

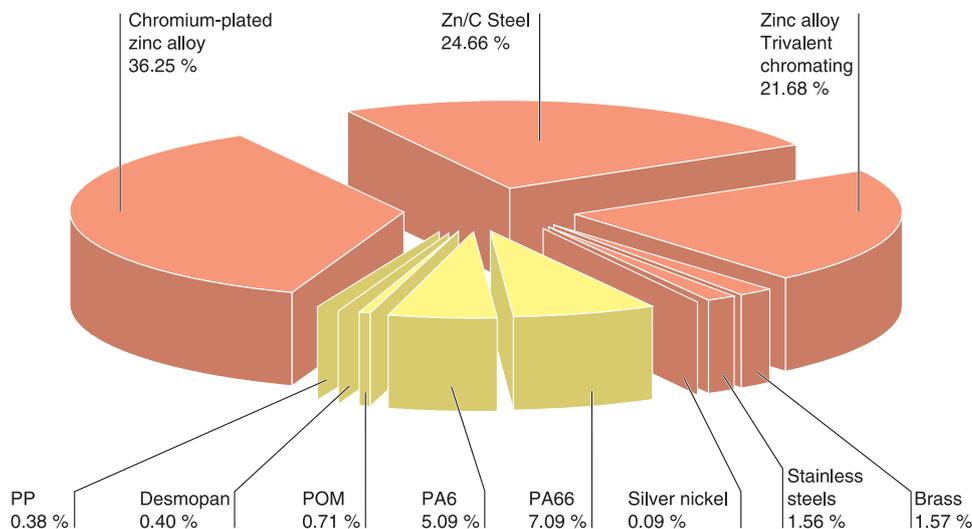
Reference	Type of actuator	Service life (in millions of operating cycles)
XB4 BA/BL	Pushbutton	5
XB4 BD/Bf	Rotary knob	1
XB4 BG	Key rotary switch	1
XB4 BC	Punch button	5

The product chosen for the environmental analysis of the range is the *XB4BD21*. It is representative of all the control units and the *Harmony diameter 22* 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 *XB4BD21* is 86.5 g, not including the packaging, and it is distributed as follows:



All necessary steps are taken with our services, suppliers and subcontractors to ensure that our products contain no substances prohibited by the legislation in force ⁽¹⁾ when they are put on the market.

(1) List available on request.

Manufacturing

The *Harmony diameter 22* product range is manufactured at a Schneider Electric production site on which an ISO 14001 certified Environmental Management System has been established.

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 *XB4BD21* weighs 8.5 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.

Product Environmental Profile - PEP

Utilization

The Harmony diameter 22 range of control units generates no pollution requiring special precautionary measures (noise, emissions, etc.); they do not use any energy.

End of life

At end of life, no special depollution measures or manual dismantling are needed for any of the components or sub-assemblies ; the product can be crushed as is, without any special precautionary measures being required.

The proportion of recyclable material in the representative product, XB4BD21, is greater than 85 % in terms of mass. This percentage includes all the metal parts: zinc alloy, steel, brass.

Environmental impacts

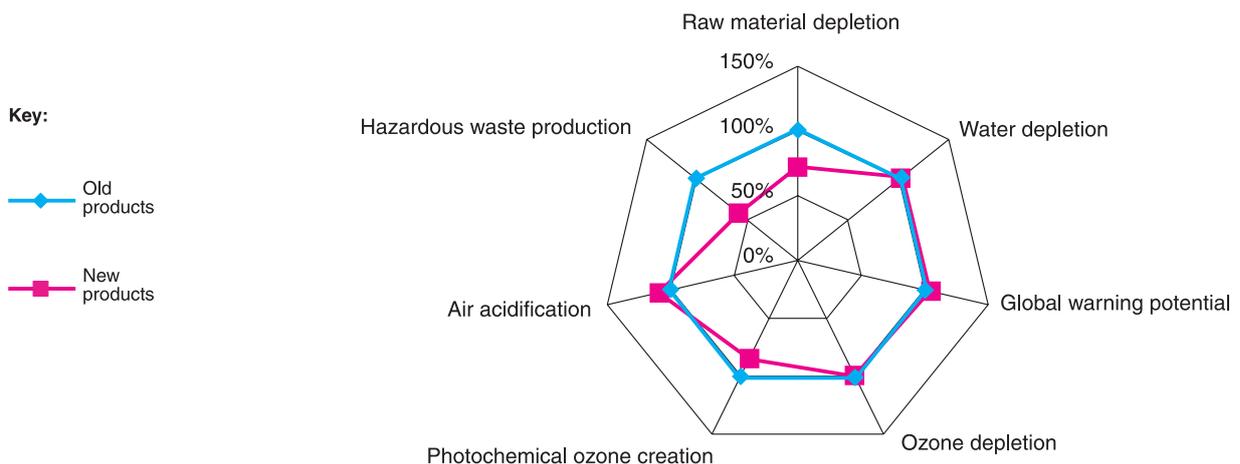


The EIME (Environmental Impact and Management Explorer) software, version 1.6, and its database, version 5.4, were used for the Life Cycle Assessment (LCA) of the rotary knob chosen as representative of the range.

The analysis focused on an XB4BD21 rotary knob which uses no energy. For the purposes of the LCA, its estimated service life is 20 years.

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



Most of the environmental impacts are caused by the Manufacturing phase, but they are minimised because of the compact nature of the product. The Utilisation phase does not generate any such impacts, as the product does not use any electricity.

Product Environmental Profile - PEP

System approach

It is important to remember that the product environmental report must take into account the application or installation in which the product is incorporated: the environmental impact values given above are only valid within the specified context.

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 Potential (GWP)

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.



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

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This document is based on ISO 14020 which relates to the general principles of environmental declarations and the ISO TR 14025 technical report relating to type III environmental declarations. It was produced according to the instructions in the PEP drafting guide, version 4.

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