Product Environmental Profile

Magelis XBT RT

Compact semi-graphic display terminal

PEP ecoPASSPORT®

Schneider Electric

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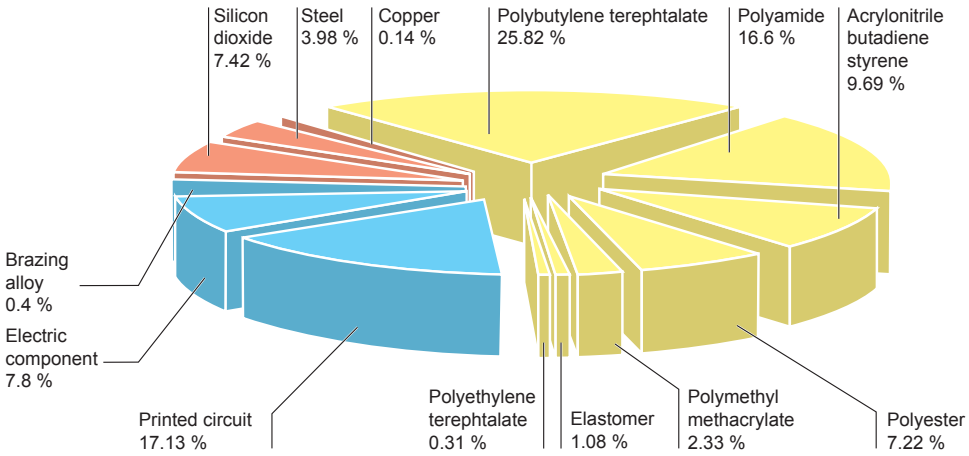
Product Overview

Magelis XBT RT is the most compact and flexible semi-graphic display terminal.
Highly flexible and innovative user interface with configurable touchpad and keyboard, in addition to customisable keys with labels that can be recaptioned, XBT RT and the Twido and Modicon M340 are a winning combination.
XBT RT has a 3.9” matrix screen that can display international character sets (ASCII, Cyrillic, Chinese, Katakana) and semi-graphic objects (Bitmap, Bar graph, Curve, Button, Indicator light, etc.). Its installation is optimised with a single cable for the power supply and for communication with the PLCs.
XBT RT uses configuration software (VijeoDesigner Lite) available in 6 languages, including Chinese, that is highly suitable for low end terminals.
The representative product used for the analysis was the XBT RT500.
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 configuration analysed for the XBT RT500 was 415 g, not including the packaging.
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 XBT RT500 is manufactured at a Schneider Electric production site on which an ISO 14001 certified environmental management system has been established.

Distribution

The packaging of the XBT RT500 has been designed to reduce its weight and volume, in compliance with the European Union’s packaging directive.
The weight of the packaging of the XBT RT500 is 132 g. Its packaging consists mainly of cardboard and paper, which are 100 % recyclable materials.
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

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Utilization

The XBT RT500 does not generate any environmental pollution requiring special precautionary measures (noise, emissions, and so on).
The dissipated power depends on the conditions under which the product is implemented and used.
The power consumption of the XBT RT500 is 1 W max.

End of life

At end of life, the XBT RT500 must be dismantled so that the LCD screen and the electronic cards can be sent to a specialised recycling centre.
The mass of this screen accounts for 5 % of the product mass.
The electronic cards are crushed and plastics recycled.
The recycling potential is more than 20 %. This percentage mainly includes plastics.
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 utilization rate of the installation is 34 % and the European electrical power model is used.

The analysis focused on an XBT RT500.

The environmental impacts were analysed for the Manufacturing (M) phase, including the processing of raw materials, and for the Distribution (D) and Utilization (U) phases.

Presentation of product environmental impacts

Environmental indicators	Unit	For the XBT RT500 terminal selected			
		S = M + D + U	M	D	U
Raw Material Depletion	**Y-1**	**$1.32\ 10^{-14}$**	98 %	0 %	2 %
Water Depletion	**dm^3**	**$3.86\ 10^{2}$**	88 %	1 %	11 %
Global Warming	**g≈CO_2**	**$6.02\ 10^{4}$**	67 %	1 %	32 %
Ozone Depletion	**g≈CFC-11**	**$1.06\ 10^{-2}$**	65 %	2 %	33 %
Photochemical Ozone Creation	**g≈C_2H_4**	**48.5**	69 %	3 %	28 %
Air Acidification	**g≈H^+**	**20.5**	83 %	1 %	16 %
Hazardous Waste Production	**kg**	**$9.84\ 10^{-1}$**	71 %	0 %	29 %

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 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.

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

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