Product Environmental Profile

HMI STU

Schneider Electric

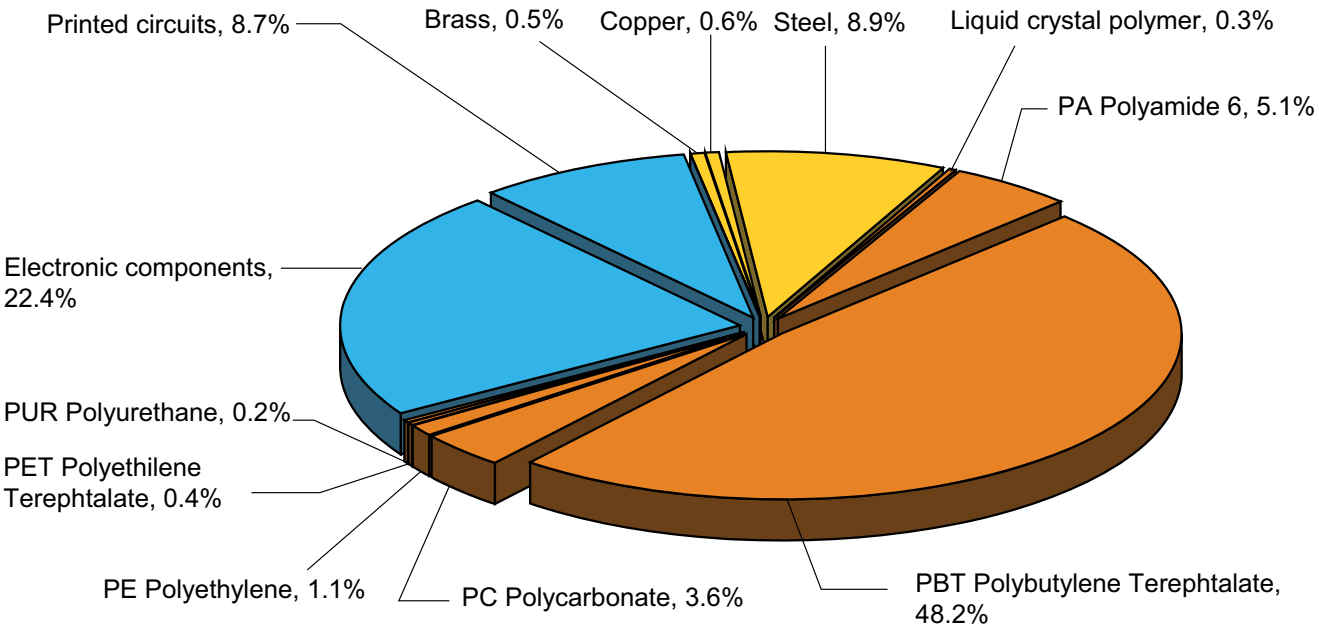
Product Environmental Profile - PEP

Product Overview

Magelis STU product range consists of a new serie of Small Panels based on compact touch graphic Terminals.
This range presents a revolutionary mounting system like a pushbutton to simplify installation of the product on machines.
These new panels bring also beautiful screen with 65K color TFT display and large communication capabilities with Serial port , Ethernet port and two USB ports.
Magelis STU fits particularly HMI needs for small industrial machines and supports all relative standards.
The representative product used for the analysis is HMI STU 655.
The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with the similar technology.
The extrapolation rules are described in the following chapters.
The environmental analysis was performed in conformity with ISO14040.
This analysis takes in account the complete life cycle of the product.

Constituent materials

The mass of the product range is from 378 g to 433 g no including packaging. It is 378 g for the HMI STU 655.
The constituent materials are distributed as follows:



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 mentionned in the Directive.

Manufacturing

The HMI STU product range is manufactured at a Schneider Electric production site on which an ISO14001 certified environmental management system has been established.

Distribution

The weight and volume of the packaging have been reduced, in compliance with the European Union's packaging directive.
The HMI STU 655 packaging weight is 119 g. It consists of cardboard (88 g) and paper (31 g).
The product distribution flows have been optimised by setting up local distribution centres close to the market areas.

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Use

The products of the HMI STU range do not generate 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 electrical power consumed by the HMISTU range spreads out 6.5 W. It is 100% in active mode for the referenced HMISTU655.

End of life

At end of life, the products in the HMI STU have been optimized to decrease the amount of waste and valorise the components and materials of the product.
This product range contains indicate the WEEE subassemblies concerned that should be separated from the stream of waste so as to optimize the end of life treatment by a special treatment. The location of this components and the other recommendations are given in the End of Life Instruction available for this product range.
The potential of recyclability of the products has been evaluated using the Codde" recyclability and recoverability calculation method" (version V1, 20 Sep. 2008) and published by ADEME (French Agency for Environment and Energy Management).
According this method, the potential recyclability ratio is: 11.7 %.
As described in the recyclability calculation method, this ratio includes metals and plastics chosen for their proven industrial recycling processes, but do not include materials which don't have such proven treatment processes (ie most type of plastics which are not recycled…).

Environmental impacts

The life cycle assessment has been achieved on the following life phases: Materials and Manufacturing (M) , Distribution (D), Utilisation (U).

Modelisation hypothesis and impact results :
■ The calculation has been done on HMISTU655.
■ This product range is included in the category Energy Consuming Product (assumed lifetime service is 10 years and using scenario : 6.5W for 100% in active mode).
■ The electrical power model used is chinese model.

Presentation of the environmental impacts

Indicator	Unit	For HMI STU 655			
		S = M + D + U	M	D	U
Raw Material Depletion	**Y-1**	**$35 . 10^{-12}$**	100%	0%	0%
Energy Depletion	**MJ**	**$5.8 . 10^{3}$**	17%	3%	80%
Water Depletion	**dm^3**	**$1.2 . 10^{3}$**	66%	0%	34%
Global Warming	**g≈CO_2**	**$455.8 . 10^{3}$**	12%	3%	84%
Ozone Depletion	**g≈CFC-11**	**$23.6 . 10^{-3}$**	55%	1%	44%
Air Toxicity	**m^3**	**$117 . 10^{6}$**	12%	2%	86%
Photochemical Ozone Creation	**g≈C_2H_4**	**90.5**	29%	13%	58%
Air Acidification	**g≈H^+**	**99.5**	11%	2%	87%
Water Toxicity	**dm^3**	**$21 . 10^{3}$**	57%	0%	42%
Water Eutrophication	**g≈PO_4**	**2.9**	69%	1%	30%
Hazardous Waste Production	**kg**	**11.1**	7%	0%	93%

The EIME (Environmental Impact and Management Explorer) software, version 4.0, and its database, version 10 were used for the life cycle assessment (LCA).
The life cycle analysis shows that the Use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators.
According to the environmental analysis, the environmental indicators (without RMD) of other products in this family may be proportional extrapolated by energy consumption values.

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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.

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

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It is complying with ISO14020 which relates to the general principles of environmental declarations and to the ISO 14025 relating to life-cycle environmental declarations.
This PEP Eco-Passport PCR V12 has been used.

It has to be noticed that the data of this PEP cannot be directly compared with datas of programs which don't use the same LCA rules.

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