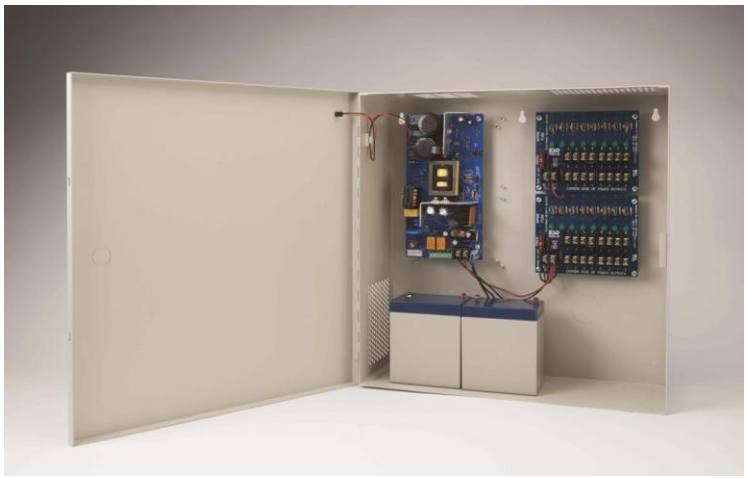
ENVIRONMENTAL PRODUCT DECLARATION

SECURITRON

AQD6 SERIES POWER SUPPLY



6 Amp Dual Voltage Power Supply: converts 115VAC or 240VAC into 12 or 24VDC with over 90% efficiency, metal enclosure protects from tamper and accidental contact, distribution board allows for multiple fused outputs as well as integration with access control systems

SECURITRON
ASSA ABLOY

ASSA ABLOY is committed to providing products and services that are environmentally sound throughout the entire production process and the product lifecycle. Our unconditional aim is to make sustainability a central part of our business philosophy and culture, but even more important is the job of integrating sustainability into our business strategy. The employment of EPDs will help architects, designers and LEED-APs select environmentally preferable door openings. The Securitron AQD6 Series Power Supply EPD provides detailed requirements with which to evaluate the environmental and human health impacts related to producing our door openings. ASSA ABLOY will continue our efforts to protect the environment and health of our customers/end users and will utilize the EPD as one means to document those efforts.

Institut Bauen und Umwelt e.V.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

SECURITRON
ASSA ABLOY

Securitron
AQD6 Series Power Supply

According to EN 15804 and ISO 14025
Dual Recognition by UL Environment and Institut Bauen und Umwelt e.V.

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	ASSA ABLOY / Hanchett Entry Systems, Inc / Securitron
ULE DECLARATION NUMBER	4786545067.137.1
IBU DECLRATION NUMBER	EPD-ASA-20150130-IBA1-EN
DECLARED PRODUCT	Securitron AQD6 Series Power Supply
REFERENCE PCR	Electronic Access Control Systems, 11-2013 (PCR tested and approved by the dependent expert committee (SVA))

DATE OF ISSUE	May 18, 2015
PERIOD OF VALIDITY	5 years

CONTENTS OF THE DECLARATION	General information Product / Product description LCA calculation rules LCA scenarios and further technical information LCA results References

The PCR review was conducted by:	IBU – Institut Bauen und Umwelt e.V. PCR was approved by the Independent Expert Committee (SVA)
The CEN Norm EN 15804 serves as the core PCR. This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	Wade Stout
This life cycle assessment was independently verified in accordance with EN 15804 and the reference PCR by:	IBU – Institut Bauen und Umwelt e.V.

Environment

1. General Information

Hanchett Entry Systems, Inc

Programme holder

IBU - Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number

EPD-ASA-20150130-IBA1-EN

This Declaration is based on the Product Category Rules:

Electronic Access Control Systems, 11-2013
(PCR tested and approved by the independent expert committee (SVA))

Issue date

18.05.2015

Valid to

17.05.2020

Prof. Dr.-Ing. Horst J. Bossenmayer
(President of Institut Bauen und Umwelt e.V.)

Dr.-Ing. Burkhart Lehmann
(Managing Director IBU)

Securitron AQD6 Series Power Supply

Owner of the Declaration

Hanchett Entry Systems, Inc
10027 S 51st Street, Suite 102
Phoenix, AZ 85044

Declared product / Declared unit

This Declaration represents 1 model AQD6 Series Power Supply, with enclosure and distribution board.

Scope:

The Life Cycle Assessment is based on data collected from the Integrated Micro-Electronics Incorporated production facility in Laguna Binan, Philippines and the IM Tech facilities in Cavite, Philippines. Final assembly takes place in USA.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Verification

The CEN Standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025
☐ internally ☒ externally

Dr. Wolfram Trinius
(Independent verifier appointed by SVA)

2. Product

2.1 Product description

Product name: Securitron AQD6 Series Power Supply

Product characteristic: 6 Amp Dual Voltage Power Supply

- Converts 115VAC or 240VAC into 12 or 24VDC with over 90% efficiency
- Metal Enclosure protects from tamper and accidental contact
- Distribution board allows for multiple fused outputs as well as integration with Access Control Systems
- UL Listed

2.2 Application

The AQD6 Series is suitable for all 12 or 24VDC powered access control devices including card readers, locks, access control panels, and security cameras installed in almost any facility.

2.3 Technical Data

The table presents the technical properties of Securitron AQD6 Series power Supply:

Technical data

Name	Value	Unit
Input Voltage	115/230	VAC
Output Voltage	12/24	VDC
Output Current	6	A
Battery Charge Current	0.7	A

2.4 Placing on the market / Application rules

Compliance with US and Canadian Directives

- UL294 6th Edition Listed
- UL 603 Listed
- ULC S318 Listed
- UL1481 Listed
- RoHS Compliant

2.5 Delivery status

Each power supply is individually packaged in a cardboard box sized 14" x 14" x 4.75".

2.6 Base materials / Ancillary materials

The average composition of the Securitron AQD6 Series power supply is as following:

Component	Percentage in mass (%)
Copper	0.12
Plastics	0.01
Steel	74.68
Electronic	25.18
Others	0.01
Total	**100.0**

2.7 Manufacture

The Securitron AQD6 Series Power Supply is assembled at the production facility at Integrated Micro-Electronics, Inc (IMI). The electronic components, including printed circuit boards (PCBs), are purchased externally and assembled at IMI. Final assembly takes place in USA.

2.8 Environment and health during manufacturing

The Management system of Lifesafety power is ISO 9001 and ISO 14001.

2.9 Product processing/Installation

AQD6 Series Power Supply is installed by trained product integrators or by the product end user. Installation instructions are included with each reader unit.

2.10 Packaging

The Power supply is packaged in cardboard.

Material	Value (%)
Cardboard/ Paper	100.0
Total	**100.0**

2.11 Condition of use

No auxiliary or consumable materials are incurred for maintenance and usage of the power supply. Repairs or replacement are not usually necessary. No cleaning efforts need to be taken into consideration.

2.12 Environment and health during use

There are no interactions between products, the environment and health.

2.13 Reference service life

The service life of the AQD6 Series is estimated to be 10 years.

2.14 Extraordinary effects

Fire

No danger to the environment can be anticipated during exposure to fire.

Water

No substances are used which have a negative impact on ecological water quality on contact by the device with water.

Mechanical destruction

No danger to the environment can be anticipated during mechanical destruction.

2.15 Re-use phase

During the reference service life the power supply can be disconnected and dismounted then remounted and attached elsewhere. The packaging and enclosure are recyclable. The circuit boards are directed to an appropriate recycling center to prevent introduction to the solid waste cycle.

2.16 Disposal

The product can be mechanically dissembled to separate the different materials. 99.99% of the materials used are recyclable. The rest is disposed as a construction waste for landfill.

2.17 Further information

Securitron
10027 S 51st Street, Suite 102
Phoenix, AZ 85044
Tel: 800-624-5625
www.securitron.com

3. LCA: Calculation rules

3.1 Declared Unit

The declaration refers to the functional unit of 1 piece of AQD6 Series Power Supply as specified in Part B requirements on the EPD for Electronic Access Control Systems /IBU PCR Part B/.

Declared unit

Name	Value	Unit
Declared unit	1	piece of AQD6 Series Power Supply
Conversion factor to 1 kg	0.1733	-
Mass of product (without packaging)	5.772	kg

3.2 System boundary

Type of the EPD: cradle to gate - with options
The following life cycle phases were considered:

A1-A3 Production stage:

- A1 – Raw material extraction and processing
- A2 – Transport to the manufacturer and
- A3 – Manufacturing.

Construction stage:

- A4 - Transport from the gate to the site
- A5 – Packaging waste processing

Use stage related to the operation of the building includes:

- B6 – Operational energy use (Energy consumption for lock operation)

End-of-life stage:

- C2 – Transport to waste processing,

- C3 – Waste processing for recycling and
- C4 – Disposal (landfill).

These information modules include provision and transport of all materials, products, as well as energy and water provisions, waste processing up to the end-of-waste state or disposal of final residues.

Module D:
- Declaration of all benefits or recycling potential from EoL and A5

3.3 Estimates and assumptions

Use phase:
For the use phase, it is assumed that the lock is used in the United States of America, thus an US electricity grid mix is considered within this stage.

EoL:
In the End-of-Life phase, for all the materials which can be recycled, a recycling scenario with 100% collection rate was assumed.

3.4 Cut-off criteria
In the assessment, all available data from the production process are considered, i.e. all raw materials used, auxiliary materials (e.g. lubricants), thermal energy consumption and electric power consumption - including material and energy flows contributing less than 1% of mass or energy (if available). In case a specific flow contributing less than 1% in mass or energy is not available, worst case assumption proxies are selected to represent the respective environmental impacts.

Impacts relating to the production of machines and facilities required during production are out of the scope of this assessment.

3.5 Background data
For life cycle modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by PE INTERNATIONAL AG, is used /GaBi 6 2013/. The GaBi-database contains consistent and documented datasets which are documented in the online
GaBi-documentation /GaBi 6 2013D/.
To ensure comparability of results in the LCA, the basic data of GaBi database were used for energy, transportation and auxiliary materials.

3.6 Data quality
The requirements for data quality and background data correspond to the specifications of the /IBU PCR PART A/.
PE INTERNATIONAL performed a variety of tests and validations during the commission of the present study in order to ensure its quality of the present document and results. This obviously includes an extensive review of project-specific LCA models as well as the background data used.
The technological background of the collected data reflects the physical reality of the declared products. The datasets are complete and conform to the system boundaries and the criteria for the exclusion of inputs and outputs.
All relevant background datasets are taken from the GaBi 6 software database. The last revision of the used background data has taken place not longer than 10 years ago.

3.7 Period under review
The period under review is 2013/14 (12 month average).

3.8 Allocation
Regarding incineration, the software model for the waste incineration plant (WIP) is adapted according to the material composition and heating value of the combusted material. Following specific life cycle inventories for the WIP are considered:
- Waste incineration of plastic
- Waste incineration of paper
- Waste incineration of electronic scrap

Regarding the recycling material of metals, the metal parts in the EoL are declared as end-of-waste status. Thus, these materials are considered in module D. Specific information on allocation within the background data is given in the GaBi dataset documentation.

3.9 Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

4. LCA: Scenarios and additional technical information

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site Packaging (Paper)	0.0544	kg

Reference service life

Name	Value	Unit
Reference service life	10	a

Operational energy use (B6)

Name	Value	Unit
Electricity consumption	7708.8	kWh
Days per year in use	365	days
Hours per day in different modes	24	h
Power consumption in on mode	144	W
Power consumption in stand-by mode	60	W

End of life (C1-C4)

Name	Value	Unit
Collected separately Copper, Plastic Parts, Steel, Electronic	5.7712	kg
Collected as mixed construction waste construction waste for landfilling	0.0005	kg
Recycling Copper	0.0067	Kg
Reuse plastic parts	0.0005	kg
Recycling Steel	4.3106	Kg
Recycling Electronic	1.4534	kg
Landfilling construction waste for landfill	0.0005	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Name	Value	Unit
Collected separately waste Card reader (including packaging)	5.826	kg
Recycling Copper	0.12	%
Reuse Plastic parts	0.01	%
Recycling Steel	73.98	%
Recycling Electronic	24.95	%
Reuse Paper Packaging	0.93	%
Loss Construction waste for landfilling (no recycling potential)	0.01	%

5. LCA: Results

Results shown below were calculated using CML 2001 – Apr. 2013 Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.74E+02	3.33E-01	7.71E-02	5.18E+03	5.54E-03	2.30E-01	7.07E-01	-2.37E+01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	5.73E-08	1.59E-12	3.53E-13	1.79E-06	2.65E-14	1.57E-10	1.95E-12	-4.99E-10
AP	Acidification potential of land and water	[kg SO_2-Eq.]	1.02E+00	1.52E-03	1.76E-05	1.75E+01	2.54E-05	1.08E-03	3.38E-04	-2.33E-01
EP	Eutrophication potential	[kg $(PO_4)^{3-}$- Eq.]	7.81E-02	3.48E-04	3.07E-06	9.35E-01	5.79E-06	6.10E-05	8.10E-05	-1.28E-02
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	6.79E-02	-4.91E-04	1.25E-06	1.07E+00	-8.18E-06	6.43E-05	2.56E-05	-1.45E-02
ADPE	Abiotic depletion potential for non-fossil resources	[kg Sb Eq.]	1.39E-02	1.25E-08	1.39E-09	6.84E-04	2.09E-10	3.18E-08	2.20E-07	-1.31E-02
ADPF	Abiotic depletion potential for fossil resources	[MJ]	2.07E+03	4.59E+00	2.16E-02	5.97E+04	7.65E-02	2.61E+00	5.63E-01	-2.39E+02

RESULTS OF THE LCA - RESOURCE USE: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	1.46E+02	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	1.46E+02	1.81E-01	2.01E-03	5.85E+03	3.01E-03	7.46E-01	7.59E-02	-6.83E+00
PENRE	Non-renewable primary energy as energy carrier	[MJ]	2.40E+03	-	-	-	-	-	-	-
PENRM	Non-renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non-renewable primary energy resources	[MJ]	2.40E+03	4.60E+00	2.53E-02	7.56E+04	7.67E-02	4.08E+00	6.75E-01	-2.43E+02
SM	Use of secondary material	[kg]	4.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non-renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m^3]	7.14E-01	1.28E-04	2.24E-04	2.66E+01	2.13E-06	1.84E-03	3.68E-03	-8.35E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	1.22E-01	1.05E-05	1.74E-06	5.89E-02	1.75E-07	5.66E-04	1.18E-04	2.44E-03
NHWD	Non-hazardous waste disposed	[kg]	2.94E+00	5.79E-04	1.94E-03	2.41E+01	9.65E-06	1.32E-03	1.53E-01	-7.00E-01
RWD	Radioactive waste disposed	[kg]	1.28E-01	6.03E-06	1.48E-06	6.22E+00	1.00E-07	5.88E-04	4.45E-05	-1.31E-03
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	5.44E-02	0.00E+00	0.00E+00	4.32E+00	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.75E-02	0.00E+00	0.00E+00	0.00E+00	4.34E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.75E-01	0.00E+00	0.00E+00	0.00E+00	1.19E-02	-

6. LCA: Interpretation

This chapter contains an interpretation of the Life Cycle Impact Assessment categories. Stated percentages in the whole interpretation are related to the overall life cycle, excluding credits (module D).

The production phase (modules A1-A3) contributes between 3% and 7% to the overall results for all the environmental impact assessment categories hereby considered, except for the abiotic depletion potential (ADPE). For this, the contribution from the production phase accounts for app. 95% - this impact category describes the reduction of the global amount of non-renewable raw materials; therefore, as expected, it is mainly related with the extraction of raw materials (A1).

Within the production phase, the main contribution for all the impact categories is the production of electronic components and steel, with app. 98%, mainly due to the energy consumption on this process. Steel accounts with app. 75% to the overall mass of the product, therefore, the impacts are in line with the mass composition of the product. The environmental impacts for the transport (A2) have a negligible impact within this stage.

To reflect the use phase (module B6), the energy consumption was included and it has a major contribution for all the impact assessment categories considered - between 92% and 97%, with the exception of ADPE (12%). This is a result of 24 hours of operation in different modes per day and per 365 days in a year.

In the end-of-life phase, there are loads and benefits (module D, negative values) considered. The benefits are considered beyond the system boundaries and are declared for the recycling potential of the metals and for the credits from the incineration process (energy substitution).

7. Requisite evidence

Not applicable in this EPD.

8. References

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin (pub.): Generation of Environmental Product Declarations (EPDs);

General principles
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www.bau-umwelt.de

IBU PCR Part A
IBU PCR Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. Institut Bauen und Umwelt e.V., Berlin (pub.). April 2013. www.bau-umwelt.de

IBU PCR Part B
IBU PCR Part B: Requirements on the EPD for Electronic Access Control Systems. Institut Bauen und Umwelt e.V., Berlin (pub.). www.bau-umwelt.com

ISO 14001
ISO 14001:2009-11: Environmental management systems - Requirements with guidance for use

ISO 14025
ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 9001
ISO 9001:2008: Quality management systems - Requirements

EN 15804
EN 15804: 2012+A1:2014: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

GaBi 6 2013
GaBi 6 2013: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Leinfelden-Echterdingen, 1992-2013.

GaBi 6 2013D
GaBi 6 2013D: Documentation of GaBi 6: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Leinfelden-Echterdingen, 1992-2013. http://documentation.gabi-software.com/

RoHS Conformity:
RoHS Conformity: EN50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

ULC S318
ULC S318: Standard for Power Supplies for Burglar Alarm Systems

UL 294
UL 294 6th Edition: Access control system units

UL 603
UL 603: Power supplies for use with burglar-alarm systems

UL1418
UL1418: Implosion-protected cathode-ray tubes for television-type appliances

UL1481
UL1481: Fire Alarm systems

9. Annex

Results shown below were calculated using TRACI Methodology.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	X	X	X	X	MND	MND	MND	MND	MND	X	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	[kg CO_2-Eq.]	1.74E+02	3.33E-01	7.71E-02	5.18E+03	5.54E-03	2.30E-01	7.07E-01	-2.37E+01
ODP	Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	6.14E-08	1.69E-12	3.75E-13	1.91E-06	2.82E-14	1.67E-10	2.07E-12	-9.20E-10
AP	Acidification potential of land and water	[kg SO_2-Eq.]	1.03E+00	1.99E-03	2.13E-05	1.63E+01	3.31E-05	1.02E-03	4.32E-04	-2.22E-01
EP	Eutrophication potential	[kg N-eq.]	6.63E-02	1.40E-04	1.23E-06	8.03E-01	2.34E-06	4.36E-05	3.56E-05	-6.65E-03
Smog	Ground-level smog formation potential	[kg O_3-eq.]	1.28E+01	4.09E-02	4.97E-04	1.39E+02	6.82E-04	9.28E-03	1.39E-02	-2.33E+00
Resources	Resources – fossil resources	[MJ]	1.74E+02	6.60E-01	2.53E-03	3.52E+03	1.10E-02	1.86E-01	5.43E-02	-7.14E+00

RESULTS OF THE LCA - RESOURCE USE: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	[MJ]	1.46E+02	-	-	-	-	-	-	-
PERM	Renewable primary energy resources as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PERT	Total use of renewable primary energy resources	[MJ]	1.46E+02	1.81E-01	2.01E-03	5.85E+03	3.01E-03	7.46E-01	7.59E-02	-6.83E+00
PENRE	Non renewable primary energy as energy carrier	[MJ]	2.40E+03	-	-	-	-	-	-	-
PENRM	Non renewable primary energy as material utilization	[MJ]	0.00E+00	-	-	-	-	-	-	-
PENRT	Total use of non renewable primary energy resources	[MJ]	2.40E+03	4.60E+00	2.53E-02	7.56E+04	7.67E-02	4.08E+00	6.75E-01	-2.43E+02
SM	Use of secondary material	[kg]	4.20E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	Use of renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	Use of non renewable secondary fuels	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	Use of net fresh water	[m^3]	7.14E-01	1.28E-04	2.24E-04	2.66E+01	2.13E-06	1.84E-03	3.68E-03	-8.35E-02

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: One piece of AQD6 Series Power Supply

Parameter	Parameter	Unit	A1 - A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	[kg]	1.22E-01	1.05E-05	1.74E-06	5.89E-02	1.75E-07	5.66E-04	1.18E-04	2.44E-03
NHWD	Non hazardous waste disposed	[kg]	2.94E+00	5.79E-04	1.94E-03	2.41E+01	9.65E-06	1.32E-03	1.53E-01	-7.00E-01
RWD	Radioactive waste disposed	[kg]	1.28E-01	6.03E-06	1.48E-06	6.22E+00	1.00E-07	5.88E-04	4.45E-05	-1.31E-03
CRU	Components for re-use	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
MFR	Materials for recycling	[kg]	0.00E+00	0.00E+00	5.44E-02	0.00E+00	0.00E+00	4.32E+00	0.00E+00	-
MER	Materials for energy recovery	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-
EEE	Exported electrical energy	[MJ]	0.00E+00	0.00E+00	9.75E-02	0.00E+00	0.00E+00	0.00E+00	4.34E-03	-
EET	Exported thermal energy	[MJ]	0.00E+00	0.00E+00	2.75E-01	0.00E+00	0.00E+00	0.00E+00	1.19E-02	-

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