

Environmental Product Declaration

Securitron

EcoPower Power Supply



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.

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.



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According to ISO 14025

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.

PROGRAM OPERATOR	UL Environment	
DECLARATION HOLDER	ASSA ABLOY/ Securitron	
DECLARATION NUMBER		
DECLARED PRODUCT	Securitron EcoPower Power Supply	
REFERENCE PCR	UL Environment and Institut Bauen und Umwelt e.V. (IBU). Product Category Rules Part B: Requirements on the Environmental Product Declaration for Electronic Access Control Systems	
DATE OF ISSUE	October 21, 2016	
PERIOD OF VALIDITY	5 Years	
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacturing Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications	
The PCR review was conducted by	The Independent Expert Committee, SVR	
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	UL Environment	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by		

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Product Definition and Information

Product Description

Product name: EcoPower

Product characteristic: power supply

EcoPower is an efficient, fully featured power supply:

- Extremely low power consumption
- 24 hours of battery backup power
- Universal voltage input capabilities
- Aesthetic design allows for convenient installation near the lock
- Product contains several small screws for installation, as well as paper instructions. Otherwise, no other accessory materials are required for installation or use.

Application

EcoPower is ideal for a wide range of applications. The product can be surfaced mounted, recessed into drywall, or mounted above a drop ceiling. This product is designed to provide power to an electrified lock, in either a fail-safe or fail-secure configuration.

Technical Data

For the declared product, the following technical data in the delivery status must be provided with reference to the test standard:

Technical Data	
Input Voltage	110V - 240V
Output Voltage	14V
Standby Power	<10mW @ 115V; <20mW @ 230V
Output Current	0.5A peak; 0.1A continuous
Battery Type	Lead Acid
Operating Temperature	-4 t+122F [-20 to +50C]
Installation	Surface mounted / Recessed in drywall / Mounted above
Mechanical Compatibility	Designed to work with low-power, electrified lock
Shipping Weight	1.7 lbs [0.77 kg]
Certification	UL 294, UL 603, ULC S533



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Placing on the Market / Application Rules

The standards that can be applied for EcoPower power supply are:

- UL 294 - Standard for Access Control System Units
- UL 603 - Standard for Power Supplies for Use with Burglar-Alarm Systems
- ULC S533 - Standard for Egress Door Securing and Releasing Devices

Delivery Status

Power supplies are delivered in a box size - 6.5in x 6.5in x 3.875in.

Base Materials / Ancillary Materials

Material	Percentage in mass (%)
Electronics	62.61%
Plastics	30.14%
Steel	3.47%
Other	3.79%
Total	100.00%

Manufacture

The primary manufacturing processes are made by Tier 1 suppliers and the final manufacturing processes occur in Phoenix, AZ. The electronics are produced in China and the remainder of the components are produced in the United States. The components come from processes like stamped steel, turning, zinc and steel casting. Final assembly takes place in Phoenix, AZ.

Environmental and Health During Manufacturing

ASSA ABLOY is committed to producing and distributing door opening solutions with minimal environmental impact, where health & safety is the primary focus for all employees and associates.

- Environmental operations, GHG, energy, water, waste, VOC, surface treatment and H&S are being routinely monitored. Inspections, audits, and reviews are conducted periodically to ensure that applicable standards are met and environment management program effectiveness is evaluated.
- Code of Conduct covers human rights, labor practices and decent work. Management of ASSA ABLOY is aware of their environmental roles and responsibilities, providing appropriate training, supporting accountability and recognizing outstanding performance.
- Any waste metals during machining are separated and recycled. The waste from the water-based painting process is delivered to waste treatment plant.
- The factory in Phoenix, AZ has certification of Environmental Management to ISO 14001:2004 and Occupational Health and Safety to OHSAS 18001:2007.

Product Processing/ Installation

EcoPower power supplies are distributed through and installed by trained installation technicians, such as locksmiths, carpenters etc. adhering to local/national standards and requirements.



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Packaging

EcoPower power supplies are packed in a cardboard box with dimensions: 6.5in x 6.5in x 3.875in.

Material	Quantity (% By Weight)
Cardboard	100%
Other	-
Total	100%

Condition of Use

No cleaning on annual maintenance is required.

Environmental and Health During Use

There is no harmful emissive potential. No damage to health or impairment is expected under normal use corresponding to the intended use of the product.

Reference Service Life

The reference service life is 10 years, calculated based on a 40000 cycle endurance test.

Extraordinary Effects

Fire

Suitable for use in fire and smoke doors (EN 14846).

Water

Contains no substances that have any impact on water in case of flood. Electric operation of the device will be influenced negative.

Mechanical destruction

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

Re-use Phase

The product can be moved from one door to another during the reference service life, thus enabling re-use.

Disposal

The majority of components are electronics and a battery. The product can be mechanically disassembled to separate the different materials. 34% of the materials used are recyclable. The plastic components can be used for energy recovery in an incineration plant.

Further Information

Hanchett Entry Systems Inc, ASSA ABLOY
10027 S. 51st Street Ste. 102
Phoenix, AZ 85044



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Life Cycle Assessment

Declared Unit

The declaration refers to the functional unit of 1 unit (or piece) of EcoPower Power Supply, as specified in Part B requirements on the EPD for Electronic Access Control Systems.

Name	Value	Unit
Declared unit	1	unit of electronic cylinder
Mass	0.621	kg
Conversion factor to 1 kg	1.611	-

System Boundary

This is a cradle to gate with options Environmental Product Declaration. The following life cycle phases were considered:

Product Stage			Construction Process Stage		Use Stage							End of Life Stage*				Benefits and Loads Beyond the System Boundaries
Raw material supply	Transport	Manufacturing	Transport from gate to the site	Construction/ installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction /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

Description of the System Boundary Stages Corresponding to the PCR
(X = Included; MND = Module Not Declared)

*This includes provision of all materials, products and energy, packaging processing and its transport, as well as waste processing up to the end-of waste state or disposal of final residues.

Estimates and Assumptions

End of Life

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

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.

Background data

For life cycle modeling of the considered products, the GaBi 6 Software System for Life Cycle Engineering, developed by thinkstep, 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.

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Data Quality

The data sources used are complete and representative of North America in terms of the geographic and technological coverage and are a recent vintage (i.e. less than ten years old). The data used for primary data are based on direct information sources of the manufacturer. Secondary data sets were used for raw materials extraction and processing, end of life, transportation, and energy production flows. Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty.

Period Under Review

The period under review is January through March of 2015, the first 3 months of production of this product.

Allocation

Allocation was determined on a per unit basis.

Comparability

A comparison or an evaluation of EPD data is only possible if all 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. Environmental declarations from different programs may not be comparable. Full conformance with the PCR for North American Builders Hardware products allows EPD comparability only when all stages of a Builders Hardware product's life cycle have been considered. However, variations and deviations are possible.

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LCA: Modeling Scenarios and Additional Technical Information

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared.

Installation into the building (A5)		
Name	Value	Unit
Auxiliary	-	kg
Water consumption	-	m ³
Other resources	-	kg
Electricity consumption	-	kWh
Other energy carriers	-	MJ
Material loss	-	kg
Output substance following waste treatment on-site	0.15	kg
Dust in the air	-	kg
VOC in the air	-	kg

Reference Service Life		
Name	Value	Unit
Reference Service Life	10	years

End of life (C1-C4)		
Name	Value	Unit
Collected separately	0.4101	kg
Collected as mixed construction waste	0.2106	kg
Reuse	0.1871	kg
Recycling	0.3978	kg
Energy recovery	-	kg
Landfilling	0.1871	kg

Operational Energy Use (B6)*		
Name	Value	Unit
Standby Power Consumption	0.007	W
Charging Power Consumption	1.97	W
Standby Cycle Time	26.67	h
Charge Cycle Time	4.71	h
Average Power Consumption	0.30	W
Annual Energy Consumption	2.628	kWh
Reference Service Life	10	years
Lifetime Energy Consumption	26.28	kWh

* This scenario is based on the worst case scenario: A fail-safe configuration with zero unlocks per cycle.



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LCA Results

Results shown below were calculated using TRACI 2.1 Methodology.

TRACI 2.1 Impact Assessment										
Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	kg CO ₂ -Eq.	5.6E+00	4.6E-02	1.4E-01	2.0E+01	2.9E-03	0.0E+00	2.2E-02	0.0E+00
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	2.2E-07	1.7E-12	1.4E-11	2.1E-10	1.1E-13	0.0E+00	8.8E-14	0.0E+00
AP Air	Acidification potential for air emissions	kg SO ₂ -Eq.	3.8E-02	2.8E-04	8.0E-04	1.8E-01	1.7E-05	0.0E+00	1.0E-04	0.0E+00
EP	Eutrophication potential	kg N-Eq.	3.6E-02	1.5E-05	2.0E-04	2.5E-03	9.6E-07	0.0E+00	3.7E-05	0.0E+00
SP	Smog formation potential	kg O ₃ -Eq.	3.2E-01	7.6E-03	8.5E-03	1.4E+00	4.8E-04	0.0E+00	3.9E-04	0.0E+00
FFD	Fossil Fuel Depletion	MJ-surplus	6.8E+00	8.1E-02	1.5E-01	1.2E+01	5.1E-03	0.0E+00	3.3E-03	0.0E+00

Results shown below were calculated using CML 2001 - April 2013 Methodology.

CML 4.1 Impact Assessment										
Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP	Global warming potential	kg CO ₂ -Eq.	2.6E+00	4.6E-02	1.4E-01	2.0E+01	2.9E-03	0.0E+00	2.5E-02	0.0E+00
ODP	Depletion potential of the stratospheric ozone layer	kg CFC-11 Eq.	3.7E-10	1.7E-12	1.3E-11	1.7E-10	1.1E-13	0.0E+00	8.2E-14	0.0E+00
AP Air	Acidification potential for air emissions	kg SO ₂ -Eq.	1.9E-02	2.3E-04	7.1E-04	1.9E-01	1.4E-05	0.0E+00	3.9E-05	0.0E+00
EP	Eutrophication potential	kg(PO ₄) ³ -Eq.	1.2E-03	4.0E-05	2.0E-04	6.8E-03	2.5E-06	0.0E+00	4.1E-05	0.0E+00
POCP	Formation potential of tropospheric ozone photochemical oxidants	kg ethane-Eq.	1.4E-03	3.2E-05	6.8E-05	1.9E-02	2.0E-06	0.0E+00	1.0E-05	0.0E+00
ADPE	Abiotic depletion potential for non-fossil resources	kg Sb-Eq.	6.7E-04	1.9E-11	1.9E-07	2.3E-07	1.2E-12	0.0E+00	1.0E-09	0.0E+00
ADPF	Abiotic depletion potential for fossil resources	MJ	4.2E+01	5.8E-01	1.4E+00	2.9E+02	3.6E-02	0.0E+00	2.6E-02	0.0E+00

Results below contain the resource use throughout the life cycle of the product.

Resource Use										
Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
PERE	Renewable primary energy as energy carrier	MJ, lower calorific value	5.9E+00	0.0E+00	6.1E-01	0.0E+00	0.0E+00	0.0E+00	2.0E-03	0.0E+00
PERM	Renewable primary energy resources as material utilization	MJ, lower calorific value	2.9E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
PERT	Total use of renewable primary energy resources	MJ, lower calorific value	8.8E+00	0.0E+00	6.1E-01	0.0E+00	0.0E+00	0.0E+00	2.0E-03	0.0E+00
PENRE	Nonrenewable primary energy as energy carrier	MJ, lower calorific value	4.6E+01	5.9E-01	1.6E+00	3.6E+02	3.7E-02	0.0E+00	2.7E-02	0.0E+00
PENRM	Nonrenewable primary energy as material utilization	MJ, lower calorific value	2.9E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
PENRT	Total use of nonrenewable primary energy resources	MJ, lower calorific value	4.9E+01	5.9E-01	1.6E+00	3.6E+02	3.7E-02	0.0E+00	2.7E-02	0.0E+00
SM	Use of secondary material	MJ, lower calorific value	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
RSF	Use of renewable secondary fuels	MJ, lower calorific value	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NRSF	Use of nonrenewable secondary fuels	MJ, lower calorific value	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
FW	Use of net fresh water	m ³	2.6E+00	0.0E+00	3.5E-02	0.0E+00	0.0E+00	0.0E+00	1.2E-03	0.0E+00



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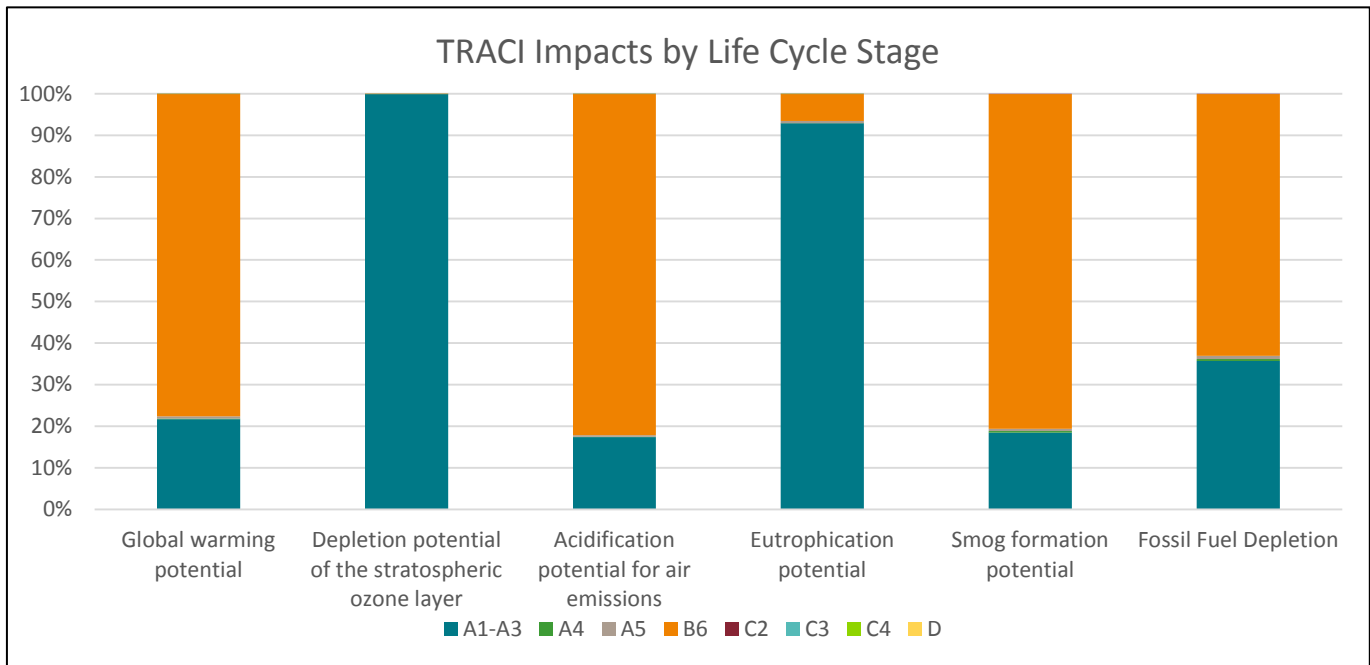
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Results below contain the output flows and wastes throughout the life cycle of the product.

Output Flows and Waste Categories										
Parameter	Parameter	Unit	A1-A3	A4	A5	B6	C2	C3	C4	D
HWD	Hazardous waste disposed	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
NHWD	Non-hazardous waste disposed	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
RWD	Radioactive waste disposed	kg	1.3E-03	0.0E+00	4.6E-05	0.0E+00	0.0E+00	0.0E+00	4.7E-07	0.0E+00
CRU	Components for re-use	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
MFR	Materials for recycling	kg	4.5E-02	0.0E+00	1.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
MER	Materials for energy recovery	kg	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
EEE	Exported electrical energy	MJ	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
EEE	Exported thermal energy	MJ	3.5E-04	0.0E+00	1.6E-02	0.0E+00	0.0E+00	0.0E+00	7.8E-03	0.0E+00

Interpretation

The operational energy use (B6) is the main driver of environmental impacts in the majority of categories, except for ozone depletion and eutrophication potential, where, the production (A1-A3) life cycle stage drives the results. Manufacturing impacts (A3) are primarily driven by electricity use. Raw materials, particularly the circuit board and polycarbonate drive the production stage (A1), as these materials are the primary materials within the product. Transportation impacts (A2) have a negligible impact within the production stage. The figure below shows the graphical representation of these impacts across the product's life cycle stages:



References

- | PCR Part A UL Environment and Institut Bauen und Umwelt e.V., Königswinter (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. July 2014, version 1.3
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- | GaBi 6 thinkstep.one: GaBi Software-System and Databases for Life Cycle Engineering. version 6.110. Copyright, TM. Stuttgart, Echterdingen. 1992-2015
- | ISO 14025 ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures.
- | ISO 14040 ISO 14040:2009-11, Environmental management — Life cycle assessment — Principles and framework.
- | ISO 14044 ISO 14044:2006-10, Environmental management — Life cycle assessment — Requirements and guidelines.
- | EN 15804 EN 15804:2012-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction product
- | ULE 2013 UL Environment, General Program Instructions, 2013.
- | TRACI 2.1 US EPA. Tools for the Reduction and Assessment of Chemical Inventory. Version 2.1.
- | CML 2001 Center of Environmental Science of Leiden University impact categories and characterisation meth