ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	dormakaba International Holding GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20220168-CBA5-EN
Issue date	18.10.2022
Valid to	17.10.2027

Cencon ATM Cash Vault Security System

dormakaba

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General Information

dormakaba

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-DOR-20220168-CBA5-EN

This declaration is based on the product category rules:

Electronic and physical Access Control Systems, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

18.10.2022

Valid to

17.10.2027



Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)



Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Cencon ATM Cash Vault Security System

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 Cencon ATM Cash Vault Security System (1piece), consisting of the following items:
- Cencon ATM lock
- product packaging

Scope:

This declaration is a specific product declaration for the Cencon ATM Cash Vault Security System.
The underlying life cycle assessment is based on the entire life cycle of this specific Cencon ATM Cash Vault Security System manufactured by dormakaba. The various technical features are outlined in chapter 2. The products are manufactured at the dormakaba production facility in Nogales (Mexico).
The year of data collection is 2021. The declared product is a self-powered solution.
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.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally



Dr.-Ing. Wolfram Trinius,
(Independent verifier)

Product

Product description/Product definition

The Cencon ATM Cash Vault Security System from dormakaba is designed to combat insider theft from ATMs through the combined use of lock hardware, systems software and Smart Keys™. Cencon offers total access control and accountability with its One Time Combination™ feature. The One Time Combination is dispatched from a central location and cannot be reused at a later date, thus eliminating temptation.

Unique software allows you to control and monitor nearly unlimited numbers of locks located anywhere in the world - from one central location. Cencon is a solution to today's most serious security challenges.

- Cencon and CenTran system supporting software
- Three independent operating modes in one lock
- Unlimited Cencon system users/100 Bank Mode users
- One Time Combination for FLM and CIT (Route) users
- Dead bolt or Swing bolt available
- *EN 1300 B, VdS class 2, SBSC, UL type 1*

For placing the Cencon ATM Cash Vault Security System on the market in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) the following legal provisions apply:

- *VdS 2344:2014-07*
- *VdS 2396:2014-07*
- *UL 2058:2005-06*
- *DIN EN1300:2019-05*
- *Restriction of Hazardous Substances (RoHS)*

Application

The Cencon Locks can work individually and give shared access.

Three modes are available

1 FLM Mode: For the First Line Maintenance personnel.
2. Route Mode: For cash replenisher or armored service.
3. Bank Mode: For bank branch employees.

Each mode addresses the individual access needs for each category of user.

Technical Data

Access Control

• User Authentication: Combination + Smart Key
• Operating Modes: Three Modes (FLM, Route and Bank)
• Single or Dual User Access: For any of the three modes
• Factory (Shelved) Mode: 50-25-50 or changeable by user
• One Time Combination: For FLM & Route Mode
• User-Defined Combinations: For Bank Mode users
• Wrong Combo Penalty: After five incorrect attempts
• Central Control: With Cencon 5 software

Audit Trail:

• Lock: Can achieve more than 1,000 events
• Key: Up to 32 events
• Software: Unlimited events
• Time Windows: by User Optional
• Time Delay: 1-99 minutes, Bank mode only
• Number of Users: Unlimited for FLM & Route mode, 100 per lock for Bank mode

Alarm Interface

• Silent Duress Alarm: Standard – combination +10
• Bolt Status: Standard
• Alarm Shunt: Optional The products are not harmonised in accordance with the Construction Product Regulations (CPR) but in accordance with other provisions for harmonisation of the EU.

Compliance with the European Union Directive and technical specifications:

- *DIN EN 1300: 2019-05,* Secure storage units - Classification for high security locks according to their resistance to unauthorized opening.

The products are subject to CE marking according to the relevant harmonization legislation.

Base materials/Ancillary materials

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision which can be applied are mentioned above.
The major material composition including packaging is listed below:

Material	Value	Unit
Zinc	47	%
Plastics	33	%
Electronics	6	%
Steel	5	%
Stainless steel	3	%
Paper	2	%
Other materials	2	%

The product includes partial articles which contain substances listed in the Candidate List of REACH Regulation 1907/2006/EC (date: 14.06.2023) exceeding 0.1 percentage by mass: no

The Candidate List can be found on the ECHA website address: https:echa.europs.eu/de/home.

Reference service life

The product is certified according to *UL 2058* with testing up to 25.000 cycles. Under normal conditions and depending on cycle frequency, it means an approximate duration of 7 years.'

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece of the product: 0.982kg without packaging

Name	Value	Unit
Declared unit	1	pce.
Mass (total system)	0.982	kg

System boundary

The type of EPD is: cradle to gate with options, modules C1–C4, and module D (A1–A3 + C + D and additional modules: A4 + A5 + B6)

Production - Module A1-A3
The product stage includes:
— A1, raw material extraction, processing and mechanical treatments, processing of secondary material input (e.g. recycling processes),
— A2, transport to the manufacturer,
— A3, manufacturing and assembly including provision of all materials, products and energy, as well as waste processing up to the end-of waste state.

Construction stage - Modules A4-A5
The construction process stage includes:
— A4, transport to the building site;
— A5, installation into the building;
including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state or disposal of final residues during the construction process stage.

End-of-life stage– Modules C1-C4 and D
The end-of-life stage includes:
— C1, de-construction, demolition:
— C2, transport to waste processing;
— C3, waste processing for reuse, recovery and/or recycling;
— C4, disposal;
including provision and all transport, provision of all materials, products and related energy and water use.

Module D (Benefits and loads beyond the system boundary) includes:
— D, recycling potentials, expressed as net impacts and benefits.

Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: United States

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.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	-	kg C
Biogenic carbon content in accompanying packaging	0.01	kg C

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.00276	l/100km
Capacity utilisation (including empty runs) via medium truck	55	%
Transport distance via medium truck	100	km
Transport distance via plane	2800	km

The product is transported via truck and plane. The main distribution regions are Mexico and US with the calculated average transport distances.

Installation into the building (A5)

Name	Value	Unit
Waste plastics	0.000017	kg
Waste paper	0,00005	kg

Reference service life

Name	Value	Unit
Life Span according to the manufacturer	7	a

End of life (C1-C4)
C1: The product dismantling from the building is done manually without environmental burden.
C2: Transport to waste treatment at end of life is 50km.

Name	Value	Unit
Collected separately waste type waste type	0.982	kg
Reuse	-	kg
Recycling	0.613	kg
Energy recovery	0.331	kg
Landfilling	0.038	kg
Transport to waste management	50	km

The product is disassembled in a recycling process. Material recycling is then assumed for the metals, electronic and electromechanics. The plastic components are assumed to be incinerated with energy recovery. Minor proportions of residues arising from the recycling process are landfilled. Region for the End of Life is: Global.

Reuse, recovery and/or recycling potentials (D), relevant scenario information
Collection rate is 100 %.

LCA: Results

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

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 the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	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	MNR	MNR	MNR	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 piece CENCON

Parameter	Unit	A1-A3	A4	A5	C2	C3	C4	D
GWP-total	kg CO_2 eq	1.59E+01	1.72E+00	2.6E-02	4E-03	8.41E-01	7.6E-04	-6.8E+00
GWP-fossil	kg CO_2 eq	1.59E+01	1.71E+00	4E-03	4E-03	8.41E-01	7.55E-04	-6.78E+00
GWP-biogenic	kg CO_2 eq	2.5E-02	3E-03	2.1E-02	1.85E-04	1.96E-05	2.58E-06	-1.4E-02
GWP-luluc	kg CO_2 eq	1.11E-02	3.58E-05	5.7E-07	9.54E-08	4.76E-05	2.17E-06	-3E-03
ODP	kg CFC11 eq	3.58E-10	1.25E-16	5.82E-18	4.23E-19	4.24E-16	2.8E-18	-2.15E-14
AP	mol H^+ eq	1.12E-01	7E-03	6.81E-06	4.01E-06	1.5E-04	5.42E-06	-6.7E-02
EP-freshwater	kg P eq	3.52E-05	2.8E-07	1.07E-09	8.58E-10	6.77E-08	1.3E-09	-5.9E-06
EP-marine	kg N eq	1.77E-02	3E-03	2.37E-06	1.28E-06	3.38E-05	1.39E-06	-1E-02
EP-terrestrial	mol N eq	1.91E-01	3.4E-02	3.07E-05	1.42E-05	6.82E-04	1.53E-05	-1.14E-01
POCP	kg NMVOC eq	5.17E-02	9E-03	6.3E-06	3.61E-06	9.35E-05	4.22E-06	-3.1E-02
ADPE	kg Sb eq	6E-03	4.85E-08	8.81E-11	1.2E-10	5.82E-09	6.78E-11	-5E-03
ADPF	MJ	2.21E+02	2.32E+01	9E-03	5.7E-02	3.9E-01	1E-02	-7.66E+01
WDP	m^3 world eq deprived	4.01E+00	3E-03	3E-03	7.86E-06	8.6E-02	7.91E-05	-1.01E+00

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 piece CENCON

Parameter	Unit	A1-A3	A4	A5	C2	C3	C4	D
PERE	MJ	3.54E+01	5.6E-02	1.88E-01	1.79E-04	1.01E-01	1E-03	-8.89E+00
PERM	MJ	1.86E-01	0	-1.86E-01	0	0	0	0
PERT	MJ	3.56E+01	5.6E-02	2E-03	1.79E-04	1.01E-01	1E-03	-8.89E+00
PENRE	MJ	2.1E+02	2.33E+01	7.1E-02	5.7E-02	1.14E+01	1E-02	-7.67E+01
PENRM	MJ	1.11E+01	0	-6.2E-02	0	-1.1E+01	0	0
PENRT	MJ	2.22E+02	2.33E+01	9E-03	5.7E-02	3.9E-01	1E-02	-7.67E+01
SM	kg	4.5E-02	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m^3	1.11E-01	1.09E-04	7.32E-05	3.22E-07	2E-03	2.5E-06	-3E-02

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 piece CENCON

Parameter	Unit	A1-A3	A4	A5	C2	C3	C4	D
HWD	kg	3.06E-06	2.22E-09	1.67E-11	5.52E-12	1.49E-09	1.51E-10	-7.25E-07
NHWD	kg	4.03E-01	2E-03	1E-03	5.82E-06	8.7E-02	5E-02	6.1E-02
RWD	kg	8.07E-03	1.91E-05	4.28E-07	6.11E-08	1.45E-05	1.13E-07	-2E-03
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	6E-01	0	0
MER	kg	0	0	0	0	0	0	0
EEE	MJ	1.07E-04	0	4E-02	0	0	0	0
EET	MJ	1.95E-04	0	7.6E-02	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 piece CENCON

Parameter	Unit	A1-A3	A4	A5	C2	C3	C4	D
PM	Disease incidence	1.06E-06	2.25E-08	4.25E-11	2.11E-11	1.91E-09	6.71E-11	-6.05E-07
IR	kBq U235 eq	8.29E-01	3E-03	6.21E-05	8.73E-06	1E-03	1.16E-05	-2.45E-01
ETP-fw	CTUe	1.2E+02	1.65E+01	4E-03	4E-02	1.46E-01	6E-03	-1.88E+01
HTP-c	CTUh	5.46E-08	3.1E-10	2.3E-13	7.58E-13	1.27E-11	8.39E-13	5.4E-09
HTP-nc	CTUh	3.98E-07	1.43E-08	1.32E-11	3.24E-11	1.28E-09	9.24E-11	6.89E-07
SQP	SQP	4.37E+01	4.7E-02	2E-03	1.46E-04	1.17E-01	2E-03	-4.27E+00

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator IRP
This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.
Disclaimer 2 – for the indicators ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc, SQP
The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

References

DIN EN 1300
DIN EN 1300:2019, Secure storage units - Classification for high security locks according to their resistance to unauthorized opening

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

EN 15804:2019+A2
EN 15804+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

UL 2058
UL 2058: 2005-06,Underwriters Laboratories, High-Security Electronic locks

VdS 2344
VdS 2344:2014-07, Procedure for the testing, approval and certification of products and systems for fire protection and security technologies

VdS 2396
VdS 2396:2014-07, VdS Guidelines for Physical Security Devices - High Security Locks for Secure Storage Units - Requirements and Test Methods

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Restriction of Hazardous Substances (RoHS)
Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), Directive (EU) No 2011/65.

European Chemicals Agency (ECHA)
https://echa.europa.eu/de/

Further References

IBU 2021
General Instructions for the EPD programme of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021. www.ibu-epd.com

GaBi ts software
Sphera Solutions GmbH Gabi Software System and Database for Life Cycle Engineering 1992-2020 Version 10.0.0.71 University of Stuttgart Leinfelden-Echterdingen

GaBi ts documentation
GaBi life cycle inventory data documentation (https://www.gabi-software.com/support/gabi/gabidatabase- 2020-lci-documentation/).

LCA-tool dormakaba
LCA tool SAL No.:
IBU-DOR-IBU-DOR-202105-LT1-EN Developed by Sphera Solutions GmbH.

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Re-port according to EN 15804+A2:2019, Version 1.0, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

PCR Part B
PCR – Part B: Requirements on the EPD for Electronic and physical Access Control Systems, version 08/2021, Institut Bauen und Umwelt e.V., www.ibu-epd.com.

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