ENVIRONMENTAL PRODUCT DECLARATION

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

Owner of the Declaration	dormakaba
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DOR-20230119-CBA1-EN
Issue date	13.04.2023
Valid to	12.04.2028

Concealed Door Closer ITS 96

dormakaba

Institut Bauen und Umwelt e.V.

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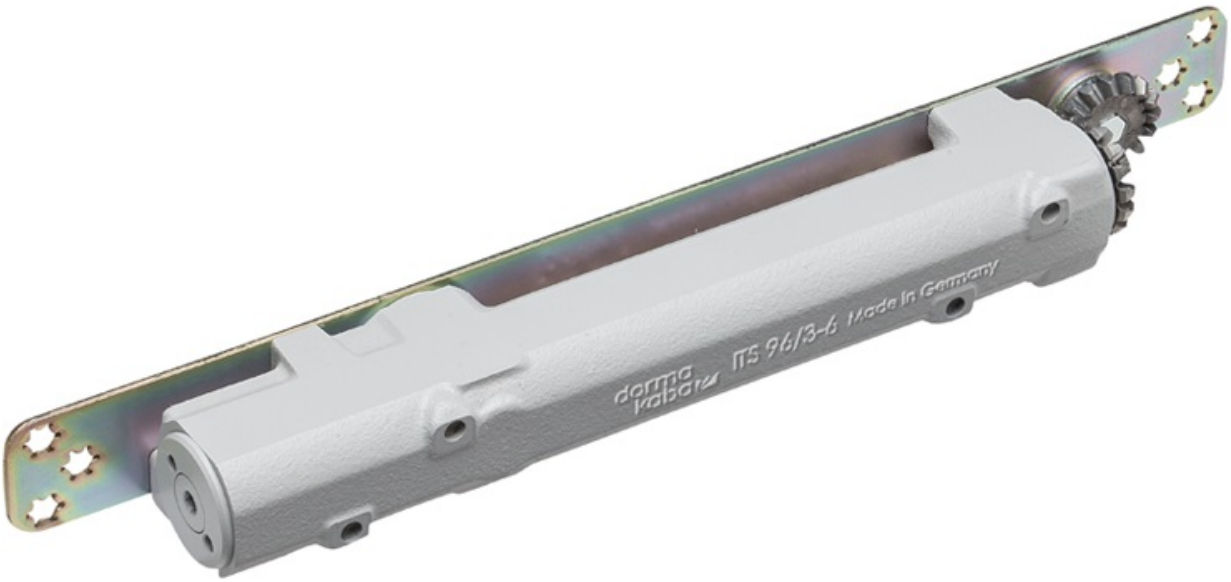
ECO PLATFORM EPD VERIFIED



General Information

dormakaba

Programme holder

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

Declaration number

EPD-DOR-20230119-CBA1-EN

This declaration is based on the product category rules:

Building Hardware products, 01.01.0001
(PCR checked and approved by the SVR)

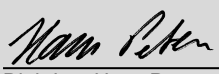
Issue date

13.04.2023

Valid to

12.04.2028

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



Dipl.-Ing. Hans Peters
(Managing Director Institut Bauen und Umwelt e.V.)

Concealed Door Closer ITS 96

Owner of the declaration

dormakaba International Holding GmbH
DORMA Platz 1
58256 Ennepetal
Germany

Declared product / declared unit

1 piece of the product: Concealed Door Closer ITS 96, consisting of the following items:

- Concealed Door Closer ITS 96 EN 3-6
- Product Packaging

Scope:

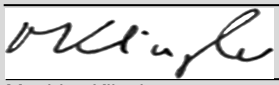
This Environment Product Declaration refers to a specific door closer manufactured by dormakaba. This EPD is also representing the variants ITS 96 EN 2-4 and ITS 96 3-6 BCA. The production site is located in Ennepetal (Germany). Green electricity is being used at this production site.

The data represents the year 2022.
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



Matthias Klingler,
(Independent verifier)

Product

Product description/Product definition

The integrated ITS 96 slide channel door closer system is a modular and multifunctional system comprising only with a few door closer models and various slide channels which complies with many functional requirements. The dormakaba ITS 96 door closer is designed for concealed installation in the door leaf and frame. Suitable for almost every type of door, it offers a wide variety of functions and flexibility combined with a high level of quality. Because of its compact design, the ITS 96 system can be concealed for virtual invisibility within the door and frame, integrating inconspicuously with the overall architectural ambience.

With the new integrated door closer ITS 96 EN 3-6 with hydraulic backcheck (BCA), doors cannot be thrown open in an uncontrolled manner, which offers effective protection against damage and accidents.
For placing on the market in the European Union/European Free Trade Association (EU/EFTA, with the exception of Switzerland), Regulation (EU) No. 305/2011 of the Construction Product Regulations (CPR) applies. The product needs a declaration of performance taking into consideration the EN 1154 for door closer applicable for fire and smoke check doors. The CE mark for building products is available. For the application and use the respective national provisions apply:

- *EN 1154*
- *EN 1634-1*

Application

The functions of the ITS 96 can be individually adapted to the local conditions of each application. The closing strength can be easily varied in accordance with the door width via the adjustment screw accessible from the top. The closing speed, the latch action and the backcheck can likewise be modified at any time using adjustment screws at the top, even after the door has been hung.

Technical Data

The door closers have following technical properties:

Data and features		ITS 96 BCA	ITS 96	
Variable closing force	Spring strength	EN 3-6	EN 2–4	EN 3–6
Standard doors[1]	≤ 1100 mm	●	●	●
	≤ 1400 mm	●	–	●
External doors, outward opening		●	–	–
Fire and smoke check doors[1]	≤ 1100 mm	●	●	●
	≤ 1400 mm	●	–	●
Door leaf thickness	≥ 40 mm	–	●	–
	≥ 50 mm	●	●	●
Max. door leaf weight in kg		180	130	180
Non-handed design (closer)		●	●	●
Arm	Slide channel	●	●	●
Closing force variable by means of adjustable screw		●	●	●
Closing speed adjustable by means of valve 120°– 15°		●	●	●
Latching speed adjustable by means of valve 7°–0°		●	●	●
Cushioned limit stay, mechanical		●	●	●
Backcheck		●	–	–
Delayed action		–	–	–
Hold-open		O	O	O
Max. door opening angle (depends on door design)		approx. 120°	approx. 120°	approx. 120°
Weight in kg		2,5	1,3	2,5
Dimensions in mm	Length	291	277	291
	Width	39,5	32	39,5
	Height	51	42	51
Door closer tested to EN 1154		●	●	●
Hold-open devices tested to EN 1155		●	●	●
Door co-ordinators tested to EN 1158		●	●	●
CE-mark for building products		●	●	●
Suitable for barrier-free building to DIN 18040 and DIN SPEC 1104 (CEN/TR 15894)		●	●	●
ANSI 156.4		●	●	●

● Yes – No O Option

1) For applications involving particularly heavy or wide doors, and doors which have to close against wind resistance, the next highest door closer size should be selected, or the closing force adjusted to a higher setting.

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision which can be applied are mentioned above.

Base materials/Ancillary materials

The major material composition including the packaging of the product is listed below:

Name	Value	Unit
Steel	87	%
Oil	4	%
Paint	3	%
Paper	3	%
Zinc	2	%
Plastics	1	%

The product/s include/s partial articles which contain substances listed in the Candidate List of REACH Regulation *1907/2006/EC* (date: 17.01.2023) exceeding 0.1 percentage by mass: yes

- Lead (Pb): 7439-92-1 (CAS-No.) is included in some of the alloys used. The concentration of lead in each individual alloy does not exceed 4.0% (by mass).

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

Reference service life

The reference service life for the ITS 96 variants amount to 20 years and depend on the application and frequency of use. For repairs or renewals, suitable spare parts are available. The door closers are tested and certified to EN 1154, meaning they are designed to withstand a minium of 500.000 cycles.

LCA: Calculation rules

Declared Unit

The declared unit is 1 piece of the product: ITS 96.

Name	Value	Unit
Declared unit	1	piece/product
Mass of declared Product	2.67	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)

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: Global

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 biogenic carbon
The biogenic carbon content quantifies the amount of biogenic carbon in a construction product leaving the factory gate, and it shall be separately declared for the product and for any accompanying packaging.
If the total mass of biogenic carbon containing materials is less than 5 % of the total mass of the product and accompanying packaging, the declaration of biogenic carbon content may be omitted. The mass of packaging containing biogenic carbon shall always be declared.

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO2.

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in accompanying packaging	0.03	kg C

The following technical scenario information is required for the declared modules and optional for non-declared modules. Modules for which no information is declared can be deleted; additional information can also be listed if necessary.

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 (MND).

A5 is not declared including the disposal of the packaging material on the construction site, the amounts of packaging materials included in the LCA calculations must be declared as technical scenario information for Module A5.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel truck (per piece)	0.008	l/100km
Transport distance via truck (for scaling)	100	km
Transport distance via truck (from dormakaba logistic center to harbor)	300	km
Capacity utilisation (including empty runs) average	55	%
Transport distance via ship	11000	km

The product is transported via truck and ship. The product is stored in the dormakaba logistic center in Germany. The main distribution regions are Europe and Asia. In order to allow scaling to a specific point of installation 100 km are declared as well.

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (packaging)	0.07	kg

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 50 km.

Name	Value	Unit
Collected separately	2.6	kg
Recycling	2.58	kg
Energy recovery	0.022	kg

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

Name	Value	Unit
Recycling	100	%

The collection rate is 100%.

LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = 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	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 door closer

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	4.45E+00	1.89E-01	1.03E-01	0	1.14E-02	5.24E-01	0	-1.4E+00
GWP-fossil	kg CO_2 eq	4.58E+00	1.85E-01	2.59E-03	0	1.09E-02	5.14E-01	0	-1.4E+00
GWP-biogenic	kg CO_2 eq	-1.34E-01	4.25E-03	1.01E-01	0	5.02E-04	1.08E-02	0	-2.76E-03
GWP-luluc	kg CO_2 eq	4.6E-03	4.1E-06	1.7E-06	0	2.58E-07	2.91E-05	0	-2.68E-04
ODP	kg CFC11 eq	7.16E-12	1.85E-17	1.87E-17	0	1.15E-18	2.6E-16	0	-1.43E-12
AP	mol H^+ eq	1.41E-02	3.63E-03	2.9E-05	0	1.09E-05	9.3E-05	0	-3.46E-03
EP-freshwater	kg P eq	1.15E-05	4.07E-08	3.65E-09	0	2.32E-09	4.15E-08	0	-1.27E-06
EP-marine	kg N eq	2.7E-03	9.62E-04	1.05E-05	0	3.46E-06	2.11E-05	0	-5.99E-04
EP-terrestrial	mol N eq	2.88E-02	1.05E-02	1.3E-04	0	3.84E-05	4.24E-04	0	-6.24E-03
POCP	kg NMVOC eq	8.75E-03	2.69E-03	2.77E-05	0	9.78E-06	5.84E-05	0	-2.22E-03
ADPE	kg Sb eq	3.3E-04	5.14E-09	2.95E-10	0	3.26E-10	3.57E-09	0	-6.93E-05
ADPF	MJ	6.04E+01	2.43E+00	3.27E-02	0	1.54E-01	2.4E-01	0	-1.6E+01
WDP	m^3 world eq deprived	6.39E-01	3.48E-04	1.28E-02	0	2.13E-05	5.36E-02	0	-1.22E-01

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 door closer

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.78E+01	7.8E-03	8.82E-01	0	4.86E-04	1.34E-01	0	-2.01E+00
PERM	MJ	9.48E-01	0	-8.76E-01	0	0	-7.2E-02	0	0
PERT	MJ	2.87E+01	7.8E-03	5.94E-03	0	4.86E-04	6.23E-02	0	-2.01E+00
PENRE	MJ	6.01E+01	2.43E+00	3.27E-02	0	1.54E-01	6.27E-01	0	-1.6E+01
PENRM	MJ	3.87E-01	0	0	0	0	-3.87E-01	0	0
PENRT	MJ	6.05E+01	2.43E+00	3.27E-02	0	1.54E-01	2.4E-01	0	-1.6E+01
SM	kg	2.01E+00	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	2.9E-02	1.41E-05	3.02E-04	0	8.71E-07	1.28E-03	0	-5.53E-03

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 door closer

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1.02E-07	2.37E-10	4.82E-11	0	1.5E-11	9.09E-10	0	-9.4E-07
NHWD	kg	2.55E-01	2.49E-04	3.24E-03	0	1.58E-05	5.34E-02	0	3.7E-02
RWD	kg	2.71E-03	2.66E-06	1.72E-06	0	1.65E-07	8.97E-06	0	-7.07E-04
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	2.39E+00	0	0
MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	1.57E-01	0	0	9.67E-01	0	0
EET	MJ	0	0	2.84E-01	0	0	2.21E+00	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 door closer

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1.92E-07	6.09E-08	1.61E-10	0	5.71E-11	1.17E-09	0	-4.89E-08
IR	kBq U235 eq	3.52E-01	3.81E-04	2.66E-04	0	2.36E-05	8.17E-04	0	-1.08E-01
ETP-fw	CTUe	2.27E+01	1.72E+00	1.55E-02	0	1.09E-01	9.04E-02	0	-2.71E+00
HTP-c	CTUh	4.54E-09	3.23E-11	8.2E-13	0	2.05E-12	7.8E-12	0	7.03E-10
HTP-nc	CTUh	1.92E-07	1.46E-09	3.55E-11	0	8.78E-11	7.85E-10	0	5.22E-08
SQP	SQP	2.61E+01	6.35E-03	8.66E-03	0	3.96E-04	7.19E-02	0	-6.63E-01

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 “Potential Human exposure efficiency relative to U235”. 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 due to 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 “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. 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.

This EPD was created using a software tool.

References

EN 1154
EN 1154-2003; Building hardware - Controlled door closing devices - Requirements and test methods

EN 1634-1
EN 1634-1:2018-04; Fire resistance and smoke control tests for door and shutter assemblies,
openable windows and elements of building hardware - Part 1: Fire
resistance test for door and shutter assemblies and openable windows

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

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

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

REACH
Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Regulation (EC) No 1907/2006

Further References

GaBi
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/)

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

LCA-tool dormakaba
LCA tool IBU-DOR-202104-LT1-EN, version 1.0, 2021. Developed by Sphera Solutions GmbH

PCR Part A
PCR – Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019, Version 1.0, 2020, Institut Bauen und Umwelt e.V., www.ibu-epd.com

PCR Part B
PCR – Part B: Requirements on the EPD for Building Hardware product, version 1.2, Institut Bauen und Umwelt e.V., www.ibu-epd.com, 2017

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