Environmental Product Declaration (EPD)

Short version

Declaration code: M-EPD-AZR-GB-112

Note: This EPD is based on the model EPD Electrical drives and pneumatic cylinders.

WindowMaster International A/S

Building components for smoke and heat control systems

Electrical drives and pneumatic cylinders for SHEV and ventilation systems

Basis:

DIN EN ISO 14025
EN15804

Model-EPD
Environmental
Product **D**eclaration

date of issue:
18.12.2018

next Revision:
18.12.2023

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erstellte-epds

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Prüfung und Kalibrierung – EN ISO/IEC 17025
Inspektion – EN ISO/IEC 17020
Zertifizierung Produkte – EN ISO/IEC 17065
Zertifizierung Managementsysteme – EN ISO/IEC 17021

Notified Body **0757**
PÜZ-Stelle: **BAY 18**

DAkkS Deutsche Akkreditierungsstelle D-ZE-11349-01-00

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Declaration code: M-EPD-AZR-GB-112

Programme operator	ift Rosenheim GmbH Theodor-Gietl-Straße 7-9 83026 Rosenheim
Practitioner of the LCA	LCEE Life Cycle Engineering Experts GmbH Berliner Allee 58 64295 Darmstadt
Declaration holder	WindowMaster International A/S Skelstedet 13 DNK-2950 Vedbæk
Declaration code	M-EPD-AZR-GB-112
Designation of the declared product	Electrical drives and pneumatic cylinders for SHEV and ventilation systems
Scope	Smoke and heat exhaust ventilation systems, or their components, which, through their interaction, exhaust smoke and heat from buildings. Smoke and heat control systems. Ventilation systems for maintaining specific air change rates.
Basis	This model EPD was prepared on the basis of EN ISO 14025:2011 and EN 15804:2012+A1:2013. In addition, the “Allgemeiner Leitfaden zur Erstellung von Typ II Umweltproduktdeklarationen” (General guideline for elaboration of Type III Environmental Product Declarations) applies. The Declaration is based on the PCR Documents “Bauteile für Anlagen zur Rauch- und Wärmefreihaltung” (Building components for smoke and heat control systems) PCR-RW-2.1:2018 and “PCR Teil A” (Part A) PCR-A-0.2:2018.
Validity	Publication date: 18.12.2018 / Date of issue: 18.04.2019 / Next revision: 18.12.2023 This verified model Environmental Product Declaration applies solely to the specified products and is valid for all members of the association window automation and smoke axtraction e.V. (VFE). It has a validity of 5 years from the date of publication in accordance with DIN EN 15804.
LCA basis	The LCA was prepared in accordance with EN ISO 14040 and DIN EN ISO 14044. The base data include both data collected the WindowMaster International A/S production sithe and the generic data derived from the "GaBi 8" database. LCA calculations were based on the "cradle to gate with options" life cycle including all upstream processes (e.g. raw materials extraction, etc.).
Notes on publication	The "Conditions and Guidance on the Use of ift Test Documents" apply. The declaration holder assumes full liability for the underlying data, certificates and verifications.

Prof. Ulrich Sieberath Director of Institute	Patrick Wortner External Verifier

Note: Use the extended version of the EPD for further information.

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Results per W Electrical drive														
Environmental impacts	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential	kg CO_2-equiv.	0.30	2.62E-03	4.83E-02	0.00	0.00	0.30	0.33	0.00	7.03E-04	7.43E-04	6.28E-02	1.16E-02	-0.29
Depletion potential of stratospheric ozone layer	kg R11-equiv.	1.71E-09	8.65E-16	8.91E-15	0.00	0.00	1.71E-09	1.44E-11	0.00	3.12E-14	2.45E-16	2.79E-12	2.5E-16	-6.85E-12
Acidification potential of soil and water	kg SO_2-equiv.	1.46E-03	1.1E-05	7.90E-06	0.00	0.00	1.46E-03	9.30E-04	0.00	2.01E-06	2.25E-06	1.79E-04	8.83E-07	-1.32E-03
Eutrophication potential	kg PO_4^{3-}-equiv.	1.10E-04	2.75E-06	1.54E-06	0.00	0.00	1.10E-04	8.41E-05	0.00	1.82E-07	5.52E-07	1.62E-05	1.81E-07	-1.03E-04
Formation potential of tropospheric ozone	kg C_2H_4-equiv.	1.00E-04	-4.07E-06	5.55E-07	0.00	0.00	1.0E04	5.93E-05	0.00	1.28E-07	-6.38E-07	1.14E-05	8.82E-08	-8.66E-05
Depletion of abiotic resources (ADP elements)	kg Sb-equiv.	2.20E-04	2.07E-10	7.97E-10	0.00	0.00	2.20E-04	1.24E-07	0.00	2.69E-10	5.87E-11	2.40E-08	9.37E-11	-3.38E-04
Depletion of abiotic resources (ADP fossil fuels)	MJ	4.38	3.56E-02	1.13E-02	0.00	0.00	4.45	3.47	0.00	7.50E-3	1.01E-02	0.67	1.64E-03	-3.61
Use of resources	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Renewable primary energy as energy source	MJ	0.98	1.79E-03	2.06E-03	0.00	0.00	0.98	1.95	0.00	4.20E-03	5.08E-04	0.38	3.12E-04	-0.85
Renewable primary energy for material use	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total use of renewable primary energy	MJ	0.98	1.79E-03	2.06E-03	0.00	0.00	0.98	1.95	0.00	4.20E-03	5.08E-04	0.38	3.12E-04	-0.85
Non-renewable primary energy as energy source	MJ	4.40	3.57E-02	1.30E-02	0.00	0.00	4.40	5.71	0.00	1.23E-02	1.01E-02	1.10	1.79E-03	-4.18
Non-renewable primary energy for material use	MJ	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total use of non-renewable primary energy	MJ	4.54	3.57E-02	1.30E-02	0.00	0.00	4.40	5.71	0.00	1.23E-02	1.01E-02	1.10	1.79E-03	-4.18
Use of secondary materials	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Renewable secondary fuels	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-renewable secondary fuels	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of fresh water resources	m^3	2.33	1.48E-04	1.42E-03	0.00	0.00	2.33	1.48	0.00	3.20E-03	4.2E-05	0.29	1.73E-04	-1.34
Waste categories and output material flows	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Disposed hazardous waste	kg	6.79E-07	0.00	0.00	0.00	0.00	6.79E-07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disposed non-hazardous waste	kg	11.60	1.29E-04	2.80E-03	0.00	0.00	11.60	1.40	0.00	3.03E-03	3.66E-05	0.27	2.32E-03	-6.57
Radioactive waste	kg	4.04E-04	4.87E-08	7.00E-07	0.00	0.00	4.04E-04	8.87E-04	0.00	1.92E-06	1.38E-08	1.71E-04	6.18E-08	-2.26E-04
Components for further use	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Materials for recycling	kg	3.50E-02	0.00	0.00	0.00	0.00	3.50E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Materials for energy recovery	kg	3.10E-03	0.00	0.00	0.00	0.00	3.10E.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exported electrical energy	MJ	0.00	0.00	6.30E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-2.10E-02	0.00
Exported thermal energy	MJ	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-5.08E-02	0.00

Results per mm Pneumatical cylinder														
Environmental impacts	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential	kg CO_2-equiv.	0.39	6.11E-03	5.29E-02	0.00	0.00	0.39	2.76E-03	0.00	1.06E-03	1.13E-03	6.16E-02	1.64E-02	-0.21
Depletion potential of stratospheric ozone layer	kg R11-equiv.	2.43E-09	2.02E-15	9.05E-15	0.00	0.00	2.43E-09	1.22E-07	0.00	4.71E-14	3.72E-16	2.74E-12	3.55E-16	-2.47E-12
Acidification potential of soil and water	kg SO_2-equiv.	1.43E-03	2.58E-05	8.29E-06	0.00	0.00	1.43E-03	7.88	0.00	3.03E-06	3.42E-06	1.76E-04	1.25E-06	-7.02E-04
Eutrophication potential	kg PO_4^{3-}-equiv.	1.29E-04	6.42E-06	1.62E-06	0.00	0.00	1.29E-04	0.71	0.00	2.74E-07	8.38E-07	1.59E-05	2.57E-07	-5.18E-05
Formation potential of tropospheric ozone	kg C_2H_4-equiv.	1.01E-03	-9.51E-06	5.89E-07	0.00	0.00	9.64E-05	0.50	0.00	1.93E-07	-9.68E-07	1.12E-05	1.25E-07	-4.53E-05
Depletion of abiotic resources (ADP elements)	kg Sb-equiv.	1.68E-05	4.83E-10	8.47E-10	0.00	0.00	5.25E-05	1.05E-03	0.00	4.06E-10	8.9E-11	2.36E-08	1.33E-10	-2.49E-05
Depletion of abiotic resources (ADP fossil fuels)	MJ	5.38	8.32E-02	1.21E-02	0.00	0.00	5.95	2.94E-04	0.00	1.13E-02	1.53E-02	0.66	2.32E-03	-2.47
Use of resources	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Renewable primary energy as energy source	MJ	1.38	4.19E-03	2.23E-03	0.00	0.00	1.38	1.65E-04	0.00	6.34E-03	7.71E-04	0.37	4.42E-04	-0.77
Renewable primary energy for material use	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total use of renewable primary energy	MJ	1.38	4.19E-03	2.23E-03	0.00	0.00	1.38	1.65E-04	0.00	6.34E-03	7.71E-04	0.37	4.42E-04	-0.77
Non-renewable primary energy as energy source	MJ	5.36	8.35E-02	1.39E-02	0.00	0.00	5.36	4.84E-04	0.00	1.86E-02	1.54E-02	1.08	2.55E-03	-3.01
Non-renewable primary energy for material use	MJ	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total use of non-renewable primary energy	MJ	5.52	8.35E-02	1.39E-02	0.00	0.00	5.36	1.25E-04	0.00	1.86E-02	1.54E-02	1.08	2.55E-03	-3.01
Use of secondary materials	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Renewable secondary fuels	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-renewable secondary fuels	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of fresh water resources	m^3	2.57	3.46E-04	1.51E-03	0.00	0.00	2.57	4.33E-03	0.00	4.82E-03	6.37E-05	0.28	2.45E-04	-1.48
Waste categories and output material flows	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Disposed hazardous waste	kg	2.91E-05	0.00	0.00	0.00	0.00	2.91E-05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disposed non-hazardous waste	kg	51.70	1.91E-04	1.75E-04	0.00	0.00	51.70	1.19E-04	0.00	4.57E-03	5.55E-05	0.27	3.33E-03	-1.11
Radioactive waste	kg	2.03E-02	7.2E-08	4.72E-08	0.00	0.00	2.03E-02	7.52	0.00	2.89E-06	2.10E-08	0.000168	8.75E-08	-2.14E-04
Components for further use	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Materials for recycling	kg	1.16E-02	0.00	0.00	0.00	0.00	1.16E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Materials for energy recovery	kg	3.50E-03	0.00	0.00	0.00	0.00	3.50E-03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exported electrical energy	MJ	0.00	0.00	6.90E-02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-3.02E-02	0.00
Exported thermal energy	MJ	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-7.30E-02	0.00

Imprint

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Notes
This EPD is mainly based on the work and findings of the Institut für Fenstertechnik e.V., Rosenheim (ift Rosenheim) and specifically on the ift-Richtlinie NA-01/3 Allgemeiner Leitfaden zur Erstellung von Typ III Umweltproduktdeklarationen. (Guideline NA-01/3 - Guidance on preparing Type III Environmental Product Declarations).

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Photographs (front page)
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