

# Environmental Product Declaration (EPD)

Short version



Declaration code: M-EPD-AZR-GB-104

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



GEZE GmbH

## 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 Declaration

date of issue:  
18.12.2018

next Revision:  
18.12.2023





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Short version



Declaration code: M-EPD-AZR-GB-104

<b>Programme operator</b>	ift Rosenheim GmbH Theodor-Gietl-Straße 7-9 83026 Rosenheim		
<b>Practitioner of the LCA</b>	LCEE Life Cycle Engineering Experts GmbH Berliner Allee 58 64295 Darmstadt		
<b>Declaration holder</b>	GEZE GmbH Reinhold-Vöster-Straße 21-29 71229 Leonberg		
<b>Declaration code</b>	M-EPD-AZR-GB-104		
<b>Designation of the declared product</b>	Electrical drives and pneumatic cylinders for SHEV and ventilation systems		
<b>Scope</b>	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.		
<b>Basis</b>	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.		
<b>Validity</b>	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 extraction e.V. (VFE). It has a validity of 5 years from the date of publication in accordance with DIN EN 15804.		
<b>LCA basis</b>	The LCA was prepared in accordance with EN ISO 14040 and DIN EN ISO 14044. The base data include both data collected the GEZE GmbH production site 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.).		
<b>Notes on publication</b>	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.

## Short version

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 <sub>2</sub> -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 <sub>2</sub> -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 <sub>4</sub> <sup>3-</sup> -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 <sub>2</sub> H <sub>4</sub> -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 <sup>3</sup>	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

## Short version

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 <sub>2</sub> -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 <sub>2</sub> -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 <sub>4</sub> <sup>3-</sup> -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 <sub>2</sub> H <sub>4</sub> -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 <sup>3</sup>	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**

### **Practitioner of the LCA**

LCEE Life Cycle Engineering Experts GmbH  
Berliner Allee 58  
64295 Darmstadt

### **Programme operator**

ift Rosenheim GmbH  
Theodor-Gietl-Str. 7-9  
83026 Rosenheim  
Phone: 0 80 31/261-0  
Fax: 0 80 31/261 290  
E-Mail: [info@ift-rosenheim.de](mailto:info@ift-rosenheim.de)  
[www.ift-rosenheim.de](http://www.ift-rosenheim.de)

### **Declaration holder**

GEZE GmbH  
Reinhold-Vöster-Straße 21-29  
71229 Leonberg

### **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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### **Layout**

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### **Photographs (front page)**

GEZE GmbH

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ift Rosenheim GmbH  
Theodor-Gietl-Str. 7-9  
83026 Rosenheim  
phone: +49 (0) 80 31/261-0  
fax: +49 (0) 80 31/261-290  
email: [info@ift-rosenheim.de](mailto:info@ift-rosenheim.de)  
[www.ift-rosenheim.de](http://www.ift-rosenheim.de)