

## SAUTER Declaration on materials and the environment

### Product



Type	<b>AVM321F110, F112, F112U AVM322F120, F122, F122U</b>
Designation	<b>Valve actuator</b>
Product range	<b>Electric actuators</b>
Product group of eco-balance	<b>Positioning actuators</b>

### Manufacturer

Fr. Sauter AG  
Im Surinam 55, CH-4016 Basel

### Management system certified according to

	Since	By
ISO 9001	<b>10 Aug. 1993</b>	<b>SQS</b>
ISO 9001:2000	<b>10 Aug. 2002</b>	<b>SQS</b>
ISO 14001:2004	<b>10 Aug. 2005</b>	<b>SQS</b>
OHSAS 18001:1999	<b>10 Aug. 2005</b>	<b>SQS</b>

### Environmentally-compatible product design

Basis	Management system Fr. Sauter AG
Process	Business process <ul style="list-style-type: none"> <li>• Product innovation</li> <li>• Ecological accounting</li> </ul>

<b>Product description</b>	CE conformity	
	Function, operation, maintenance, service	PDS 51.374
<b>Environmental risk</b>	Fire protection according to	EN 60695-2-11, EN 60695-10-2
	Fire load <sup>1</sup>	18.7...21.2 MJ
	Hazardous substances <sup>2</sup>	Conforming to RoHS 2011/65/EU
	Banned substances (see link below)	Conforming to REACH 1907/2006/EC
	Parts containing halogen (causing corrosive smoke)	Printed circuit board
	Liquids polluting the aquatic environment	Lubricant
	Explosive substances	None
<b>Packaging</b> <sup>3</sup>	Cardboard PAP 21	114.5 g

## Materials

	Total weight of product <sup>4</sup>	1411...1553 g	Material Safety Data Sheet (MSDS)	EU waste code <sup>5</sup>
<b>Plastic</b>				
EPDM	0.2...0.3 g		Yes	20 01 39
PA6	43.8 g		Yes	20 01 39
PBT	85.2 g		Yes	20 01 39
PC	185.7...303.2 g		Yes	20 01 39
PC+ABS	205.3...331.4 g		Yes	20 01 39
POM	55.4...58.1 g		Yes	20 01 39
PUR	2.6 g		Yes	20 01 39
<b>Metal</b>				
Steel of different alloys	565.3...566.2 g		Not required	20 01 40
Aluminium of all alloys	51.4...239.2 g		Not required	20 01 40
Sintered metal with Fe	5.1...7.8 g		Not required	20 01 40
<b>Printed circuit board</b>				
PCB assembly, lead-free solder	26.9...31.6 g		Not required	20 01 36
<b>Various</b>				
Terminals	4.0...6.0 g		Not required	20 01 99
<b>Special components</b>				
Motor	47.6...89.2 g		Not required	20 01 36
Lubricant, Shm	3.0 g		Not required	20 01 26

<sup>1</sup> See **Remarks** on last page

<sup>2</sup> Only applies to electrical devices

<sup>3</sup> Directive 94/62/EC and follow-on document, ruling 97/129/EC

<sup>4</sup> See **Remarks** on last page

<sup>5</sup> Directive 75/442/EEC and follow-on document, ruling 2001/118/EC



**Note**

Silicone content: Lubricant and parts used are silicone-free

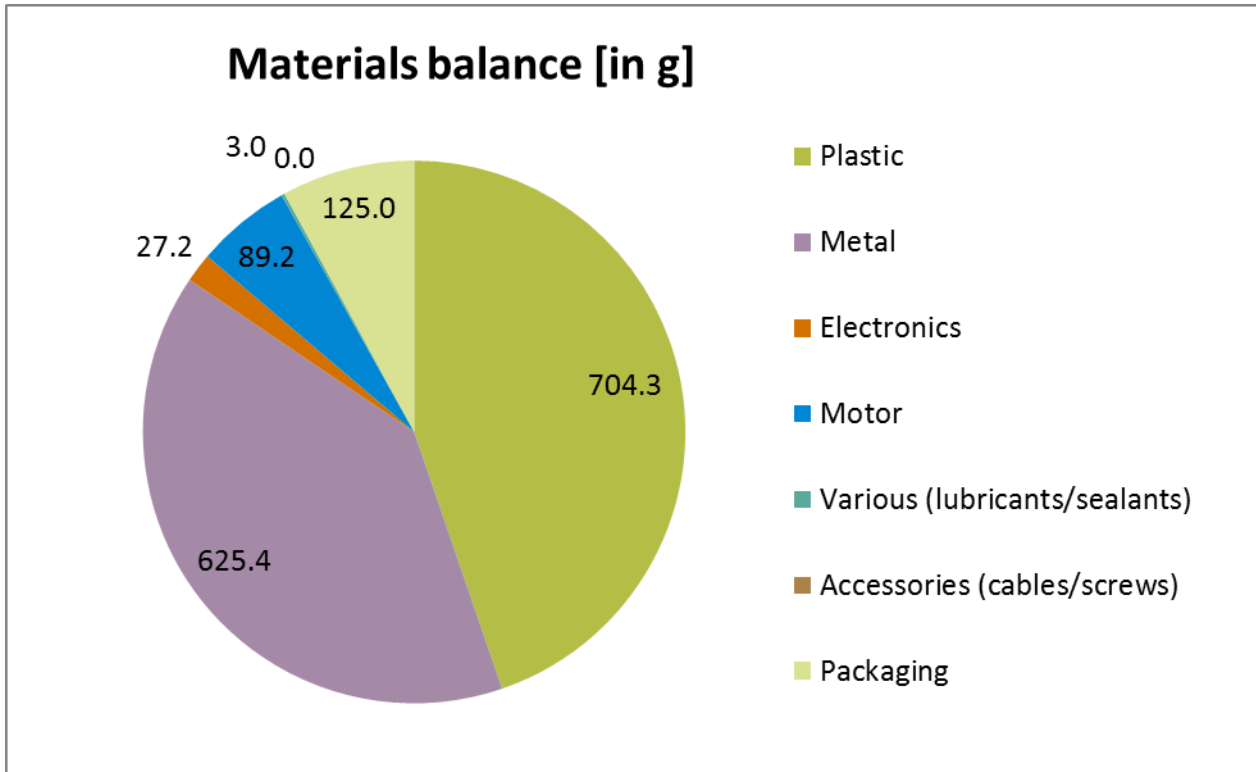
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### Note

The following materials balance and the calculation of the environmental impact relate to type AVM321F110.

## Materials balance



## Energy requirement in the utilisation phase

Power requirement for component

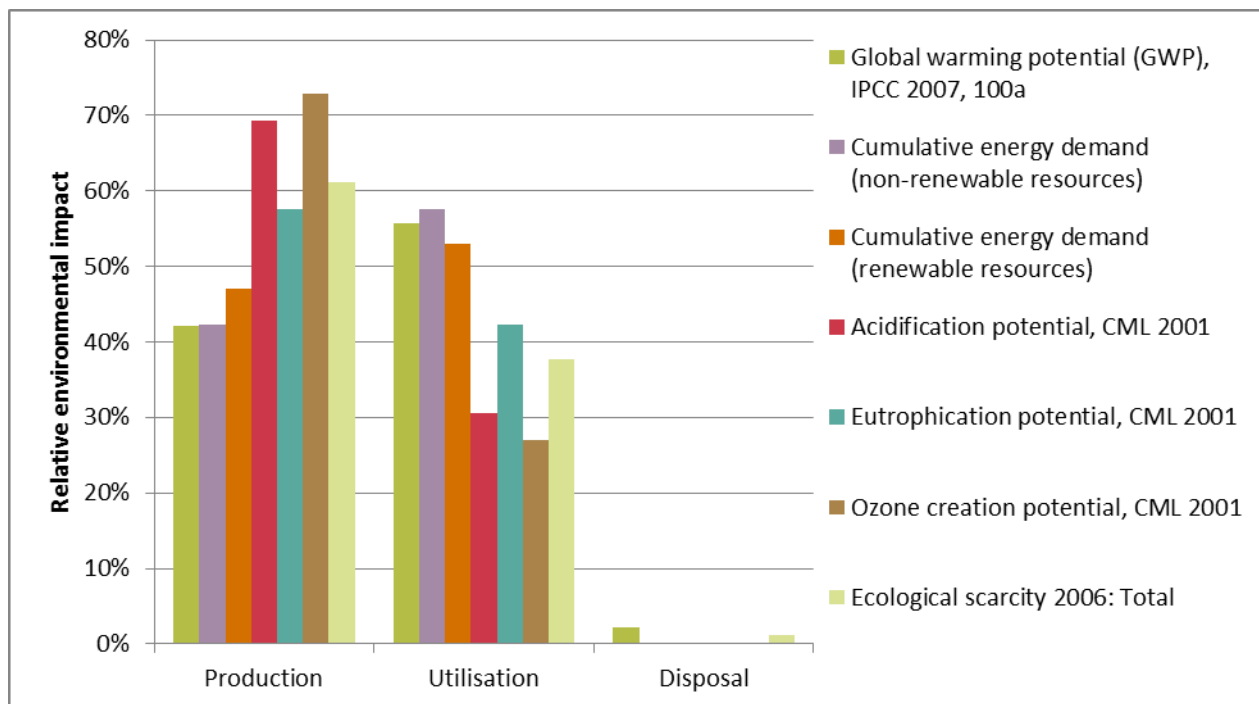
- Minimum power consumption 0.45 W
- Average power consumption 1.5 W
- Typical energy consumption per year 4.5 kWh

The energy requirement evaluation was performed for a typical utilisation scenario. The European electricity mix from ecoinvent 2.2 was used to evaluate the power consumption in the utilisation phase.

## Calculation of the environmental impact

Evaluation over the entire life stage of 8 years in a typical utilisation scenario. The results additionally shown are based on a method of ecological scarcity that combines various environmental effects into an “environmental impact points” key figure. The method is based on Switzerland’s environmental targets and evaluates the individual effects depending on the “Distance to Target”.

Indicator	Unit	Production	Utilisation	Disposal	Total
Global warming potential (GWP), IPCC 2007, 100a	kg CO2 eq.	14.9	19.7	0.8	35.4
Cumulative energy demand (non-renewable resources)	MJ eq.	292	398	0.5	691
Cumulative energy demand (renewable resources)	MJ eq.	26.8	30.2	0.01	57.0
Acidification potential, CML 2001	kg SO2 eq.	1.84E-01	8.11E-02	2.43E-04	2.65E-01
Eutrophication potential, CML 2001	kg PO4-- eq.	8.79E-02	6.44E-02	2.34E-04	1.53E-01
Ozone creation potential, CML 2001	kg C2H4 eq.	8.81E-03	3.26E-03	8.02E-06	1.21E-02
Ecological scarcity 2006: Total	UBP	32,590	20,100	590	53,300



The relationship of the contributions made by the utilisation in comparison to those made by the production and disposal depends on the intensity of the utilisation (utilisation scenario).

**Product:**

The device must be disposed of as waste from electrical and electronic equipment (electrical/electronic scrap) and must not be disposed of as household waste. This applies in particular to the PCB assembly.

It is possible that special treatment for special components is compulsory by law or makes ecological sense.

**Packaging:**

Recyclable

The local and currently valid laws (WEEE2012/19/EU) must be observed.

**Special information:**

None

**Remarks****<sup>(1)</sup> Depending on the fire load for the type:**

AVM321F110	21,2 MJ
AVM321F112 / F112U	21,2 MJ
AVM322F120	19,2 MJ
AVM322F122 / F122U	19,2 MJ

**<sup>(2)</sup> Depending on the weight of the type:**

AVM321F110	1453 g
AVM321F112 / F112U	1453 g
AVM322F120	1553 g
AVM322F122 / F122U	1553 g

**How the environment benefits**

With these products we make a significant contribution to energy savings in buildings and to reducing global warming.

In the Green Building area, our products ensure that customer requirements are fulfilled optimally and that there is cost efficiency over the entire building life-cycle.

- High performance in relation to size and weight.
  - Stand-by function at limit minimises energy consumption.
  - Reduction in the general energy loss due to very good regulation of the actuator.
  - Easy dismantling for proper disposal.

**Extent of applicability**

This declaration is an environmental declaration based on ISO 14025 and describes the environmental impact of the product over its entire life stage. The declaration is made in a compact form without an external check or registration.

The data gathered have been evaluated with existing data inventories for production processes from the ecoinvent 2.2 European database.

For the determination of the energy requirement during the utilisation phase of the product, standard HVAC applications and average climatic conditions in Switzerland were assumed, based on the ecological accounting for the corresponding product group.

**Disclaimer: This declaration is only for information purposes.**

Deviations from the information it contains can occur without being reported. Fr. Sauter AG explicitly rules out any liability for any consequences that may result due to the above information.



Your local SAUTER representative will provide further information on environmental aspects, and specifically on disposal.

## References

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Ecoinvent 2010 ecoinvent data v2.2, Swiss Center for Life Cycle Inventories, Dübendorf

FOEN 2008 eco-balances: method of ecological scarcity – eco-factors 2006, FOEN