

ABB Drives

# Recycling instructions and environmental information ACS550 and ACH550 product family



Power and productivity  
for a better world™



# List of related manuals

<b>Drive hardware manuals and guides</b>	<b>Code (English)</b>
<i>ACS550 and ACH550 recycling instructions and environmental information</i>	<a href="#">3AFE68315727</a>
<i>ACS550-01/U1 User's Manual</i>	<a href="#">3AFE64804588</a>
<i>ACH550-01 User's Manual</i>	<a href="#">3AFE68258537</a>

You can find manuals and other product documents in PDF format on the Internet. See section [Document library on the Internet](#) on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.

# Recycling instructions and environmental information

ACS550 and ACH550 product family

Table of contents





# Table of contents

---

## **1. Introduction to the manual**

What this chapter contains .....	7
Applicability .....	7
Target audience .....	7
Contents of the manual .....	7
Frame size .....	8
Disclaimer .....	8

## **2. Product materials**

Contents of this chapter .....	9
Structure of the ACS550/ACH550 module frame sizes R1 and R2 .....	10
Structure of the ACS550/ACH550 module frame sizes R3 and R4 .....	11
Structure of the ACS550/ACH550 module frame size R5 .....	12
Structure of the ACS550/ACH550 module frame size R6 .....	13
Structure of the ACS550/ACH550 module frame size R7 .....	14
Structure of the ACS550/ACH550 module frame size R8 .....	15
Control panel .....	16
Other optional modules .....	17
Encoder module (ACS550 and US market only) .....	17
Fieldbus adapter module .....	18
Package .....	19
Product manuals and sales brochures .....	19

## **3. Manufacturing and use**

Manufacturing .....	21
Use .....	21

## **4. Product disposal**

Contents of this chapter .....	23
Disposal .....	23
Dismantling .....	23
Manual dismantling .....	24
Mechanical shredding .....	24
ABB list of prohibited and restricted substances .....	24
Reference list .....	24
Recycling information in accordance with the WEEE .....	25
A recycling example .....	26

## **Further information**

Product and service inquiries .....	27
Product training .....	27
Providing feedback on ABB manuals .....	27
Document library on the Internet .....	27
ABB environment policy .....	27

---



ABB group sustainability objectives ..... 27  
ABB list of prohibited and restricted substances ..... 27





# Introduction to the manual

---

## What this chapter contains

This chapter describes the contents of the manual. It also contains information on the compatibility and intended audience.

## Applicability

This document covers the environmental information of the following products:

- ACS550 product family
- ACH550 product family
- accessories and option modules.

## Target audience

This document is intended for ABB customers and for professional recyclers.

## Contents of the manual

The document contains information for treatment facilities in accordance with the EU directive on waste electrical and electronic equipment (WEEE).

This manual contains the following chapters:

- [Product materials](#)
- [Manufacturing and use](#)
- [Product disposal](#)

The WEEE directive is implemented through national regulations and therefore requirements vary in each EU member state.

---

Drives are always parts of other machines or equipment and they are covered by the WEEE directive when the end product is covered. Inclusion or exclusion depends on the application of the drive.

The WEEE directive does not apply to drives which are used in large-scale fixed installations, large-scale stationary industrial tools, means of transport for persons and goods, or non-road mobile machinery made available exclusively for professional use.

We recommend to contact local environmental authorities for up-to-date information about national recycling requirements.

## **Frame size**

This manual covers all different frame sizes of the product family. The frame size is marked on the type designation label of the drive. The frame size is also shown in the rating tables for each drive type. The rating tables are in the *drive user's manual*.

## **Disclaimer**

The information presented in this publication does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequences of its use. Publication thereof does not convey nor imply any license under patent - or other industrial or intellectual - property rights.

---



# Product materials

---

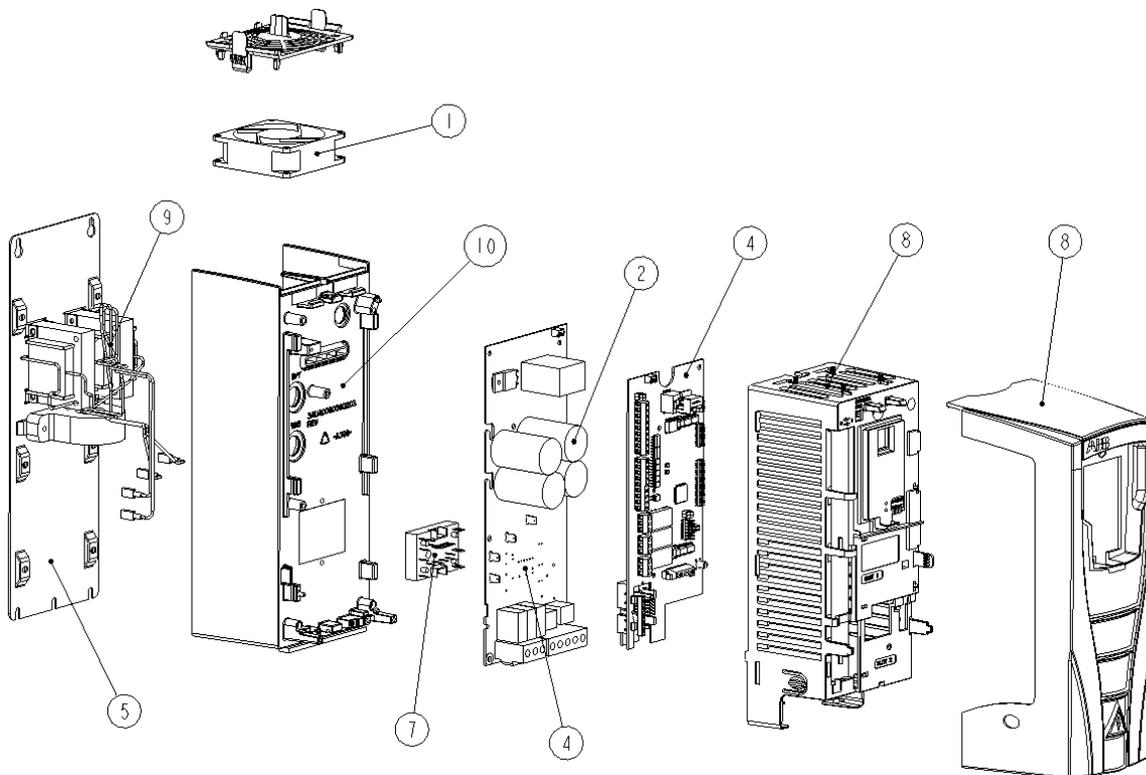
## Contents of this chapter

This chapter describes the main components and product materials of the ACS550/ACH550 drive of frame sizes R1 to R8.

---

## Structure of the ACS550/ACH550 module frame sizes R1 and R2

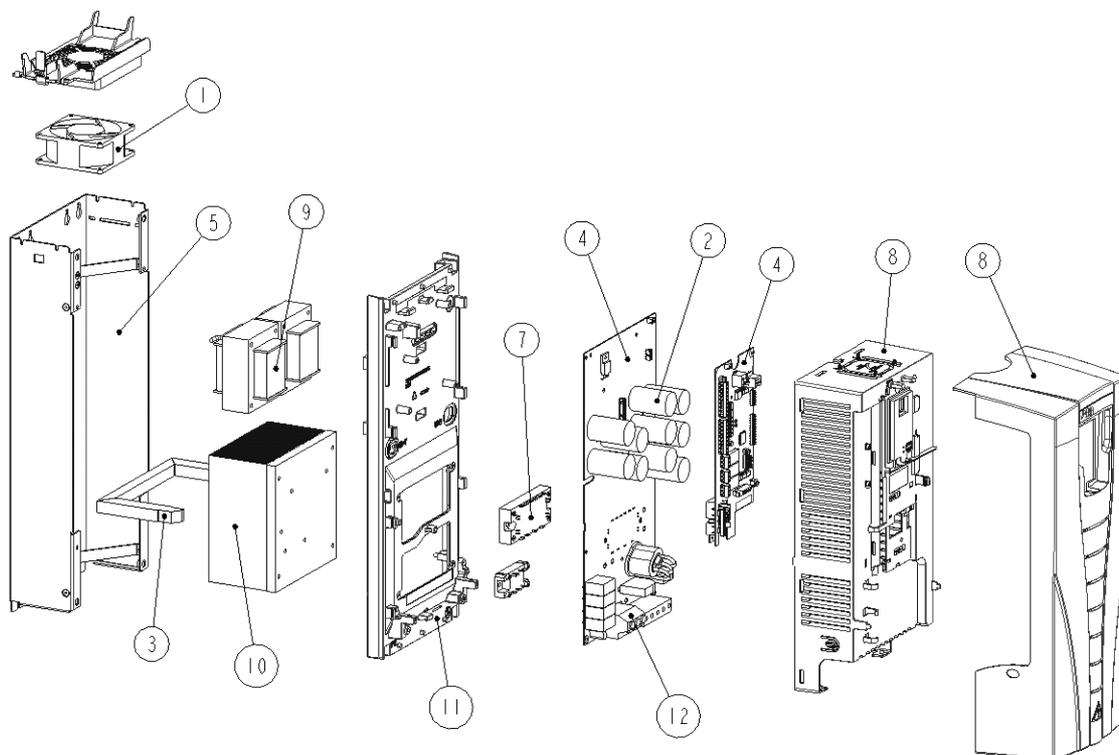
The main components are shown in the figure below.



Part No.	Name	Qty	Materials	Weight / g
1	Fan	1	Various, plastic parts PBT+PA	150
2	Electrolytic capacitor	4	Al, electrolytic solute	200...400
4	Printed circuit board	2	Various (FR4) *	1250...1450
5	Steel plate	1	Zn-coated steel	1050...1650
7	Semiconductors	1	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	60...120
8	Housing parts	2	PC/ABS	650...850
9	Chokes	3	Fe 68 weight-%, Cu 28%, various 4%	1400...3100
10	Heatsink	1	Aluminum alloy, A380 or AlSi10Mg	2900...4350
	Cables	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	N/A
	Optional modules (not shown; see sections <a href="#">Control panel</a> and <a href="#">Other optional modules</a> )	1...3	Various	50...100
<b>Total weight</b>				<b>8.2...11.2 kg</b>
* FR4 contains only TBBA which is not forbidden material in any country so far.				
** Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).				

## Structure of the ACS550/ACH550 module frame sizes R3 and R4

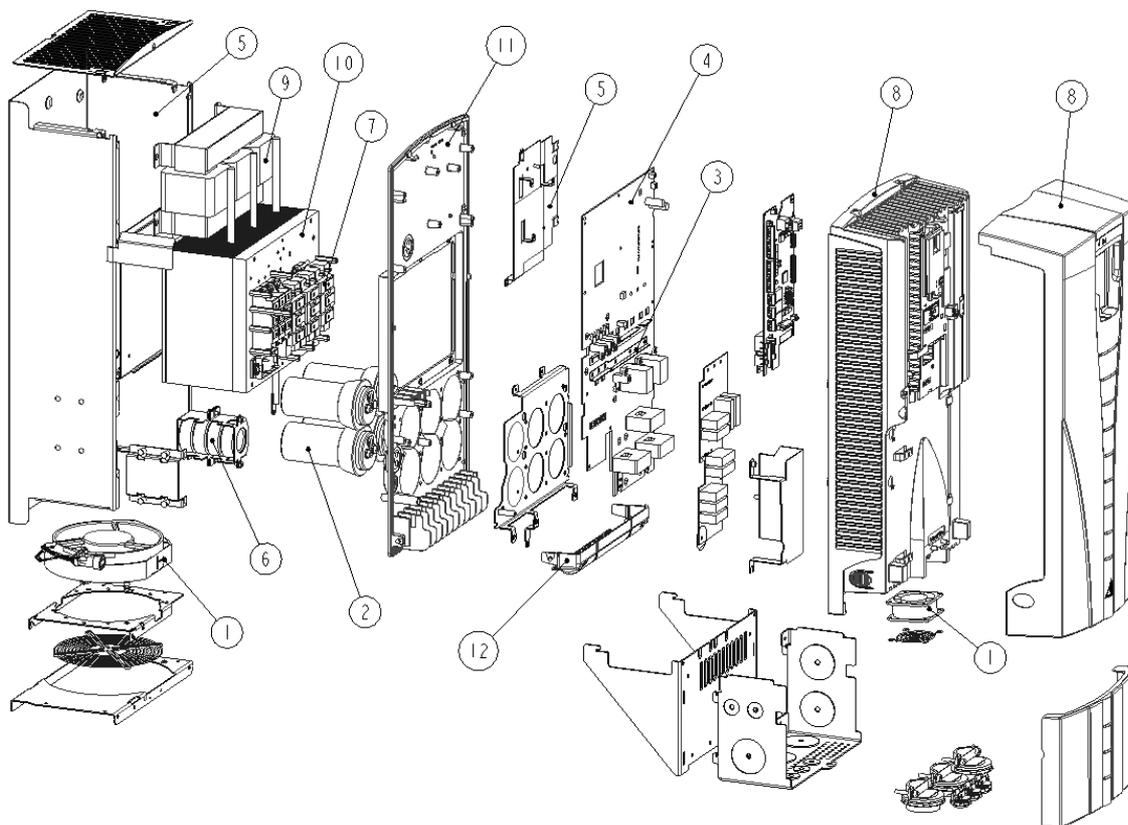
The main components are shown in the figure below.



Part No.	Name	Qty	Materials	Weight / g
1	Fan	1	Various, plastic parts PBT+PA	250
2	Electrolytic capacitor	2...3	Al, electrolytic solute	740...1000
3	Air guide	1	Polypropylene (PP) or neoprene rubber (CR)	20
4	Printed circuit board	2	Various (FR4) *	1000
5	Steel plate	1	Zn-coated steel	6380
7	Semiconductors	2	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	875
8	Housing parts	2	PC/ABS	1100
9	Chokes	2	Fe 68 weight-%, Cu 28%, various 4%	8000
10	Heatsink	1	Aluminum alloy (Si, Mg)	5227
11	Adapter plate (deck)	1	Aluminum alloy, A380 or AISi10Mg	1600...1850
12	Custom-made connector (R4 only)	1	PC+10%GF	180
	Cables and busbars	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	N/A
	Optional modules (not shown; see sections <a href="#">Control panel</a> and <a href="#">Other optional modules</a> )	1...3	Various	50...100
<b>Total weight</b>				<b>18.5...26.5 kg</b>
* FR4 contains only TBBA which is not forbidden material in any country so far.				
** Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).				

## Structure of the ACS550/ACH550 module frame size R5

The main components are shown in the figure below.



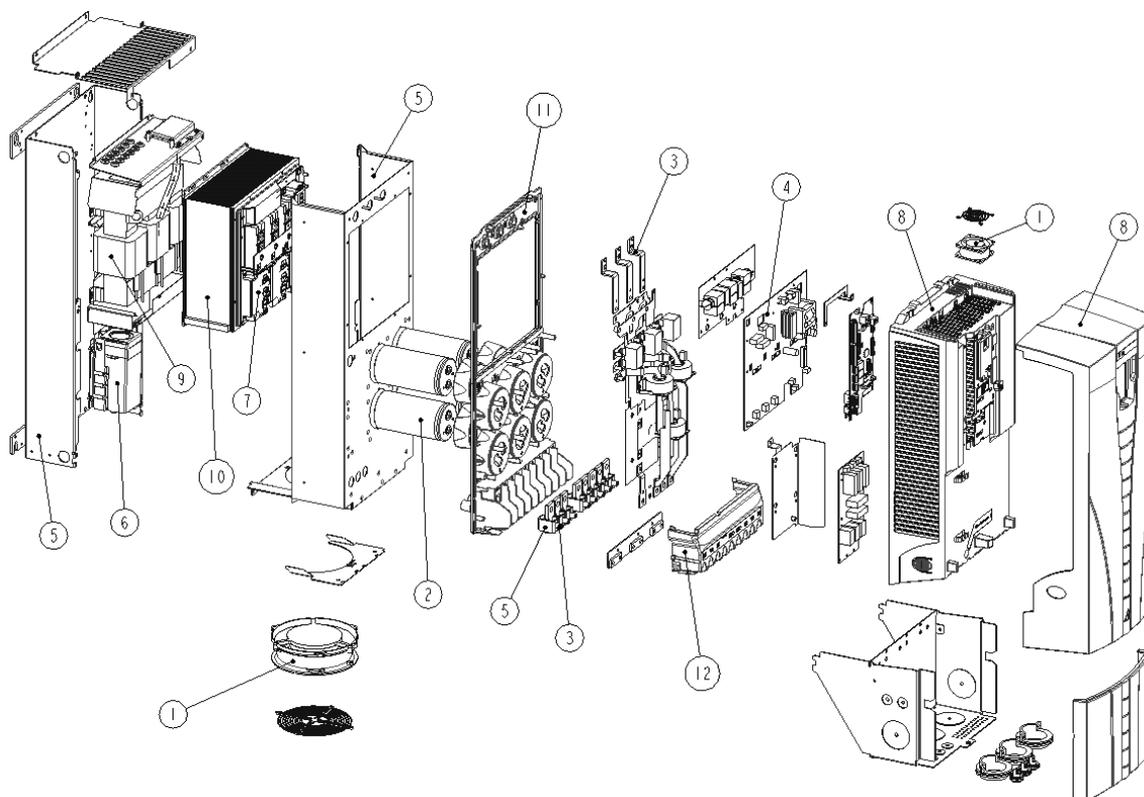
Part No.	Name	Qty	Materials	Weight / g
1	Fan	1...2	Various, plastic parts PBT+PA	600...660
2	Electrolytic capacitor	4...6	Al, electrolytic solute	2400
3	Busbars	9	Sn-coated Cu	3000
4	Printed circuit board	3	Various (FR4) *	1500
5	Steel plates	9...12	Zn-coated steel	9430
6	Options (shielding)	4	Ferrite	50
7	Semiconductors	6...7	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	950
8	Housing parts	2	PC/ABS	1510
9	Chokes	1	Fe 68 weight-%, Cu 28%, various 4%	8450
10	Heatsink	1	Aluminum alloy (Si, Mg)	7430
11	Adapter plate (insulating support, deck)	1	PC+10%GF	850
12	Terminal cover	1	PC	45
	Cables	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	30
	Optional modules (not shown; see sections <a href="#">Control panel</a> and <a href="#">Other optional modules</a> )	1...3	Various	50...100
<b>Total weight</b>				<b>38.5 kg</b>

\* FR4 contains only TBBA which is not forbidden material in any country so far.

\*\* Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).

## Structure of the ACS550/ACH550 module frame size R6

The main components are shown in the figure below.



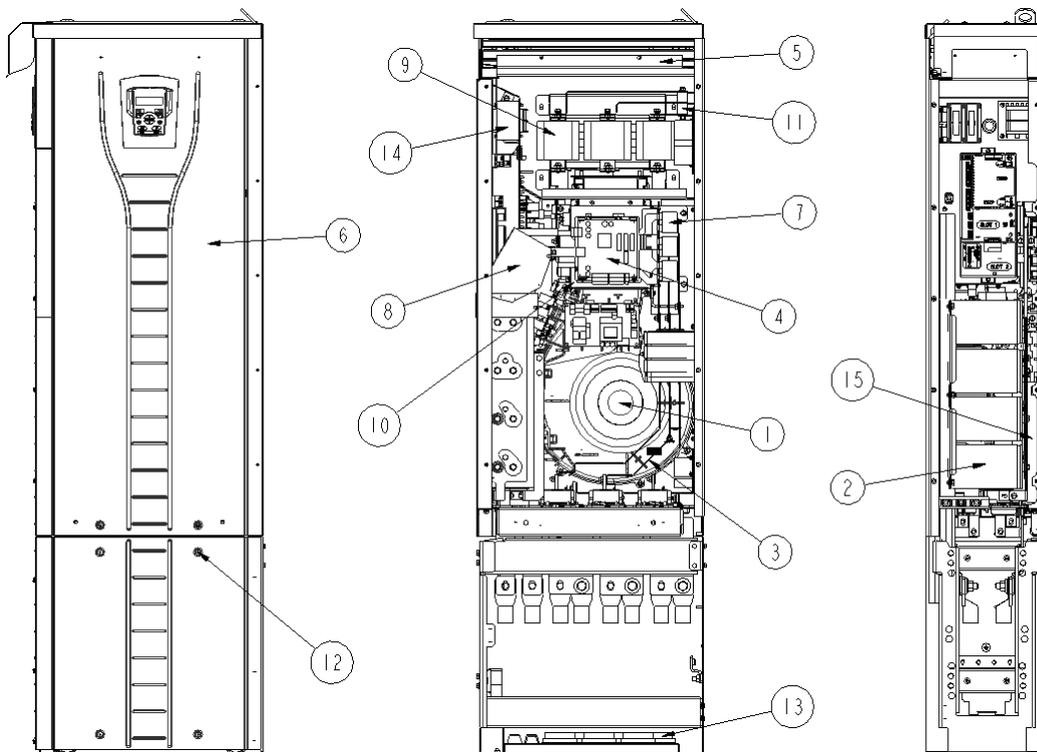
Part No.	Name	Qty	Materials	Weight / g
1	Fan	1...2	Various, plastic parts PBT+PA	1000...1060
2	Electrolytic capacitor	4...6	Al, electrolytic solute	5760
3	Busbars	9	Sn-coated Cu	3950
4	Printed circuit board	3...6	Various (FR4) *	4000
5	Steel plates	11	Zn-coated steel	20000
6	Options (shielding)	6	Ferrite	100
7	Semiconductors	6...7	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	950
8	Housing parts	2	PC/ABS	2400
9	Chokes	3	Fe 68 weight-%, Cu 28%, various 4%	21900
10	Heatsink	1	Aluminum alloy (Si, Mg)	11900
11	Adapter plates (insulating support, deck)	2	PC+10%GF	1180
12	Terminal cover	1	PC	135
	Cables	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	2000
	Optional modules (not shown; see sections <a href="#">Control panel</a> and <a href="#">Other optional modules</a> )	1...3	Various	50...100
<b>Total weight</b>				<b>80.0 kg</b>

\* FR4 contains only TBBA which is not forbidden material in any country so far.

\*\* Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).

## Structure of the ACS550/ACH550 module frame size R7

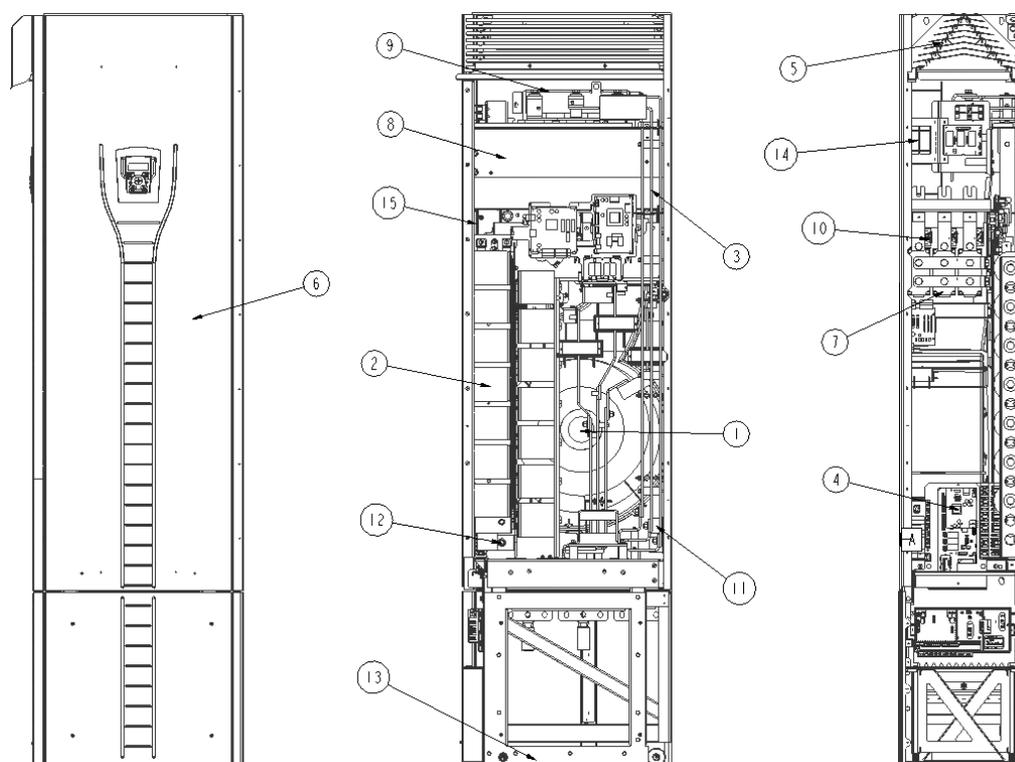
The main components are shown in the figure below.



Part No.	Name	Materials	Weight / kg
1	Fan	Zn-coated steel, Al, Cu	2.6
2	Electrolytic capacitors	Al, electrolytic solute	4.7
3	Busbars	Sn-coated Cu	9.0
4	Printed circuit boards	Various (FR4) *	1.0
5	Sheet metal parts	Zn-coated steel	25.3
6	Sheet metal part, painted	Polyester powder paint (Teknos CZ 8080®)	33.1
7	Semiconductors	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	2.5
8	Insulating plates / Mouldings	PC / PC/ABS	2.0
9	Chokes	Fe, Cu + various	18.3
10	Heatsinks	Al alloy (Si, Mg)	7.6
11	Insulating supports	PA, GF, epoxy	0.5
12	Screws	Zn-coated steel	1.0
13	Membrane packings	EPDM / CR	0.2
14	Transducers	PC, PUR, Cu	2.7
15	Cables and wires	PVC, Cu, Sn + various	0.3
<b>Total weight approx.</b>			<b>115 kg</b>
* FR4 contains only TBBA which is not forbidden material in any country so far.			
** Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).			

## Structure of the ACS550/ACH550 module frame size R8

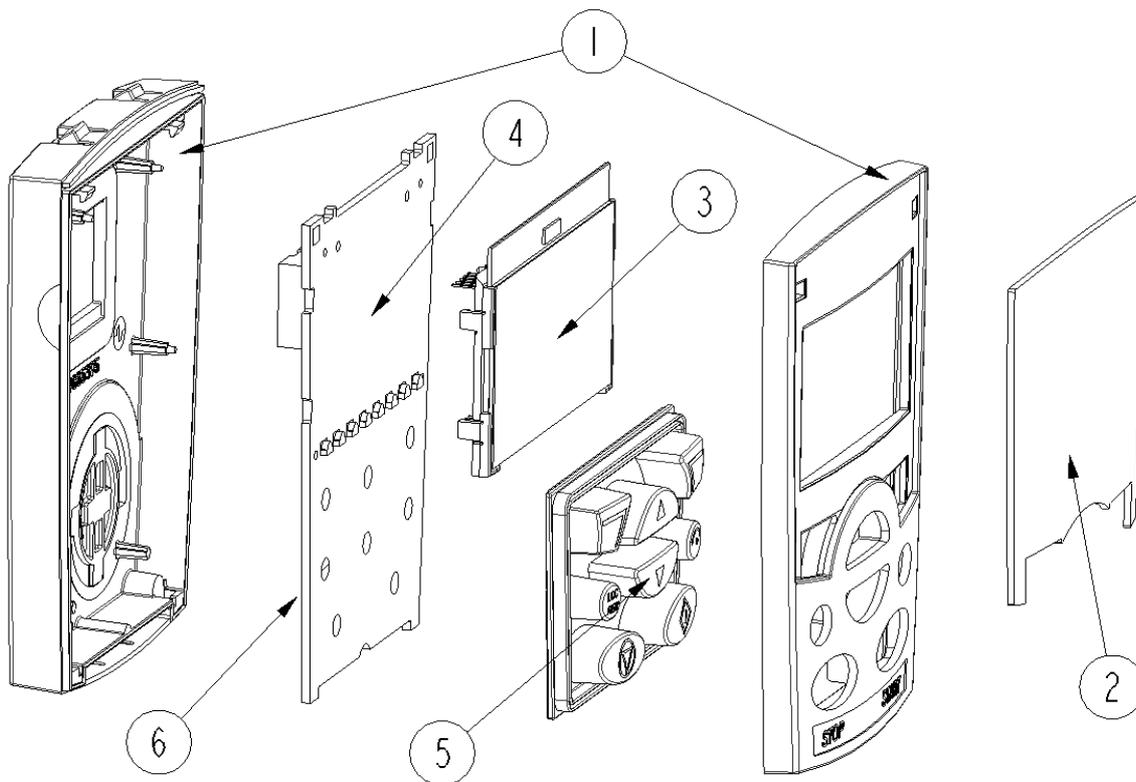
The main components are shown in the figure below.



Part No.	Name	Materials	Weight / kg
1	Fan	Zn-coated steel, Al, Cu	5.5
2	Electrolytic capacitors	Al, electrolytic solute	12.5
3	Busbars	Sn-coated Cu	31.5
4	Printed circuit boards	Various (FR4) *	1.2
5	Sheet metal parts	Zn-coated steel	55.4
6	Sheet metal part, painted	Polyester powder paint	53.5
7	Semiconductors	Epoxy, Cu, Al, Si, Si gel, PBT, Pb**, PPS, SiN, AlN	8.7
8	Insulating plates / Mouldings	PC / PC/ABS	6.1
9	Chokes	Fe, Cu + various	42.0
10	Heatsinks	Al alloy (Si, Mg)	20.7
11	Insulating supports	PA, GF, epoxy	1.2
12	Screws	Zn-coated steel	2.0
13	Membrane packings	EPDM / CR	0.3
14	Transducers	PC, PUR, Cu	5.2
15	Cables and wires	PVC, Cu, Sn + various	0.5
<b>Total weight approx.</b>			<b>230 kg</b>
* FR4 contains only TBBA which is not forbidden material in any country so far.			
** Since end of the year 2005 all semiconductors used in ACS550/ACH550 products are RoHS compliant and the amount of Pb is below the allowed limit (1000ppm).			

## Control panel

The main components are shown in the figure below.

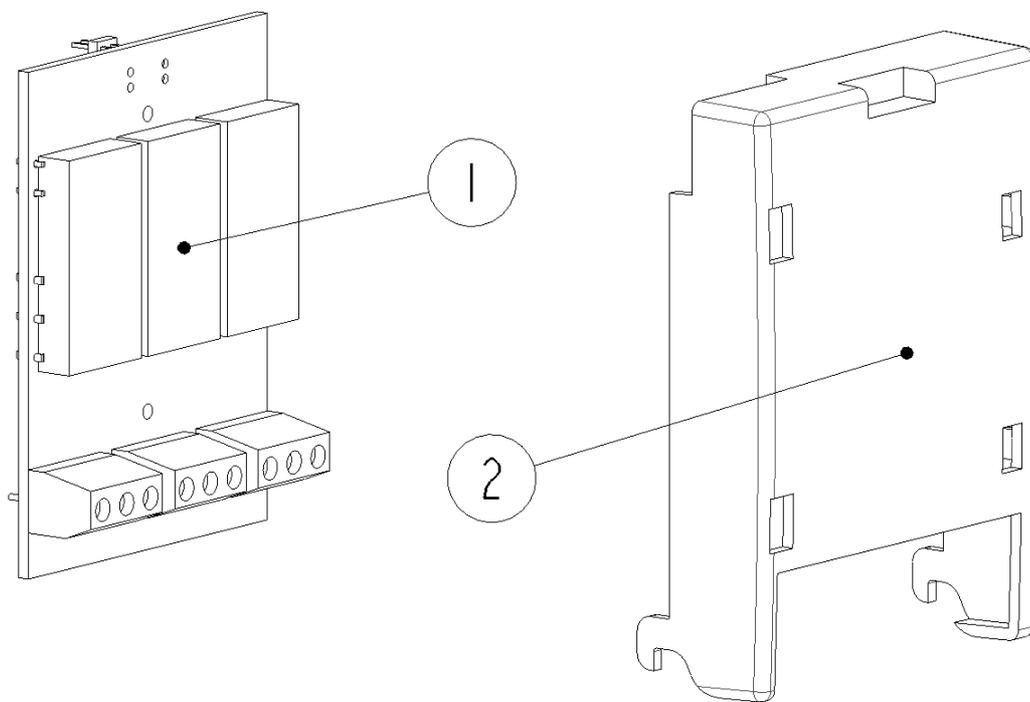


Part No.	Name	Materials	Weight / g
1	Housing parts	PC/ABS	34
2	Lens	PC	6
3	LCD display	Various	14
4	Printed circuit board	Various	26
5	Keypad	Silicone rubber	10
6	CR 2032 lithium battery	Various	3
<b>Total weight</b>			<b>93</b>

## Other optional modules

### ■ Encoder module (ACS550 and US market only)

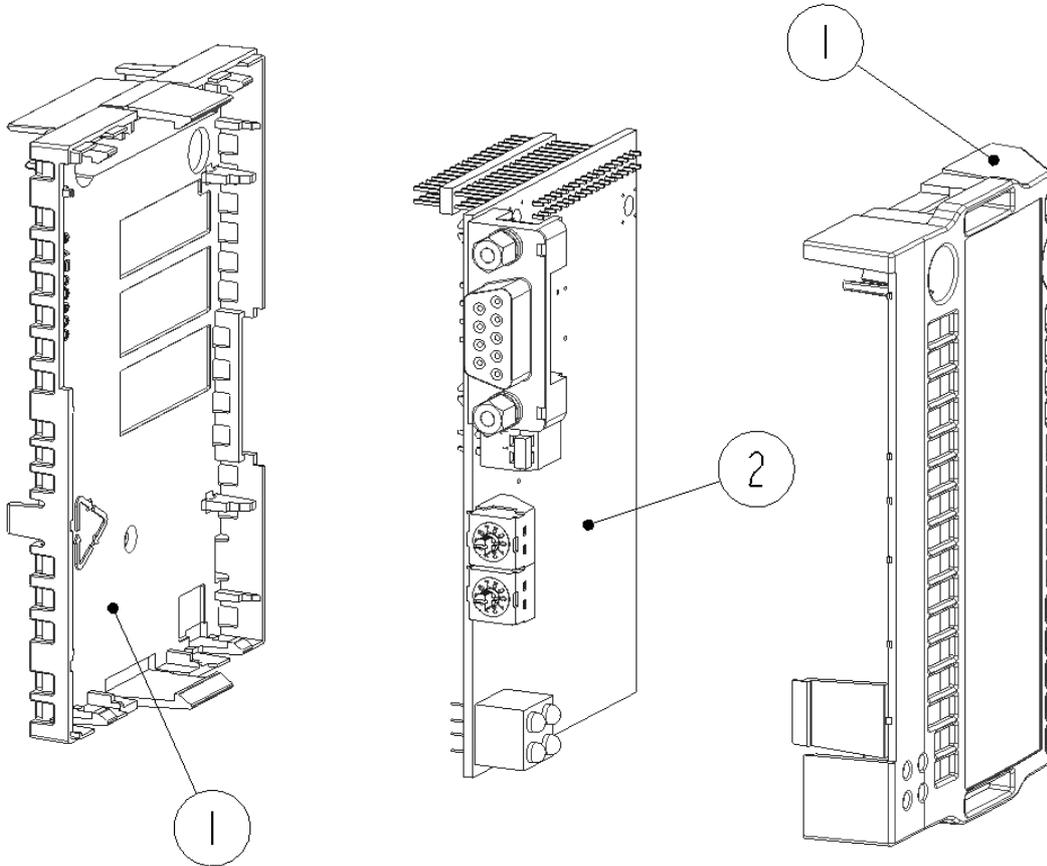
The main components are shown in the figure below.



Part No.	Name	Qty	Materials	Weight / g
1	Printed circuit board	1	Various	35
2	Housing	1	PC/ABS	15
<b>Total weight</b>				<b>50 g</b>

**Fieldbus adapter module**

The main components are shown in the figure below.



Part No.	Name	Qty	Materials	Weight / g
1	Housing parts	2	PC/ABS	25
2	Printed circuit board (Appearance may vary)	1	Various	35
<b>Total weight</b>				<b>60 g</b>

All screws in ACS550/ACH550: carbon steel, Pozidrivs or Torx recess, zinc coating

Plastics and rubber	
ABS	Acrylonitrile-butadiene-styrene
CR	Chloprene rubber
EPDM	Ethylenepropylenrubber
GF	Glass fibre
PA	Polybutene terephthalate
PBT	Polyamide
PC	Polycarbonate
PP	Polypropylene
PPS	Polyphenylenesulfide
PS	Polystyrene
PUR	Polyurethane
PVC	Polyvinyl chloride

All plastic parts (weight > 25 g) are marked according to ISO 1043 and DIN 54840.

## **Package**

The product package is made of corrugated fibreboard, expanded polystyrene (PS-E), plywood or wood. The package is covered with plastic covering made of polyethylene (PE-LD) and tied with polypropylene (PP) or steel bands.

Option boards are in protective polyethylene (PE-LD) bags.

You can recycle all materials used in the package.

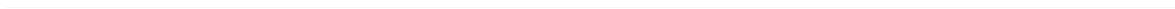
To avoid pollution caused by unnecessary transportation, the factory does not take back used packages. Contact your local ABB office for package recycling instructions if needed.

ABB recommends package recycling as it preserves raw materials and reduces waste being landfilled.

## **Product manuals and sales brochures**

To save natural resources and reduce paper waste, all product manuals are available in ABB Library and on the Internet.

---





# 3

## Manufacturing and use

---

### Manufacturing

ABB Oy (Finland) has a company-wide integrated quality, environmental and occupational health & safety management system. The system is certified in accordance with requirements of the international standards ISO 9001:2015 and ISO 14001:2015.

The Integrated Management System applies to all units of the company.

### Use

The use of a drive has several positive environmental impacts, such as:

- Substantial energy savings and reduced operating costs can be reached using a drive. Rather than have an electric motor running continuously at full speed, an electric drive allows the user to slow down or speed up the motor.
- Process control is optimized. An electric drive enables a process to achieve the right speed and torque while maintaining its accuracy.

Need for maintenance is reduced. Being able to vary the speed and torque of an electric motor means there is less wear and tear on the motor and the driven machine.

---





# Product disposal

---

## Contents of this chapter

This chapter contains product disposal instructions.

### Disposal

The main parts of the drive can be recycled to preserve natural resources and energy. Product parts and materials should be dismantled and separated.

Generally all metals, such as steel, aluminum, copper and its alloys, and precious metals can be recycled as material. Plastics, rubber, cardboard and other packaging material can be used in energy recovery.

Printed circuit boards and DC capacitors need selective treatment according to IEC 62635 guidelines.

To aid recycling, plastic parts are marked with an appropriate identification code.

Contact your local ABB distributor for further information on environmental aspects. End of life treatment must follow international and national regulations.

### Dismantling

You can dismantle the drive manually or in a shredding machine. The chapter is divided in two sections on basis of the dismantling method.

---

## ■ **Manual dismantling**

Sort the parts of the product according to their material contents as follows:

- ferrous metals (plates, screws)
- aluminum (heatsink)
- plastics
- printed circuit boards
- electrolytic capacitors (mounted on the main circuit board)
- other.

You can recycle metal parts (iron and aluminum) and most of the other materials according to local regulations.

For information on harmful materials, see subsection [ABB list of prohibited and restricted substances](#).

## ■ **Mechanical shredding**

In this method, a whole product is mechanically shredded into small pieces and materials are sorted using dedicated sorting processes.

Remove the harmful material before shredding the drive in the shredding machine. See subsection [ABB list of prohibited and restricted substances](#).

## **ABB list of prohibited and restricted substances**

The purpose of this list is to comply with legislation to avoid substances that may present hazards to the environment or the health.

This document provides information about “Prohibited substances”, substances that must not be used, and “Restricted substances”, substances whose use should be limited within ABB.

Definitions and regulations of hazardous materials differ from country to country and are likely to change when knowledge of materials increases. The materials used in the product are materials typically used in electrical and electronic equipment.

## ■ **Reference list**

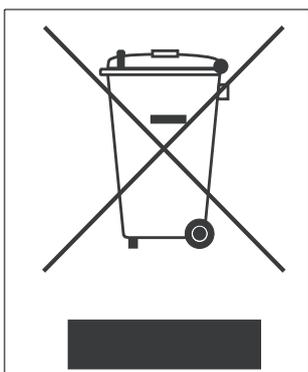
1. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS II).
  2. Regulation No 1907/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH):
    - Annex XIV: List of substances subject to authorization
    - Annex XVII: Restrictions on use of substances in articles
    - SVHC: Candidate list of substances of very high concern for authorization.
  3. Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE).
-

## Recycling information in accordance with the WEEE

The product is marked with the wheelie bin symbol. It indicates that at the end of life the product should enter the recycling system.

You should dispose of it separately at an appropriate collection point and not place it in the normal waste stream.

The figure below shows the wheelie bin symbol indicating separate collection for electrical and electronic equipment (EEE).



The horizontal bar underneath the crossed-out wheelie bin indicates that the equipment has been manufactured after the Directive came into force in 2005.

The wheelie bin symbol is added to the type designation label of the product since 2017.

The figure below shows an example.

<b>ACS355-01E-02A4-2</b>	
PN 0.37 kW (1/2 HP) Frame R0	
S/N J1643F0001	
	
<b>ABB</b>	ABB Oy Hiomotie 13 00380 Helsinki Finland
IP20 / UL Open type	<b>ACS355-01E-02A4-2</b>
UL Type 1 with MUL1 option	
PN 0.37 kW (1/2 HP)	S/N J1643F0001
U1 1~200...240 V	
I1 6.1 A	3AUA0000058166
I1 with ext. choke 4.5 A	RoHS
f1 48...63 Hz	
U2 3~0...U1 V	
I2 2.4 A (150% 1/10 min)	
f2 0...599 Hz	
	

## A recycling example

This example complies with typical national regulations valid at the time of publishing this manual.

<b>Materials</b>	<b>Recycling method</b>
Steel	Recycled as material
Aluminum	Recycled as material
Plastics	Energy recovery (incineration)
Printed circuit boards	Recycled as WEEE
Electrolytic capacitors	Recycled as WEEE
Cables	Recycled as material
Ceramics	Landfilled
Other materials	Energy recovery (incineration)

---

## Further information

### Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to [www.abb.com/searchchannels](http://www.abb.com/searchchannels).

### Product training

For information on ABB product training, navigate to [new.abb.com/service/training](http://new.abb.com/service/training).

### Providing feedback on ABB manuals

Your comments on our manuals are welcome. Navigate to [new.abb.com/drives/manuals-feedback-form](http://new.abb.com/drives/manuals-feedback-form).

### Document library on the Internet

You can find manuals and other product documents in PDF format on the Internet at [www.abb.com/drives/documents](http://www.abb.com/drives/documents).

### ABB environment policy

You can find ABB's environmental policy on the Internet at [new.abb.com/sustainability/environment-policy](http://new.abb.com/sustainability/environment-policy).

### ABB group sustainability objectives

For information on ABB group sustainability objectives, navigate to [new.abb.com/sustainability/creating-value/objectives](http://new.abb.com/sustainability/creating-value/objectives)

### ABB list of prohibited and restricted substances

You can find the ABB list of prohibited and restricted substances at [new.abb.com/sustainability/environment](http://new.abb.com/sustainability/environment).

# Contact us

[www.abb.com/drives](http://www.abb.com/drives)

[www.abb.com/drivespartners](http://www.abb.com/drivespartners)

3AFE68315727 Rev C (EN) 2017-10-27

