

ABB DRIVES

ACS880-11, ACS880-31, ACH580-31 and ACQ580-31 drives

Recycling instructions and environmental information



List of related manuals

Drive manuals and guides	Code (English)
<i>ACS880-11, ACS880-31, ACH580-31 and ACQ580-31 drives Recycling instructions and environmental information</i>	3AXD50000137671
<i>ACS880-11 hardware manual</i>	3AXD50000045932
<i>ACS880-31 hardware manual</i>	3AXD50000045933
<i>ACH580-31 hardware manual</i>	3AXD50000037066
<i>ACQ580-31 hardware manual</i>	3AXD50000045935

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

ACS880-11, ACS880-31, ACH580-31 and ACQ580-31 drives

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Introduction to the manual

Contents of this chapter

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:

- ACS880-11 drives
- ACS880-31 drives
- ACH580-31 drives
- ACQ580-31 drives

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 R3, R6 and R8 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 hardware 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.



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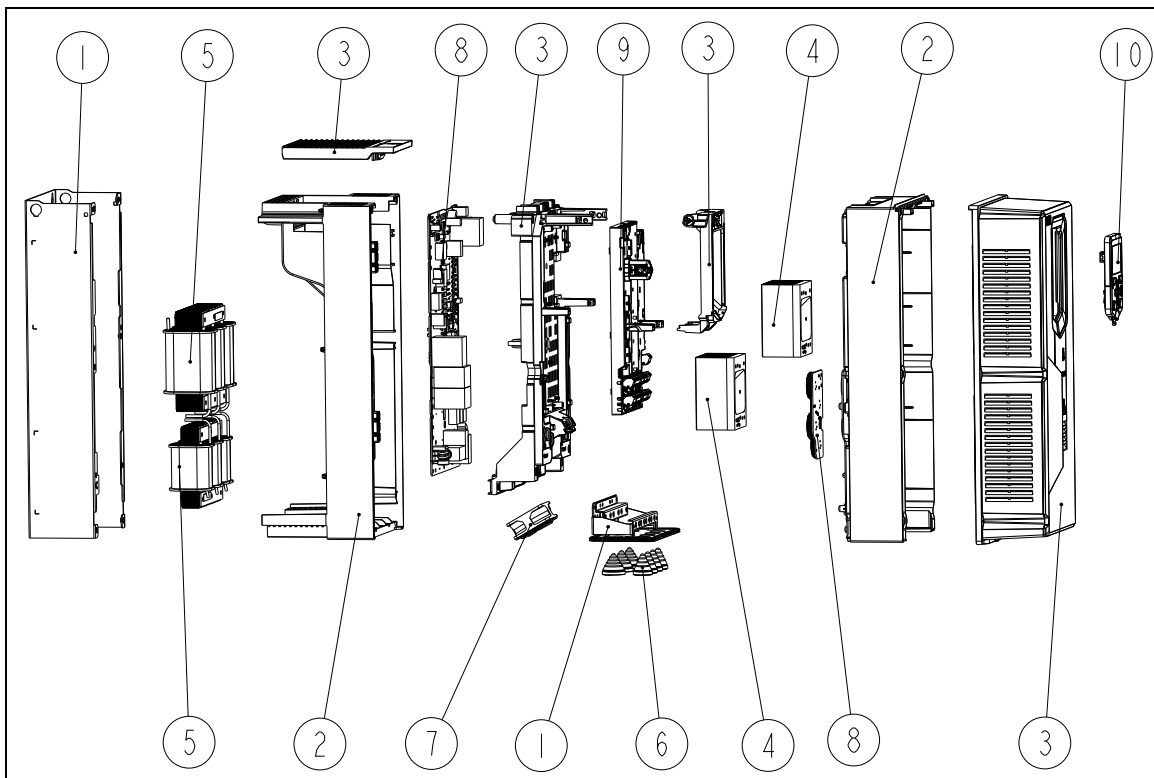
Product materials

Contents of this chapter

This chapter describes the main components and product materials of ACS880-11, ACS880-31, ACH580-31 and ACQ580-31 drives.

Materials of frame R3

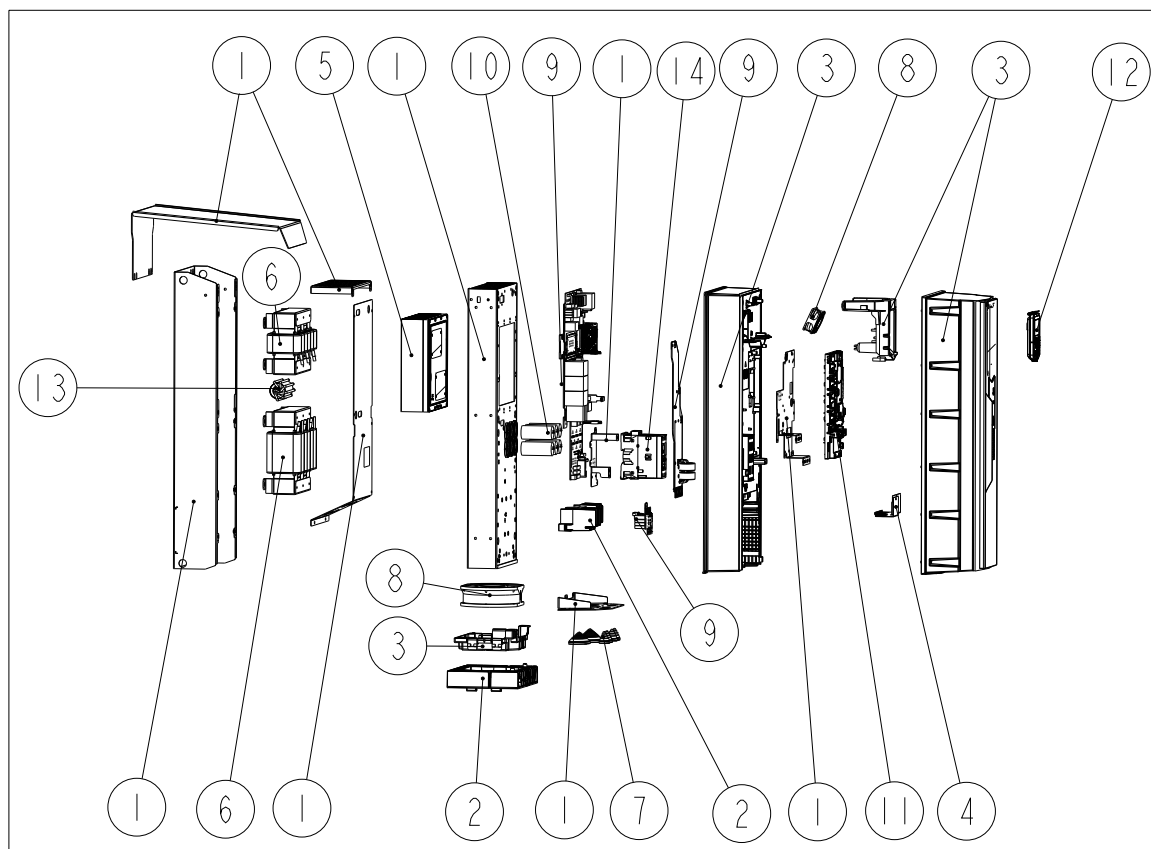
The main components are shown in the figure below.



No.	Name	Qty	Materials	Weight / g
1	Sheet metal parts	2	HDG steel sheet: DX51D+Z275-M-A-C	3500
2	Reinforced plastic parts	2	Plastic: PC+10% GF	2070
3	Housing / cover parts	4	Plastic: PC-ABS	530
4	Heatsink and other aluminum parts	2	Aluminum: AW-6060 [Al Mg Si]	1200
5	Choke	2	Various materials: Fe, Cu, PET+30% GF, silicone, thermoplastic polyester, glass-filled nylon	7000
6	Gaskets	7	Rubber: TPE	110
7	Axial fan	1	Various materials, plastic parts: PBT, aluminum alloy	290
8	Printed circuit board	2	Various materials, electronic components	1340
	Semiconductors	2	Cu, Al oxide, Sn, silicone gel, PBT, GF	60
9	Control unit	1	For ACS880-X1 drives see Materials of control unit ZCU-12 on page 14. For ACX580-X1 drives see Materials of control unit CCU-24 on page 15.	570
10	Control panel	1	See Materials of the control panel on page 16	130
	Electrolytic capacitor	4	Al, electrolytic solute	310
	Cables / Wires	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	20
Total weight appr.				16,8kg

Materials of frame R6

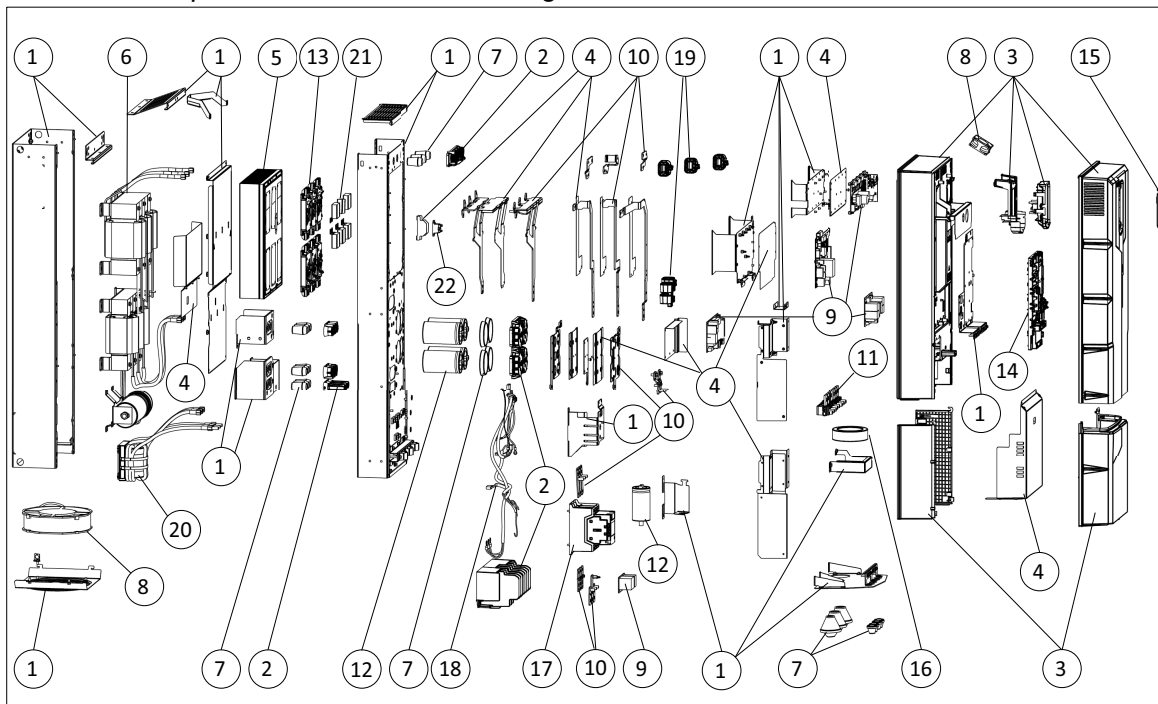
The main components are shown in the figure below.



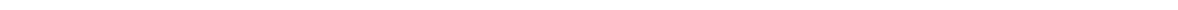
No.	Name	Qty	Materials	Weight / g
1	Sheet metal parts	8	HDG steel sheet: DX51D+Z275-M-A-C	12310
2	Reinforced plastic parts	2	Plastic: PC+10% GF	530
3	Housing / Cover parts	3	Plastic: PC-ABS	1750
4	Terminal cover / insulating sheets	1	Plastic: PC	200
5	Heatsink	1	Aluminum: AW 6060: Al Mg Si	4880
6	Choke	2	Fe, Cu, PET+30% GF, silicone, thermoplastic polyester, glass-filled nylon	20000
7	Gaskets	7	Rubber: TPE	280
8	Axial fan	2	Various materials, plastic parts: PBT, aluminum alloy	800
9	Printed circuit board	3	Various materials, electronic components	2530
10	Electrolytic capacitor	6	Al, electrolytic solute	1000
11	Control unit	1	For ACS880-X1 drives see Materials of control unit ZCU-12 on page 14. For ACX580-X1 drives see Materials of control unit CCU-24 on page 15.	570
12	Control panel	1	See Materials of the control panel on page 16	130
13	Ferrite rings	6	Ferrite iron	540
14	Contactors	1	Various materials, plastic parts	1000
15	Cables / Wires	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	1000
Total weight appr.				47,5 kg

Materials of frame R8

The main components are shown in the figure below.



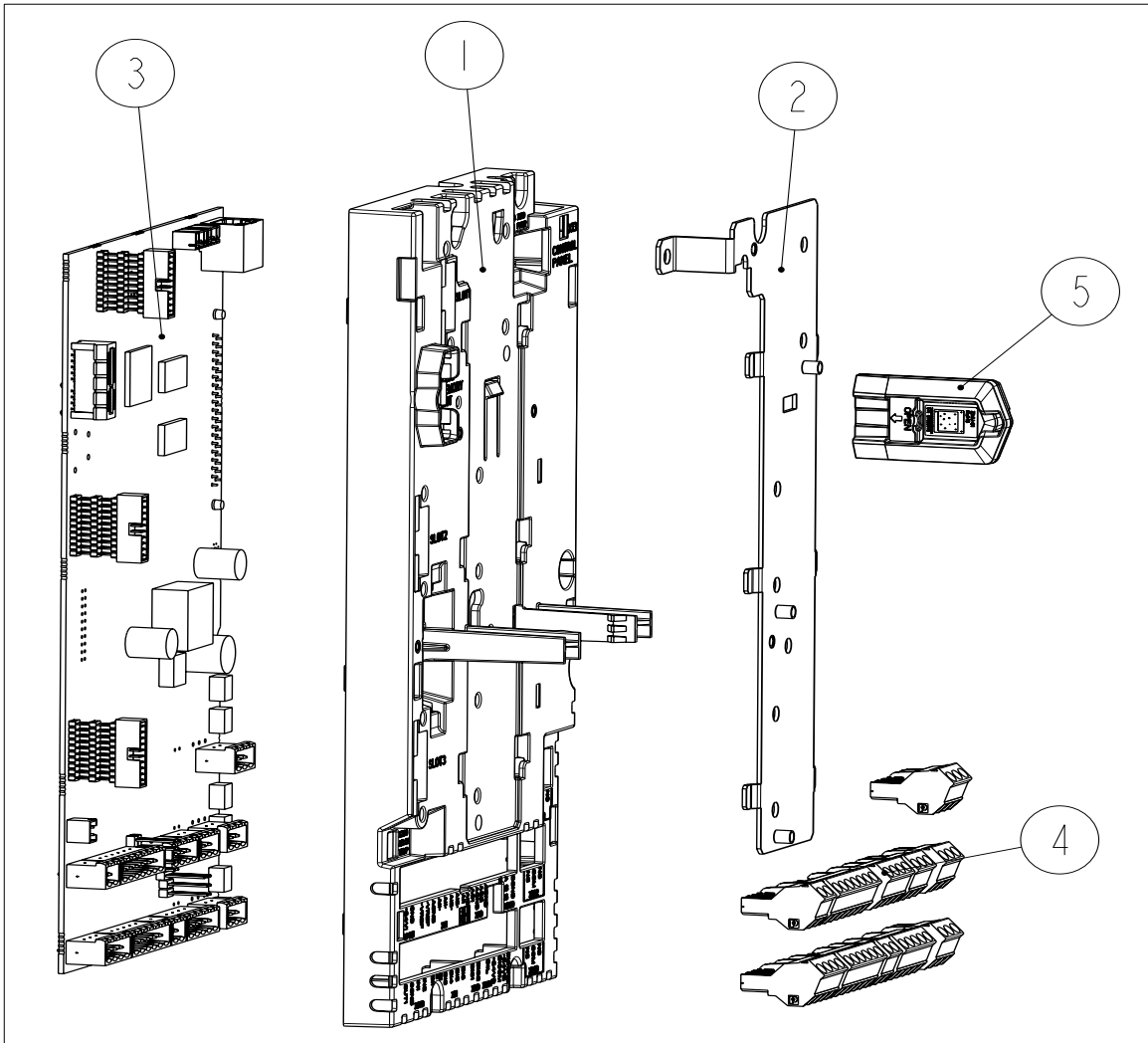
No.	Name	Qty	Materials	Weight / g
1	Sheet metal parts	33	HDG steel sheet: DX51D+Z275-M-A-C	28000
2	Reinforced plastic parts	8	Plastic: PC+10% GF	900
3	Housing parts	7	Plastic: PC-ABS	3970
4	Terminal cover / Insulating sheets	13	Plastic: PC / FR Polypropylene	510
5	Heatsink	1	Aluminum: AW 6060: Al Mg Si	7710
6	Choke	2	Fe, Cu, PET+30% GF, silicone, thermoplastic polyester, glass-filled nylon	58900
7	Gaskets	18	Rubber: TPE	400
8	Axial fan	2	Various materials, plastic parts: PBT, aluminum alloy	1130
9	Printed circuit boards	5	Various materials, electronic components	1226
10	Bus bars	23	Cu, Sn	3500
11	Terminal connectors	8	SS, Sn-coated Cu, Zn-coated steel	760
12	Electrolytic capacitor	6	Al, electrolytic solute	3700
13	Semiconductors	6	Cu, Al oxide, Sn, silicone gel, PBT, GF	2000
14	Control unit	1	For ACS880-X1 drives see Materials of control unit ZCU-12 on page 14. For ACX580-X1 drives see Materials of control unit CCU-24 on page 15.	536 or 570
15	Control panel	1	See Materials of the control panel on page 16	130
16	Ferrite rings	1	Ferrite iron	700
17	Contactors	1	Various materials, plastic parts	1460
18	Cables / Wires	N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	600
19	Current transducers	6	Various materials, plastic parts	600
20	C2 Choke	1	Ferrite iron, PC+GF, Cu, Sn, silicone, thermoplastic polyester	1700
21	Film capacitors	6	Al, plastic film	240
22	Discharging resistor	1	Various materials, plastic parts	34
Total weight appr.				118,7 kg



Materials of control unit ZCU-12

ZCU-12 control unit is used in ACS880-11 and ACS880-31 drives.

The main components are shown in the figure below.

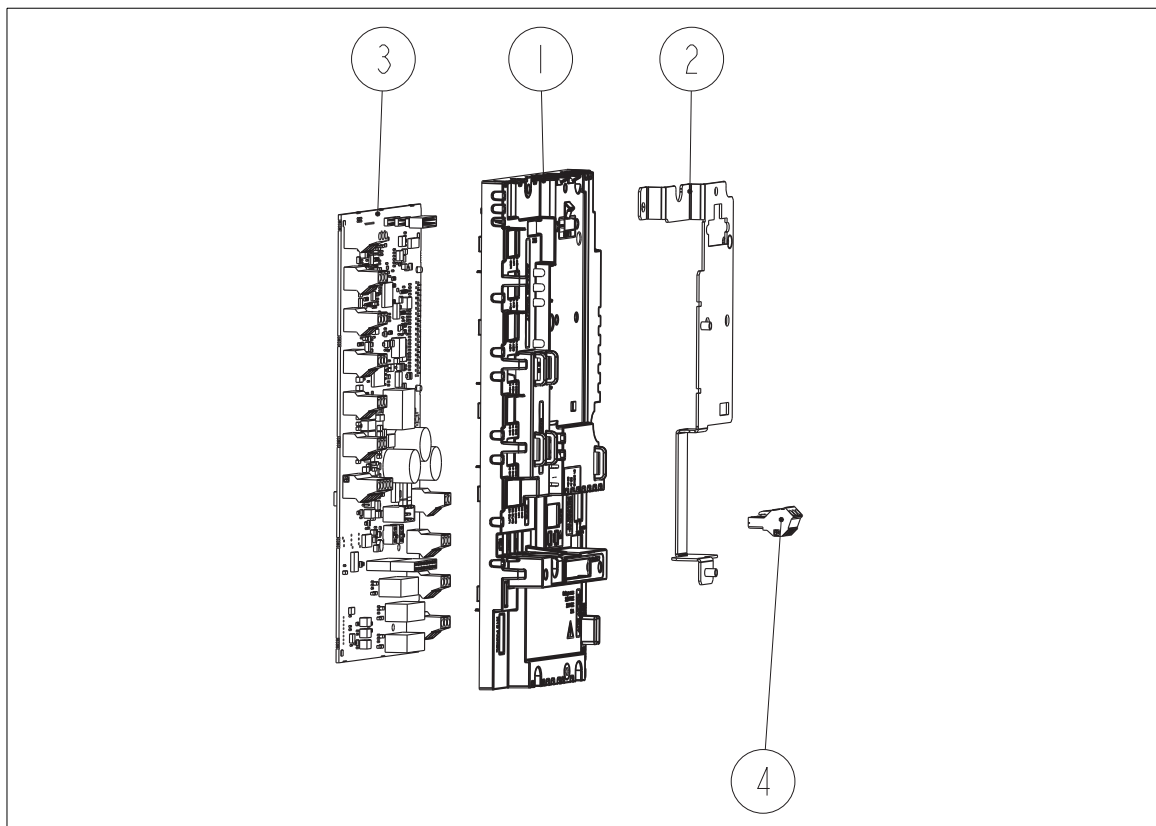


No.	Category	Qty	Materials	Weight (g)
1	Housing parts	1	Plastic: ABS PC	140
2	Sheet metal parts	1	Zn-plated Fe	100
3	Printed circuit board	1	Various material, electronic components	240
4	Connectors	11	PA plastic, Fe, Sn, Cu	80
5	Memory unit	1	Plastic: ABS, electronic components	10
Total weight appr.				570 g

Materials of control unit CCU-24

CCU-24 control unit is used in ACH580-31 and ACQ580-31 drives.

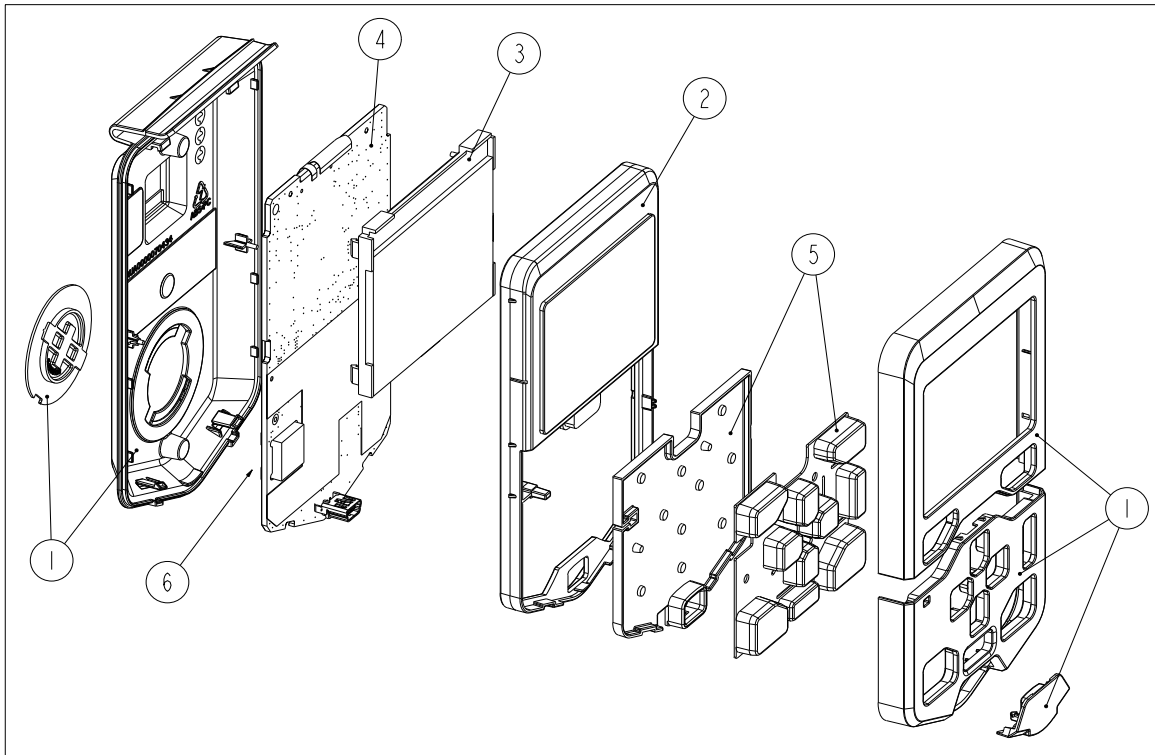
The main components are shown in the figure below.



No.	Category	Qty	Materials	Weight (g)
1	Housing parts	1	Plastic: ABS PC, PUR	120
2	Sheet metal parts	1	Zn-coated Fe	86
3	Printed circuit board	2	Various material, electronic components	320
4	Connector	1	PA, Fe	10
Total weight appr.				536 g

Materials of the control panel

The main components are shown in the figure below.



No.	Category	Qty	Materials	Weight (g)
1	Housing parts	4	Plastic: ABS PC	40
2	Lens	1	Plastic: PC	15
3	LCD display	1	Various materials	20
4	Printed circuit board	1	Various material, electronic components	45
5	Keypad	2	Silicone rubber	20
6	CR 2032 lithium battery	1	Various materials	3
Total weight				143 g

Abbreviations

Plastics and rubber:	
ABS	Acrylonitrile-butadiene-styrene
GF	Glass fiber
PBT	Polybutylene terephthalate
PC	Polycarbonate
PVC	Polyvinyl chloride

Package

The product package is made of corrugated cardboard.

You can recycle all materials used in the package.

To avoid pollution caused by unnecessary transportation, the factory does not take back used packages. The local ABB companies give instructions on the package recycling when necessary.

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.



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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 and ISO 14001.

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
- 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 chemical 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**

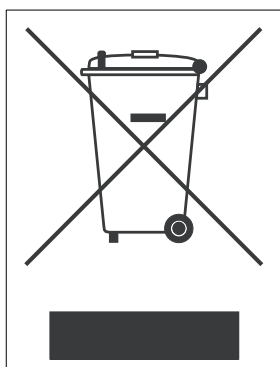
1. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS II).
 2. Regulation No 1907/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning 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).
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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.

ACS355-01E-02A4-2	
PN 0.37 kW (1/2 HP) Frame R0	
S/N J1643F0001	
	
ABB	ABB Oy Hiomotie 13 00380 Helsinki Finland
IP20 / UL Open type	ACS355-01E-02A4-2
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.

Materials	Recycling method
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 abb.com/searchchannels.

Product training

For information on ABB product training, navigate to new.abb.com/service/training.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Navigate to new.abb.com/drives/manuals-feedback-form.

Document library on the Internet

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ABB environment policy

You can find ABB's policy on health, safety, environment, security and sustainability on the Internet at new.abb.com/sustainability/abb-policy-on-health-safety-environment-security-and-sustainability

ABB group sustainability objectives

For information on ABB group sustainability objectives, navigate to 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.



abb.com/drives



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