

ABB DRIVES

ACS580-07, ACH580-07 and ACQ580-07 cabinet-installed drive modules

Recycling instructions and environmental
information



ACS580-07, ACH580-07 and ACQ580-07 cabinet-installed drive modules

Recycling instructions and environmental information

Table of contents



Table of contents

1 Introduction to the manual

Contents of this chapter	7
Applicability	7
Target audience	7
Categorization by frame size and option code	7
Abbreviations	8
Disclaimer	8
Related documents	9

2 Product materials

Contents of this chapter	11
Materials of the drive cabinet and cabinet-installed drive modules of frame sizes R4 to R9	12
Materials of the drive cabinet and cabinet-installed drive modules of frame size R10 and R11	15
Materials of the control unit CCU-23	17
Materials of control unit CCU-24	18
Materials of the control panel	19
Package materials	20
Package materials for cabinet-installed low-power single drives	20
Package materials for options, accessories and spare parts	20
Materials of manuals	20

3 Environmental information on manufacturing and use

Manufacturing	21
Use	21

4 Product disposal

Contents of this chapter	23
Disposal	23
Dismantling	24
Manual dismantling	24
Mechanical shredding	24
ABB List of Prohibited and Restricted Substances	24
Recycling information in accordance with the WEEE	25
Recycling example	26
EU Directives and Regulations	26

Further information



1

Introduction to the manual

Contents of this chapter

This chapter describes the contents of the manual. It contains information on applicability and target audience, disclaimer, a list of abbreviations and reference to related manuals.

Applicability

This document covers the environmental information of the following products:

- drive cabinet
- ACH580-07 cabinet-installed drive modules with option modules
- ACQ580-07 cabinet-installed drive modules with option modules
- ACS580-07 cabinet-installed drive modules with option modules.

Target audience

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

Categorization by frame size and option code

The frame size identifies information which concerns only a certain frame size of the drive. The frame size is shown on the type designation label. All frame sizes are listed in the technical data.

The option code (A123) identifies information which concerns only a certain optional selection. The options included in the drive are listed on the type designation label.

Abbreviations

ABS	Acrylonitrile-butadiene-styrene
EPDM	Ethylenepropylenrubber
GF	Glass fiber
PA	Polyamide
PBT	Polybutylene terephthalate
PC	Polycarbonate
PE	Polyethylene
PET	Polyethylene terephthalate
PPE	Polyphenyloxide
PS	Polystyrene
PUR	Polyurethane
PVC	Polyvinyl chloride
SVHC	Substances of very high concern
TPE	Thermoplastic elastomer
VCI	Volatile Corrosion Inhibitor
WEEE	Waste from electrical and electronic equipment

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.

Related documents

You can find manuals on the Internet. See below for the relevant code/link. For more documentation, go to www.abb.com/drives/documents.

Drive hardware manuals and guides	Code (English)
ACS580-07, ACH580-07 and ACQ580-07 drives recycling instructions and environmental information	3AXD50000040612
ACS880-04, ACS880-14, ACS880-34, ACS580-04, ACH580-04, ACH580-34, ACQ580-04 and ACQ580-34 drives recycling instructions and environmental information	3AXD50000137688
ACS580-07, ACH580-07 and ACQ580-07 cabinet-installed drive modules recycling instructions and environmental information	3AXD50000153893
ACH580-07 drives hardware manual	3AXD50000045816
ACQ580-07 drives hardware manual	3AXD50000045817
ACS580-07 drives hardware manual	3AXD50000045815

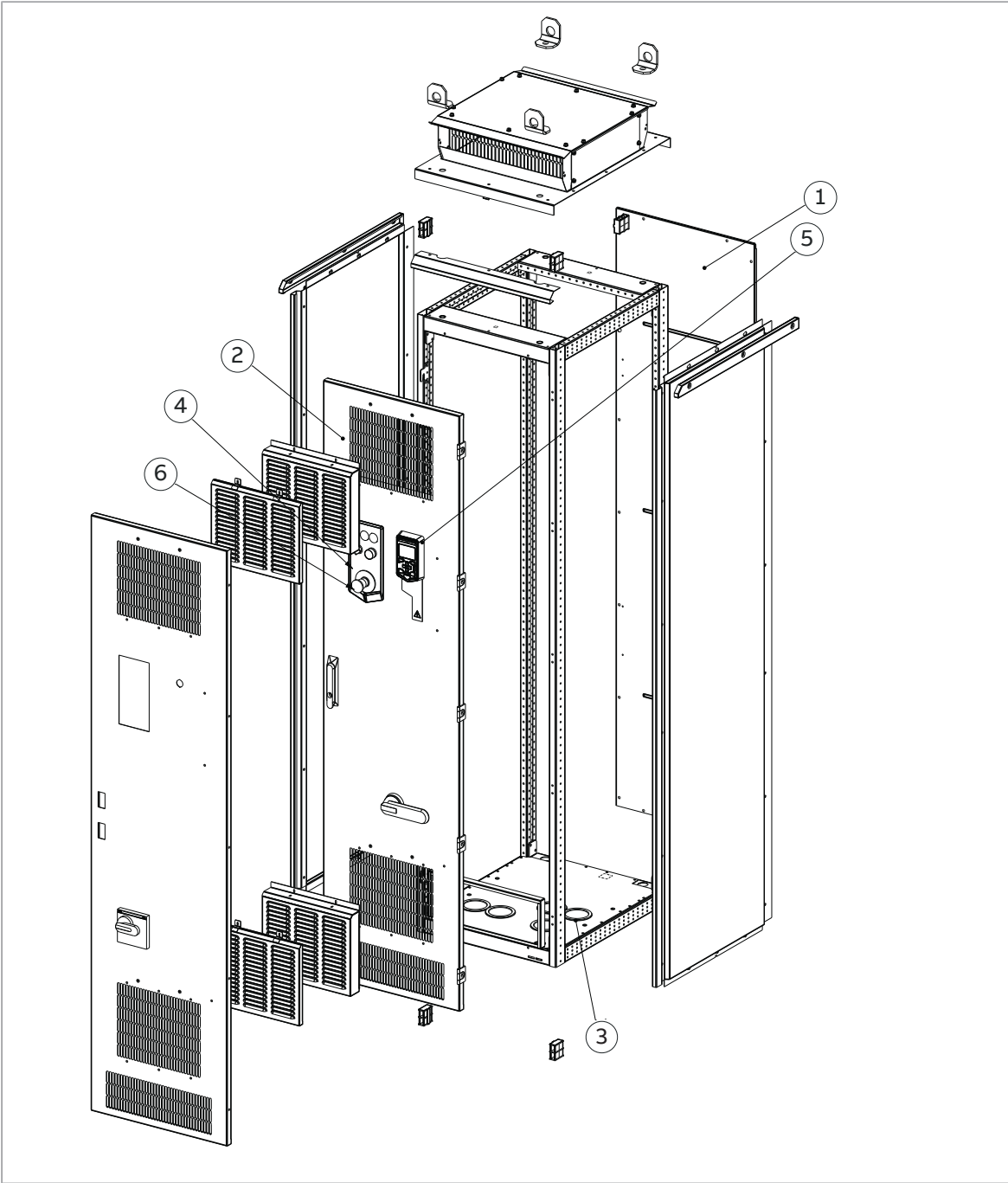
2

Product materials

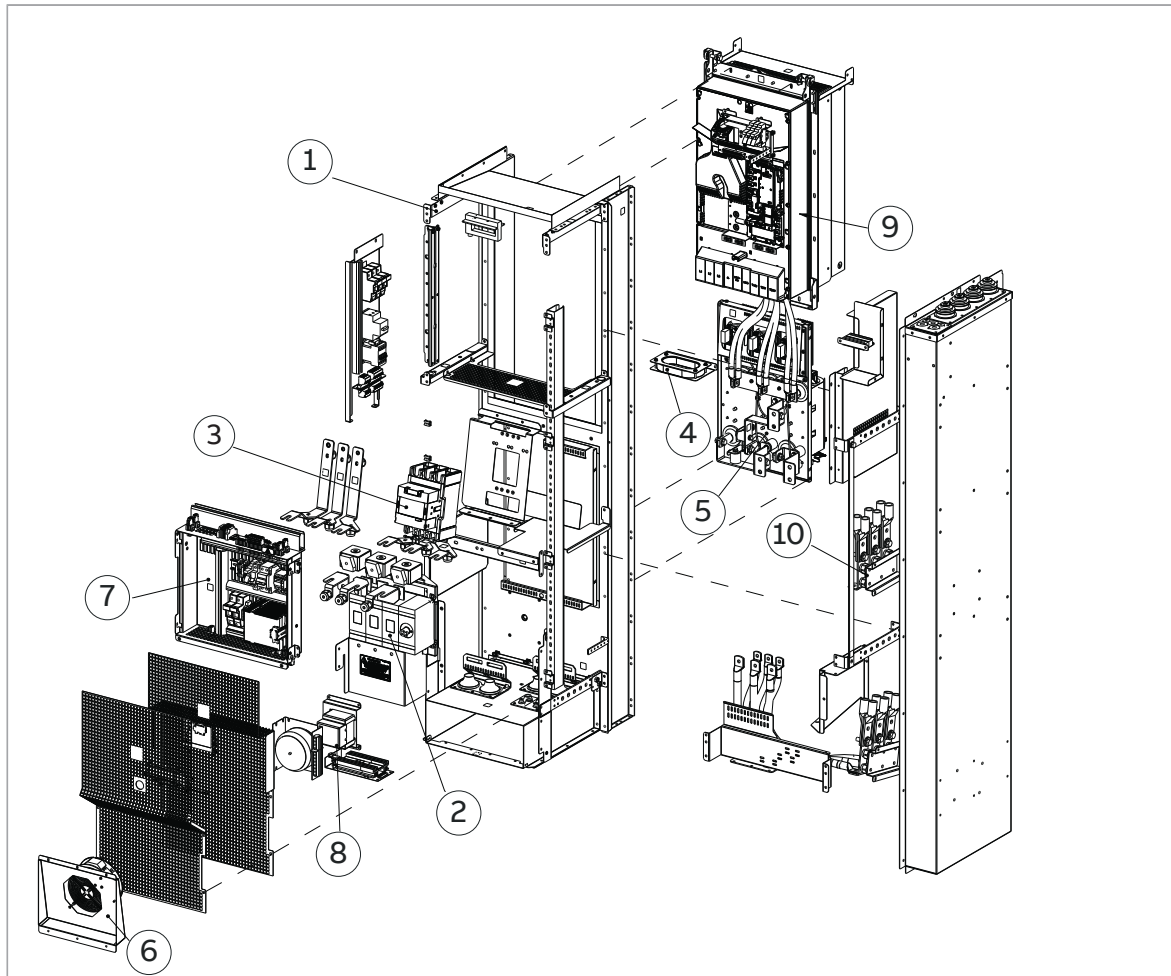
Contents of this chapter

This chapter describes the main components and product materials of the drive cabinet and cabinet-installed drive modules ACH580-07, ACQ580-07 and ACS580-07.

Materials of the drive cabinet and cabinet-installed drive modules of frame sizes R4 to R9



Part	Category	Materials	Weight (kg)
1	Sheet metal parts	Zn-coated steel	28 - 34
2	Sheet metal parts painted	Zn-coated steel, polyester powder paint (Teknos CZ 8080®)	46 - 47
3	Gaskets	Rubber: TPE	1.2 - 1.4
4	Plastic parts	ABS PC	0.38
5	Control panel	See subsection Materials of the control panel (page 19) .	0.14
6	Electric accessories	Various materials	0 - 0.3
Total weight approximately (kg)			171-321 kg

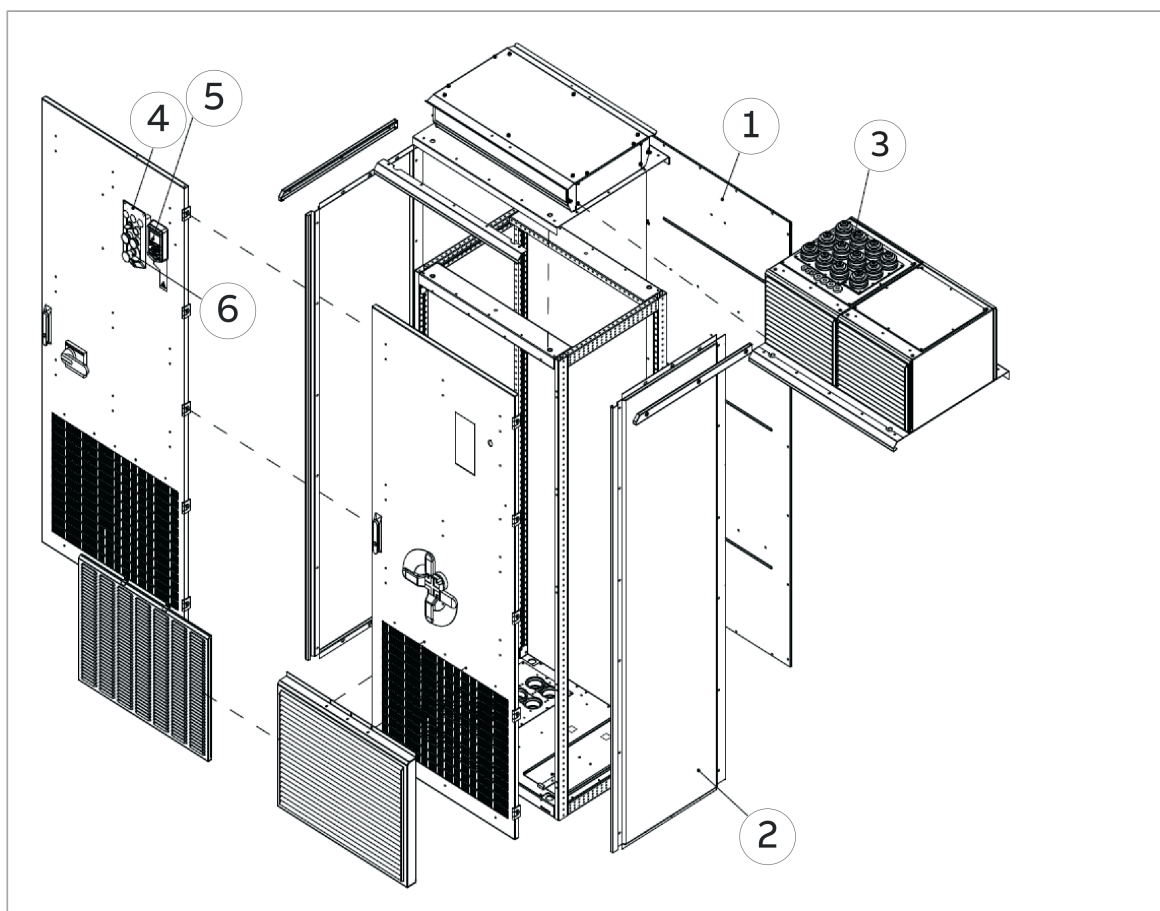


Part	Category	Materials	Weight (kg)
1	Sheet metal parts frame	Zn-coated steel	34 - 37
	Busbars	Sn-coated Cu	0.6
	Plastic parts	PVC, PPE, PS, PC, ABS, PA, GF	0.6 - 0.8
	Gaskets	TPE, EPDM, Neoprene	0.66
2	Switch	Various materials, see manufacturer's instructions	4.5 - 5.7
	Fuses	Ceramics, Cu, Fe, Ag, Sn, various others	1.1 - 2.4
	Busbars	Sn-coated Cu	0.0 - 1.0
	Insulating support	Epoxy, PC, PA, PS, GF	0.0 - 0.72
3	Contactor	Various materials, see manufacturer's instructions	0.0 - 4.7
	Busbars	Sn-coated Cu	0.0 - 1.0
4	Choke	Fe, Zn-coated steel, various others	0.0 - 0.91
5	Output filter	Zn-coated steel, Sn-coated Cu, Al, enamel, various others	0.0 - 18.0
6	Fan	Various materials, see manufacturer's instructions	0.0 - 1-0
	Supports, grills	Zn-coated steel	0.2 - 1.1
7	Electronic components	Various materials, see manufacturer's instructions	0.1 - 1.1
	Terminal blocks, switches, fuses	Cu, Al, Fe, Ag, Sn, ceramics, various others	0.7 - 1.8
	Assembly plate	Zn-coated steel	4.0
8	Transformer, heater	Fe, Cu, Sn, Al, various others	0.0 - 5.8

14 Product materials

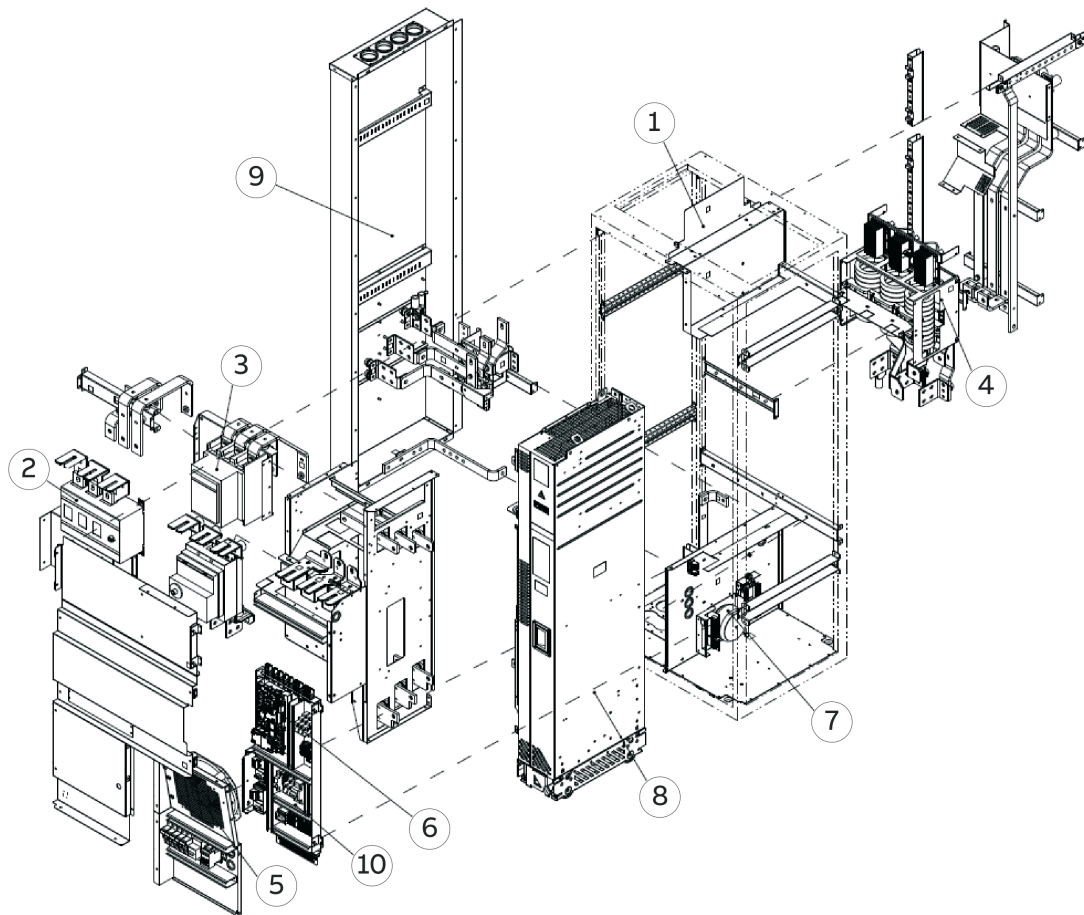
9	Module	See Recycling instructions and environmental information for ACx580-01 drives 3AXD50000040612, section Materials of frames R6 to R9	42.0 - 97.0
	Module accessories	Zn-coated steel, various others	3.3 - 5.9
10	Sheet metal parts top entry/exit	Zn-coated steel	0.0 - 30.0
	Busbars	Sn-coated Cu	0.0 - 4.4
	Insulating supports	Epoxy, PC, PA, PS, GF	0.0 - 1.4
	Plastic parts	PC	0.0 - 0.24
	Cables and wires	PVC, Cu, Sn, various others	2.9 - 11.0

Materials of the drive cabinet and cabinet-installed drive modules of frame size R10 and R11



Part	Category	Materials	Weight (kg)
1	Sheet metal parts	Zn-coated Fe	74 - 88
2	Sheet metal parts painted	Zn-coated steel, polyester powder paint (Teknos CZ 8080®)	56
3	Gaskets	Rubber: TPE	0.2
4	Plastic parts	ABS PC	0.4
5	Control panel	See subsection Materials of the control panel (page 19) .	0.14
6	Electric accessories	Various materials	0 - 0.4
Total weight approximately (kg)			355 - 480 kg

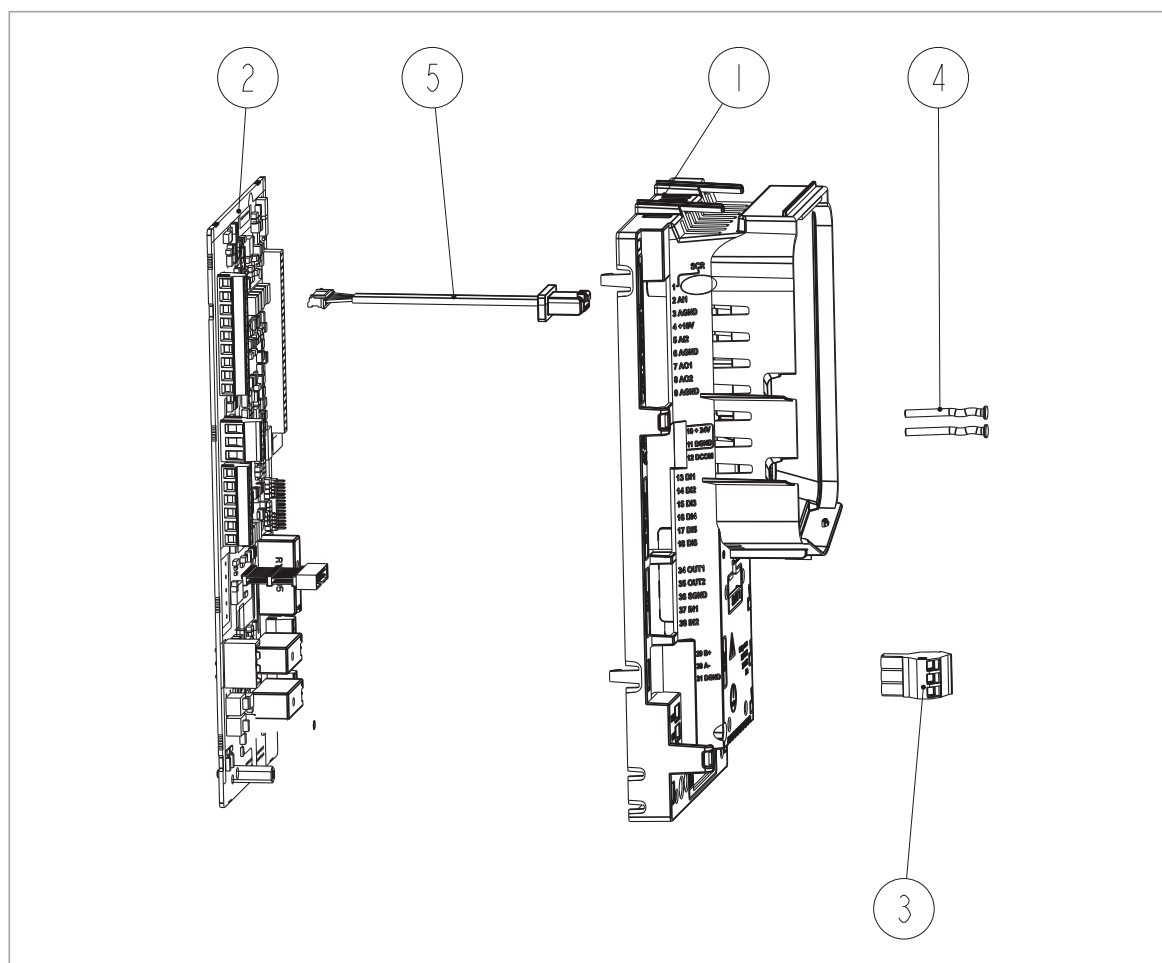
16 Product materials



Part	Category	Materials	Weight (kg)
1	Sheet metal parts frame	Zn-coated steel	50
	Plastic parts	PVC, PPE, PS, PC, ABS, PA, GF	0.8
	Gaskets	TPE, EPDM, Neoprene	0.6
2	Switch	Various materials, see manufacturer's instructions	7 - 18
	Fuses	Ceramics, Cu, Fe, Ag, Sn, various others	2.7
	Busbars	Sn-coated Al	1.7 - 2.4
	Insulating supports	Epoxy, PC, PA, PS, GF	1.8
3	Contactor	Various materials, see manufacturer's instructions	0 - 15.7
	Busbars	Sn-coated Al	4.3 - 4.4
	Supports	Zn-coated steel	2.3
	Insulating supports	PC, PA, PS, GF, epoxy	0.7
4	Output filter	Zn-coated steel, Sn-coated Cu, Al, enamel, various others	0 - 16
5	Fans	Various materials, see manufacturer's instructions	2.3 - 5.6
	Supports, grills	Zn-coated steel	2.2 - 5.3
	Plastic parts	PC, PA, GF	0 - 1.5
	Terminal blocks, switches, fuses	Cu, Al, Fe, Ag, Sn, ceramics, various others	0 - 1
6	Control unit	Various materials, see manufacturer's instructions	0.7
	Electronic components	Various materials, see manufacturer's instructions	0.1 - 1.2

	Terminal blocks, switches, fuses	Cu, Al, Fe, Ag, Sn, ceramics, various others	0.7 - 3.2
	Assembly plate	Zn-coated steel	3.7
7	Transformer, heater	Fe, Cu, Sn, Al, various others	5 - 11
	Support	Zn-coated steel	0.1 - 0.6
	Terminal blocks, switches, fuses	Cu, Al, Fe, Ag, Sn, ceramics, various others	0.01
8	Module	See ACS880-04, ACS880-14, ACS880-34, ACS580-04, ACH580-04, ACH580-34, ACQ580-04 and ACQ580-34 drives Recycling instructions and environmental information 3AXD50000137688	138 - 145
9	Sheet metal parts top entry/exit	Zn-coated steel	0 - 30
	Busbars	Sn-coated Al	0 - 7.8
	Insulating supports	Epoxy, PC, PA, PS, GF	0 - 1.4
10	Cables and wires	PVC, Cu, Sn, various others	0.54 - 1.42

Materials of the control unit CCU-23

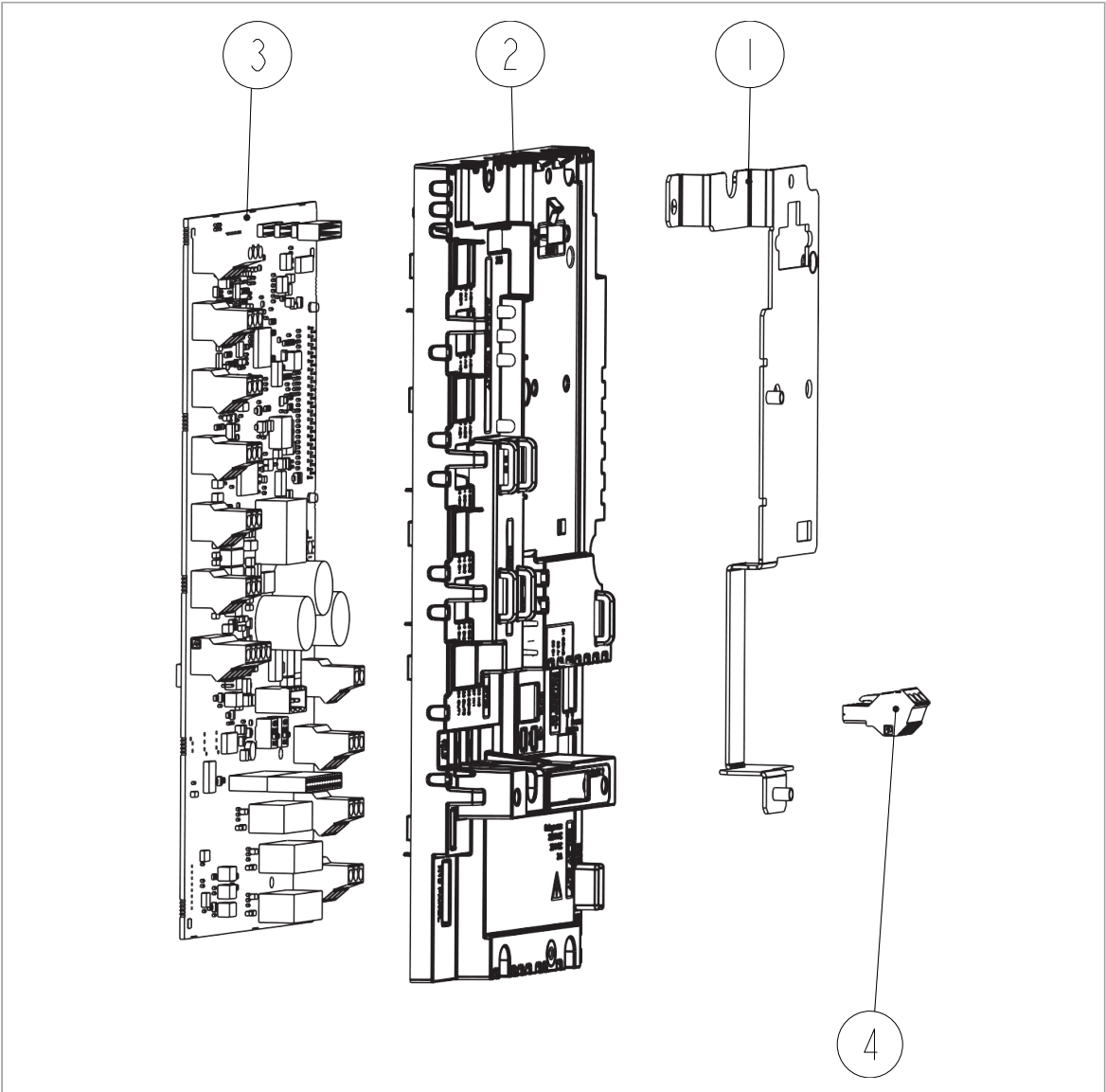


Part	Category	Qty	Materials	Weight (g)
1	Housing parts	1	Plastic: ABS PC	112
2	Printed circuit board	1	Various materials, electronic component	174

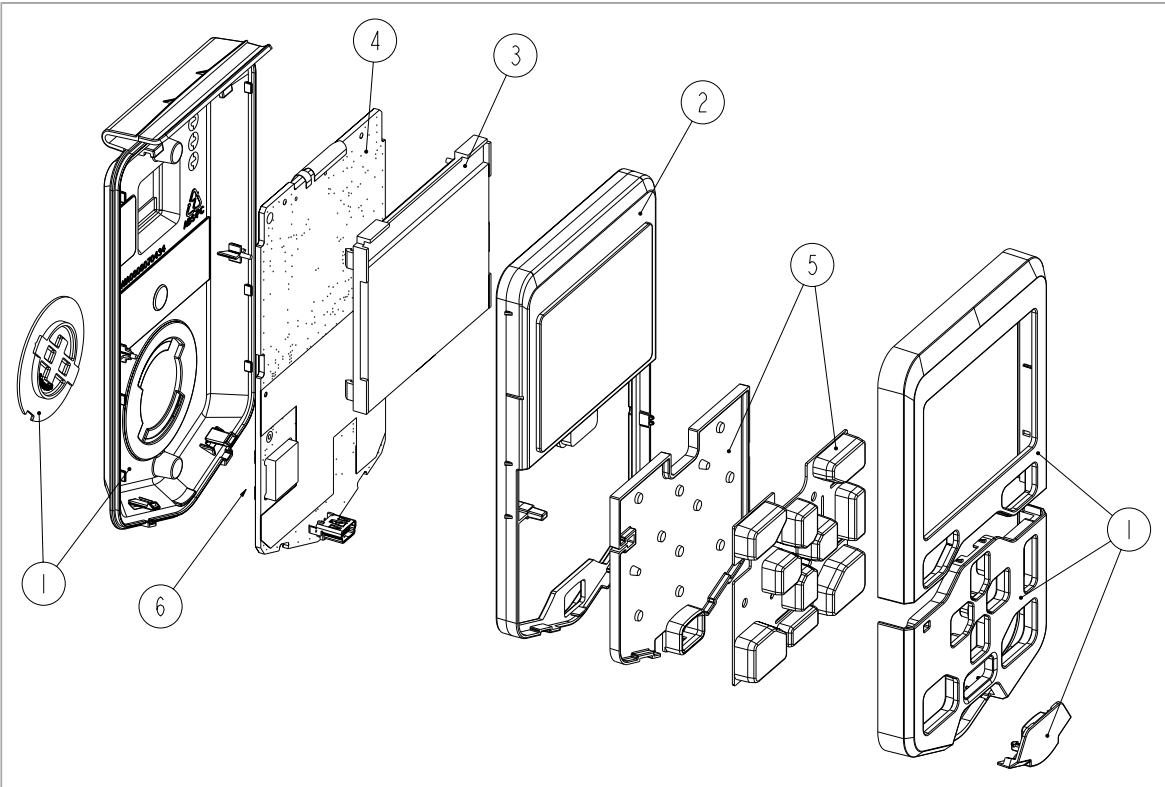
18 Product materials

3	Connector	1	PA, Fe	10
4	Photoconductor	2	Plastic: PC	1
5	Cables / wires	1	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass-filled nylon	10
Total weight approximately (g)				307

Materials of control unit CCU-24

				
Part	Category	Qty	Material	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 materials, electronic components	320
4	Connector	1	PA, Fe	10
Total weight approximately (g)				536

Materials of the control panel

				
Part	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 materials, electronic components	45
5	Keypad	2	Silicone rubber	20
6	CR 2032 lithium battery	1	Various materials	3
Total weight approximately (kg)				143 kg

Package materials

You can recycle all materials used in the package. To avoid pollution caused by unnecessary transportation, the factory does not take back packages. The local ABB companies can give instructions on the recycling.

■ Package materials for cabinet-installed low-power single drives

- Cardboard heavy duty quality with wet strength glue
- Plywood¹⁾
- Wood
- PET (strapping)
- PE (VCI film)
- Metal (fixing clamps, screws)
- Clay desiccant.

¹⁾ Horizontal package only: Also cardboard hoods are used instead.

■ Package materials for options, accessories and spare parts

- Cardboard
- Kraft paper
- PP (straps)
- PE (film, bubble wrap)
- Plywood, wood (only for heavy components).

Materials vary according to the item type, size and shape. Typical package consists of a cardboard box with paper filling or bubble wrap. ESD-safe packing materials are used for printed circuit boards and similar items.

Materials of manuals

Printed product manuals are made of recyclable paper. Product manuals are available on the Internet.

3

Environmental information on manufacturing and use

Manufacturing

ABB Drives has a company-wide integrated quality, environmental and occupational health & safety management system. The system is certified in accordance with requirements of international standards ISO 9001 and ISO 14001.

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.

For more information on ABB Policy on Health, Safety, Environment, Security and Sustainability, refer to new.abb.com/sustainability/abb-policy-on-health-safety-environment-security-and-sustainability.

For more information on ABB group sustainability objectives, refer to new.abb.com/sustainability/creating-value/objectives.

4

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, most plastic parts are marked with an appropriate identification code. In addition, components containing substances of very high concern (SVHCs) are listed in European Chemicals Agency's SCIP database. SCIP is the database for information on Substances of Concern in articles as such or in complex objects (Products) established under the Waste Framework Directive (2008/98/EC). For further information, contact your local ABB distributor or consult European Chemicals Agency's SCIP database to find out which SVHCs are used in the drive, and to find out where those components are located.

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

For more information on ABB end of life services, refer to new.abb.com/service/end-of-life-services.

Dismantling

You can dismantle the drive manually or in a shredding machine.

■ 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, refer to 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

For the ABB list of prohibited and restricted substances, refer to new.abb.com/sustainability/environment.

The purpose of the list is to comply with legislation to avoid chemical substances that may cause environmental or health hazards.

The list gives prohibited substances that must not be used within ABB and restricted substances the use of which 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 typically used in electrical and electronic equipment.

Recycling information in accordance with the WEEE

WEEE stands for EU Directive on waste electrical and electronic equipment. The WEEE mark shows that at the end of life the product should enter the recycling system. The product should be disposed of separately at an appropriate collection point and not be put in the normal waste stream.

The figure below shows the WEEE mark. The black bar indicates that the equipment has been manufactured after the WEEE Directive came into force in 2005.



The WEEE mark is added to the type designation label of the drive since 2017. This figure shows an example label.

<div> <div> <p>Origin Finland Made in Finland ABB Oy Hiomotie 13 00380 Helsinki Finland</p> </div> <div> <p>ACS580-01-088A-4+B056+J400</p> <table> <tr> <td>Input</td> <td>U1</td> <td>3~ 400/480 VAC</td> </tr> <tr> <td></td> <td>I1</td> <td>88/77 A</td> </tr> <tr> <td></td> <td>f1</td> <td>50/60 Hz</td> </tr> <tr> <td>Output</td> <td>U2</td> <td>3~ 0...U1</td> </tr> <tr> <td></td> <td>I2</td> <td>88/77 A</td> </tr> <tr> <td></td> <td>f2</td> <td>0...500 Hz</td> </tr> </table> </div> </div> <div> <div> <p>FRAME</p> <p>R5</p> <p>Air cooling</p> <p>IP55</p> <p>UL type 1 without hood</p> <p>UL type 12 with hood</p> <p>IE2 (90;100) 1,9 %</p> </div> <div> <p>IEC: Icc 65 kA</p> <p>UL: SCCR 100 kA</p> </div> <div> <p>②</p> </div> </div> <div> <div> <p>CE</p> <p>EAC</p> <p>UK CA</p> </div> <div> <p>SP 206573</p> <p>TUV NORD Safety Approved</p> <p>cUL US LISTED IND. CONT. EQ. 1PDS</p> <p>KE 20</p> </div> <div> <p>MSIP-REI-Abb-088A-4</p> <p>S/N: 1213205780</p> </div> </div>		Input	U1	3~ 400/480 VAC		I1	88/77 A		f1	50/60 Hz	Output	U2	3~ 0...U1		I2	88/77 A		f2	0...500 Hz
Input	U1	3~ 400/480 VAC																	
	I1	88/77 A																	
	f1	50/60 Hz																	
Output	U2	3~ 0...U1																	
	I2	88/77 A																	
	f2	0...500 Hz																	
1	WEEE mark																		
2	Link to product information, including the product's SCIP code and the WEEE Category																		

This manual contains information for treatment facilities in accordance with the EU Directive on waste electrical and electronic equipment (WEEE).

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.

ABB recommends to contact local environmental authorities for up-to-date information about national recycling requirements.

Recycling example

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

Material	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)

EU Directives and Regulations

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 (EC) No 1907/2006 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).



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/contact-centers.

Product training

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

Providing feedback on ABB manuals

Your comments on our manuals are welcome. Navigate to forms.abb.com/form-26567.

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.



www.abb.com/drives



3AXD50000153893C