

ABB Drives

Recycling instructions and environmental information ACS300 product family



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List of related manuals

Drive hardware manuals and guides	Code (English)
<i>ACS300 recycling instructions and environmental information</i>	DOCRIACS30001

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

ACS300 product family

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1

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:

- ACS300 product family, frame sizes R0 to R2
- all 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 ACS300 drive.

Structure of the ACS300 module

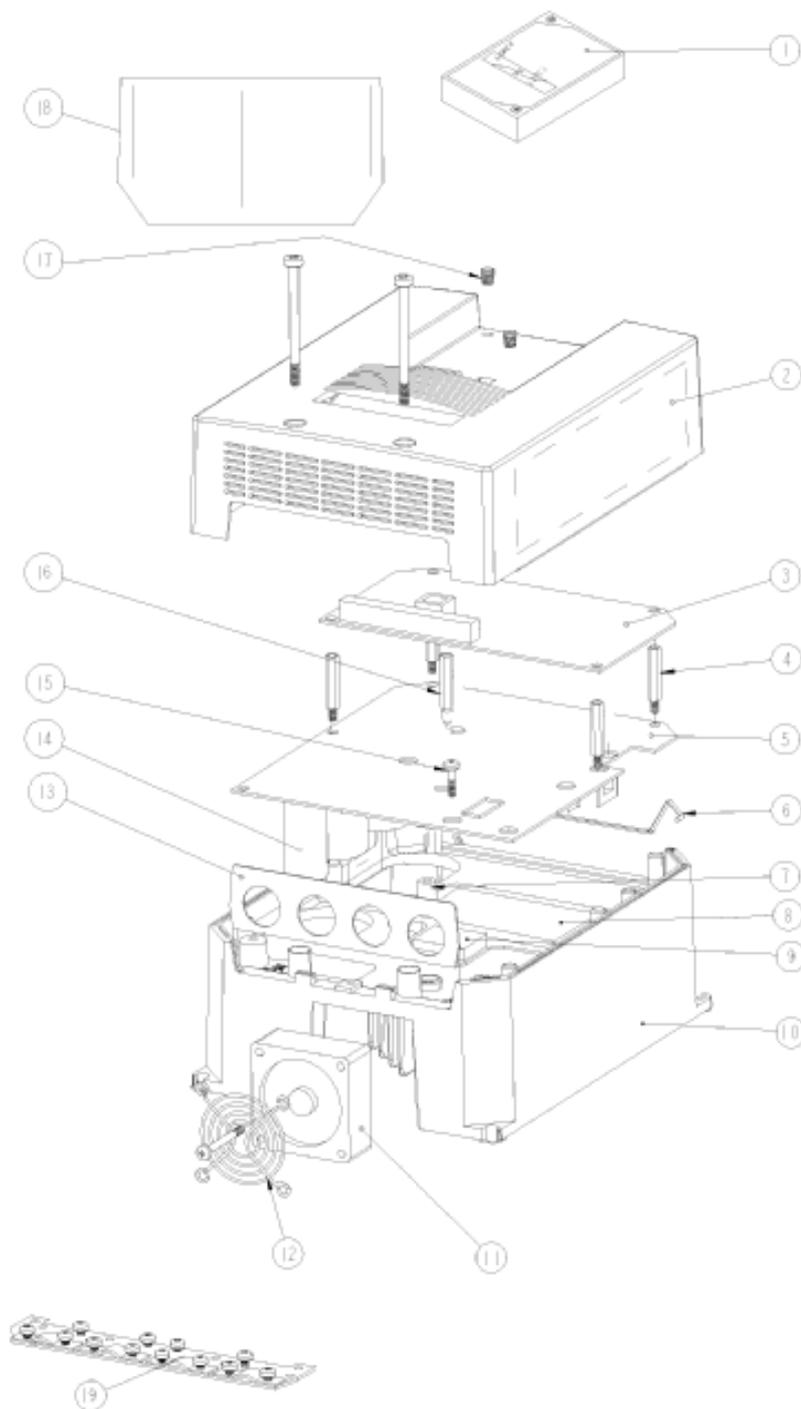
The main components of the ACS300 module of frame size R1 are shown in the figure below.

Difference between frame sizes R0 and R1 is that R0 does not contain a fan.

Frame size R2 has a steel casing around the drive and some components which are not included in other frame sizes. Therefore the picture below does not describe also frame size R2.

In the materials table, also R2 is separated from R0 and R1.

10 Product materials

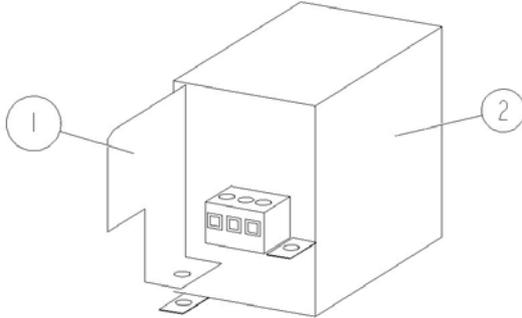


Part No.	Name	Qty	Materials	Weight R0 and R1 (total) / g	Weight R2 (total) / g
1	Cover panel	1	PC	61...64	70
2	Cover part	1	ABS (70%), PC (30%)	289...349	425
3, 5	Printed circuit board	2...3	Various	470...792	655
4	Standoff	4...14	Nickel-plated brass	31	73
6	Gasket	1	CR	1	1
7	Standoff	1	PVC	1	1
8, 9	IGBT and rectifier bridge	1	Various	95	600
10	Heatsink	1	ALSi12 (trade name A380)	1790...2147	2290

11	Fan*	1...2	PBT, PA, steel	58	190...380
12	Fan guard*	1...2	R1 chromium-plated steel, R2 Noryl or ABS	10	15...30
13	Cable plate	1	Zinc-coated steel	39	370
14	Capacitors	2...4	Various	101...202	600
15	Combi screw	1	PA	1	1
16	Standoff	1	PA	2	-
17	Hit-Sert	2	Brass	1	1
18	IP21 cover hat	1	ABS (70%), PC (30%)	50	100
19	EMC plate	1	Zinc-coated steel	92	355
	Screws etc.	n	Carbon steel	100	170
	Casing**	1	Zinc-coated steel		3075
	Connectors at C-rail**	1	Zinc-coated steel		340
	Input chokes**	3	Fe 70%, Cu 25%, various 5%		3100...3900
	Capacitor fixing screw**	2	PA		20
	Diode bridge**	1	Various		170
Total weight: R0 and R1					3192...4035 g
R2					12622...13627 g
* Not in frame size R0					
** Only in frame size R2 included as standard					

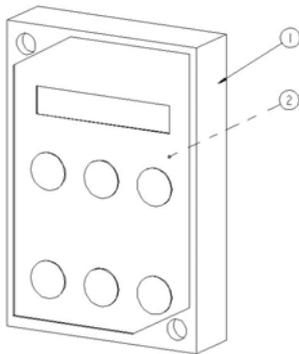
Accessories and option modules

RFI filter



Part No.	Name	Qty	Materials	Weight (total) / g
1	EMC plate	1	Tin plated steel	12
2	RFI filter	1	Various	546
Total weight				558 g

Control panel



Part No.	Name	Qty	Materials	Weight (total) / g
1	Cover parts	2	ABS+PC=Cycoloy®2800	88
2	Printed circuit boards, connector, flat cable	1	Various, FR PVC, Tin-plated copper	59
Total weight				156 g

RS 232 adapter

Part No.	Name	Qty	Materials	Weight (total) / g
1	Casing	2	Anodised aluminum	33
2	Printed circuit board	1	Various	25
Total weight				62 g

■ DDCS module

Part No.	Name	Qty	Materials
1	Printed circuit board	1	Various
			Total weight 16 g

■ Resistor

An example: A resistor for the smallest ACS300 (100 ohm, 250 W). Weight of the resistors varies greatly according to the drive type with which it is used.

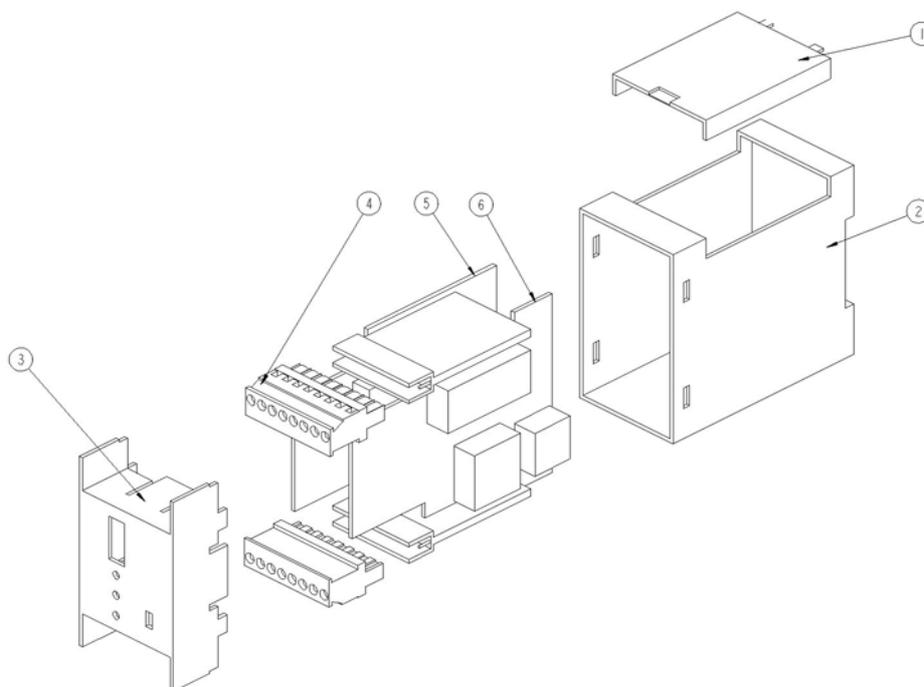
Part No.	Name	Qty	Materials	Weight (total) / g
1	Frame	1	Zinc-coated steel	545
2	Resistor	1	Steatite C221 or cordierite C551,AlPO ₄	385
3	Resistance wire	1	CrAlFe, CrNi, CuNi	21
3	Connectors	1	Porcelain	4
4	Cables	2	Nickelchrome and magnesium oxide, nickel or constantan (50% Cu, 50% Ni), insulation silicone	4
				Total weight 1016 g

■ Input and output chokes

Part No.	Name	Qty	Materials
1	Choke	1...6	Armature sheet 56-69 weight-%, Cu 14-20%, Fe 7-13%, various plastics (incl. PVC, connector PA) 4-13%
			Total weight 1600...16200 g

■ Fieldbus adapter

The main components are shown in the figure below.



Part No.	Name	Qty	Materials	Weight (total) / g
1...3	Frame parts	3	ABS	55
4	Connector	1...2	ABS, PA, nickel- or tin-plated brass	17...33
5, 6	Printed circuit boards	2	Various	105...120
				Total weight 178...209 g

■ IP65 set for the control panel

Part No.	Name	Qty	Materials	Weight (total) / g
1	Cable	1	PVC, Cu	75
2	Gasket	1	CR	3
Total weight				80 g

All screws in ACS300: carbon steel, Philips recess, Zinc plating

Plastics and rubber	
ABS	Acrylonitrile-butadiene-styrene
CR	Chlorepene rubber
PA	Polybutene terephthalate
PBT	Polyamide
PC	Polycarbonate
PE	Polyethylene
PVC	Polyvinyl chloride
FR PVC	Fire resistant PVC

Package

The product package is made of corrugated board. R0 and R1 packages contain also PE foam. Packages are equipped with recycling symbols.

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.



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**

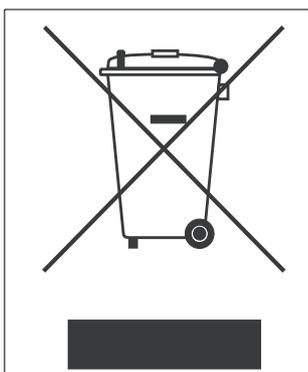
1. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS II).
 2. Regulation No 1907/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning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

ACS355-01E-02A4-2		
PN 0.37 kW (1/2 HP) Frame R0		
S/N J1643F0001		
		
ABB	ABB Oy Hiomotie 13 00380 Helsinki Finland	ACS355-01E-02A4-2
IP20 / UL Open type		
UL Type 1 with MUL1 option		S/N J1643F0001
PN 0.37 kW (1/2 HP)		
U1 1~200...240 V		3AUA0000058166
I1 6.1 A		RoHS
I1 with ext. choke 4.5 A		
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 www.abb.com/searchchannels.

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 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.

ABB environment policy

You can find ABB's environmental policy on the Internet at 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

ABB list of prohibited and restricted substances

You can find the ABB list of prohibited and restricted substances at new.abb.com/sustainability/environment.

Contact us

www.abb.com/drives

www.abb.com/drivespartners

DOCRIACS30001 Rev C (EN) 2017-01-23

