ABB INDUSTRIAL DRIVES

DCS800 drives
20 A to 5200 A

Recycling instructions and environmental information

LIST OF RELATED MANUALS

Drive hardware manuals and guides	Code (English)
DCS800 Recycling instructions and environmental information	3ADW000528
DCS800 Hardware manual	3ADW000194

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.

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TRADEMARKS

DCS800 is a registered trademark of ABB Automation Products GmbH

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TABLE OF CONTENTS

1. INTRODUCTION TO THE MANUAL

1.1 What this chapter contains

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

1.2 Applicability

This document covers the environmental information of the following products: DCS800 drives with option modules.

1.3 Target audience

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

1.4 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.

1.5 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.

1.6 Disclaimer

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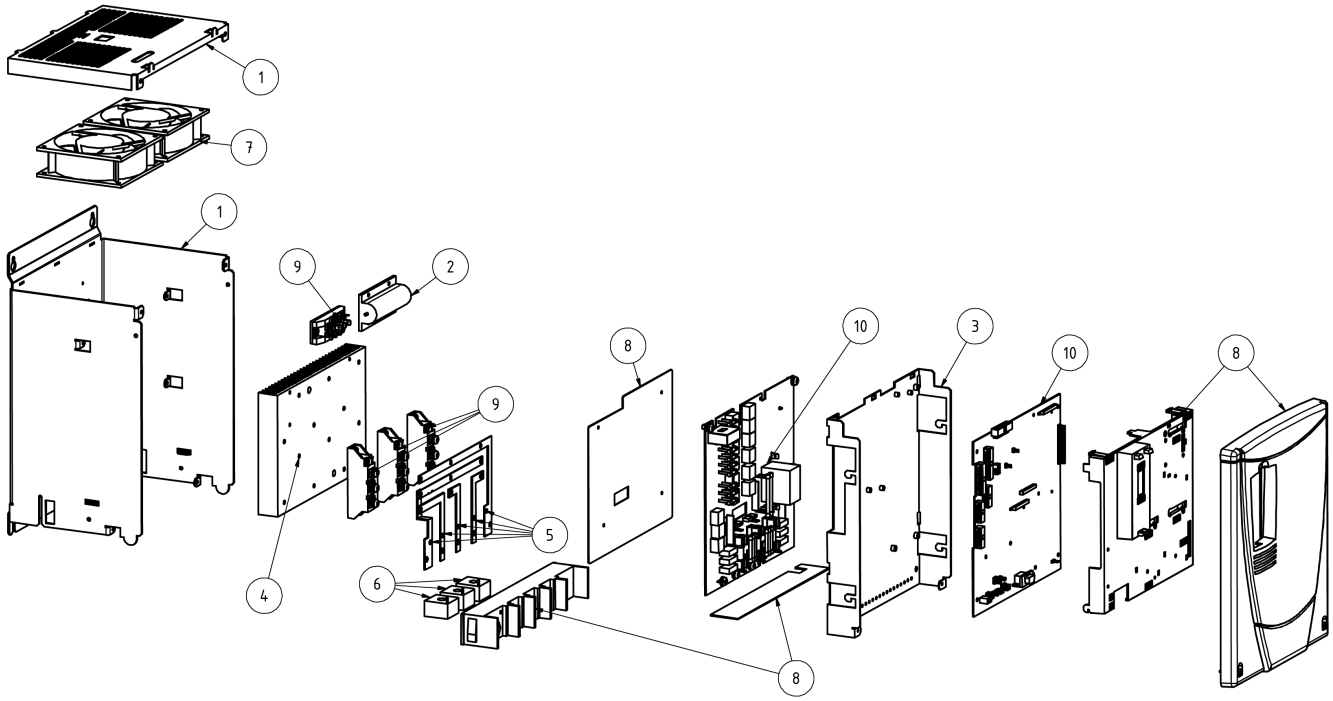
2. PRODUCT MATERIALS

2.1 Contents of this chapter

This chapter describes the main components and product materials of the DCS800 drives.

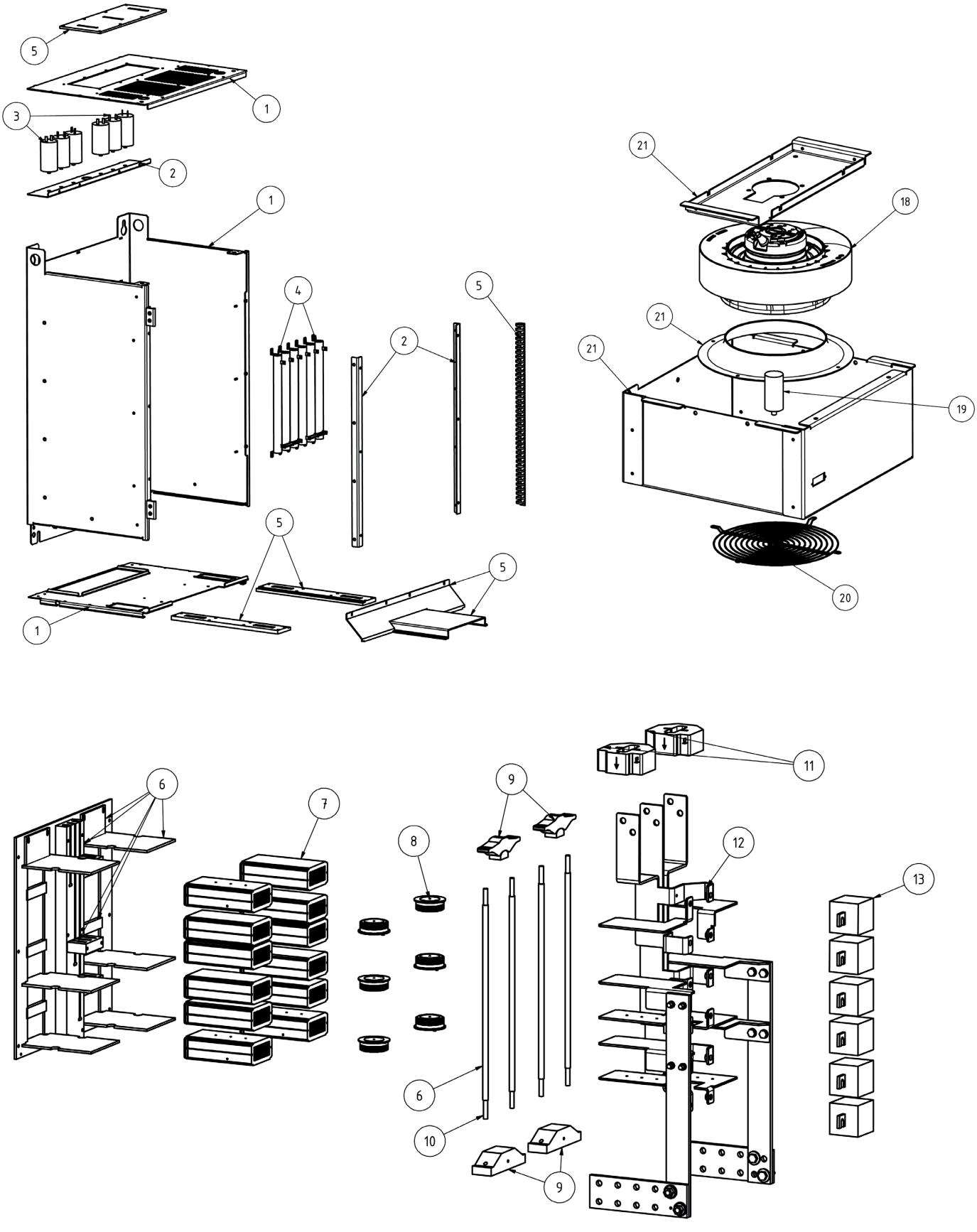
2.2 Materials for frames D1 to D4+

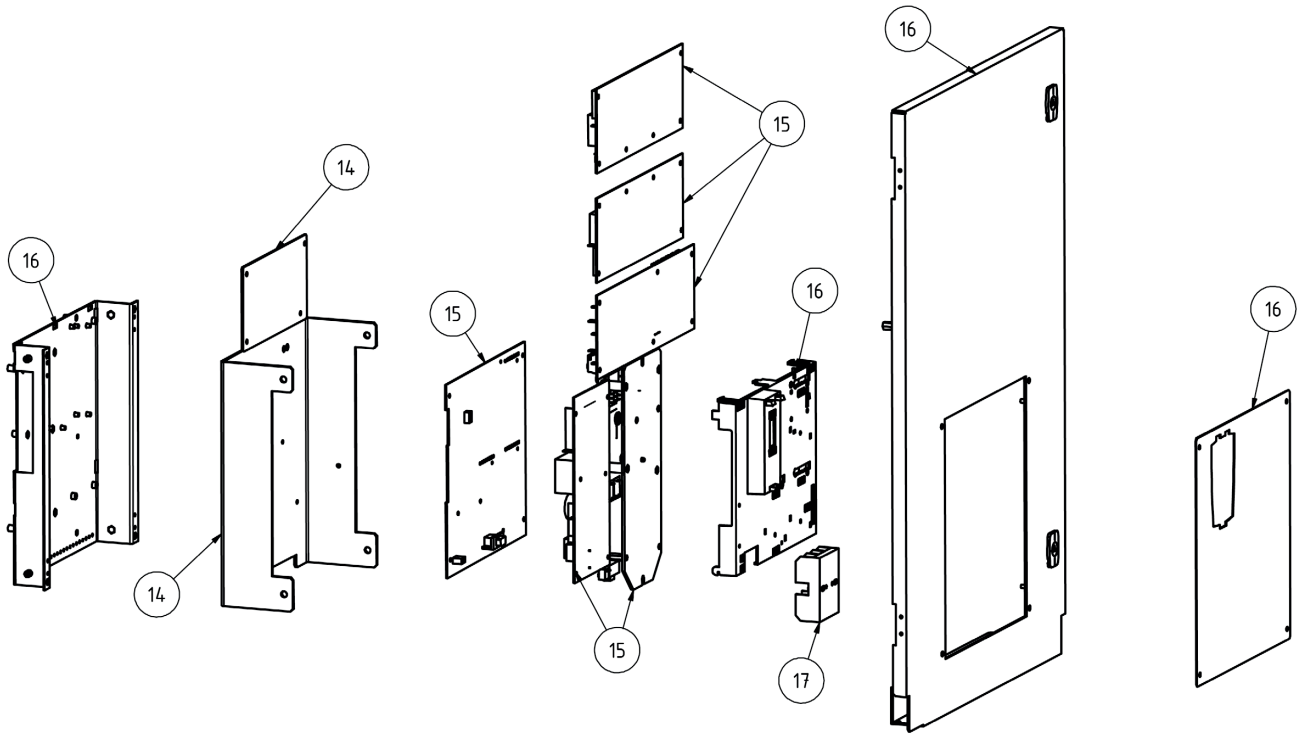


DCS880 frames D1 to D4+ product materials					D1	D2	D3	D4	D4+
					Total weight (kg) ~11	Total weight (kg) ~16	Total weight (kg) ~25	Total weight (kg) ~38	Total weight (kg) ~55
Part	Category		Qty	Materials	Weight (g)	Weight (g)	Weight (g)	Weight (g)	Weight (g)
1	Housing		2	hot-dip galvanized Fe	3950	4400	6010	9000	(3) / 11400
2	Resistor		1	Various materials	250	250	250	250	250
3	Sheet metal plates		1	hot-dip galvanized Fe	1000	1000	1000	1000	(3) / 1990
4	Heat Sink		1	Aluminum AlMgSi	2390	4500	6930	9900	(3) / 11400
5	Busbars	S01	5	Zn-plated CU	140	240 / 270	1290	(7) 1800	(16) 7850
		S02	5		270	370 / 430	(7) 2180	(7) 3050	(16) 7850
6	Current transformer		2	Various materials, plastic	-	500	600	600	600
			3	parts	540	-	-	-	-
7	Fan		1	Various materials, plastic	- / 400	-	-	2000	3000
			2	parts	-	400	400	-	-
			4		-	-	800	-	-
8	Plastic parts		5	PC / PA66 / ABS / GPO3	770	725	835	1280	1430
9	Semiconductor	S01	4	Cu, AL oxide, Sn, silicone gel,	310	595	2350	4300	4200
		S02	7	PBT, GF	540	1090	4600	8500	8400
10	Printed circuit boards		2	Various materials, electronic components	840	840	840	840	840
10	Printed circuit boards		2	Various materials, electronic components	840	840	840	840	840
11	Cables / Wires		N/A	PVC, Cu, GF, Sn, Au, Ni, phosphor bronze, thermoplastic polyester, glass filled nylon	150	150	150	200	200
	Control Panel			See subsection materials of the control panel on page 13					

2.3 Materials for frame D5

The main components are shown in the figure below.

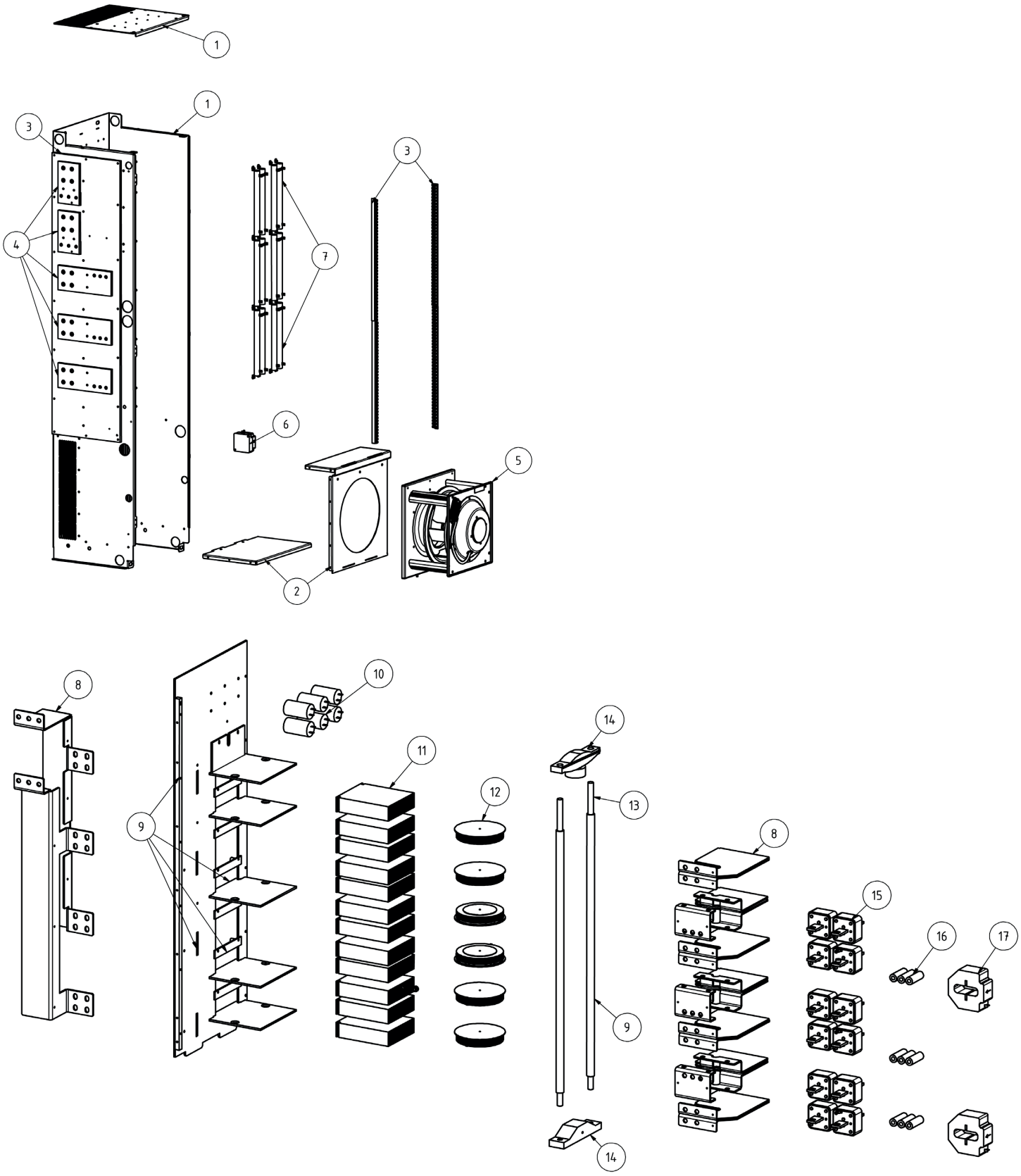


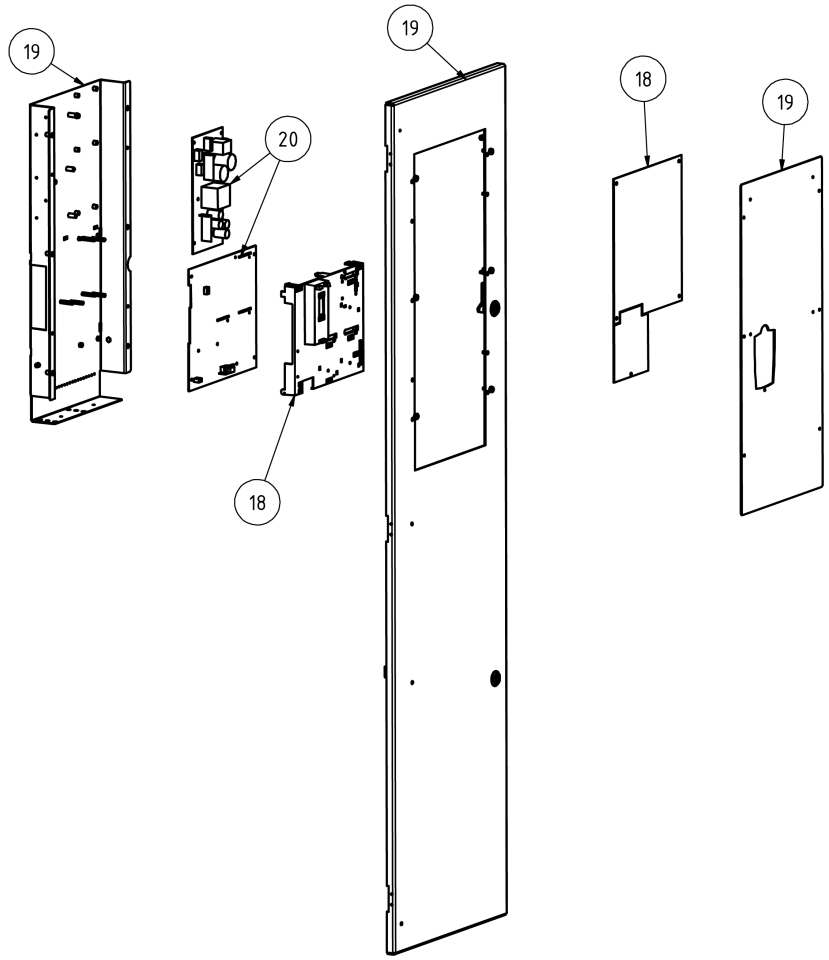


Part	Category	Qty	Materials	Weight (g)
1	Housing	3	hot-dip galvanized Fe	19500
2	Sheet metal part	3	hot-dip galvanized Fe	1100
3	Capacitor	6	Various materials, plastic parts	1500
4	Resistor	6	Various materials	1200
5	Plastic parts	5	PC / PA66 / ABS / GPO3 / MKHP	900
6	Plastic parts	23	GPO3 / PTFE	2200
7	Heat Sink	12	Aluminum AlMgSi	25200
8	Semiconductor S01 S02	6 12	Cu, Al oxide, Sn, silicone gel, PBT, GF	3000 6000
9	Aluminum parts	4	Aluminum AlMgSi	2900
10	Steel parts	4	stainless steel	2400
11	Current transformer	2	Various materials	3400
12	Busbars	17	ZN-plated CU	23500
13	Fuse	6	Various materials	7200
14	Plastic parts	3	PC / PA66 / ABS	800
15	Printed circuit parts	6	Various materials, electronic components	4000
16	Sheet metal part	3	hot-dip galvanized Fe	9000
17	Fuse holder + Fuse	4	Various materials, plastic parts	600
18	FAN	1	Various materials, plastic parts	4000
19	Capacitor	1	Various materials, plastic parts	100
20	Steel parts	1	stainless steel	200
21	Sheet metal part	3	hot-dip galvanized Fe	6300
22	Cables / Wires	N/A	PVC, Cu, GF, SN, Au, Ni, phosphor bronze, thermoplastic polyester, glass filled nylon	800
	Control Panel		See subsection materials of the control panel on page 13	

2.4 Materials for frame D6

The main components are shown in the figure below.

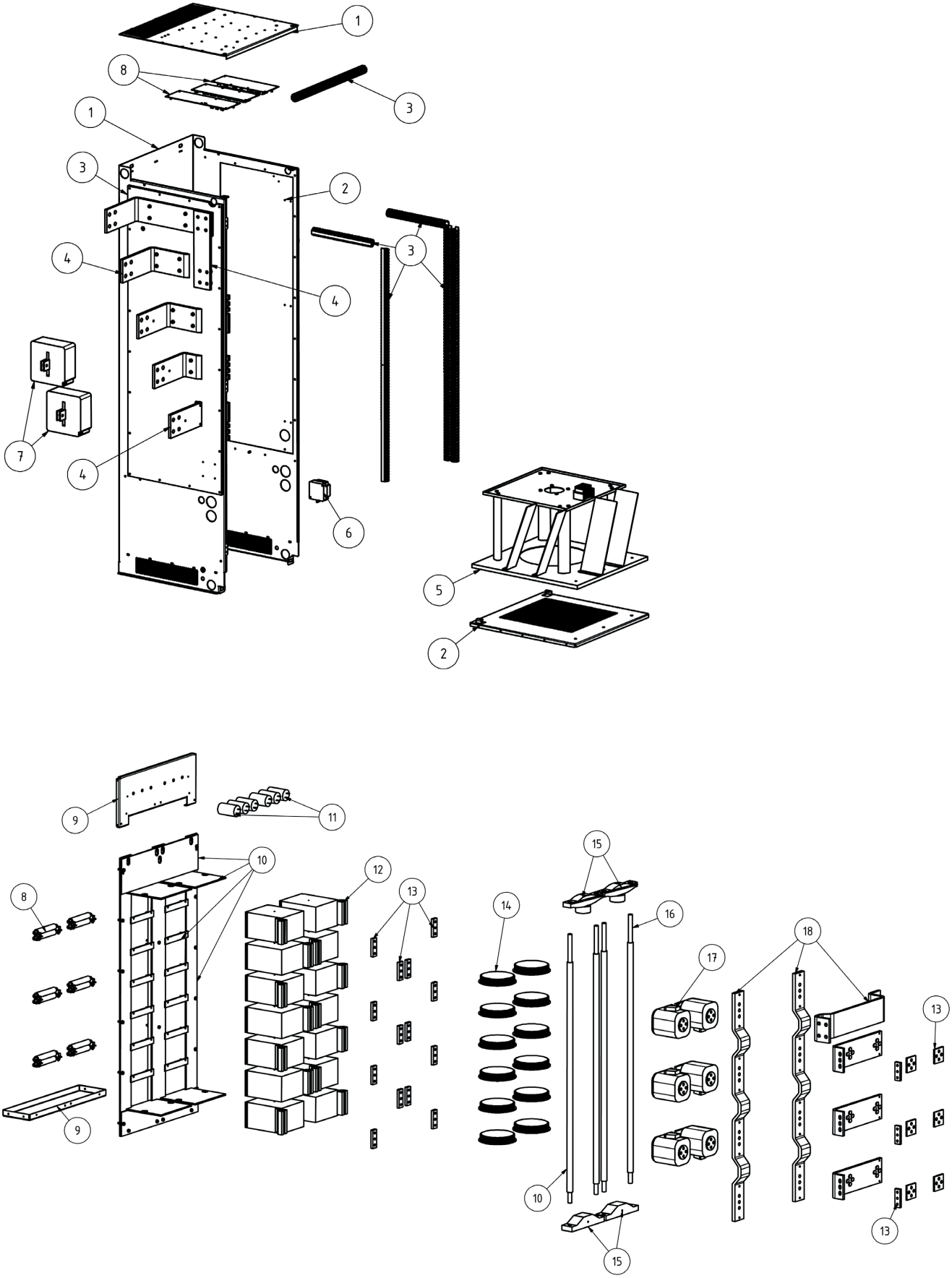


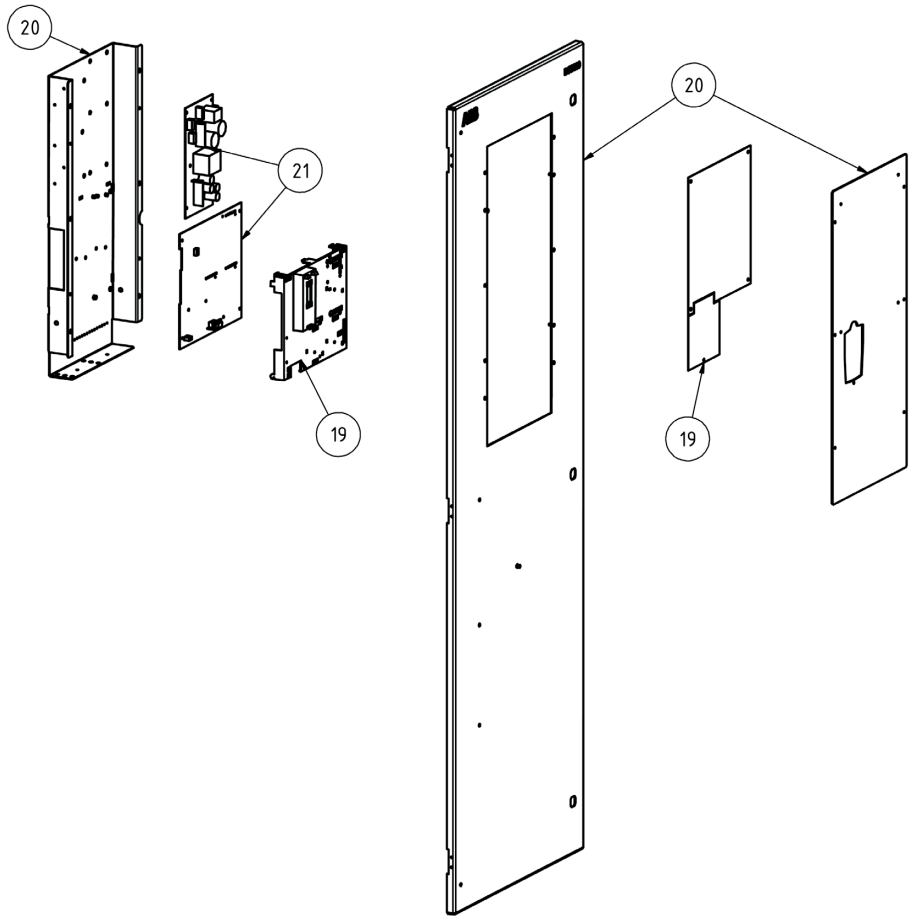


Part	Category	Qty	Materials	Weight (g)
1	Housing	2	hot-dip galvanized Fe	27000
2	Sheet metal part	2	hot-dip galvanized Fe	4800
3	Plastic parts	5	PC / PA66 / ABS / GPO3 / MKHP	6000
4	Busbars	5	ZN-plated CU	9500
5	FAN	1	Various materials, plastic parts	15000
6	Air pressure sensor	1	Various materials, plastic parts	400
7	Resistor	12	Various materials	1200
8	Busbars	19	ZN-plated CU	33000
9	Plastic parts	16	GPO3 / MKHP /PTFE	6500
10	Capacitor	6	Various materials, plastic parts	1500
11	Heat Sink	12	Aluminum AlMgSi	28000
12	Semiconductor S01 + BCT	6	Cu, Al oxide, Sn, silicone gel, PBT, GF	5000
	S02	12		10000
13	Steel parts	2	stainless steel	3000
14	Aluminum parts	2	Aluminum AlMgSi	5000
15	Fuses	12	Various materials	14400
16	Copper parts	9	Cu	1700
17	Current transformer	2	Various materials	3400
18	Plastic parts	2	PC / ABS	600
19	Sheet metal part	3	hot-dip galvanized Fe	14600
20	Printed circuit parts	2	Various materials, electronic components	1100
21	Cables / Wires	N/A	PVC, Cu, GF, SN, Au, Ni, phosphor bronze, thermoplastic polyester, glass filled nylon	900
	Control Panel		See subsection materials of the control panel on page 13	

2.5 Materials for frame D7

The main components are shown in the figure below.

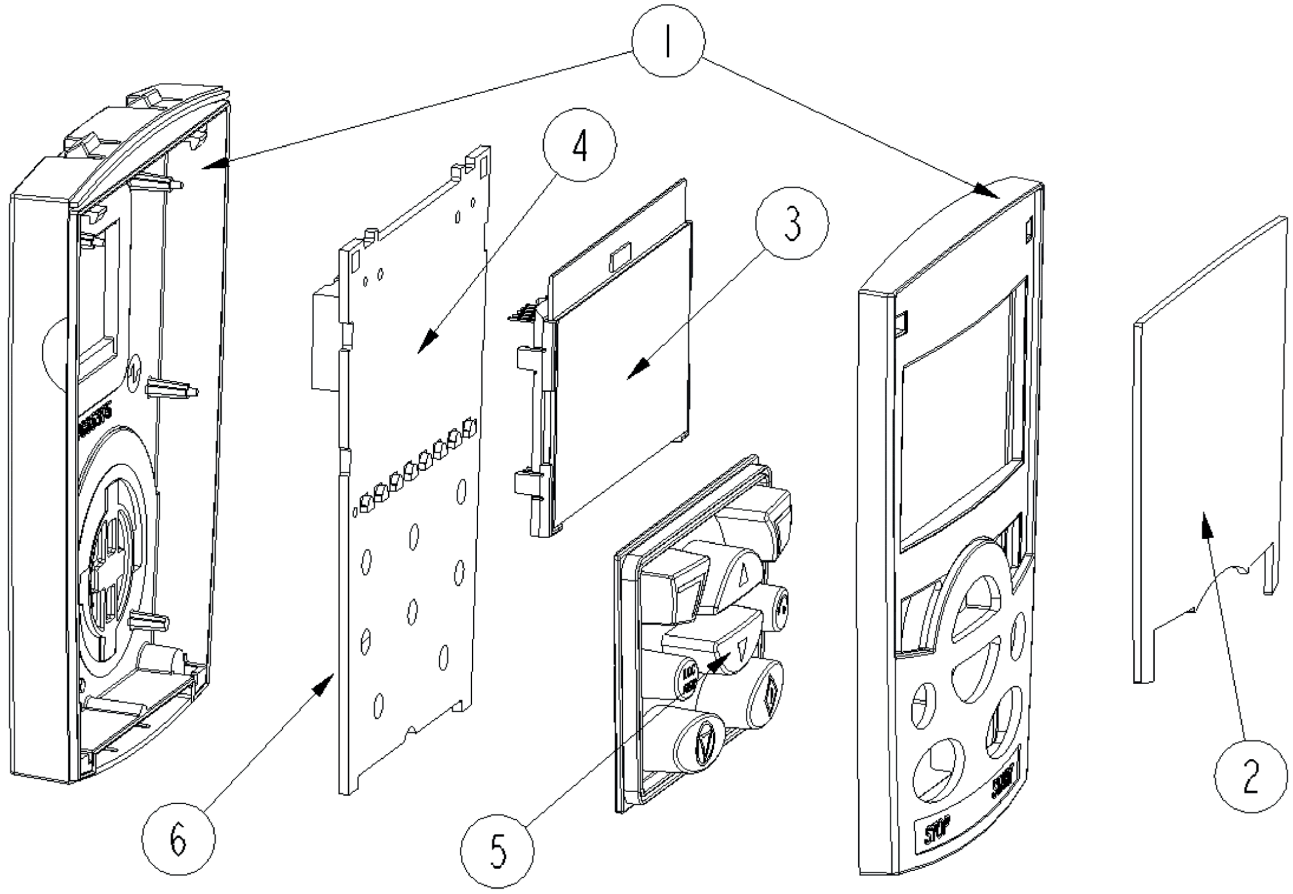




Part	Category	Qty	Materials	Weight (g)
1	Housing	2	hot-dip galvanized Fe	33500
2	Sheet metal part	2	hot-dip galvanized Fe	10000
3	Plastic parts	10	PC / PA66 / ABS / GPO3 / MKHP	10500
4	Busbars	6	ZN-plated CU	24000
5	FAN	1	Various materials, plastic parts	33000
6	Air pressure sensor	1	Various materials, plastic parts	400
7	Current transformer	2	Various materials, plastic parts	3400
8	Resistor	6/12	Various materials	1800/3600
9	Sheet metal part	2	hot-dip galvanized Fe	3200
10	Plastic parts	26	GPO3 / MKHP / PTFE	7500
11	Capacitor	6	Various materials, plastic parts	1500
12	Heat Sink	14	Aluminum AlMgSi	70000
13	Steel	23	ZN-plated Fe	3000
14	Semiconductor S01	6	Cu, Al oxide, Sn, silicone gel, PBT, GF	12500
	S02	12		25000
15	Aluminum parts	4	Aluminum AlMgSi	8000
16	Steel parts	4	stainless steel	7000
17	Fuses	6	Various materials	20000
18	Busbars	6	ZN-plated CU	29000
19	Plastic parts	2	PC / ABS	600
20	Sheet metal part	3	hot-dip galvanized Fe	17400
21	Printed circuit parts	2	Various materials, electronic components	1100
22	Cables / Wires	N/A	PVC, Cu, GF, SN, Au, Ni, phosphor bronze, thermoplastic polyester, glass filled nylon	1000
	Control Panel		See subsection materials of the control panel on page 13	

2.6 Materials of the control panel

The main components are shown in the figure below.



Part	Category	Qty	Materials	Weight (g)
1	Housing parts	2	Plastic: ABS PC	34
2	Lens	1	Plastic: PC	6
3	LCD display	1	Various materials	14
4	Printed circuit board	1	Various material, electronic components.	26
5	Keypad	1	Silicone rubber	10
6	CR 2032 lithium battery	1	Various materials	3

2.7 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.

2.8 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

3.1 Manufacturing

ABB Automation Products GmbH (Germany) 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.

3.2 Use

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

- 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.

4. PRODUCT DISPOSAL

4.1 Contents of this chapter

This chapter contains product disposal instructions.

4.2 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.

4.3 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.

4.3.1 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.

4.3.2 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 shredder.

4.4 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.

4.4.1 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.

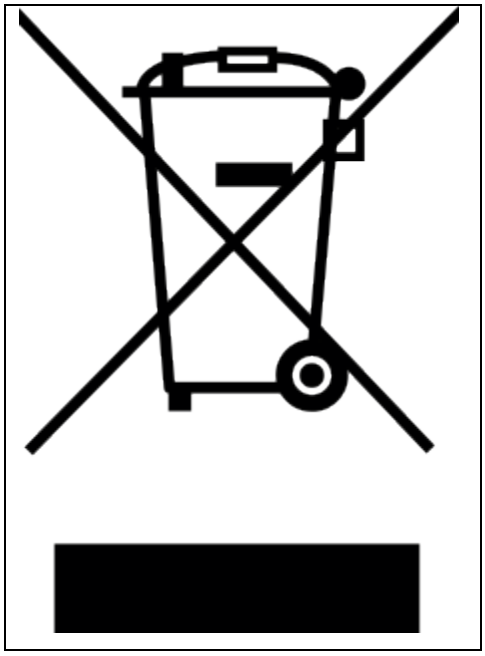
3. Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE).

4.5 Recycling information in accordance with the WEEE

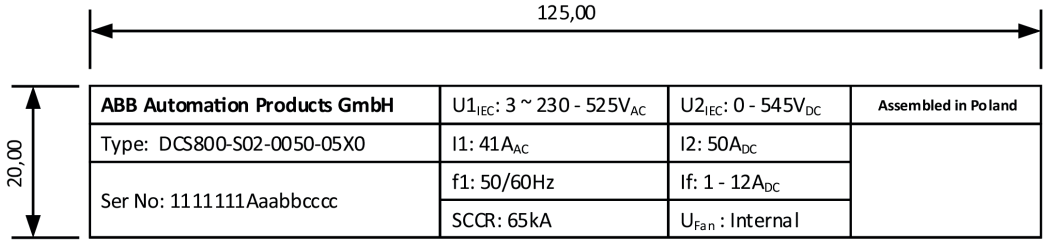
The product is marked with the wheelie bin symbol. It indicates that at the end of life the product should enter the recycling system.

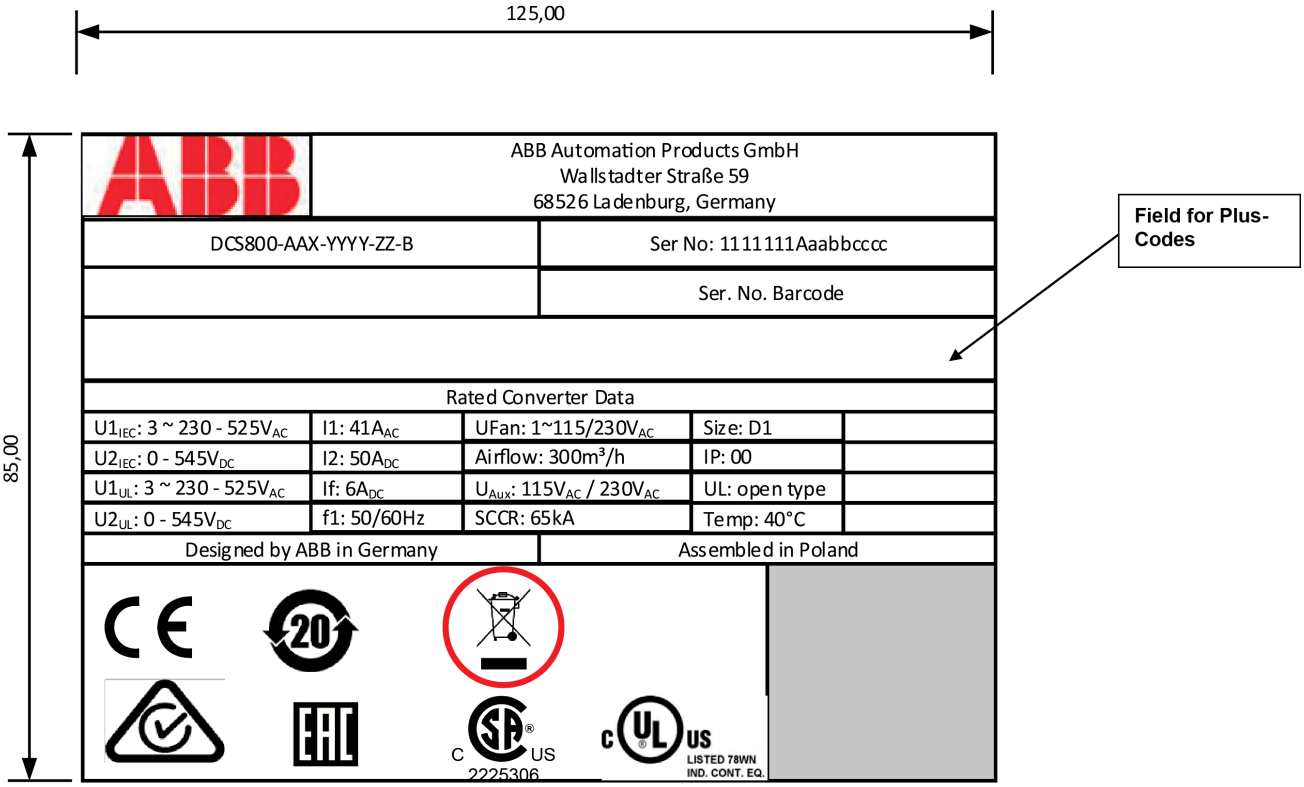
You should dispose of it separately at an appropriate collection point and not place it in the normal waste stream.

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.





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)

5. FURTHER INFORMATION

5.1 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.

5.2 Product training

For information on ABB product training, navigate to www.abb.com/drives and select Training courses.

5.3 Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome.

Go to www.abb.com/drives and select Document Library – Manuals feedback form (LV AC drives).

5.4 Document library on the Internet

You can find manuals and other product documents in PDF format on the Internet. Go to www.abb.com/drives and select Document Library. You can browse the library or enter selection criteria, for example a document code, in the search field.

5.5 ABB environment policy

You can find ABB's environmental policy on the Internet at new.abb.com/sustainability/environment-policy.

5.6 ABB group sustainability objectives

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

6. ABB LIST OF PROHIBITED AND RESTRICTED SUBSTANCES

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

7. ABB AUTOMATION PRODUCTS

DCS550

ABB offers the machine building industry a DC drive which combines state-of-the-art drive technology with proven DC technology. The new converter series is suited both for new installations and retrofit-ting, due to its robust technology and compact design.

Integrated ”Winder”, programmability and a powerful field converter provide machine manufacturers with a maximum of flexibility in terms of machine integration.

AC500

ABB's powerful flagship PLC offering provides wide range of performance levels and scalability within a single simple concept where most competitors require multiple product ranges to deliver similar functionality.

Programmability

Automation Builder integrates the engineering and maintenance for PLC, drives, motion, HMI and robotics. It complies with the IEC 61131-3 standard offering all five IEC programming languages for PLC and drive configuration. Automation Builder supports a number of languages and comes with new libraries, FTP functions, SMTP, SNTP, smart diagnostics and debugging capabilities

DC motors

ABB's DMI generation of DC motors turns many ingrained concepts upside down

Thanks to creative innovations and state-of-the-art computerized optimization of technical solutions that earlier were considered to have reached the "design limits", a completely new generation of DC motors has evolved.

The DMI generation of DC motors offers completely new opportunities for improving productivity as a result of the substantially faster speed control. At the same time, the investment costs are lowered. Thanks to the precise optimization of the electrical and mechanical characteristics and the wide speed range, oversizing of motor drives to achieve the desired speed range is unnecessary.

DCT880

ABB’s DCT880 offers their customers a thyristor power controller for the accurate control of ohmic or inductive heating elements and infrared radiators in glass, plastic, annealing, drying, melting or heating applications. DCT880 controllers are available in eight compact sizes, ranging from 20 A to 4,200 A

The integrated three-phase current measurement allows for implementing all load configurations from star, delta, single- and two-phase all the way to reactive-power optimized transformer control.

DCS880-R

The DCS880-R Rebuild Kit replaces the control electronics of an existing DC drive. All power components, including the thyristors, are retained. The DCS880-R Rebuild Kit is suitable for almost all existing drives from different manufacturers. In addition, ABB has developed specifically tailored solutions for some existing types of converter: this is a cost-efficient option for DC Drive revamping

ACS500-S

A PLC based modular automation solution that makes it easier than before to mix and match standard and safety I/O modules to expertly meet your safety requirements in all functional safety applications. “Extreme conditions” version is also offered.

All-compatible drives portfolio

The all-compatible drives share the same architecture; firmware platform, tools, user interfaces and options. Yet, there is an optimal drive from the smallest water pump to the biggest cement kiln, and everything in the between. When you have learned to use one drive it is easy use the other drives in the portfolio.

Jokab safety products

ABB Jokab Safety offers an extensive range of innovative products and solutions for machine safety systems. It is represented in standardization organisations for machine safety and works daily with the practical application of safety requirements in combination with production requirements.

Contacts

ABB Automation Products GmbH
Motors and Drives
Wallstadter Straße 59
68526 Ladenburg, Germany
www.abb.com/dc-drives

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