Recycling instructions and environmental information
HES880 converter modules and filters
List of related manuals

<table>
<thead>
<tr>
<th>Drive manuals and guides</th>
<th>Code (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES880 converter modules and filters recycling instructions and environmental information</td>
<td>3AXD50000181735</td>
</tr>
<tr>
<td>HES880 converter modules and filters product manual</td>
<td>3AUA0000127651</td>
</tr>
<tr>
<td>Safety instructions for HES880-104</td>
<td>3AXD50000047299</td>
</tr>
</tbody>
</table>

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
HES880 converter modules and filters

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
Converter module and filter types ........................................... 8
Disclaimer .................................................................. 8

2. Product materials
Contents of this chapter ...................................................... 9
Materials of converter modules ............................................. 9
Materials of filters ................................................................
   HLCL filters .............................................................. 9
   HDCL chokes ............................................................. 10
Package ............................................................................
Product manuals and sales brochures ..................................... 10

3. Manufacturing and use
Manufacturing ......................................................................
Use ....................................................................................

4. Product disposal
Contents of this chapter ...................................................... 13
Disposal ............................................................................
Dismantling ........................................................................
   Manual dismantling .................................................... 14
   Mechanical shredding .................................................. 14
ABB list of prohibited and restricted substances ......................... 14
Reference list .....................................................................
A recycling example .......................................................... 15

Further information
Product and service inquiries .............................................. 17
Product training ................................................................. 17
Providing feedback on ABB Drives manuals .............................. 17
Document library on the Internet ........................................... 17
ABB environment policy ..................................................... 17
ABB group sustainability objectives ....................................... 17
ABB list of prohibited and restricted substances ....................... 17
ABB end of life services ..................................................... 17
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:
• HES880 converter modules
• HLCL filters
• HDCL chokes.

Target audience
This document is intended for people who need information on recycling.

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.

**Converter module and filter types**

This manual covers all different converter module and filter types of the HES880 product family. The converter module or filter type is marked on the type designation plate of the module or filter. The converter module and filter type is also shown in the rating tables for each converter and filter type. The rating tables are in the *HES880 converter modules and filters product 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 HES880 converter modules and filters.

Materials of converter modules

The main materials are listed in the table below.

<table>
<thead>
<tr>
<th>Converter module</th>
<th>Material / kg</th>
<th>Total weight / kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aluminum</td>
<td>Copper</td>
</tr>
<tr>
<td>HES880-104-0352A-5</td>
<td>22.42</td>
<td>5.07</td>
</tr>
<tr>
<td>HES880-104-0602A-5</td>
<td>22.39</td>
<td>5.07</td>
</tr>
<tr>
<td>HES880-104-0902A-5</td>
<td>24.64</td>
<td>7.78</td>
</tr>
</tbody>
</table>

Materials of filters

- HLCL filters

The main materials are listed in the table below.

<table>
<thead>
<tr>
<th>LCL filter</th>
<th>Material / kg</th>
<th>Total weight / kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aluminum</td>
<td>Copper</td>
</tr>
<tr>
<td>HES880-HLCL-0352A-5</td>
<td>36.91</td>
<td>3.05</td>
</tr>
<tr>
<td>HES880-HLCL-0602A-5</td>
<td>47.39</td>
<td>1.16</td>
</tr>
<tr>
<td>HES880-HLCL-0902A-5</td>
<td>67.83</td>
<td>0.40</td>
</tr>
</tbody>
</table>
HDCL chokes

The main materials are listed in the table below.

<table>
<thead>
<tr>
<th>DC choke</th>
<th>Aluminum</th>
<th>Copper</th>
<th>Steel</th>
<th>Electronic components</th>
<th>Total weight / kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES880-HDLC-0320A-5</td>
<td>16.27</td>
<td>-</td>
<td>3.03</td>
<td>80.70</td>
<td>100.00</td>
</tr>
<tr>
<td>HES880-HDLC-0600A-5</td>
<td>18.02</td>
<td>-</td>
<td>3.51</td>
<td>98.47</td>
<td>120.00</td>
</tr>
</tbody>
</table>

Package

The product package is made of wooden base and 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.
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.

ABB recommends that you return HES880 converter modules and filters to ABB for disposal.

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 (frame, enclosure, busbars)
- copper (busbars)
- plastics
- printed circuit boards
- electrolytic capacitors
- other.
You can recycle metal parts (iron, aluminum and copper) 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

   - 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.
A recycling example

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

<table>
<thead>
<tr>
<th>Materials</th>
<th>Recycling method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>Recycled as material</td>
</tr>
<tr>
<td>Aluminum</td>
<td>Recycled as material</td>
</tr>
<tr>
<td>Plastics</td>
<td>Energy recovery (incineration)</td>
</tr>
<tr>
<td>Printed circuit boards</td>
<td>Recycled as WEEE</td>
</tr>
<tr>
<td>Electrolytic capacitors</td>
<td>Recycled as WEEE</td>
</tr>
<tr>
<td>Cables</td>
<td>Recycled as material</td>
</tr>
<tr>
<td>Ceramics</td>
<td>Landfilled</td>
</tr>
<tr>
<td>Other materials</td>
<td>Energy recovery (incineration)</td>
</tr>
</tbody>
</table>
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 www.abb.com/drives and select Training courses.

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).

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.

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.

ABB end of life services
For information on ABB end of life services, navigate to new.abb.com/service/end-of-life-services.
Contact us

www.abb.com/drives
www.abb.com/drivespartners

3AXD50000181735 Rev A (EN) 2017-11-21