Units with pedestal and busbars on the long side (+H354, bookshelf mounting)

Delivery check
Check that there are no signs of damage. Before attempting installation and operation, check the information on the type designation label of the drive to verify that the unit is of the correct type.

Item packages
The following tables show what each item package contains:

- parts
- part list code
- plus code
- assembling instruction.

In the tables, the basic unit is described first, then the possible optional parts are listed. Choose the table and options of your delivery in the following sections:

- Item packages of frame size R7 with busbars on the long side on page 58.
- Item packages of frame size R8 with busbars on the long side on page 64.

Note: The complete assembling instructions are represented under Assembling procedure for units with busbars on the long side (+H354) on page 73.
### Mechanical installation of non-pre-assembled units (ACS800-04M)

**Item packages of frame size R7 with busbars on the long side**

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic unit (type code ACS800-0M4-xxxx-x+H354+H355)</td>
<td>Drive module</td>
<td>Refer to section Assembling procedure for units with busbars on the long side (+H354) on page 73.</td>
</tr>
<tr>
<td>Drive control unit (RDCU)</td>
<td>RDCU drive control unit</td>
<td>See RDCU Drive Control Unit Hardware Manual [3AFE64636324 (English)].</td>
</tr>
</tbody>
</table>

**ACS800-04M of frame size R7 with busbars on the long side**

ProE code 64770308 D
## ACS800-04M of frame size R7 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestal R7 +H354</td>
<td>64754416 Pedestal</td>
<td>Base mounting from outside:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting bracket and grounding terminal kit R7 +H354</td>
<td>64743309 PE terminals, Base mounting brackets, Wall mounting bracket, Spacer for wall mounting</td>
<td>Wall mounting:</td>
</tr>
</tbody>
</table>

**Mechanical installation of non-pre-assembled units (ACS800-04M)**
### Mechanical installation of non-pre-assembled units (ACS800-04M)

#### ACS800-04M of frame size R7 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor output busbar kit R7 +H355</td>
<td><img src="image1.png" alt="Motor cable terminals" /> <img src="image2.png" alt="Insulating supports" /> <img src="image3.png" alt="Support brackets" /> <img src="image4.png" alt="AC output busbars" /></td>
<td>Pro/E code 64770306 D</td>
</tr>
</tbody>
</table>

Optional selection +J413: Control Panel Holder RPMP-21

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control panel holder +J413</td>
<td><img src="image5.png" alt="Control panel holder" /></td>
<td></td>
</tr>
</tbody>
</table>

---

*ACS800-04M*
### ACS800-04M of frame size R7 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional selection +H354+H356+H362: DC/brake busbars</td>
<td></td>
<td>ProE code 64770306 D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestal DC busbar kit R7 +H356</td>
<td>64769341</td>
<td><img src="image1.png" alt="Pedestal busbars" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC output busbar kit R7 +H362</td>
<td>64744747</td>
<td><img src="image2.png" alt="Side busbars" /></td>
</tr>
</tbody>
</table>

---

Mechanical installation of non-pre-assembled units (ACS800-04M)
Optional selection $+H354+H356+H362+H363$: DC and brake busbars on opposite sides

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral DC output busbar kit R7 $+H363$</td>
<td>64744895</td>
<td>DC busbars on the right side:</td>
</tr>
</tbody>
</table>

Long DC busbar for the pedestal (ends on both sides of the pedestal)

DC busbars on the left side and brake busbars on the right side:
ACS800-04M of frame size R7 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling drawing / reference to instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example assembly</td>
<td>(+H354+H355+H356+H362+H363 included)</td>
<td>Pro/E code 64770306 D</td>
</tr>
</tbody>
</table>

ACS800-04M of frame size R7 with busbars on the long side

AC, brake and DC busbars on the left

AC and brake busbars on the left and DC busbars on the right

Mechanical installation of non-pre-assembled units (ACS800-04M)
### Item packages of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic unit (type code ACS800-04M-xxxx-x+H354+H355)</td>
<td></td>
<td>Refer to section Assembling procedure for units with busbars on the long side (+H354) on page 73.</td>
</tr>
<tr>
<td>Drive control unit (RDCU)</td>
<td>RDCU drive control unit</td>
<td>See RDCU Drive Control Unit Hardware Manual [3AFE64636324 (English)].</td>
</tr>
</tbody>
</table>

*ProE code 64772023 E*
### ACS800-04M of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestal R8 +H354</td>
<td><img src="image1" alt="Pedestal Image" /></td>
<td>Base mounting from outside:</td>
</tr>
<tr>
<td>64754424</td>
<td>Pedestal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mounting bracket and grounding terminal kit R8 (+H354)</th>
<th><img src="image2" alt="Mounted Bracket Image" /></th>
<th>Wall mounting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>64744330</td>
<td><img src="image3" alt="Wall Mounting Bracket" /></td>
<td>Wall mounting bracket</td>
</tr>
<tr>
<td></td>
<td><img src="image4" alt="Wall Mounting Bracket" /></td>
<td>PE terminals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motor output busbar kit R8 +H355</th>
<th><img src="image5" alt="Motor Output Busbar Image" /></th>
<th>Motor cable terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>64743295</td>
<td>Ext Insulating supports</td>
<td>Motor cable terminals</td>
</tr>
<tr>
<td></td>
<td>Support brackets</td>
<td>Insulating supports</td>
</tr>
<tr>
<td></td>
<td>AC output busbars</td>
<td>Support brackets</td>
</tr>
</tbody>
</table>
ACS800-04M of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional selection</td>
<td>+H354+H356+H362: DC/brake busbars</td>
<td></td>
</tr>
</tbody>
</table>

- **Pedestal DC busbar kit R8 H356**
  - Part Number: 64769359
  - Illustration: Insulating supports and connecting busbars

- **DC output busbar kit R8 H362**
  - Part Number: 64744755
  - Illustration: Insulating supports, Terminals, Side busbars

Mechanical installation of non-pre-assembled units (ACS800-04M)
### Mechanical installation of non-pre-assembled units (ACS800-04M)

#### ACS800-04M of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional selection +H354+H356+H363: DC and brake busbars on opposite sides</td>
<td>64744798</td>
<td>ProE code 64772023 E</td>
</tr>
</tbody>
</table>

- **Support brackets**
- **Terminal**
- **Output busbar**
- **Insulating support**
- **Long DC busbar for the pedestal**

**DC output on the right side:**

- **Front**
- **DC output on the right**
- **Brake output on the right and DC output on the left**
### Optional selection +J413: Control Panel Holder RPMP-21

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control panel holder +J413</td>
<td>68394961</td>
<td>ProE code 64772023 E</td>
</tr>
</tbody>
</table>

**Control panel holder**
Mechanical installation of non-pre-assembled units (ACS800-04M)

ACS800-04M of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ProE code 64772023 E</td>
</tr>
</tbody>
</table>

Example assembly (+H354+H355+H356+H362+H363 included): AC and brake or DC busbars on the left, brake or DC busbars on the right

View when vertical busbars are not connected

View with vertical busbars connected

Note: All possible installation positions are shown. Actually DC and brake busbars can only be located on one side each.
Optional selection +B060: shrouds for vertical busbars and input terminals

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top entry busbar shroud kit +B060</td>
<td>68341493</td>
<td>ProE code 64772023 E</td>
</tr>
</tbody>
</table>

Top entry busbar shroud
Fastening screws included
### Mechanical installation of non-pre-assembled units (ACS800-04M)

#### ACS800-04M of frame size R8 with busbars on the long side

<table>
<thead>
<tr>
<th>Package</th>
<th>Parts</th>
<th>Assembling instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical busbar shroud kit +B060</td>
<td>Vertical busbar shrouds</td>
<td>ProE code 64772023 E</td>
</tr>
<tr>
<td>68329639</td>
<td>Fastening screws included</td>
<td></td>
</tr>
</tbody>
</table>
Example assembly (+H354+H355+H356+H362+B060+Q950 included): top entry busbar shroud, vertical busbar shroud and Prevention of Unexpected Start

**Note:** The protective films on the shrouds must be removed before installing.

Terminal block for user connection of Prevention of Unexpected Start (+Q950). The other end of the cable is connected to AGPS board terminal X1. The terminal block can be fastened to the cabinet frame or wall with screws.

Mechanical installation of non-pre-assembled units (ACS800-04M)
# Assembling procedure for units with busbars on the long side (+H354)

## Working order

References to instructions in this chapter are printed in italic in the table below. The pictures represent frame size R7 with the following orientations.

![Pedestal viewed from above](image)

<table>
<thead>
<tr>
<th>Step</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preparing the pedestal</td>
<td><strong>AC busbars on the left side</strong>&lt;br&gt;Go to step 2.</td>
</tr>
<tr>
<td></td>
<td><strong>AC busbars on the right side</strong>&lt;br&gt;1. See <a href="#">Swapping the busbars of the pedestal to the other side</a> on page 78.&lt;br&gt;2. Go to step 2.</td>
</tr>
<tr>
<td></td>
<td><strong>AC busbars, R-, R+/UDC+ and UDC- busbars on the left side (+H356 required)</strong>&lt;br&gt;1. See <a href="#">Connecting the DC busbars to the pedestal (+H356 and +H363 only)</a> on page 76.&lt;br&gt;2. Go to step 2.</td>
</tr>
<tr>
<td></td>
<td><strong>AC busbars, R-, R+/UDC+ and UDC- busbars on the right side (+H356 required)</strong>&lt;br&gt;1. See <a href="#">Swapping the busbars of the pedestal to the other side</a> on page 78.&lt;br&gt;2. See <a href="#">Connecting the DC busbars to the pedestal (+H356 and +H363 only)</a> on page 76.&lt;br&gt;3. Go to step 2.</td>
</tr>
<tr>
<td></td>
<td><strong>AC busbars and R-, R+/UDC+ busbars on the left side and UDC+ and UDC- busbars on the right side (+H356 and +H363 required)</strong>&lt;br&gt;1. See <a href="#">Swapping the busbars of the pedestal to the other side</a> on page 78 and <a href="#">Optional selection +H363</a> on page 79.&lt;br&gt;2. See <a href="#">Connecting the DC busbars to the pedestal (+H356 and +H363 only)</a> on page 76.&lt;br&gt;3. Go to step 2.</td>
</tr>
<tr>
<td>Step</td>
<td>Instruction</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td><strong>AC busbars and UDC+ and UDC-busbars on the left side and R-, R+/UDC+ busbars on the right side (+H356 and +H363 required)</strong></td>
</tr>
</tbody>
</table>
|      | 1. See *Swapping the busbars of the pedestal to the other side* on page 78 and *Optional selection* +H363 on page 79.  
2. See *Connecting the DC busbars to the pedestal* (+H356 and +H363 only) on page 76.  
3. Go to step 2. |
| 2    | **Base mounting from outside** |
|      | 1. See *Clamping the pedestal with the outside brackets* on page 80.  
2. Go to step 3. |
|      | **Base mounting from inside** |
|      | 1. See *Fastening the pedestal through the holes inside the pedestal* on page 80.  
2. Go to step 3. |
| 3    | **Units with vertical busbars** |
|      | 1. See *Fastening the output busbars and PE terminal and sliding the module in* on page 86.  
2. See *Fastening the drive module to the pedestal* on page 89.  
|      | **Units with no vertical busbars** |
|      | 1. See *Fastening the drive module to the pedestal* on page 89.  
2. Go to step 4 (wall-mounted units) or 5 (base-mounted units). |
| 4    | **Wall mounting** |
|      | See *Fastening the drive module to wall* (wall-mounted units only, not for base-mounted units) on page 81.
<table>
<thead>
<tr>
<th>Step</th>
<th>If</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>base-mounted unit</td>
<td>See <em>Fastening the drive module by top to the cabinet frame</em> on page 81.</td>
</tr>
</tbody>
</table>
| 6    | if included | Frame size R7  
See *Top entry busbar shroud* in section *Fastening the top entry busbar and bottom exit shrouds (+B060)* on page 55.  
Frame size R8  
See *Fastening the shrouds in frame size R8* on page 90. |
Connecting the DC busbars to the pedestal (+H356 and +H363 only)

Procedure

1. Screw insulating supports ("a" below) onto the free pins ("b" below) on the inner sides of the pedestal.
2. Push busbars (c) through the R-, R+/UDC+ and UDC- lead-through insulators as the W2, V2 and U2 busbars.
3. Connect the connecting busbars (d, e, f) to the insulating supports and to the R-, R+/UDC+ and UDC busbars as shown below.

For +H363, see also Optional selection +H363 on page 79.

Photos of frame size R7
Photos of frame size R8

DC busbars connected
Busbars to the left- or right-hand side of the module?
The pedestal is delivered from the factory ready for left-hand side busbar connections. When required, the internal busbars of the pedestal can be swapped to the right side.

Swapping the busbars of the pedestal to the other side
When swapping the busbars from left to right, proceed as follows:

1. Turn the pedestal over to access the bolts which connect the pedestal power connections to the horizontal busbars.
2. Undo the connections.
3. Pull out the busbars and rotate them 180 degrees.
4. Reinsert the busbars so that the busbar ends with the hole protrude on the right-hand side of the pedestal.
5. Positions the busbars so that the small hole in the busbar is aligned with the hole in the insulator.
6. Tighten the connections (2).
7. Connect the right-hand side PE terminal.
Optional selection +H363

This selection enables the connection of the DC output and the brake resistor output to the opposite sides of the pedestal. The installation below requires also optional selection +H356. The UDC- busbar and R- busbar are taken from the +H356 parts, the R+/UDC+ busbar from the +H363 parts. For instruction on how to connect the busbars to the pedestal frame, see Connecting the DC busbars to the pedestal (+H356 and +H363 only) on page 76.

1. Connect the UDC- busbar.
2. Connect the R+/UDC+ busbar.
3. Connect the R- busbar.
Fastening the pedestal to the cabinet base (not for wall-mounted units)

Fasten the pedestal to the base of the cabinet either with the outside fastening brackets or by using the fastening holes inside the pedestal.

**Note:** Place the module on a solid base. The fastening brackets are not strong enough to carry the weight of the module on their own.

*Clamping the pedestal with the outside brackets*

1. Fasten the front bracket to the pedestal with two screws.
2. Fasten the back fastening bracket onto the cabinet floor with two screws.
3. Place the pedestal on the cabinet floor and push it so that the tabs of the fastening bracket enter the slots in the pedestal.
4. Fasten the front bracket to the base with two screws.

![Diagram showing clamping the pedestal with the outside brackets](image)

Tightening torque: 5 Nm (3.7 lbf ft)

*Fastening the pedestal through the holes inside the pedestal*

Fasten the pedestal to the base of the cabinet with four screws through the inside fastening points.

![Diagram showing fastening the pedestal through the holes inside the pedestal](image)

M6, 5 Nm (3.7 lbf ft)
Fastening the drive module by top to the cabinet frame

In addition to the base fastening, it is recommended to fasten the module to the cabinet also from the fastening points at the top. Refer to Dimensional drawings for the vertical fastening points.

If the module is not fastened from the back top to the cabinet frame, it must be fastened from the front top fastening points during transportation or in case of vibration.

Fastening the drive module to wall (wall-mounted units only, not for base-mounted units)

Requirements for protection

The drive module must be protected against contact, dust and humidity (see chapter Technical data in ACS800-04/04M/U4 Hardware Manual [64671006 (English)]).

Requirements for the wall

The wall must be as close to vertical as possible, of non-flammable material and strong enough to carry the weight of the unit. Check that there is nothing on the wall to inhibit the installation.

Floor

The floor/material below the installation must be non-flammable.
Procedure

- Place the wall mounting bracket onto the pedestal so that its pins enter the slots of the pedestal.
- Fasten the pins with nuts (1) from inside or fasten the bracket with screws from outside (2). The nuts and screws are included in the mounting bracket package.

Inserting the wall mounting bracket into the slots in the pedestal

The pins of the wall mounting bracket are fastened with nuts from inside

Fastening the wall mounting bracket with screws from outside (alternative to pin fastening from inside)
• See *Dimensional drawings* for locations of the fastening points at the top of the module.

• Use a pallet truck or a lifter to move the unit to the final mounting place.

---

**WARNING!** Secure the unit to eliminate the danger of overturning and falling during the fastening procedure.

---

• Fasten the module through the slots in the wall mounting bracket and the fastening holes at the top of the module using spacers between the module and the wall.

  **Note:** In flat mounting, the spacers (at the top and bottom) provide a clearance of 15 mm (0.6 in.) between the drive module and the wall so that the protruding studs of the module will not press against the wall. In bookshelf mounting, the spacer removes a 4 mm (0.16 in.) gap between the drive module top and the wall so that the module will hang in an upright position.

• Fasten the module also by top front with a wall-fastened support bracket.
Units with busbars on the short sides (flat mounting, frame sizes R7 and R8)

Screw size: M10 for frame sizes R7 and R8
Units with busbars on the long side (bookshelf mounting, frame sizes R7 and R8)

**Frame size R7 with spacer**
Frame size R8: no spacer

**Screw size:** M10 for frame sizes R7 and R8

**Fastening points of frame size R7**

**4 mm (0.6 in.)**

Spacer (frame size R7)

Top

Bottom
Fastening the output busbars and PE terminal and sliding the module in

The steps of this installation procedure are shown in the photos on the next pages.

1. Connect the output busbars to the pedestal.
2. Fasten the PE terminal.
3. Screw the insulating supports onto the pins on the outer support bracket.
4. Fasten the output busbars and terminals to the insulating supports on the outer support bracket.
5. Fasten the inner support bracket to the drive module.

6. Remove the fastening brackets (screws “b” on photos under Fastening the drive module to the pedestal on page 89) from the pedestal.

7. Slide the module onto the pedestal so that the inner support bracket enters inside the outer support bracket.

8. Fasten the outer support bracket to the drive module.

9. Fasten the stickers to the output busbars.
View of output busbar connections of frame size R7 (DC and brake busbars included)

WARNING! Fasten the output busbars to the insulating supports with M8x16 screws when no cable lug terminal is connected, but with M8x20 screws when a cable lug terminal is also connected with the same screw. Screwing an M8x20 screw without a cable lug terminal through the busbar into the insulating support will break the insulating support. Fasten the cable lug terminals elsewhere with M10x25 screws.

Tightening torque
M8: 15...22 Nm (3.7 lbf ft)
M10: 30...44 Nm (22...32 lbf ft)
**WARNING!** Fasten the output busbars to the insulating supports with M10x20 screws when no cable lug terminal is connected, but with M10x25 screws when a cable lug terminal is connected as well. Screwing an M10x25 screw without a cable lug terminal through the busbar into the insulating support will break the insulating support.
Fastening the drive module to the pedestal

- Remove the front cover of the module.
- Connect the busbars with screws [3 to 6 pcs (a)] using a torque wrench with an extension bar.
- Fasten the module to the pedestal with screws (b).

**WARNING!** Fastening of screws (b) is important because the screws are required for the grounding of the drive.

![Frame size R7 diagram](image)

- **M8x25 combi screw**
  - Tightening torque: 15...22 Nm (11...16 lbf ft)
- **M6 combi screw**
  - Tightening torque: 5 Nm (3.7 lbf ft)

![Frame size R8 diagram](image)

- **M10x25 combi screws**
  - Tightening torque: 30...44 Nm (22...32 lbf ft)
- **M6x16 combi screws**
  - Tightening torque: 5 Nm (3.7 lbf ft)

- Match the three guide pins on the cover with the counter holes. Fasten the front cover to the module with screws.
**Fastening the shrouds in frame size R8**

*Top entry busbar shroud*

1. Step drill lead-throughs for the busbars.
2. Remove the protective film.
3. Place the top cover to position (3) with the tabs entering the slots of the shroud.
4. Fasten the shroud to the drive module.

*Vertical busbar shroud*

1. Cut the corner piece to make space for the PE terminal of the drive module.
2. Remove the protective film from the shroud surfaces.
3. Fasten the shroud plates to each other and to the drive module.

**Note:** When connecting the power cables, remove the front (and top and side) shroud by undoing the fastening screws.