

# ACS800

**Rittal TS 8 Cabinet Installation**

**ACS800-04 and ACS800-04M Drive Modules (45 to 560 kW)**

**ACS800-U4 Drives (60 to 600 HP)**



# ABB

# ACS800 Single Drive Manuals

**HARDWARE MANUALS** (appropriate manual is included in the delivery)

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ACS800-01/U1 Hardware Manual 0.55 to 110 kW (0.75 to 150 HP)  
3AFE64382101 (English)

ACS800-01/U1 Marine Supplement 3AFE64291275 (English)

ACS800-02/U2 Hardware Manual 90 to 500 kW (125 to 600 HP)  
3AFE64567373 (English)

ACS800-11/U11 Hardware Manual 5.5 to 110 kW (7.5 to 125 HP)  
3AFE68367883 (English)

ACS800-04 Hardware Manual 0.55 to 132 kW  
3AFE68372984 (English)

ACS800-04/04M/U4 Hardware Manual 45 to 560 kW (60 to 600 HP)  
3AFE64671006 (English)

ACS800-04/04M/U4 Cabinet Installation 45 to 560 kW (60 to 600 HP)  
3AFE68360323 (English)

ACS800-07/U7 Hardware Manual 45 to 560 kW (50 to 600 HP)  
3AFE64702165 (English)

ACS800-07/U7 Dimensional Drawings 45 to 560 kW (50 to 600 HP)  
3AFE64775421

ACS800-07 Hardware Manual 500 to 2800 kW  
3AFE64731165 (English)

ACS800-17 Hardware Manual 75 to 1120 kW  
3AFE64681338 (English)

- Safety instructions
- Electrical installation planning
- Mechanical and electrical installation
- Motor control and I/O board (RMIO)
- Maintenance
- Technical data
- Dimensional drawings
- Resistor braking

## **FIRMWARE MANUALS, SUPPLEMENTS AND GUIDES**

(appropriate documents are included in the delivery)

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Standard Application Program Firmware Manual  
3AFE64527592 (English)

System Application Program Firmware Manual  
3AFE63700177 (English)

Application Program Template Firmware Manual  
3AFE64616340 (English)

Master/Follower 3AFE64590430 (English)

PFC Application Program Firmware Manual  
3AFE64649337 (English)

Extruder Control Program Supplement 3AFE64648543 (English)

Centrifuge Control Program Supplement 3AFE64667246 (English)

Traverse Control Program Supplement 3AFE64618334 (English)

Crane Control Program Firmware Manual 3BSE11179 (English)

Adaptive Programming Application Guide  
3AFE64527274 (English)

## **OPTION MANUALS** (delivered with optional equipment)

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Fieldbus Adapters, I/O Extension Modules etc.

ACS800-04 and ACS800-04M Drive Modules  
45 to 560 kW  
ACS800-U4 Drive Modules  
60 to 600 HP

## **Rittal TS 8 Cabinet Installation**

3AFE68372330 Rev A EN  
EFFECTIVE: 1.2.2005



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# About this manual

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## What this chapter contains

This chapter describes the intended audience and contents of the manual and refer to other related manuals.

## Target audience

The manual is intended for people who plan the installation and install the drive module into a Rittal TS 8 cabinet. Read the manual before working on the drive module. The reader is expected to know the fundamentals of electricity, wiring, electrical components and electrical schematic symbols.

The manual is written for readers worldwide. Both SI and imperial units are shown.

## Safety



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**WARNING!** Follow the safety instructions given in *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)] when installing, operating and servicing the drive. If ignored, physical injury or death may follow, or damage may occur to the drive, motor or driven equipment. Read the safety instructions before you work on the unit.

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## What this manual contains

The manual shows a few installation examples on how to install the drive module into a Rittal TS 8 cabinet.

The chapters of this manual are briefly described below.

*About this manual* introduces the manual.

*Drive module of frame size R7 with bottom exit* describes the installation of a drive module of frame size R7 in an 800 mm × 2000 mm × 600 mm enclosure.

*Drive module of frame size R7 with bottom exit and Rittal cooling unit* describes the installation of a drive module of frame size R7 in an 800 mm × 2000 mm × 600 mm enclosure when the enclosure is cooled with a cooling unit.

*Drive module of frame size R8 and Rittal cooling unit* describes how to install a drive module of frame size R8 into a 600 mm deep enclosure when the enclosure is cooled with a cooling unit.

*Drive module of frame size R8* describes the installation of a drive module of frame size R8 in an 800 mm × 2000 mm × 600 mm enclosure.

*Dimensional drawings* contains the dimensional drawings of the fastening points in the drive modules used in the installation examples in this manual, and dimensional drawings of air baffles and EMC screens.

## Other related manuals

Refer to *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)] for information concerning the drive module such as

- dimensional drawings
- assembling instructions
- general instructions on installing the drive module into a cabinet.

Refer to *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)] for information concerning the drive module such as

- safety
- moving and unpacking
- specifications of the drive, e.g. the ratings, sizes and technical requirements, provisions for fulfilling the requirements for CE and other markings, warranty policy etc.

For installation of ACS800-04M components, refer to their manuals:

- *ARFI-10 EMC Filter Installation Guide* [3AFE68317941 (English)]
- *RDCU Drive Control Unit Hardware Manual* [3AFE64636324 (English)]
- *RPMP-11/13 Control Panel Mounting Platform Kit Installation Guide* [3AFE68400643 (English)].

The manuals can be viewed on the Internet: [www.abb.com](http://www.abb.com) under **Motors, drives and power electronics / Drives / Document library**.

## Component lists

ACS800-04M and Rittal parts used in the installation examples are listed in the manual. A list of other components, such as the contactor, switch fuse etc., is included in *Modules Engineering Tool* on [www.abb.com](http://www.abb.com) under **Motors, drives and power electronics / Low Voltage AC Drives / Drives / Industrial drives, modules**.



## Categorization according to the frame size

The instructions, technical data and dimensional drawings which concern only certain frame sizes are marked with the symbol of the frame size R7 or R8. The frame size is not marked on the drive designation label. To identify the frame size of your drive, see the rating tables in *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)] in chapter *Technical data*.

## Take care of sufficient cooling

The installation examples described in this manual have been tested for sufficient cooling. When installing the drive module in another position (e.g. by the longer side, or in a horizontal position), ensure that the cooling air gratings at the front panel of the module will not be covered and the required cooling air flow is achieved.

For evaluating cooling, refer to Rittal Therm calculation program for climate control of enclosures under [www.rittal.com](http://www.rittal.com).

## Liability

The installation examples in this manual are provided to help the installer in designing his/her installation.

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**Note:** The installation must always be designed and made according to applicable local laws and regulations. ABB does not assume any liability whatsoever for any installation which breaches the local laws and/or other regulations.

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# Drive module of frame size R7 with bottom exit

## What this chapter contains

This chapter describes the installation of a drive module of frame size R7 with bottom exit into a 600 mm deep, 800 mm wide and 2000 mm high Rittal TS 8 enclosure. The installation is designed to comply with the limits of IEC/EN 61800-3 for immunity and emissions of electrical equipment in first environment (includes establishments connected to a low-voltage network which supplies buildings used for domestic purposes). This requires EMC screen and EMC cable lead-throughs, which are otherwise not necessarily needed. The installer is responsible for the verification. The degree of protection of the installation is IP20.

## Rittal parts

This table lists the Rittal parts used in the installation.

Rittal model no.	Description	Qty (pcs)
TS 8806.500	Enclosure with mounting plate, width × height × depth: 800 mm × 2000 mm × 600 mm	1
TS 8106.235	Side panel for 2000 mm × 600 mm	2
TS 8612.160	Punched section with mounting flange, outer mounting level for 600 mm horizontal	2
TS 8614.240	Mounting plate 1100 mm × 300 mm	1
DK 7092.000	C-rail 390 mm	1
DK 7097.000	C-rail cable clamp for cable diameters of 18 to 22 mm	4
DK 7098.000	C-rail cable clamp for cable diameters of 38 to 42 mm	6
DK 7828.060	C-rail 600 mm	2
DK 7967.000	50 mm spacer for roof plate	4
PS 4944.000	Support rail 555 mm	1
SK 3326.267 *	EMC compatible air filter 323 mm for 292 mm × 292 mm door ventilation holes	3
SK 3326.607	EMC compatible fan-and-air-filter unit 700/720 m <sup>3</sup> /h, 230 V, 50/60 Hz	1
SV 3568.000	Laminated copper bar Flexibar S. Dimensions: 15.5 mm × 4.8 mm, 2000 mm long	3

\* for first environment EMC installations. In other installations SK 3326.200 air filter 323 mm for 292 mm × 292 mm door ventilation holes can be used.

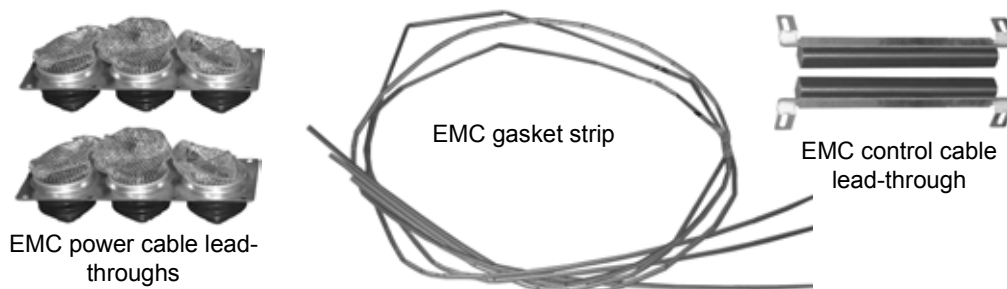
For photos and specifications of the parts, refer to [www.rittal.com](http://www.rittal.com).

## ACS800-04M parts

The following ACS800-04M parts are used in the installation:

- drive module of type ACS800-04M-xxxx+B060+E202+H352+J400+J410. For descriptions of the plus codes, refer to *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)], chapter *The ACS800-04/U4 and ACS800-04M: Type code*.

- EMC kit 64331116 containing two power cable lead-throughs with EMC sleeves and rubber grommets, one control cable lead-through and gasket strip for EMC shielding of the enclosure door. See also page [20](#).



## Additional parts to be provided by the installer

The following parts, in addition to the Rittal and ACS800-04M parts listed above, are needed in the installation:

- air baffle, see page [17](#).
- EMC screen, see page [16](#).
- 800 mm × 600 mm piece of wire mesh with max. 10 mm mesh size for fulfilling IP20 degree of protection of the enclosure. The mesh is placed on the top of the enclosure frame under the 50 mm spacers on which the enclosure roof lies. See page [18](#).
- PE busbar of dimensions 70 mm × 50 mm × 10 mm, copper
- contactor (optional)
- auxiliary voltage transformer when a contactor is installed
- supply disconnecting device and input cable fuses. See *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)], chapters *Planning the electrical installation* and *Technical data*.
- terminal for grounding the control cable shields and self-adhesive strain reliefs to be mounted next to the RDCU Drive Control Unit. See page [22](#)
- shroud over the input cable terminal connections and output connections of the disconnecting device.

## Moving, unpacking and assembling the drive module

Follow the instructions given in *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)]. Fasten the bottom exit kit (+H352) to the drive module before beginning to install the drive module into the enclosure.

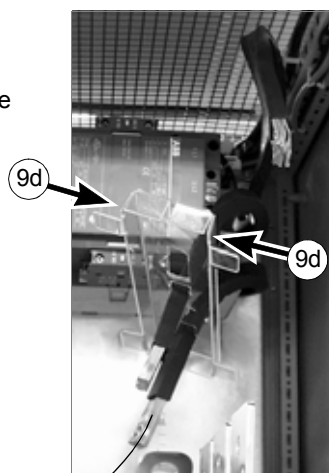
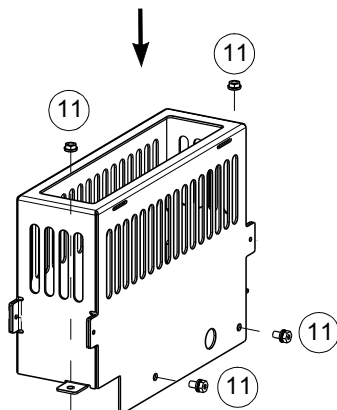
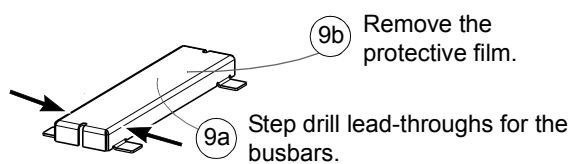


## Installation steps

Step	Instruction	Photo
1	Fasten the base plates and lead-through plates to the enclosure frame. See also section <a href="#">Cable lead-through plates</a> on page 20.	<p><b>Left side view of the installation without side panel and EMC screen</b></p> <p>BACK FRONT</p> <p>1025 (40.35)</p> <p>820 (32.28)</p> <p>2 Punched section TS 8612.160</p> <p>3 Side mounting plate TS 8614.240 1100 mm x 300 mm</p> <p>4 Base plates (included in the TS 8806.500 enclosure)</p> <p>5 Control cable lead-through</p> <p>6 Input cable lead-throughs</p> <p>7 Back mounting plate (included in the TS 8806.500 enclosure)</p> <p>8 C-rail 600 mm</p> <p>1 Motor cable lead-throughs</p>
2	Fasten the punched sections for the side mounting plate fastening to the vertical profiles of the enclosure frame.	
3	Fasten the devices to the side mounting plate. See also section <a href="#">Fastening of the RDCU Drive Control Unit to the side mounting plate</a> on page 22.	
4	Fasten the side mounting plate to the punched sections.	
5	Fasten the devices, and the drive module if a lifting device is available, to the back mounting plate. See <a href="#">ARFI-10 EMC Filter Installation Guide</a> [3AFE68317941 (English)].	
6	Connect the switch fuse to the EMC filter, and the EMC filter to the contactor with laminated copper bars. Connect laminated copper bars to the output of the contactor.	
7	Fasten the back mounting plate to the enclosure frame 70 mm from the back vertical profile. In this location, the drive module will face the enclosure door thus allowing no hot air recirculation into the drive module ventilation grating from the inside of the enclosure. See also <a href="#">Fastening of the back mounting plate</a> on page 21.	
8	Fasten the drive module to the back mounting plate if not fastened already.	

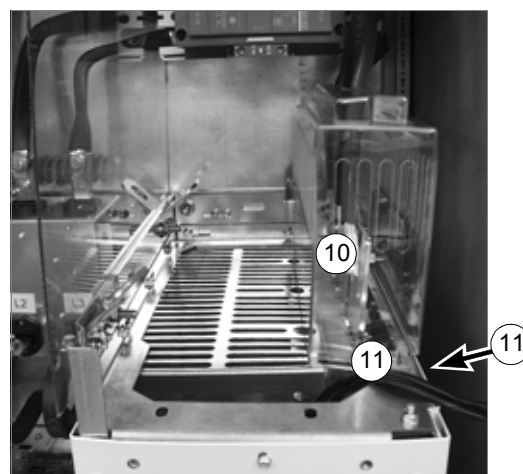


Step	Instruction	Photo
9	Assemble the top entry clear plastic busbar shroud.	
10	Connect the laminated copper bars to the input terminals of the drive module.	
11	Fasten the top entry clear plastic busbar shroud to the drive module.	

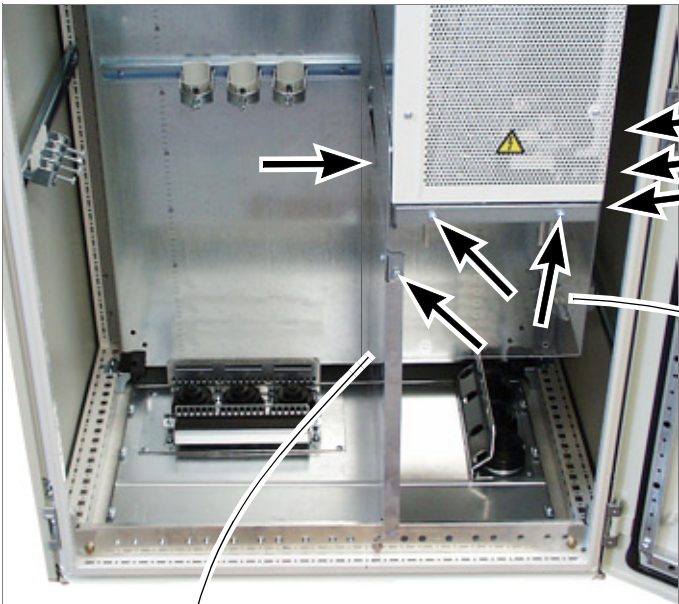
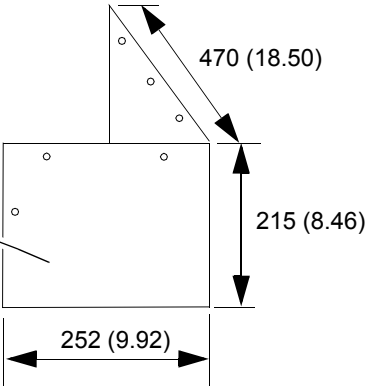
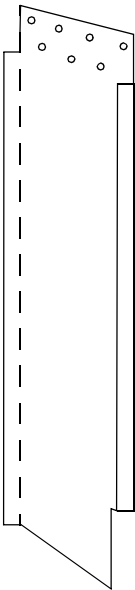


Press the top cover on the sides inwards to enable its tabs to enter the slots in the lower part of the shroud.

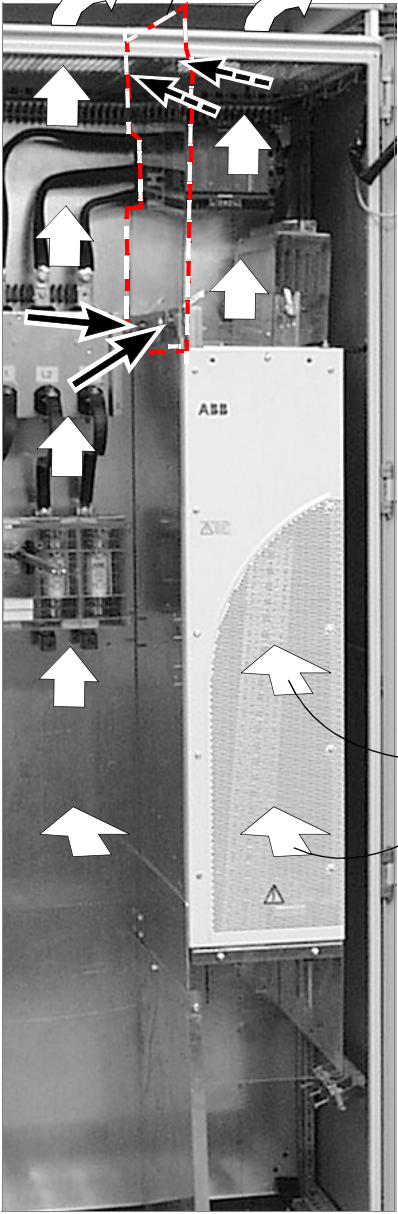
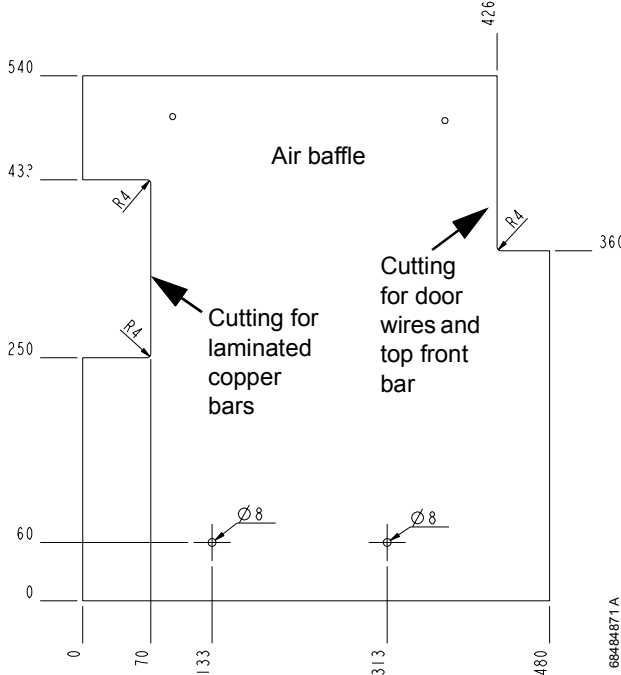
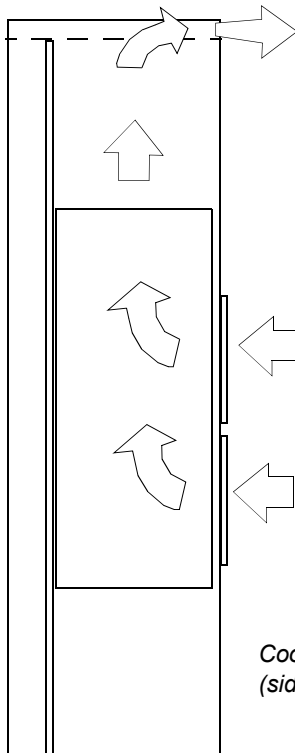
Pass the laminated copper bars through the lead-throughs and the lower part of the shroud

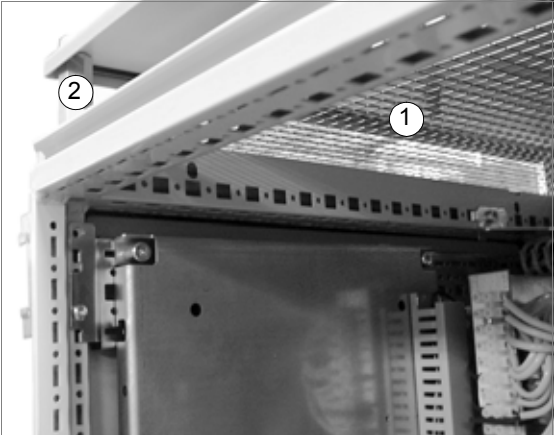
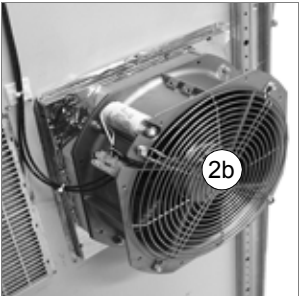
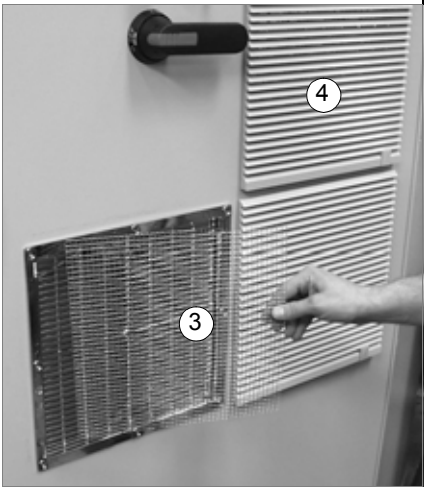

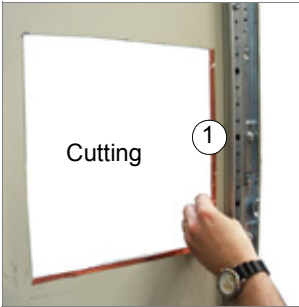


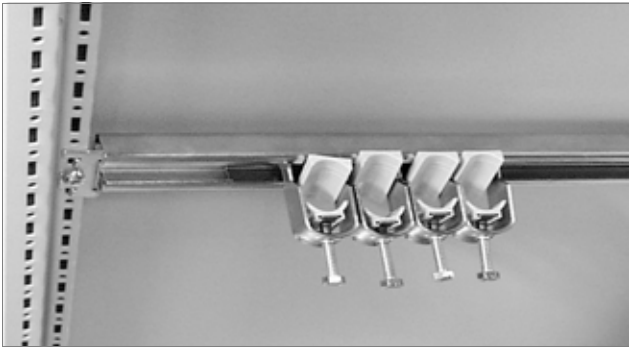
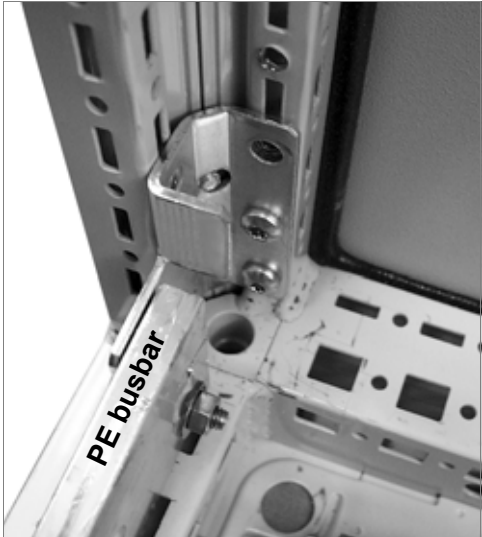
*Top entry busbar shroud installed*

Step	Instruction	Photo
12	Fasten the EMC screen and clear plastic shroud to the drive module.	<div><div></div><div><p><b>Clear plastic shroud</b> (included in ACS800-04M bottom exit shroud kit +B060)</p></div><div><p><b>Note:</b> Remove the protective film from the shroud surfaces. If the EMC screen is not used, protect the output terminals against contact at the left-hand side also with the clear plastic shroud.</p></div><div><p><b>EMC screen</b></p></div><div><p>See the dimensional drawing on page <a href="#">49</a>.</p></div></div>



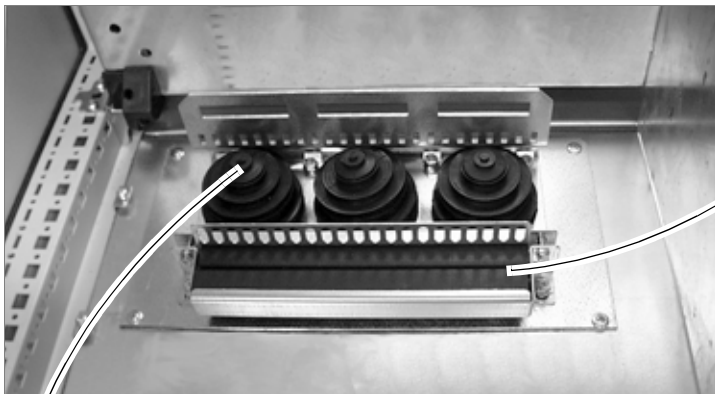
Step	Instruction	Photo
13	Fasten the air baffle to the fastening points of the drive module and to the support rail with screws.	<p>The air baffle is needed for preventing hot air from entering the cool area of the cabinet.</p>    <p>Cooling air flow into the drive module</p> <p>Cooling air flow (side view)</p>
14	Fasten the back panel of the enclosure.	
15	Fasten the side panels of the enclosure.	

Step	Instruction	Photo
16	<p>Fasten the roof plate:</p> <ol style="list-style-type: none"><li>1. Cut an opening to the roof wire mesh for the upper edge of the air baffle. Place the mesh on the top of the enclosure frame.</li><li>2. Fasten the enclosure roof plate above the mesh with four 50 mm spacers at the corners.</li></ol>	
17	<p>Fasten the door devices. See <i>RPMP-11/13 Control Panel Mounting Platform Kit Installation Guide</i> [3AFE68400643 (English)].</p> <p>Install the ventilation gratings on the door:</p> <ol style="list-style-type: none"><li>1. Cover the edges of the cuttings with copper tape.</li><li>2. Fasten the metal gratings (2a) and the EMC compatible fan-and-air-filter unit (2b).</li><li>3. Place the metal mesh between the lower grating and the outer louvred grating.</li><li>4. Push the louvred grating onto its place.</li></ol>	<div></div> <p><i>View of the EMC compatible fan-and-air-filter unit on the back side of the door</i></p>
18	<p>Fasten the EMC gasket strip to the door as shown on page <a href="#">13</a>.</p>	

Step	Instruction	Photo
19	Install the C-rails and clamps for cable strain relief.	
20	<p>Fasten the PE busbar.</p> <p>The PE busbar is provided for grounding of the input cable shield and the motor cable shield if the PE terminal of the drive module is not used.</p>	
21	Fasten shrouds over all live parts.	

## Cable lead-through plates

EMC kit 64331116 contains the lead-throughs without the strain relief plates shown below.

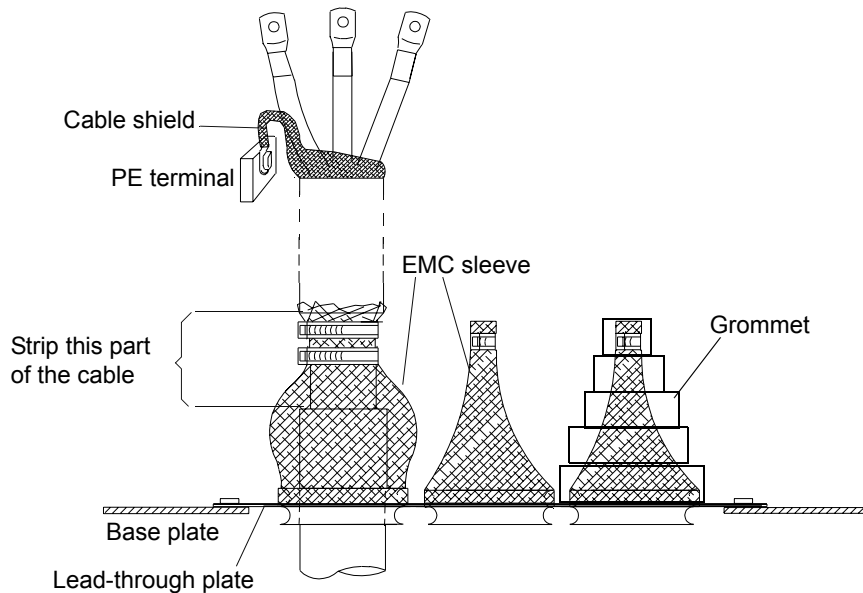
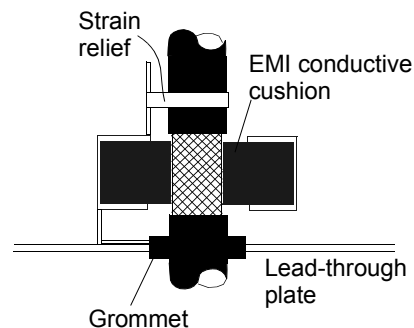


Recommended entry for control cables in first environment installations (360 degrees grounding between the conductive cushions)

**Note:** Control cable lead-throughs with rubber grommets only may also be possible.

Entries for power cables (conductive sleeves inside the grommets). Cut an adequate hole to the rubber grommet. Lead the cable through the grommet and the conductive sleeve as shown below.

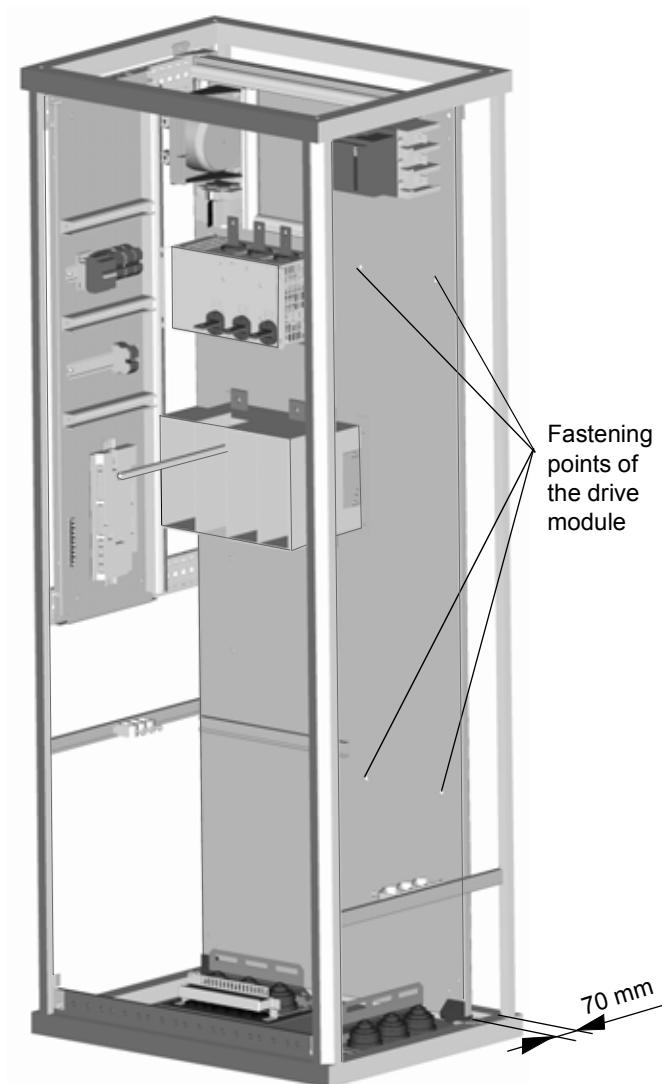
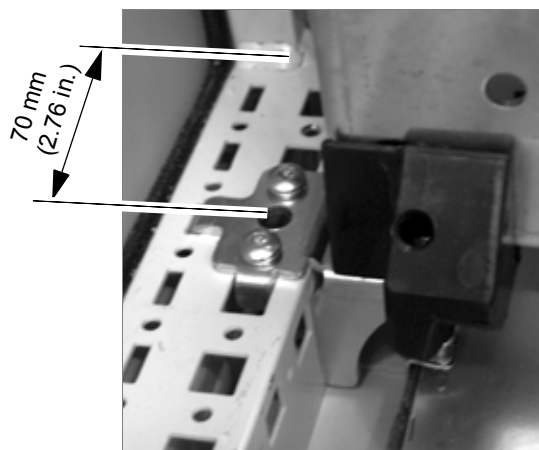
In first environment installations, 360 degrees grounding must be applied to motor cables and is also recommended for input cables.



*Installing the power cables*

## Fastening of the back mounting plate

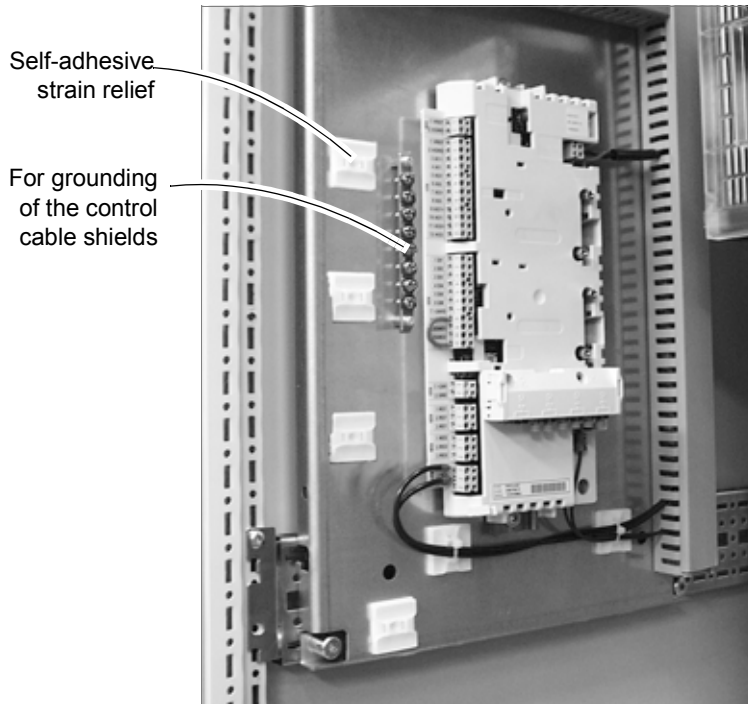
Fasten the back mounting plate to the enclosure frame at a distance of 70 mm from the back vertical profiles. The attachment in the lower left-hand side corner is shown here.



*View of the enclosure frame when the back mounting plate (without the drive module) is fastened*

ProE: White Currant / acs800-04-rittal\_common.asm, \_common\_no\_heat.asm

### Fastening of the RDCU Drive Control Unit to the side mounting plate



See *RDCU Drive Control Unit Hardware Manual* [3AFE64636324 (English)].

# Drive module of frame size R7 with bottom exit and Rittal cooling unit

## What this chapter contains

This chapter describes the installation of a drive module of frame size R7 with bottom exit into a 600 mm deep, 800 mm wide and 2000 mm high Rittal TS 8 enclosure. A Rittal cooling unit is installed on the side of the enclosure. The degree of protection of the installation is IP54.

## Required Rittal parts

Rittal model no.	Description	Qty (pcs)
TS 8806.500	Enclosure with mounting plate, width x height x depth: 800 mm x 2000 mm x 600 mm	1
TS 8106.235	Side panel for 2000 mm x 600 mm	2
TS 8612.160	Punched section with mounting flange, outer mounting level for 600 mm horizontal	2
TS 8614.240	Mounting plate 1100 × 300	1
DK 7092.000	C-rail 390 mm	1
DK 7097.000	C-rail cable clamp for cable diameters of 18 to 22 mm	4
DK 7098.000	C-rail cable clamp for cable diameters of 38 to 42 mm	6
DK 7828.060	C-rail 600 mm	1
SK 3332.540	Cooling unit	1
SV 3568.000	Laminated copper bar Flexibar S. Dimensions: 15.5 mm x 4.8 mm, 2000 mm long	3

For photos and specifications of the parts, refer to [www.rittal.com](http://www.rittal.com).

## ACS800-04M parts

The following ACS800-04M parts are used in the installation:

- drive module of type ACS800-04M-xxxx+B060+E202+H352+J400+J410.

For descriptions of the plus codes, refer to *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)], chapter *The ACS800-04/U4 and ACS800-04M: Type code*.

## Additional parts to be provided by the installer

The following parts, in addition to the Rittal and ACS800-04M parts listed above, are needed in the installation:

- for first environment installations: EMC screen mesh which allows cooling air flow from the cooling unit to the input cable part of the enclosure. See page 26.

- power cable lead-throughs
- control cable lead-throughs
- PE busbar of dimensions 70 mm × 50 mm × 10 mm, copper
- contactor (optional)
- auxiliary voltage transformer when a contactor is installed
- supply disconnecting device and input cable fuses. See the *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)] chapters *Planning the electrical installation* and *Technical data*.
- terminal for grounding the control cable shields and self-adhesive strain reliefs to be mounted next to the RDCU Drive Control Unit. See page [22](#).
- shroud over the input cable terminal connections and output connections of the disconnecting device.

## Moving, unpacking and assembling the drive module

Follow the instructions given in *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)]. Fasten the bottom exit kit (+H352) to the drive module before beginning to install the drive module into the enclosure.

## View of the installation

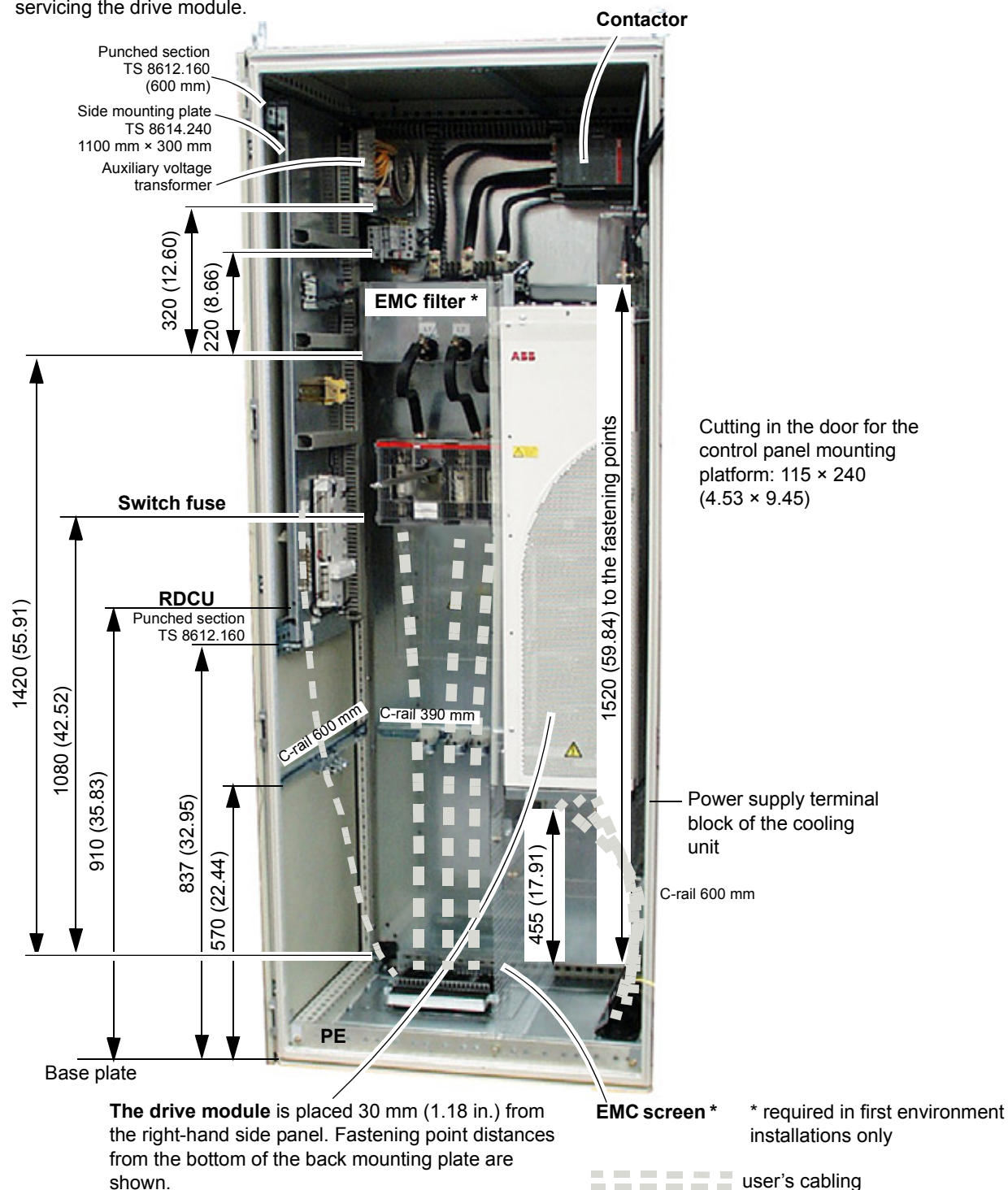




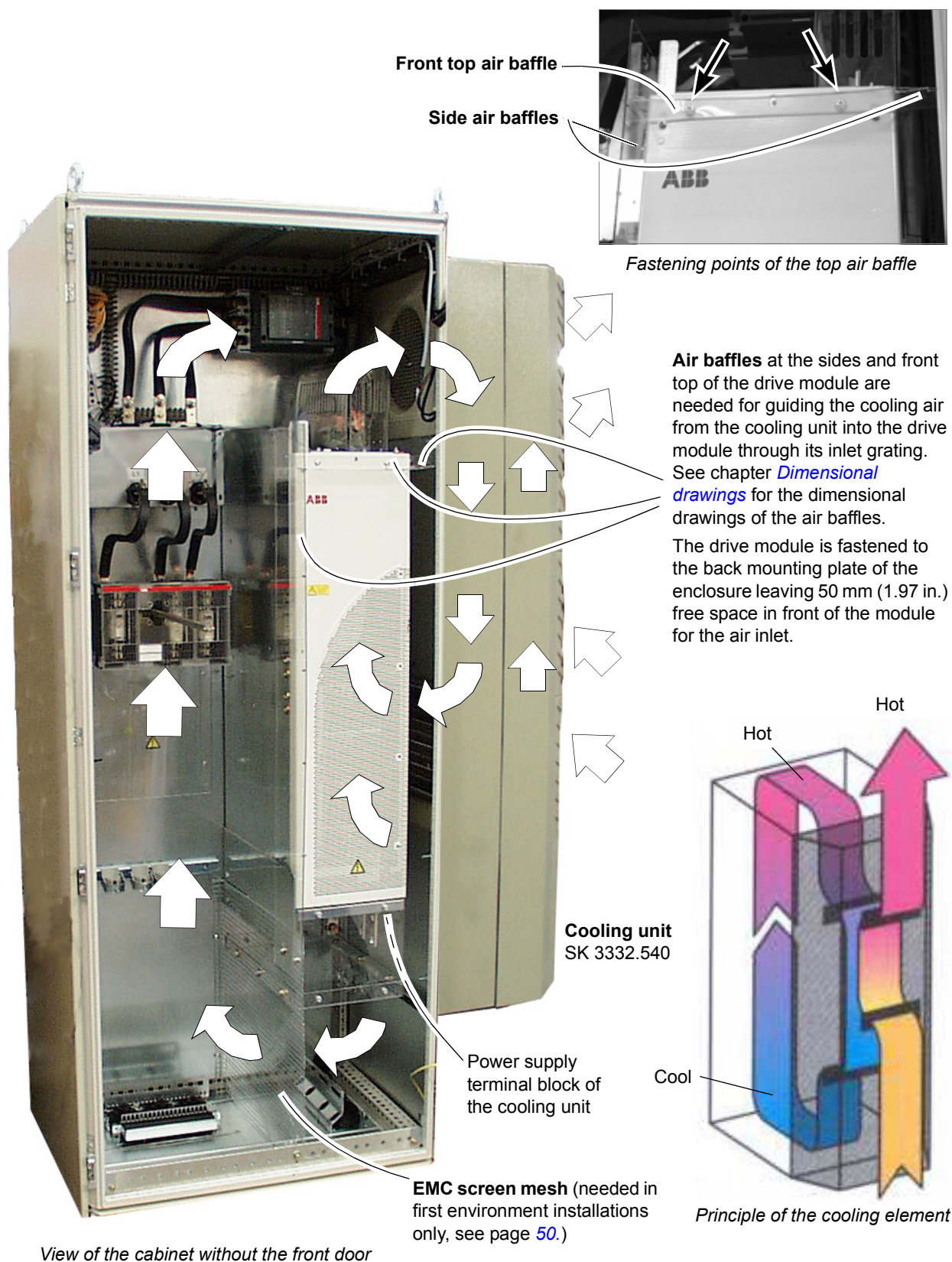
## Layout of the installation

This photo shows the final installation with component placing dimensions in millimetres and (inches).

**Note:** A mirrored layout is advantageous for servicing the drive module.



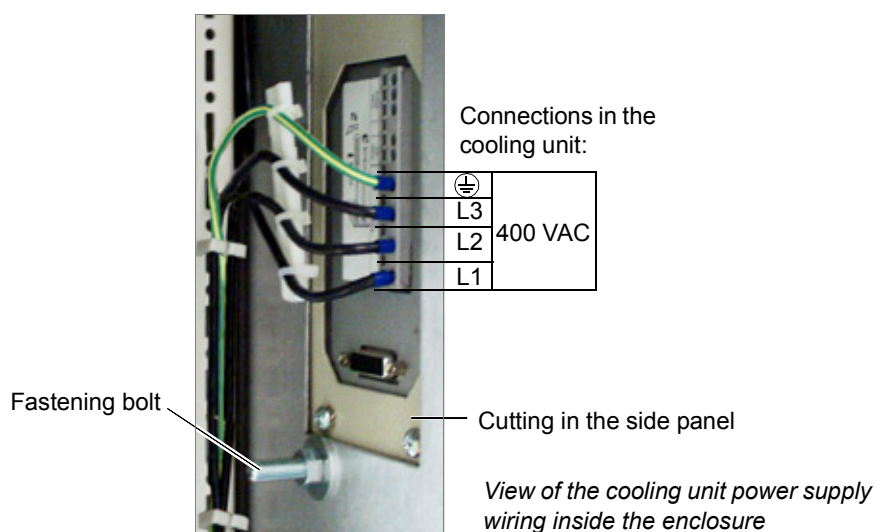
## Cooling air flow



## Installation steps

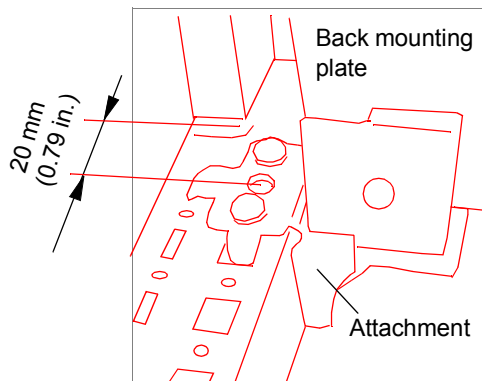
Install the cooling unit according to the manufacturer's instructions to the side panel of the drive enclosure:

1. Cut openings in the side panel of the enclosure for air input and output and power supply wiring of the cooling unit.
2. Install the cooling unit.
3. Lead the power supply wires through a lead-through grommet into the enclosure.
4. Connect the power supply wires and secure them with cable ties.



Install the components into the enclosure as described in chapter [Drive module of frame size R7 with bottom exit](#) with the following exceptions:

- Install the enclosure roof plate directly onto the enclosure frame without spacers and a wire mesh (no air outlet through the roof).
- Do not install ventilation gratings and an EMC fan-and-filter unit on the enclosure door (no air inlet through the door).
- Fasten the back mounting plate at the back of the enclosure frame without moving it 70 mm inwards from the back vertical profile. This is needed for allowing air to enter the front grating of the drive module as the front door of the enclosure has no gratings.



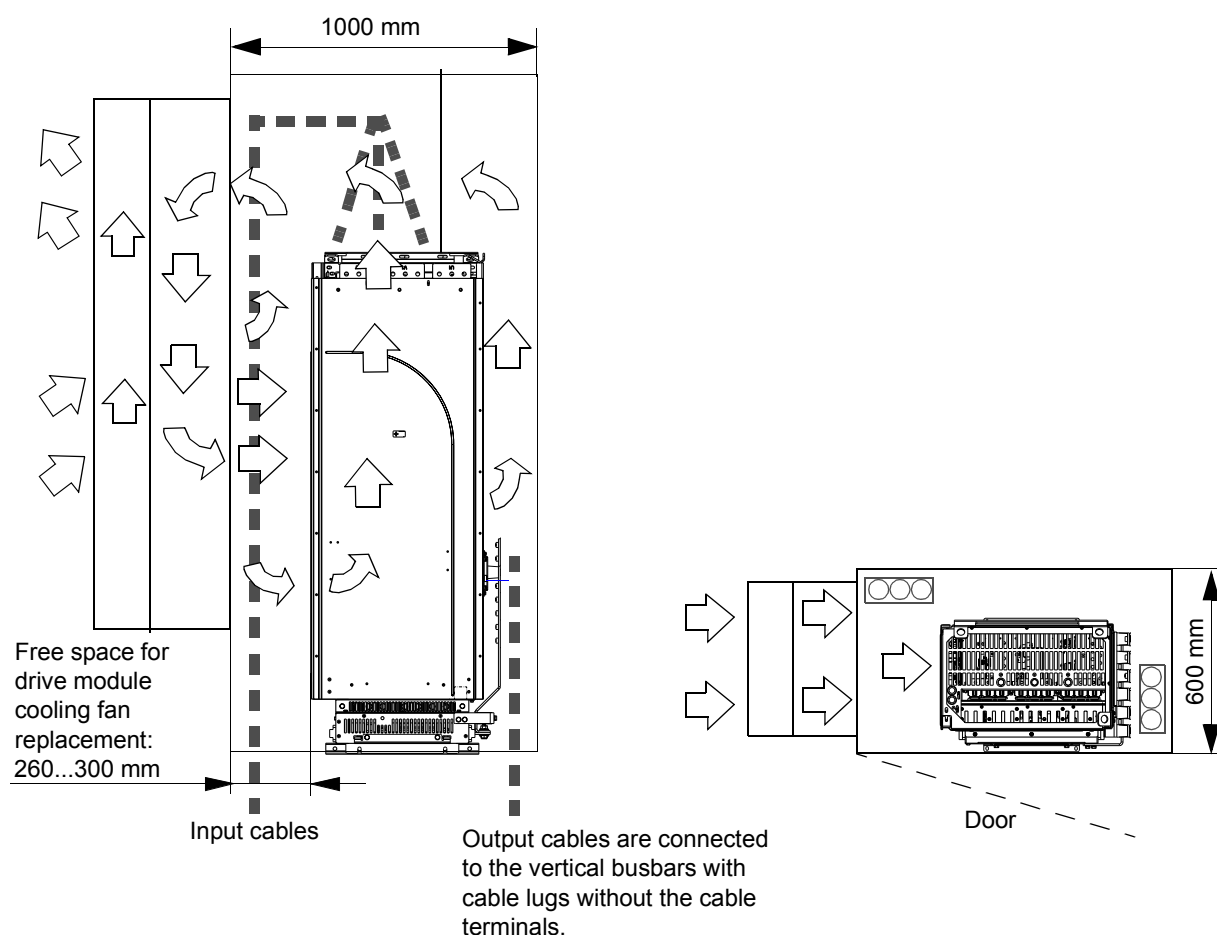
- Fasten three air baffles that face the enclosure door:
  - one at the front top of the drive module
  - one at the left-hand side of the drive module
  - one at the right-hand side of the drive module.

See chapter [Dimensional drawings](#) for the dimensions of the air baffles.

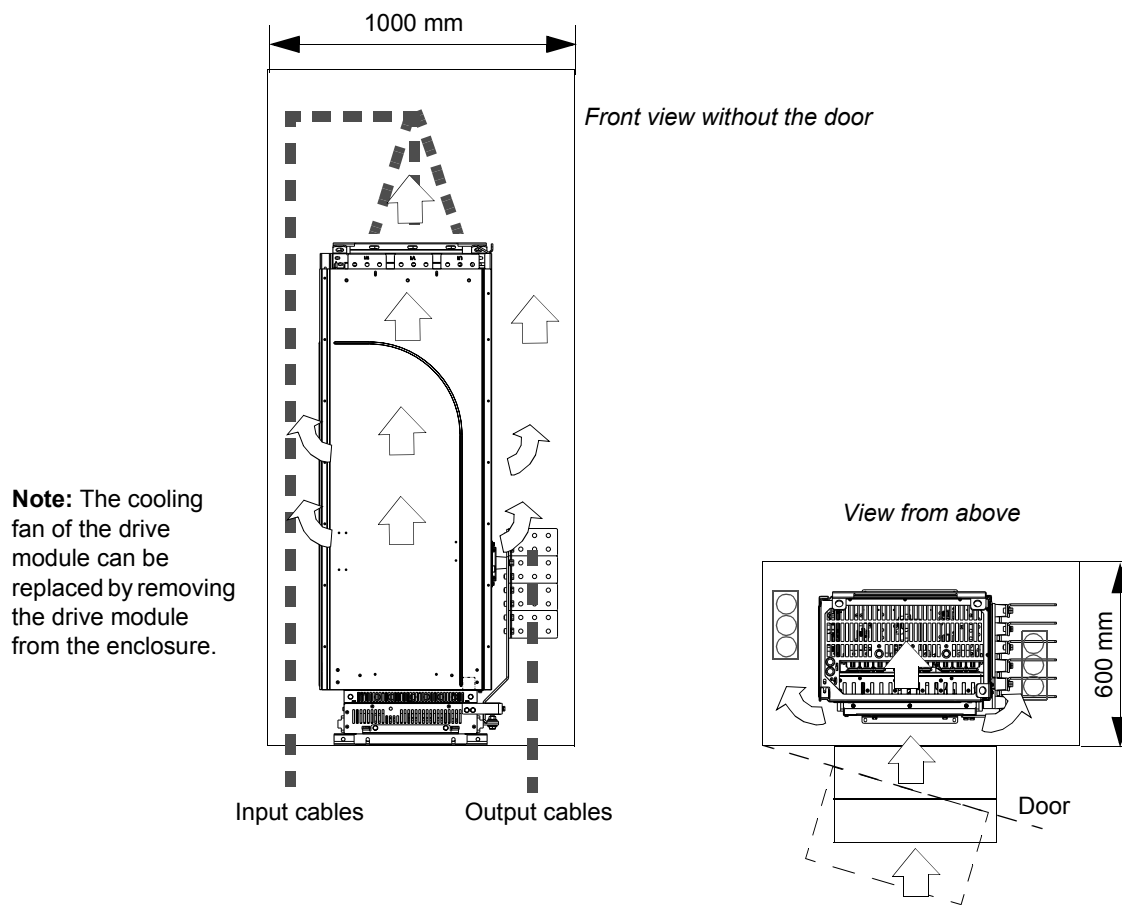
## Drive module of frame size R8 and Rittal cooling unit

The drive module must be installed in a flat position (i.e. the vertical busbars on the short side, +H360) in a 600 mm deep enclosure to allow the cooling air flow through the drive module. In a bookshelf position, the drive module would face the enclosure door and block the air flow.

### Layout example with cooling unit on the side



## Layout example with cooling unit on the door





## Drive module of frame size R8

---

### What this chapter contains

This chapter describes the installation of a drive module of frame size R8 into a 600 mm deep, 800 mm wide and 2000 mm high Rittal TS 8 enclosure. The installation is designed to comply with the limits of IEC/EN 61800-3 for immunity and emissions of electrical equipment in second environment (includes establishments connected to a network not supplying domestic premises). The installer is responsible for the verification. The degree of protection of the installation is IP20.

### Required Rittal parts

Rittal model no.	Description	Qty (pcs)
TS 8806.500	Enclosure, width × height × depth: 800 mm × 2000 mm × 600 mm	1
TS 8106.235	Side panel for 2000 mm × 600 mm	2
TS 8612.180	Punched section with mounting flange, outer mounting level for 800 mm horizontal	3
TS 8612.400	Mounting plate	2
TS 8614.640	Mounting plate: 500 mm × 300 mm	1
TS 8614.840	Mounting plate: 700 mm × 300 mm	1
DK 7097.000	C-rail cable clamp for cable diameters of 18 to 22 mm	4
DK 7099.000	C-rail cable clamp for cable diameters of 56 to 64 mm	6
DK 7828.060	C-rail 600 mm	3
DK 7967.000	50 mm spacer for roof plate	4
PS 4199.000	Spacer bracket	?
PS 4375.000	Punched section without mounting flange 395 mm	2
PS 4396.000	Support rail for 600 mm enclosure depth	2
PS 4944.000	Support rail 555 mm	1
SK 3326.200	Air filter 323 mm for 292 mm × 292 mm door ventilation holes	3
SK 3326.607	EMC compatible fan-and-air-filter unit 700/720 m <sup>3</sup> /h, 230 V, 50/60 Hz	1
SV 3574.000	Laminated copper bar Flexibar S. Dimensions: 32 mm × 10 mm, 2000 mm long	3

For photos and specifications of the parts, refer to [www.rittal.com](http://www.rittal.com).

## ACS800-04M parts

The following ACS800-04 parts are used in the installation:

- drive module of type ACS800-04M-xxxx+B060+H354+H355+H356+H362+J400+J410.

For descriptions of the plus codes, refer to *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)], chapter *The ACS800-04/U4 and ACS800-04M: Type code*.

## Additional parts to be provided by the installer

The following parts, in addition to the Rittal and ACS800-04M parts listed above, are needed in the installation:

- air baffle, see [37](#).
- 800 mm × 600 mm piece of wire mesh with max. 10 mm mesh size for fulfilling IP20 degree of protection of the cabinet. The mesh is placed on the top of the cabinet frame under the 50 mm spacers on which the cabinet roof lies. See page [39](#).
- power cable lead-throughs. An example with rubber grommets and a strain relief bracket is shown on page [40](#). EMC power cable lead-throughs are available from ABB with code 64331116, refer to page [11](#).
- control cable lead-throughs. An example is shown on page [40](#).
- PE busbar of dimensions 70 mm × 50 mm × 10 mm, copper
- contactor (optional)
- auxiliary voltage transformer when a contactor is installed
- supply disconnecting device and input cable fuses. See *ACS800-04/04M/U4 Hardware Manual* [3AFE64671006 (English)], chapters *Planning the electrical installation* and *Technical data*.
- terminal for grounding the control cable shields and self-adhesive strain reliefs to be mounted next to the RDCU Drive Control Unit
- shroud over the input cable terminal connections and output connections of the disconnecting device.

## Moving, unpacking and assembling the drive module

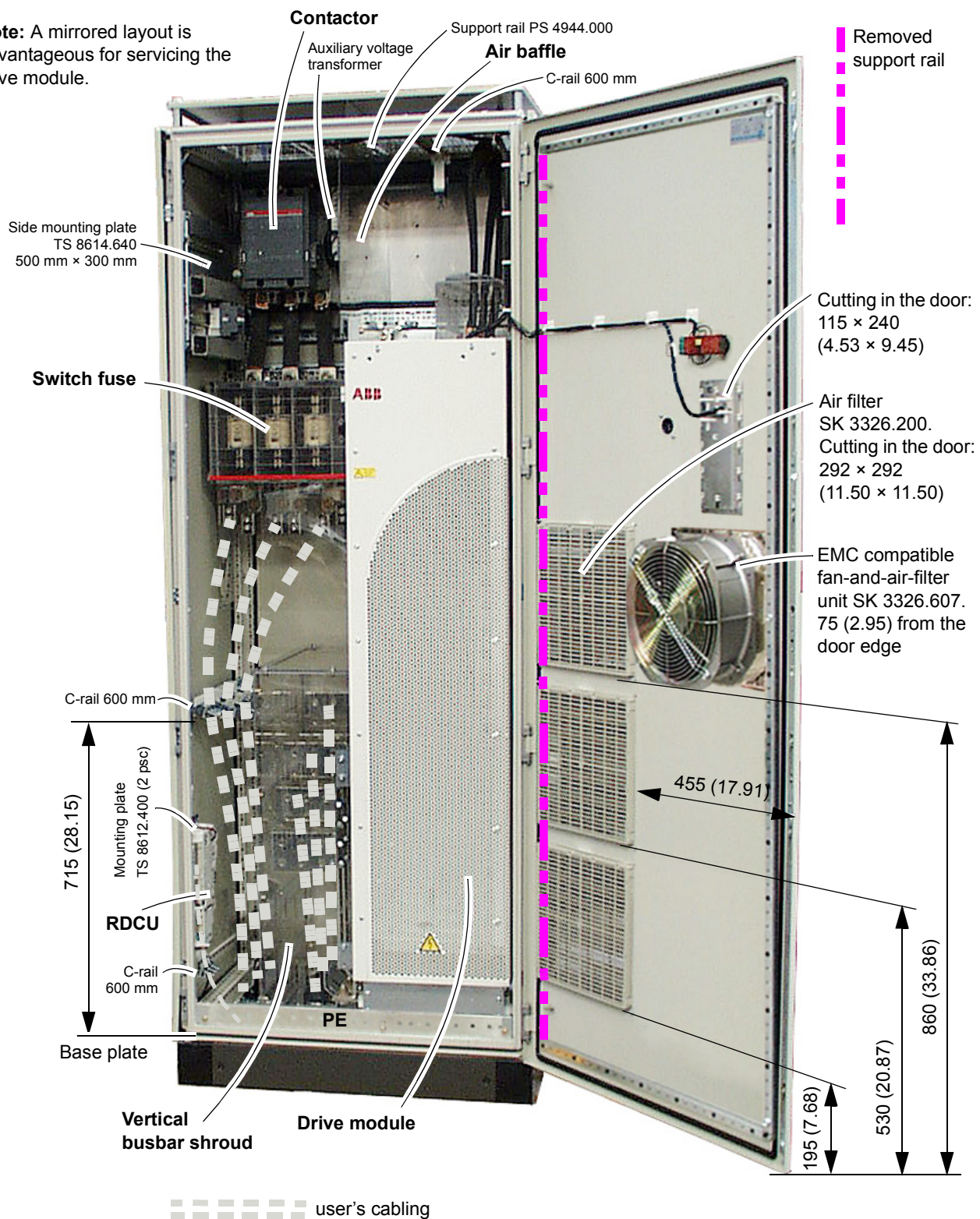
Follow the instructions given in *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)].



## Layout of the installation

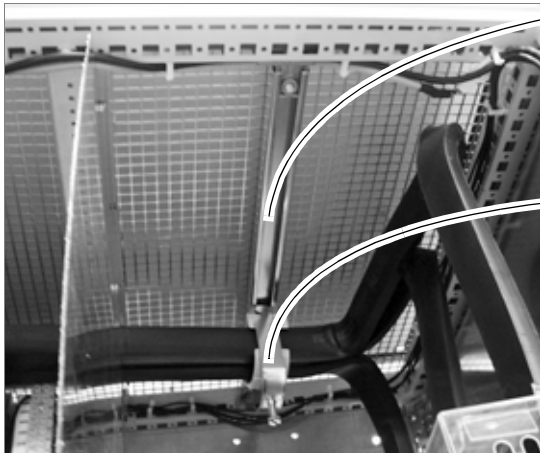
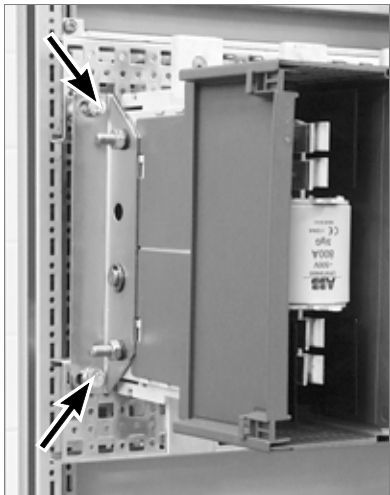
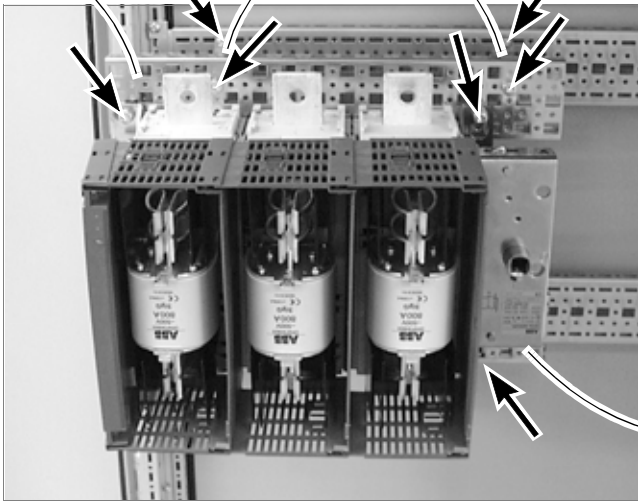
This photo shows the final installation with component placing dimensions in millimetres and (inches).

**Note:** A mirrored layout is advantageous for servicing the drive module.

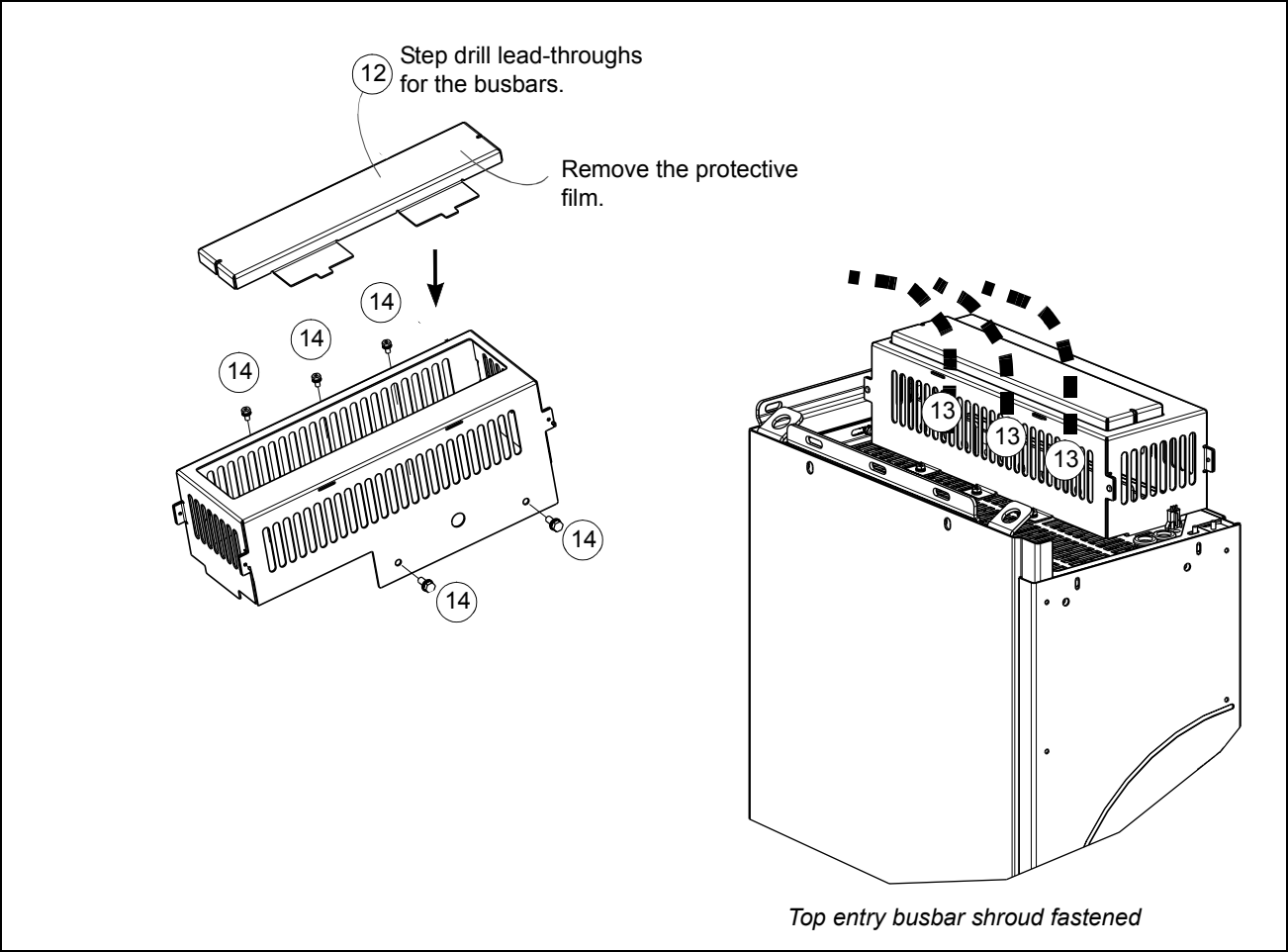


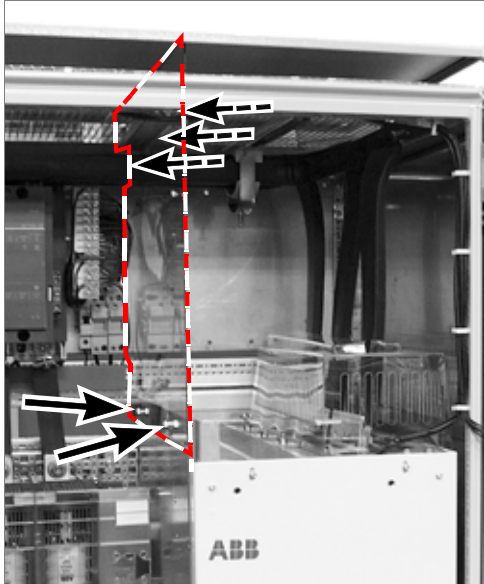
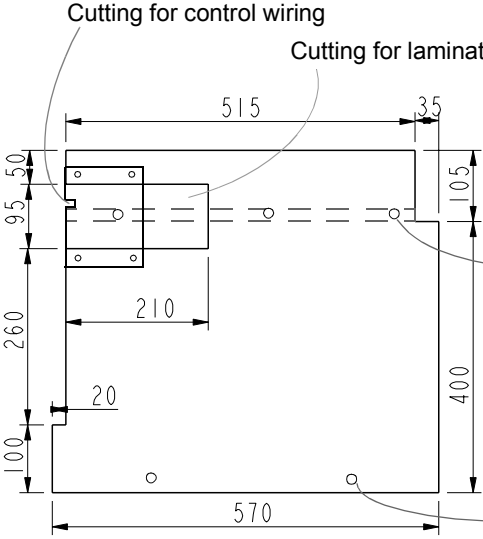
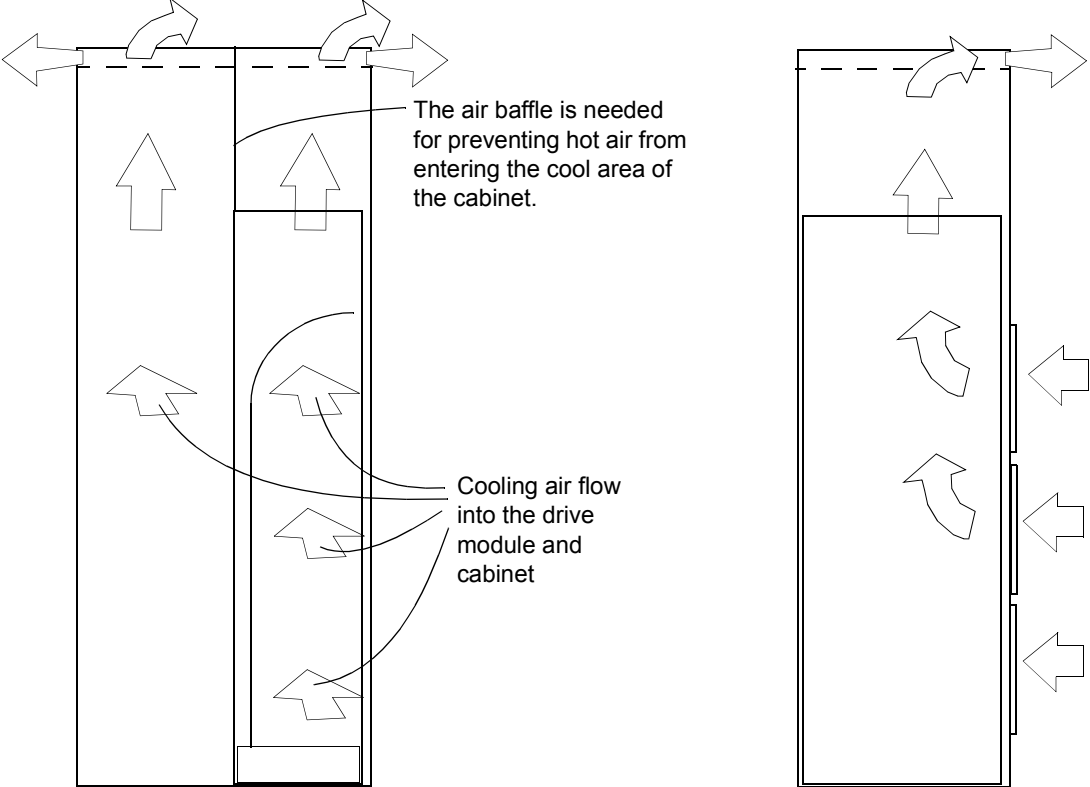
## Installation steps

Step	Instruction	Photo
1	Fasten the base plates and lead-through plates to the enclosure frame. See also section <a href="#">View of base plates and cable lead-throughs fastened</a> on page 40.	<p style="text-align: center;"><b>Back view of the installation</b></p> <p><b>Back mounting plate</b> TS 8614.840 700 mm × 300 mm</p> <p><b>Punched section</b> TS 8612.180</p> <p><b>Switch fuse</b></p> <p><b>Back fastening bracket for the vertical busbar shroud</b></p> <p><b>PE busbar</b></p> <p><b>Base plates</b> (included in the TS 8806.500 enclosure)</p> <p><b>Control cable lead-throughs</b></p> <p><b>Input cable lead-throughs</b></p> <p><b>Motor cable lead-throughs</b></p> <p><b>PE terminal</b></p> <p>1553 (61.14) 1180 (46.46) 232 (9.13)</p>
2	Fasten the punched sections to the back vertical profiles of the enclosure frame. See also section <a href="#">Fastening of the punched sections</a> on page 41.	
3	Fasten the side mounting plate to the enclosure frame.	
4	Fasten the support rails onto which the drive module will be placed to the punched sections of the enclosure frame. See section <a href="#">Fastening the drive pedestal to the enclosure frame</a> on page 41.	
5	Fasten the vertical output busbars to the drive pedestal.	
6	Place the pedestal onto the support rails and fasten the pedestal to the enclosure frame. See section <a href="#">Fastening the drive pedestal to the enclosure frame</a> on page 41.	
7	Fasten the contactor and auxiliary voltage transformer to the back mounting plate and fasten the mounting plate to the enclosure frame. See section <a href="#">Fastening of the back mounting plate</a> on page 41.	
8	Fasten the devices to the side mounting plate.	
9	Slide the drive module onto the pedestal, connect the internal busbars and fasten the module to the pedestal as shown in <i>ACS800-04/04M/U4 Cabinet Installation</i> [3AFE68360323 (English)].	

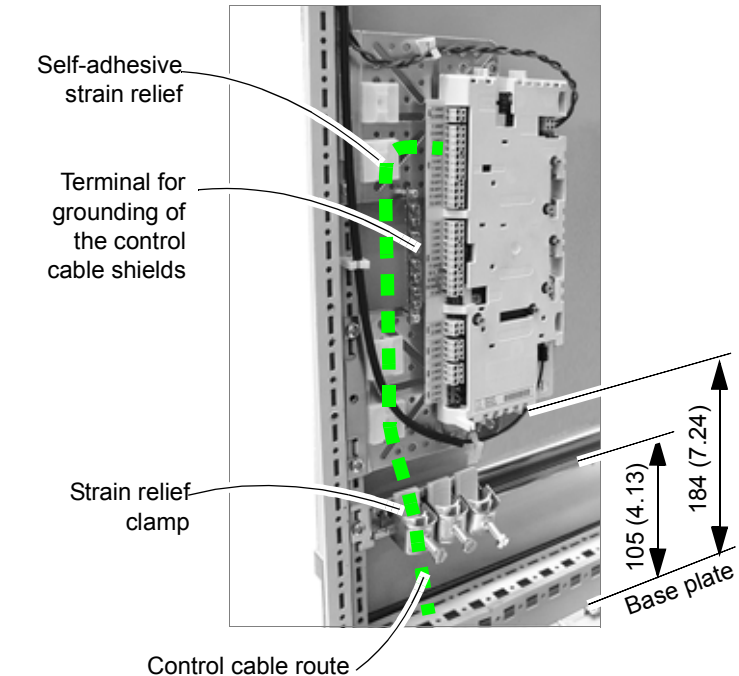
Step	Instruction	Photo
10	Fasten the drive module by its top to the back punched section.	
11	<p>Fasten the switch fuse to the enclosure frame.</p> <p>Connect the switch fuse to the contactor with laminated copper bars.</p> <p>Connect laminated copper bars to the output of the contactor.</p> <p>Fasten a C-rail to the top of the enclosure frame and support the laminated busbars to the C-rail.</p>	<p>Contactor</p>  <p>C-rail 600 mm DK 7828.060</p> <p>Cable clamp DK 7099.000</p> <p>Input terminals of the drive module</p>
<p><i>Fastening of the switch fuse</i></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Punched section PS 4375.000 (395 mm)</p>  <p><i>Side view</i></p> </div> <div style="text-align: center;"> <p>Spacer brackets PS 4199.000</p>  <p>Punched section PS 4375.000 (395 mm)</p> <p><i>Front view</i></p> </div> </div>		

Step	Instruction	Photo
12	Step drill lead-throughs in the top cover of the top entry clear plastic busbar shroud. Pass the laminated copper bars through the lead-throughs and the lower part of the shroud.	
13	Connect the laminated copper bars to the input terminals of the drive module.	
14	Fasten the top entry clear plastic busbar shroud to the drive module.	

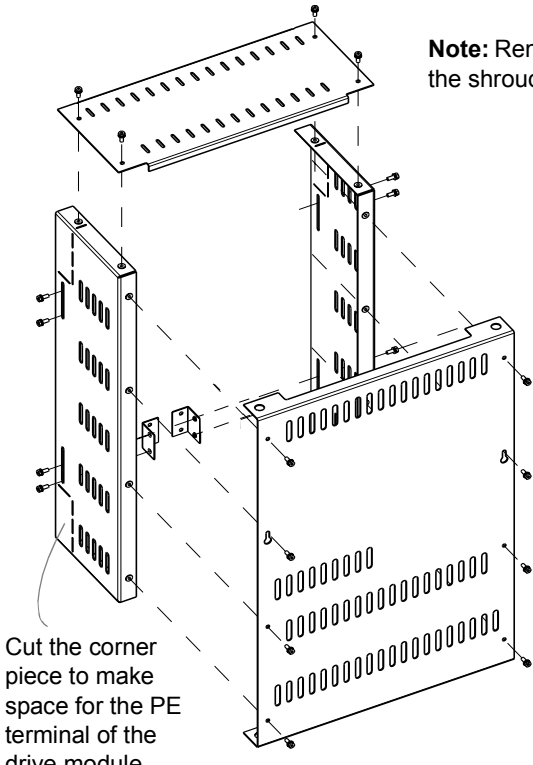


Step	Instruction	Photo
15	Fasten the air baffle to the fastening points of the drive module and to the support rail with screws.	
		 <p data-bbox="300 981 497 1003"><i>Air baffle fastened</i></p>  <p data-bbox="778 376 1040 398">Cutting for control wiring</p> <p data-bbox="1008 409 1359 432">Cutting for laminated copper bars</p> <p data-bbox="1248 633 1471 801">Fasten the baffle by its top to the support rail (PS 4944.000) which is fastened to the enclosure frame top.</p> <p data-bbox="1248 891 1471 1003">Fasten the baffle by its bottom to the drive module side top fastening points.</p> <p data-bbox="906 981 1008 1003"><i>Air baffle</i></p>  <p data-bbox="657 1193 928 1305">The air baffle is needed for preventing hot air from entering the cool area of the cabinet.</p> <p data-bbox="705 1574 865 1686">Cooling air flow into the drive module and cabinet</p> <p data-bbox="306 1888 593 1910"><i>Cooling air flow (front view)</i></p> <p data-bbox="1040 1888 1327 1910"><i>Cooling air flow (side view)</i></p>



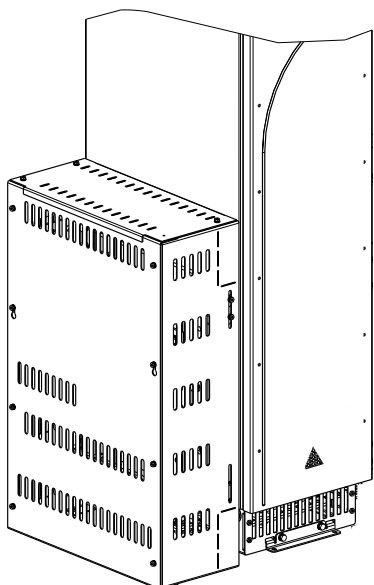
Step	Instruction	Photo
16	<p>Fasten the RDCU Drive Control Unit. See <i>RDCU Drive Control Unit Hardware Manual</i> [3AFE64636324 (English)].</p> <p>Fasten a terminal for grounding the control cable shields and self-adhesive strain reliefs.</p>	

17	Fasten the clear plastic vertical busbar shroud on the output busbars of the drive module.	
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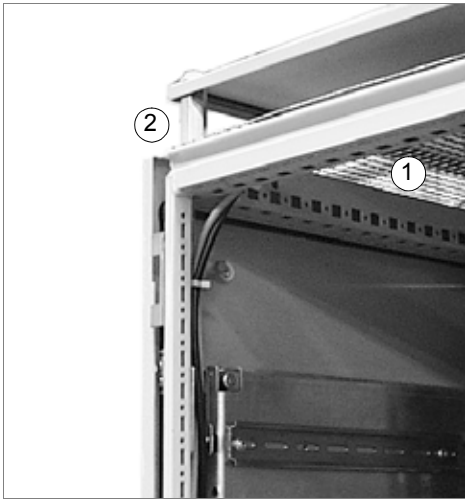
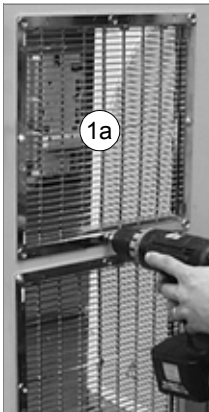
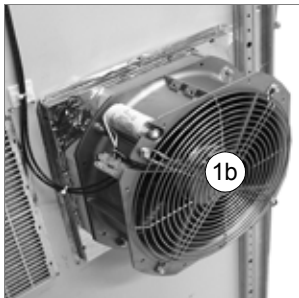

**Note:** Remove the protective film from the shroud surfaces.

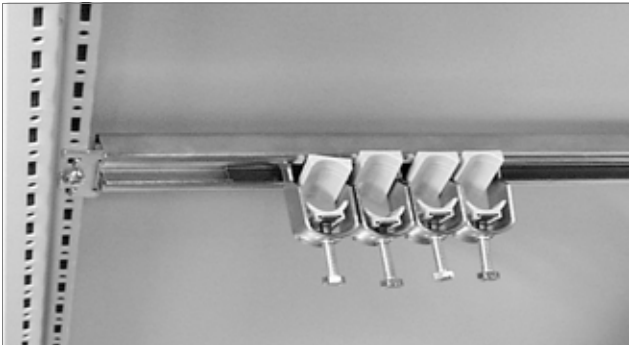
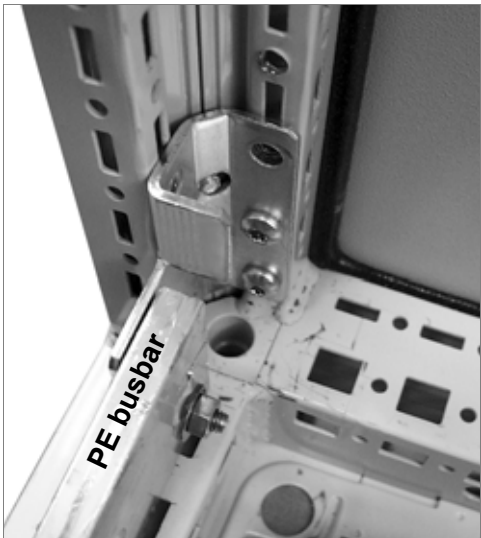
Cut the corner piece to make space for the PE terminal of the drive module.



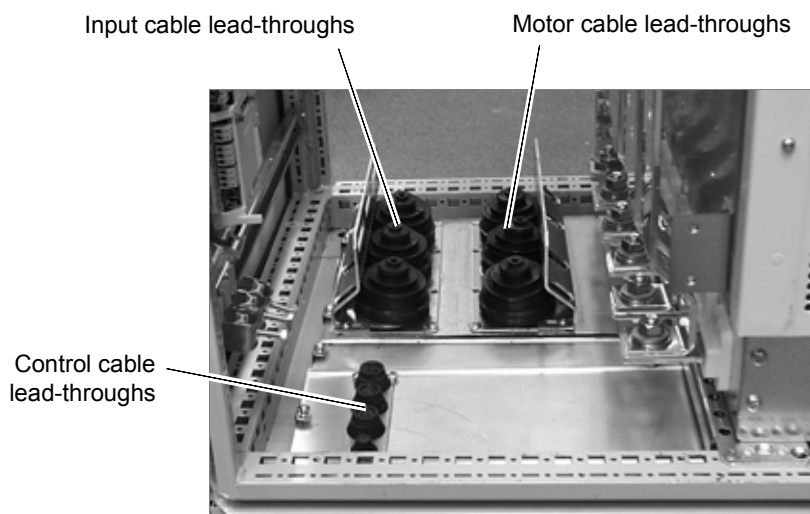
*Vertical busbar shroud fastened*

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

Step	Instruction	Photo
18	Fasten the back panel of the enclosure.	
19	Fasten the side panels of the enclosure.	
20	Fasten the roof plate: <ol style="list-style-type: none"> <li>1. Cut an opening to the roof wire mesh for the upper edge of the air baffle. Place the mesh on the top of the enclosure frame.</li> <li>2. Fasten the enclosure roof plate above the mesh with four 50 mm spacers at the corners.</li> </ol>	
21	Remove the vertical support rail on the hinged side of the enclosure door. See page 33	
22	Cut openings in the door for the ventilation gratings, control panel mounting platform and other devices. Fasten and wire the door devices. See <i>RPMP-11/13 Control Panel Mounting Platform Kit Installation Guide</i> [3AFE68400643 (English)]. <p>Install the ventilation gratings on the door as follows:</p> <ol style="list-style-type: none"> <li>1. Fasten the gratings (1a) and the EMC compatible fan-and-air-filter unit (1b).</li> <li>2. Place the air filter mat between the lower grating and the outer louvred grating.</li> <li>3. Push the louvred grating onto its place.</li> </ol>	<div>    </div> <p>View of the EMC compatible fan-and-air-filter unit on the back side of the door</p>

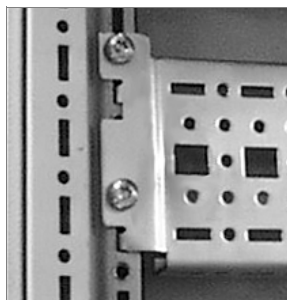
Step	Instruction	Photo
23	Install the C-rails and clamps for cable strain relief.	
24	Fasten the PE busbar. The PE busbar is provided for grounding of the input cable shield and the motor cable shield if the PE terminal of the drive module is not used.	
25	Fasten shrouds over all live parts.	

### View of base plates and cable lead-throughs fastened

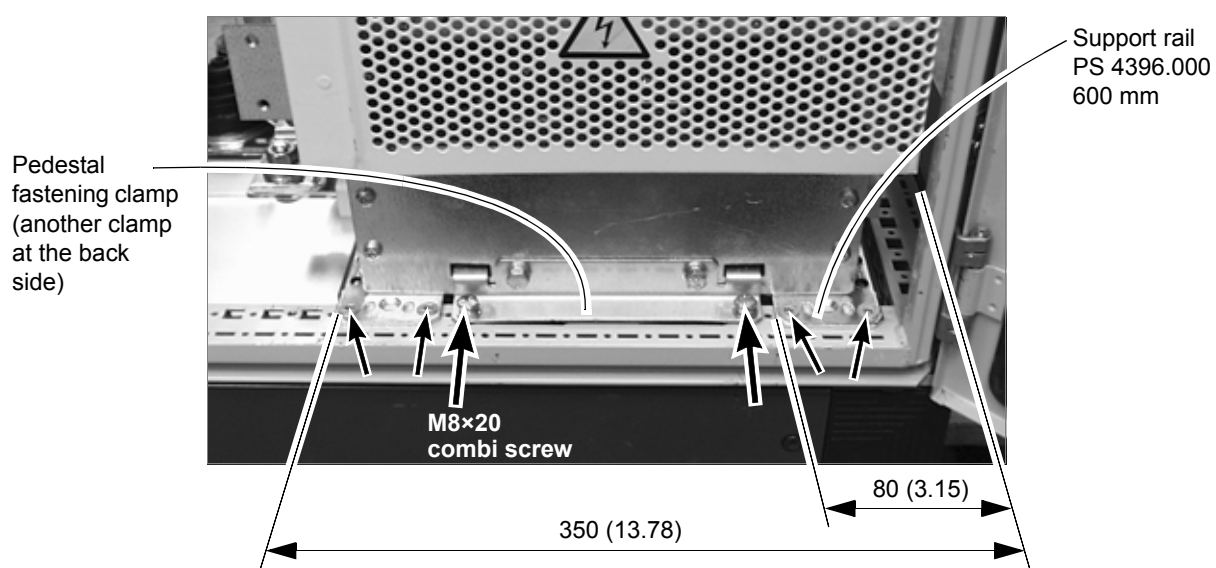




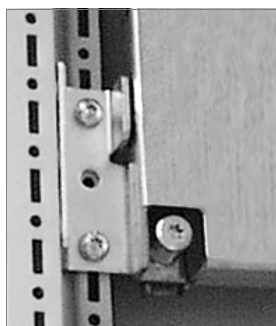
### Fastening of the punched sections



### Fastening the drive pedestal to the enclosure frame



### Fastening of the back mounting plate





# Dimensional drawings

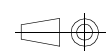
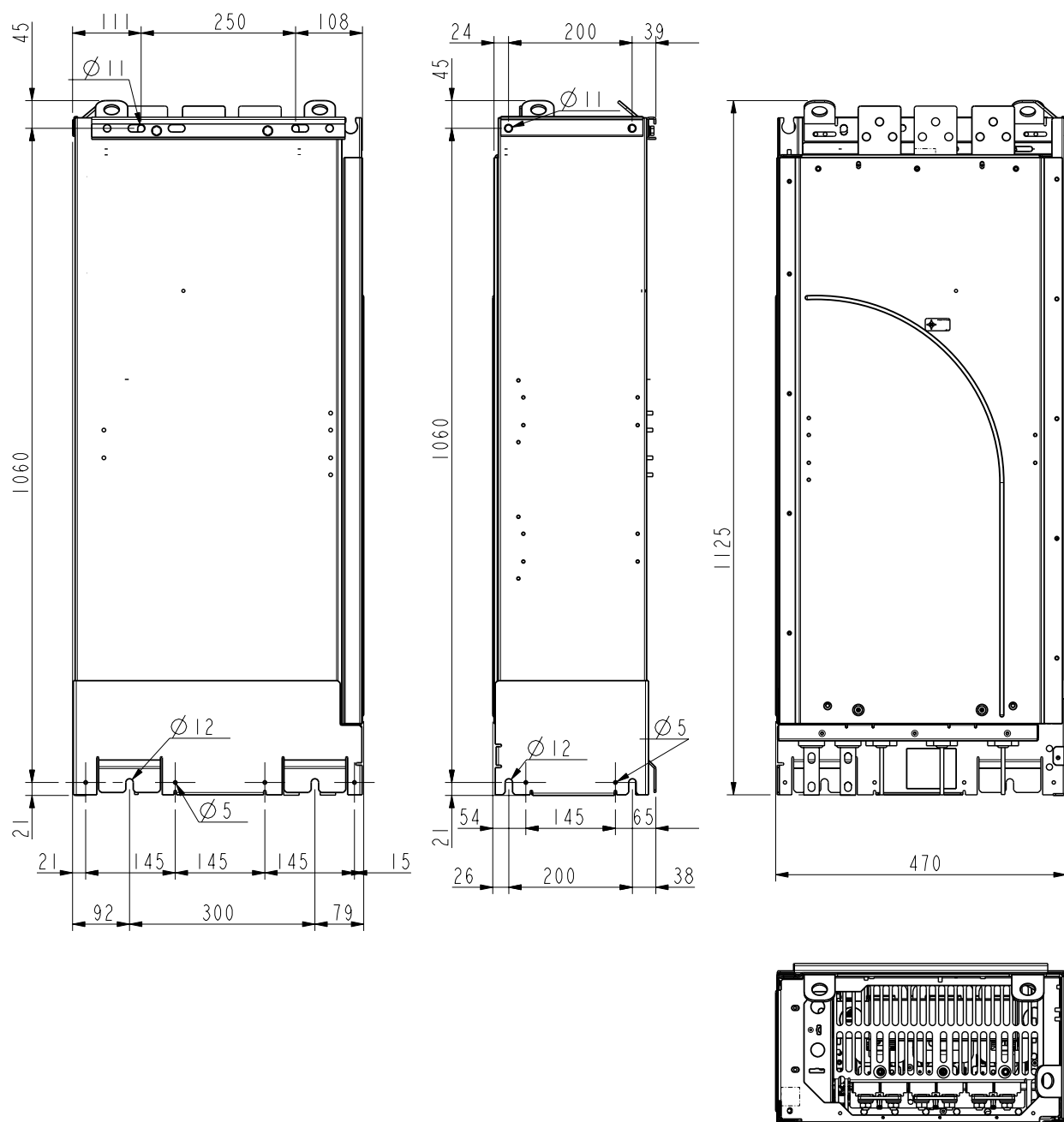
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## What this chapter contains

This chapter contains the dimensional drawings of the fastening points in the drive modules used in the installation examples in this manual. Dimensional drawings of air baffles and EMC screens are also shown. The dimensions are given in millimetres. 1 mm = 0.03936996 in..

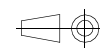
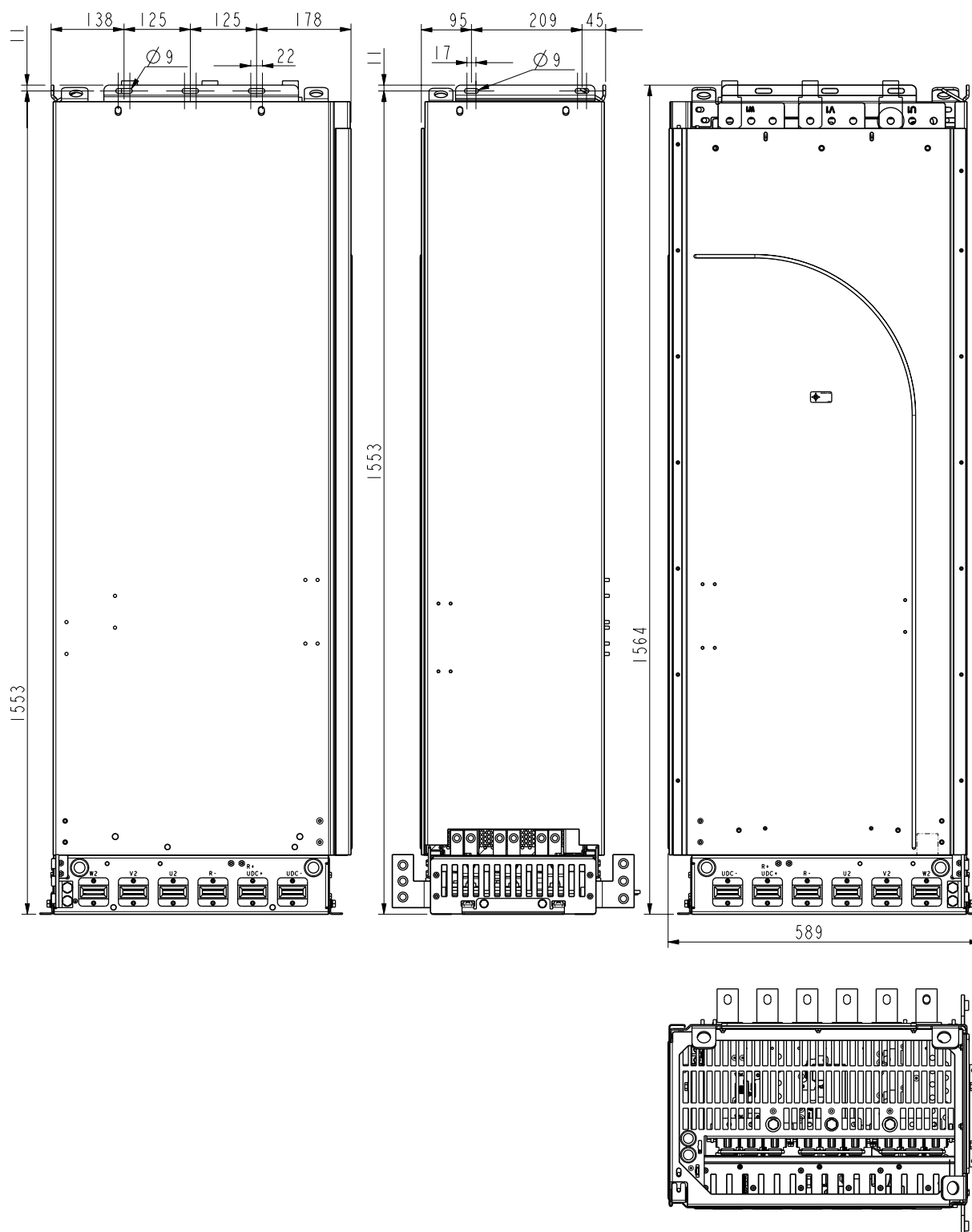
For other dimensional drawings, refer to *ACS800-04/04M/U4 Cabinet Installation* [3AFE68360323 (English)].

## Frame size R7



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## Frame size R8

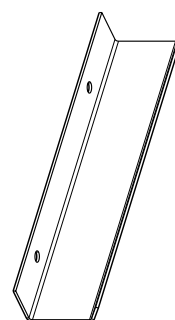
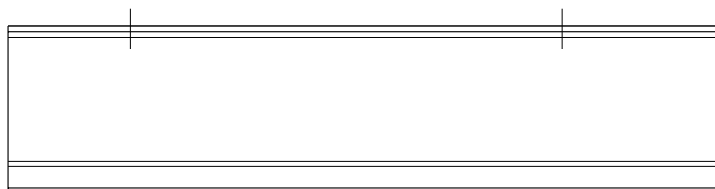
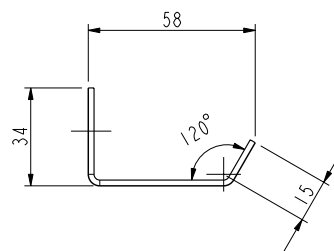
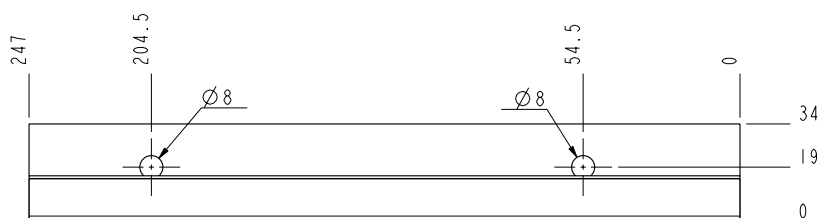


68469091\_2

## Air baffles for the enclosure with drive module of frame size R7 and Rittal cooling unit

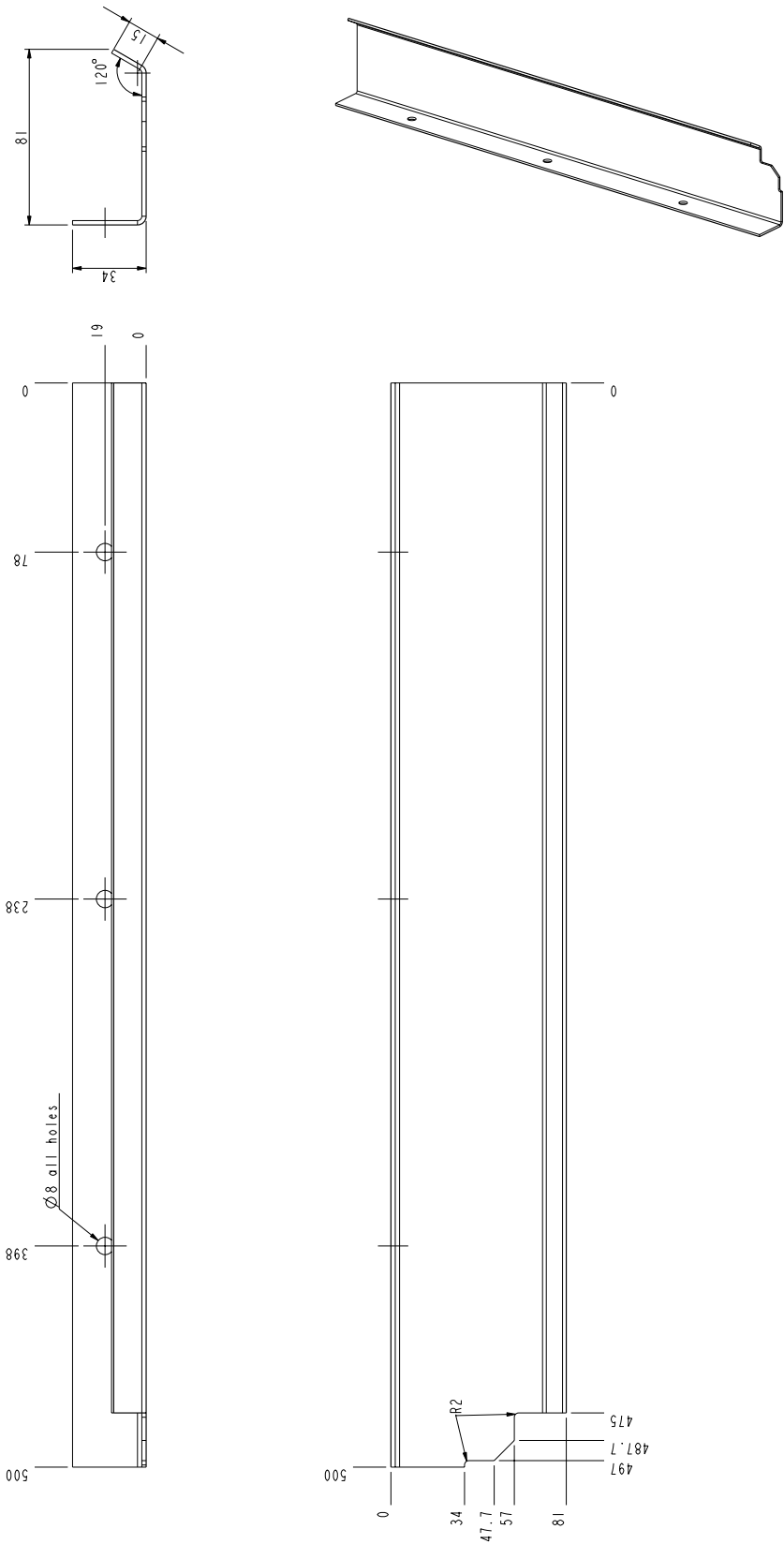
The air baffles of the layout on page 26 are shown below.

### Air baffle at the front top of the drive module



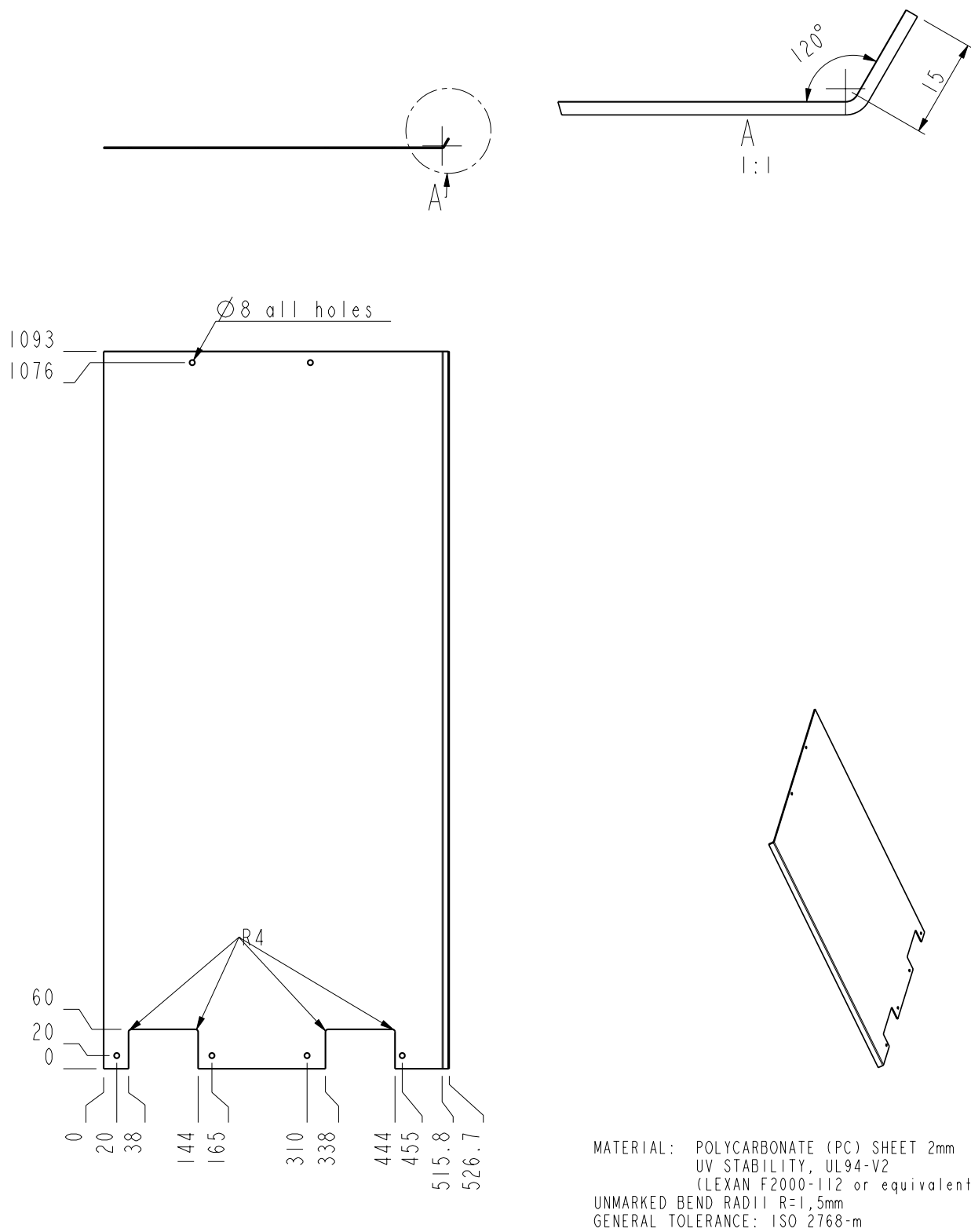
68484901 A

Air baffle at the right-hand side of the drive module



68484898 A

### Air baffle at the left-hand side of the drive module

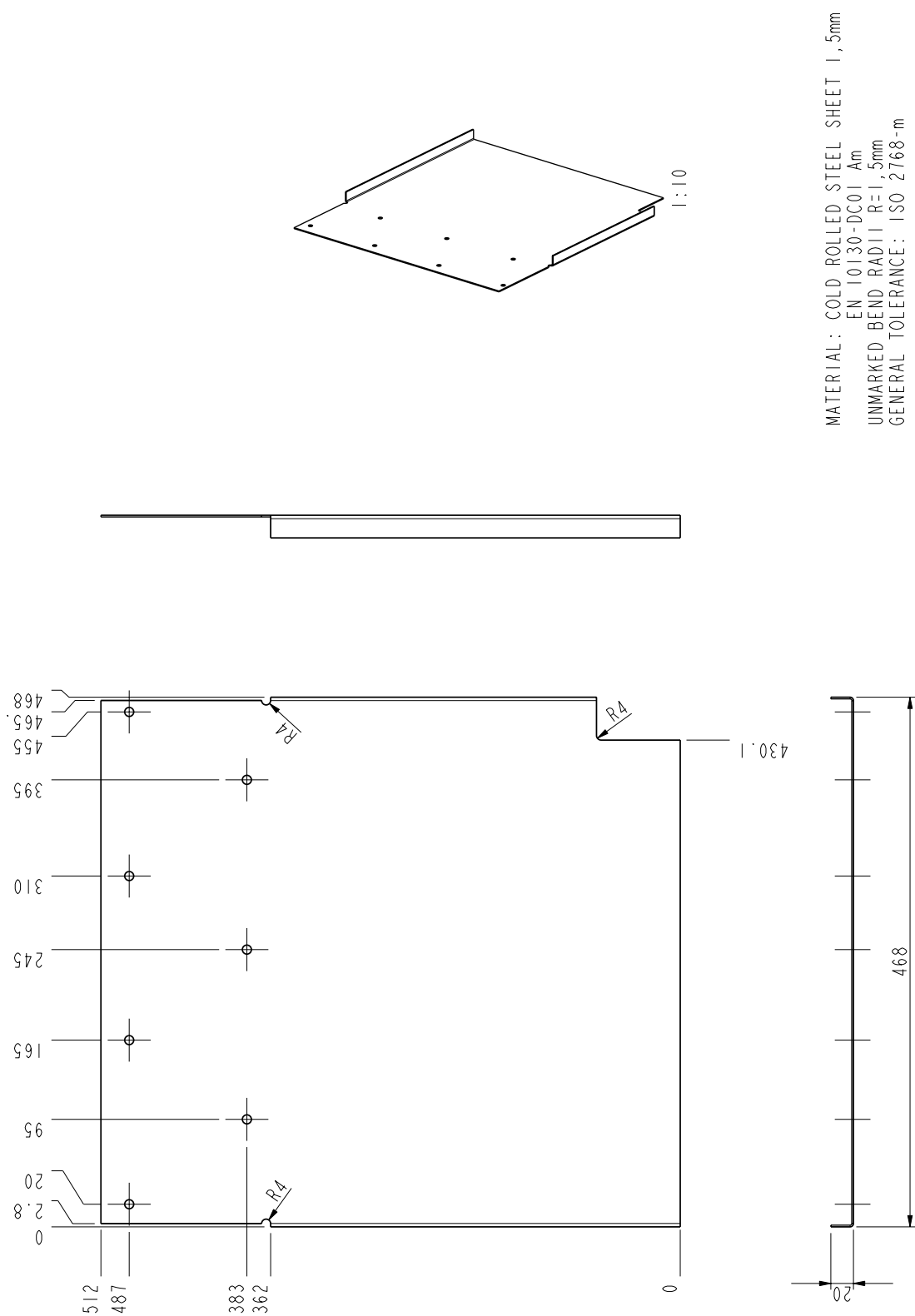


68484910 A



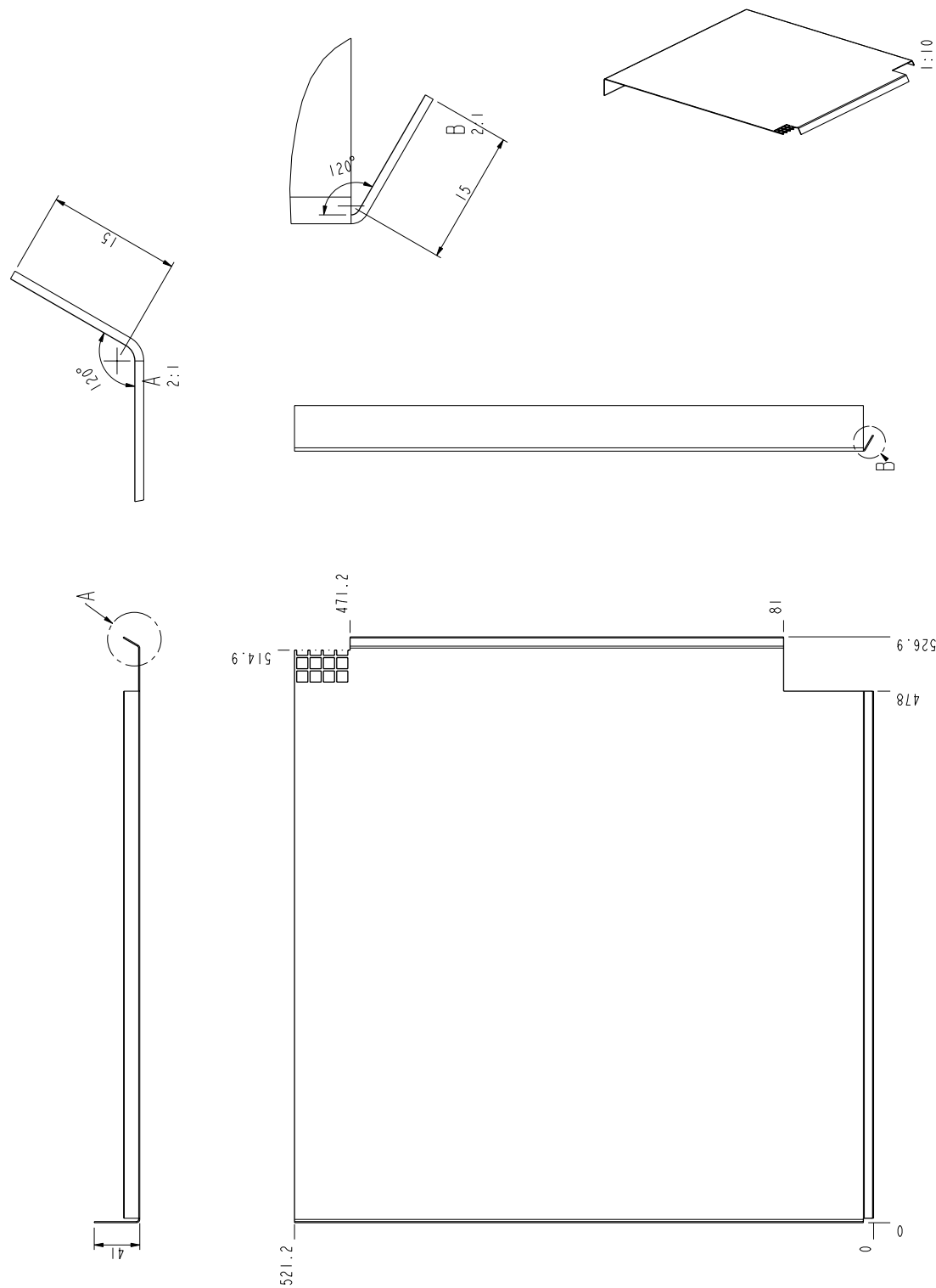
## EMC screen for the enclosure with drive module of frame size R7

The EMC screen used in the installation on page 16 is shown below.



EMC screen mesh for the enclosure with drive module of frame size R7 and Rittal cooling unit

The EMC screen mesh used in the installation on page 26 is shown below.



68484944 A





3AFE68372330 Rev A EN  
EFFECTIVE: 1.2.2005

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