Bonfiglioli
Vectron

ACTIVE and ACTIVE Cube

Installation manual
Feed-through mounting
Frequency Inverter 230V / 400V
0.55 kW ... 132.0 kW

Bonfiglioli
power, control and green solutions

Feed-through mounting of frequency inverters ACT and ACU

This installation manual describes the feed-through mounting of the frequency inverter series ACT and ACU (type designations ACT x01-xx D, ACU x01-xx D). It complements the documentation by the information relating to the variant details.

The feed-through mounting reduces the heat load of the control cabinet by means of thermal separation of the heat sink.

Instead of standard fixtures the scope of supply of the feed-through mounting devices contains fixing plates for inserting into the heat sink, back panels for air flow guiding and an adhesive seal.

Warning!

- The safety instructions and information on use contained in this manual and in the operating instructions manual on the attached CD must be complied with strictly during installation and commissioning of the frequency inverter.
- According to the application and optional components refer to additional manuals on CD.

  Non-compliance with the warnings and precaution described will result in death, serious injury or material damage.
- The present documentation is applicative for qualified staff that is familiar with the installation, assembly, commissioning and operation of the frequency inverter and has the proper qualification for the job.
  Safe operation of the frequency inverter requires that the documentation and the device specification be complied with during installation and start of operation. For specific areas of application further provisions and guidelines must be complied with where applicable.

Note:
Further information on frequency inverter application, electrical installation, storage, maintenance and service is stored on the attached CD.

CONTENTS

Mechanical Installation

Warning!

- During assembly, make sure that no foreign particles (e.g. filings, dust, wires, screws, tools) can get inside the frequency inverter.
- Mount the devices with sufficient clearance of at least 100 mm to other components so that the cooling air can circulate freely.
- Avoid soiling by grease and air pollution by dust, aggressive gases, etc.

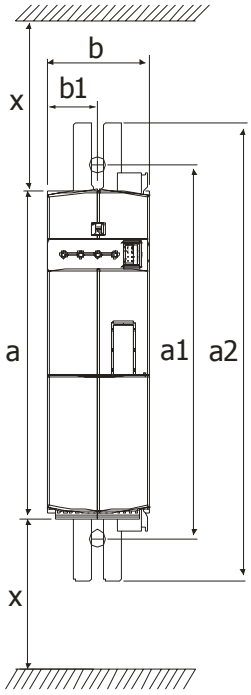
- Take the dimensions of the present frequency inverter construction size from chapter "Dimensions".
- Take the dimensions for the installation from chapter "Assembly drawings".
- If the fixing plates or mounting brackets (construction size 7) are not already fitted at the frequency inverter follow the instructions given in the chapter "Assembly of the fixing plates" or "assembly".
- Pass the frequency inverter through the cut-out of the assembly panel and screw it on. Tighten all bolts uniformly.
- After mechanical installation proceed with the electrical installation according to the attached manual. Comply with the listed safety instructions.

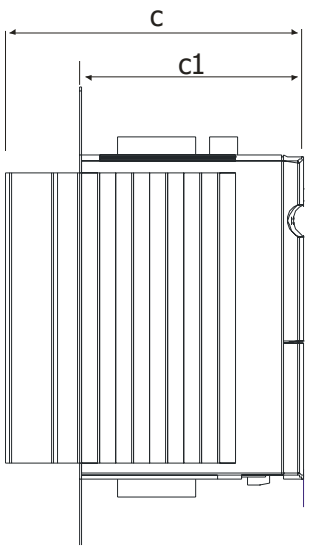
Construction size			Cooling
Frequency inverter		**Recommended shaft output**	**Cooling air flow rate**
ACT/ACU 201	**Construction size 1**	**0.55 kW ... 1.1 kW**	
	Construction size 2	**1.5 kW ... 3.0 kW** - with fan - without fan	30 m^3/h
	Construction size 3	**4.0 ... 5.5 kW** - with fan - without fan	60 m^3/h
	Construction size 4	**7.5 ... 9.2 kW** - with fan - without fan	120 m^3/h
ACT/ACU 401	**Construction size 1**	**0.55 kW ... 1.5 kW**	
	Construction size 2	**1.85 kW ... 4.0 kW** - with fan - without fan	30 m^3/h
	Construction size 3	**5.5 ... 9.2 kW** - with fan - without fan	60 m^3/h
	Construction size 4	**11.0 ... 15.0 kW** - with fan - without fan	120 m^3/h
	Construction size 5	**18.5 ... 30.0 kW** - with fan - without fan	250 m^3/h
	Construction size 6	**37.0 ... 65.0 kW** - with fan - without fan	350 m^3/h
	Construction size 7	**75.0 ... 132.0 kW** - with fan - without fan	820 m^3/h

Construction sizes 1 and 2

Dimensions

Construction sizes 1 and 2	ACT/ACU 201 (0.55 kW ... 3.0 kW) ACT/ACU 401 (0.55 kW ... 4.0 kW)



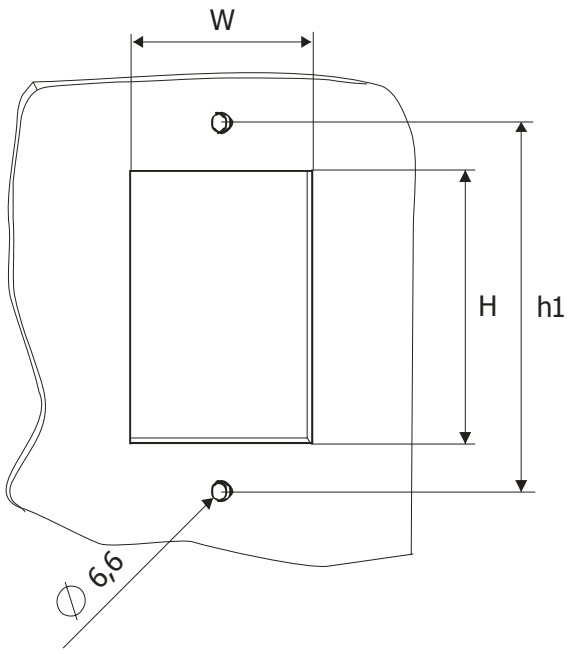


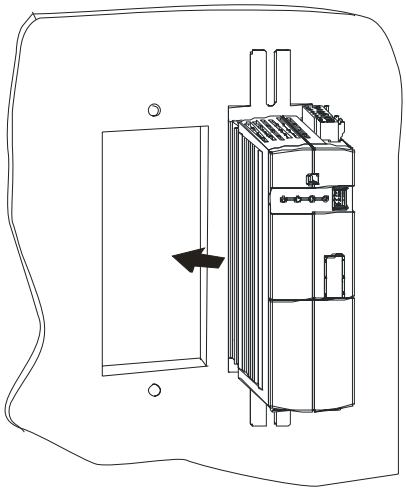
X > 100 mm

Dimensions in mm (without optional components)					Installation dimensions in mm			
Frequency inverter		a	b	c	a1	a2	b1	c1
ACT/ACU 201	**0.55 kW ... 1.1 kW**	190	60	175	210 ... 230	255	30	130
	1.5 kW ... 3.0 kW	250	60	175	270 ... 290	315	30	130
ACT/ACU 401	**0.55 kW ... 1.5 kW**	190	60	175	210 ... 230	255	30	130
	1.85 kW ... 4.0 kW	250	60	175	270 ... 290	315	30	130

Assembly drawings

Construction sizes 1 and 2	ACT/ACU 201 (0.55 kW ... 3.0 kW) ACT/ACU 401 (0.55 kW ... 4.0 kW)





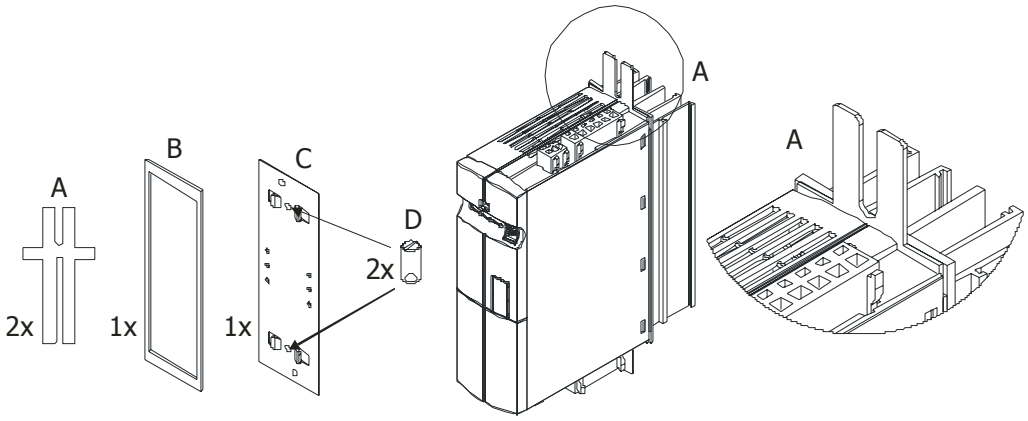
Cut-out of the assembly panel in mm

Frequency inverter			h1	H	W
ACT/ACU 201	**Construction size 1**	**0.55 kW ... 1.1 kW**	220	171.5	57.5
	Construction size 2	**1.5 kW ... 3.0 kW** - with fan - without fan	276	238 191.5	57.5
ACT/ACU 401	**Construction size 1**	**0.55 kW ... 1.5 kW**	220	171.5	57.5
	Construction size 2	**1.85 kW ... 4.0 kW** - with fan - without fan	276	238 191.5	57.5

Assembly of the fixing plates

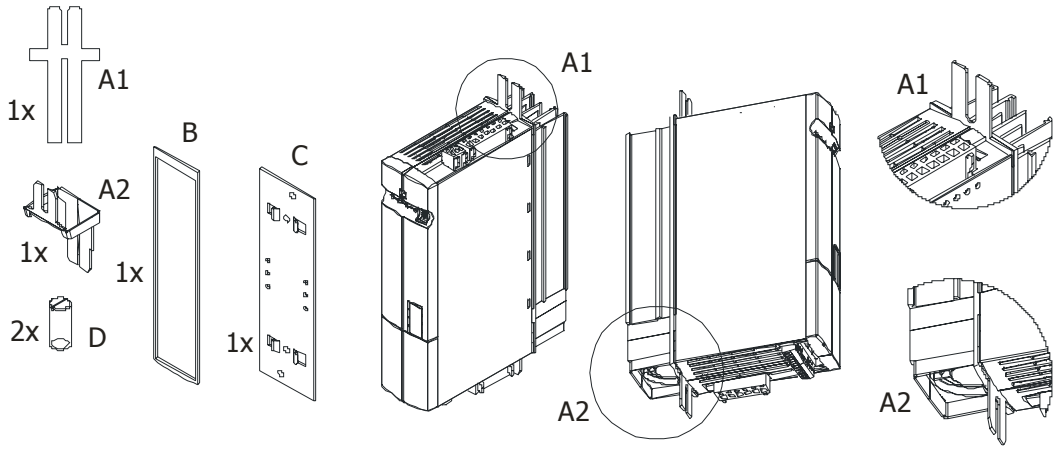
- Construction size 1: Insert the fixing plates (A) in the upper and lower side of the heat sink.
  Construction size 2: Insert the fixing plates (A1) and (A2) in the upper and lower side of the heat sink.
- Push the seal (B) over the heat sink and stick it on.
- Stick the back panel (C) in the holding rail of the heat sink. Screw the slugs (D) to the heat sink to secure the back panel.

Construction size 1	ACT/ACU 201 (0.55 kW ... 1.1 kW) ACT/ACU 401 (0.55 kW ... 1.5 kW)

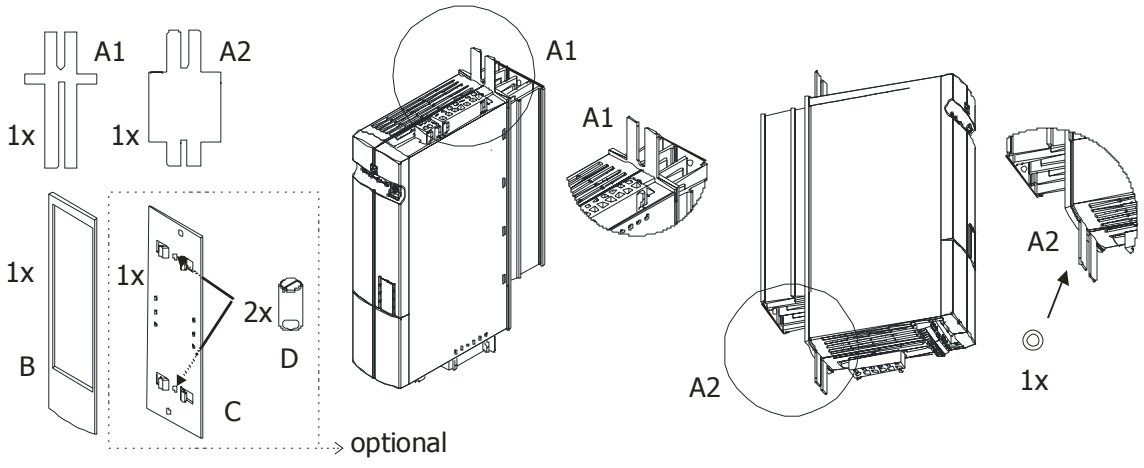


Construction size 2	ACT/ACU 201 (1.5 kW ... 3.0 kW) ACT/ACU 401 (1.85 kW ... 4.0 kW)

- **with fan**



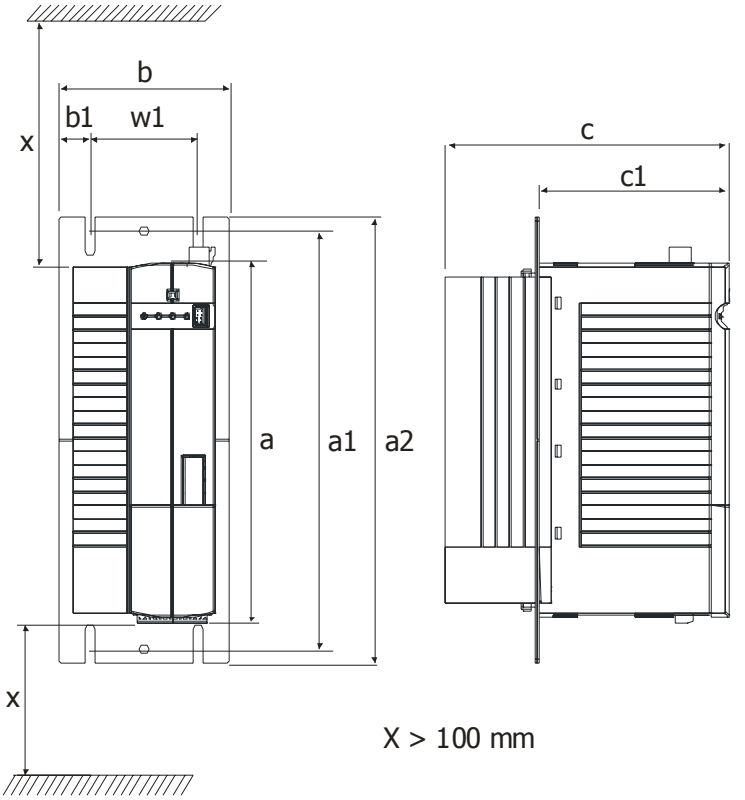
- **without fan**



Construction sizes 3 and 4

Dimensions

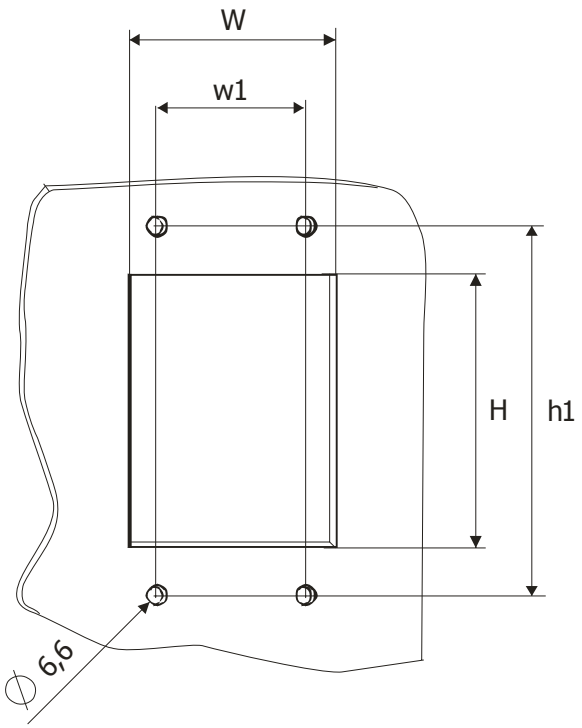
Construction sizes 3 and 4	ACT/ACU 201 (4.0 kW ... 9.2 kW) ACT/ACU 401 (5.5 kW ... 15.0 kW)

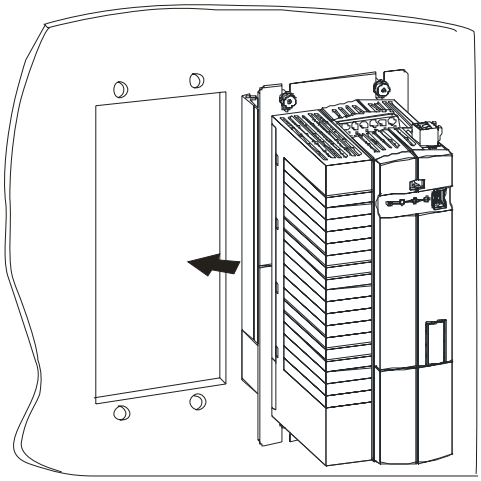


Dimensions in mm (without optional components)					Installation dimensions in mm				
Frequency inverter		a	b	c	a1	a2	b1	c1	w1
ACT/ACU 201	**4.0 kW ... 5.5 kW**	250	120	200	270 ... 290	315	22.0	133	76
	7.5 kW ... 9.2 kW	250	145	200	270 ... 290	315	27.5	133	90
ACT/ACU 401	**5.5 kW ... 9.2 kW**	250	120	200	270 ... 290	315	22.0	133	76
	11.0 kW ... 15.0 kW	250	145	200	270 ... 290	315	27.5	133	90

Assembly drawings

Construction sizes 3 and 4	ACT/ACU 201 (4.0 kW ... 9.2 kW) ACT/ACU 401 (5.5 kW ... 15.0 kW)





Cut-out of the assembly panel in mm

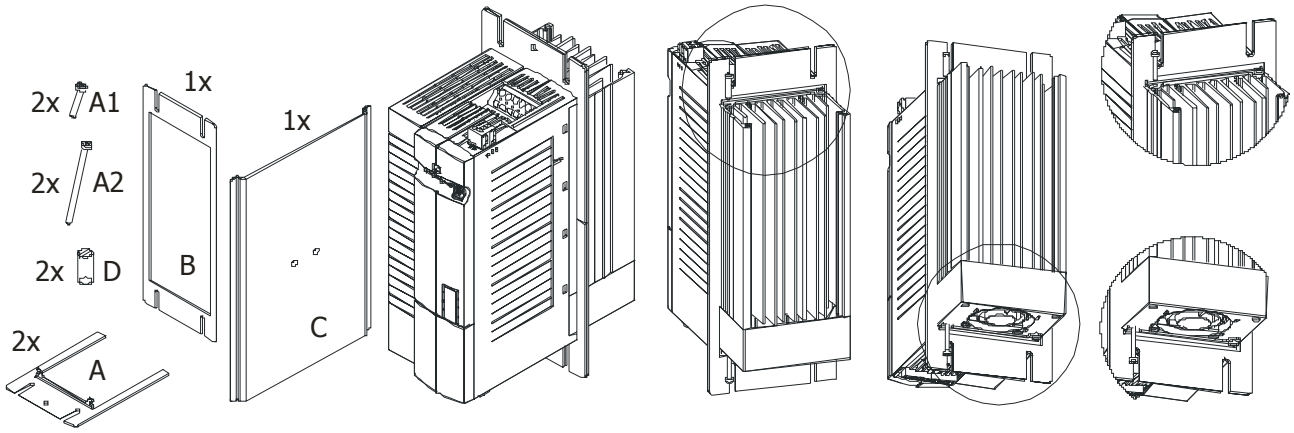
Frequency inverter			h1	w1	H	W
ACT/ACU 201	**Construction size 3**	**4.0 ... 5.5 kW** - with fan - without fan	290	76	245 202	101
	Construction size 4	**7.5 ... 9.2 kW** - with fan - without fan	290	90	245 202	126
ACT/ACU 401	**Construction size 3**	**5.5 ... 9.2 kW** - with fan - without fan	290	76	245 202	101
	Construction size 4	**11.0 ... 15.0 kW** - with fan - without fan	290	90	245 202	126

Assembly of the fixing plates

Construction size 3	ACT/ACU 201 (4.0 kW ... 5.5 kW) ACT/ACU 401 (5.5 kW ... 9.2 kW)

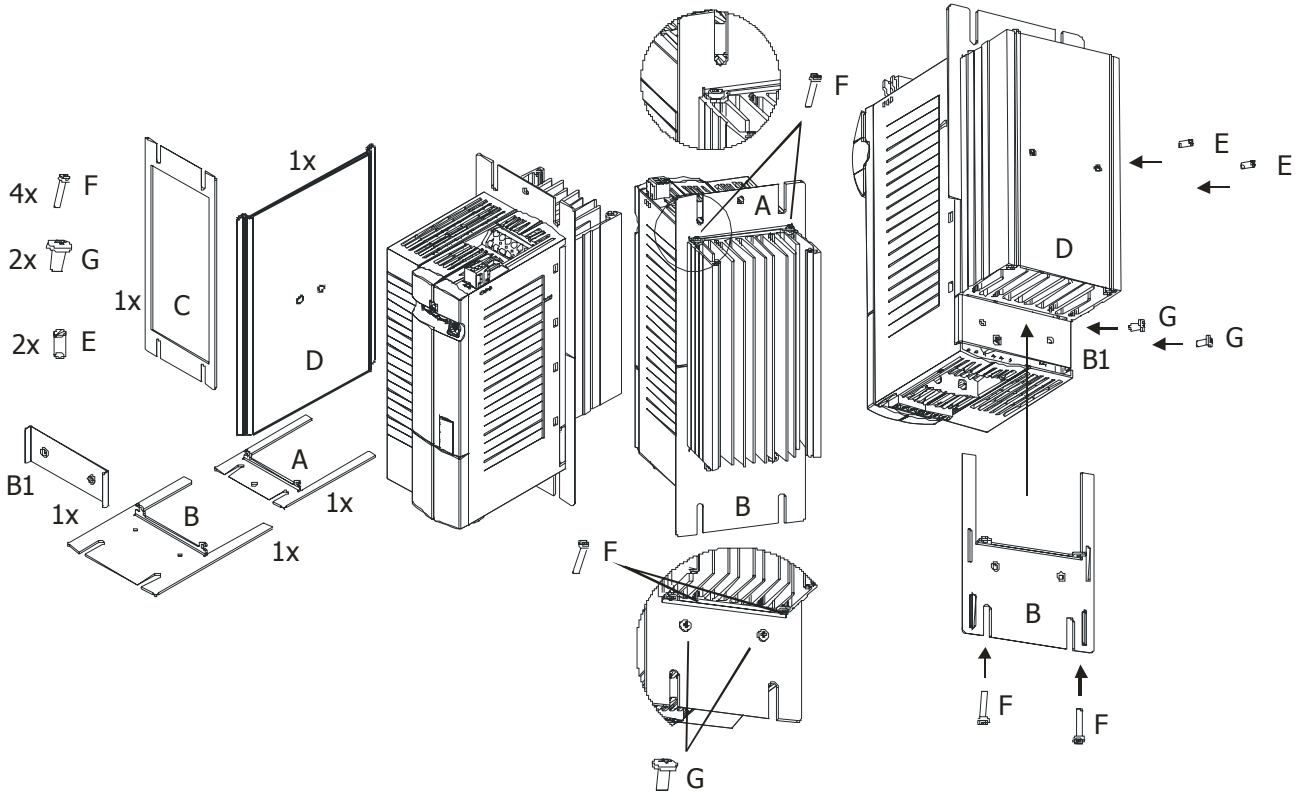
- **with fan**

- Insert the fixing plates (A) in the upper and lower side of the heat sink.
- Screw the fixing plates (A) to the heat sink, on the upper side with the screws (A1) and on the lower side with the screws (A2).
- Push the seal (B) over the heat sink and stick it on.
- Stick the back panel (C) in the holding rail of the heat sink. Screw the slugs (D) to the heat sink to secure the back panel.



- **without fan**

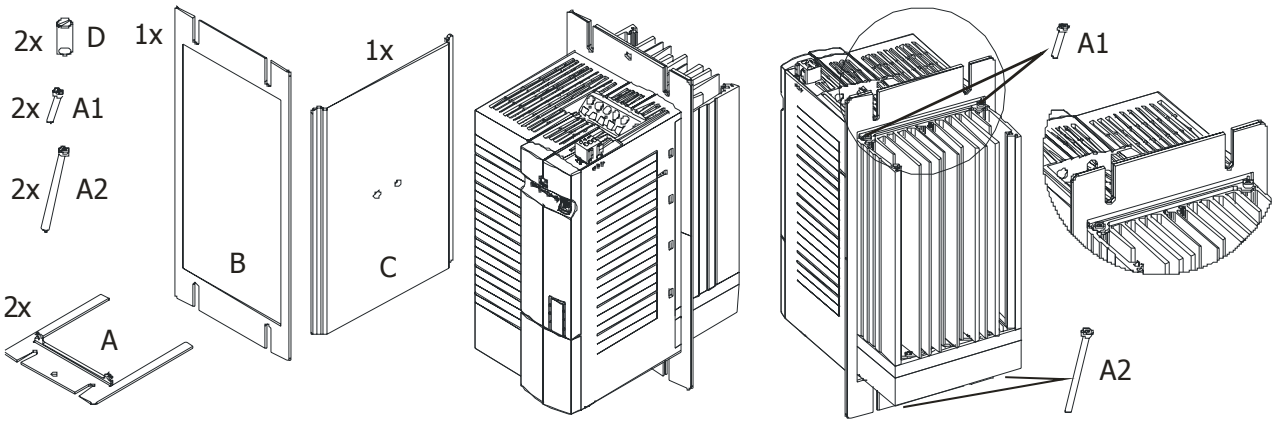
- Put the bracket (B1) onto the backside of the housing.
- Insert the fixing plates (A) and (B) in the upper and lower side of the heat sink.
- Assemble fixing plate (B) to bracket (B1) with screws (G).
- Assemble the fixing plates (A) and (B) to the upper and lower side of the heat sink with the screws (F).
- Push the seal (C) over the heat sink and stick it on.
- Stick the back panel (D) in the holding rail of the heat sink. Screw the slugs (E) to the heat sink to secure the back panel.



Construction size 4	ACT/ACU 201 (7.5 kW ... 9.2 kW) ACT/ACU 401 (11.0 kW ... 15.0 kW)

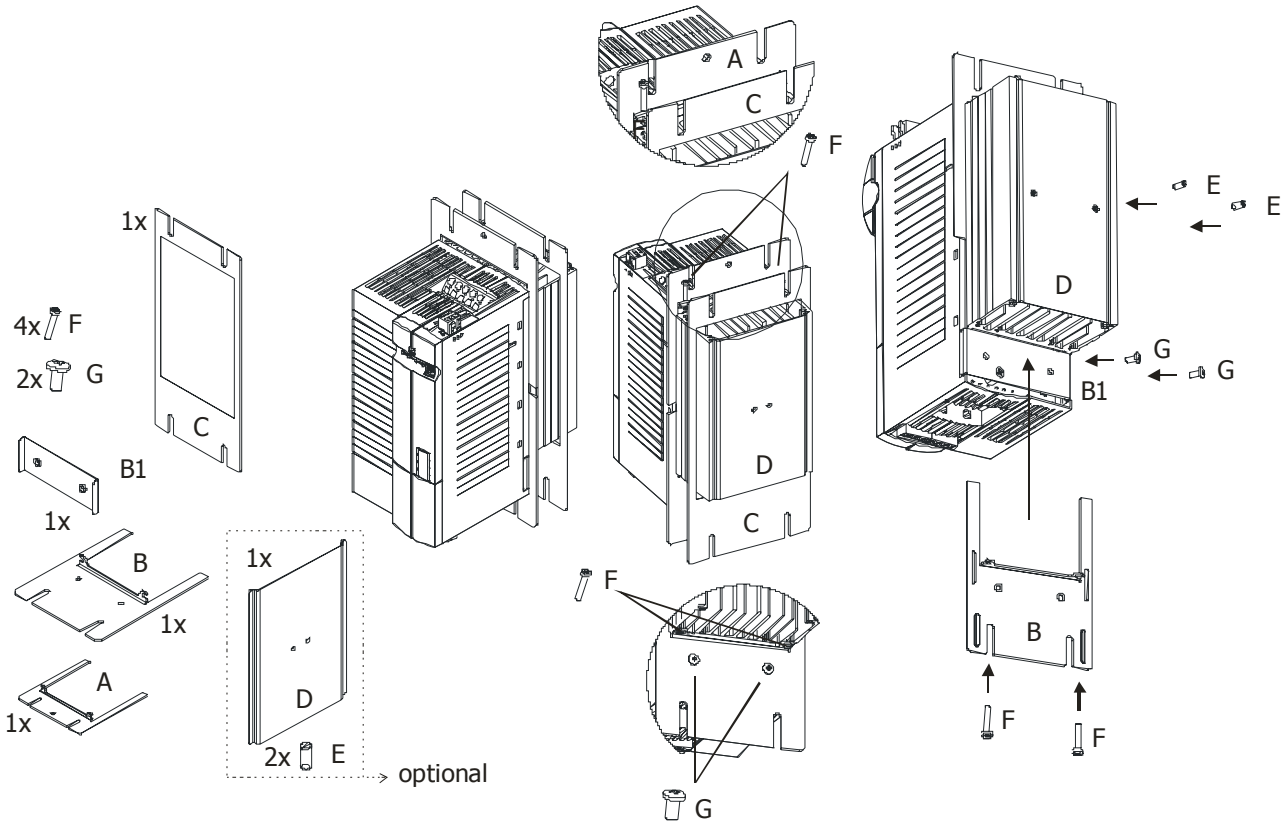
- **with fan**

- Insert the fixing plates (A) in the upper and lower side of the heat sink.
- Screw the fixing plates (A) to the heat sink, on the upper side with the screws (A1) and on the lower side with the screws (A2).
- Push the seal (B) over the heat sink and stick it on.
- Stick the back panel (C) in the holding rail of the heat sink. Screw the slugs (D) to the heat sink to secure the back panel.



- **without fan**

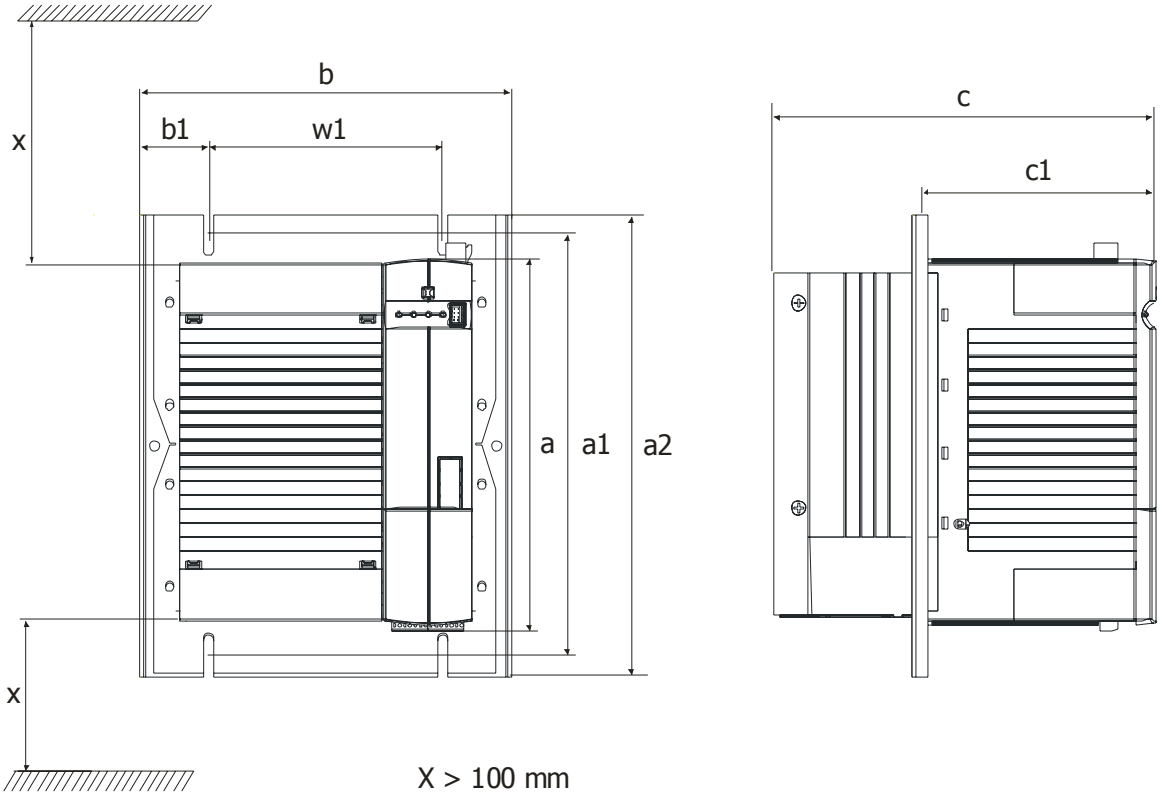
- Put the bracket (B1) to the backside of the housing.
- Insert the fixing plates (A) and (B) in the upper and lower side of the heat sink.
- Assemble fixing plate (B) to bracket (B1) with screws (G).
- Assemble the fixing plates (A) and (B) to the upper and lower side of the heat sink with the screws (F).
- Push the seal (C) over the heat sink and stick it on.
- Stick the optional back panel (D) in the holding rail of the heat sink. Screw the slugs (E) to the heat sink to secure the back panel.



Construction size 5

Dimensions

Construction size 5	ACT/ACU 401 (18.5 kW ... 30.0 kW)

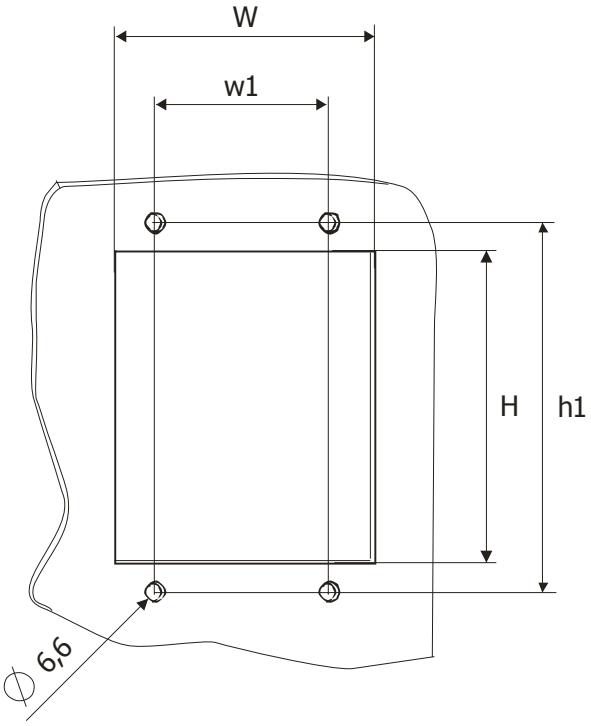


Dimensions in mm (without optional components)					Installation dimensions in mm				
Frequency inverter		a	b	c	a1	a2	b1	c1	w1
ACT/ACU 401	**18.5 kW ... 30.0 kW**	250	253	265	270 ... 290	315	46.5	170	160

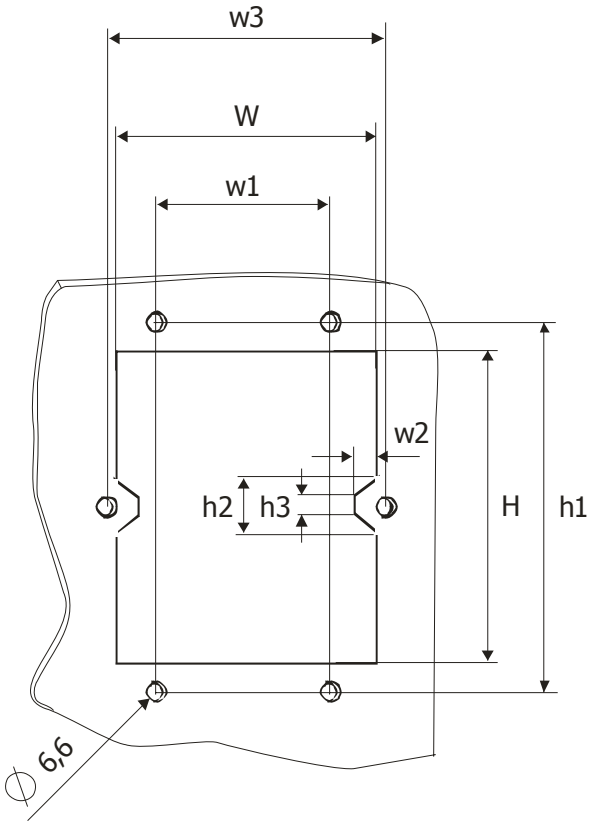
Assembly drawings

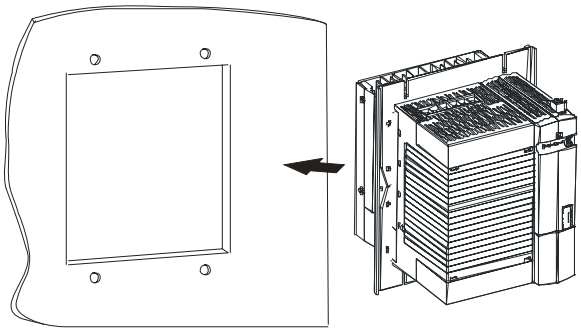
Construction size 5 — **ACT/ACU 401 (18.5 kW ... 30.0 kW)**

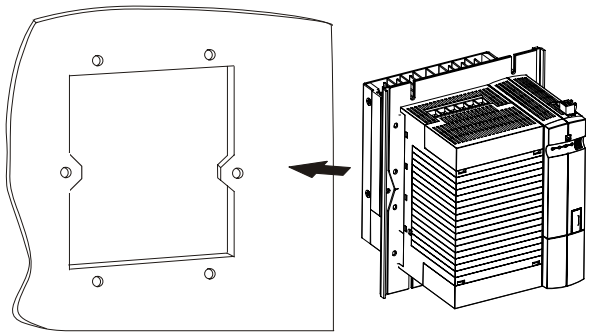
For **assembly panel thickness** > **2 mm** make the following cut-out of the assembly panel:



For **assembly panel thickness** ≤ **2 mm** make the following cut-out of the assembly panel:







Cut-out of the assembly panel in mm

Frequency inverter			h1	h2	h3	w1	w2	w3	H	W
ACT/ACU 401	**Construction size 5**	**18.5 ... 30.0 kW** - with fan - without fan	283	40*	20*	160	10*	233.5*	240	226

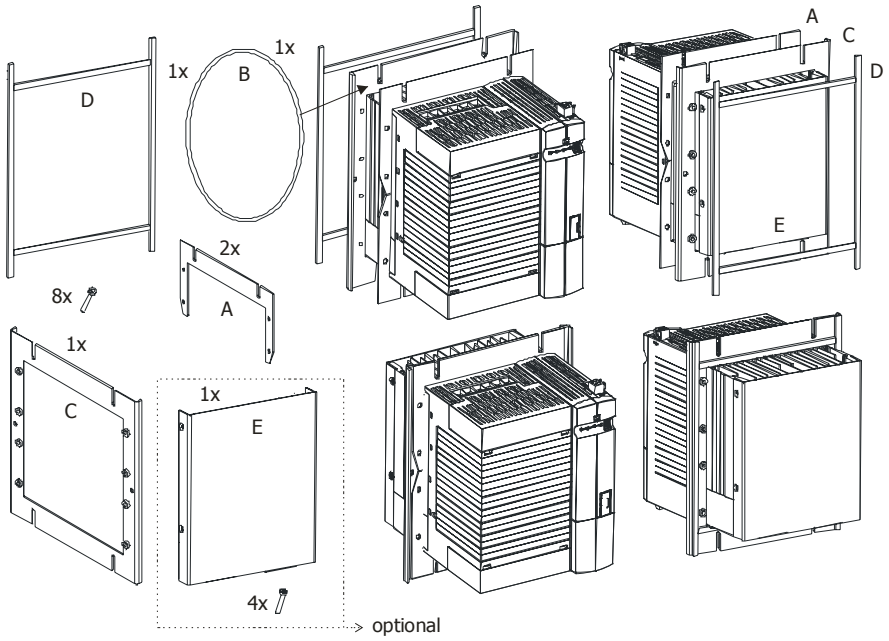
* Only for assembly panel thickness ≤ 2 mm

Assembly of the fixing plates

Construction size 5 **ACT/ACU 401 (18.5 kW ... 30.0 kW)**

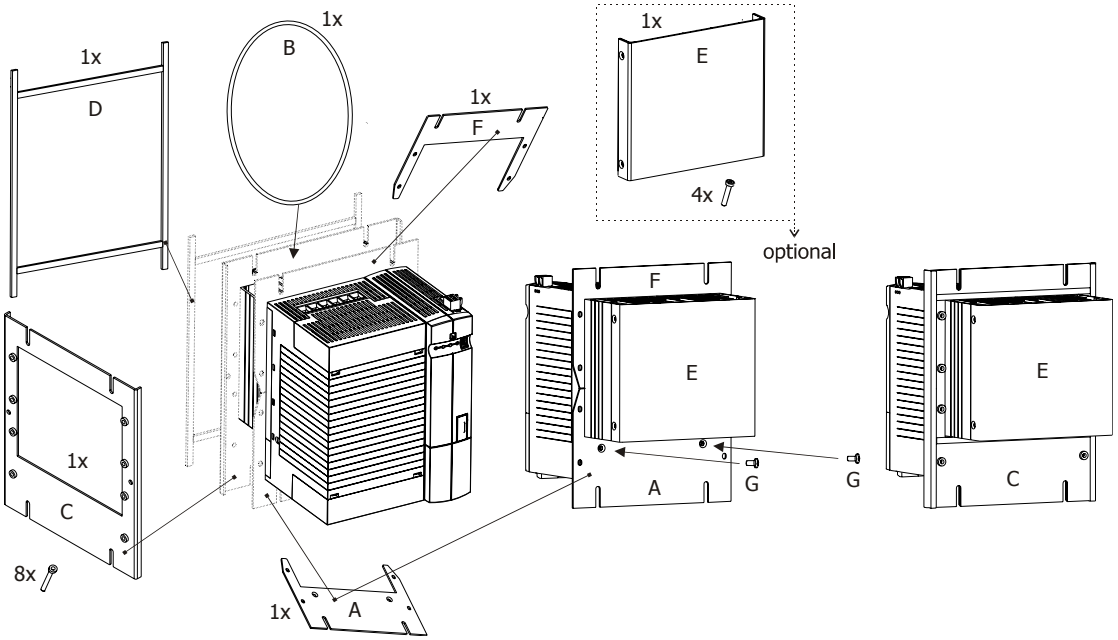
- **with fan**

- Insert the fixing plates (A) in the upper and lower side of the heat sink.
- Push the O-seal (B) over the heat sink. The O-seal must be placed between the fixing plates (A) and the assembly frame (C).
- Push the assembly frame (C) over the heat sink and fit it on the fixing plates (A).
- Cut the sealing tape (D) to a suitable size and stick it on the assembly frame (C).
- Screw the optional back panel (E) sideways to the heat sink.



- **without fan**

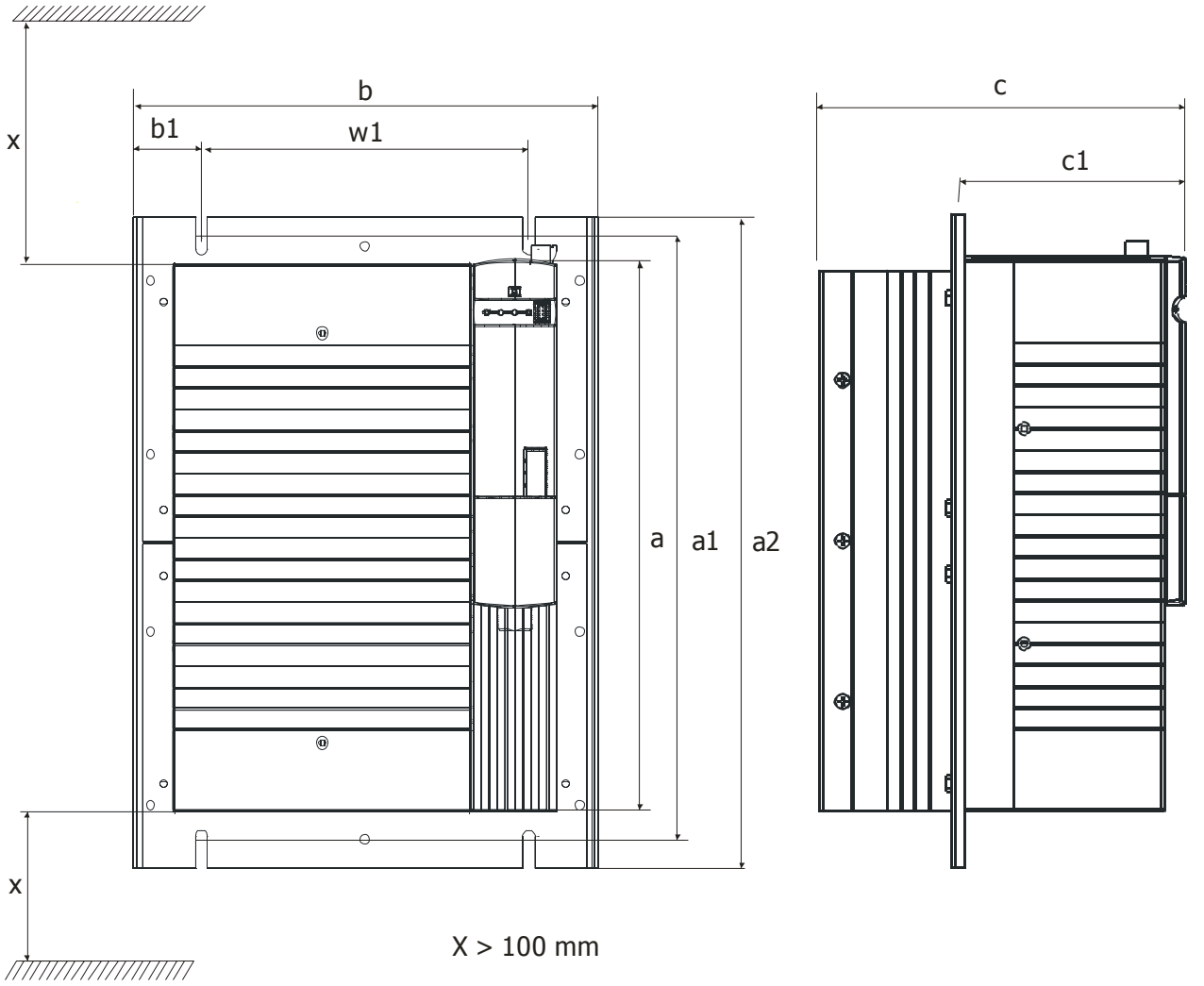
- Insert the fixing plates (F) and (A) in the upper and lower side of the heat sink.
- Mount the fixing plate (A) to the frequency inverter with the screws (G).
- Push the O-seal (B) over the heat sink. The O-seal must be placed between the fixing plates (A, F) and the assembly frame (C).
- Push the assembly frame (C) over the heat sink and fit it on the fixing plates (A, F).
- Cut the sealing tape (D) to a suitable size and stick it on the assembly frame (C).
- Screw the optional back panel (E) sideways to the heat sink.



Construction size 6

Dimensions

Construction size 6 **ACT/ACU 401 (37.0 kW ... 65.0 kW)**

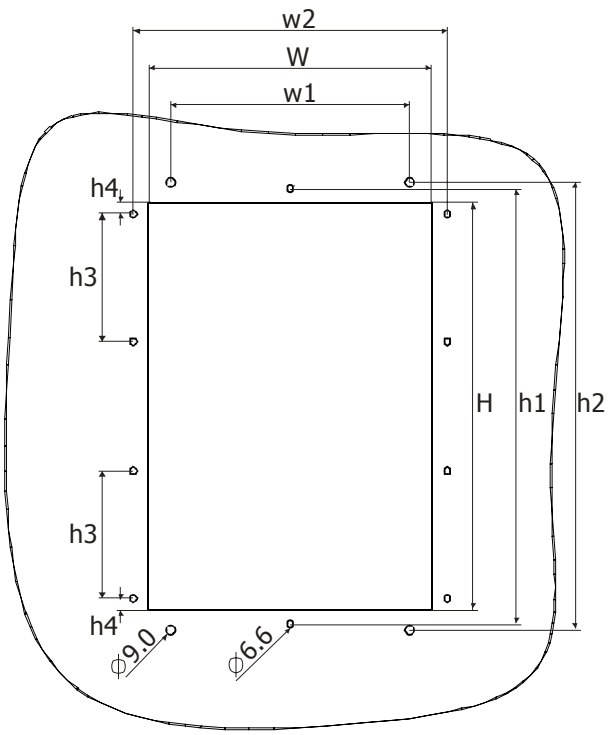


Dimensions in mm (without optional components)					Installation dimensions in mm				
Frequency inverter		a	b	c	a1	a2	b1	c1	w1
ACT/ACU 401	**37.0 kW ... 65.0 kW**	400	334	262	425 ... 445	467	49,5	168	235

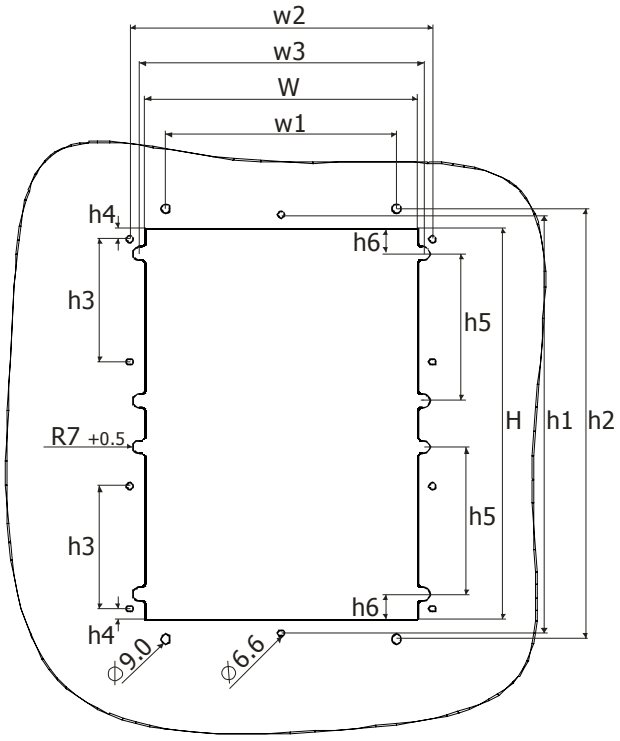
Assembly drawings

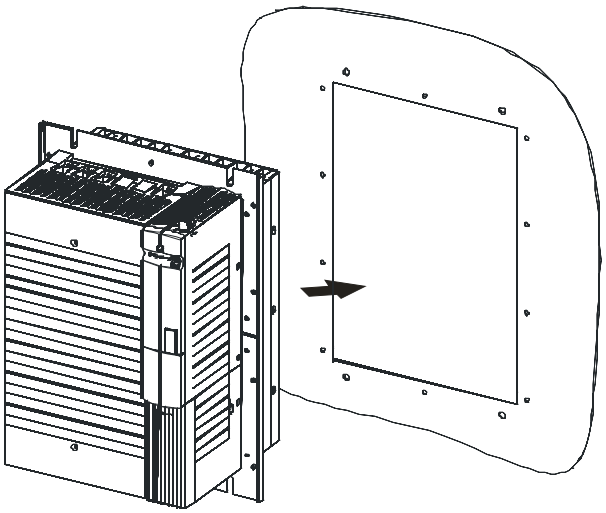
Construction size 6 **ACT/ACU 401 (37.0 kW ... 65.0 kW)**

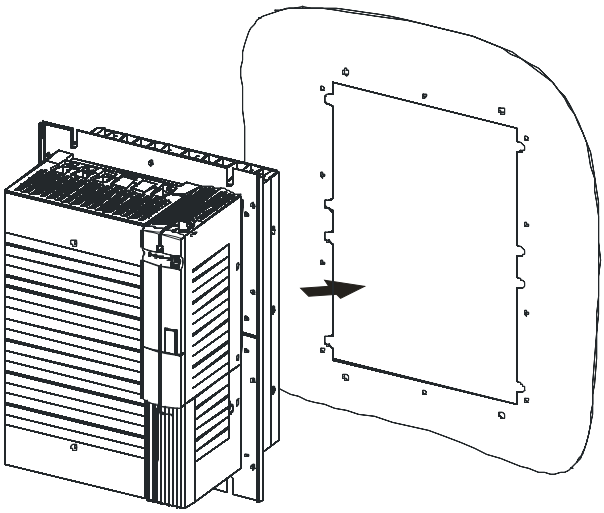
For **assembly panel thickness** > **2 mm** make the following cut-out of the assembly panel:



For **assembly panel thickness** ≤ **2 mm** make the following cut-out of the assembly panel







Cut-out of the assembly panel in mm

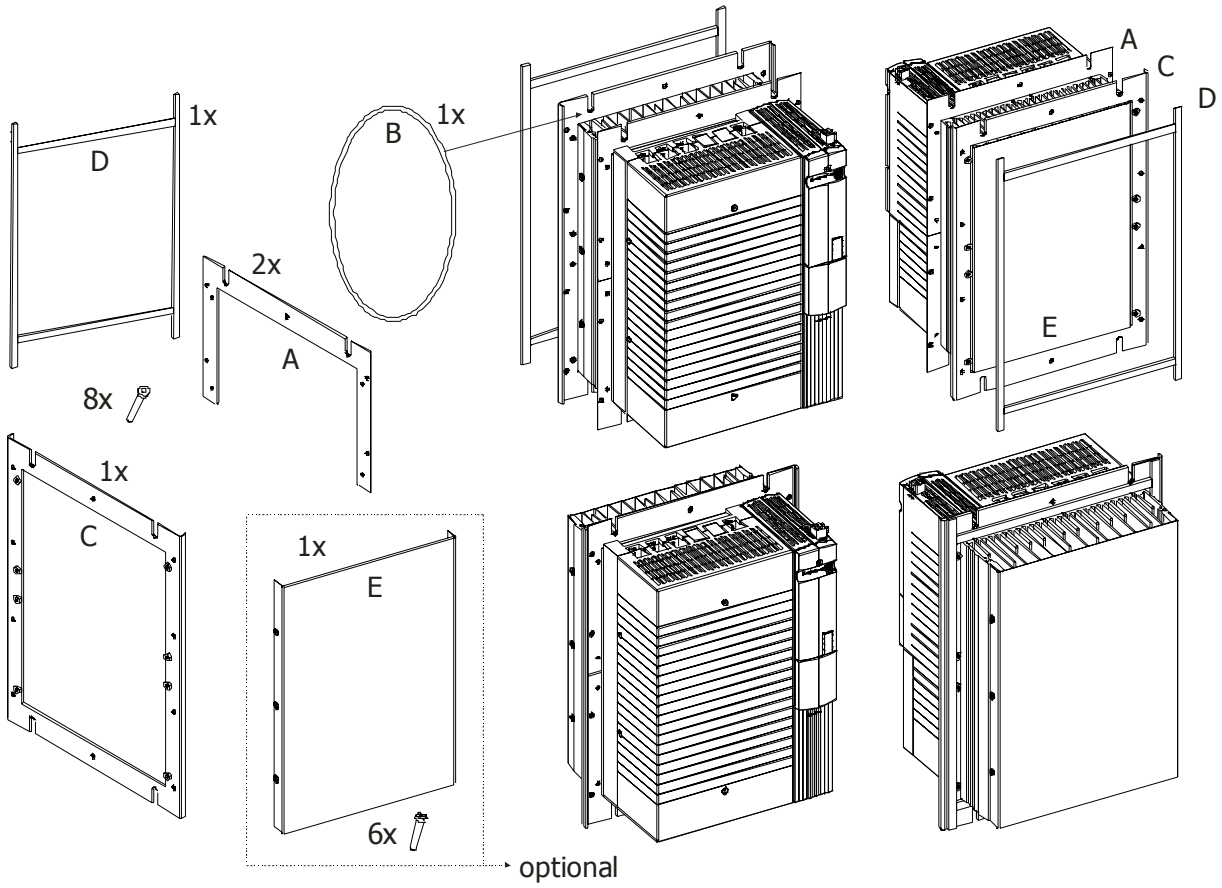
Frequency inverter								
ACT/ACU 401	Construction size 6	37.0 kW ... 65.0 kW - with fan - without fan	**h1**	**h2**	**h3**	**h4**	**h5**	**h6**
			427	439	125	11	150*	26*
			w1	**w2**	**w3**	**H**	**W**	
			235	308.5	288.5*	399	278	

* Only for assembly panel thickness ≤ 2 mm

Assembly of the fixing plates

- Insert the fixing plates (A) in the upper and lower side of the heat sink.
- Push the O-seal (B) over the heat sink. The O-seal must be placed between the fixing plates (A) and the assembly frame (C).
- Push the assembly frame (C) over the heat sink and fit it on the fixing plates (A).
- Cut the sealing tape (D) to a suitable size and stick it on the assembly frame (C).
- Screw the back panel (E) sideways to the heat sink.

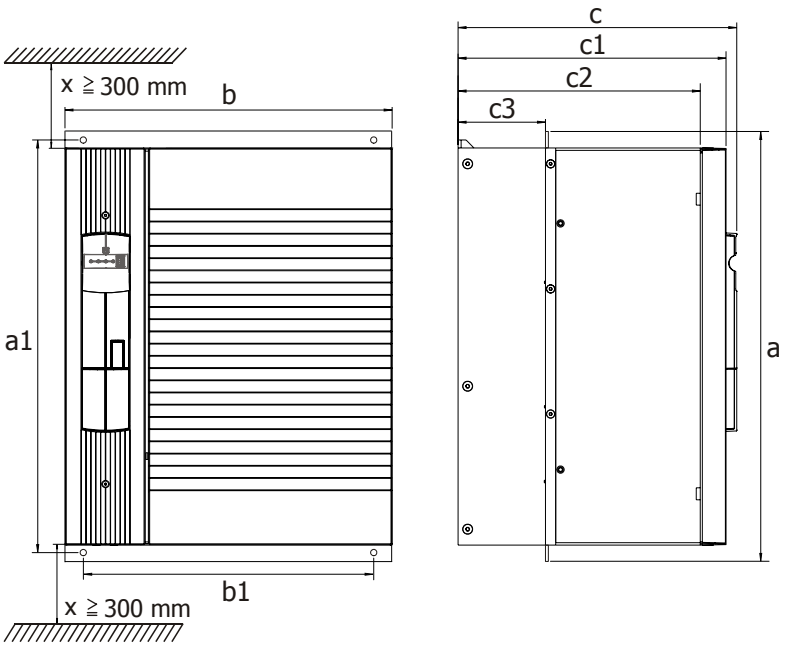
Construction size 6 **ACT/ACU 401 (37.0 kW ... 65.0 kW)**



Construction size 7

Dimensions

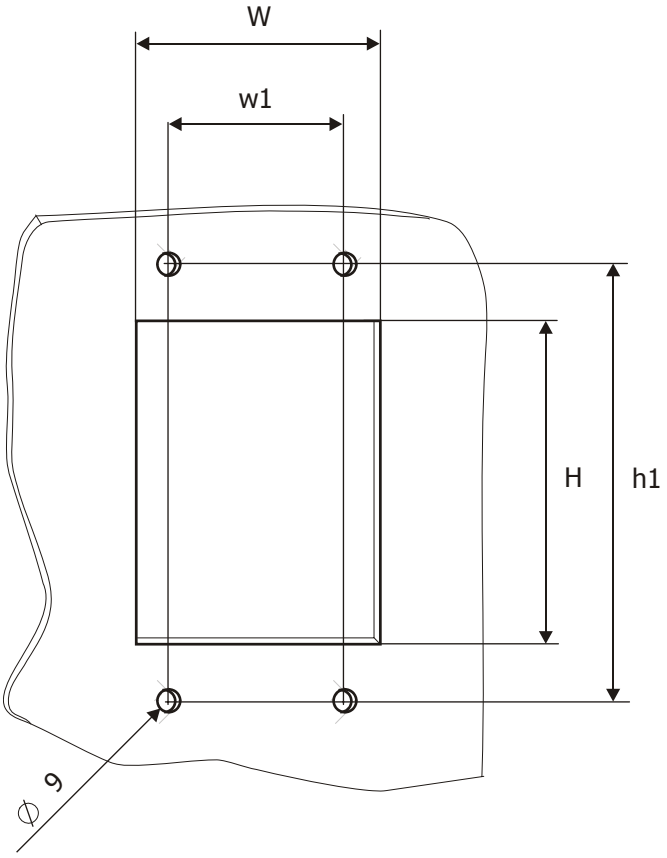
Construction size 7	ACT/ACU 401 (75.0 kW ... 132.0 kW)



Dimensions in mm (without optional components)					Installation dimensions in mm				
Frequency inverter		a	b	c	a1	b1	c1	c2	c3
ACT/ACU 401	**75.0 kW ... 132.0 kW**	580	412	351	550	342	338	305	110

Assembly drawings

Construction size 7 **ACT/ACU 401 (75.0 kW ... 132.0 kW)**



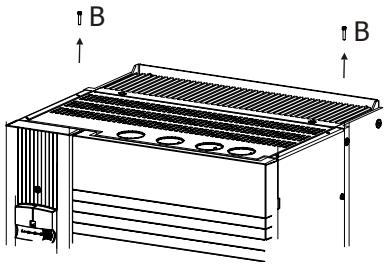
Cut-out of the assembly panel in mm

Frequency inverter			h1	w1	H	W
ACT/ACU 401	**Construction size 7**	**75.0 kW ... 132.0 kW** - with fan - without fan	550	342	504	400

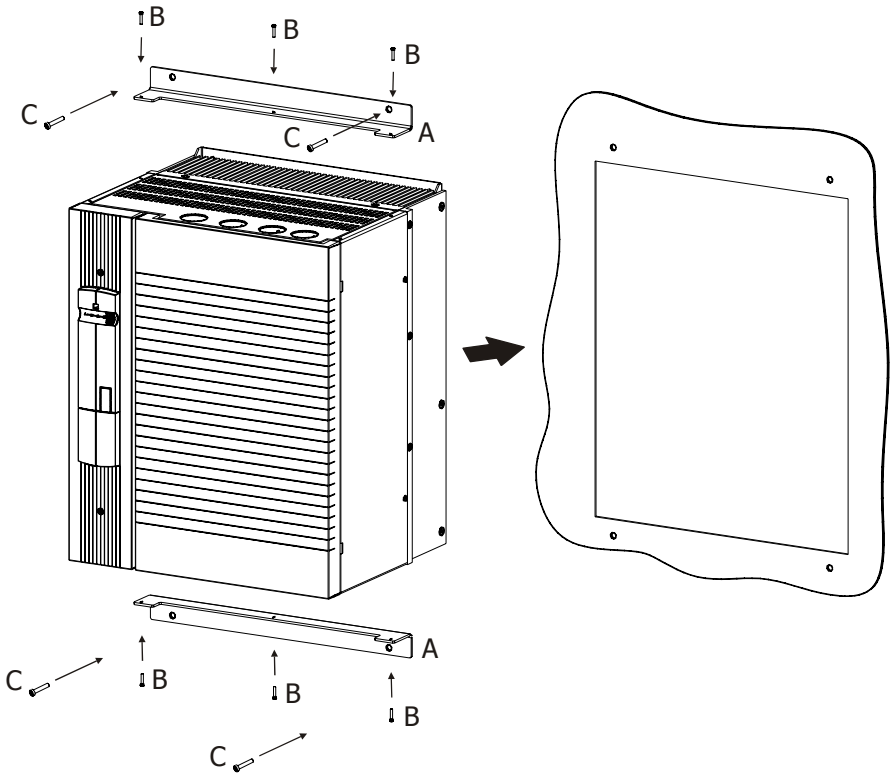
Assembly

Construction size 7 **ACT/ACU 401 (75.0 kW ... 132.0 kW)**

- Unscrew the screws (B) from the frequency inverter.



- Tighten the mounting brackets (A) with the screws (B) at the frequency inverter.
- Push the heat sink of the frequency inverter through the cut-out of the assembly panel.
- Mount the frequency inverter at the assembly panel with the screws (C).



B: M5x12
C: M8

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