



Installation manual

ROTEX HPSU low temperature monobloc control box

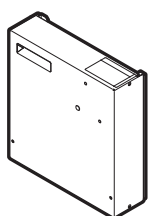


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1 About the documentation

1.1 About this document

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

- **General safety precautions:**
 - Safety instructions that you must read before installing
 - Format: Paper (in the box of the outdoor unit)
- **Outdoor unit installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)
- **Control box installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the control box)
- **Option box installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the option box)
- **Backup heater installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the backup heater)
- **Installer reference guide:**
 - Preparation of the installation, technical specifications, good practices, reference data,...
 - Format: Digital files on the ROTEX homepage

▪ Addendum book for optional equipment:

- Additional info about how to install optional equipment
- Format: Paper (in the box of the outdoor unit) + Digital files on the ROTEX homepage

Latest revisions of the supplied documentation may be available on the regional ROTEX website or via your dealer.

The original documentation is written in English. All other languages are translations.

2 About the box

2.1 Control box

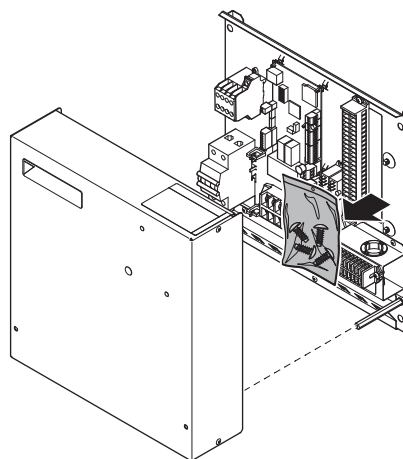


NOTICE

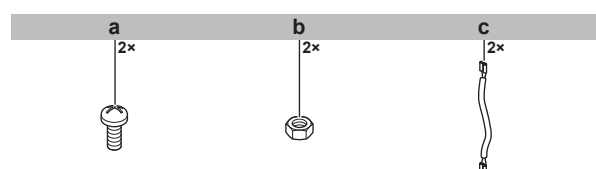
Control box RKCB07CAV3 is an option and can only be used in combination with outdoor units RDLQ05+07CAV3 and RBLQ05+07CAV3.

2.1.1 To remove the accessories from the control box

- 1 Open the control box.



- 2 Remove the accessories.



- a M4 bolts for user interface
- b M4 nuts for user interface
- c Wires for domestic hot water booster heater relay

3 Preparation

3.1 Preparing installation site

3.1.1 Installation site requirements of the control box

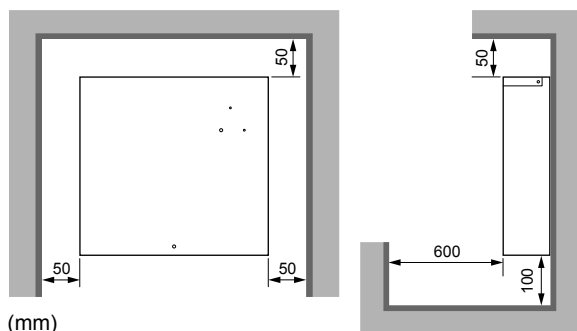
- Mind the measurement guidelines:

Maximum distance between control box and outdoor unit	20 m
Maximum distance between control box and backup heater kit	10 m

4 Installation

Maximum distance between control box and domestic hot water tank	10 m
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- Mind the following spacing installation guidelines:



(mm)

- The control box is designed to be wall-mounted in indoor locations only. Make sure the installation surface is a flat and vertical non-combustible wall.
- The control box is designed to operate in ambient temperatures ranging from 5~35°C.

3.2 Preparing electrical wiring

3.2.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
Power supply			
1	Power supply for control box	2+GND	(a)
Interconnection cable			
2	Interconnection cable between outdoor unit and control box	2	(b)
3	Interconnection cable for valve kit EKMBHBP1 (between outdoor unit and control box)	3	(g)
User interface			
4	User interface	2	100 mA ^(c)
Optional equipment			
5	Preferential kWh rate power supply (voltage-free contact)	2	(d)
6	Backup heater kit thermistor	2	(e)
7	Backup heater kit thermal protector	2	(e)
8	Backup heater kit connection (from control box)	2 (3V3) 3 (6V3, 6W1, 9W1)	(e)
9	3-way valve	3	(f)
10	Power supply for booster heater and thermal protection (from control box)	4+GND	(a)
11	Power supply for booster heater (to control box)	2+GND	13 A

Item	Description	Wires	Maximum running current
12	Domestic hot water tank thermistor	2	(f)
13	Room thermostat/heat pump convector	3 or 4	100 mA ⁽ⁱ⁾
14	Valve kit EKMBHBP1	3	(h)

- (a) Cable section 2.5 mm².
- (b) Minimum cable section 0.75 mm²; maximum length: 20 m.
- (c) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual use interface connection.
- (d) Cable section 0.75 mm² till 1.25 mm²; maximum length: 50 m. Voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
- (e) Minimum cable section 0.75 mm²; maximum length: 10 m.
- (f) The thermistor and connection wire (12 m) are delivered with the domestic hot water tank.
- (g) Cable section 0.75 mm².
- (h) The valve and connection wire (12 m) are delivered with the valve kit.
- (i) If valve kit EKMBHBP1 is part of the system, then the required cable section is 0.75 mm². If valve kit EKMBHBP1 is NOT part of the system, then the minimum required cable section is 0.75 mm², and the maximum cable length is 10 m.



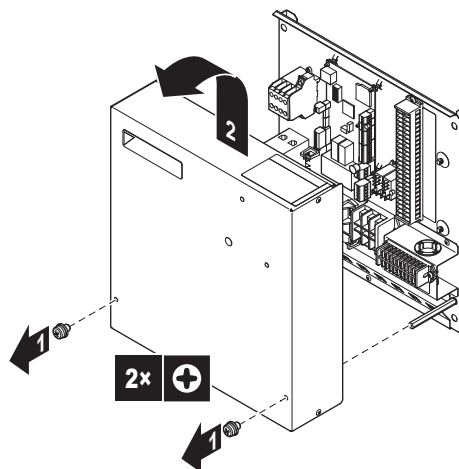
NOTICE

More technical specifications of the different connections are indicated on the inside of the control box.

4 Installation

4.1 Opening the units

4.1.1 To open the control box



WARNING

The screws are delivered with toothed lock washers. ALWAYS use toothed lock washers, also when the screws need to be replaced. Failure to follow this warning may result in electric shock.



INFORMATION

The holes in the front plate are for the connection of the user interface to the control box. If you do NOT connect the user interface to the control box, do NOT remove the plugs from the holes.

4.2 Mounting the control box

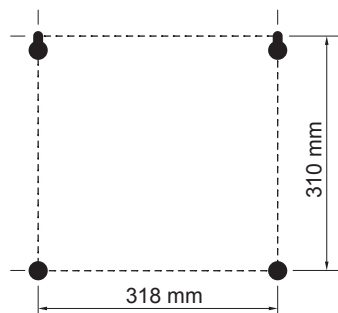
4.2.1 To install the control box

- 1 Remove the front plate.
- 2 Hold the back plate against the wall and mark the fixation points (2 on the top and 2 at the bottom).



NOTICE

Make sure that the marks (2 by 2) are completely level and that their dimensions correspond to the figure below.



- 3 Drill 4 holes and install 4 plugs (suitable for M5).
- 4 Put the screws in the top plugs and hang the box on the screws.
- 5 Put the screws in the bottom plugs.
- 6 Fix the 4 screws firmly.



INFORMATION

It is possible to connect the user interface to the control box. For more information, refer to ["4.3.4 To connect the user interface" on page 5](#).

4.3 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION

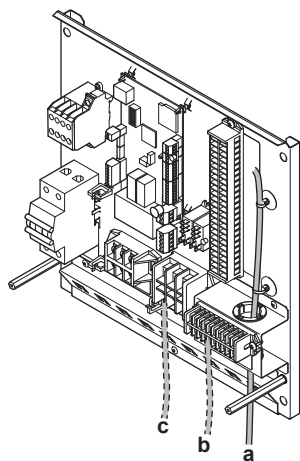


WARNING

ALWAYS use multicore cable for power supply cables.

4.3.1 To connect the electrical wiring on the control box

- 1 Insert the wiring from the bottom of the control box.
- 2 Make sure the low voltage wiring is located on the right. Route it through the intake hole and fasten it with cable ties.



- a Low voltage wiring
b High voltage wiring

c Main power supply

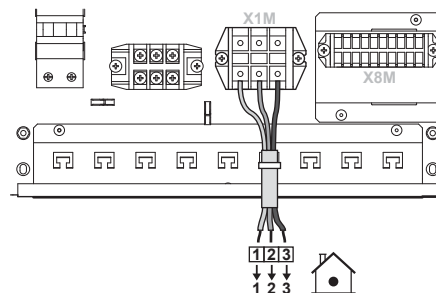


NOTICE

The distance between the high voltage and low voltage cables should be at least 25 mm.

4.3.2 To connect the control box power supply

- 1 Connect the power supply cable to the control box.



- 1 GND
2 L
3 N

- 2 Fix the cable with cable ties to the cable tie mountings to ensure strain relief and to make sure that it does NOT come in contact with sharp edges.

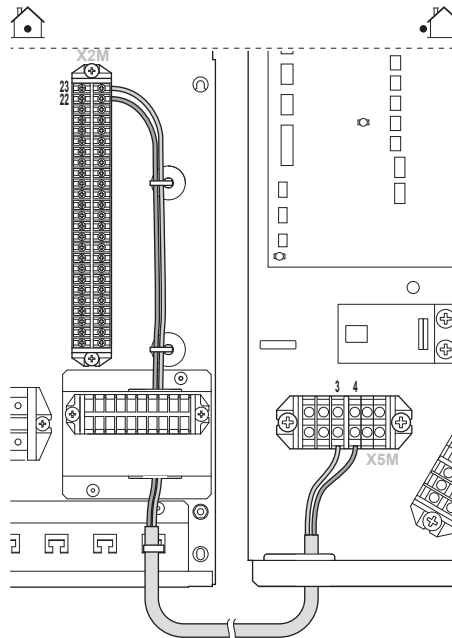


CAUTION

Do NOT push or place redundant cable length in the unit.

4.3.3 To connect the interconnection cable between control box and outdoor unit

- 1 Connect X2M/22 (control box) to X5M/4 (outdoor unit).
- 2 Connect X2M/23 (control box) to X5M/3 (outdoor unit).

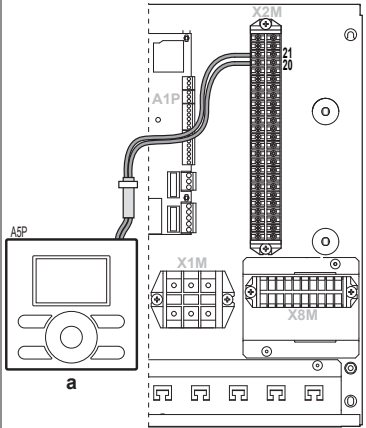
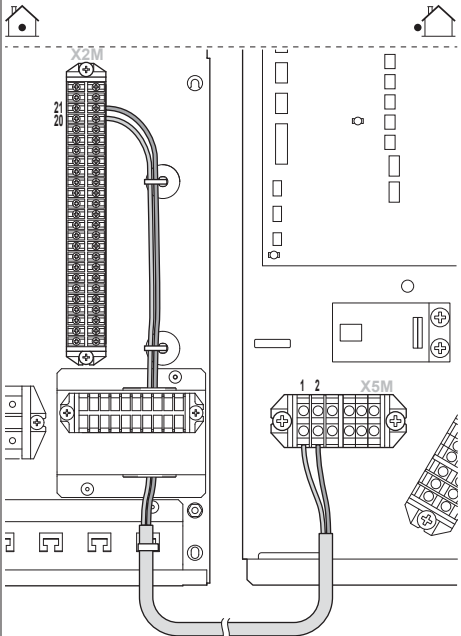
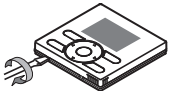


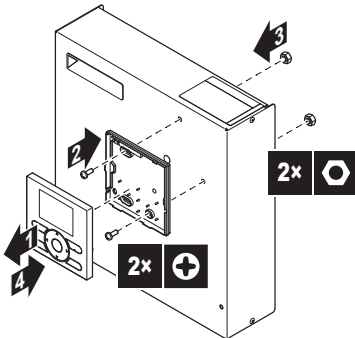
- 3 Tie the cable with cable ties to the cable tie mountings.

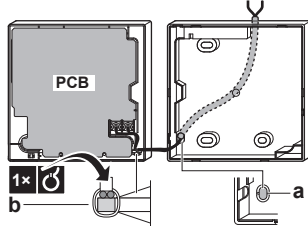
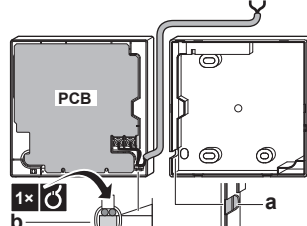
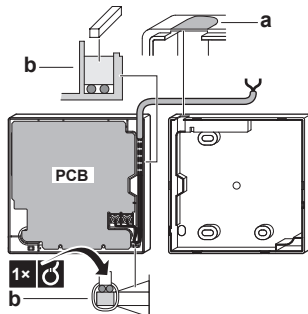
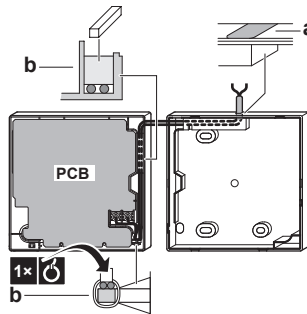
4.3.4 To connect the user interface

- If you use 1 user interface, you can connect it onto control box RKCBO7CAV3 (for control close to the control box), or in the room (where used as room thermostat).
- If you use 2 user interfaces, you can connect 1 user interface onto control box RKCBO7CAV3 (for control close to the control box) + 1 user interface in the room (where used as room thermostat).

5 Starting up the system

#	Onto control box	In the room
1	Connect the user interface cable to control box terminals X2M/20+21. Fix the cable with cable ties to the cable tie mountings.  a Main user interface^(a)	Connect the user interface cable to control box terminals X2M/20+21. Route the cable from the right-hand side of the terminals, fasten it to the cable tie mountings and route it through the hole of the low voltage wiring.
2	Connect the control box to the outdoor unit. Fix the cable with cable ties to the cable tie mountings. 	
3	Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wall plate. The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it. 	

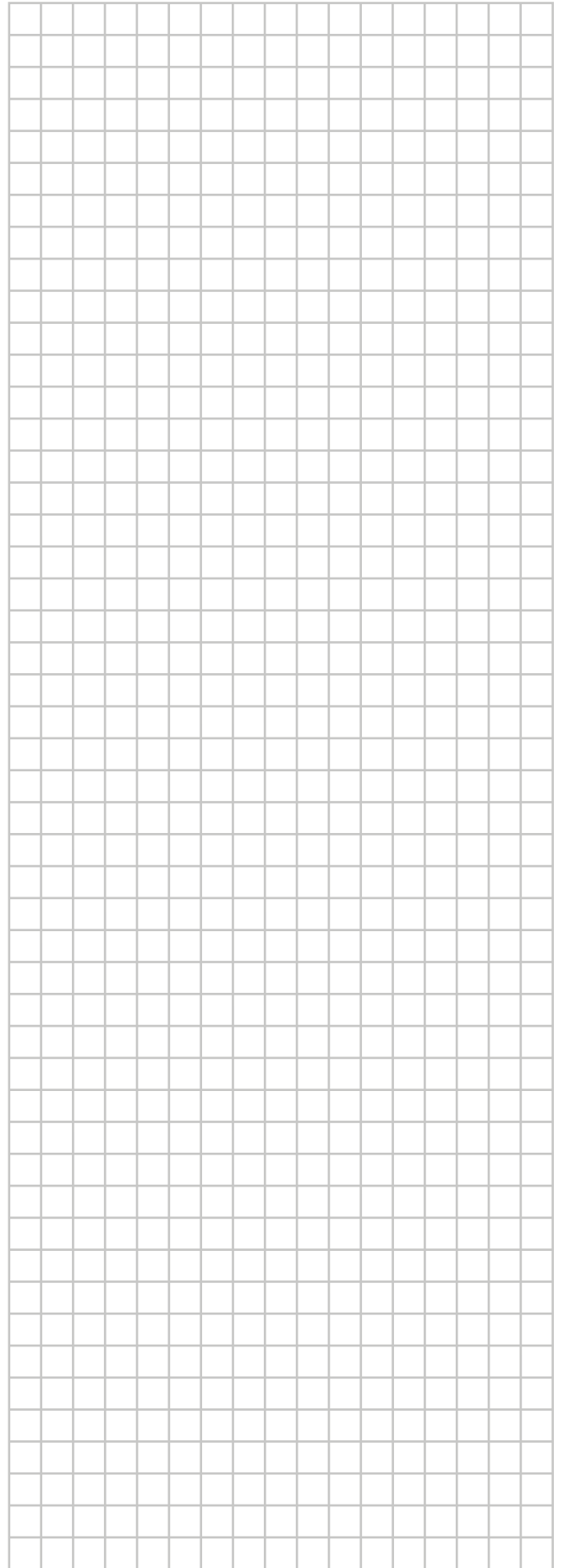
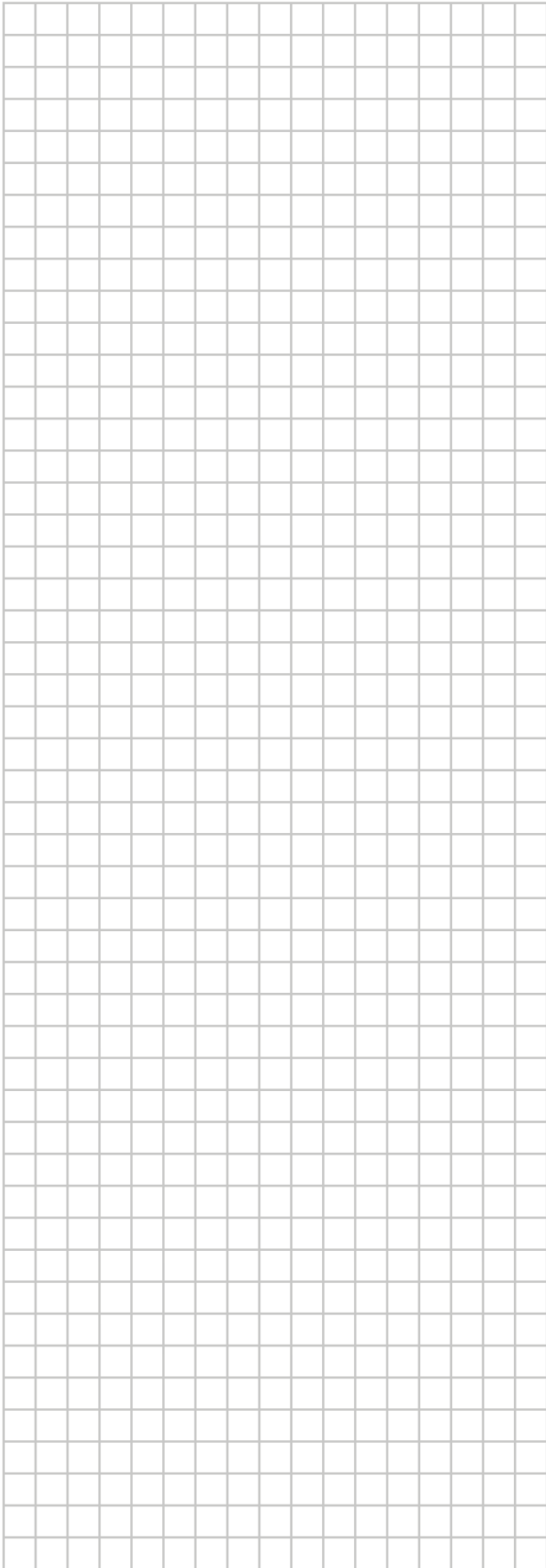
#	Onto control box	In the room
4	Fix the wall plate of the user interface to the front panel of the control box using the M4 bolts and nuts from the accessory bag. Be careful NOT to distort the shape of the backside of the user interface by overtightening the mounting screws. 	Fix the wall plate of the user interface to the wall. When NOT connecting a user interface to the control box, do NOT remove the plugs from the holes in the front plate.
5	Connect as shown in 4A.	Connect as shown in 4A, 4B, 4C or 4D.
6	Reconnect the faceplate to the wall plate. Be careful NOT to pinch the wiring when connecting the front panel to the control box.	

4A From the rear	4B From the left
	
4C From the top	4D From the top centre
	

- a** Notch this part for the wiring to pass through with nippers etc.
- b** Secure the wiring to the front part of the casing using the wiring retainer and clamp.

5 Starting up the system

For instructions on how to configure and commission the system, and hand it over to the user, refer to the installation manual of the outdoor unit.



ROTEX

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