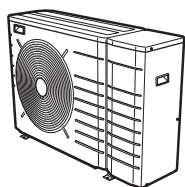




Installation manual

ROTEX HPSU low temperature monobloc



RBLQ05CAV3
RBLQ07CAV3

RDLQ05CAV3
RDLQ07CAV3

Installation manual
ROTEX HPSU low temperature monobloc

English

CE-DECLARATION OF CONFORMITY
CE-VOORAFKLEPINGSVERKLARING
CE-DECLARAZIONE DI CONFORMITÀ
CE-ДІЯЖЕННЯ СІМВОЛІЗОВАННЯ

CE-DECLARACIÓN DE CONFORMIDADE
CE-ЗАВЯЖЭННЕ А ЦООТВЕТСТВІЯ
CE-OVERENSTEMMELSESVERKLARING
CE-FÖRSÄKRAN OM ÖVERENSTEMMELSE

CE-ERKLÄRUNG ÜB. ÜBERSTIMMUNG
CE-ІДІДЖЕННЯ ВІДПОВІДНОСТІ
CE-DECLARACIJA ZGODNOSTI
CE-DECLARAȚIE DE CONFORMITATE

CE-IZJAVA O SKLADNOSTI
CE-VASTAVUSDEKLARACIJA
CE-ДІЯЖЕННЯ ВІДПОВІДНОСТІ
CE-DECLARAȚIE DE CONFORMITATE

CE-ATITIKTES-DEKLARACIJA
CE-ATBILSTĪBAS-DEKLARĀCIJA
CE-VYHLÁŠENIE ŽADŮJ
CE-UYGUNLUK BEYAN

ROTEX

- 01 060 declares under its sole responsibility that the equipment to which this declaration relates:
- 02 060 erklärt auf seine alleinige Verantwortung, daß die Ausrüstung für die diese Erklärung bestimmt ist:
- 03 060 déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:
- 04 060 verklaart herbij de eigen exclusieve verantwoordelijkheid dat de apparatuur waaraan deze verklaring betrekking heeft:
- 05 060 declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
- 06 060 δηλώνει υπό τη μόνη αποκλειστική του ευθύνη ότι ο εξοπλισμός στον οποίο αφορά η παρούσα δήλωση:
- 07 060 объявляет по своему исключительному и единоличному ответственности, что это оборудование:
- 08 060 declara sub sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:

RBLQ05CAV3, RBLQ07CAV3,
RDLQ05CAV3, RDLQ07CAV3,

- 01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
- 02 deriden følgende Norm(er) eller annen anden Normdokument eller -dokumenter enskriftsprisprisen, under der Voresættning, dás sie gemás:
- 03 conformer aux normes (ou autres) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
- 04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
- 05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
- 06 sono conformi al(l) seguente(s) standard(s) o altro(i) document(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
- 07 ёвон адпавядае ўмоў (або іншым) дакументам(ам) з характэрнамі нормаў, пры ўмове, што яны будуць ужывацца ў адпаведнасці з нашымі інструкцыямі:

EN60335-2-40,

- 01 following the provisions of:
- 02 gemäß den Vorschriften der:
- 03 conformément aux stipulations des:
- 04 overeenkomstig de bepalingen van:
- 05 secondo le disposizioni de:
- 06 según las prescripciones per:
- 07 по тэрыторыі нашых умоў:
- 08 de acuerdo con o previsto en:
- 09 в соответствии с положениями:

- 01 Note* as set out in <A> and judged positively by
- 02 Hinweis* wie in <A> angegeben und von positiv beurteilt gemás:
- 03 Remarque* la suite défini dans <A> et évalué positivement par
- 04 Bemerk* zoals vermeld in <A> en positief beoordeeld door
- 05 Nota* como se establece en <A> y es valorado positivamente por

- 11 Information* enligt <A> och godkänns av enligt Certifikat <C>
- 12 Merk* enligt de tekniska villkoren i <A> och godkänns av enligt Certifikat <C>
- 13 Huom* jotta on esitetty tähtämissä <A> ja jotta on hyväksynyt Sertifikaatin <C>
- 14 Poznámka* jak bylo uvedeno v <A> a pozitivně zjištěno v souladu s osvědčením <C>
- 15 Napomena* som antferri <A> og positivt vurderet af

- 16 Megjegyzés* az/iz <A> alapján al/iz igazolta a megfigyelést, al/iz
- 17 Uwaga* zgodnie z dokumentacją <A> pozytywną opinią
- 18 Nota* aş cum este stabilit în <A> şi apreciat pozitiv de
- 19 Opomba* kot je opredeljeno v <A> in odobreno s strani
- 20 Märkus* nagu on näidatud dokumentis <A> ja heaks kiidetud järgi vastavalt sertifikaadile <C>

- 21 Zabeleška* kato je ispravno u <A> u ispravno potvrđeno od
- 22 Pažaba* karpiusavija <A> ir kaip teigiamai nuslysta pagal
- 23 Piezīmes* ka norādīts <A> un atbilstoš pozitīvajam vērtējumam
- 24 Poznámka* ako bolo uvedené v <A> a pozitívne zistené v súlade s osvedčením <C>
- 25 Not* laimant olimi darak degeteritiridig gbe.

- 01 Directives as amended
- 02 Direktiven gemäß Änderung
- 03 Directies, telles que modifiées
- 04 Richtlijnen, zoals geamendard
- 05 Directies, según la modificación
- 06 Direktive, come la modifica
- 07 Ohjelmot, muutetut korjauksin
- 08 Directivas, conforme alteração em
- 09 Директива со всеми поправками

- 18 Direktiivier, cu amendamentele respective
- 19 Direktiva z ismi spremembami
- 20 Direktivd ioss muudatustega
- 21 Direktiiv, med förändring
- 22 Direktiiv, selisidise muutustega
- 23 Direktives, s reformacekamek
- 24 Direktiiv, s muođidmuos
- 25 Suoritus, y planoinnien
- 26 Değişimlisiz teleye Foreneleker

<A>	TCF.025H08/04-2015
	DEKRA (NB0344)
<C>	2082543.0551-QUA/EMC

3P403988-6E

ROTEX Heating Systems GmbH
Langwiesenstraße 10 · D-74363 Güglingen

Georg Blümel
Managing Director
1st of April 2016

[Signature]

ROTEX

09 060 заявляет, исключительно под свою ответственность, что оборудование, к которому относится настоящее заявление:

- 10 060 erklärt unter eigenverantwortig, daß dieses Gerät auf demer erachtet:
- 11 060 déclare sous sa responsabilité, que l'équipement visé par la présente déclaration:
- 12 060 verklaart herbij de eigen exclusieve verantwoordelijkheid dat de apparatuur waaraan deze verklaring betrekking heeft:
- 13 060 declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
- 14 060 δηλώνει υπό τη μόνη αποκλειστική του ευθύνη ότι ο εξοπλισμός στον οποίο αφορά η παρούσα δήλωση:
- 15 060 объявляет по своему исключительному и единоличному ответственности, что это оборудование:
- 16 060 declara sub sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:

- 08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
- 09 overeenstemmen met de volgende standaard(en) of andere normatieve document(en), indien deze worden gebruikt overeenkomstig onze instructies:
- 10 overnolider följande standard(er) eller andra följande standard(er) eller andra normative dokument, under förutsättning att användning utifrån de instruktionerna med våra instruktioner:
- 11 respektive utifrån de villkoren i <A> och godkänns av enligt Certifikat <C>
- 12 respektive utifrån de villkoren i <A> och godkänns av enligt Certifikat <C>
- 13 vastaavast seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen että niitä käytetään ohjeiden mukaisesti:
- 14 za předpokladu, že jsou vyhlášeny v souladu s našimi podmínkami, odpovídají následujícím normám nebo normativním dokumentům:
- 15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:

Low Voltage 2014/35/EU
Electromagnetic Compatibility 2014/30/EU

*

- 17 060 déclare que la présente déclaration est conforme à la réglementation en vigueur, sous réserve que les dispositions de la présente déclaration soient appliquées conformément à nos instructions:
- 18 060 erklärt, daß diese Erklärung der geltenden Rechtsvorschriften entspricht, vorausgesetzt, daß die Bestimmungen der Erklärung in Übereinstimmung mit unseren Anweisungen verwendet werden:
- 19 060 declara que esta declaración es conforme a la legislación vigente, siempre que se aplique de acuerdo con nuestras instrucciones:
- 20 060 verklaart dat deze verklaring in overeenstemming is met de geldende wetgeving, op voorwaarde dat de bepalingen van de verklaring worden toegepast overeenkomstig onze instructies:
- 21 060 declara que esta declaração é conforme à legislação em vigor, desde que seja aplicada de acordo com as nossas instruções:
- 22 060 δηλώνει ότι αυτή η δήλωση είναι σύμφωνα με την ισχύουσα νομοθεσία, υπό την προϋπόθεση ότι οι διατάξεις της δήλωσης θα εφαρμόζονται σύμφωνα με τις οδηγίες μας:
- 23 060 объявляет, что это заявление соответствует действующему законодательству, при условии, что требования настоящего документа будут исполнены в соответствии с нашими инструкциями:
- 24 060 declara que esta declaração é conforme à legislação em vigor, desde que seja aplicada de acordo com as nossas instruções:
- 25 060 déclare que la présente déclaration est conforme à la réglementation en vigueur, sous réserve que les dispositions de la présente déclaration soient appliquées conformément à nos instructions:

- 16 megfigyelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azok elfértek szerinti használatuk:
- 17 szerint a vonatkozó rendelkezéseket, amennyiben azok a jelen nyilatkozatban foglaltaknak megfelelően kerülnek alkalmazásra:
- 18 spunt in conformiteit cu unităţile (normativele standarde) sau altele (documente) normative, cu condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile noastre:
- 19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo skladu z našimi navodili:
- 20 on vastavuses järgmistele standardidele ja/või teiste normatiivsete dokumentidega, kui need asutatakse vastavalt meie juhendile:
- 21 соответствует требованиям стандартов или других нормативных документов, при условии, что будут соблюдены требования инструкции:
- 22 atitinka žemiau nurodytusius standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
- 23 tad, ja tieši atbilstoš standartiem (arba) citiem normatīviem dokumentiem:
- 24 su v zbirke s naslednjimi normativnim dokumentom(ima) ali drugim normativnim dokumentom(ima), za predpokrada, že se používají v slladu s našimi návodmi:
- 25 ühtlun, laimant olimi darak degeteritiridig gbe.

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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, 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.

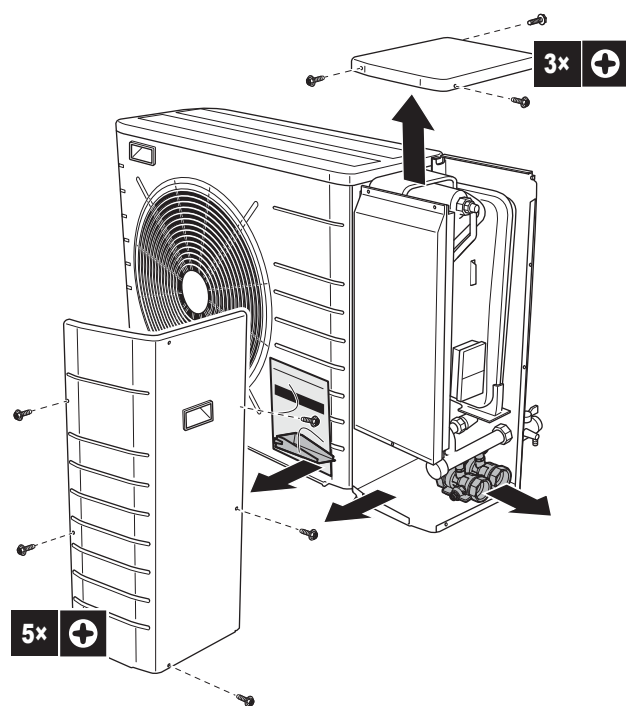
2 About the box

2.1 Outdoor unit

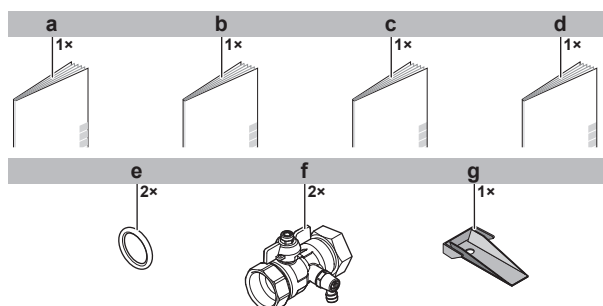
2.1.1 To remove the accessories from the outdoor unit

- 1 Open the outdoor unit.

3 Preparation



2 Remove the accessories.



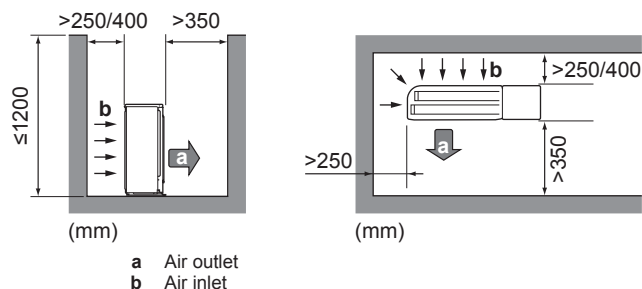
- a General safety precautions
- b Addendum book for optional equipment
- c Outdoor unit installation manual
- d Operation manual
- e Sealing ring for shut-off valve
- f Shut-off valve
- g Unit mounting plate

3 Preparation

3.1 Preparing the installation site

3.1.1 Installation site requirements of the outdoor unit

Mind the following spacing guidelines:



- a Air outlet
- b Air inlet

! INFORMATION

If shut-off valves are installed on the unit, provide a minimum space of 400 mm at the air inlet side. If shut-off valves are NOT installed on the unit, provide a minimum space of 250 mm.

If the system contains a domestic hot water tank, meet the following requirements:

Maximum allowable distance between outdoor unit and ...	Distance
domestic hot water tank	10 m
3-way valve	10 m

The outdoor unit is designed for outdoor installation only, and for ambient temperatures ranging 10~43°C in cooling mode, -25~25°C in space heating mode, and -25~35°C in domestic hot water operation mode.

3.2 Preparing water piping

! NOTICE

In case of plastic pipes, make sure they are fully oxygen diffusion tight according to DIN 4726. The diffusion of oxygen into the piping can lead to excessive corrosion.

3.2.1 To check the water volume and flow rate

Minimum water volume

If	Then
The system contains a backup heater	The minimum water volume is 10 l ^(a)
The system does NOT contain a backup heater	The minimum water volume is 20 l ^(a)

(a) The internal water volume of the outdoor unit NOT included.

! NOTICE

When circulation in each space heating/cooling loop is controlled by remotely controlled valves, it is important that the minimum water volume is guaranteed, even if all of the valves are closed.

Minimum flow rate

Check that the minimum flow rate (required during defrost/backup heater operation) in the installation is guaranteed in all conditions.

! NOTICE

If glycol was added to the water circuit, and the temperature of the water circuit is low, the flow rate will NOT be displayed on the user interface. In this case, the minimum flow rate can be checked by way of the pump test (check that the user interface does NOT display error 7H).

! NOTICE

When circulation in each or certain space heating loops is controlled by remotely controlled valves, it is important that the minimum flow rate is guaranteed, even if all valves are closed. In case the minimum flow rate cannot be reached, a flow error 7H will be generated (no heating or operation).

See the installer reference guide for more information.

Minimum required flow rate

05+07 models	12 l/min
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See the recommended procedure as described in "6.2 Checklist during commissioning" on page 18.

3.3 Preparing electrical wiring

3.3.1 Overview of electrical connections for external and internal actuators

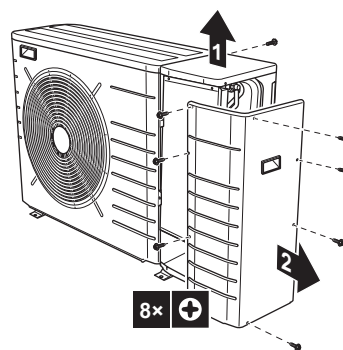
Item	Description	Wires	Maximum running current
Outdoor unit power supply			
1	Power supply for outdoor unit	2+GND	(a)
2	Normal kWh rate power supply	2	6.3 A
User interface			
3	User interface	2	(b)
Optional equipment			
4	Remote outdoor sensor	2	(c)
Field-supplied components			
5	Domestic hot water pump	2	(c)
6	Space heating/cooling operation control (or shut-off valve)	2	(e)
Interconnection cable			
7	Interconnection cable between outdoor unit and control box	2	(d)

- (a) Refer to name plate on outdoor unit.
 (b) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual user interface connection.
 (c) Minimum cable section 0.75 mm².
 (d) Cable section 0.75 mm² till 1.25 mm²; maximum length: 20 m.
 (e) 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.

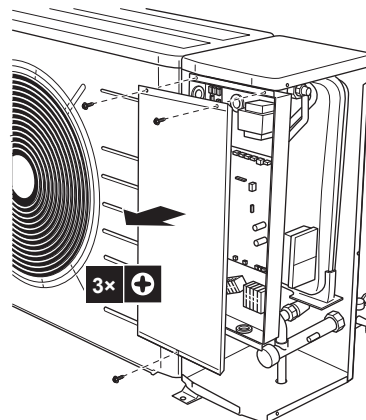


NOTICE

More technical specifications of the different connections are indicated on the inside of the outdoor unit.



4.1.2 To open the switch box cover of the indoor unit



4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure



INFORMATION

For information on the available options, contact your dealer.

If the unit is installed directly on the floor, prepare 4 sets of M8 or M10 anchor bolts, nuts and washers (field supply) as follows:



INFORMATION

The maximum height of the upper protruding part of the bolts is 15 mm.

4 Installation

4.1 Opening the units

4.1.1 To open the outdoor unit

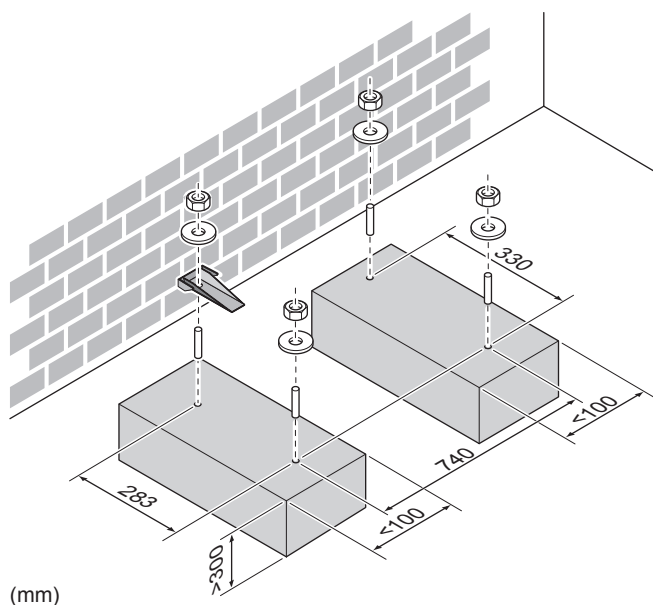


DANGER: RISK OF ELECTROCUTION

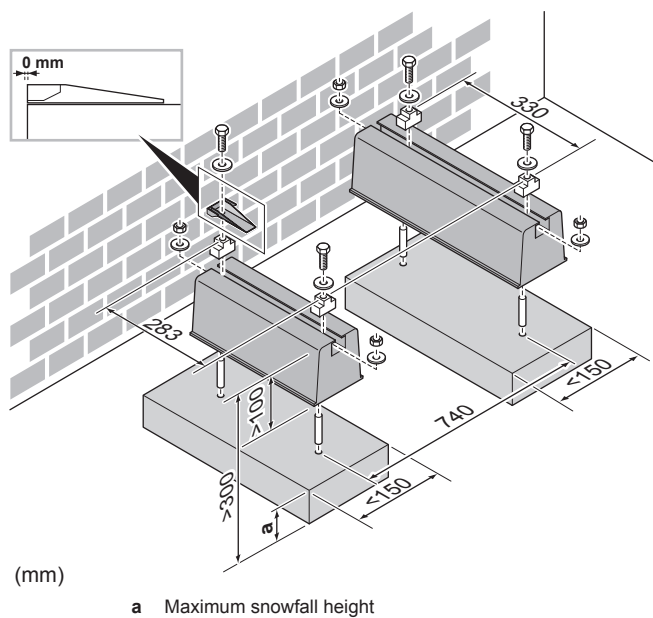


DANGER: RISK OF BURNING

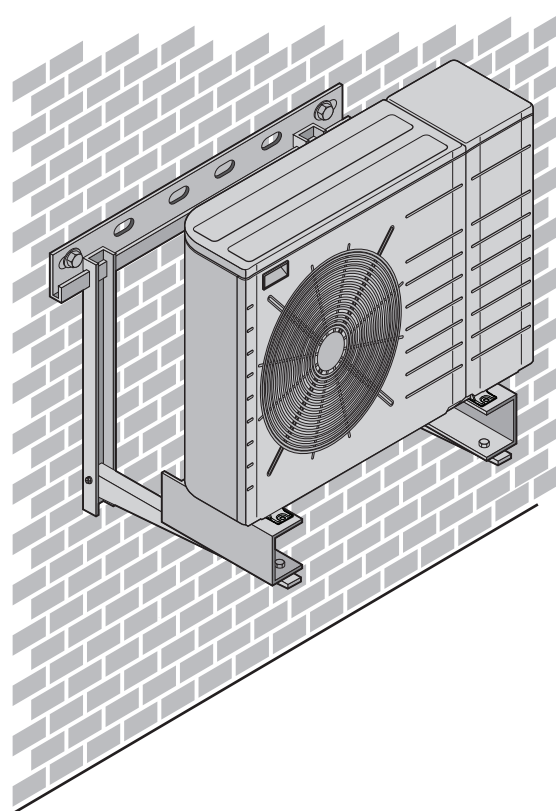
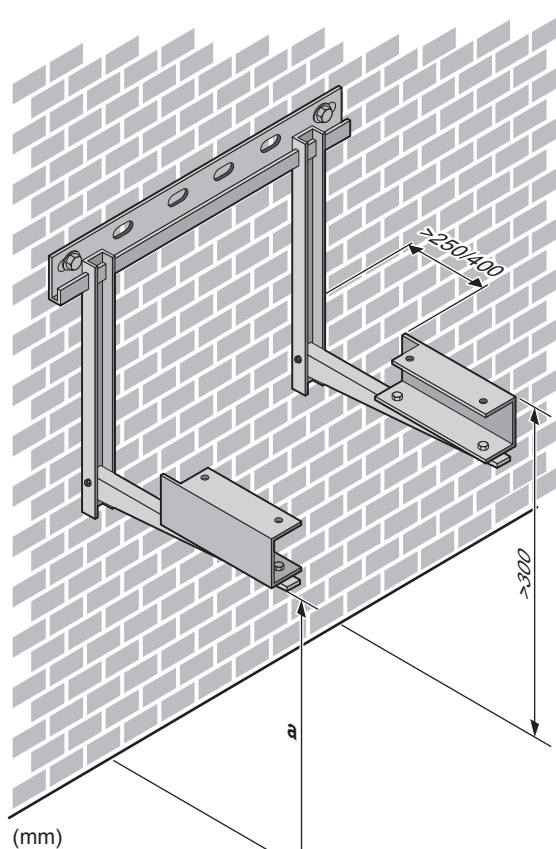
4 Installation



In any case, provide at least 300 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow.



It is possible to install the unit on brackets to the wall:



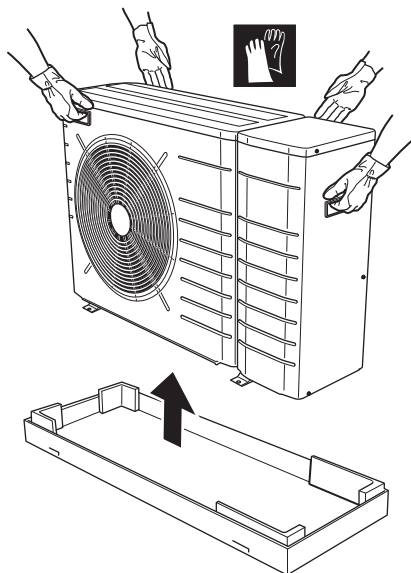
4.2.2 To install the outdoor unit



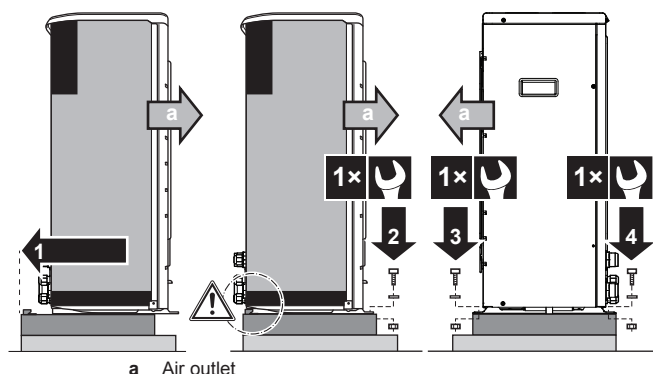
CAUTION

Do NOT remove the protective cardboard before the unit is installed properly.

1 Lift the outdoor unit.



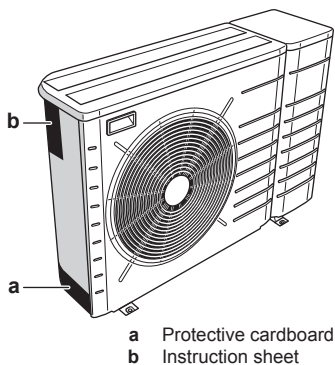
2 Install the outdoor unit as follows:



NOTICE

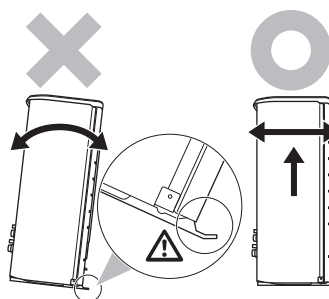
Properly align the unit. Make sure the backside of the unit does NOT protrude.

3 Remove the protective cardboard and instruction sheet.



NOTICE

To prevent damage to the supporting feet, do NOT tilt the unit sideways in any way:



4.2.3 To provide drainage

Make sure that condensate can be evacuated properly. When the unit is in cooling mode, condensate may also form in the hydro part. When providing drainage, therefore make sure to cover the entire unit.



NOTICE

If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze.



INFORMATION

For information on the available options, contact your dealer.



NOTICE

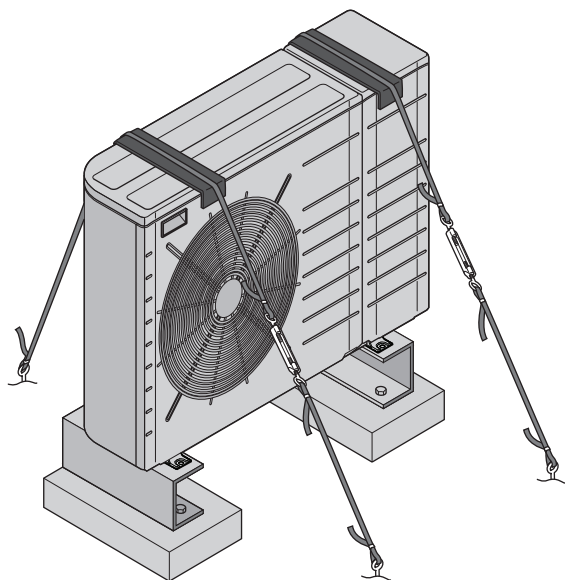
Provide at least 300 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the expected level of snow.

4.2.4 To prevent the outdoor unit from falling over

In case the unit is installed in places where strong wind can tilt the unit, take following measure:

- 1 Prepare 2 cables as indicated in the following illustration (field supply).
- 2 Place the 2 cables over the outdoor unit.
- 3 Insert a rubber sheet between the cables and the outdoor unit to prevent the cables from scratching the paint (field supply).
- 4 Attach the ends of the cables and tighten them.

4 Installation



4.3 Connecting the water piping

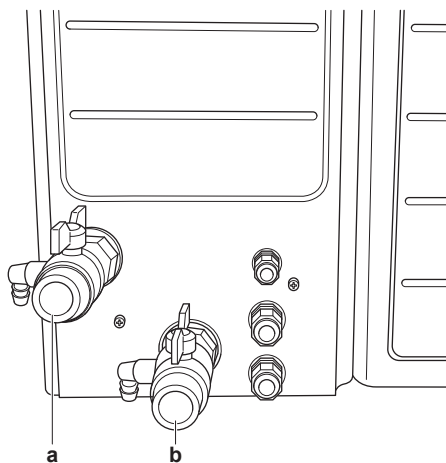
4.3.1 To connect the water piping



NOTICE

Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit. Make sure that the tightening torque does NOT exceed 30 N•m.

To facilitate service and maintenance, 2 shut-off valves are provided. Mount the valves on the space heating water inlet and space heating water outlet. Mind their position: the integrated drain valves will only drain the side of the circuit on which they are located. To be able to only drain the unit, make sure the drain valves are positioned between the shut-off valves and the unit.



a Water inlet
b Water outlet

- 1 Screw the outdoor unit nuts on the shut-off valves.
- 2 Connect the field piping on the shut-off valves.
- 3 In case of connection with the optional domestic hot water tank, see the installation manual of the domestic hot water tank.



NOTICE

Install a manometer in the system.



NOTICE

Install air purge valves at all local high points.



NOTICE

In case an optional domestic hot water tank is installed: A pressure relief valve (field supply) with an opening pressure of maximum 10 bar must be installed on the domestic cold water inlet connection in accordance with the applicable legislation.

4.3.2 To protect the water circuit against freezing

Frost can damage the system. To prevent the hydraulic components from freezing, the software is equipped with special frost protection functions, that include the activation of pump, internal heaters, and/or backup heater operation in case of low temperatures.

However, in case of a power failure, these functions cannot guarantee protection. It is therefore recommended to add glycol to the water circuit. The required concentration depends on the lowest expected outdoor temperature, and on whether you want to protect the system from bursting or from freezing. To prevent the system from freezing, more glycol is required. Add glycol according to the table below.



INFORMATION

- Protection against bursting: the glycol will prevent the piping from bursting, but NOT the liquid inside the piping from freezing.
- Protection against freezing: the glycol will prevent the liquid inside the piping from freezing.

Lowest expected outdoor temperature	Prevent from bursting	Prevent from freezing
-5°C	10%	15%
-10°C	15%	25%
-15°C	20%	35%
-20°C	25%	—
-25°C	30%	—



NOTICE

- The required concentration might differ depending on the type of glycol. ALWAYS compare the requirements from the table above with the specifications provided by the glycol manufacturer. If necessary, meet the requirements set by the glycol manufacturer.
- The added concentration of glycol should NEVER exceed 35%.
- If the liquid in the system is frozen, the pump will NOT be able to start. Mind that if you only prevent the system from bursting, the liquid inside might still freeze.
- In case of a power supply failure or pump failure, and NO glycol was added to the system, drain the system.
- When water is at standstill inside the system, the system is very likely to freeze and get damaged.

The types of glycol that can be used depend on whether the system contains a domestic hot water tank:

If...	Then...
The system contains a domestic hot water tank	Only use propylene glycol ^(a)
The system does NOT contain a domestic hot water tank	You can use either propylene glycol ^(a) or ethylene glycol

(a) Propylene glycol, including the necessary inhibitors, classified as Category III according to EN1717.



WARNING

Ethylene glycol is toxic.



NOTICE

Glycol absorbs water from its environment. Therefore do NOT add glycol that has been exposed to air. Leaving the cap off the glycol container causes the concentration of water to increase. The glycol concentration is then lower than assumed. As a result, the hydraulic components might freeze up after all. Take preventive actions to ensure a minimal exposure of the glycol to air.



NOTICE

- If overpressure occurs, the system will release some of the liquid through the pressure relief valve. If glycol was added to the system, take adequate measures so as to safely recover it.
- In any case, make sure that the flexible hose of the pressure relief valve is ALWAYS free to release pressure. Prevent water from staying and/or freezing up inside the hose.



WARNING

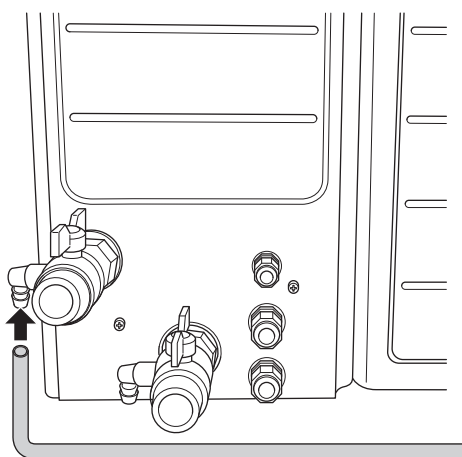
Due to presence of glycol, corrosion of the system is possible. Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by the presence of copper and high temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. Therefore it is important that:

- the water treatment is correctly executed by a qualified water specialist,
- a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols,
- no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates which can foul or plug the system,
- galvanized pipes are NOT used in glycol systems since the presence may lead to the precipitation of certain components in the glycol's corrosion inhibitor.

Adding glycol to the water circuit reduces the maximum allowed water volume of the system. For more information, refer to the chapter "To check the water volume and flow rate" in the installer reference guide.

4.3.3 To fill the water circuit

- 1 Connect the water supply hose to the drain and fill valve.



- 2 Open the drain and fill valve.
- 3 If an automatic air purge valve was installed, make sure it is open.
- 4 Fill the circuit with water until the manometer (field supply) indicates a pressure of ± 2.0 bar.

- 5 Purge as much air as possible from the water circuit. For instructions, see "6 Commissioning" on page 18.
- 6 Refill the circuit until the pressure is ± 2.0 bar.
- 7 Repeat steps 5 and 6 until no more air is purged and there are no more pressure drops.
- 8 Close the drain and fill valve.
- 9 Disconnect the water supply hose from the drain and fill valve.

4.3.4 To insulate the water piping

The piping in the complete water circuit MUST be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity.

To prevent the freezing of the outdoor water piping during winter time, the thickness of the sealing material MUST be at least 13 mm (with $\lambda=0.039$ W/mK).

If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

During winter, protect the water piping and shut-off valves against freezing by adding heat tape (field supply). If the outdoor temperature can drop below -20°C and no heat tape is used, it is recommended to install the shut-off valves indoors.

4.4 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION

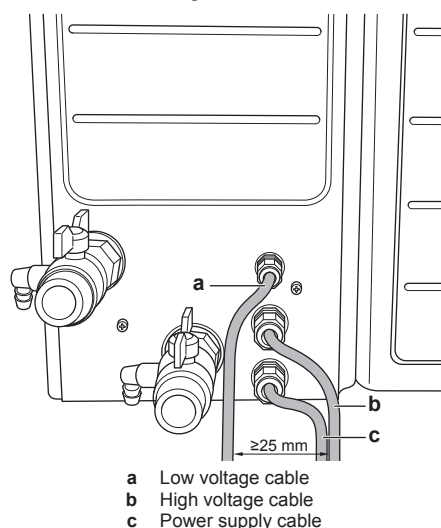


WARNING

ALWAYS use multicore cable for power supply cables.

4.4.1 To connect the electrical wiring on the outdoor unit

- 1 Remove the switch box cover. See "4.1.1 To open the outdoor unit" on page 5.
- 2 Insert the wiring at the back of the unit:



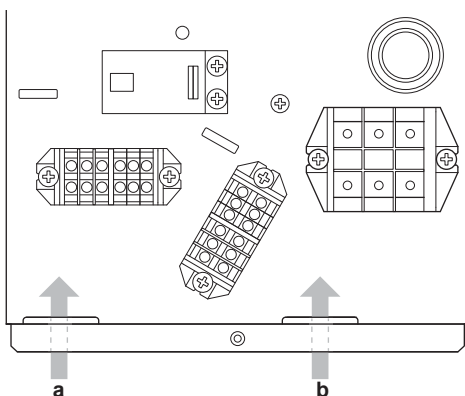
NOTICE

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

4 Installation

Routing	Possible cables (depends on the installed options)
a Low voltage	<ul style="list-style-type: none"> User interface Interconnection cable to control box RKCBO7CAV3 Remote outdoor sensor (option)
b High voltage	<ul style="list-style-type: none"> Normal kWh rate power supply Preferential kWh rate power supply Heat pump convector (option) Shut-off valve (field supply) Domestic hot water pump (field supply) Space heat/cool operation control
c Main power supply	<ul style="list-style-type: none"> Main power supply

3 Inside the unit, route the wiring as follows:



- a Low voltage wiring
b High voltage wiring + main power supply

4 Make sure that the cable does NOT come in contact with sharp edges or hot gas piping.

5 Install the switch box cover.



INFORMATION

When installing field supply or option cables, foresee sufficient cable length. This will make it possible to remove/reposition the switch box and gain access to other components during service.

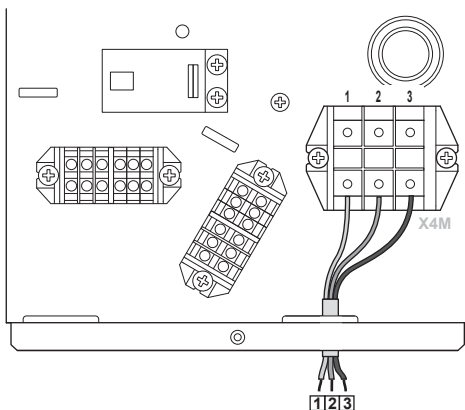


CAUTION

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

4.4.2 To connect the main power supply

1 Connect the main power supply.



- 1 GND
2 L

3 N

4.4.3 To connect the user interface



INFORMATION

- If control box RKCBO7CAV3 is NOT part of the system, connect the user interface directly to the outdoor unit.
- If control box RKCBO7CAV3 is part of the system, you can also connect the user interface to the control box. To do this, connect the user interface to control box terminals X2M/20+21, and then connect the control box to the outdoor unit by connecting X2M/20+21 to outdoor unit terminals X5M/1+2.

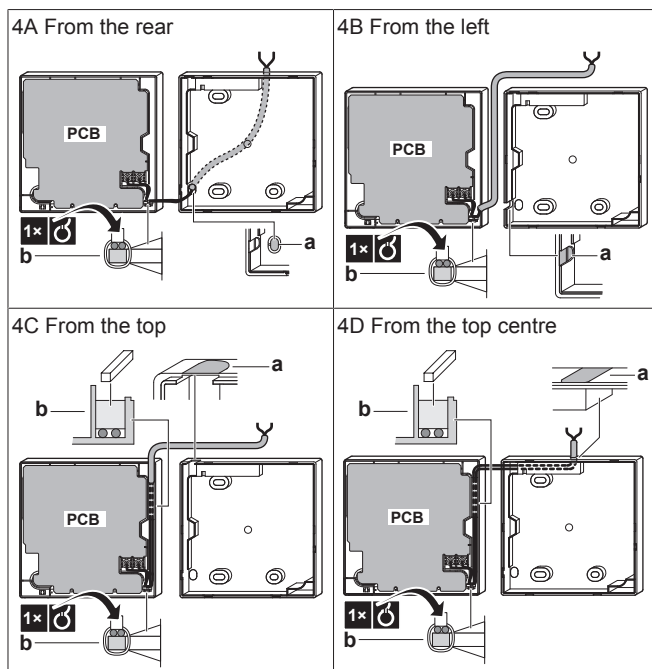


INFORMATION

For details on how to connect the user interface to the control box, refer to the installer reference guide or the installation manual of the control box.

#	Action
1	<p>Connect the user interface cable to the outdoor unit.</p> <p>a Main user interface^(a) b Optional user interface</p>
2	<p>Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wallplate.</p> <p>The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it.</p>
3	Fix the wallplate of the user interface to the wall.
4	Connect as shown in 4A, 4B, 4C or 4D.
5	<p>Reinstall the faceplate onto the wallplate.</p> <p>Be careful NOT to pinch the wiring when attaching the frontplate to the unit.</p>

- (a) The main user interface is required for operation, but has to be ordered separately (mandatory option).



- 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.

4.4.4 To connect the shut-off valve

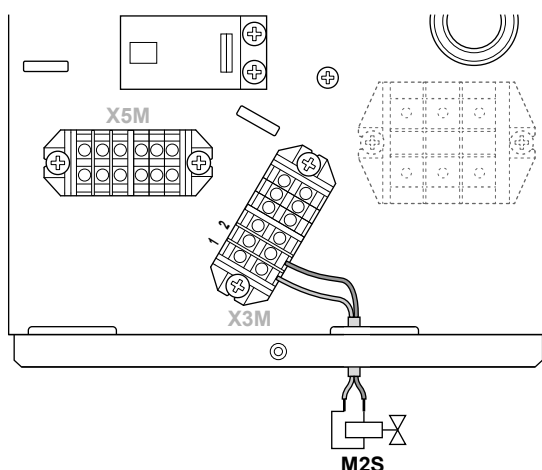
- 1 Connect the valve control cable to the appropriate terminals as shown in the illustration below.



NOTICE

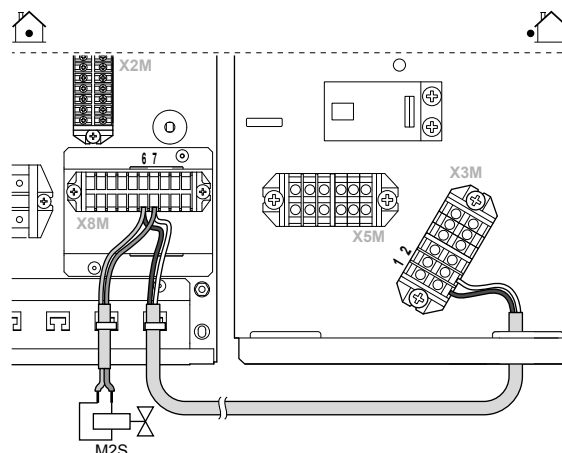
Only connect NO (normal open) valves.

NO



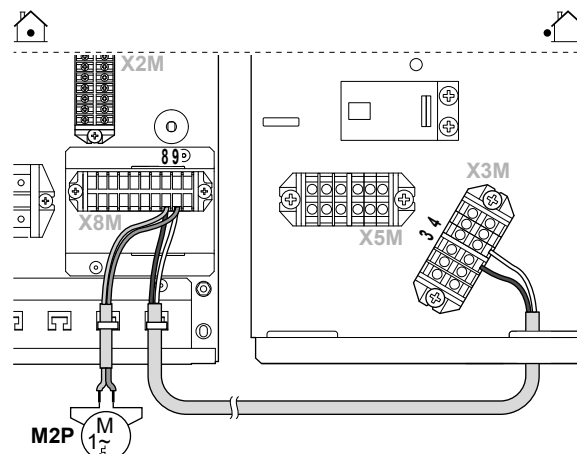
INFORMATION

By default, the shut-off valve is to be connected to the outdoor unit. However, if control box RKCB07CAV3 is present in the system, you can also connect it to the control box. To do this, connect outdoor unit terminals X3M/1+2 to control box terminals X8M/6+7, and then connect the shut-off valve to control box terminals X8M/6+7.



4.4.5 To connect the domestic hot water pump

- 1 Connect outdoor unit terminals X3M/3+4 to the bottom side of terminals X8M/8+9 of control box RKCB07CAV3.
- 2 Connect the cable of the domestic hot water pump to the bottom side of control box terminals X8M/8+9.



5 Configuration

5.1 Overview: Configuration

This chapter describes what you have to do and know to configure the system after it is installed.



NOTICE

The explanation about the configuration in this chapter gives you ONLY basic explanations. For more detailed explanation and background information, see the installer reference guide.

Why

If you do NOT configure the system correctly, it might NOT work as expected. The configuration influences the following:

- The calculations of the software

5 Configuration

- What you can see on and do with the user interface

How

You can configure the system via the user interface.

- First time – Quick wizard.** When you turn ON the user interface for the first time (via the indoor unit), a quick wizard starts to help you configure the system.
- Afterwards.** If necessary, you can make changes to the configuration afterwards.



INFORMATION

When the installer settings are changed, the user interface will request to confirm. When confirmed, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

Accessing settings – Legend for tables

You can access the installer settings using two different methods. However, NOT all settings are accessible via both methods. If so, the corresponding table columns in this chapter are set to N/A (not applicable).

Method	Column in tables
Accessing settings via the breadcrumb in the menu structure.	#
Accessing settings via the code in the overview settings.	Code

See also:

- ["To access the installer settings" on page 12](#)
- ["5.3 Menu structure: Overview installer settings" on page 17](#)

5.1.1 To access the most used commands

To access the installer settings

- Set the user permission level to Installer.
- Go to [A]: > Installer settings.

To access the overview settings

- Set the user permission level to Installer.
- Go to [A.8]: > Installer settings > Overview settings.

To set the user permission level to Installer

- Set the user permission level to Adv. end user.
- Go to [6.4]: > Information > User permission level.
- Press for more than 4 seconds.

Result: is displayed on the home pages.

- If you do NOT press any button for more than 1 hour or press again for more than 4 seconds, the installer permission level switches back to End user.

To set the user permission level to Advanced end user

- Go to the main menu or any of its submenus: .
- Press for more than 4 seconds.

Result: The user permission level switches to Adv. end user. Additional information is displayed and "+" is added to the menu title. The user permission level will stay in Adv. end user until set otherwise.

To set the user permission level to End user

- Press for more than 4 seconds.

Result: The user permission level switches to End user. The user interface will return to the default home screen.

To modify an overview setting

Example: Modify [1-01] from 15 to 20.

- Go to [A.8]: > Installer settings > Overview settings.
- Go to the corresponding screen of the first part of the setting by using the and button.



INFORMATION

An additional 0-digit is added to the first part of the setting when you access the codes in the overview settings.

Example: [1-01]: "1" will result in "01".

Overview settings				
01				
00	01	15	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

- Go to the corresponding second part of the setting by using the and button.

Overview settings				
01				
00	01	15	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

Result: The value to be modified is now highlighted.

- Modify the value by using the and button.

Overview settings				
01				
00	01	20	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

- Repeat previous steps if you have to modify other settings.
- Push to confirm the modification of the parameter.
- At installer settings menu, press to confirm the settings.

Installer settings	
The system will restart.	
OK	Cancel
OK Confirm Adjust	

Result: The system will restart.

5.2 Basic configuration

5.2.1 Quick wizard: Language / time and date

#	Code	Description
[A.1]	N/A	Language
[1]	N/A	Time and date

5.2.2 Quick wizard: Standard

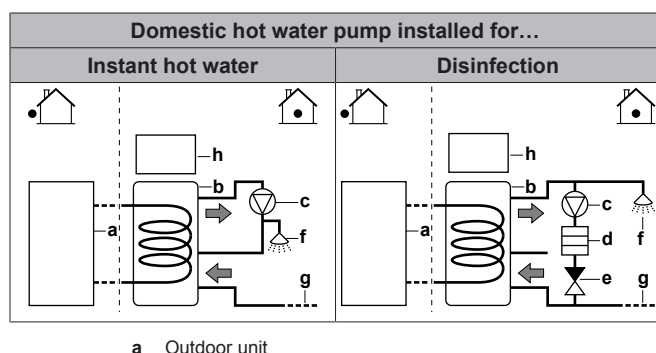
Space heating/cooling settings

#	Code	Description
[A.2.1.7]	[C-07]	Unit temperature control: <ul style="list-style-type: none"> 0 (LWT control): Unit operation is decided based on the leaving water temperature. 1 (Ext RT control): Unit operation is decided by the external thermostat. 2 (RT control): Unit operation is decided based on the ambient temperature of the user interface.
[A.2.1.8]	[7-02]	Number of water temperature zones: <ul style="list-style-type: none"> 0 (1 LWT zone): Main 1 (2 LWT zones): Main + additional
[A.2.1.9]	[F-0D]	Pump operation: <ul style="list-style-type: none"> 0 (Continuous): Continuous pump operation, regardless of thermo ON or OFF condition. 1 (Sample): When thermo OFF condition occurs, the pump runs every 5 minutes and the water temperature is checked. If the water temperature is below target, unit operation can start. 2 (Request): Pump operation based on request. Example: Using a room thermostat and thermostat creates thermo ON/OFF condition.
[A.2.1.B]	N/A	Only if there are 2 user interfaces: User interface location: <ul style="list-style-type: none"> At unit In room
[A.2.1.C]	[E-0D]	Glycol present: <ul style="list-style-type: none"> 0 (No)(default) 1 (Yes)

5.2.3 Quick wizard: Options

External domestic hot water pump

#	Code	Description
[A.2.2.A]	[D-02]	Domestic hot water pump: <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Secondary rtn): Installed for instant hot water 2 (Disinf. shunt): Installed for disinfection See also illustrations below.



- b Tank
- c Domestic hot water pump
- d Heater element
- e Non-return valve
- f Shower
- g Cold water
- h Control box

Remote outdoor sensor

#	Code	Description
[A.2.2.B]	[C-08]	External sensor (outdoor): <ul style="list-style-type: none"> 0 (No): NOT installed. 1 (Outdoor sensor): Remote outdoor sensor, connected to the outdoor unit. 2 (Room sensor): Remote indoor sensor, connected to option box RK2CB07CAV3.



INFORMATION

You can only connect either the remote indoor sensor or the remote outdoor sensor.

Control box RKCB07CAV3

#	Code	Description
[A.2.2.E.1]	[E-03]	Backup heater steps: <ul style="list-style-type: none"> 0 (default) 1 2
[A.2.2.E.2]	[5-0D]	BUH type: <ul style="list-style-type: none"> 1 (1P,(1/1+2)): 6 kW 1~ 230 V (default) 4 (3PN,(1/2)): 6 kW 3N~ 400 V (*9W) 5 (3PN,(1/1+2)): 9 kW 3N~ 400 V (*9W)

The system allows for the connection of 2 types of backup heater kits:

- RKMBUHCA3V3: 1~ 230 V - 3 kW backup heater
- RKMBUHCA9W1: Unified backup heater

Backup heater RKMBUHCA3V3 can only be configured to be a 3V3 backup heater. Unified backup heater RKMBUHCA9W1 can be configured in 4 ways:

- 3V3: 1~ 230 V, 1 step of 3 kW
- 6V3: 1~ 230 V, 1st step = 3 kW, 2nd step = 3+3 kW
- 6W1: 3N~ 400 V, 1st step = 3 kW, 2nd step = 3+3 kW
- 9W1: 3N~ 400 V, 1st step = 3 kW, 2nd step = 3+6 kW

To configure the backup heater (both RKMBUHCA3V3 and RKMBUHCA9W1), combine settings [E-03] and [5-0D]:

Backup heater configuration	[E-03]	[5-0D]
3V3	1	1 (1P,(1/1+2))
6V3	2	1 (1P,(1/1+2))
6W1	2	4 (3PN,(1/2))
9W1	2	5 (3PN,(1/1+2))

#	Code	Description
[A.2.2.E.4]	[E-05]	DHW operation: Can the system prepare domestic hot water? <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Yes): Installed

5 Configuration

#	Code	Description
[A.2.2.E.5]	[C-05]	<p>External room thermostat for the main zone:</p> <ul style="list-style-type: none"> 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convector can only send a thermo ON/OFF condition. No separation between heating or cooling demand. 2 (H/C request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition. <p>If there are two zones (main +additional), then only Thermo ON/OFF is possible.</p>
[A.2.2.E.6]	[C-06]	<p>External room thermostat for the additional zone:</p> <ul style="list-style-type: none"> 0: N/A 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convector can only send a thermo ON/OFF condition. No separation between heating or cooling demand. 2: N/A <p>If there are two zones (main +additional), then only Thermo ON/OFF is possible.</p>

Option box RK2CB07CAV3

#	Code	Description
[A.2.2.F.1]	[C-02]	<p>External backup heater source:</p> <ul style="list-style-type: none"> 0 (default – read only)
[A.2.2.F.2]	[C-09]	<p>Alarm output</p> <ul style="list-style-type: none"> 0 (Normally open): The alarm output will be powered when an alarm occurs. 1 (Normally closed): The alarm output will NOT be powered when an alarm occurs. This installer setting allows for a distinction between the detection of an alarm, and the detection of a power failure. <p>See also table below (Alarm output logic).</p>
[A.2.2.F.3]	[D-08]	<p>Optional external kWh meter 1:</p> <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)
[A.2.2.F.4]	[D-09]	<p>Optional external kWh meter 2:</p> <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)

#	Code	Description
[A.2.2.F.5]	[C-08]	<p>External sensor (indoor):</p> <ul style="list-style-type: none"> 0 (No): NOT installed. 1 (Outdoor sensor): Remote outdoor sensor, connected to the outdoor unit. 2 (Room sensor): Remote indoor sensor, connected to option box RK2CB07CAV3.



INFORMATION

You can only connect either the remote indoor sensor or the remote outdoor sensor.

#	Code	Description
[A.2.2.F.6]	[D-04]	<p>PCC by digital inputs:</p> <ul style="list-style-type: none"> 0 (No) 1 (Yes)

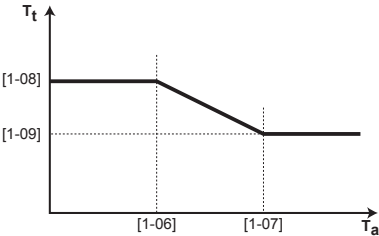
5.2.4 Quick wizard: Capacities (energy metering)

#	Code	Description
[A.2.3.1]	[6-02]	Booster heater capacity [kW]
[A.2.3.2]	[6-03]	Backup heater capacity (step 1) [kW]
[A.2.3.3]	[6-04]	Backup heater capacity (step 2) [kW]

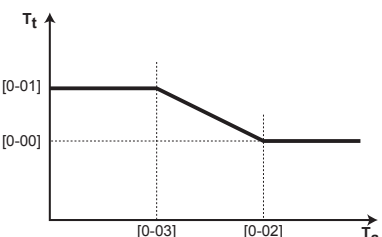
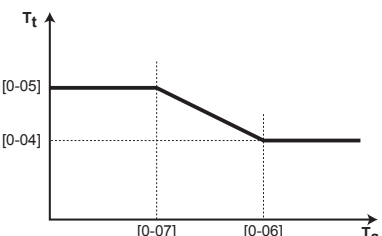
5.2.5 Space heating/cooling control

Leaving water temperature: Main zone

#	Code	Description
[A.3.1.1.1]	N/A	<p>Set point mode:</p> <ul style="list-style-type: none"> 0 (Fixed): Absolute 1 (Weather dep.): Weather-dependent 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[7.7.1.1]	[1-00] [1-01] [1-02] [1-03]	<p>Weather-dependent curve (heating):</p> <p> T_t [1-02] [1-03] [1-00] [1-01] T_a </p> <ul style="list-style-type: none"> T_t: Target leaving water temperature (main) T_a: Outdoor temperature

#	Code	Description
[7.7.1.2]	[1-06] [1-07] [1-08] [1-09]	Weather-dependent curve (cooling):  <ul style="list-style-type: none"> ▪ T_t: Target leaving water temperature (main) ▪ T_a: Outdoor temperature

Leaving water temperature: Additional zone

#	Code	Description
[A.3.1.2.1]	N/A	Set point mode: <ul style="list-style-type: none"> ▪ 0 (Fixed): Absolute ▪ 1 (Weather dep.): Weather-dependent ▪ 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) ▪ 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[7.7.2.1]	[0-00] [0-01] [0-02] [0-03]	Weather-dependent curve (heating):  <ul style="list-style-type: none"> ▪ T_t: Target leaving water temperature (additional) ▪ T_a: Outdoor temperature
[7.7.2.2]	[0-04] [0-05] [0-06] [0-07]	Weather-dependent curve (cooling):  <ul style="list-style-type: none"> ▪ T_t: Target leaving water temperature (additional) ▪ T_a: Outdoor temperature

Leaving water temperature: Delta T source

#	Code	Description
[A.3.1.3.1]	[9-09]	Heating: required temperature difference between entering and leaving water. In case a minimum temperature difference is required for the good operation of the heat emitters in heating mode.

#	Code	Description
[A.3.1.3.2]	[9-0A]	Cooling: required temperature difference between entering and leaving water. In case a minimum temperature difference is required for the good operation of the heat emitters in cooling mode.

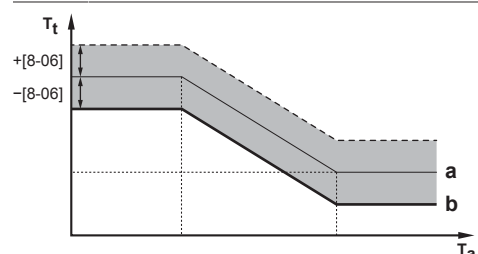
Leaving water temperature: Modulation

#	Code	Description
[A.3.1.1.5]	[8-05]	Leaving water temperature modulation: <ul style="list-style-type: none"> ▪ 0 (No): Disabled ▪ 1 (Yes): Enabled. The leaving water temperature is calculated according to the difference between desired and actual room temperature. This allows better matching of the heat pump capacity to actual required capacity and results in less start/stop cycles of the heat pump and more economic operation.
N/A	[8-06]	Leaving water temperature maximum modulation: 0°C~10°C (default: 3°C) Requires modulation to be enabled. This is the value by which the desired leaving water temperature is increased or lowered.



INFORMATION

When leaving water temperature modulation is enabled, the weather-dependent curve needs to be set to a higher position than [8-06] plus the minimum leaving water temperature setpoint required to reach a stable condition on the comfort setpoint for the room. To increase efficiency, modulation can lower the leaving water setpoint. By setting the weather-dependent curve to a higher position, it cannot drop below the minimum setpoint. Refer to the illustration below.



- a Weather-dependent curve
- b Minimum leaving water temperature setpoint required to reach a stable condition on the comfort setpoint for the room.

5 Configuration

Leaving water temperature: Emitter type

#	Code	Description
[A.3.1.1.7]	[9-0B]	<p>Reaction time of the system:</p> <ul style="list-style-type: none">0: Quick. Example: Small water volume and fan coils.1: Slow. Example: Large water volume, floor heating loops. <p>Depending on the system water volume and the heat emitters type, the heat up or cool down of a space can take longer. This setting can compensate for a slow or a quick heating/cooling system by adjusting the unit capacity during the heat up/cool down cycle.</p>

5.2.6 Domestic hot water control

#	Code	Description
[A.4.1]	[6-0D]	<p>Domestic hot water Type:</p> <ul style="list-style-type: none">0 (Reheat only): Only reheat operation is allowed.1 (Reheat + sched.): Same as 2, but between the scheduled heatup cycles, reheat operation is allowed.2 (Scheduled only): The domestic hot water tank can ONLY be heated according to a schedule.

#	Code	Description
[A.4.5]	[6-0E]	The maximum temperature that users can select for the domestic hot water. You can use this setting to limit the temperature at the hot water taps.



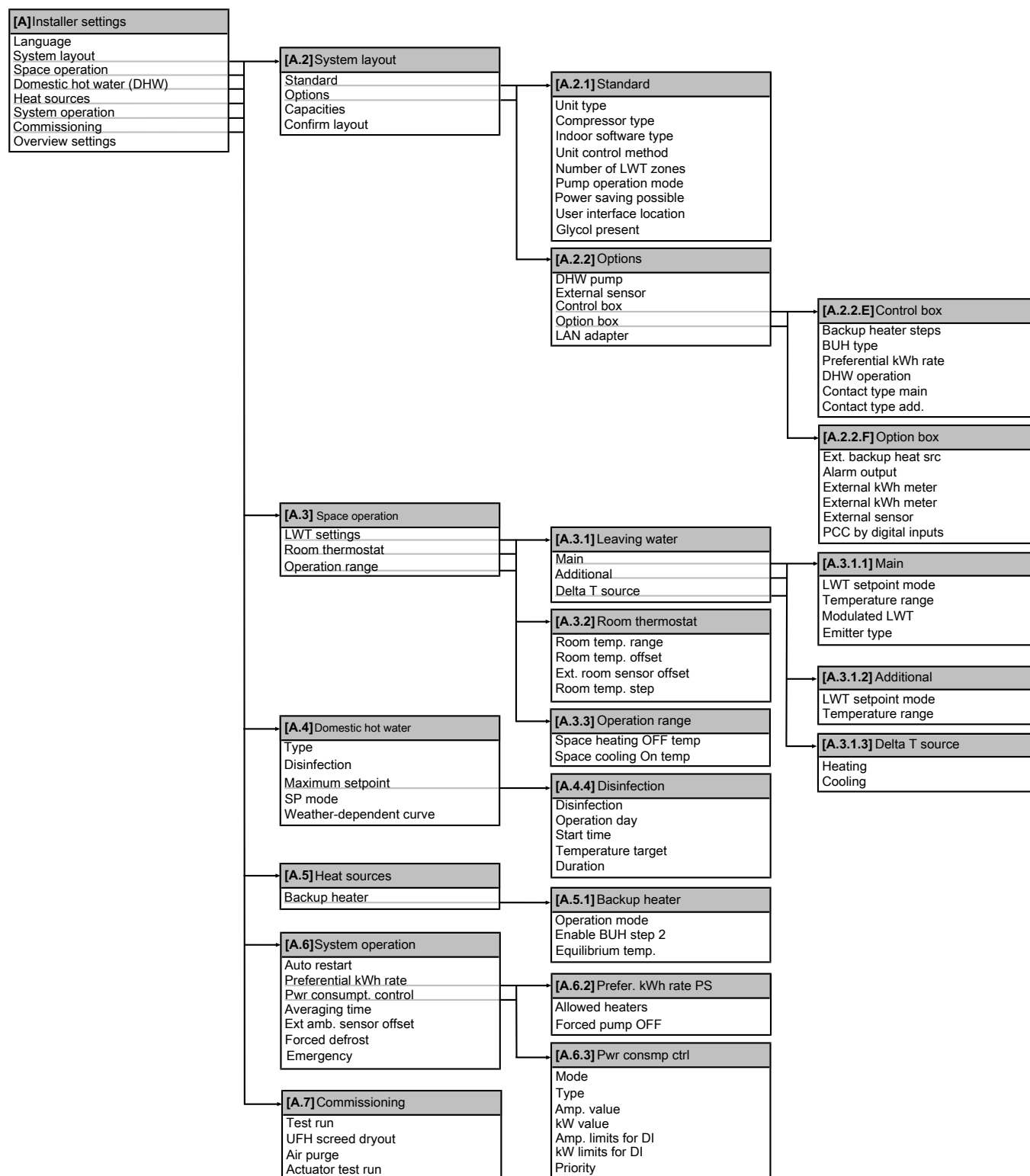
INFORMATION

There is a risk of space heating (cooling) capacity shortage/comfort problem (in case of frequent domestic hot water operation, frequent and long space heating/cooling interruption will happen) when selecting [6-0D]=0 ([A.4.1] Domestic hot water Type=Reheat only) in case of a domestic hot water tank without an internal booster heater.

5.2.7 Contact/helpdesk number

#	Code	Description
[6.3.2]	N/A	Number that users can call in case of problems.

5.3 Menu structure: Overview installer settings



INFORMATION

Depending on the selected installer settings and unit type, settings will be visible/invisible.

6 Commissioning

6 Commissioning



NOTICE

NEVER operate the unit without thermistors and/or pressure sensors/switches. Burning of the compressor might result.

6.1 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit MUST be closed, ONLY then can the unit be powered up.

Depending on the system layout, not all components may be available.

<input type="checkbox"/>	You read the complete installation instructions, as described in the installer reference guide .
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The control box is properly mounted.
<input type="checkbox"/>	The option box is properly mounted.
<input type="checkbox"/>	Only if you use the optional backup heater: The backup heater is properly mounted.
<input type="checkbox"/>	The following field wiring has been carried out according to the available documentation and the applicable legislation: <ul style="list-style-type: none">Between the local supply panel and the outdoor unitBetween the outdoor unit and the control boxBetween the control box and the option boxBetween the control box and the backup heaterBetween the local supply panel and the control boxBetween the local supply panel and the option boxBetween the outdoor unit and the valvesBetween the control box and the room thermostatBetween the control box and the domestic hot water tank
<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have NOT been bypassed.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the outdoor unit.
<input type="checkbox"/>	Only if you use the optional backup heater: Depending on the backup heater type, backup heater circuit breaker F1B (on the switch box of the backup heater) is turned ON.
<input type="checkbox"/>	Only for tanks with built-in booster heater: Booster heater circuit breaker F2B (on the switch box of the control box) is turned ON.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	There are no water leaks inside the outdoor unit.
<input type="checkbox"/>	The shut-off valves are properly installed and fully open.



The **pressure relief valve** purges water when opened.



The **minimum water volume** is guaranteed in all conditions. See "To check the water volume" in ["3.2 Preparing water piping" on page 4](#).



If **glycol** was added to the system, confirm the correct glycol concentration, and check if glycol setting [E-0D]=1.



NOTICE

- Make sure glycol setting [E-0D] matches the liquid inside the water circuit (0=water only, 1=water+glycol). If the glycol setting is NOT set correctly, the liquid inside the piping can freeze.
- When glycol is added to the system, but the glycol concentration is lower than prescribed, the liquid inside the piping can still freeze.



INFORMATION

The software is equipped with an "installer-on-site" mode ([4-0E]), that disables automatic operation by the unit. At first installation, setting [4-0E] is by default set to "1", meaning automatic operation is disabled. All protective functions are then disabled. If the user interface home pages are off, the unit will NOT operate automatically. To enable automatic operation and the protective functions, set [4-0E] to "0".

36 hours after the first power-on, the unit will automatically set [4-0E] to "0", ending "installer-on-site" mode and enabling the protective functions. If – after first installation – the installer returns to the site, the installer has to set [4-0E] to "1" manually.

6.2 Checklist during commissioning

<input type="checkbox"/>	The minimum flow rate is guaranteed in all conditions. See "To check the water volume and flow rate" in "3.2 Preparing water piping" on page 4 .
<input type="checkbox"/>	To perform an air purge .
<input type="checkbox"/>	To perform a test run .
<input type="checkbox"/>	To perform an actuator test run .
<input type="checkbox"/>	Underfloor screed dryout function The underfloor screed dryout function is started (if necessary).

6.2.1 To perform an air purge

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- Go to [A.7.3]: > Installer settings > Commissioning > Air purge.
- Set the type.
- Select Start air purge and press **OK**.
- Select OK and press **OK**.



NOTICE

The outdoor unit is equipped with a manual air purge valve. The air purge procedure requires manual action.



NOTICE

When purging air with the manual air purge valve of the unit, collect any fluid that might leak out of the valve. If this fluid is NOT collected, it might drip on internal components and damage the unit.



INFORMATION

- To purge air, use all air purge valves present in the system. This includes the manual air purge valve of the outdoor unit, as well as any field-supplied valves.
- If the system contains a backup heater, also use the air purge valve of the backup heater.
- If the system contains valve kit EKMBHBP1, it is required to – during the air purge – manually switch the position of the valve kit's 3-way valve by turning its knob, this to prevent air from remaining in the bypass. For more information, refer to the instruction sheet of the valve kit.

6.2.2 To perform a test run

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Set the user permission level to Installer. See ["To set the user permission level to Installer" on page 12](#).
- 2 Go to [A.7.1]: > Installer settings > Commissioning > Test run.
- 3 Select a test and press **OK**. **Example:** Heating.
- 4 Select OK and press **OK**.

Result: The test run starts. It stops automatically when done (±30 min). To stop it manually, press , select OK and press **OK**.



INFORMATION

When starting up the system in a cold climate, and NO backup heater kit was installed, it may be required to start up with a small water volume. To do this, gradually open the heat emitters. As a result, the water temperature will gradually rise. Monitor the inlet water temperature ([6.1.6] in the menu structure) and make sure it does NOT drop below 15°C.



INFORMATION

If 2 user interfaces are present, you can start a test run from both user interfaces.

- The user interface used to start the test run displays a status screen.
- The other user interface displays a "busy" screen. You cannot use the user interface as long as the "busy" screen is shown.

6.2.3 To perform an actuator test run

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Set the user permission level to Installer. See ["To set the user permission level to Installer" on page 12](#).
- 2 Make sure the room temperature control, the leaving water temperature control and the domestic hot water control are turned OFF via the user interface.
- 3 Go to [A.7.4]: > Installer settings > Commissioning > Actuator test run.
- 4 Select an actuator and press **OK**. **Example:** Pump.
- 5 Select OK and press **OK**.

Result: The actuator test run starts. It automatically stops when finished. To stop it manually, press , select OK and press **OK**.

Possible actuator test runs

- Booster heater test
- Backup heater (step 1) test
- Backup heater (step 2) test
- Pump test



INFORMATION

Make sure that all air is purged before executing the test run. Also avoid disturbances in the water circuit during the test run.

- 2-way valve test
- 3-way valve test
- Alarm output test
- Cooling/heating signal test
- Quick heat-up test
- Circulation pump test

6.2.4 To perform an underfloor heating screed dryout

Prerequisite: Make sure there is ONLY 1 user interface connected to your system to perform an underfloor heating screed dryout.

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Go to [A.7.2]: > Installer settings > Commissioning > UFH screed dryout.
- 2 Set a dryout program.
- 3 Select Start dryout and press **OK**.
- 4 Select OK and press **OK**.

Result: The underfloor heating screed dryout starts. It stops automatically when done. To stop it manually, press , select OK and press **OK**.



NOTICE

To perform an underfloor heating screed dryout, room frost protection needs to be disabled ([2-06]=0). By default, it is enabled ([2-06]=1). However, due to the "installer-on-site" mode (see "Checklist before commissioning"), room frost protection will be automatically disabled for 36 hours after the first power-on.

If the screed dryout still needs to be performed after the first 36 hours of power-on, manually disable room frost protection by setting [2-06] to "0", and KEEP it disabled until the screed dryout has finished. Ignoring this notice will result in cracking of the screed.



NOTICE

For the underfloor heating screed dryout to be able to start, make sure the following settings are met:

- [4-00]=1
- [C-02]=0
- [D-01]=0
- [4-08]=0
- [4-01]≠1

7 Hand-over to the user

Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- Fill in the installer setting table (in the operation manual) with the actual settings.
- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation at the URL mentioned earlier in this manual.
- Explain the user how to properly operate the system and what to do in case of problems.
- Show the user what to do for the maintenance of the unit.
- Explain the user about energy saving tips as described in the operation manual.


7.1 About locking and unlocking

If required, it is possible to lock the buttons of the main user interface, making it impossible for the user to operate it. For the user to be able to change setpoint temperatures, the simplified user interface or an external room thermostat is then required.


You can use the following locking modes:

- Function lock: Locks a specific function to prevent people from changing its settings.
- Button lock: Locks all buttons to prevent users from changing settings.

To activate or deactivate a function lock

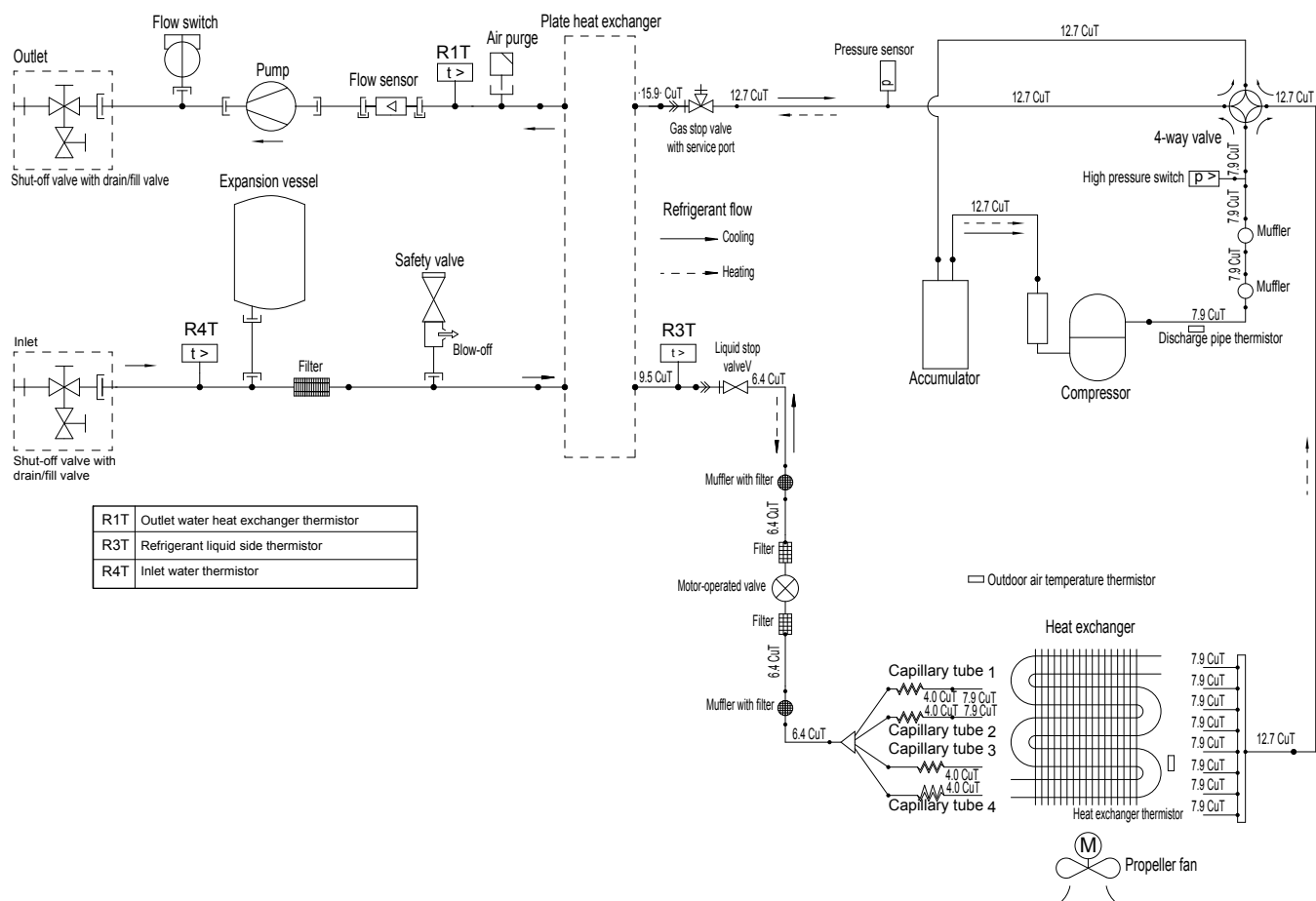
- 1 Press  to go to the menu structure.
- 2 Press **OK** for more than 5 seconds.
- 3 Select a function and press **OK**.
- 4 Select Lock or Unlock, and press **OK**.

To activate or deactivate button lock

- 1 Press  to go to one of the home pages.
- 2 Press **OK** for more than 5 seconds.

8 Technical data

8.1 Piping diagram: Outdoor unit



3D097222-1

8 Technical data

8.2 Wiring diagram: Outdoor unit

See the internal wiring diagram supplied with the unit (on the inside of the outdoor unit switch box cover). The abbreviations used are listed below.

Outdoor unit: compressor module

C110~C112	Capacitor
DB1, DB2, DB401	Rectifier bridge
DC_N1, DC_N2	Connector
DC_P1, DC_P2	Connector
DCP1, DCP2,	Connector
DCM1, DCM2	Connector
DP1, DP2	Connector
E1, E2	Connector
E1H	Drain pan heater
FU1~FU5	Fuse
HL1, HL2, HL402	Connector
HN1, HN2, HN402	Connector
IPM1	Intelligent power module
L	Live
LED 1~LED 4	Indication lamps
LED A, LED B	Pilot lamp
M1C	Compressor motor
M1F	Fan motor
MR30, MR306, MR307, MR4	Magnetic relay
MRM10, MRM20	Magnetic relay
MR30_A, MR30_B	Connector
N	Neutral
PCB1	Printed circuit board (main)
PCB2	Printed circuit board (inverter)
PCB3	Printed circuit board (service)
Q1DI	Earth leakage circuit breaker
Q1L	Overload protector
R1T	Thermistor (discharge)
R2T	Thermistor (heat exchanger)
R3T	Thermistor (air)
S1NPH	Pressure sensor
S1PH	High pressure switch
S2~S503	Connector
SA1	Surge arrestor
SHEET METAL	Terminal strip on fixed plate
SW1, SW3	Push buttons
SW2, SW5	DIP switches
U	Connector
V	Connector
V2, V3, V401	Varistor
W	Connector
X11A, X12A	Connector
X1M, X2M	Terminal strip
Y1E	Electronic expansion valve coil
Y1R	Reversing solenoid valve coil
Z1C~Z4C	Ferrite core
⋮ ■ ■ ■ ⋮	Field wiring
□ □ □ □	Terminal strip

	Connector
	Terminal
	Protective earth
BLK	Black
BLU	Blue
BRN	Brown
GRN	Green
ORG	Orange
PPL	Purple
RED	Red
WHT	White
YLW	Yellow

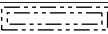
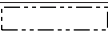
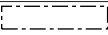

Outdoor unit: hydro module

English	Translation
(1) Connection diagram	(1) Connection diagram
Compressor switch box	Compressor switch box
Control box	Control box
External outdoor ambient sensor option	External outdoor ambient sensor option
Hydro switch box supplied from compressor module	Hydro switch box supplied from compressor module
Hydro switch box	Hydro switch box
Indoor	Indoor
NO valve	Normal open valve
Normal kWh rate power supply	Normal kWh rate power supply
Only for normal power supply (standard)	Only for normal power supply (standard)
Only for preferential kWh rate power supply (compressor)	Only for preferential kWh rate power supply (compressor)
Outdoor	Outdoor
Preferential power supply	Preferential kWh rate power supply
Use normal kWh rate power supply for hydro switch box	Use normal kWh rate power supply for hydro switch box
(2) Hydro switch box layout	(2) Hydro switch box layout
(3) Notes	(3) Notes
X4M	Main terminal
-----	Earth wiring
15	Wire number 15
-----	Field supply
①	Several wiring possibilities
	Option
	Wiring depending on model
	Switch box
	PCB
(4) Legend	(4) Legend
A1P	Main PCB
A2P	Current loop PCB
E6H	Plate heat exchanger heater tape
E7H	Expansion vessel heater
Q*DI	# Earth leakage circuit breaker

English		Translation
R6T	*	External outdoor ambient sensor option
TR1		Power supply transformer
X*M		Terminal strip
X*Y		Connector
PCB3		Service PCB
M2S	#	Shut-off valve

*: Optional
 #: Field supply

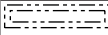
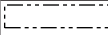
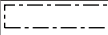
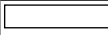
Control box

English		Translation
(1) Connection diagram		(1) Connection diagram
BUH option		Backup heater option
Control box		Control box
DHW option		Domestic hot water option
DHW pump		Domestic hot water pump
Dual set point application (refer to installation manual)		Dual set point application (refer to installation manual)
Heat pump convector		Heat pump convector
Hydro switch box		Hydro switch box
NO valve		Normal open valve
Only for ***		Only for ***
Only for ext. sensor (floor or ambient)		Only for external sensor (floor or ambient)
Only for wired On/OFF thermostat		Only for wired On/OFF thermostat
Only for wireless On/OFF thermostat		Only for wireless On/OFF thermostat
Option box		Option box
Preferential kWh rate power supply contact: 5 V DC detection (voltage supplied by PCB)		Preferential kWh rate power supply contact: 5 V DC detection (voltage supplied by PCB)
(2) Notes		(2) Notes
X1M		Main terminal
-----		Earth wiring
15		Wire number 15
-----		Field supply
①		Several wiring possibilities
		Option
		Wiring depending on model
		Switch box
		PCB
(3) Control switch box layout		(3) Control switch box layout
(4) Legend		(4) Legend
A3P	*	On/OFF thermostat (PC=power circuit)
A3P	*	Heat pump convector
A4P	*	Extension PCB (control, optional)
A5P		User interface PCB
A7P	*	Receiver PCB (wireless On/OFF thermostat)
F2B	*	Overcurrent fuse booster heater
K3M	*	Contacteur booster heater
M2P	#	Domestic hot water pump
M2S	#	Shut-off valve

English		Translation
M3S		3-way valve for domestic hot water
M4S	*	Valve kit
Q*DI	#	Earth leakage circuit breaker
Q2L/Q3L	*	Thermal protector booster heater
R1T (A3P)	*	Ambient sensor On/OFF thermostat
R2T (A3P)	*	External sensor (floor or ambient)
R5T	*	Domestic hot water thermistor
S1S	#	Preferential kWh rate power supply contact
X*M/K1		Terminal strip
X*Y		Connector
K1A		Relay for heating
K2A		Relay for cooling

*: Optional
 #: Field supply

Control box option: backup heater

English		Translation
(1) Connection diagram		(1) Connection diagram
BUH option		Backup heater option
Control box		Control box
Only for ***		Only for ***
(2) Notes		(2) Notes
-----		Earth wiring
15		Wire number 15
-----		Field supply
①		Several wiring possibilities
		Option
		Wiring depending on model
		Switch box
		PCB
(3) BUH kit switch box		(3) BUH kit switch box
(4) Legend		(4) Legend
F1B		Overcurrent fuse backup heater
K1R		Relay backup heater (step 1)
K2R		Relay backup heater (step 2) (only for *9W)
K1M		Contacteur backup heater (step 1)
K2M		Contacteur backup heater (step 2) (only for *9W)
K5M		Safety contacteur backup heater (only for *9W)
Q*DI	#	Earth leakage circuit breaker
Q1L		Thermal protector backup heater
R2T		Outlet backup heater thermistor
X*M		Thermistor strip
X*Y		Connector

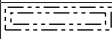
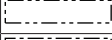
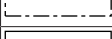
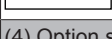
*: Optional
 #: Field supply

Control box option: option box

English		Translation
(1) Connection diagram		(1) Connection diagram
Alarm output		Alarm output
Control box		Control box

8 Technical data

English	Translation
Electric pulse meter inputs: 5 V DC pulse detection (voltage supplied by PCB)	Electric pulse meter inputs: 5 V DC pulse detection (voltage supplied by PCB)
Ext. heat source	External heat source
External indoor ambient sensor option	External indoor ambient sensor option
Indoor	Indoor
Max. load	Maximum load
Max. voltage	Maximum voltage
Min. load	Minimum load
Option box	Option box
Power limitation digital inputs: 5 V DC detection (voltage supplied by PCB)	Power limitation digital inputs: 5 V DC detection (voltage supplied by PCB)
Space C/H On/OFF output	Space cooling/heating On/OFF output
(2) Legend	
A4P	Extension PCB (control, optional)
Q*DI	# Earth leakage circuit breaker
R6T	* External indoor ambient sensor option

English	Translation
S1P	# Digital power limitation input 1
S2P	# Digital power limitation input 2
S3P	# Digital power limitation input 3
S4P	# Digital power limitation input 4
S5P-S6P	# Electrical meters
X*M	Terminal strip
X*Y	Connector
(3) Notes	
X1M	Main terminal
-----	Earth wiring
15	Wire number 15
-----	Field supply
①	Several wiring possibilities
	Option
	Wiring depending on model
	Switch box
	PCB
(4) Option switch box layout	

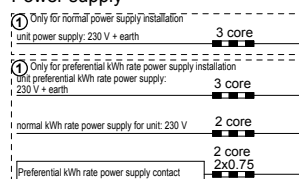
*: Optional
#: Field supply

Electrical connection diagram

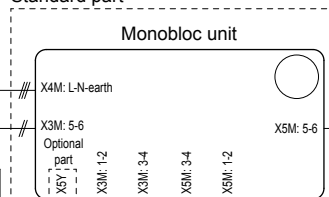
Notes:

- In case of signal cable: keep minimum distance to power cables > 5 cm
- Available heaters: see combination table

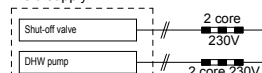
Power supply



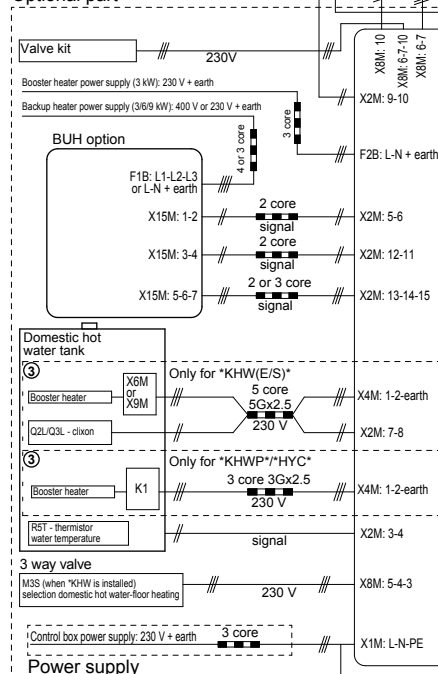
Standard part



Field supply



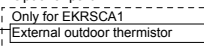
Optional part



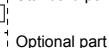
Typical configuration

		2 low voltage wires
		Standard: 4 low voltage wires Optional: 4 high voltage wires
		Only for "DLQ" Standard: 4 low voltage wires Optional: 4 high voltage wires Inside: 6 or 7 wires to BUH
		Only for "BLQ" Standard: 4 low voltage wires Optional: 5 high voltage wires Inside: 6 or 7 wires to BUH Valve kit: 3 wires

Optional part

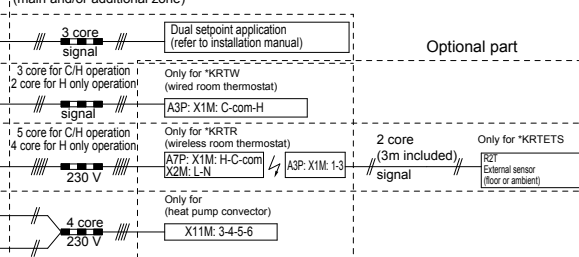


Standard part



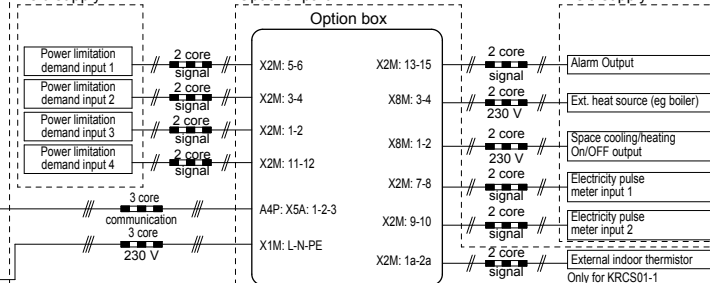
Optional part

External room thermostat / Heat pump convactor (main and/or additional zone)



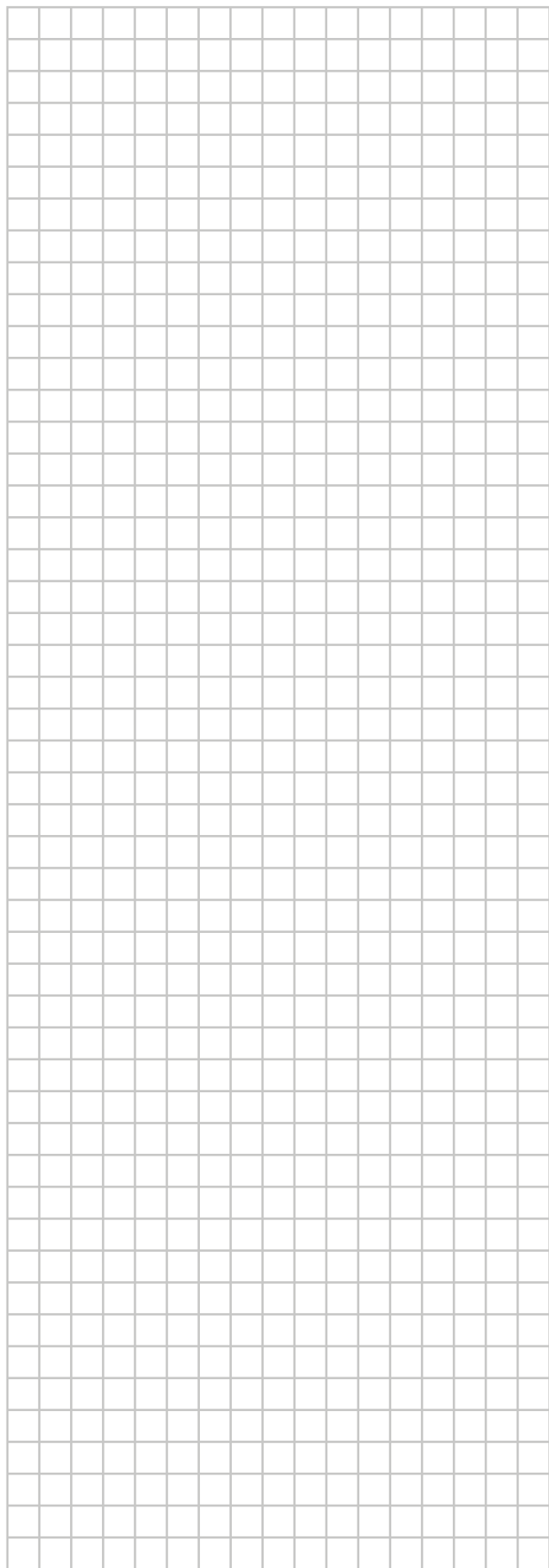
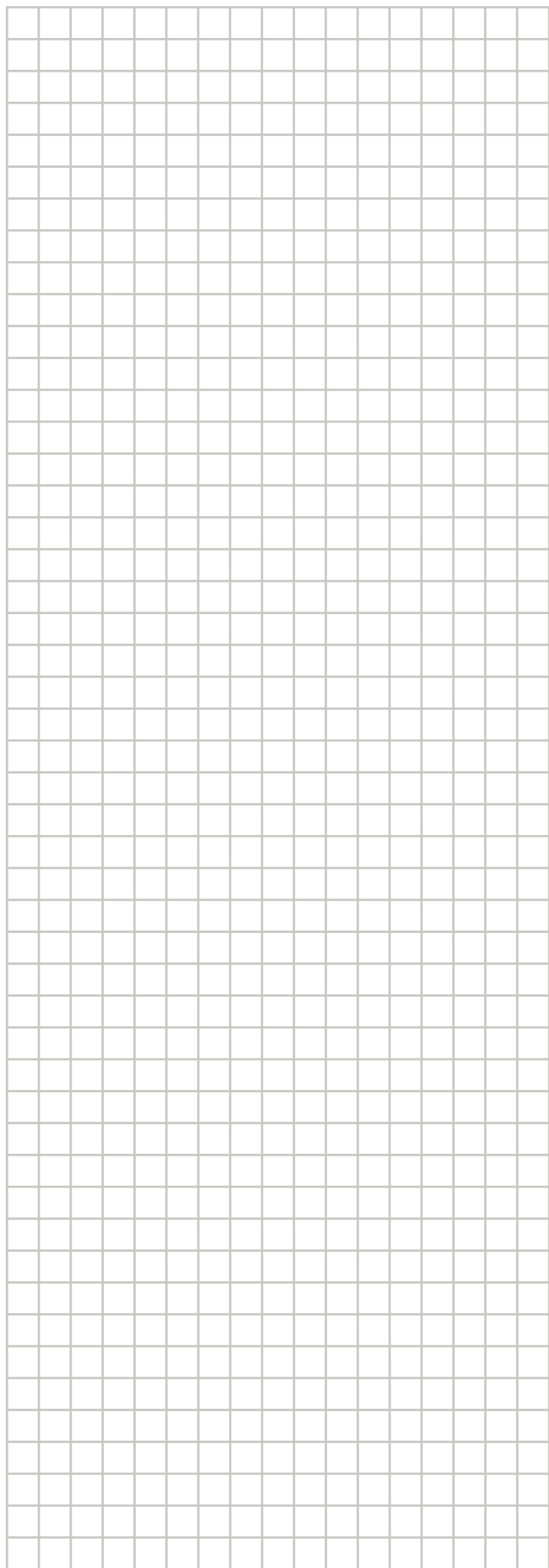
Optional part

Field supply



4D09752-1C







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