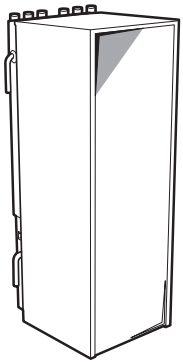
ROTEX

Installation manual

ROTEX HPU ground



RGSQH10S18AA9W

Installation manual
ROTEX HPU ground

English

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING

CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OVERENSSTEMMELSESERKLÆRING
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE

CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ

CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI
CE - DECLARAŢIE-DE-CONFORMITATE

CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON
CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ

CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY
CE - UYGUNLUK-BEYANI

ROTEX

01 (GB) declares under its sole responsibility that the equipment to which this declaration relates:
02 (D) erklärt auf seine alleinige Verantwortung daß die Ausrüstung für die diese Erklärung bestimmt ist:
03 (F) déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:
04 (NL) verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de apparatuur waarop deze verklaring betrekking heeft:
05 (E) declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
06 (I) dichiara sotto la propria responsabilità che gli apparecchi a cui è riferita questa dichiarazione:
07 (GR) δηλώνει με αποκλειστική της ευθύνη ότι ο εξοπλισμός στον οποίο αναφέρεται η παρούσα δήλωση:
08 (P) declara sob sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:
09 (RUS) заявляет, исключительно под свою ответственность, что оборудование, к которому относится настоящее заявление:
10 (DK) erklærer under eneansvarlig, at udstyret, som er omfattet af denne erklæring:
11 (S) deklarerar i egenskap av huvudansvarig, att utrustningen som berörs av denna deklaration innebär att:
12 (N) erklærer et fullstendig ansvar for at det utstyr som berøres av denne deklarasjon innebærer at:
13 (FIN) ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat laitteet
14 (CZ) prohlašuje ve své plné odpovědnosti, že zařízení, k němuž se toto prohlášení vztahuje:
15 (HR) izjavljuje pod isključivo vlastitom odgovornošću da oprema na koju se ova izjava odnosi:
16 (H) teljes felelőssége tudatában kijelenti, hogy a berendezések, melyekre e nyilatkozat vonatkozik:
17 (PL) deklaruje na własną i wyłączną odpowiedzialność, że urządzenia, których ta deklaracja dotyczy:
18 (RO) declară pe proprie răspundere că echipamentele la care se referă această declaraţie:
19 (SLO) z vso odgovornostjo izjavlja, da je oprema naprav, na katero se izjava nanaša:
20 (EST) kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluv varustus:
21 (BG) декларира на своя отговорност, че оборудването, за което се отнася тази декларация:
22 (LT) visiška savo atsakomybe skelbia, kad įranga, kuriai taikoma ši deklaracija:
23 (LV) ar pilnu atbildību apliecina, ka tālāk aprakstītās iekārtas, uz kurām attiecas šī deklarācija:
24 (SK) vyhlasuje na vlastnú zodpovednosť, že zariadenie, na ktoré sa vzťahuje toto vyhlásenie:
25 (TR) tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu donanımının aşağıdaki gibi olduğunu beyan eder:

RGSQH10S18AA9W,

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 der/den folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) 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(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
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 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutssetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, 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:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), 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 v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:
25 ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:

EN60335-2-40,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 съгласно клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održiavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

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

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.
25 Değiştirilmiş halleriyle Yönetmelikler.

01 **Note*** as set out in **<A>** and judged positively by **<B>** according to the **Certificate <C>**.
02 **Hinweis*** wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat <C>**.
03 **Remarque*** tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat <C>**.
04 **Bemerk*** zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat <C>**.
05 **Nota*** como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado <C>**.
06 **Nota*** delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato <C>**.
07 **Σημείωση*** όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό <C>**.
08 **Nota*** tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado <C>**.
09 **Примечание*** как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству <C>**.
10 **Bemærk*** som anført i **<A>** og positivt vurderet af **<B>** i henhold til **Certifikat <C>**.
11 **Information*** enligt **<A>** och godkänts av **<B>** enligt **Certifikatet <C>**.
12 **Merk*** som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat <C>**.
13 **Huom*** jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin <C>** mukaisesti.
14 **Poznámka*** jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením <C>**.
15 **Napomena*** kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu <C>**.
16 **Megjegyzés*** a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
17 **Uwaga*** zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem <C>**.
18 **Notă*** aşa cum este stabilit în **<A>** şi apreciat pozitiv de **<B>** în conformitate cu **Certificatul <C>**.
19 **Opomba*** kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom <C>**.
20 **Märkus*** nagu on näidatud dokumendis **<A>** ja heaks kiidetud **<B>** järgi vastavalt **sertifikaadile <C>**.
21 **Забележка*** както е изложено в **<A>** и оценено положително от **<B>** съгласно **Сертификата <C>**.
22 **Pastaba*** kaip nustatyta **<A>** ir kaip teigiamai nuspręsta **<B>** pagal **Sertifikatą <C>**.
23 **Piezīmes*** kā norādīts **<A>** un atbilstoši **<B>** pozitīvajam vērtējumam saskaņā ar **sertifikātu <C>**.
24 **Poznámka*** ako bolo uvedené v **<A>** a pozitívne zistené **<B>** v súlade s **osvedčením <C>**.
25 **Not*** **<A>**'da belirtildiği gibi ve **<C>** **Sertifikasına** göre **<B>** tarafından olumlu olarak değerlendirildiği gibi.

<A>	**TCF.025E19/07-2013**
<B>	**DEKRA (NB0344)**
<C>	**2082543.0551-QUA/EMC**

3P351751-2C

ROTEX Heating Systems GmbH
Langwiesenstraße 10 · D-74363 Güglingen

Georg Blümel
Managing Director
1st of April 2016

ROTEX

Table of Contents

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 indoor unit)
- **Indoor unit installation manual:**
  - Installation instructions
  - Format: Paper (in the box of the indoor unit)
- **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 indoor 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.

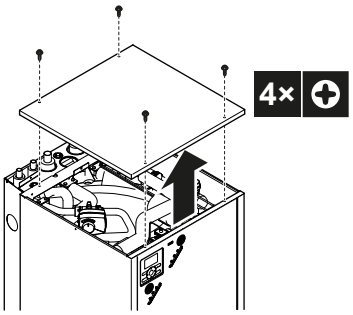
2 About the box

2.1 Indoor unit

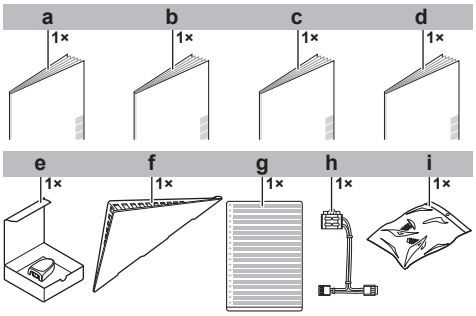
2.1.1 To remove the accessories from the indoor unit

1 Remove the screws at the top of the unit.

2 Remove the top panel.



3 Remove the accessories.



a General safety precautions
b Addendum book for optional equipment
c Installation manual
d Operation manual
e Remote outdoor sensor
f User interface kit cover
g Multilingual fluorinated greenhouse gases label
h Cable for brine pressure switch connection
i 2 screws for fixing the user interface.

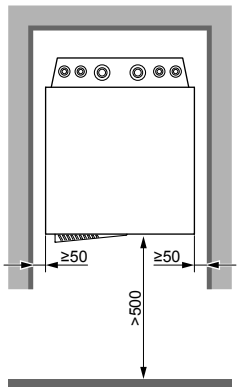
4 Reinstall the top panel.

3 Preparation

3.1 Preparing the installation site

3.1.1 Installation site requirements of the indoor unit

- Mind the following spacing installation guidelines:



(mm)

- The indoor unit is designed for indoor installation only and for ambient temperatures ranging from 5~30°C.

3.2 Preparing 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 of the space heating circuit and brine circuit

Minimum water volume

Check that the total water volume per circuit in the installation is minimum 20 litre, the internal water volume of the indoor unit NOT included.

INFORMATION

If a minimum heating load of 1 kW can be guaranteed and setting [9-04] is changed by the installer from 1 to 4°C, the minimum water volume can be lowered to 10 litre.

INFORMATION

In critical processes, or in rooms with a high heat load, extra water might be required.

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

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 during backup heater operation
12 l/min

See the recommended procedure as described in "6.2 Checklist during commissioning" on page 20.

3.3 Preparing electrical wiring

3.3.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
Indoor unit power supply			
1	Power supply for E1 and E3	3+N + GND	(a)
2	Power supply for E2	2	(c)
4	Preferential kWh rate power supply (voltage free contact)	2	(d)
5	Normal kWh rate power supply	2	6.3 A
User interface			
6	User interface	2	(e)
Optional equipment			
12	Room thermostat	3 or 4	100 mA(b)
13	Outdoor ambient temperature sensor	2	(b)

Item	Description	Wires	Maximum running current
14	Indoor ambient temperature sensor	2	(b)
15	Heat pump convector	4	100 mA(b)
Field supplied components			
16	Shut-off valve	2	100 mA(b)
17	Electricity meter	2 (per meter)	(b)
18	Domestic hot water pump	2	(b)
19	Alarm output	2	(b)
20	Changeover to external heat source control	2	(b)
22	Power consumption digital inputs	2 (per input signal)	(b)
23	Safety thermostat	2	(d)

(a) Refer to name plate on unit.
(b) Minimum cable section 0.75 mm².
(c) Cable section 2.5 mm².
(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) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual user interface connection.

NOTICE

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

4 Installation

4.1 Opening the units

4.1.1 To open the indoor unit

1 Loosen and remove the screws at the bottom of the unit.

2 Push on the button at the bottom of the front plate.

WARNING: Sharp edges

Take the front plate on the upper part instead of the lower part. Watch your fingers, there are sharp edges on the lower part of the front plate.

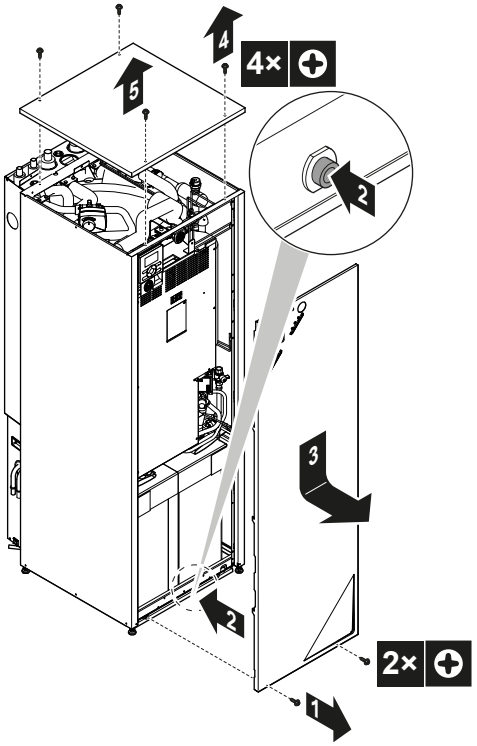
3 Slide the front panel of the unit downwards and remove it.

CAUTION

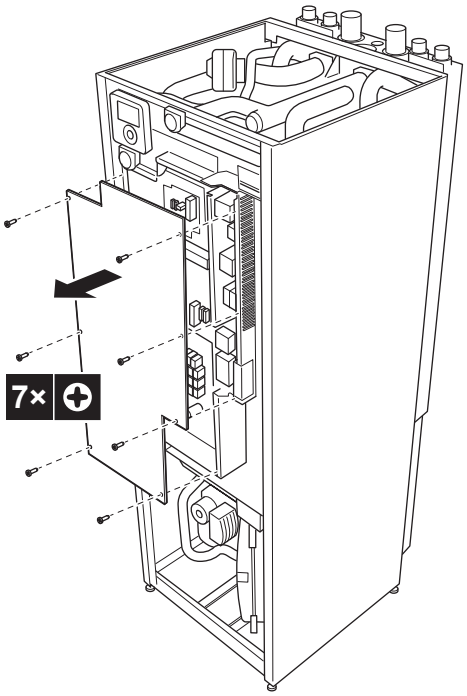
The front panel is heavy. Be careful NOT to jam your fingers when opening or closing the unit.

4 Loosen and remove the 4 screws that fix the top panel.

5 Remove the top panel from the unit.



4.1.2 To open the switch box cover of the indoor unit

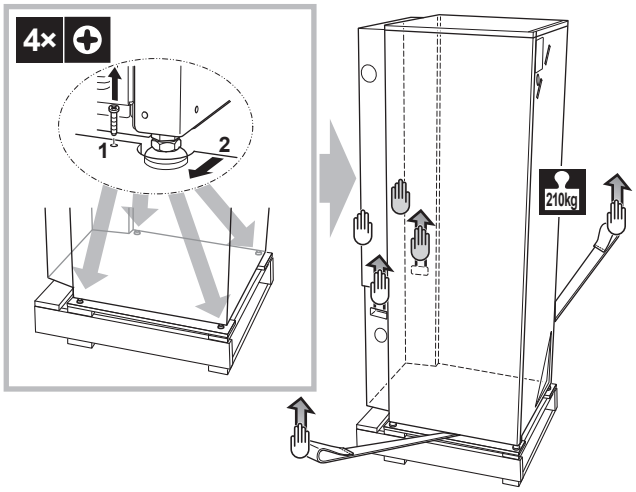


4.2 Mounting the indoor unit

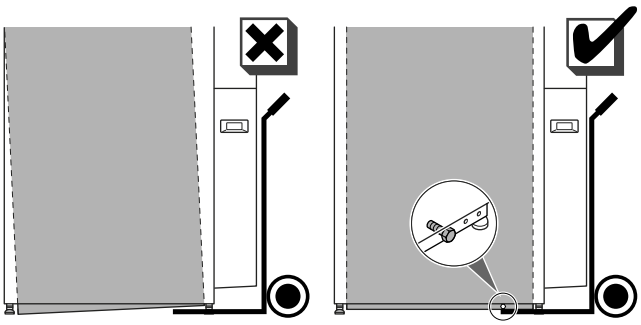
4.2.1 To install the indoor unit

1 Bring the unit on the pallet as close as possible to its installation place.

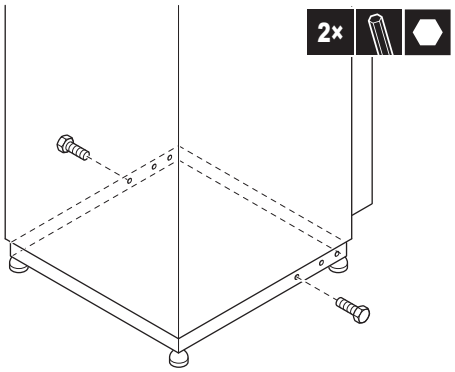
2 Lift the indoor unit from the pallet and place it on the floor.



3 Slide the indoor unit into position. Make sure that the side support bolts are present when handling the unit.

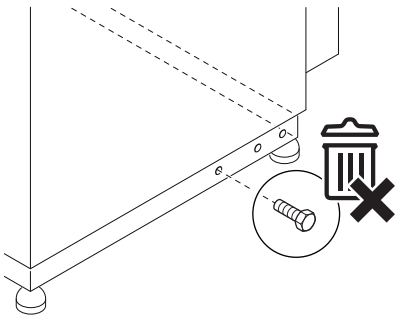


4 Unlink the heat pump module from the outer frame. ONLY remove the side support bolts!

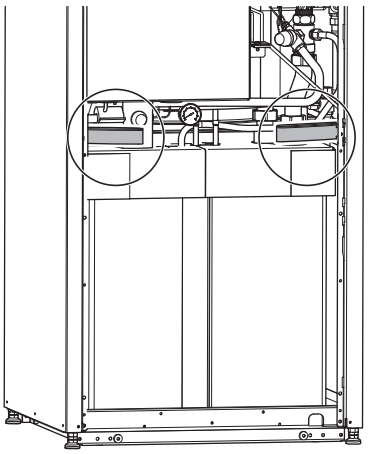


NOTICE

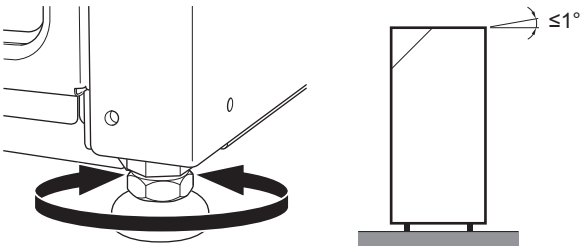
Do NOT throw away any bolts. They need to be re-inserted when transport or heavy manipulation is required.



5 Open the front plate of the unit. If needed, the nylon bands for lifting can be used.



6 Adjust the height of the 4 leveling feet of the outer frame to compensate for floor irregularities. The maximum allowed deviation is 1°.



NOTICE

To avoid structural damage on unit, ONLY move the unit when levelling feet are at their lowest position.

NOTICE

For optimum sound reduction, carefully check if there is no gap between the bottom frame and the floor.

7 Adjust the height of the 2 front leveling feet of the inner frame to compensate for irregularities.

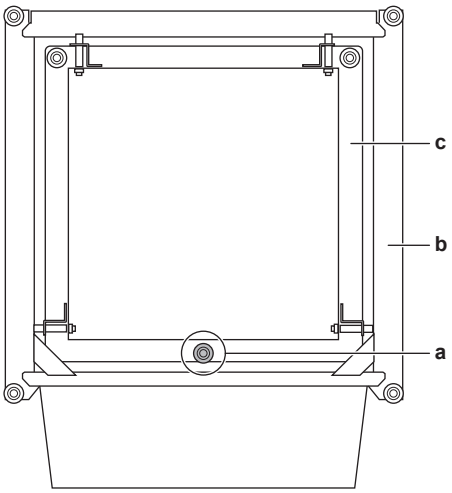
CAUTION

Check that the heat pump module does NOT touch the outer casing.

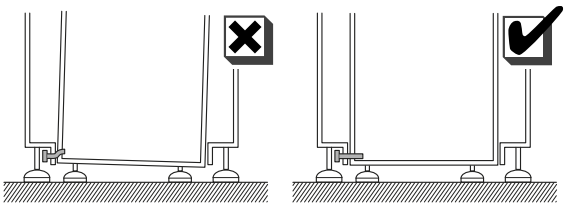
NOTICE

Check if the front support bolts remain levelled and are NOT stressed. The support feet from outer (b) and inner frame (c) MUST be adjusted so that those front bolts remain level. Do NOT adjust support foot (a)!

Bottom view:



Side view:

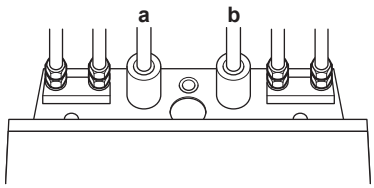


INFORMATION

To check if the front support bolts are not stressed, loosen them partly and fix them again afterwards.

4.3 Connecting the brine piping

4.3.1 To connect the brine piping



a Brine out
b Brine in

NOTICE

To facilitate service and maintenance, it is recommended to install shut-off valves as close as possible to the inlet and outlet of the unit.

4.3.2 To fill the brine circuit

WARNING

Before, during and after filling carefully check the brine circuit for leakage.

WARNING

Temperature of the fluid running through the evaporator can become negative. It MUST be protected against freezing. Refer to setting [A-04] in "5.2.2 Quick wizard: Standard" on page 15.

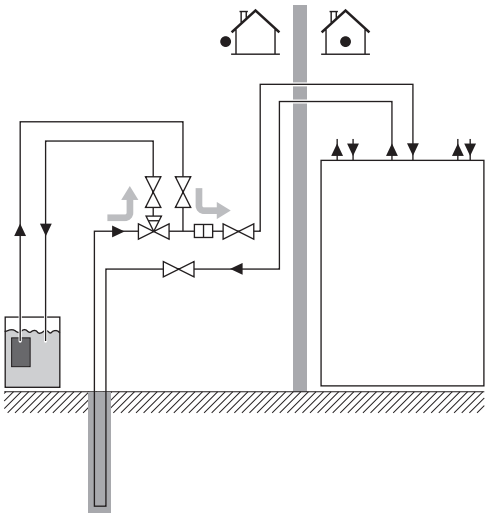
INFORMATION

The materials used in the units brine circuit are chemically resistant to the following anti-freeze fluids:

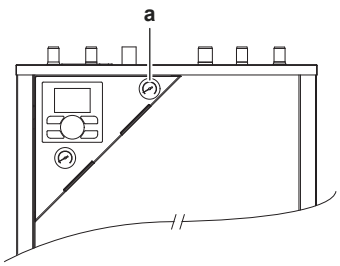
- 40 mass% propylene glycol
- 29 mass% ethanol

1 Connect the unit to the field supplied brine filling system.

2 Position the 3-way valve correctly.



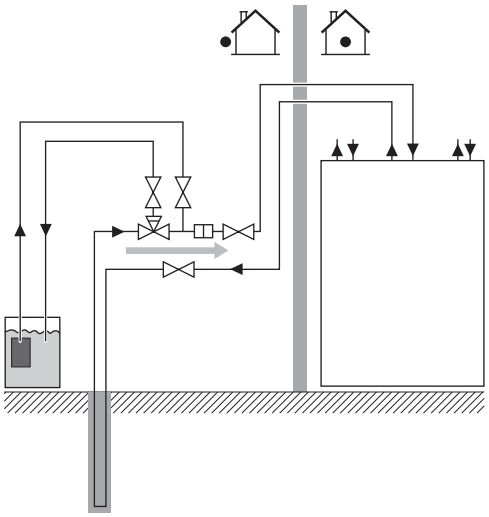
3 Fill the circuit with brine until the manometer indicates a pressure of ±2.0 bar.



a Brine manometer

4 Purge as much air as possible from the brine circuit. For instructions, see "6 Commissioning" on page 20.

5 Return the 3-way valve to its original position.



4.3.3 To insulate the brine piping

The piping in the complete brine circuit MUST be insulated to prevent reduction of the heating capacity.

Consider that the brine circuit piping inside the house can/will condensate. Foresee adequate insulation for these pipes.

4.4 Connecting the water piping

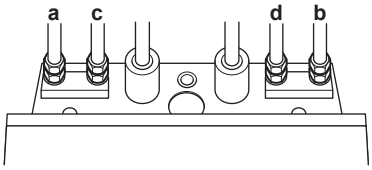
4.4.1 To connect the water piping

NOTICE

Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit.

1 Connect the domestic hot water in and out pipes to the indoor unit.

2 Connect the space heating in and out pipes to the indoor unit.



a Space heating water out
b Space heating water in
c Domestic hot water out
d Domestic cold water in (cold water supply)

NOTICE

It is recommended to install shut-off valves to cold water in and hot water out connections. Shut-off valves are field supplied.

NOTICE

Install air purge valves at all local high points.

NOTICE

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.

4.4.2 To connect the recirculation piping

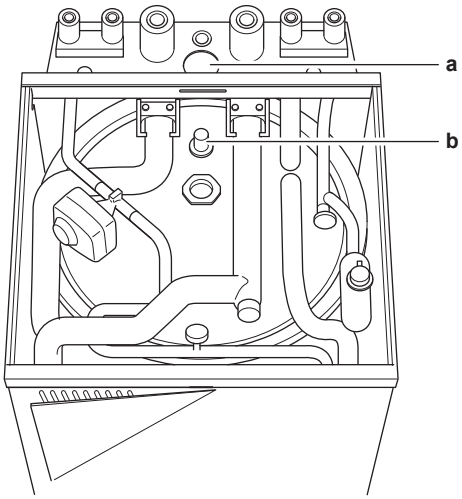
Prerequisite: Only required if you need recirculation in your system.

1 Loosen and remove the screws at the bottom of the unit.

2 Slide the front panel of the unit downwards and remove it.

3 Loosen and remove the 4 screws that fix the top panel.

4 Remove the top panel from the unit.



a Knock-out hole
b Connection for recirculation piping

5 Remove the knock-out hole at the backside of the unit.

6 Connect the recirculation piping to the recirculation connection and route the piping through the knock-out hole at the backside of the unit.

7 Re-attach the insulation and casing.

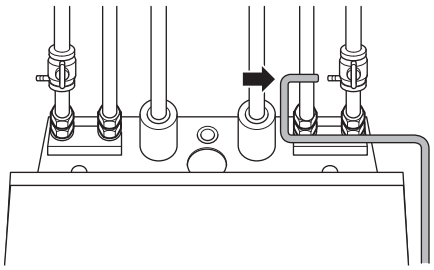
4.4.3 To connect the drain hose

Condensate can form on the brine components inside the compressor department of the unit. The unit contains a drain pan. Depending on room ambient temperature, room humidity and operation condition, the drain pan can overflow. A drain hose is supplied with the unit.

The drain hose is routed to the backside on the left, close to the bottom of the unit. A field supplied drain pump might be needed to pump the water away to the field drain.

4.4.4 To fill the space heating circuit

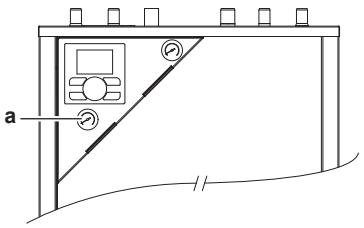
1 Connect the water supply hose to the fill valve (field supply).



2 Open the fill valve.

3 Make sure that the automatic air purge valve is open (at least 2 turns).

4 Fill the circuit with water until the manometer indicates a pressure of ±2.0 bar.



a Water manometer

5 Purge as much air as possible from the water circuit.

NOTICE

- Air in the water circuit can cause malfunctioning of the backup heater. During filling, it may not be possible to remove all the air from the circuit. Remaining air will be removed through the automatic air purge valves during the initial operating hours of the system. Additional filling with water afterwards may be required.
- To purge the system, use the special function as described in the chapter "6 Commissioning" on page 20. This function should be used to purge the heat exchanger coil of the domestic hot water tank.

6 Close the fill valve.

7 Disconnect the water supply hose from the fill valve.

4.4.5 To fill the domestic hot water tank

1 Open every hot water tap in turn to purge air from the system pipe work.

2 Open the cold water supply valve.

3 Close all water taps after all air is purged.

4 Check for water leaks.

5 Manually operate the field-installed pressure relief valve to ensure a free water flow through the discharge pipe.

4.4.6 To insulate the water piping

The piping in the complete water circuit MUST be insulated to prevent reduction of the heating capacity.

4.5 Connecting the electrical wiring

DANGER: RISK OF ELECTROCUTION

WARNING

ALWAYS use multicore cable for power supply cables.

4.5.1 About electrical compliance

Equipment complying with EN/IEC 61000-3-12 (European/ International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.).

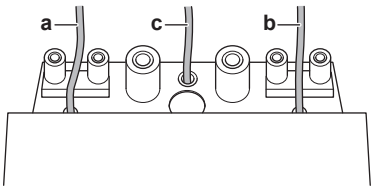
4.5.2 To connect the electrical wiring on the indoor unit

INFORMATION

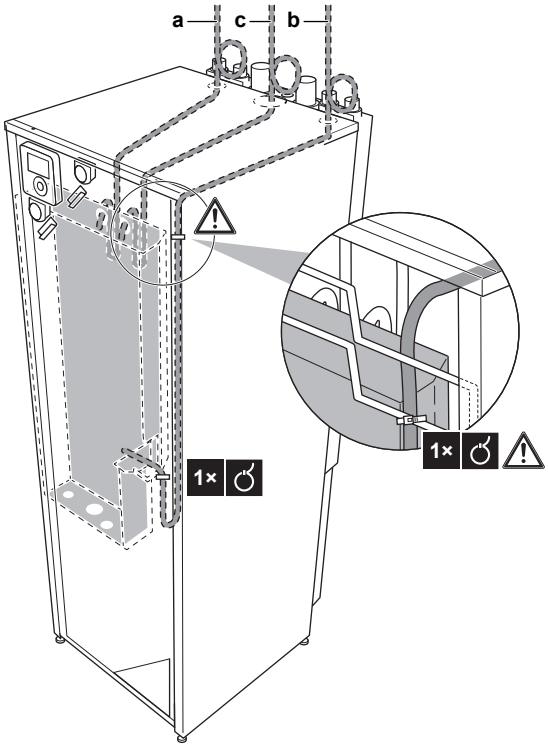
Foresee additional cable length of 35 cm for all wires which should be connected to X2M and X5M on sheet metal support above the hydro PCB. Additional wire length should be tie wrapped at the back side of the unit. Reason is to guarantee serviceability of, for example, the hydro PCB.

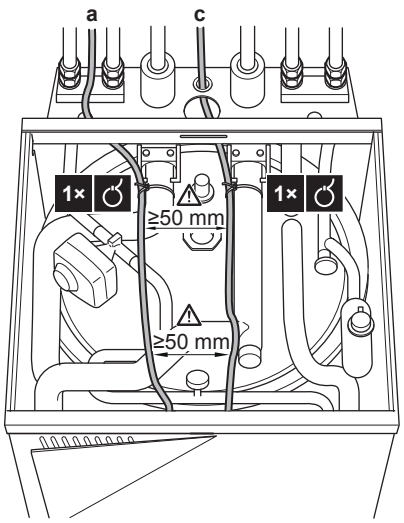
1 To open the indoor unit, see "4.1.1 To open the indoor unit" on page 5 and "4.1.2 To open the switch box cover of the indoor unit" on page 5.

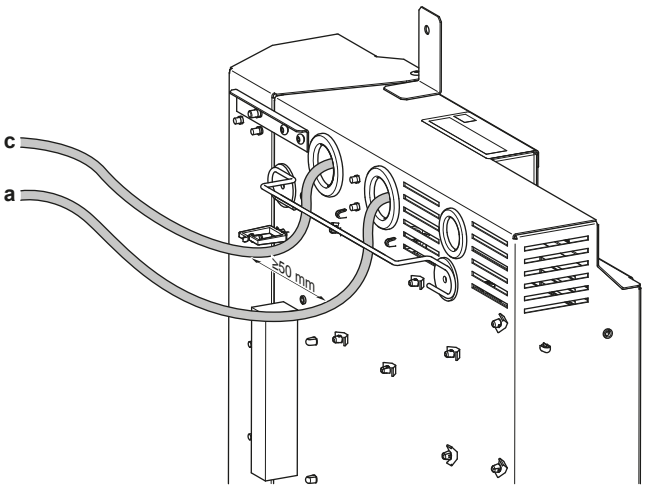
2 Wiring should enter the unit from the top:

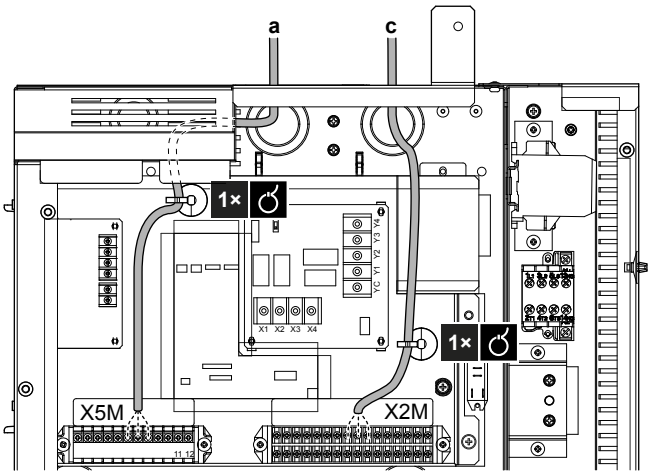


3 Routing of the wiring inside the unit should be as follows:









NOTICE

- Make sure that 50 mm is guaranteed between the low voltage (a) and high voltage (c) cables.
- Make sure that the cables (a) and (c) are routed between the wire guide and the backside of the switch box to prevent water ingress.

4 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 the piping and sharp edges.

Routing	Possible cables (depending on unit type and installed options)
a Low voltage	▪ Preferential power supply contact ▪ User interface ▪ Power consumption digital inputs (field supply) ▪ Outdoor ambient temperature sensor ▪ Indoor ambient temperature sensor (option) ▪ Electrical meters (field supply) ▪ Safety thermostat (field supply)
b High voltage power supply	▪ Normal kWh rate power supply (power supply for unit)
c High voltage control signal	▪ Preferential kWh rate power supply ▪ Heat pump convector (option) ▪ Room thermostat (option) ▪ Shut-off valve (field supply) ▪ Domestic hot water pump (field supply) ▪ Alarm output ▪ Changeover to external heat source control

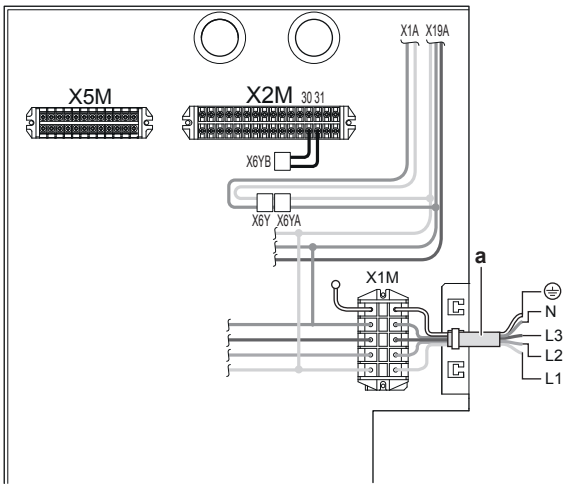
CAUTION

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

4.5.3 To connect the main power supply

1 Connect the main power supply.

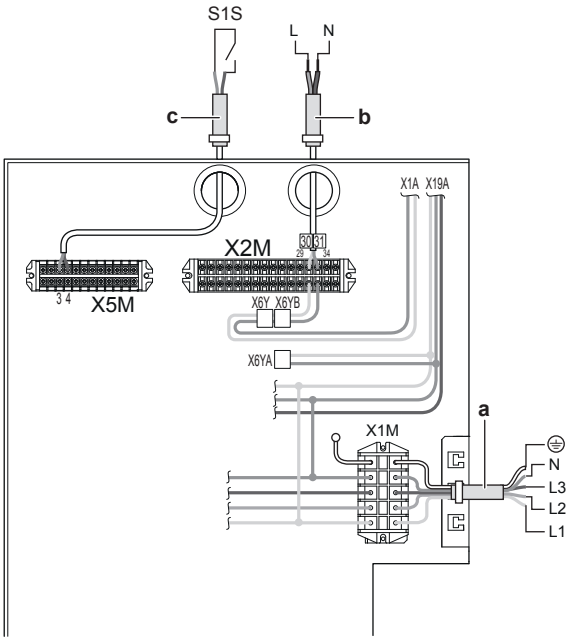
In case of normal kWh rate power supply



Legend: see illustration below.

In case of preferential kWh rate power supply

Connect X6Y to X6YB.



a Main power supply
b Normal kWh rate power supply
c Preferential power supply contact

2 Fix the cables with cable ties to the cable tie mountings.

INFORMATION

In case of preferential kWh rate power supply, connect X6Y to X6YB. The necessity of separate normal kWh rate power supply to indoor unit (b) X2M/30+31 depends on the type of preferential kWh rate power supply.

Separate connection to the indoor unit is required:

- if preferential kWh rate power supply is interrupted when active, OR
- if no power consumption of the indoor unit is allowed at the preferential kWh rate power supply when active.

INFORMATION

The preferential kWh rate power supply contact is connected to the same terminals (X5M/3+4) as the safety thermostat. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat.

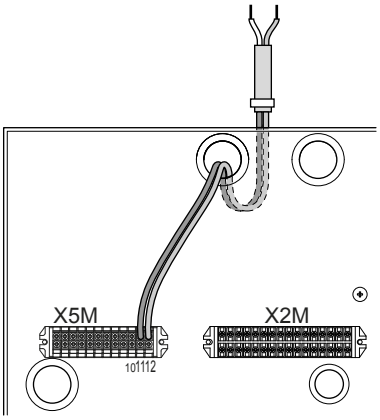
4.5.4 To connect the remote outdoor sensor

The remote outdoor sensor (delivered as accessory) measures the outdoor ambient temperature.

INFORMATION

If the desired leaving water temperature is weather dependent, the full time outdoor temperature measurement is important.

1 Connect the external temperature sensor cable to the indoor unit.



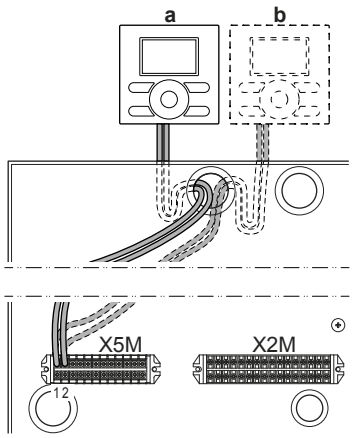
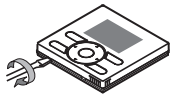
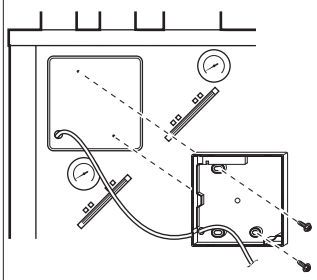
2 Fix the cable with cable ties to the cable tie mountings.

3 Install the remote outdoor sensor outside as described in the installation manual of the sensor (delivered as accessory).

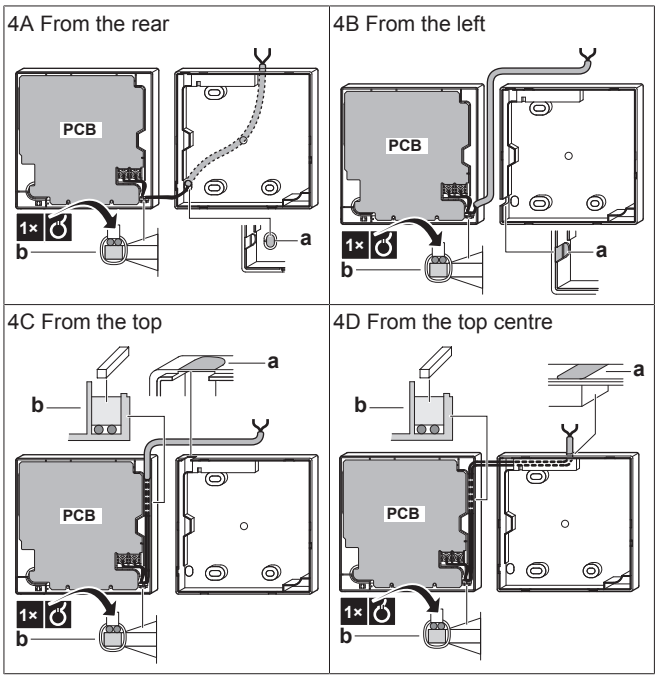
4.5.5 To connect the user interface

- If you use 1 user interface, you can install it at the indoor unit (for control close to the indoor unit), or in the room (when used as room thermostat).
- If you use 2 user interfaces, you can install 1 user interface at the indoor unit (for control close to the indoor unit) + 1 user interface in the room (used as room thermostat).

The procedure differs slightly depending on where you install the user interface.

#	At the indoor unit	In the room
1	Connect the user interface cable to the indoor unit. Fix the cable with cable ties to the cable tie mountings.  **a** Main user interface[(a)] **b** Optional user interface	
2	Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wallplate. The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it. 	
3	Use the 2 screws in the accessory bag to fix the wallplate of the user interface to the sheet metal of the unit. Be careful NOT to distort the shape of the backside of the user interface by overtightening the mounting screws. 	Fix the wallplate of the user interface to the wall.
4	Connect as shown in 4A.	Connect as shown in 4A, 4B, 4C or 4D.
5	Reinstall the faceplate onto the wallplate. Be careful NOT to pinch the wiring when attaching the frontplate to the unit.	

(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.

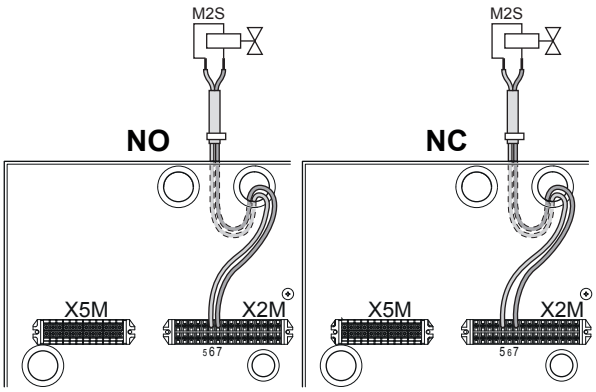
b Secure the wiring to the front part of the casing using the wiring retainer and clamp.

4.5.6 To connect the shut-off valve

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

NOTICE

Wiring is different for a NC (normal closed) valve and a NO (normal open) valve.



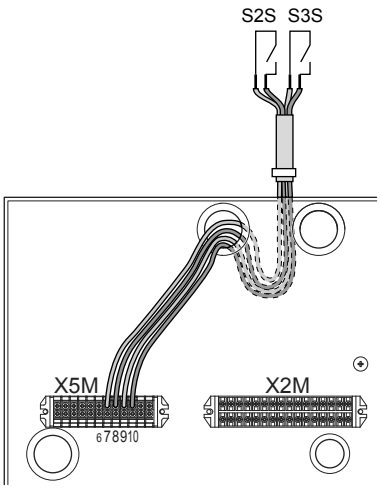
2 Fix the cable with cable ties to the cable tie mountings.

4.5.7 To connect the electrical meters

INFORMATION

In case of an electrical meter with transistor output, check the polarity. The positive polarity MUST be connected to X5M/7 and X5M/9; the negative polarity to X5M/8 and X5M/10.

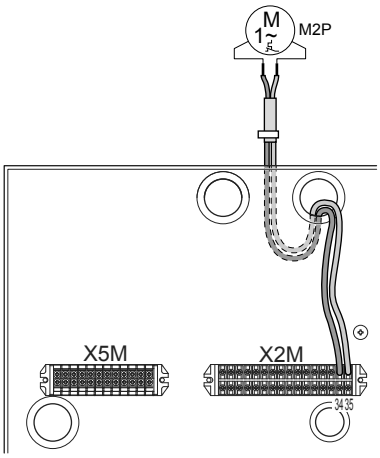
1 Connect the electrical meters cable to the appropriate terminals as shown in the illustration below.



2 Fix the cable with cable ties to the cable tie mountings.

4.5.8 To connect the domestic hot water pump

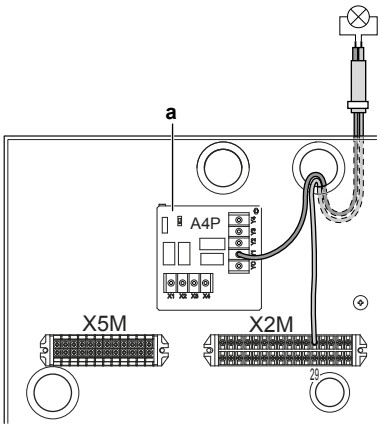
1 Connect the domestic hot water pump cable to the appropriate terminals as shown in the illustration below.



2 Fix the cable with cable ties to the cable tie mountings.

4.5.9 To connect the alarm output

1 Connect the alarm output cable to the appropriate terminals as shown in the illustration below.

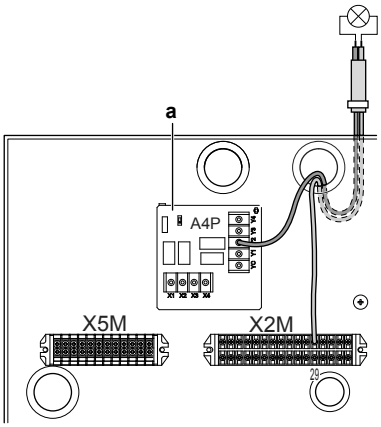


a Installation of EKRP1HB is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.10 To connect the space heating ON/OFF output

1 Connect the space heating ON/OFF output cable to the appropriate terminals as shown in the illustration below.

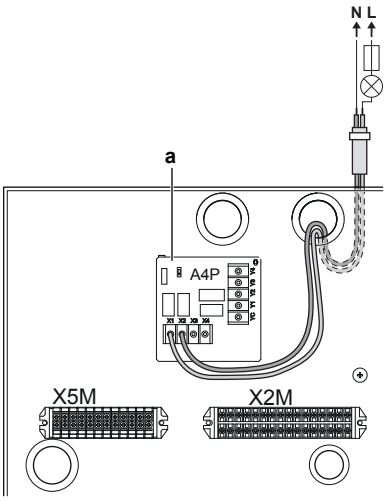


a Installation of EKRP1HB is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.11 To connect the changeover to external heat source

1 Connect the changeover to external heat source cable to the appropriate terminals as shown in the illustration below.

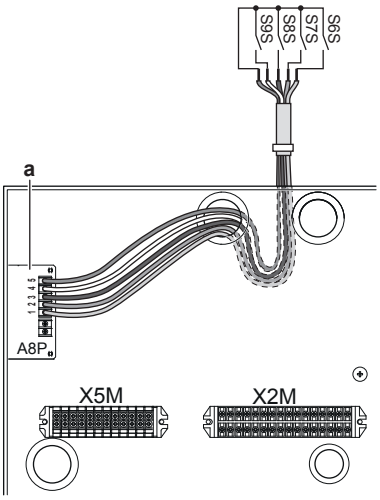


a Installation of EKRP1HB is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.12 To connect the power consumption digital inputs

1 Connect the power consumption digital inputs cable to the appropriate terminals as shown in the illustration below.

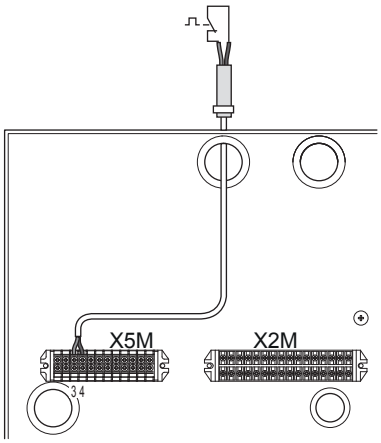


a Installation of EKRP1AHTA is required.

2 Fix the cable with cable ties to the cable tie mountings.

4.5.13 To connect the safety thermostat (normal closed contact)

1 Connect the safety thermostat (normal closed) cable to the appropriate terminals as shown in the illustration below.



2 Fix the cable with cable ties to the cable tie mountings.

NOTICE

Make sure to select and install the safety thermostat according to the applicable legislation.

In any case, to prevent unnecessary tripping of the safety thermostat, it is recommended that …

- … the safety thermostat is automatically resettable.
- … the safety thermostat has a maximum temperature variation rate of 2°C/min.
- … there is a minimum distance of 2 m between the safety thermostat and the 3-way valve.

INFORMATION

After it is installed, do NOT forget to configure the safety thermostat. Without configuration, the indoor unit will ignore the safety thermostat contact.

INFORMATION

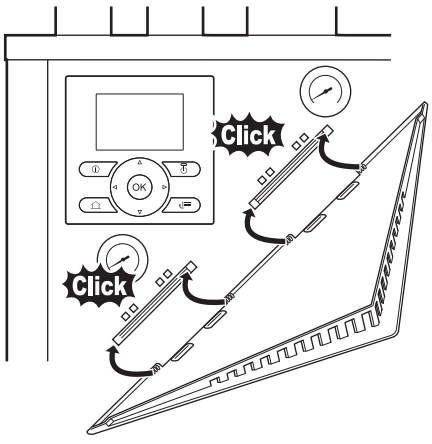
The preferential kWh rate power supply contact is connected to the same terminals (X5M/3+4) as the safety thermostat. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat.

4.6 Finishing the indoor unit installation

4.6.1 To fix the user interface cover to the indoor unit

1 Make sure that the front panel is removed from the indoor unit. See "4.1.1 To open the indoor unit" on page 5.

2 Plug the user interface cover into the hinges.



3 Mount the front panel to the indoor unit.

4.6.2 To close the indoor unit

1 Close the switch box cover.

2 Reinstall the top plate.

3 Reinstall the front panel.

NOTICE

When closing the indoor unit cover, make sure that the tightening torque does NOT exceed 4.1 N•m.

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
- 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 14
- "5.4 Menu structure: Overview installer settings" on page 19

5.1.1 To access the most used commands

To access the installer settings

1 Set the user permission level to Installer.

2 Go to [A]: > Installer settings.

To access the overview settings

1 Set the user permission level to Installer.

2 Go to [A.8]: > Installer settings > Overview settings.

To set the user permission level to Installer

1 Set the user permission level to Adv. end user.

2 Go to [6.4]: > Information > User permission level.

3 Press for more than 4 seconds.

Result: is displayed on the home pages.

4 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

1 Go to the main menu or any of its submenus: .

2 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

1 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.

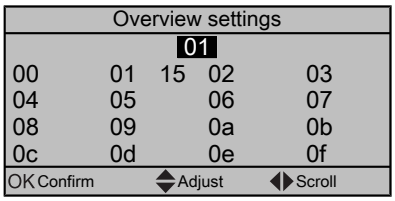
1 Go to [A.8]: > Installer settings > Overview settings.

2 Go to the corresponding screen of the first part of the setting by using the and button.

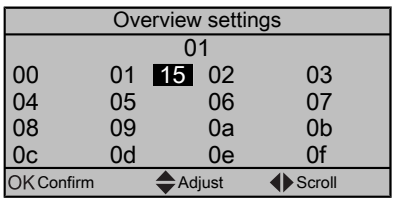
INFORMATION

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 "**0**1".

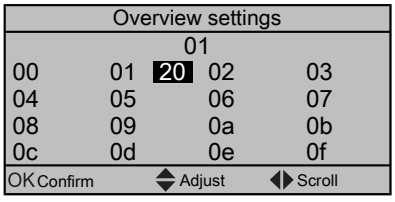


3 Go to the corresponding second part of the setting by using the and button.



Result: The value to be modified is now highlighted.

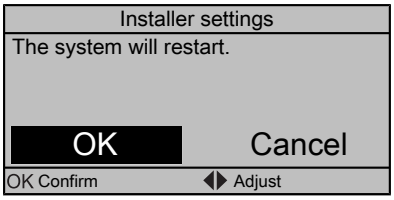
4 Modify the value by using the and button.



5 Repeat previous steps if you have to modify other settings.

6 Push OK to confirm the modification of the parameter.

7 At installer settings menu, press OK to confirm the settings.



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

Backup heater configuration

#	Code	Description
[A.2.1.5]	[5-0D]	BUH type: ▪ 4 (3PN,(1/2)): 6 kW 3N~ 400 V

Space heating settings

#	Code	Description
[A.2.1.7]	[C-07]	Unit temperature control: ▪ 0 (LWT control)(default): 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.B]	N/A	Only if there are 2 user interfaces: User interface location: ▪ 0 (At unit) ▪ 1 (In room)(default)
[A.2.1.8]	[7-02]	Number of water temperature zones: ▪ 0 (1 LWT zone): Main ▪ 1 (2 LWT zones): Main + additional
[A.2.1.9]	[F-0D]	Pump operation: ▪ 0 (Continuous): Continuous pump operation, regardless of thermo ON or OFF condition. ▪ 1 (Sample)(default): 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.

Brine freezing temperature

#	Code	Description
[A.6.9]	[A-04]	Brine freezeup temp ▪ 0: 0°C ▪ 1: –2°C ▪ 2: –4°C ▪ 3: –6°C ▪ 4: –8°C ▪ 5: –10°C ▪ 6: –12°C ▪ 7 (default): –14°C

NOTICE

The setting brine freezing temperature can be modified and the read out is correct in [A.6.9] Brine freezeup temp ONLY after having accessed menu [A.8] Overview settings.

This setting can ONLY be modified and/or saved and the read out is ONLY correct if the communication between hydro module and compressor module is present. The communication between hydro module and compressor module is NOT guaranteed and/or applicable if:

- error "U4" appears on the user interface,
- the heat pump module is connected to preferential kWh rate power supply where power supply is interrupted and preferential kWh rate power supply is activated.

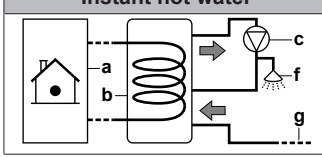
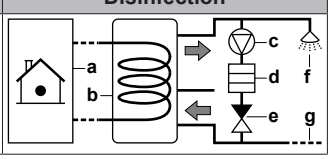
Capacity boost

#	Code	Description
N/A	[A-03]	Compressor frequency ▪ 0 (default): normal ▪ 1: boost

5.2.3 Quick wizard: Options

Domestic hot water settings

#	Code	Description
N/A	[E-05]	DHW operation: ▪ 0: N/A ▪ 1 (Yes): Installed
[A.2.2.A]	[D-02]	DHW pump: ▪ 0 (No)(default): NOT installed ▪ 1 (Secondary rtrn): Installed for instant hot water ▪ 2 (Disinf. shunt): Installed for disinfection See also illustrations below.

Domestic hot water pump installed for…	
Instant hot water	Disinfection
	

a Indoor unit
b Tank
c Domestic hot water pump
d Heater element
e Non-return valve
f Shower

g Cold water

Thermostats and external sensors

NOTICE

If an external room thermostat is used, the external room thermostat will control the room frost protection. However, the room frost protection is only possible if the leaving water temperature control on the unit's user interface is turned ON.

#	Code	Description
[A.2.2.4]	[C-05]	External room thermostat for the **main** zone: ▪ 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convector can only send a thermo ON/OFF condition. ▪ 2 (H/C request): Because only heating is possible, the used external room thermostat can only send a thermo ON/OFF condition.
[A.2.2.5]	[C-06]	External room thermostat for the **additional** zone: ▪ 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. ▪ 2 (H/C request): Because only heating is possible, the used external room thermostat can only send a thermo ON/OFF condition.
[A.2.2.B]	[C-08]	External sensor: ▪ 0 (No)(default): NOT installed. ▪ 2 (Room sensor): Connected to PCB measuring the indoor temperature.

Digital I/O PCB

#	Code	Description
[A.2.2.6.1]	[C-02]	External backup heater source: ▪ 0 (No)(default): None ▪ 1 (Bivalent): Gas, oil boiler
[A.2.2.6.3]	[C-09]	Alarm output on optional EKRP1HB PCB: ▪ 0 (Normally open): The alarm output will be powered when an alarm occurs. By setting this value, a distinction is made between the detection of an alarm, and the detection of a power failure. ▪ 1 (Normally closed): The alarm output will NOT be powered when an alarm occurs. See also table below (Alarm output logic).

Alarm output logic

[C-09]	Alarm	No alarm	No power supply to unit
0 (default)	Closed output	Open output	Open output
1	Open output	Closed output	

Demand PCB

#	Code	Description
[A.2.2.7]	[D-04]	Demand PCB Indicates if the optional demand PCB is installed. ▪ 0 (No) ▪ 1 (Pwr consmp ctrl)

Energy metering

#	Code	Description
[A.2.2.8]	[D-08]	Optional external kWh meter 1: ▪ 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.2.2.9]	[D-09]	Optional external kWh meter 2: ▪ 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)

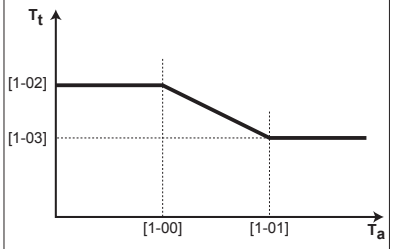
5.2.4 Quick wizard: Capacities (energy metering)

#	Code	Description
[A.2.3.2]	[6-03]	Capacity of the first step of the backup heater at nominal voltage [kW]
[A.2.3.3]	[6-04]	Capacity difference between the second and first step of the backup heater [kW]

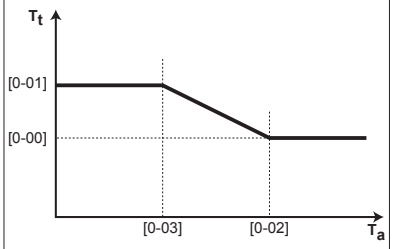
5.2.5 Space heating control

Leaving water temperature: Main zone

#	Code	Description
[A.3.1.1.1]	N/A	Set point mode: ▪ 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)

#	Code	Description
[7.7.1.1]	[1-00] [1-01] [1-02] [1-03]	Weather-dependent curve (heating):  ▪ 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: ▪ 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):  ▪ T_t: Target leaving water temperature (additional) ▪ T_a: Outdoor temperature

Leaving water temperature: Delta T source

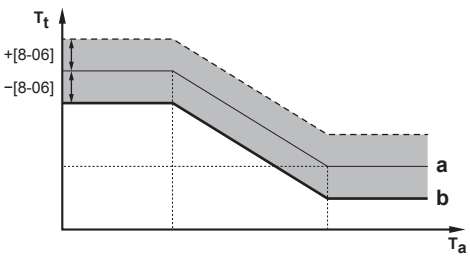
#	Code	Description
[A.3.1.3.1]	[9-09]	Heating: required temperature difference between entering and leaving water. In case a minimum temperature difference is required for the good operation of the heat emitters in heating mode.

Leaving water temperature: Modulation

#	Code	Description
[A.3.1.1.5]	[8-05]	Leaving water temperature modulation: ▪ 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.

Leaving water temperature: Emitter type

#	Code	Description
[A.3.1.1.7]	[9-0B]	Reaction time of the system: ▪ 0 (Quick)(default) **Example:** Small water volume and fan coils. ▪ 1 (Slow) **Example:** Large water volume, floor heating loops. Depending on the system water volume and the heat emitters type, the heat up of a space can take longer. This setting can compensate for a slow or a quick heating system by adjusting the unit capacity during the heat up cycle.

5.2.6 Domestic hot water control

#	Code	Description
[A.4.1]	[6-0D]	Domestic hot water Type: ▪ 0 (Reheat only)(default): 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.
[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 capacity shortage/comfort problem (in case of frequent domestic hot water operation, frequent and long space heating interruption will happen) when selecting [6-0D]=0 ([A.4.1] Domestic hot water Type=Reheat only).

5.2.7 Contact/helpdesk number

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

5.3 Advanced configuration/ optimization

5.3.1 Space heating operation: advanced

Room frost protection

NOTICE

If Emergency is set to Manual ([A.6.C]=0), and the unit is triggered to start emergency operation, the user interface will ask confirmation before starting. Room frost protection is active even if the user does NOT confirm emergency operation.

5.3.2 Heat source settings

Auto emergency

When the heat pump fails to operate, the backup heater can serve as an emergency heater and either automatically or non-automatically take over the heat load.

- When auto emergency is set to Automatic and a heat pump failure occurs, the backup heater will automatically take over the heat load.
- When auto emergency is set to Manual and a heat pump failure occurs, the domestic hot water and space heating operations will stop and need to be recovered manually. The user interface will then ask you to confirm whether the backup heater can take over the heat load or not.

When the heat pump fails, ⓘ will appear on the user interface. If the house is unattended for longer periods, we recommend to set [A.6.C] Emergency to Automatic.

#	Code	Description
[A.6.C]	N/A	Emergency: ▪ 0: Manual (default) ▪ 1: Automatic

INFORMATION

The auto emergency setting can be set in the menu structure of the user interface only.

INFORMATION

If a heat pump failure occurs and [A.6.C] is set to Manual, the room frost protection function, the underfloor heating screed dryout function, and the water pipe antifreeze function will remain active even if the user does NOT confirm emergency operation.

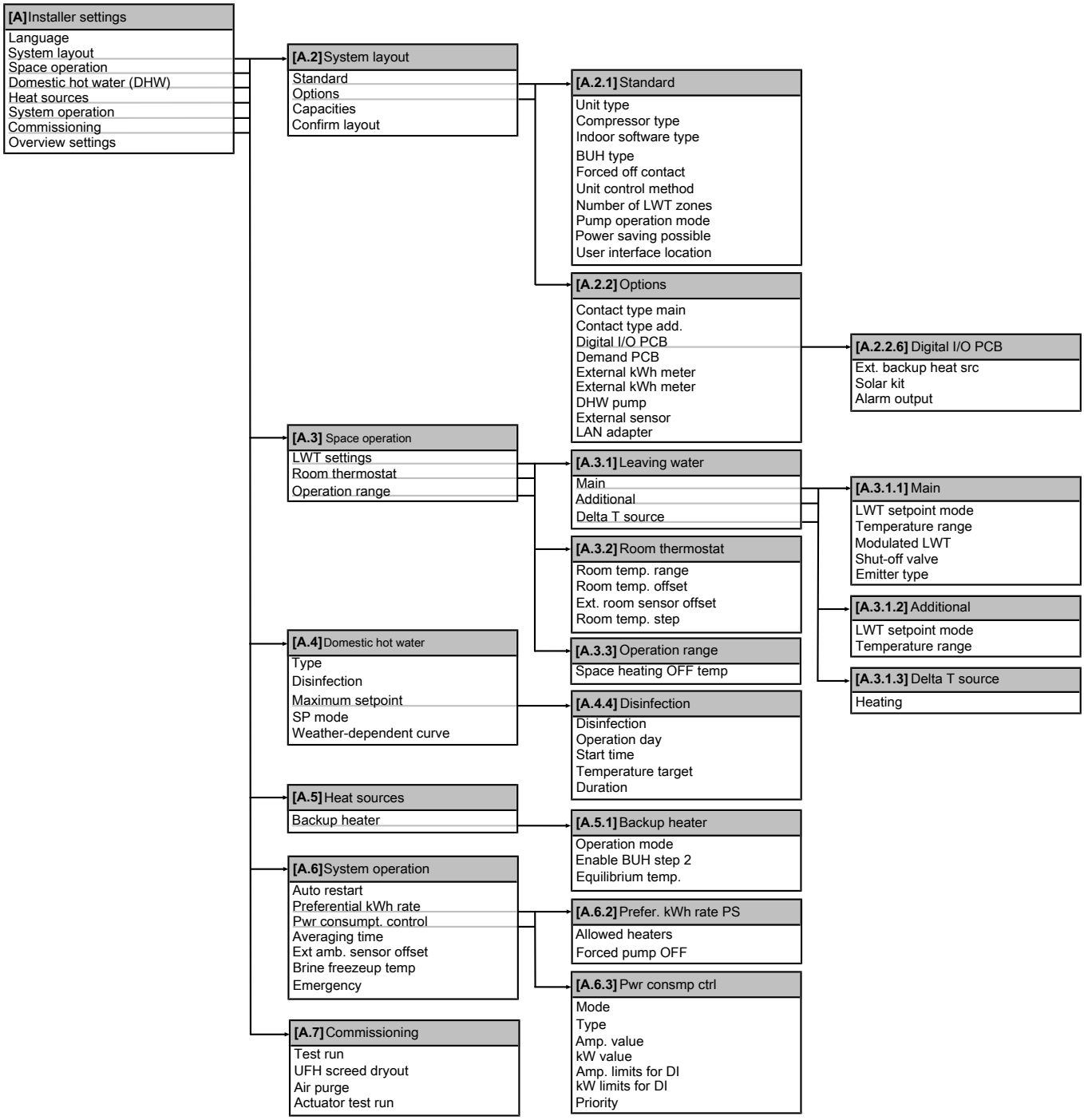
5.3.3 System settings

Power consumption control

NOTICE

During periods of excessive capacity demand (example: screed dryout function), the power limitation can be activated in accordance to the dimension of the brine earth collector.

5.4 Menu structure: Overview installer settings



INFORMATION

Solar kit settings are shown but are NOT applicable for this unit. Settings shall NOT be used or changed.

INFORMATION

Power saving settings are shown but are NOT applicable for this unit. Settings shall NOT be used or changed.

INFORMATION

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

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

Do NOT operate the system before the following checks are OK:

☐	You read the complete installation instructions, as described in the **installer reference guide**.
☐	The **indoor unit** is properly mounted.
☐	The following **field wiring** has been carried out according to this document and the applicable legislation: ▪ Between the local supply panel and the indoor unit ▪ Between the indoor unit and the valves (if applicable) ▪ Between the indoor unit and the room thermostat (if applicable)
☐	The system is properly **earthed** and the earth terminals are tightened.
☐	The **fuses** or locally installed protection devices are installed according to this document, and have NOT been bypassed.
☐	The **power supply voltage** matches the voltage on the identification label of the unit.
☐	There are NO **loose connections** or damaged electrical components in the switch box.
☐	There are NO **damaged components** or **squeezed pipes** on the inside of the indoor unit.
☐	There are NO **refrigerant leaks**.
☐	The correct pipe size is installed and the **pipes** are properly insulated.
☐	There is NO **water and/or brine leak** inside the indoor unit.
☐	There are no **odour traces** noticeable of the used brine.
☐	The **space heating air purge** valve is open (at least 2 turns).
☐	The **pressure relief valves** purge to a safe location when opened.
☐	The **minimum water volume** is guaranteed in all conditions. See "To check the water volume and flow rate of the space heating circuit and brine circuit" in "3.2 Preparing piping" on page 4.

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

☐	The **minimum flow rate** during backup heater/defrost operation is guaranteed in all conditions. See "To check the water volume and flow rate of the space heating circuit and brine circuit" in "3.2 Preparing piping" on page 4.
☐	To perform an **air purge**.
☐	To perform an **air purge on the brine circuit**.
☐	To perform a **test run**.
☐	To perform an **actuator test run**.
☐	**Underfloor screed dryout function** The underfloor screed dryout function is started (if necessary).

6.2.1 To check the minimum flow rate

1 Confirm according to the hydraulic configuration which space heating loops can be closed due to mechanical, electronic, or other valves.

2 Close all space heating loops that can be closed (see previous step).

3 Start the pump test run operation (see "6.2.5 To perform an actuator test run" on page 21).

4 Go to [6.1.8]: ☰ > Information > Sensor information > Flow rate to check the flow rate. During pump test run operation, the unit can operate below this minimum required flow rate.

Bypass valve foreseen?	
Yes	**No**
Modify the bypass valve setting to reach the minimum required flow rate + 2 l/min	In case the actual flow rate is below the minimum flow rate, modifications at the hydraulic configuration are required. Increase the space heating loops that can NOT be closed or install a pressure-controlled bypass valve.

Minimum required flow rate during backup heater operation
12 l/min

6.2.2 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.

1 Go to [A.7.3]: ☰ > Installer settings > Commissioning > Air purge.

2 Set the type.

3 Select Start air purge and press OK.

4 Select OK and press OK.

Result: The air purge starts. It stops automatically when done. To stop it manually, press ⏻, select OK and press OK.

6.2.3 Air purge function on the brine circuit

When installing and commissioning the unit, it is very important to remove all air from the brine circuit.

NOTICE

It is required that the brine circuit is filled BEFORE the brine pump test run is activated.

There are 2 ways to perform an air purge:

- with a brine filling station (field supply),
- with a brine filling station (field supply) in combination with the unit's own brine pump.

10-day brine pump operation. If a brine buffer vessel is part of the system, it may be required to let the brine pump run continuously for 10 days after the system is commissioned. If 10-day brine pump operation is:

- ON: The unit operates as normal, except that the brine pump operates continuously for 10 days, independent of compressor status.
- OFF: Brine pump operation is linked to compressor status.

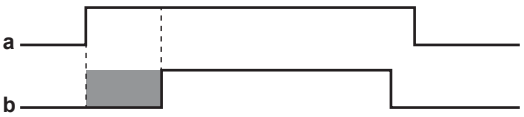
To perform an air purge with a brine filling station

Follow the instructions included with the brine filling station (field supply).

To perform an air purge with the brine pump and a brine filling station

Prerequisite: Performing an air purge on the brine circuit was NOT successful using a brine filling station only (see "To perform an air purge with a brine filling station" on page 21). In this case, use a brine filling station and the unit's own brine pump simultaneously.

1. Fill the brine circuit.
2. Start the brine pump test run.
3. Start the brine filling station (MUST be started within a time frame of 5~60 seconds after starting the brine pump test run).



a Brine pump test run
b Brine filling station
Time frame of 5~60 seconds

Result: The brine pump test run starts running, starting the removal of air from the brine circuit. During the test run, the brine pump operates without actual operation of the unit.

INFORMATION

For details on starting/stopping the brine pump test run, see "6.2.5 To perform an actuator test run" on page 21.

The brine pump test run stops automatically after 2 hours.

To start or stop 10-day brine pump operation

INFORMATION

The 10-day brine pump operation procedure includes the activation of the brine pump test run. Because the procedure provides limited time for this, it is required that the brine pump test run be activated as fast as possible. For instructions, see the "Commissioning" chapter in the installer reference guide.

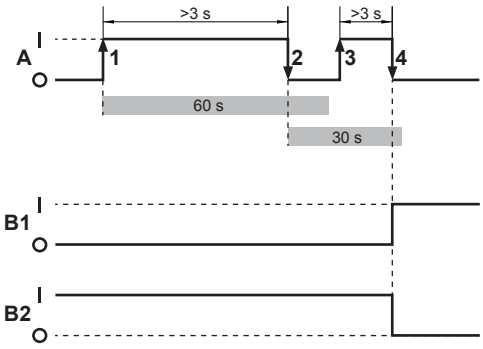
Prerequisite: All other commissioning tasks are finished.

1. Start the brine pump test run and leave it on for at least 3 seconds.

   Result: A 60-second timer starts counting down.
2. Stop the brine pump test run before the timer has finished.

   Result: A 30-second timer starts counting down.
3. Start the brine pump test run again and leave it on for at least 3 seconds.
4. Stop it before the timer has finished.

Result: 10-day brine pump operation switches (OFF→ON or ON→OFF).



I ON
O OFF
A Brine pump test run
B1 Starting 10-day brine pump operation
B2 Stopping 10-day brine pump operation

6.2.4 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 14.
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

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.

6.2.5 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 14.
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.

INFORMATION

If the brine pump test run is activated as part of the 10-day brine pump operation procedure, it is required to activate the test run as fast as possible. For instructions, see the "Commissioning" chapter in the installer reference guide.

Possible actuator test runs

- Backup heater (step 1) test

- Backup heater (step 2) test
- Pump test (space heating)

INFORMATION

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

- Brine pump test
- 2-way valve test
- 3-way valve test
- Bivalent signal test
- Alarm output test
- Circulation pump test

6.2.6 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

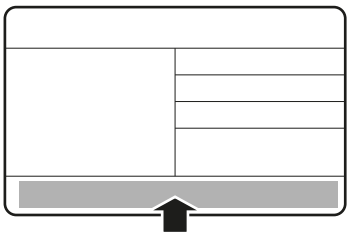
Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- 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 on the url as earlier described 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 in relation to maintaining the unit.
- Explain the user about energy saving tips as described in the operation manual.

7.1 To fix the applicable language on the unit name plate

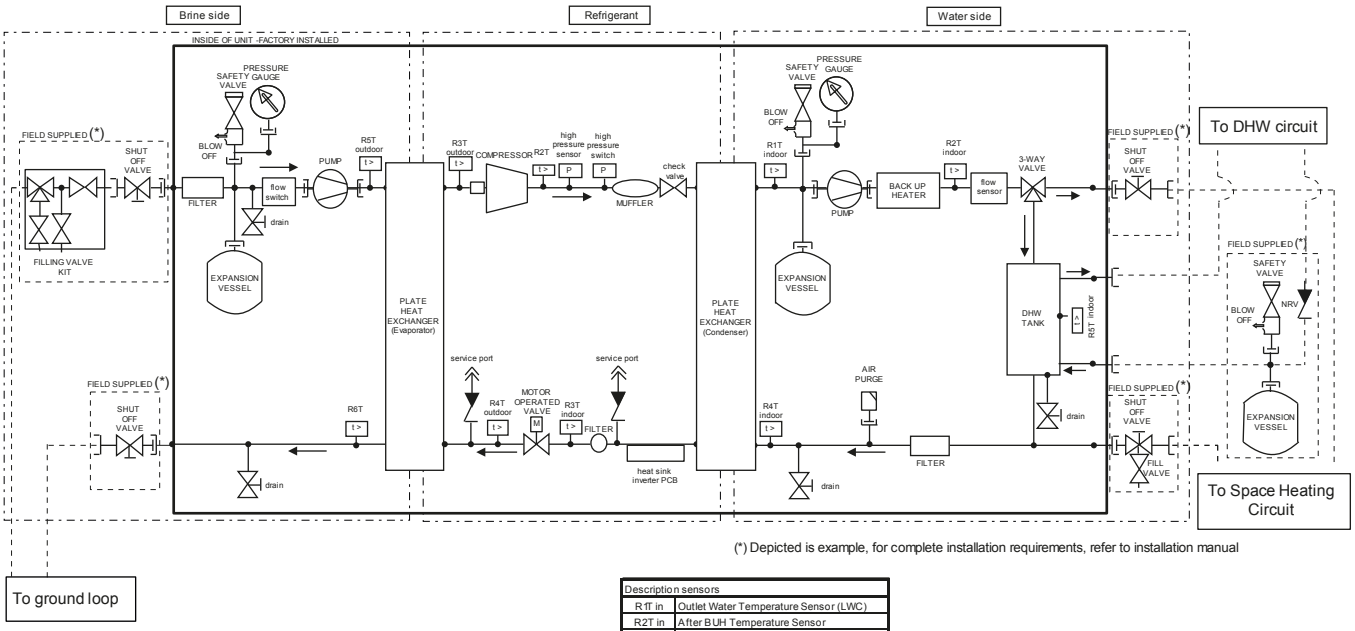
1 From the multilingual fluorinated greenhouse gases label peal off the applicable language.

2 Stick it on top of the marked area on the unit name plate.



8 Technical data

8.1 Piping diagram: Indoor unit



(*) Depicted is example, for complete installation requirements, refer to installation manual

Description sensors	
R1T in	Outlet Water Temperature Sensor (LWC)
R2T in	After BUH Temperature Sensor
R3T in	Refrigerant Liquid Temperature Sensor
R4T in	Inlet Water Temperature Sensor (EWC)
R5T in	DHW Tank Temperature Sensor
R1T out	Ambient Air Sensor
R2T out	discharge sensor
R3T out	suction sensor
R4T out	2 phase sensor (Tx)
R5T out	brine entering water
R6T out	brine leaving water

LEGEND:

CHECK VALVE		SCREW CONN.	
FLARE CONN.		QUICK COUPLING	
SPINNED PIPE		FLANGE CONN.	
PINCHED PIPE		BRAZED CONN.	

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8.2 Wiring diagram: Indoor unit

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

Notes to go through before starting the unit

English	Translation
Notes to go through before starting the unit	Notes to go through before starting the unit
X1M	Main terminal
X2M	Field wiring terminal for AC
X5M	Field wiring terminal for DC
—·—·—·—·	Earth wiring
15	Wire number 15
– – – – – – –	Field supply
—> **/12.2	Connection ** continues on page 12 column 2
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB
User installed options	User installed options
☐ Remote user interface	☐ Remote user interface
☐ Ext. indoor thermistor	☐ External indoor thermistor
☐ Digital I/O PCB	☐ Digital I/O PCB
☐ Demand PCB	☐ Demand PCB
☐ Brine pressure switch connection kit	☐ Brine pressure switch connection kit
Main LWT	Main leaving water temperature
☐ On/OFF thermostat (wired)	☐ On/OFF thermostat (wired)
☐ On/OFF thermostat (wireless)	☐ On/OFF thermostat (wireless)
☐ Ext. thermistor	☐ External thermistor
☐ Heat pump convector	☐ Heat pump convector
Add LWT	Additional leaving water temperature
☐ On/OFF thermostat (wired)	☐ On/OFF thermostat (wired)
☐ On/OFF thermostat (wireless)	☐ On/OFF thermostat (wireless)
☐ Ext. thermistor	☐ External thermistor
☐ Heat pump convector	☐ Heat pump convector

Position in switch box

English	Translation
Position in switch box	Position in switch box

Legend

A1P		Main PCB (hydrobox)
A2P		User interface PCB
A3P	*	On/OFF thermostat
A3P	*	Heat pump convector
A4P	*	Digital I/O PCB
A4P	*	Receiver PCB (Wireless On/OFF thermostat, PC=power circuit)
A8P	*	Demand PCB
A9P		Main PCB (refrigerant, brine)
A10P		Main PCB (inverter)
CN* (A4P)	*	Connector
DS1 (A8P)	*	DIP switch
F1U, F2U (A4P)	*	Fuse 5 A 250 V
K*R		Relay on PCB
M2P	#	Domestic hot water pump
M2S	#	Shut-off valve
Q*DI	#	Earth leakage circuit breaker
R1T (A3P)	*	Ambient sensor On/OFF thermostat
R1T (A9P)		Ambient air sensor
R2T (A3P)	*	External sensor (floor or ambient)
R6T (A1P)	*	External indoor ambient thermistor
R1H (A3P)	*	Humidity sensor
S1P	#	Water pressure switch brine side
S1S	#	Preferential kWh rate power supply contact
S2S	#	Electrical meter pulse input 1
S3S	#	Electrical meter pulse input 2
S4S	#	Safety thermostat
S6S~S9S	#	Digital power limitation inputs
SS1 (A4P)	*	Selector switch
X*M		Terminal strip
X*Y		Connector
	* =	Optional
	# =	Field supply

Translation of text on wiring diagram

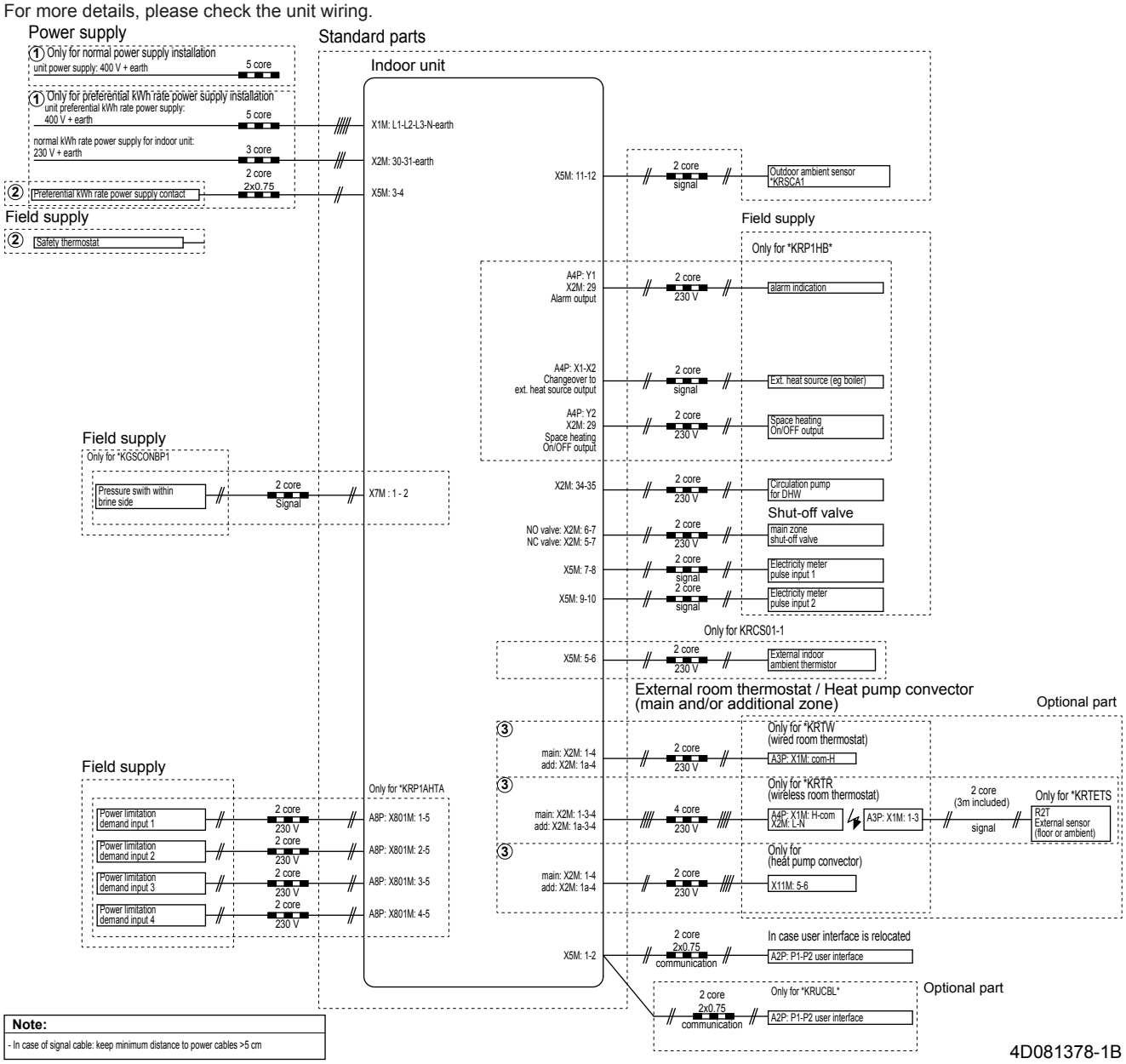
English	Translation
(1) Main power connection	(1) Main power connection
For preferential kWh rate power supply	For preferential kWh rate power supply
Normal kWh rate power supply	Normal kWh rate power supply
Only for normal power supply (standard)	Only for normal power supply (standard)
Only for preferential kWh rate power supply	Only for preferential kWh rate power supply
Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)	Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)
Switch box	Switch box
Use normal kWh rate power supply for hydro PCB	Use normal kWh rate power supply for hydrobox PCB
(2) Outdoor ambient sensor	(2) Outdoor ambient sensor
Switch box	Switch box
(3) Option external indoor ambient sensor	(3) Option external indoor ambient sensor
Switch box	Switch box
(4) User interface	(4) User interface
Only for remote user interface option	Only for remote user interface option
Switch box	Switch box
(5) Option PCBs	(5) Option PCBs
Alarm output	Alarm output
Ext. heat source	External heat source
Max. load	Maximum load

English	Translation
Min. load	Minimum load
Only for demand PCB option	Only for demand PCB option
Only for digital I/O PCB option	Only for digital I/O PCB option
Options: boiler output, alarm output, On/OFF output	Options: boiler output, alarm output, On/OFF output
Power limitation digital inputs: 12 V DC / 12 mA detection (voltage supplied by PCB)	Power limitation digital inputs: 12 V DC / 12 mA detection (voltage supplied by PCB)
Space heating On/OFF output	Space heating On/OFF output
Switch box	Switch box
(6) Field supplied options	(6) Field supplied options
230 V AC supplied by PCB	230 V AC supplied by PCB
5 V DC pulse detection (voltage supplied by PCB)	5 V DC pulse detection (voltage supplied by PCB)
Continuous	Continuous current
DHW pump	Domestic hot water pump
DHW pump output	Domestic hot water pump output
Electrical meters	Electrical meters
For safety thermostat	For safety thermostat
Inrush	Inrush current
Max. load	Maximum load
Normally closed	Normally closed

English	Translation
Normally open	Normally open
Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)	Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)
Shut-off valve	Shut-off valve
SWB	Switch box
(7) External room thermostats and heat pump convector	(7) External room thermostats and heat pump convector
Additional LWT zone	Additional leaving water temperature zone
Main LWT zone	Main leaving water temperature zone
Only for external sensor (floor/ ambient)	Only for external sensor (floor or ambient)
Only for heat pump convector	Only for heat pump convector
Only for wired thermostat	Only for wired thermostat
Only for wireless thermostat	Only for wireless thermostat
(8) Option for brine pressure switch connection kit	(8) Option for brine pressure switch connection kit
5 V DC / 0.05 mA detection (voltage supplied by PCB)	5 V DC / 0.05 mA detection (voltage supplied by PCB)
Only for brine pressure switch connection kit	Only for brine pressure switch connection kit
Switch box	Switch box

Electrical connection diagram

For more details, please check the unit wiring.



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ROTEX a member of DAIKIN group

ROTEX Heating Systems GmbH
Langwiesenstraße 10
D-74363 Güglingen
www.rotex-heating.com

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