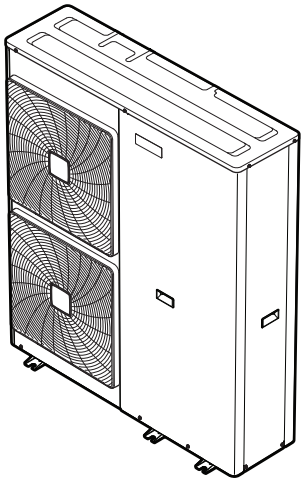
ROTEX

Installation manual

ROTEX HPSU monobloc compact outdoor unit



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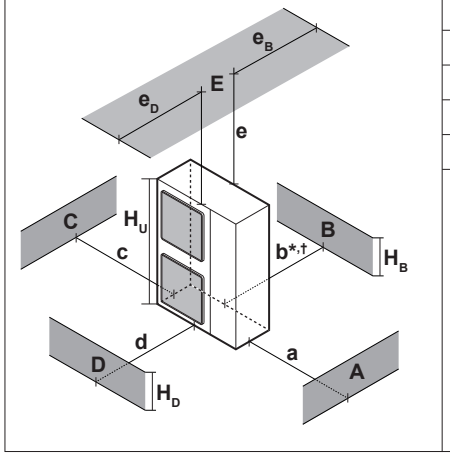


A~E	H_B H_D H_U	(mm)								
		a	b*	b†	c	d	e	e_B	e_D	H
A, B, C	—	≥500	≥250	≥400	≥100					≥150
A, B, C, E	—	≥500	≥250	≥400	≥150		≥1000		≤500	≥150
D	—					≥500				≥150
D, E	—					≥500	≥1000	≤500		≥150
B, D	$H_D<H_U$		≥250	≥400		≥500				≥150
B, D, E	$H_D<H_U$ & $H_B>H_U$		≥250	≥400		≥1000	≥1000		≤500	≥150
	$H_D>H_U$ & $H_B<H_U$		≥250	≥400		≥1000	≥1000	≤500		≥150

*,† ➡

1

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

RBLQ011CAW1, RBLQ014CAW1, RBLQ016CAW1,

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 forutsetning 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 следвайки 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.025J02/02-2018
<B>	DEKRA (NB0344)
<C>	2082543.0551-QUA/EMC

3P403988-8G

ROTEX Heating Systems GmbH
Langwiesenstraße 10 · D-74363 Güglingen

Georg Blümel
Managing Director
1st of August 2018

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 outdoor unit)
- **Outdoor unit installation manual:**
  - Installation instructions
  - Format: Paper (in the box of the outdoor unit)
- **Installer reference guide:**
  - Preparation of the installation, good practices, reference data,…
  - Format: 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.

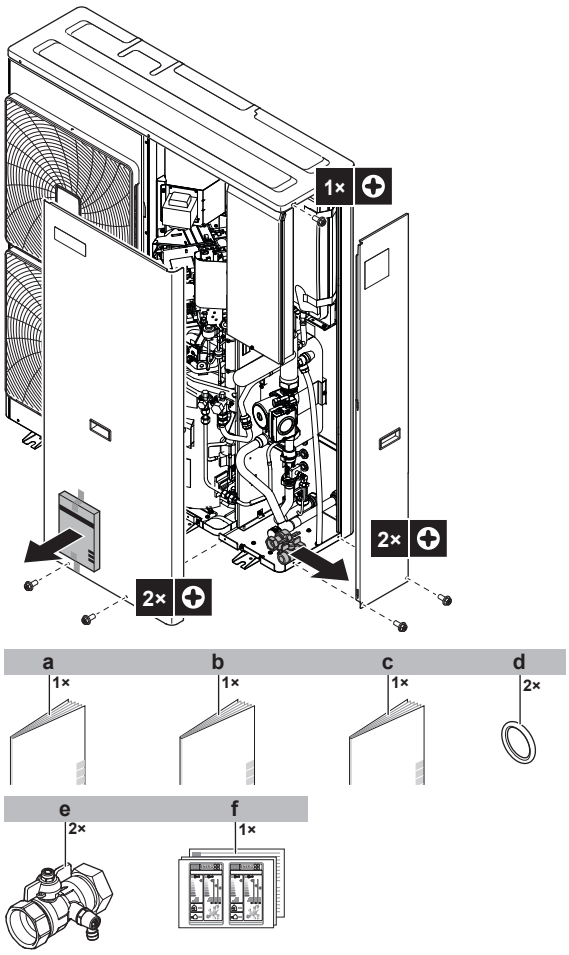
2 About the box

2.1 Outdoor unit

2.1.1 To remove the accessories from the outdoor unit

1 Open the outdoor unit.

2 Remove the accessories.



a General safety precautions
b Addendum book for optional equipment
c Outdoor unit installation manual
d Sealing ring for shut-off valve
e Shut-off valve
f Energy label

3 Preparation

3.1 Preparing the installation site

3.1.1 Installation site requirements of the outdoor unit

Mind the spacing guidelines. See figure 1 on the inside of the front cover.

The symbols can be interpreted as follows:

A,C	Left side and right side obstacles (walls/baffle plates)
B	Suction side obstacle (wall/baffle plate)
D	Discharge side obstacle (wall/baffle plate)
E	Top side obstacle (roof)
a,b,c,d,e	Minimum service space between the unit and obstacles A, B, C, D and E
*	If shut-off valves are NOT installed on the unit
†	If shut-off valves are installed on the unit
e_B	Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B
e_D	Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D
H_U	Height of the unit including the installation structure
H_B,H_D	Height of obstacles B and D
H	Height of installation structure below the unit

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.

The maximum allowable distance between outdoor unit and HPSU monobloc tank is 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

Check that the total water volume in the installation is minimum 80 litre, the internal water volume of the outdoor unit NOT included.

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

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
20 l/min

See the recommended procedure as described in the installation manual of the HPSU monobloc tank.

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	4+GND	(a)
Optional equipment			
2	Remote outdoor sensor	2	(b)
Field-supplied components			
3	Shut-off valve	2	(b)
Interconnection cable			
4	Interconnection cable between outdoor unit and HPSU monobloc tank	2	(c)

(a) Refer to name plate on outdoor unit.
(b) Minimum cable section 0.75 mm².
(c) Cable section 1.5 mm²; maximum length: 20 m.

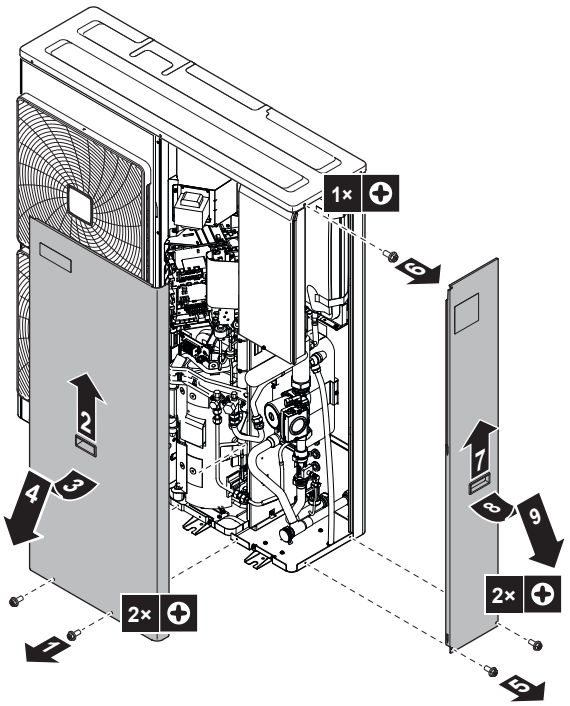
4 Installation

4.1 Opening the units

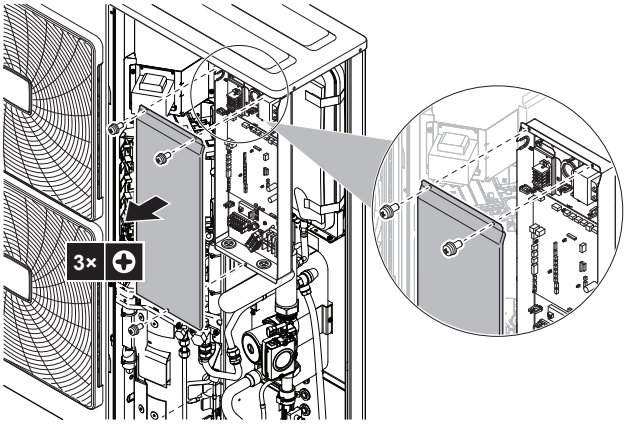
4.1.1 To open the outdoor unit

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING



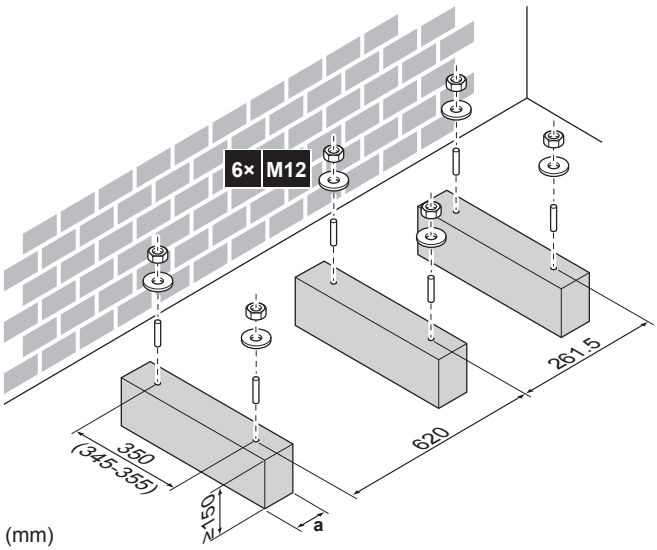
4.1.2 To open the switch box cover of the outdoor unit



4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

Prepare 6 sets of anchor bolts, nuts and washers (field supply) as follows:

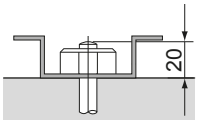


(mm)

a Make sure not to cover the drain holes.

INFORMATION

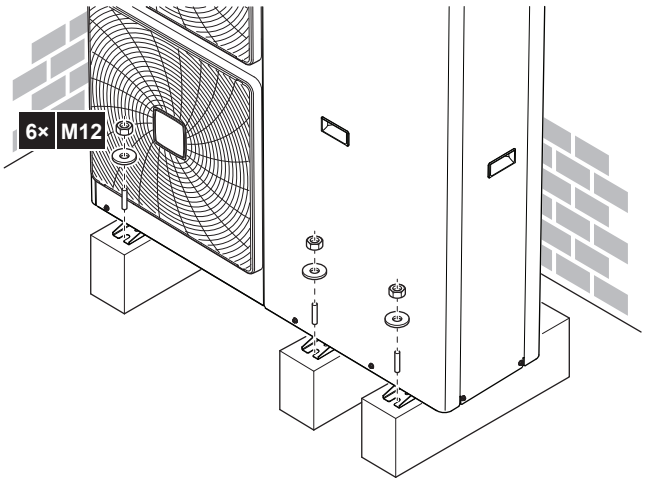
The recommended height of the upper protruding part of the bolts is 20 mm.



NOTICE

Fix the outdoor unit to the foundation bolts using nuts with resin washers (a). If the coating on the fastening area is stripped off, the nuts rust easily.

4.2.2 To install the outdoor unit

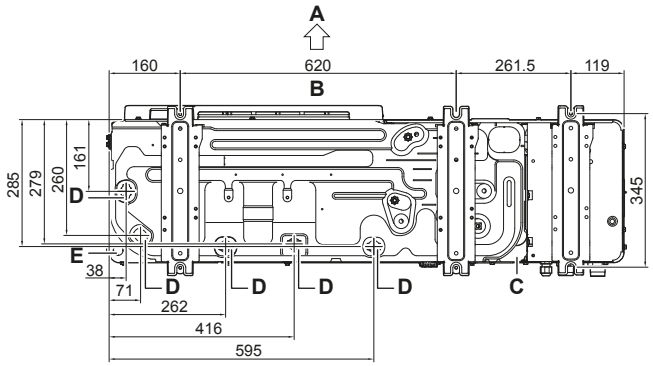


4.2.3 To provide drainage

NOTICE

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

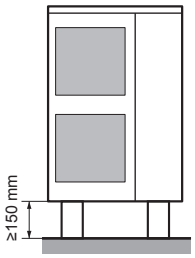
Drain holes (dimensions in mm)



A Discharge side
B Distance between anchor points
C Bottom frame
D Drain holes
E Knockout hole for snow

NOTICE

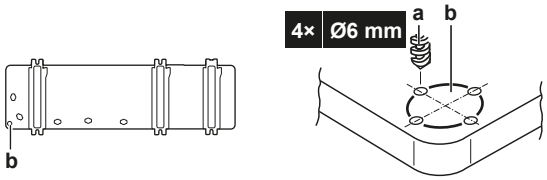
If drain holes of the outdoor unit are covered by a mounting base or by floor surface, raise the unit to provide a free space of more than 150 mm under the outdoor unit.



Snow

In regions with snowfall, snow might build up and freeze between the heat exchanger and the external plate. This might decrease the operating efficiency. To prevent this:

1 Drill (a, 4×) and remove the knockout hole (b).



2 Remove the burrs, and paint the edges and areas around the edges using repair paint to prevent rusting.

4.2.4 To prevent the outdoor unit from falling over

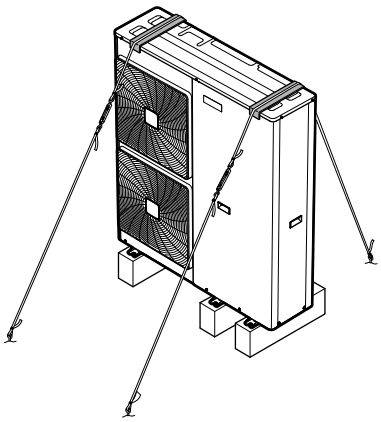
In case the unit is installed in places where strong wind can tilt the unit, take following measure:

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.



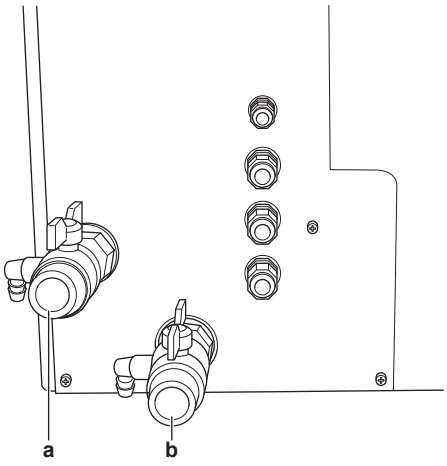
4.3 Connecting the water piping

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 Install the shut-off valves onto the outdoor unit water pipes.

2 Connect the field piping to the shut-off valves.

3 For how to connect the HPSU monobloc tank, see the installation manual of the tank.

NOTICE

To protect the water circuit against freezing, add glycol. For instructions, see the installation manual of the HPSU monobloc tank.

NOTICE

Install a manometer in the system.

NOTICE

Install air purge valves at all local high points.

4.3.2 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 λ=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

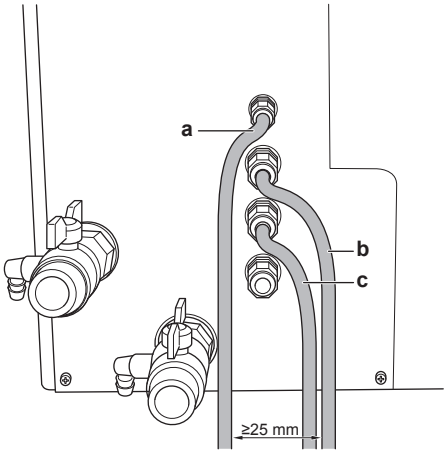
WARNING

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:



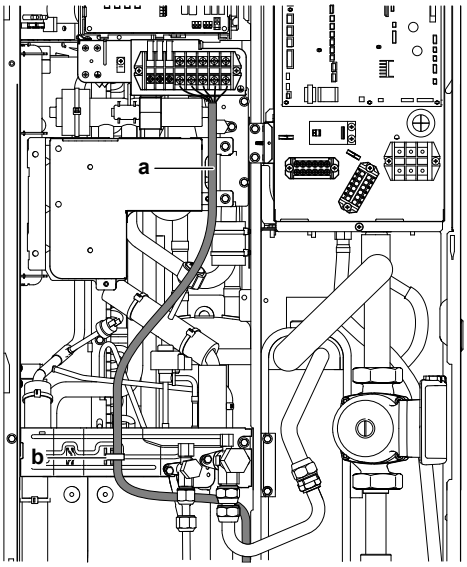
a Low voltage cable
b High voltage cable
c Power supply cable

NOTICE

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

Routing	Possible cables (depends on the installed options)
a Low voltage	▪ Interconnection cable to HPSU monobloc tank ▪ Remote outdoor sensor (option)
b High voltage	▪ Shut-off valve (field supply)
c Main power supply	▪ Main power supply

3 Inside the unit, route the wiring as follows:



a Power supply cable
b Cable tie

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

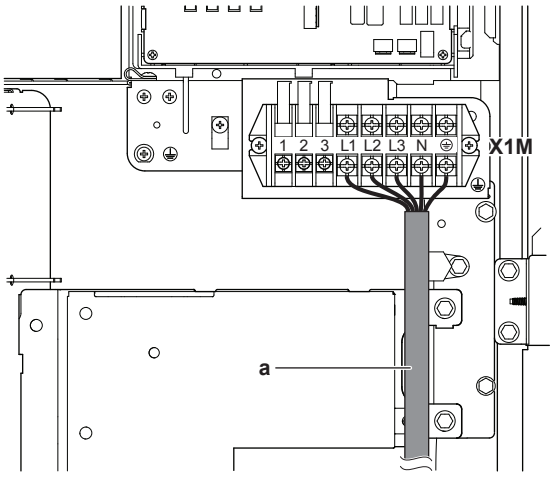
When installing field supply or option cables, foresee sufficient cable length. This will make it possible to remove/ reposition the switch box and gain access to other components during service.

CAUTION

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

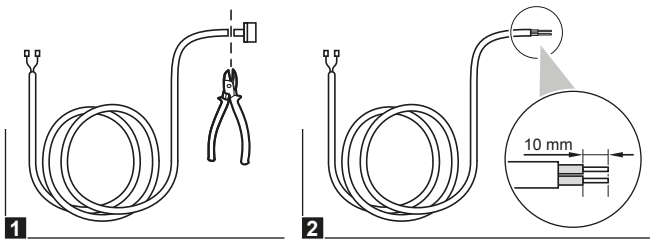
4.4.2 To connect the main power supply

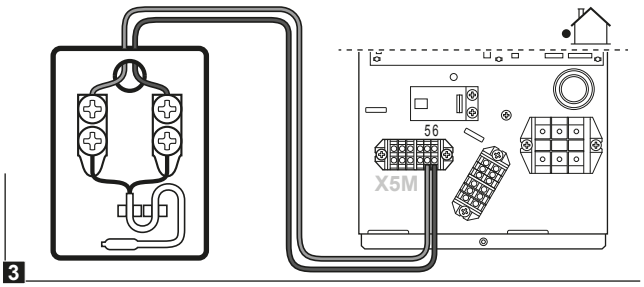
1 Connect the main power supply.



a Power supply cable (including earth)

4.4.3 To connect the remote outdoor sensor





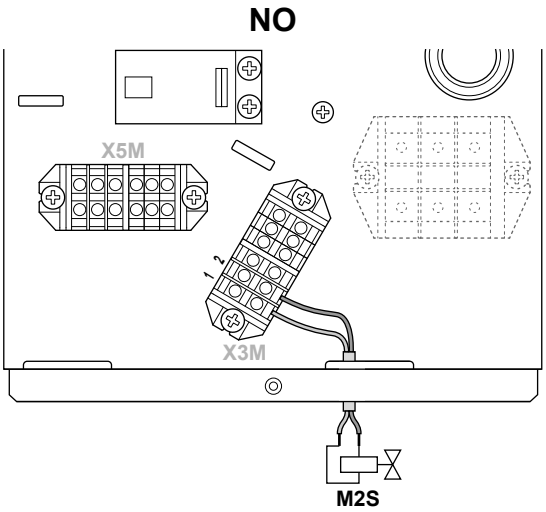
3

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.



5 Commissioning

NOTICE

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

5.1 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.

☐	You read the complete installation instructions, as described in the **installer reference guide**.
☐	The **outdoor unit** is properly mounted.
☐	The HPSU monobloc tank is properly mounted.
☐	The following **field wiring** has been carried out according to the available documentation and the applicable legislation: ▪ Between the local supply panel and the outdoor unit ▪ Between the local supply panel and the HPSU monobloc tank ▪ Between the local supply panel and the optional backup heater inside the HPSU monobloc tank (if applicable) ▪ Between the outdoor unit and the HPSU monobloc tank
☐	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 outdoor unit.
☐	The correct pipe size is installed and the **pipes** are properly insulated.
☐	There are no **water leaks** inside the outdoor unit.
☐	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 5.

INFORMATION

For further commissioning instructions, see the installation manual of the HPSU monobloc tank.

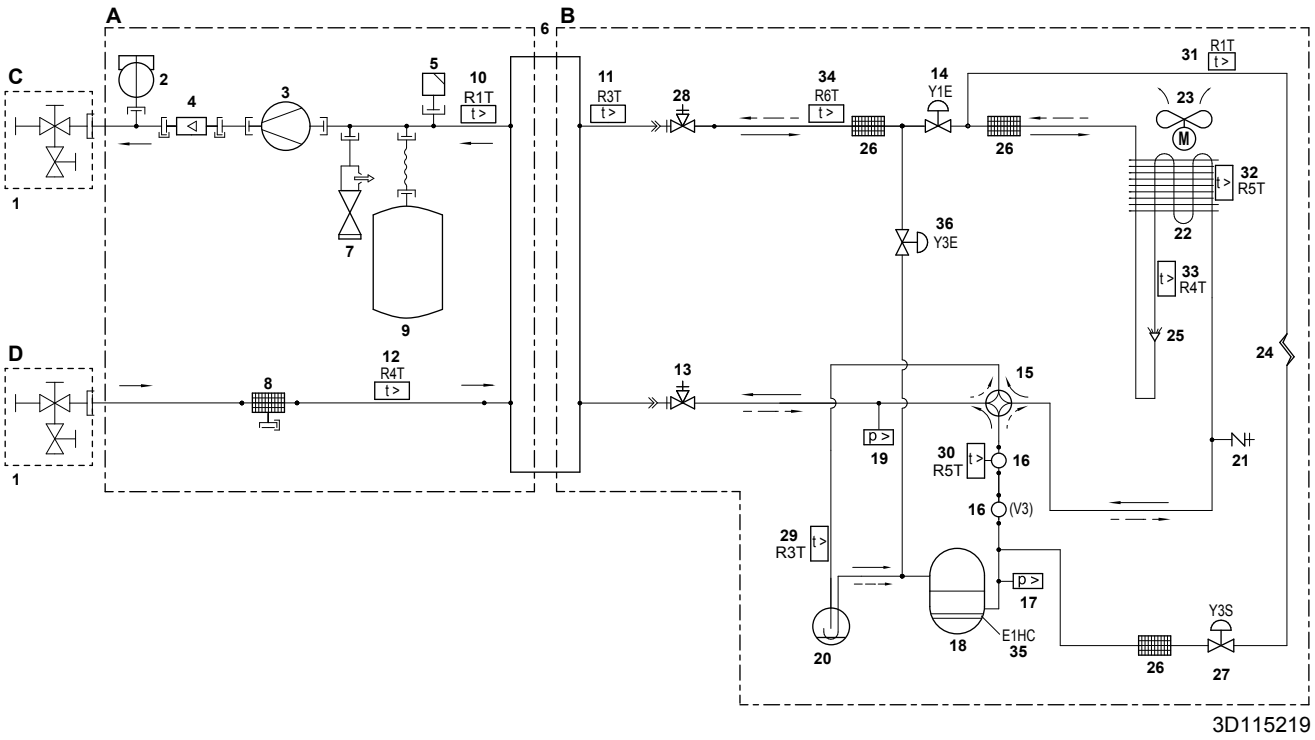
6 Hand-over to the user

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

- 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.

7 Technical data

7.1 Piping diagram: Outdoor unit



3D115219

1 Shut-off valve with drain/fill valve
2 Flow switch
3 Pump
4 Flow sensor
5 Air purge
6 Plate heat exchanger
7 Safety valve
8 Water filter
9 Expansion vessel
10 Outlet water heat exchanger thermistor
11 Refrigerant liquid side thermistor
12 Inlet water thermistor
13 Gas stop valve with service port
14 Electronic expansion valve (main)
15 4-way valve
16 Not applicable
17 High pressure switch
18 Compressor
19 Pressure sensor
20 Accumulator
21 Service port 5/16" flare
22 Heat exchanger
23 Fan motor (propeller fan)
24 Capillary tube
25 Distributor
26 Refrigerant filter
27 Solenoid valve
28 Liquid stop valve with service port
29 Suction pipe thermistor
30 Discharge pipe thermistor
31 Outdoor air temperature thermistor
32 Heat exchanger thermistor (middle)
33 Heat exchanger thermistor (distributor)
34 Liquid pipe thermistor
35 Crankcase heater
36 Electronic expansion valve (injection)
A Water side
B Refrigerant side
C Outlet
D Inlet
Field installed
Refrigerant flow - cooling
Refrigerant flow – heating

7.2 Wiring diagram: Outdoor unit

See the internal wiring diagram supplied with the unit (on the inside of the front plate). The abbreviations used are listed below.

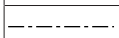
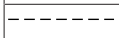
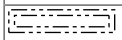
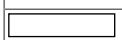
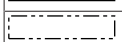
(1) Connection diagram

English	Translation
Connection diagram	Connection diagram
Outdoor	Outdoor
ON	ON
OFF	OFF
See note ***	See note ***
Upper Fan	Upper fan
Lower Fan	Lower fan
Injection	Injection
Main	Main

(2) Layout

English	Translation
Front	Front
Position of compressor terminal	Position of compressor terminal

(3) Notes

English	Translation
Notes	Notes
	Connection
X1M	Main terminal
	Earth wiring
	Field supply
	Option
	Switch box
	PCB
	Wiring depending on model
	Protective earth
	Field wire

NOTES:

1 Refer to the wiring diagram sticker (on the back of the service cover) for how to use the BS1~BS4 and DS1 switches.

2 When operating, do not short-circuit protective devices S1PH, S1PL and S1NPH

3 Refer to the combination table and the option manual for how to connect the wiring to X6A.

4 Colours: BLK: black; RED: red; BLU: blue; WHT: white; GRN: green; YLW: yellow

5 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: OFF.

(4) Legend

A1P		Printed circuit board (main)
A2P		Printed circuit board (inverter)
A3P		Printed circuit board (noise filter)
BS1~BS4 (A2P)		Push-button switch
C1~C3 (A2P)		Capacitor
DS1 (A2P)		DIP switch
E1H	*	Bottom plate heater
E1HC		Crankcase heater
F1U, F2U (A1P)		Fuse T 31.5 A 500 V
F3U~F6U (A1P)		Fuse T 6.3 A 500 V
F7U (A2P)		Fuse T 5 A 250 V
F8U, F9U	*	Fuse F 1 A 250 V
H1P~H7P (A2P)		LED (service monitor is orange)
HAP (A1P~A2P)		LED (service monitor is green)
K1M~K2M (A2P)		Magnetic contactor (main-upload)
K1R (A1P)		Magnetic relay (Y1S)
K1R (A2P)		Magnetic relay (upload)
K2R (A1P)		Magnetic relay (E1H)
K3R (A1P)		Magnetic relay (Y3S)
K4R (A1P)		Magnetic relay (E1HC)
L1R~L3R		Reactor
L4R		Reactor (outdoor fan motor)
M1C		Compressor motor
M1F, M2F		Fan motor
PS (A2P)		Switching power supply
Q1DI	#	Earth leakage circuit breaker (30 mA)
R1, R2 (A2P)		Resistor
R1T		Thermistor (air)
R2T		Thermistor (discharge)
R3T		Thermistor (suction)
R4T		Thermistor (heat exchanger)
R5T		Thermistor (heat exchanger middle)
R6T		Thermistor (liquid)
R7T		Thermistor (fin)
S1NPH		Pressure sensor
S1PH		High pressure switch
V1R~V2R (A2P)		Power module
V3R (A2P)		Diode module
X1M		Terminal strip
Y1E, Y3E		Electronic expansion valve
Y1S		Solenoid valve (4-way valve)
Y3S		Solenoid valve (hot gas pass)
Z1C~Z9C		Noise filter (ferrite core)
Z1F~Z3F (A1P)		Noise filter
Z4F (A3P)		Noise filter

*: Optional
#: Field supply

Outdoor unit: hydro module

English	Translation
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
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)

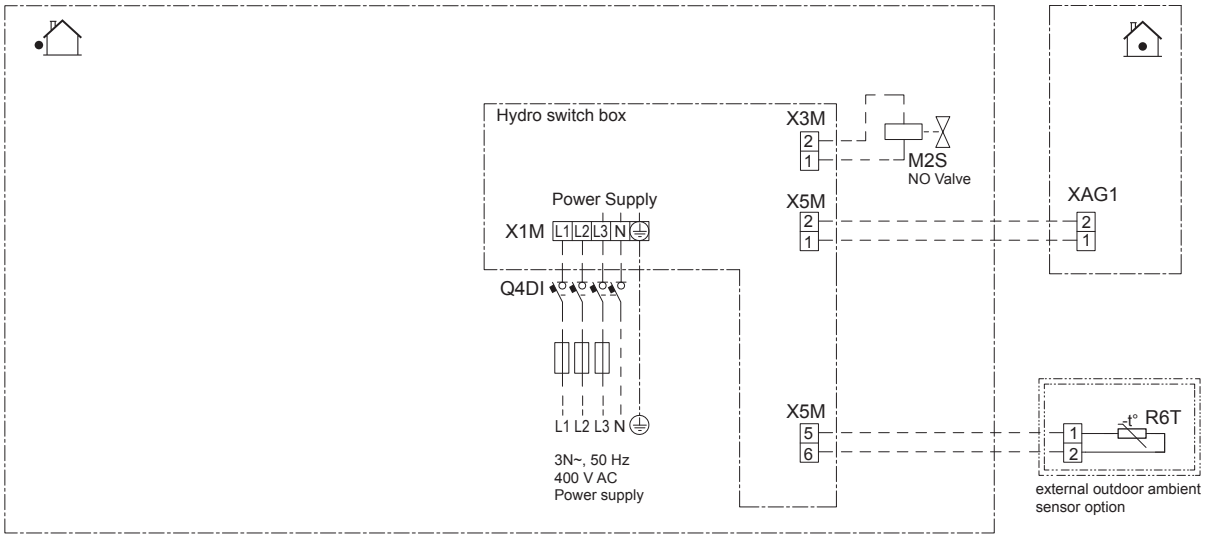
7 Technical data

English		Translation
Outdoor		Outdoor
Use normal kWh rate power supply for hydro switch box		Use normal kWh rate power supply for hydro switch box
A1P		Main PCB
A2P		Current loop PCB
B1L		Flow sensor
E11H		Flextube heater (15.6 W)
E12H		Expansion vessel heater (50 W)
E13H		PHE heater (50 W)
E14H		Internal pipe heater 1 (50 W)
E15H		Internal pipe heater 2 (33 W)
F1U (A1P)		Fuse T5 A 250V
K*R (A1P)		Magnetic relay

English		Translation
M1P		Main supply pump
Q4DI	#	Earth leakage circuit breaker
R1T		Outlet water heat exchanger thermistor
R3T		Refrigerant liquid side thermistor
R4T		Inlet water thermistor
R6T	*	External outdoor ambient sensor
S1L		Flow switch
TR1		Power supply transformer
X*A, X*Y (A1P, A2P)		Connector
X*M		Terminal strip

*: Optional
#: Field supply

Electrical connection diagram



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