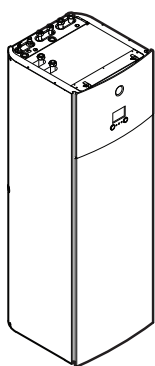




# Installation manual

## Daikin Altherma – Low temperature split



**EHVZ04S18DA6V(G)**

**EHVZ08S18DA6V(G)**

**EHVZ08S23DA6V(G)**

**EHVZ08S18DA9W(G)**

**EHVZ08S23DA9W(G)**

Installation manual  
Daikin Altherma – Low temperature split

**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 - OVERENSTEMMELSEERKLÆRING  
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE

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

CE - IZJAVA O USKLADENOSTI  
CE - MEGFELELŐSÉGI NYILATKOZAT  
CE - DEKLARACJA ZGODNOŚCI  
CE - DECLARATIE DE CONFORMITATE

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

CE - ATTIKTIES-DEKLARĀCIJA  
CE - ATBILSTĪBAS-DEKLARĀCIJA  
CE - VYHLÁSENIE-ZHODY  
CE - UYGUNLUK-BEYANI

**Daikin Europe N.V.**

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EHVZ04S18DA6V\*, EHVZ08S18DA6V\*, EHVZ08S23DA6V\*, EHVZ08S18DA9W\*, EHVZ08S23DA9W\*,

$$G_{\alpha} =$$

are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:  
 de onderstaande norm(en) of andere normatieve document(en), indien deze worden gebruikt overeenkomstig onze instructies:  
 our instructions are used in accordance with our instructions:  
 conform de volgende norm(en) of andere normatieve document(en), indien deze worden gebruikt overeenkomstig onze instructies:

206 sono conformi al(i) seguente(i) standard(s) o altro(i) document(o) i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni;  
207 είναι σύμφωνα με το(ι) ακόλουθο(ι) πρότυπο(α) ή άλλο(α) έγγραφο(α) κανονιστικό, υπό την προϋπόθεση ότι χρησιμοποιούνται

EN60335-2-40,

10. following the provisions of;
11. gemäß den Vorschriften der;
12. conformen aux stipulations des;
13. overeenkomstig de bepalingen van;
14. seguendo las disposiciones de;
15. secondo le prescrizioni per;
16. в соответствии с требованиями;
17. ijinjoni tur bard'evam tur
18. acorda cu o previziune din
19. в соответствии с положениями;

19 ob upoštevanju dolžob;  
20 vastavlati pñutele;  
21 sledvajki klauzite na;  
22 laikantis nuostaty, pateikiamy;  
23 ievõrojot prasības, kas noteiktas;  
24 odrõzvajajõ ustanoveniõ;  
25 bunun kosullarima uvõgun darak;

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15 Napomena*	

11 Information\*  
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 15 Napomena\*

16 Megjegyzés\*

17 Uwaga\*

18 Notă\*

19 Opomba\*

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07	Drehtven, come emendatod.	24	Drehtvov, as emendatod.
08	Drehtven, as emendatod.	25	Drehtvov, as emendatod.
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**DAIKIN**

Director  
Ostend, 2nd of October 2017

**DAIKIN EUROPE N.V.**

Zandvoordestraat 300, B-8400 Oostende, Belgium

**3P507286-4**

## Table of Contents

<b>1</b>	<b>About the documentation</b>	<b>3</b>
1.1	About this document.....	3
<b>2</b>	<b>About the box</b>	<b>4</b>
2.1	Indoor unit .....	4
2.1.1	To remove the accessories from the indoor unit.....	4
2.1.2	To handle the indoor unit .....	4
<b>3</b>	<b>Preparation</b>	<b>4</b>
3.1	Preparing the installation site .....	4
3.1.1	Installation site requirements of the indoor unit .....	4
3.2	Preparing water piping .....	6
3.2.1	To check the water volume and flow rate .....	6
3.3	Preparing electrical wiring .....	6
3.3.1	Overview of electrical connections for external and internal actuators .....	6
<b>4</b>	<b>Installation</b>	<b>6</b>
4.1	Opening the units .....	6
4.1.1	To open the indoor unit .....	6
4.1.2	To open the switch box cover of the indoor unit .....	7
4.1.3	To lower the switch box on the indoor unit.....	7
4.2	Mounting the indoor unit.....	7
4.2.1	To install the indoor unit.....	7
4.3	Connecting the refrigerant piping .....	8
4.3.1	To connect the refrigerant piping to the indoor unit ....	8
4.4	Connecting the water piping .....	8
4.4.1	To connect the water piping .....	8
4.4.2	To connect the recirculation piping .....	9
4.4.3	To connect the drain hose to the drain .....	9
4.4.4	To fill the water circuit .....	9
4.4.5	To fill the domestic hot water tank .....	9
4.4.6	To insulate the water piping .....	9
4.5	Connecting the electrical wiring.....	9
4.5.1	About electrical compliance .....	9
4.5.2	To connect the electrical wiring on the indoor unit.....	9
4.5.3	To connect the main power supply .....	10
4.5.4	To connect the backup heater power supply .....	11
4.5.5	To connect the shut-off valve.....	12
4.5.6	To connect the electrical meters .....	12
4.5.7	To connect the domestic hot water pump .....	12
4.5.8	To connect the alarm output .....	12
4.5.9	To connect the space heating ON/OFF output .....	12
4.5.10	To connect the changeover to external heat source...	13
4.5.11	To connect the power consumption digital inputs .....	13
4.5.12	To connect the safety thermostat (normal closed contact) .....	13
4.6	Finishing the indoor unit installation .....	14
4.6.1	To close the indoor unit.....	14
<b>5</b>	<b>Configuration</b>	<b>14</b>
5.1	Overview: Configuration .....	14
5.1.1	To access the most used commands .....	14
5.2	Configuration wizard.....	15
5.2.1	Configuration wizard: Language .....	15
5.2.2	Configuration wizard: Time and date .....	15
5.2.3	Configuration wizard: System .....	15
5.2.4	Configuration wizard: Backup heater .....	16
5.2.5	Configuration wizard: Main zone.....	16
5.2.6	Configuration wizard: Additional zone.....	17
5.2.7	Detailed screen with weather-dependent curve.....	18
5.2.8	Configuration wizard: Tank .....	18
5.3	Settings menu .....	18
5.3.1	Main zone .....	18
5.3.2	Additional zone .....	19
5.3.3	Information .....	19

5.4	Menu structure: Overview installer settings.....	20
<b>6</b>	<b>Commissioning</b>	<b>21</b>
6.1	Checklist before commissioning .....	21
6.2	Checklist during commissioning .....	21
6.2.1	To check the minimum flow rate .....	21
6.2.2	To perform an air purge .....	22
6.2.3	To perform an operation test run .....	22
6.2.4	To perform an actuator test run .....	22
6.2.5	To perform an underfloor heating screed dryout.....	22
<b>7</b>	<b>Hand-over to the user</b>	<b>23</b>
<b>8</b>	<b>Technical data</b>	<b>24</b>
8.1	Piping diagram: Indoor unit .....	24
8.2	Wiring diagram: Indoor unit .....	25
8.3	Table 1 – Maximum refrigerant charge allowed in a room: indoor unit.....	28
8.4	Table 2 – Minimum floor area: indoor unit.....	28
8.5	Table 3 – Minimum venting opening area for natural ventilation: indoor unit .....	28

## 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)
- **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 <http://www.daikineurope.com/support-and-manuals/product-information/>
- **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 <http://www.daikineurope.com/support-and-manuals/product-information/>

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

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

#### Technical engineering data

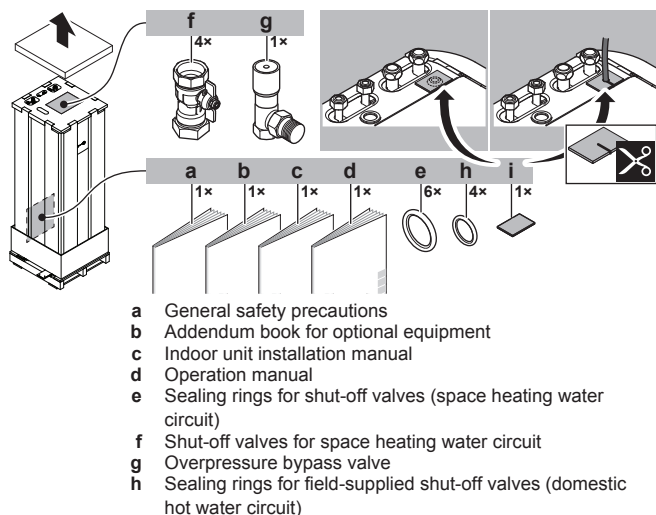
- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

## 2 About the box

## 2 About the box

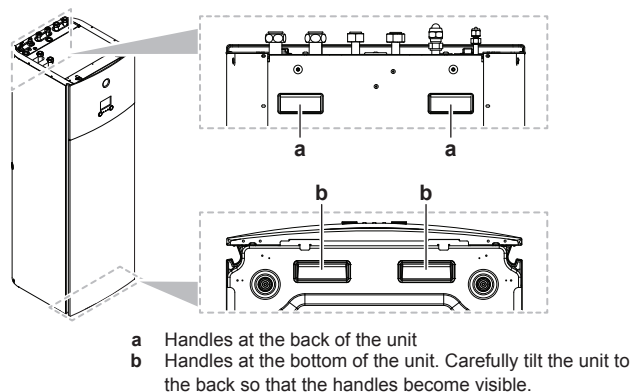
### 2.1 Indoor unit

#### 2.1.1 To remove the accessories from the indoor unit



#### 2.1.2 To handle the indoor unit

Use the handles at the back and at the bottom to carry the unit.



## 3 Preparation

### 3.1 Preparing the installation site



#### NOTICE

This unit is designed for operation on 2 temperature zones:

- underfloor heating in the **main zone**, this is the zone with the **lowest water temperature**,
- radiators in the **additional zone**, this is the zone with the **highest water temperature**.

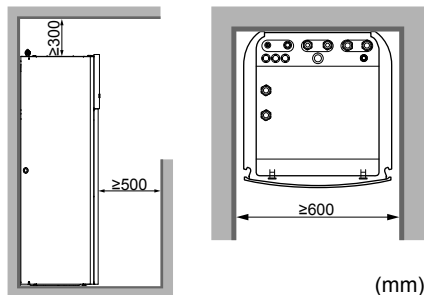


#### WARNING

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).

#### 3.1.1 Installation site requirements of the indoor unit

- The indoor unit is designed for indoor installation only and for the following ambient temperatures:
  - Space heating operation: 5~30°C
  - Domestic hot water production: 5~35°C
- Mind the following spacing installation guidelines:



#### NOTICE

When the temperature in multiple rooms is controlled by 1 thermostat, do NOT place a thermostatic valve on the emitter in the room where the thermostat is installed.

#### Special requirements for R32



#### WARNING

- Do NOT pierce or burn.
- Do NOT use means to accelerate the defrosting process or to clean the equipment, other than those recommended by the manufacturer.
- Be aware that R32 refrigerant does NOT contain an odour.



#### WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) and have a room size as specified below.



#### NOTICE

- Do NOT reuse joints which have been used already.
- Joints made in installation between parts of refrigerant system shall be accessible for maintenance purposes.



#### WARNING

Make sure installation, servicing, maintenance and repair comply with instructions from Daikin and with applicable legislation (for example national gas regulation) and are executed only by authorised persons.

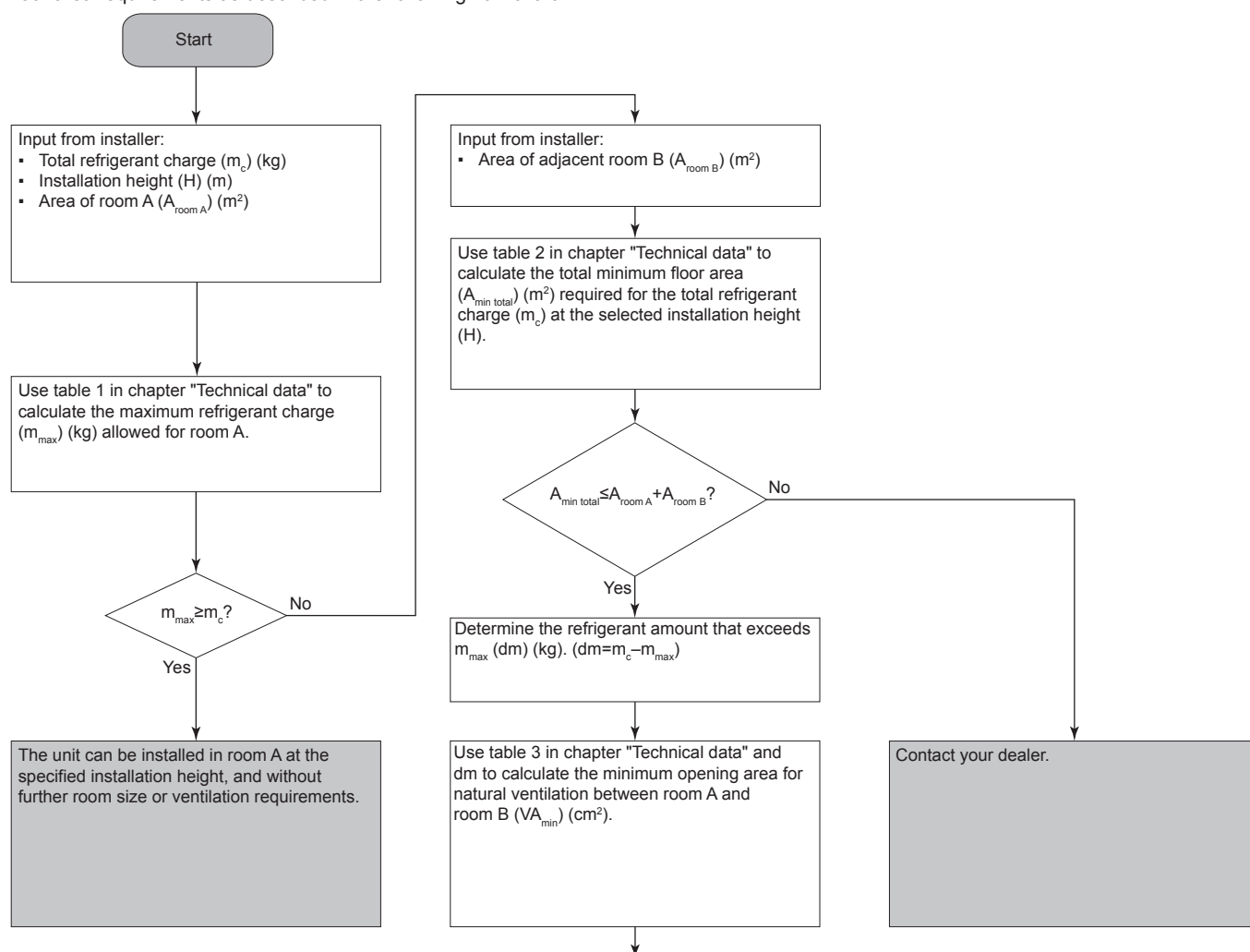


#### NOTICE

- Pipework shall be protected from physical damage.
- Installation of pipework shall be kept to a minimum.

If the total refrigerant charge in the system is <1.84 kg (i.e. if the piping length is <27 m), there are no additional minimum floor area requirements.

If the total refrigerant charge in the system is ≥1.84 kg (i.e. if the piping length is ≥27 m), you need to comply with additional minimum floor area requirements as described in the following flow chart:



Unit can be installed at **room A** if:

- 2 ventilation openings (permanently open) are provided between room A and B, 1 at the top and 1 at the bottom.
- Bottom opening:** The bottom opening must meet the minimum area requirements ( $VA_{min}$ ). It must be as close as possible to the floor and lower than H. If the ventilation opening starts from the floor, the height must be ≥20 mm. The bottom of the opening must be situated ≤100 mm from the floor. At least 50% of the required opening area must be situated <200 mm from the floor. The entire area of the opening must be situated <300 mm from the floor.
- Top opening:** The area of the top opening must be larger than or equal to the bottom opening. The bottom of the top opening must be situated at least 1.5 m above the top of the bottom opening.
- Ventilation openings to the outside are NOT considered suitable ventilation openings (the user can block them when it is cold). For ventilation opening requirements, see "Ventilation opening requirements" in the chapter "Technical data".

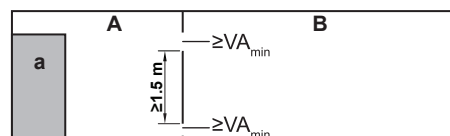


## INFORMATION

The value of H considered is 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.

Use the following tables to calculate the needed values to make sure that your appliance is installed correctly:

- "8.3 Table 1 – Maximum refrigerant charge allowed in a room: indoor unit" on page 28
- "8.4 Table 2 – Minimum floor area: indoor unit" on page 28
- "8.5 Table 3 – Minimum venting opening area for natural ventilation: indoor unit" on page 28



- a Indoor unit
- A Room where the indoor unit is installed.
- B Room adjacent to room A.

## 4 Installation

### 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

There are no requirements for the minimum water volume.

##### Minimum flow rate

Check that the minimum flow rate in the installation is guaranteed in all conditions on each zone separately. This minimum flow rate is required during defrost/backup heater operation. For this purpose, use the overpressure bypass valve delivered with the unit.



#### 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 defrost/backup heater operation

12 l/min

See the recommended procedure as described in ["6.2 Checklist during commissioning"](#) on page 21.

### 3.3 Preparing electrical wiring

#### 3.3.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
<b>Outdoor unit and indoor unit power supply</b>			
1	Power supply for outdoor unit	2+GND	(a)
2	Power supply and interconnection cable to indoor unit	3	(f)
3	Power supply for backup heater	See table below.	—
4	Preferential kWh rate power supply (voltage free contact)	2	(d)
5	Normal kWh rate power supply	2	6.3 A
<b>Optional equipment</b>			
6	User interface used as room thermostat	2	(e)
7	Room thermostat	3 or 4	100 mA <sup>(b)</sup>
8	Outdoor ambient temperature sensor	2	(b)
9	Indoor ambient temperature sensor	2	(b)
10	Heat pump convector	2	100 mA <sup>(b)</sup>
<b>Field supplied components</b>			
11	Shut-off valve	2	100 mA <sup>(b)</sup>

Item	Description	Wires	Maximum running current
12	Electricity meter	2 (per meter)	(b)
13	Domestic hot water pump	2	(b)
14	Alarm output	2	(b)
15	Changeover to external heat source control	2	(b)
16	Space heating operation control	2	(b)
17	Power consumption digital inputs	2 (per input signal)	(b)
18	Safety thermostat for the main zone	2	(b)
19	Safety thermostat for the additional zone	2	(d)

- (a) Refer to name plate on outdoor unit.
- (b) Minimum cable section 0.75 mm<sup>2</sup>.
- (c) Cable section 2.5 mm<sup>2</sup>.
- (d) Cable section 0.75 mm<sup>2</sup> till 1.25 mm<sup>2</sup>; maximum length: 50 m. Voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
- (e) Cable section 0.75 mm<sup>2</sup> till 1.25 mm<sup>2</sup>; maximum length: 500 m.
- (f) Cable section 1.5 mm<sup>2</sup>.



#### NOTICE

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



#### NOTICE

A safety thermostat (normal closed contact) MUST be installed for the main zone. See ["4.5.12 To connect the safety thermostat \(normal closed contact\)"](#) on page 13.

Backup heater type	Power supply	Required number of conductors
*6V	1N~ 230 V	2+GND
	3~ 230 V	3+GND
*9W	3N~ 400 V	4+GND

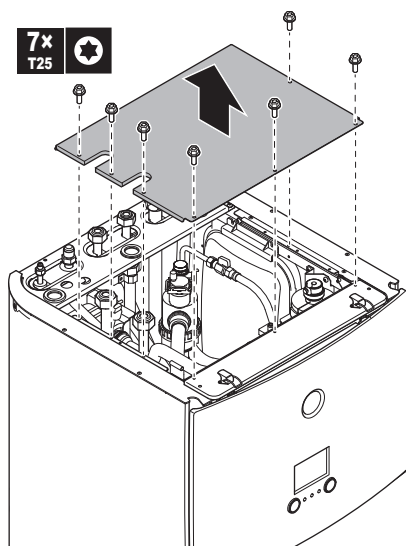
## 4 Installation

### 4.1 Opening the units

#### 4.1.1 To open the indoor unit

- 1 Remove the top panel.



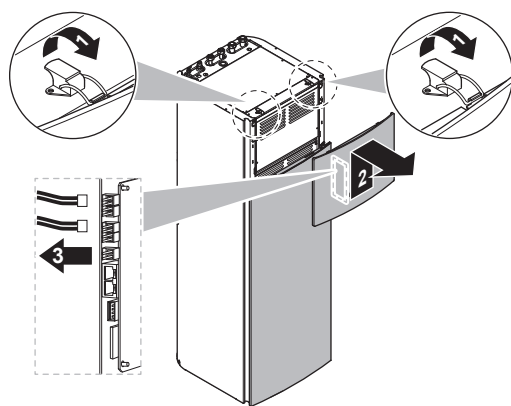


- 2 Remove the upper front panel. Open the hinges at the top and slide the top panel upwards.

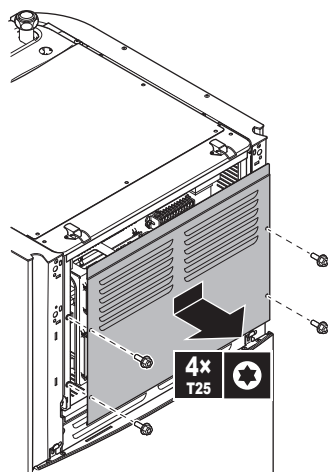


## NOTICE

If you remove the upper front panel with integrated user interface, also disconnect the cables from the back of the user interface inside the front panel, to avoid damaging them.



### 4.1.2 To open the switch box cover of the indoor unit



## INFORMATION

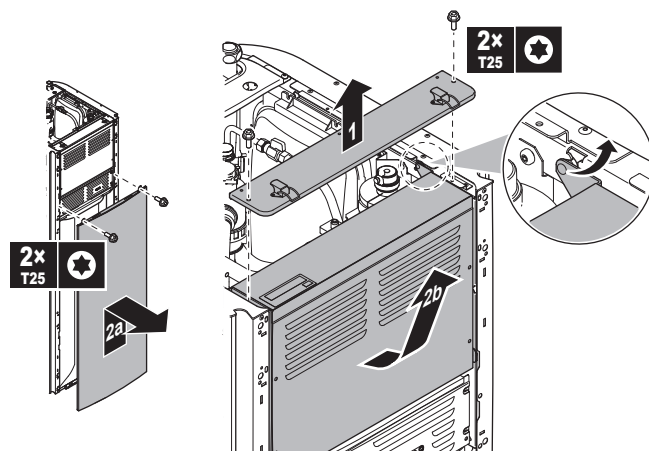
In this manual, we only give instructions how to open the upper switch box. The lower switch box contains all high voltage connections and components and only needs to be opened during maintenance.

### 4.1.3 To lower the switch box on the indoor unit

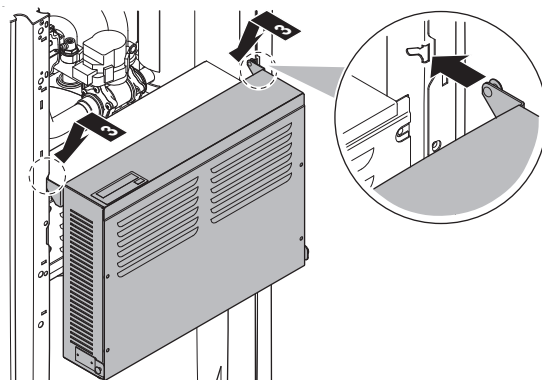
During the installation, you will need access to the inside of the indoor unit. To have easier front access, put the switch box lower on the unit as follows:

**Prerequisite:** The user interface front panel has been removed.

- 1 Remove the top plate that keeps the switch box into place at the top of the unit.
- 2 Tilt the switch box to the front and lift it out of its hinges.



- 3 Place the switch box lower on the unit. Use the 2 hinges located lower on the unit.

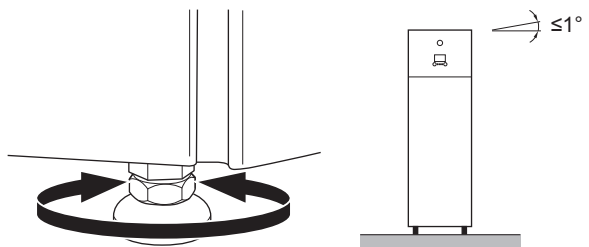


## 4.2 Mounting the indoor unit

### 4.2.1 To install the indoor unit

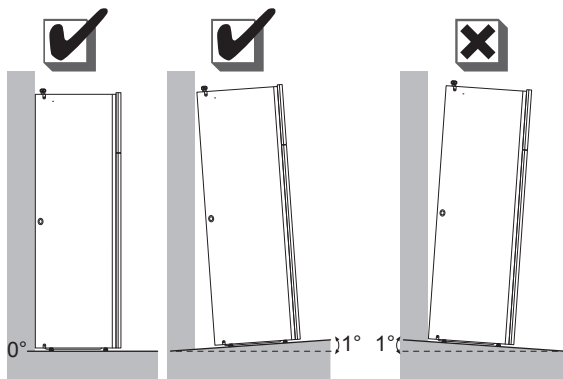
- 1 Lift the indoor unit from the pallet and place it on the floor. Also see "2.1.2 To handle the indoor unit" on page 4.
- 2 Slide the indoor unit into position.
- 3 Adjust the height of the leveling feet to compensate for floor irregularities. The maximum allowed deviation is 1°.

## 4 Installation



### NOTICE

Do NOT tilt the unit forwards:

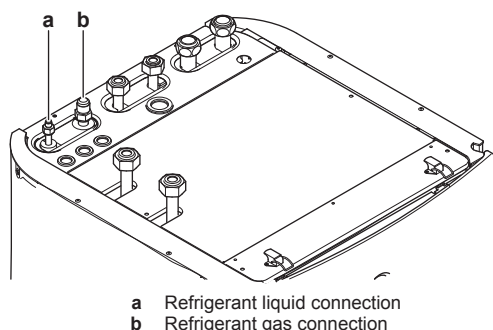


### 4.3 Connecting the refrigerant piping

See the outdoor unit installation manual for all guidelines, specifications and installation instructions.

#### 4.3.1 To connect the refrigerant piping to the indoor unit

- 1 Connect the liquid stop valve from the outdoor unit to the refrigerant liquid connection of the indoor unit.



- a Refrigerant liquid connection
- b Refrigerant gas connection

- 2 Connect the gas stop valve from the outdoor unit to the refrigerant gas connection of the indoor unit.

### 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.

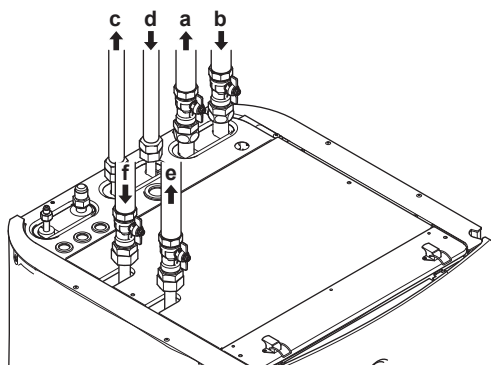
To facilitate service and maintenance, 4 shut-off valves and 1 overpressure bypass valve are provided. Mount the shut-off valves on the space heating water inlets and space heating water outlets. To prevent overpressure and ensure the minimum flow rate, install the **overpressure bypass valve** on the space heating water outlet for the **additional zone**.

### NOTICE

This unit is designed for operation on 2 temperature zones:

- underfloor heating in the **main zone**, this is the zone with the **lowest water temperature**,
- radiators in the **additional zone**, this is the zone with the **highest water temperature**.

- 1 Install the shut-off valves on the space heating water pipes.
- 2 Screw the indoor unit nuts on the shut-off valve.
- 3 Connect the domestic hot water in and out pipes to the indoor unit.



- a Space heating additional zone water out
- b Space heating additional zone water in
- c Domestic hot water out
- d Domestic cold water in (cold water supply)
- e Space heating main zone water out
- f Space heating main zone water in

### NOTICE

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

### NOTICE



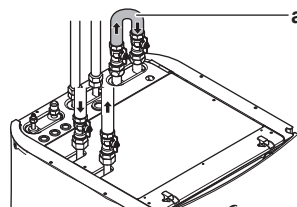
**Overpressure bypass valve** (delivered as accessory). We recommend to install the overpressure bypass valve in the space heating water circuit.

Mind the minimum flow rate when adjusting the overpressure bypass valve setting. See ["3.2.1 To check the water volume and flow rate" on page 6](#) and ["6.2.1 To check the minimum flow rate" on page 21](#).

### NOTICE

If you install EHVZ models as a single-zone application, then:

**Setup.** Install a bypass between the space heating water inlet and outlet of the additional zone (=direct zone). Do NOT interrupt the water flow by closing the shut-off valves.



a Bypass

**Configuration.** Set field setting [7-02]=0 (Number of zones = Single zone).





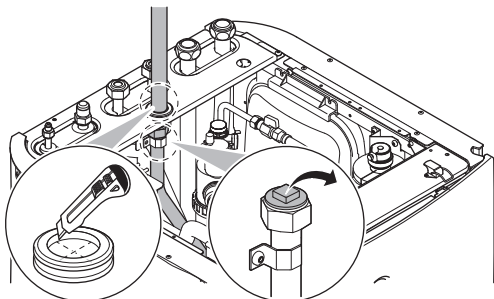
## NOTICE

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 Remove the top panel from the unit, see "4.1.1 To open the indoor unit" on page 6.
- 2 Cut out the rubber grommet on top of the unit, and remove the stop. The recirculation connector is placed below the hole.
- 3 Route the recirculation piping through the grommet and connect it to the recirculation connector.



- 4 Reattach the top panel.

### 4.4.3 To connect the drain hose to the drain

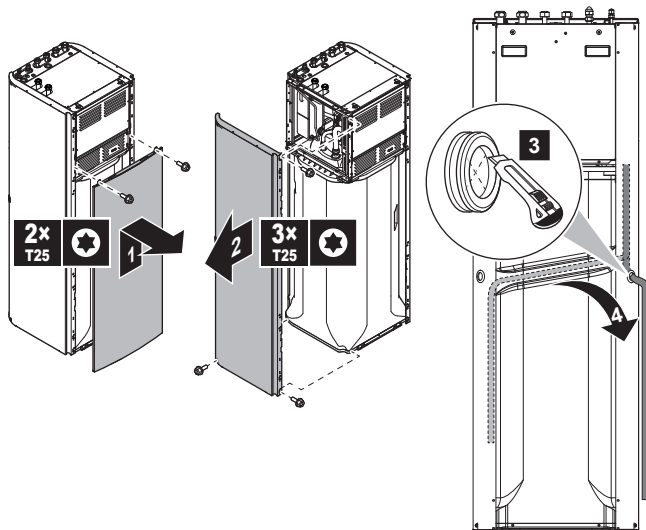
Water coming from the pressure relief valve is collected in the drain pan. The drain pan is connected to a drain hose inside the unit. It is recommended to connect the drain hose to an appropriate drain according to the applicable legislation. You can route the drain hose through the left or right side panel.

**Prerequisite:** The upper front panel has been removed from the unit, see "4.1.1 To open the indoor unit" on page 6.

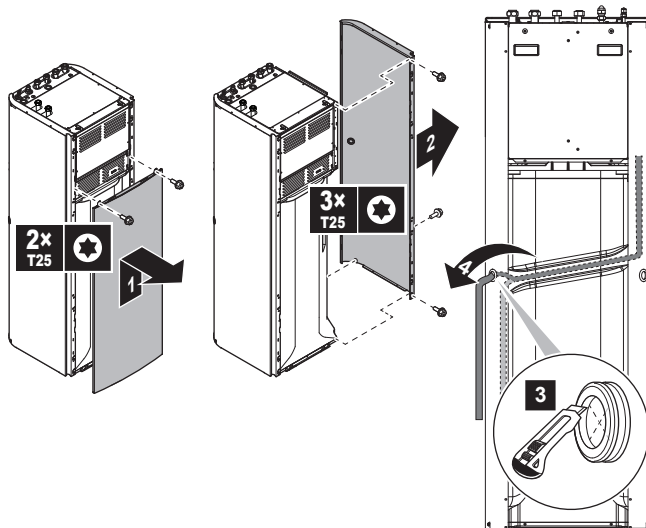
- 1 Remove the lower front panel from the unit.
- 2 Remove one of the side panels.
- 3 Cut out the rubber grommet.
- 4 Pull the drain hose through the hole.
- 5 Reattach the side panel. Ensure the water can flow through the drain tube.

It is recommended to use a tundish to collect the water.

#### Option 1: Through the left side panel



#### Option 2: Through the right side panel



### 4.4.4 To fill the water circuit

To fill the water circuit, use the optional filling kit (EKFILL-CA) or a field supply filling kit. Make sure you comply with the applicable legislation.

### 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 condensation during defrost operation and reduction of the heating capacity.

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.

## 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

Only for the backup heater of the indoor unit

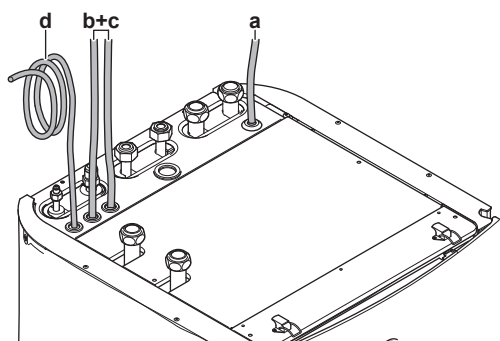
See "4.5.4 To connect the backup heater power supply" on page 11.

### 4.5.2 To connect the electrical wiring on the indoor unit

- 1 To open the indoor unit, see "4.1.1 To open the indoor unit" on page 6 and "4.1.2 To open the switch box cover of the indoor unit" on page 7.

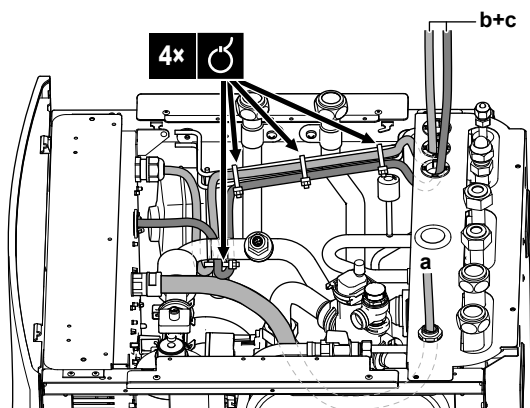
## 4 Installation

2 The wiring enters the unit from the top:



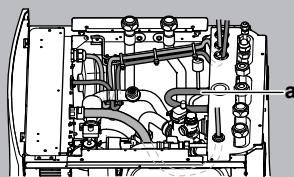
- a, b, c Field wiring (see table below)  
d Factory-mounted cable for power supply of backup heater

3 Routing of the wiring inside the unit should be as follows. Fix the cable to the cable rail using cable ties:



### WARNING

Make sure that the electrical wiring does NOT touch the refrigerant gas pipe, which can be very hot.



a Refrigerant gas pipe

Routing	Possible cables (depending on unit type and installed options)
a Low voltage	<ul style="list-style-type: none"> <li>Preferential power supply contact</li> <li>User interface used as room thermostat (option)</li> <li>Power consumption digital inputs (field supply)</li> <li>Outdoor ambient temperature sensor (option)</li> <li>Indoor ambient temperature sensor (option)</li> <li>Electrical meters (field supply)</li> <li>Safety thermostat (field supply)</li> </ul>
b High voltage power supply	<ul style="list-style-type: none"> <li>Interconnection cable</li> <li>Normal kWh rate power supply</li> <li>Preferential kWh rate power supply</li> </ul>

Routing	Possible cables (depending on unit type and installed options)
c High voltage control signal	<ul style="list-style-type: none"> <li>Heat pump convector (option)</li> <li>Room thermostat (option)</li> <li>Shut-off valve (field supply)</li> <li>Domestic hot water pump (field supply)</li> <li>Alarm output</li> <li>Changeover to external heat source control</li> <li>Space heating operation control</li> </ul>
d High voltage power supply (factory-mounted cable)	<ul style="list-style-type: none"> <li>Power supply for backup heater</li> </ul>



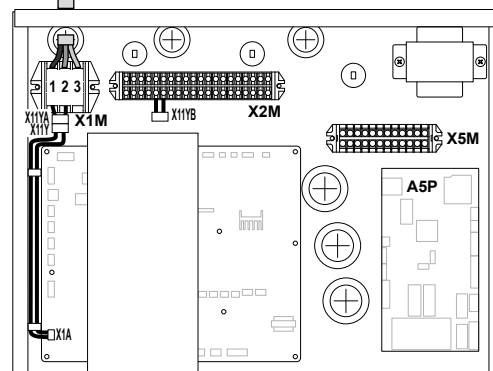
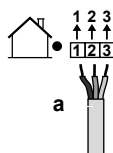
### CAUTION

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.

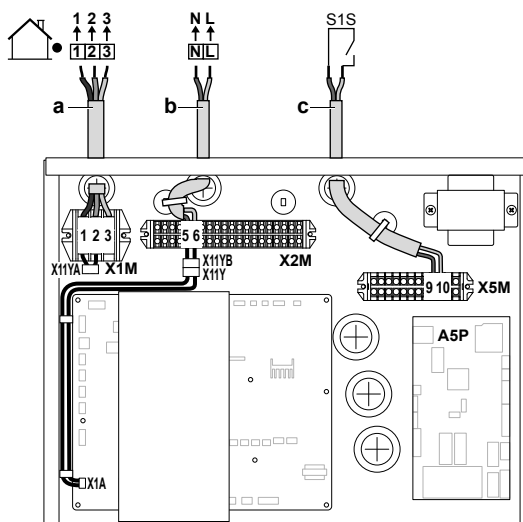
In case of normal kWh rate power supply



Legend: see illustration below.

In case of preferential kWh rate power supply

Connect X11Y to X11YB.



- a Interconnection cable (=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 X11Y to X11YB. The necessity of separate normal kWh rate power supply to indoor unit (b) X2M/5+6 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/9+10) as the safety thermostat for the additional zone. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat for the additional zone.

## 4.5.4 To connect the backup heater power supply



### WARNING

The backup heater **MUST** have a dedicated power supply and **MUST** be protected by the safety devices required by the applicable legislation.



### CAUTION

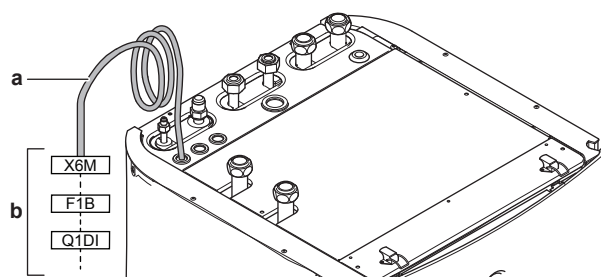
To guarantee the unit is completely earthed, always connect the backup heater power supply and the earth cable.

The backup heater capacity can vary, depending on the indoor unit model. Make sure that the power supply is in accordance with the backup heater capacity, as listed in the table below.

Backup heater type	Backup heater capacity	Power supply	Maximum running current	$Z_{max}$
*6V	2 kW	1N~ 230 V	9 A	—
	4 kW	1N~ 230 V	17 A <sup>(a)(b)</sup>	0.22 $\Omega$
	6 kW	1N~ 230 V	26 A <sup>(a)(b)</sup>	0.22 $\Omega$
	2 kW	3~ 230 V	5 A	—
	4 kW	3~ 230 V	10 A	—
	6 kW	3~ 230 V	15 A	—
*9W	3 kW	3N~ 400 V	4 A	—
	6 kW	3N~ 400 V	9 A	—
	9 kW	3N~ 400 V	13 A	—

- (a) 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.).
- (b) This equipment complies with EN/IEC 61000-3-11 (European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤75 A) provided that the system impedance  $Z_{sys}$  is less than or equal to  $Z_{max}$  at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a system impedance  $Z_{sys}$  less than or equal to  $Z_{max}$ .

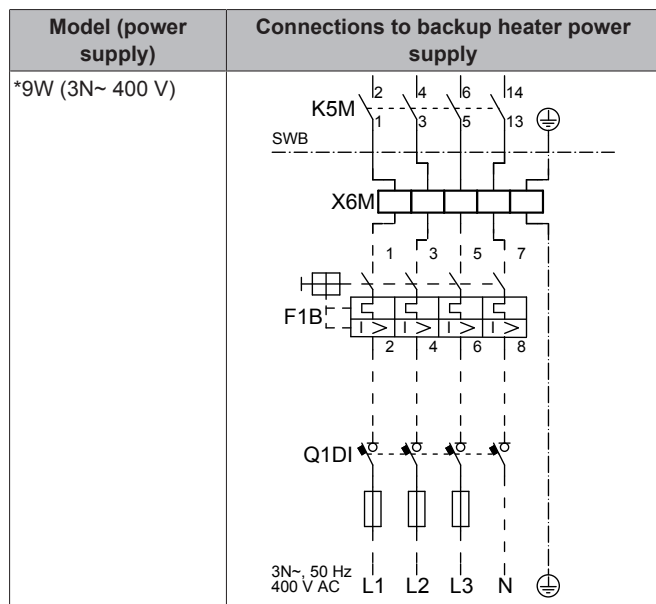
Connect the backup heater power supply as follows:



- a Factory-mounted cable connected to the backup heater contactor inside the switch box (K5M for \*6V and \*9W models)
- b Field wiring (see table below)

Model (power supply)	Connections to backup heater power supply
*6V (1N~ 230 V)	
*6V (3~ 230 V)	

## 4 Installation



- F1B Overcurrent fuse (field supply). Recommended fuse for \*6V and \*9W models: 4-pole; 20 A; curve 400 V; tripping class C.
- K1M Contactor (in the lower switch box)
- K5M Safety contactor (in the lower switch box)
- Q1DI Earth leakage circuit breaker (field supply)
- SWB Switch box
- X6M Terminal (field supply)

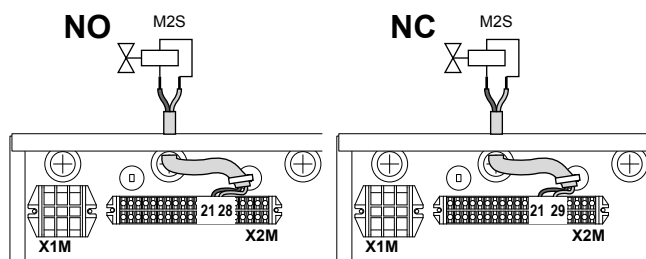
### 4.5.5 To connect the shut-off valve

- 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.

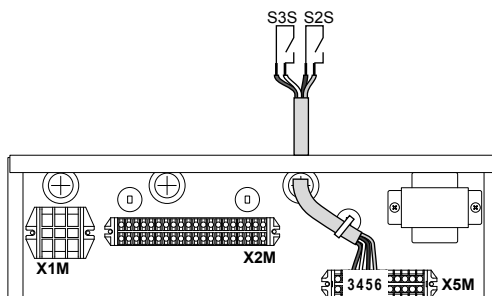
### 4.5.6 To connect the electrical meters



#### INFORMATION

In case of an electrical meter with transistor output, check the polarity. The positive polarity **MUST** be connected to X5M/6 and X5M/4; the negative polarity to X5M/5 and X5M/3.

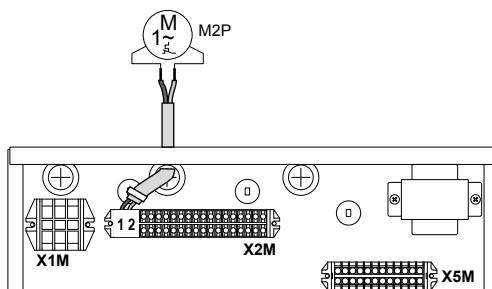
- 1 Connect the electrical meters cable to the appropriate terminals as shown in the illustration below.



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

### 4.5.7 To connect the domestic hot water pump

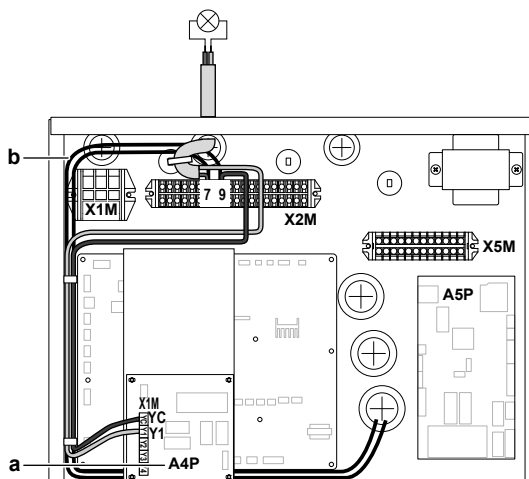
- 1 Connect the domestic hot water pump cable to the appropriate terminals as shown in the illustration below.



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

### 4.5.8 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.
- b Prewiring between X2M/7+9 and Q1L (= thermal protector backup heater). Do NOT change.

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

### 4.5.9 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.





## 5 Configuration



### NOTICE

Make sure to select and install the safety thermostat for the additional zone 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 for the additional zone. 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/9+10) as the safety thermostat for the additional zone. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat for the additional zone.

## 4.6 Finishing the indoor unit installation

### 4.6.1 To close the indoor unit

- 1 Close the cover of the switch box.
- 2 Reinstall the top plate.
- 3 Reinstall the side panels.
- 4 Reconnect the cables to the user interface integrated in the front panel.
- 5 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 – Configuration wizard.** When you turn ON the user interface for the first time (via the indoor unit), the configuration wizard starts to help you configure the system.
- **Restart the configuration wizard.** If the system is already configured, you can restart the configuration wizard. To restart the configuration wizard, go to Installer settings > Configuration wizard.
- **Afterwards.** If necessary, you can make changes to the configuration in the menu structure or the overview settings.



### INFORMATION

When the configuration wizard is finished, the user interface will show an overview screen and request to confirm. When confirmed, the system will restart and the home screen will be displayed.

#### 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 <b>menu structure</b> .	#
Accessing settings via the code in the <b>overview settings</b> .	Code

See also:

- ["To access the installer settings" on page 14](#)
- ["5.4 Menu structure: Overview installer settings" on page 20](#)

### 5.1.1 To access the most used commands

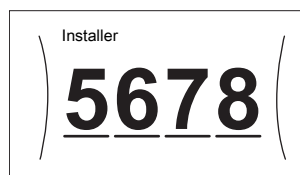
#### To change the user permission level

You can change the user permission level as follows:

1	Go to [B]: User profile	⌂⋯⋯○
2	Enter the applicable code for the user permission. <ul style="list-style-type: none"><li>▪ Move the cursor from left to right.</li><li>▪ Browse through the list of digits and change the selected digit.</li><li>▪ Confirm the pincode and proceed.</li></ul>	— ⌂⋯⋯○ ○⋯⋯ ○⋯⋯

#### Installer pin code

The Installer pin code is **5678**. Additional menu items and installer settings are now available.



#### Advanced user pin code

The Advanced user pin code is **1234**. Additional menu items for the user are now visible.

#### User pin code

The User pin code is **0000**.

#### To access the installer settings

- 1 Set the user permission level to Installer.
- 2 Go to [9]: Installer settings.



**To modify an overview setting**

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

All settings can be done using the menu structure. If for any reason it is required to change a setting using the overview settings, then the overview settings can be accessed as follows:

1	Set the user permission level to Installer. See <a href="#">"To change the user permission level" on page 14.</a>	—
2	Go to [9.I]: Installer settings > Overview field settings.	
3	Turn the left dial to select the first part of the setting and confirm by pressing the dial. 	
4	Turn the left dial to select the second part of the setting 	
5	Turn the right dial to modify the value from 15 to 20. 	
6	Press the left dial to confirm the new setting.	
7	Press the center button to go back to the home screen.	

**INFORMATION**

When you change the overview settings and you go back to the home screen, the user interface will show a popup screen and request to restart the system.

When confirmed, the system will restart and recent changes will be applied.

**INFORMATION**

By default, daylight savings time is enabled and clock format is set to 24 hours. If you want to change these settings, you can do this in the menu structure (User settings > Time/date) once the unit is initialised.

**5.2.3 Configuration wizard: System****Indoor unit type**

The indoor unit type is displayed, but cannot be adjusted.

**Backup heater type**

The backup heater is adapted to be connected to most common European electricity grids. The type of backup heater must be set on the user interface. For units with a built-in backup heater, the type of heater can be viewed but not changed.

#	Code	Description
[9.3.1]	[E-03]	<ul style="list-style-type: none"> <li>3: 6V</li> <li>4: 9W</li> </ul>

**Domestic hot water**

Set the following settings according to the actual installation. The setting determines if the system can prepare domestic hot water or not, and which tank is used.

#	Code	Description
[9.2.1]	[E-05] [E-06] [E-07]	<ul style="list-style-type: none"> <li>Integrated The backup heater will also be used for domestic hot water heating.</li> </ul>

**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 and the domestic hot water production.
- When auto emergency is set to Manual and a heat pump failure occurs, the domestic hot water and space heating operation 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.

We recommend to set Emergency to Automatic if the house is unattended for longer periods.

#	Code	Description
[9.5]	[4-06]	<ul style="list-style-type: none"> <li>0: Manual</li> <li>1: Automatic</li> </ul>

**INFORMATION**

If a heat pump failure occurs and Emergency 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.

**Number of zones**

The system can supply leaving water to up to 2 water temperature zones. During configuration, the number of water zones must be set.

**5.2 Configuration wizard**

After first power ON of the system, the user interface will guide you using the configuration wizard. This way you can set the most important initial settings. This way the unit will be able to run properly. Afterwards, more detailed settings can be done via the menu structure if required.

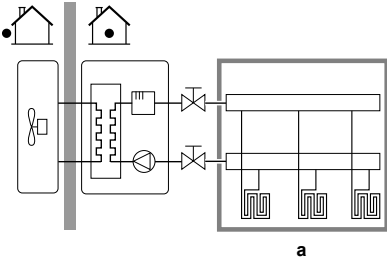
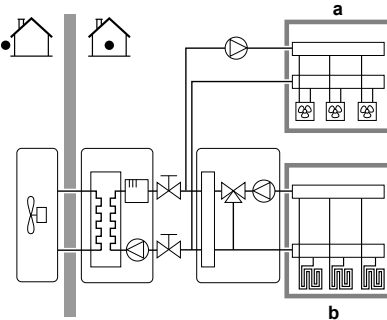
**5.2.1 Configuration wizard: Language**

#	Code	Description
[7.1]	N/A	Language

**5.2.2 Configuration wizard: Time and date**

#	Code	Description
[7.2]	N/A	Set the local time and date

## 5 Configuration

#	Code	Description
[4.5]	[7-02]	<ul style="list-style-type: none"> <li>0: Single zone Only one leaving water temperature zone:</li> </ul>  <ul style="list-style-type: none"> <li>a: Main LWT zone</li> </ul>
[4.5]	[7-02]	<ul style="list-style-type: none"> <li>1: Dual zone Two leaving water temperature zones. The main leaving water temperature zone consists of the higher load heat emitters and a mixing station to achieve the desired leaving water temperature. In heating:</li> </ul>  <ul style="list-style-type: none"> <li>a: Additional LWT zone: Highest temperature</li> <li>b: Main LWT zone: Lowest temperature</li> </ul>



### CAUTION

If there are 2 zones, it is important that the zone with the lowest water temperature is configured as the main zone, and the zone with the highest water temperature is configured as the additional zone. Not configuring the system in this way could cause damage to the heat emitters.



### CAUTION

If there are 2 zones and the emitter types are wrongly configured, water of high temperature can be sent towards a low temperature emitter (underfloor heating). To avoid this:

- Install an aquastat/thermostatic valve to avoid too high temperatures towards a low temperature emitter.
- Make sure you set the emitter types for the main zone [2.7] and for the additional zone [3.7] correctly in accordance with the connected emitter.

### 5.2.4 Configuration wizard: Backup heater

The backup heater is adapted to be connected to most common European electricity grids. If the backup heater is available, the voltage, configuration and capacity must be set on the user interface.

The capacities for the different steps of the backup heater must be set for the energy metering and/or power consumption control feature to work properly. When measuring the resistance value of each heater, you can set the exact heater capacity and this will lead to more accurate energy data.

#### Voltage

- For a 3V model, this is fixed to 230V, 1ph.
- A 6V model can be set to 230V, 1ph or 230V, 3ph.
- For a 9V model, it is fixed to 400V, 3ph.

#	Code	Description
[9.3.2]	[5-0D]	<ul style="list-style-type: none"> <li>0: 230V, 1ph</li> <li>1: 230V, 3ph</li> <li>2: 400V, 3ph</li> </ul>

#### Configuration

The backup heater can be configured in different ways. It can be chosen to have a 1-step only backup heater or a backup heater with 2 steps. If 2 steps, the capacity of the second step depends on this setting. It can also be chosen to have a higher capacity of the second step in emergency.

#	Code	Description
[9.3.3]	[4-0A]	<ul style="list-style-type: none"> <li>0: Relay 1</li> <li>1: Relay 1 / Relay 1+2<sup>(a)</sup></li> <li>2: Relay 1 / Relay 2<sup>(a)</sup></li> <li>3: Relay 1 / Relay 2 Emergency Relay 1+2<sup>(a)</sup></li> </ul>

(a) Not available for 3V models.



#### INFORMATION

During normal operation, the capacity of the second step of the backup heater at nominal voltage is equal to  $[6-03] + [6-04]$ .



#### INFORMATION

If  $[4-0A]=3$  and emergency mode is active, the power usage of the backup heater is maximal and equal to  $2 \times [6-03] + [6-04]$ .



#### INFORMATION

Only for systems with integrated domestic hot water tank: If the storage temperature set point is higher than 50°C, Daikin recommends NOT to disable the backup heater second step because it will have a big impact on the required time for the unit to heat up the domestic hot water tank.

#### Capacity step 1

#	Code	Description
[9.3.4]	[6-03]	<ul style="list-style-type: none"> <li>The capacity of the first step of the backup heater at nominal voltage.</li> </ul>

#### Additional capacity step 2

#	Code	Description
[9.3.5]	[6-04]	<ul style="list-style-type: none"> <li>The capacity difference between the second and first step of the backup heater at nominal voltage. Nominal value depends on backup heater configuration.</li> </ul>

### 5.2.5 Configuration wizard: Main zone

The most important settings for the main leaving water zone can be set here.

**Emitter type**

Depending on the system water volume and the heater emitter type of the main zone, the heat up or cool down of the main zone can take longer. This setting can compensate for a slow or a quick heating/cooling system during the heat up/cool down cycle. The target delta T for the main zone will depend on this setting. Target delta T control is only possible in case only 1 zone is active. Pump control will be different when both zones are active.

In room thermostat control, this setting will influence the maximum modulation of the desired leaving water temperature, and the possibility for usage of the automatic cooling/heating changeover based on the indoor ambient temperature.

Therefore it is important to set this correctly and in accordance with your system layout.

#	Code	Description
[2.7]	[2-0C]	<ul style="list-style-type: none"> <li>0: Underfloor heating</li> <li>1: Fancoil unit</li> <li>2: Radiator</li> </ul>

The setting of the emitter type has an influence on the space heating setpoint range and the target delta T in heating as follows:

Description	Space heating setpoint range	Target delta T in heating
0: Underfloor heating	Maximum 55°C	Variable
1: Fancoil unit	Maximum 55°C	Variable
2: Radiator	Maximum 65°C	Fixed 10°C

**NOTICE**

For radiators, the average emitter temperature will be lower compared to underfloor heating, due to the fixed delta T of 10°C. To compensate, you can:

- Increase the weather dependent curve desired temperatures [2.5].
- Enable leaving water temperature modulation and increase the maximum modulation [2.C].

**Control**

In Leaving water control, unit operation is decided based on the leaving water temperature regardless the actual room temperature and/or heating or cooling demand of the room.

In External room thermostat control, unit operation is decided by the external thermostat or equivalent (e.g. heat pump convector).

In Room thermostat control, unit operation is decided based on the ambient temperature of the user interface used as a room thermostat.

#	Code	Description
[2.9]	[C-07]	<ul style="list-style-type: none"> <li>0: Leaving water</li> <li>1: External room thermostat</li> <li>2: Room thermostat</li> </ul>

**Setpoint mode**

In Fixed mode, the desired leaving water temperature does NOT depend on the outdoor ambient temperature.

In WD heating, fixed cooling mode, the desired leaving water temperature:

- depends on the outdoor ambient temperature for heating
- does NOT depend on the outdoor ambient temperature for cooling

In Weather dependent mode, the desired leaving water temperature depends on the outdoor ambient temperature.

#	Code	Description
[2.4]	N/A	<ul style="list-style-type: none"> <li>0: Fixed</li> <li>1: WD heating, fixed cooling</li> <li>2: Weather dependent</li> </ul>

If you choose WD heating, fixed cooling or Weather dependent, the next screen will be the detailed screen with weather-dependent curves. Also see ["5.2.7 Detailed screen with weather-dependent curve" on page 18](#).

**Schedule**

Indicates if the desired leaving water temperature is according to a schedule. Influence of the LWT setpoint mode [2.4] is as follows:

- In Fixed LWT setpoint mode, the scheduled actions consist of desired leaving water temperatures, either preset or custom.
- In Weather dependent LWT setpoint mode, the scheduled actions consist of desired shift actions, either preset or custom.

#	Code	Description
[2.1]	N/A	<ul style="list-style-type: none"> <li>0: No</li> <li>1: Yes</li> </ul>

**5.2.6 Configuration wizard: Additional zone**

The most important settings for the additional leaving water zone can be set here.

**Emitter type**

For more info about this functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.7]	[2-0D]	<ul style="list-style-type: none"> <li>0: Underfloor heating</li> <li>1: Fancoil unit</li> <li>2: Radiator</li> </ul>

**Control**

The control type is displayed here, but cannot be adjusted. It is determined by the control type of the main zone. For more info about the functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.9]	N/A	<ul style="list-style-type: none"> <li>0: Leaving water if the control type of the main zone is Leaving water.</li> <li>1: External room thermostat if the control type of the main zone is External room thermostat or Room thermostat.</li> </ul>

**Setpoint mode**

For more info about this functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.4]	N/A	<ul style="list-style-type: none"> <li>0: Fixed</li> <li>1: WD heating, fixed cooling</li> <li>2: Weather dependent</li> </ul>

If you choose WD heating, fixed cooling or Weather dependent, the next screen will be the detailed screen with weather-dependent curves. Also see ["5.2.7 Detailed screen with weather-dependent curve" on page 18](#).

**Schedule**

Indicates if the desired leaving water temperature is according to a schedule. Also see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

## 5 Configuration

#	Code	Description
[3.1]	N/A	<ul style="list-style-type: none"> <li>0: No</li> <li>1: Yes</li> </ul>

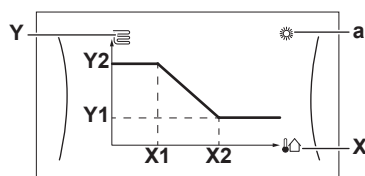
### 5.2.7 Detailed screen with weather-dependent curve

When weather dependent operation is active the desired tank temperature is determined automatically depending on the averaged outdoor temperature. When the outdoor temperature is lower the tank temperature will need to be higher as the water pipes will be colder and vice versa.

The weather-dependent curves are defined by two setpoints:

- Setpoint (X1, Y2)
- Setpoint (X2, Y1)

Weather-dependent curve:



	Go through the temperatures.
	Confirm changes and proceed.
	Change the temperature.
	Go to the next temperature.

Item	Description
<b>a</b>	Possible weather dependent zones: <ul style="list-style-type: none"> <li> Main zone heating</li> <li> Additional zone heating</li> <li> Domestic hot water</li> </ul>
<b>X, X1, X2</b>	Outdoor ambient temperature
<b>Y, Y1, Y2</b>	Desired tank temperature or leaving water temperature. The symbol shown here corresponds to the heat emitter for that zone: <ul style="list-style-type: none"> <li> Underfloor heating</li> <li> Fan coil unit</li> <li> Radiator</li> <li> Domestic hot water tank</li> </ul>

### 5.2.8 Configuration wizard: Tank

#### Heat up mode

The domestic hot water can be prepared in 3 different ways. They differ from each other by the way the desired tank temperature is set and how the unit acts upon it.

#	Code	Description
[5.7]	[6-0D]	<ul style="list-style-type: none"> <li>0: Reheat only: Only reheat operation is allowed.</li> <li>1: Schedule + reheat: The domestic hot water tank is heated according to a schedule and between the scheduled heat up cycles, reheat operation is allowed.</li> <li>2: Schedule only: The domestic hot water tank can ONLY be heated according to a schedule.</li> </ul>

See the operation manual for more details.

#### Comfort setpoint

#	Code	Description
[5.3]	[6-0A]	<p>Only applicable when domestic hot water preparation is Schedule only or Schedule + reheat. When programming the schedule, you can make use of the comfort setpoint as a preset value. When you later want to change the storage setpoint, you only have to do it in one place.</p> <p>The tank will heat up until the <b>storage comfort temperature</b> has been reached. It is the desired temperature when a storage comfort action is scheduled.</p> <p>Additionally, a storage stop can be programmed. This feature puts a stop to tank heating even if the setpoint has NOT been reached. Only program a storage stop when tank heating is absolutely undesirable.</p>

#### Eco setpoint

#	Code	Description
[5.4]	[6-0B]	The <b>storage economic temperature</b> denotes the lower desired tank temperature. It is the desired temperature when a storage economic action is scheduled (preferably during day).

#### Reheat setpoint

#	Code	Description
[5.5]	[6-0C]	<ul style="list-style-type: none"> <li><b>Desired reheat tank temperature, used:</b> <ul style="list-style-type: none"> <li>in Reheat only mode or Schedule + reheat mode: the guaranteed minimum tank temperature is set by the Reheat setpoint minus the reheat hysteresis. If the tank temperature drops below this value, the tank is heated up.</li> <li>during storage comfort, to prioritize the domestic hot water preparation. When the tank temperature rises above this value, domestic hot water preparation and space heating/cooling are executed sequentially.</li> </ul> </li> </ul>

## 5.3 Settings menu

You can set additional settings using the main menu screen and its submenus. The most important settings are presented here.

### 5.3.1 Main zone

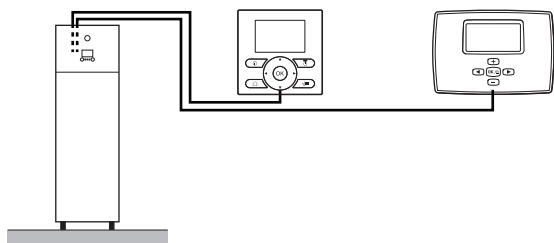
#### Thermostat type

Only applicable in external room thermostat control.

Following combinations are possible to control the unit (not applicable when [C-07]=0):

When [C-07]=2 (RT control)

User interface at indoor unit	User interface used as room thermostat at main zone	External room thermostat at additional zone
-------------------------------	---	---

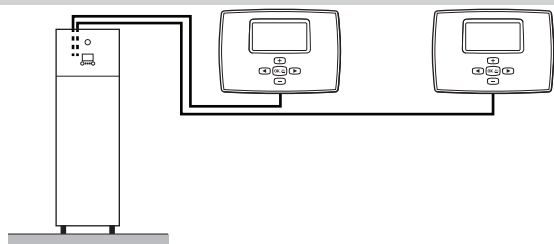


When [C-07]=1 (Ext RT control)

User interface at  
indoor unit

External room  
thermostat at main  
zone

External room  
thermostat at  
additional zone



#### 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
[2.A]	[C-05]	<p>External room thermostat type for the main zone:</p> <ul style="list-style-type: none"> <li>1: 1 contact: The used external room thermostat can only send a thermo ON/OFF condition. There is no separation between heating or cooling demand.</li> <li>2: 2 contacts: The used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.</li> </ul>

### 5.3.2 Additional zone

#### Thermostat type

Only applicable in external room thermostat control. For more info about the functionality, see ["5.3.1 Main zone" on page 18](#).

#	Code	Description
[3.A]	[C-06]	<p>External room thermostat type for the additional zone:</p> <ul style="list-style-type: none"> <li>1: 1 contact</li> <li>2: 2 contacts</li> </ul>

### 5.3.3 Information

#### Dealer information

The installer can fill in his contact number here.

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

## 5 Configuration

### 5.4 Menu structure: Overview installer settings

[9] Installer settings		[9.2] Domestic hot water
Configuration wizard		Domestic hot water
Domestic hot water		DHW pump
Backup heater		DHW pump schedule
Booster heater		Solar
Emergency		
Balancing		[9.3] Backup heater
Water pipe freeze prevention		Backup heater type
Benefit kWh power supply		Voltage
Power consumption control		Configuration
Energy metering		Capacity step 1
Sensors		Additional capacity step 2
Bivalent		Equilibrium
Alarm output		Equilibrium temperature
Auto restart		Operation
Power saving function		
Disable protections		[9.4] Booster heater
Forced defrost		Capacity
Overview field settings		BSH allowance schedule
		BSH eco timer
		Operation
		[9.6] Balancing
		Space heating priority
		Priority temperature
		Offset BSH setpoint
		Anti-recycle timer
		Minimum running timer
		Maximum running timer
		Additional timer
		[9.8] Benefit kWh power supply
		Benefit kWh power supply
		Allow heater
		Allow pump
		[9.9] Power consumption control
		Power consumption control
		Type
		Limit
		Limit 1
		Limit 2
		Limit 3
		Limit 4
		Priority heater
		[9.A] Energy metering
		Electricity meter 1
		Electricity meter 2
		[9.B] Sensors
		External sensor
		Sensor offset
		Averaging time
		[9.C] Bivalent
		Bivalent
		Boiler efficiency
		Temperature
		Hysteresis



#### 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:

<input type="checkbox"/>	You read the complete installation instructions, as described in the <b>installer reference guide</b> .
<input type="checkbox"/>	The <b>indoor unit</b> is properly mounted.
<input type="checkbox"/>	The <b>outdoor unit</b> is properly mounted.
<input type="checkbox"/>	The following <b>field wiring</b> has been carried out according to this document and the applicable legislation: <ul style="list-style-type: none"> <li>Between the local supply panel and the outdoor unit</li> <li>Between indoor unit and outdoor unit</li> <li>Between the local supply panel and the indoor unit</li> <li>Between the indoor unit and the valves (if applicable)</li> <li>Between the indoor unit and the room thermostat (if applicable)</li> </ul>
<input type="checkbox"/>	The system is properly <b>earthed</b> and the earth terminals are tightened.
<input type="checkbox"/>	The <b>fuses</b> or locally installed protection devices are installed according to this document, and have not been bypassed.
<input type="checkbox"/>	The <b>power supply voltage</b> matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO <b>loose connections</b> or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO <b>damaged components</b> or <b>squeezed pipes</b> on the inside of the indoor and outdoor units.
<input type="checkbox"/>	<b>Backup heater circuit breaker</b> F1B (field supply) is turned ON.
<input type="checkbox"/>	There are NO <b>refrigerant leaks</b> .
<input type="checkbox"/>	The <b>refrigerant pipes</b> (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the <b>pipes</b> are properly insulated.
<input type="checkbox"/>	There is NO <b>water leak</b> inside the indoor unit.
<input type="checkbox"/>	The <b>shut-off valves</b> are properly installed and fully open.
<input type="checkbox"/>	The <b>stop valves</b> (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	The <b>air purge</b> valve is open (at least 2 turns).
<input type="checkbox"/>	The <b>pressure relief valve</b> purges water when opened.
<input type="checkbox"/>	The <b>domestic hot water tank</b> is filled completely.



### INFORMATION

The software is equipped with an "installer-on-site" mode ([9.G]: Disable protections), that disables automatic operation by the unit. At first installation, setting Disable protections is by default set to Yes, 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 Disable protections to No.

36 hours after the first power-on, the unit will automatically set Disable protections to No, 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 Disable protections to Yes manually.

### 6.2 Checklist during commissioning

<input type="checkbox"/>	The <b>minimum flow rate</b> during backup heater/defrost operation is guaranteed in all conditions. See "To check the water volume and flow rate" in <a href="#">"3.2 Preparing water piping" on page 6</a> .
<input type="checkbox"/>	To perform an <b>air purge</b> .
<input type="checkbox"/>	To perform a <b>test run</b> .
<input type="checkbox"/>	To perform an <b>actuator test run</b> .
<input type="checkbox"/>	<b>Underfloor screed dryout function</b> The underfloor screed dryout function is started (if necessary).

#### 6.2.1 To check the minimum flow rate

##### Mandatory procedure for the additional zone

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 <a href="#">"6.2.4 To perform an actuator test run" on page 22</a> ).	—
4	During pump test run operation, go to Sensors.	
5	Select the flow rate information. During test run operation, the unit can operate below the minimum required flow rate.	
6	Modify the bypass valve setting to reach the minimum required flow rate + 2 l/min.	—

##### Recommended procedure for the main zone




### INFORMATION

The pump of the additional zone ensures that the minimum flow rate for correct operation of the unit is guaranteed.

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	Create a thermo request on the main zone only.	—
4	Wait 1 minute until the unit is stabilized.	—
5	If the additional pump is still assisting (the green LED on the right hand sided pump is ON) increase the flow until the additional pump is not assisting anymore (LED is OFF).	—





## 6 Commissioning

6	Go to [8.4.A]: Information > Sensors > Flow rate.	
7	Modify the bypass valve setting to reach the minimum required flow rate + 2 l/min.	—

### Minimum required flow rate during defrost/backup heater operation

12 l/min

### 6.2.2 To perform an air purge

1	Set the user permission level to Installer. See <a href="#">"To change the user permission level" on page 14.</a>	—
2	Go to [A.3]: Commissioning > Air purge.	
3	Select OK to confirm. <b>Result:</b> The air purge starts. It stops automatically when done.	
To stop the air purge manually:		—
1	Go to Stop air purge.	
2	Select OK to confirm.	



#### INFORMATION






For both manual and automatic air purge, 1 temperature zone is purged with each air purge start. To purge the other temperature zone, you have to restart the air purge function. When performing an air purge for the first time, the main temperature zone will be purged.

### 6.2.3 To perform an operation test run





#### INFORMATION

The test run only applies to the additional temperature zone.

1	Set the user permission level to Installer. See <a href="#">"To change the user permission level" on page 14.</a>	—
2	Go to [A.1]: Commissioning > Operation test run.	
3	Select a test from the list. <b>Example:</b> Heating.	
4	Select OK to confirm. <b>Result:</b> The test run starts. It stops automatically when done (±30 min).	
To stop the test run manually:		—
1	Go to Stop test run.	
2	Select OK to confirm.	



If the installation of the unit has been done correctly, the unit will start up during test operation in the selected operation mode. During test mode, the correct operation of the unit can be checked by monitoring its leaving water temperature (heating/cooling mode) and tank temperature (domestic hot water mode).




To monitor the temperature:

1	Go to Sensors.	
2	Select the temperature information.	

### 6.2.4 To perform an actuator test run

Purpose of the actuator test run is to confirm the operation of the different actuators (e.g., when you select Pump, a test run of the pump will start).

1	Set the user permission level to Installer. See <a href="#">"To change the user permission level" on page 14.</a>	—
2	Go to [A.2]: Commissioning > Actuator test run.	
3	Select a test from the list. <b>Example:</b> Pump.	

4	Select OK to confirm. <b>Result:</b> The actuator test run starts. It stops automatically when done (±30 min).	
To stop the test run manually:		—
1	Go to Stop test run.	
2	Select OK to confirm.	

### Possible actuator test runs

- Booster heater test
- Backup heater 1 test
- Backup heater 2 test
- Pump test








#### INFORMATION

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

- Shut off valve test
- Diverter valve test
- Bivalent signal test
- Alarm output test
- C/H signal test
- DHW pump test

### 6.2.5 To perform an underfloor heating screed dryout

1	Set the user permission level to Installer. See <a href="#">"To change the user permission level" on page 14.</a>	—
2	Go to [A.4]: Commissioning > UFH screed dryout.	
3	Set a dryout program: go to Program and use the UFH screed dryout programming screen.	
4	Select OK to confirm. <b>Result:</b> The underfloor heating screed dryout starts. It stops automatically when done.	
To stop the test run manually:		—
1	Go to Stop UFH screed dryout.	
2	Select OK to confirm.	



#### 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

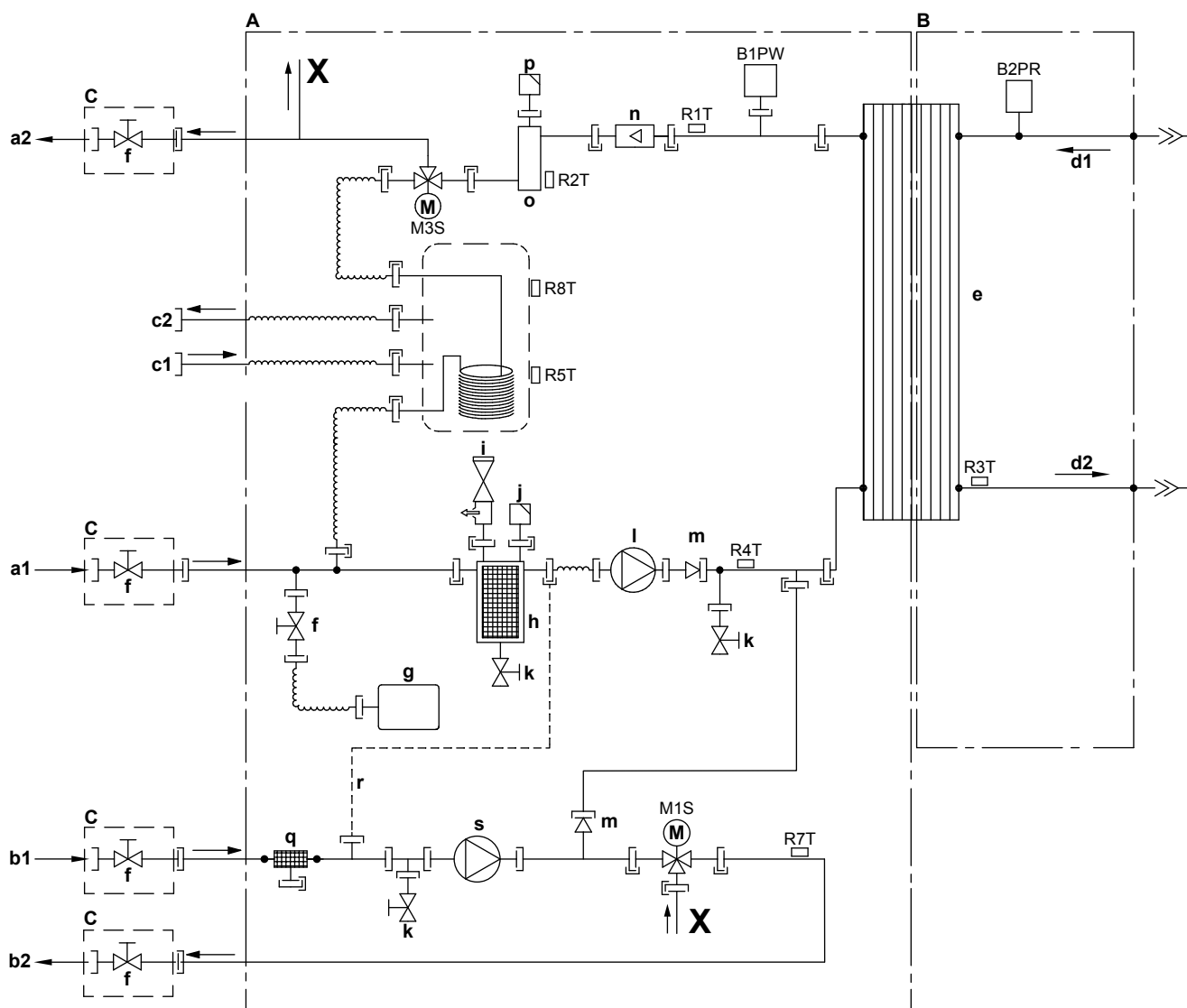
Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- 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.

## 8 Technical data

A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible). The **full set** of latest technical data is available on the Daikin extranet (authentication required).

### 8.1 Piping diagram: Indoor unit



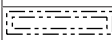

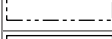
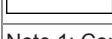
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- |  |   |
|--|---|
| <b>A</b> Water side  | <b>B2PR</b> Refrigerant pressure sensor                       |
| <b>B</b> Refrigerant side                                  | <b>M1S</b> 3-way valve (mixing valve for the main/mixed zone) |
| <b>C</b> Field installed                                   | <b>M3S</b> 3-way valve (space heating/domestic hot water)     |
| <b>a1</b> Space heating water IN (additional/direct zone)  | <b>R1T</b> Thermistor (heat exchanger – water OUT)            |
| <b>a2</b> Space heating water OUT (additional/direct zone) | <b>R2T</b> Thermistor (backup heater – water OUT)             |
| <b>b1</b> Space heating water IN (main/mixed zone)         | <b>R3T</b> Thermistor (liquid refrigerant)                    |
| <b>b2</b> Space heating water OUT (main/mixed zone)        | <b>R4T</b> Thermistor (heat exchanger – water IN)             |
| <b>c1</b> Domestic hot water: cold water IN                | <b>R5T, R8T</b> Thermistor (tank)                             |
| <b>c2</b> Domestic hot water: hot water OUT                | <b>R7T</b> Thermistor (main/mixed zone – water OUT)           |
| <b>d1</b> Gas refrigerant IN (heating mode; condenser)     | — Screw connection  |
| <b>d2</b> Liquid refrigerant OUT (heating mode; condenser) | — Flare connection  |
| <b>e</b> Plate heat exchanger                              | — Quick coupling  |
| <b>f</b> Shut-off valve for service                        | — Brazed connection   |
| <b>g</b> Expansion vessel                                  |   |
| <b>h</b> Magnetic filter/dirt separator                    |   |
| <b>i</b> Safety valve                                      |   |
| <b>j</b> Air purge   |   |
| <b>k</b> Drain valve                                       |   |
| <b>l</b> Pump (additional/direct zone)                     |   |
| <b>m</b> Check valve                                       |   |
| <b>n</b> Flow sensor                                       |   |
| <b>o</b> Backup heater                                     |   |
| <b>p</b> Air purge   |   |
| <b>q</b> Water filter (main/mixed zone)                    |   |
| <b>r</b> Capillary tube                                    |   |
| <b>s</b> Pump (main/mixed zone)                            |   |
| <b>B1PW</b> Space heating water pressure sensor            |   |

## 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
X6M	Backup heater power supply terminal
-----	Earth wiring
-----	Field supply
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB
Note 1: Connection point of the power supply for the BUH should be foreseen outside the unit.	Note 1: Connection point of the power supply for the backup heater should be foreseen outside the unit.
Backup heater power supply	Backup heater power supply
<input type="checkbox"/> 1N~, 230 V	<input type="checkbox"/> 1N~, 230 V
<input type="checkbox"/> 3~, 230 V	<input type="checkbox"/> 3~, 230 V
<input type="checkbox"/> 3N~, 400 V	<input type="checkbox"/> 3N~, 400 V
User installed options	User installed options
<input type="checkbox"/> LAN adapter	<input type="checkbox"/> LAN adapter
<input type="checkbox"/> Remote user interface	<input type="checkbox"/> User interface used as room thermostat
<input type="checkbox"/> Ext. indoor thermistor	<input type="checkbox"/> External indoor thermistor
<input type="checkbox"/> Ext outdoor thermistor	<input type="checkbox"/> External outdoor thermistor
<input type="checkbox"/> Digital I/O PCB	<input type="checkbox"/> Digital I/O PCB
<input type="checkbox"/> Demand PCB	<input type="checkbox"/> Demand PCB
Main LWT	Main leaving water temperature
<input type="checkbox"/> On/OFF thermostat (wired)	<input type="checkbox"/> On/OFF thermostat (wired)
<input type="checkbox"/> On/OFF thermostat (wireless)	<input type="checkbox"/> On/OFF thermostat (wireless)
<input type="checkbox"/> Ext. thermistor	<input type="checkbox"/> External thermistor
<input type="checkbox"/> Heat pump convector	<input type="checkbox"/> Heat pump convector
<input type="checkbox"/> Safety thermostat	<input type="checkbox"/> Safety thermostat
Add LWT	Additional leaving water temperature
<input type="checkbox"/> On/OFF thermostat (wired)	<input type="checkbox"/> On/OFF thermostat (wired)
<input type="checkbox"/> On/OFF thermostat (wireless)	<input type="checkbox"/> On/OFF thermostat (wireless)
<input type="checkbox"/> Ext. thermistor	<input type="checkbox"/> External thermistor
<input type="checkbox"/> Heat pump convector	<input type="checkbox"/> Heat pump convector

### Position in switch box

English	Translation
Position in switch box	Position in switch box

### Legend

A1P	Main PCB
A2P	* On/OFF thermostat (PC=power circuit)
A3P	* Heat pump convector

A4P	* Digital I/O PCB
A8P	* Demand PCB
A10P	MMI (= user interface connected to the indoor unit) – Power supply unit PCB
A11P	MMI (= user interface connected to the indoor unit) – Main PCB
A13P	* LAN adapter
A14P	* User interface used as room thermostat – PCB
A15P	* Receiver PCB (wireless On/OFF thermostat)
CN* (A4P)	* Connector
DS1(A8P)	* DIP switch
F1B	# Overcurrent fuse backup heater
F1U, F2U (A4P)	* Fuse 5 A 250 V for digital I/O PCB
K1M, K2M	Contactor backup heater
K5M	Safety contactor backup heater
K*R (A4P)	Relay on PCB
M2P	# Domestic hot water pump
M2S	# 2-way valve for cooling mode
PC (A15P)	* Power circuit
PHC1 (A4P)	* Optocoupler input circuit
Q1L	Thermal protector backup heater
Q3L, Q4L	# Safety thermostat
Q*DI	# Earth leakage circuit breaker
R1H (A2P)	* Humidity sensor
R1T (A2P)	* Ambient sensor On/OFF thermostat
R2T (A2P)	* External sensor (floor or ambient)
R6T	* External indoor or outdoor ambient thermistor
S1S	# Preferential kWh rate power supply contact
S2S	# Electrical meter pulse input 1
S3S	# Electrical meter pulse input 2
S6S~S9S	* Digital power limitation inputs
SS1 (A4P)	* Selector switch
TR1	Power supply transformer
X6M	# Backup heater power supply terminal strip
X*, X*A, X*Y, Y*	Connector
X*M	Terminal strip

\* 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
Indoor unit supplied from outdoor	Indoor unit supplied from outdoor
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 (outdoor)	Only for preferential kWh rate power supply (outdoor)
Outdoor unit	Outdoor unit

## 8 Technical data

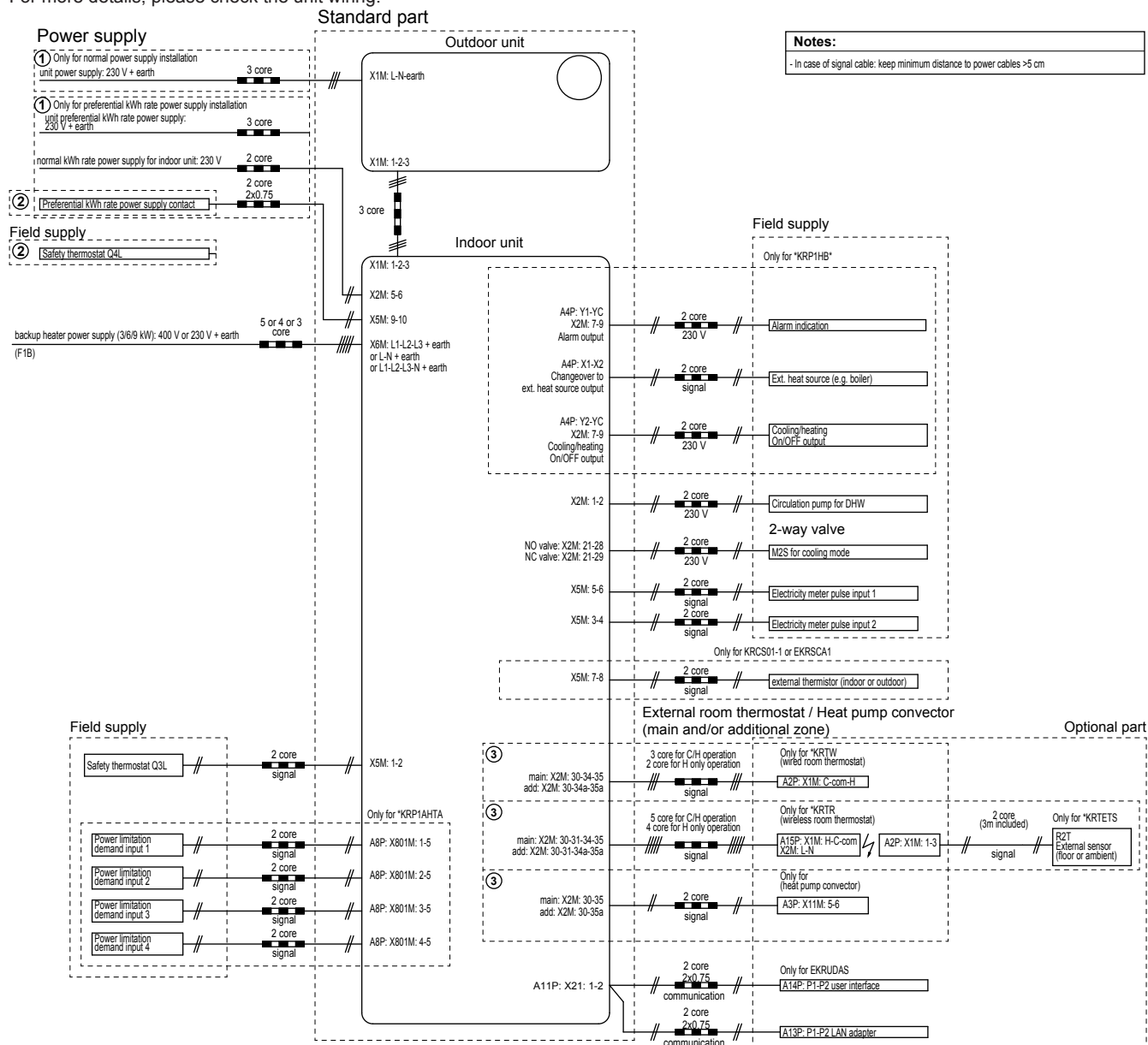
English	Translation
Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)	Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)
SWB	Switch box
Use normal kWh rate power supply for indoor unit	Use normal kWh rate power supply for indoor unit
(2) Backup heater power supply	(2) Backup heater power supply
Only for ***	Only for ***
(3) User interface	(3) User interface
Only for LAN adapter	Only for the LAN adapter
Only for remote user interface EKRUDAS	Only for the user interface used as room thermostat (EKRUDAS)
(5) Ext. thermistor	(5) External thermistor
SWB	Switch box
(6) Field supplied options	(6) Field supplied options
12 V DC pulse detection (voltage supplied by PCB)	12 V DC pulse detection (voltage supplied by PCB)
230 V AC supplied by PCB	230 V AC supplied by PCB
Continuous	Continuous current
DHW pump output	Domestic hot water pump output
DHW pump	Domestic hot water pump
Electrical meters	Electrical meters
For safety thermostat	For safety thermostat
Inrush	Inrush current
Max. load	Maximum load
Normally closed	Normally closed
Normally open	Normally open
Safety thermostat	Safety thermostat
Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)	Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)

English	Translation
Shut-off valve	Shut-off valve
SWB	Switch box
(7) Option PCBs	(7) Option PCBs
Alarm output	Alarm output
Changeover to ext. heat source	Changeover to external heat source
Max. load	Maximum load
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: ext. heat source output, alarm output	Options: external heat source output, alarm output
Options: On/OFF output	Options: 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 C/H On/OFF output	Space cooling/heating On/OFF output
SWB	Switch box
(8) External On/OFF thermostats and heat pump convector	(8) External On/OFF 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 On/OFF thermostat	Only for wired On/OFF thermostat
Only for wireless On/OFF thermostat	Only for wireless On/OFF thermostat



## Electrical connection diagram

For more details, please check the unit wiring.



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## 8 Technical data

### 8.3 Table 1 – Maximum refrigerant charge allowed in a room: indoor unit

$A_{room}$ (m <sup>2</sup> )	Maximum refrigerant charge in a room ( $m_{max}$ ) (kg)
	H=600 mm
1	0.138
2	0.276
3	0.414
4	0.553
5	0.691
6	0.829
7	0.907
8	0.970
9	1.028
10	1.084
11	1.137
12	1.187
13	1.236
14	1.283
15	1.328
16	1.371
17	1.413
18	1.454
19	1.494
20	1.533
21	1.571
22	1.608
23	1.644
24	1.679
25	1.714
26	1.748
27	1.781
28	1.814
29	1.846
30	1.877
31	1.909



#### INFORMATION

- For H values lower than 600 mm, the value of H considered is 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate  $A_{room}$  values (i.e. when  $A_{room}$  is between two values from the table), consider the value that corresponds to the lower  $A_{room}$  value from the table. If  $A_{room}=12.5$  m<sup>2</sup>, consider the value that corresponds to " $A_{room}=12$  m<sup>2</sup>".



#### INFORMATION

- For H values lower than 600 mm, the value of H considered is 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate  $m_c$  values (i.e. when  $m_c$  is between two values from the table), consider the value that corresponds to the higher  $m_c$  value from the table. If  $m_c=1.87$  kg, consider the value that corresponds to " $m_c=1.88$  kg".
- Systems with total refrigerant charge lower than 1.84 kg are not subjected to any room requirements.
- Charges above 1.9 kg are not allowed in the unit.

### 8.5 Table 3 – Minimum venting opening area for natural ventilation: indoor unit

$m_c$	$m_{max}$	$dm=m_c-m_{max}$ (kg)	Minimum venting opening area (cm <sup>2</sup> )
			H=600 mm
1.9	0.1	1.80	729
1.9	0.3	1.60	648
1.9	0.5	1.40	567
1.9	0.7	1.20	486
1.9	0.9	1.00	418
1.9	1.1	0.80	370
1.9	1.3	0.60	301
1.9	1.5	0.40	216
1.9	1.7	0.20	115



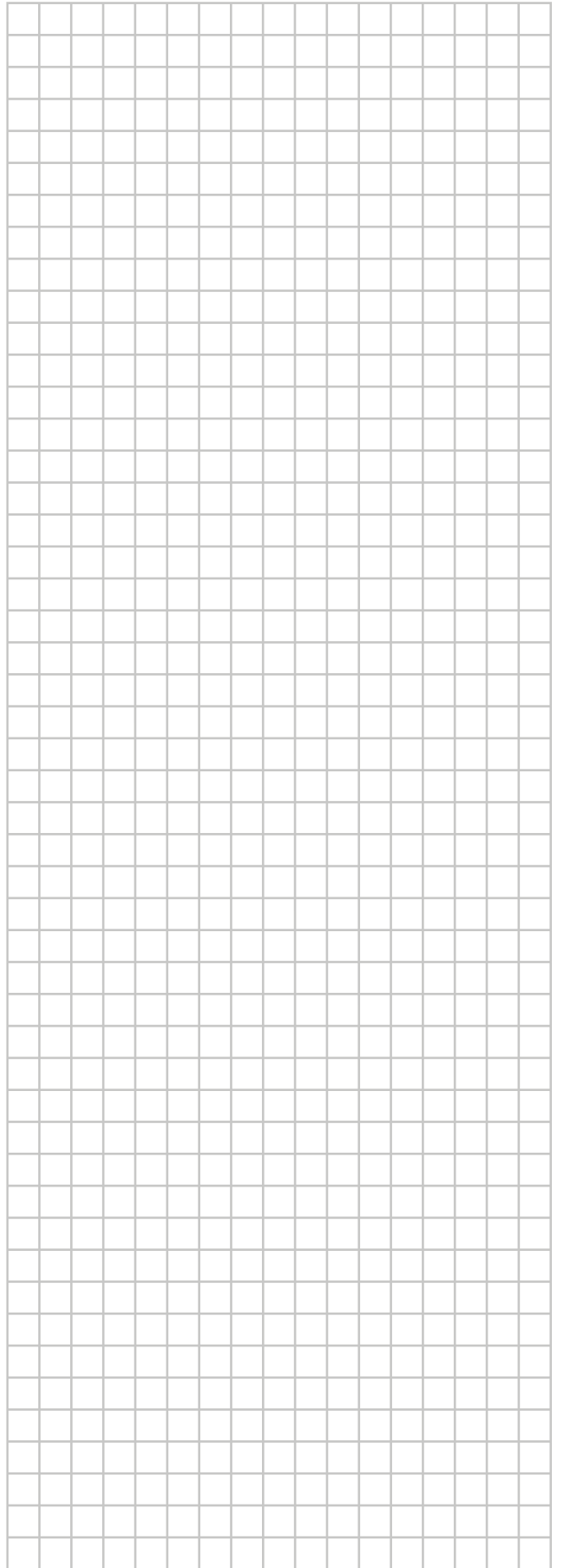
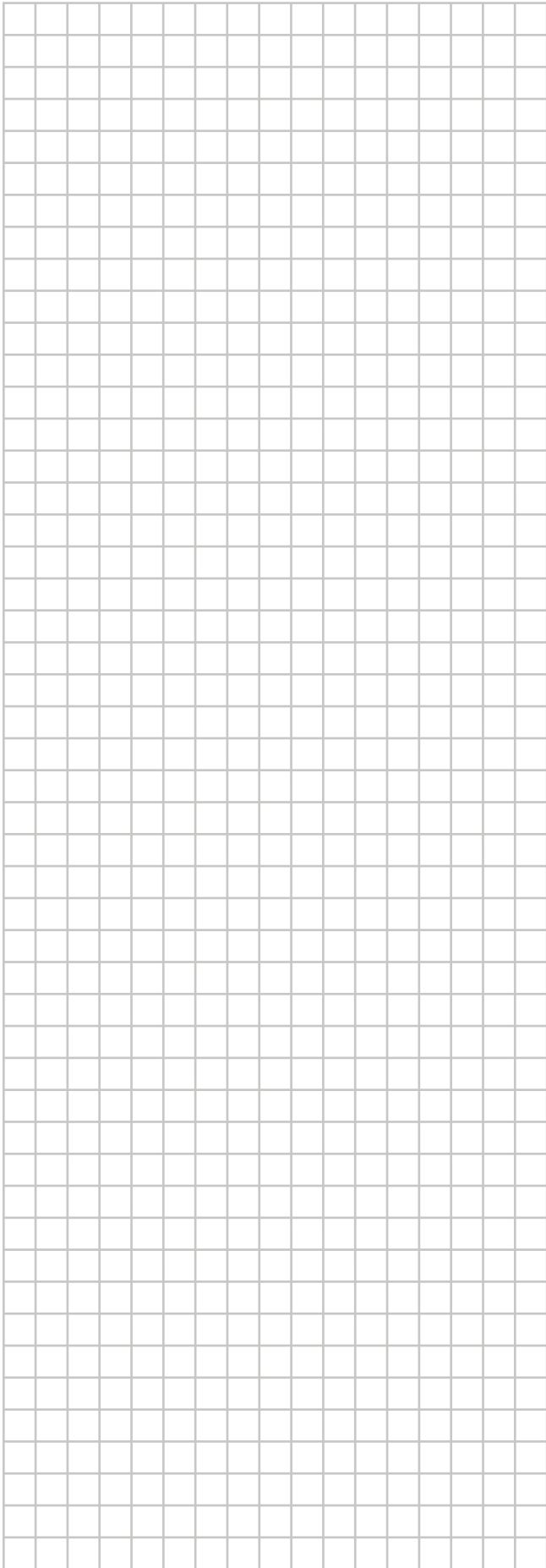
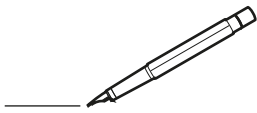
#### INFORMATION

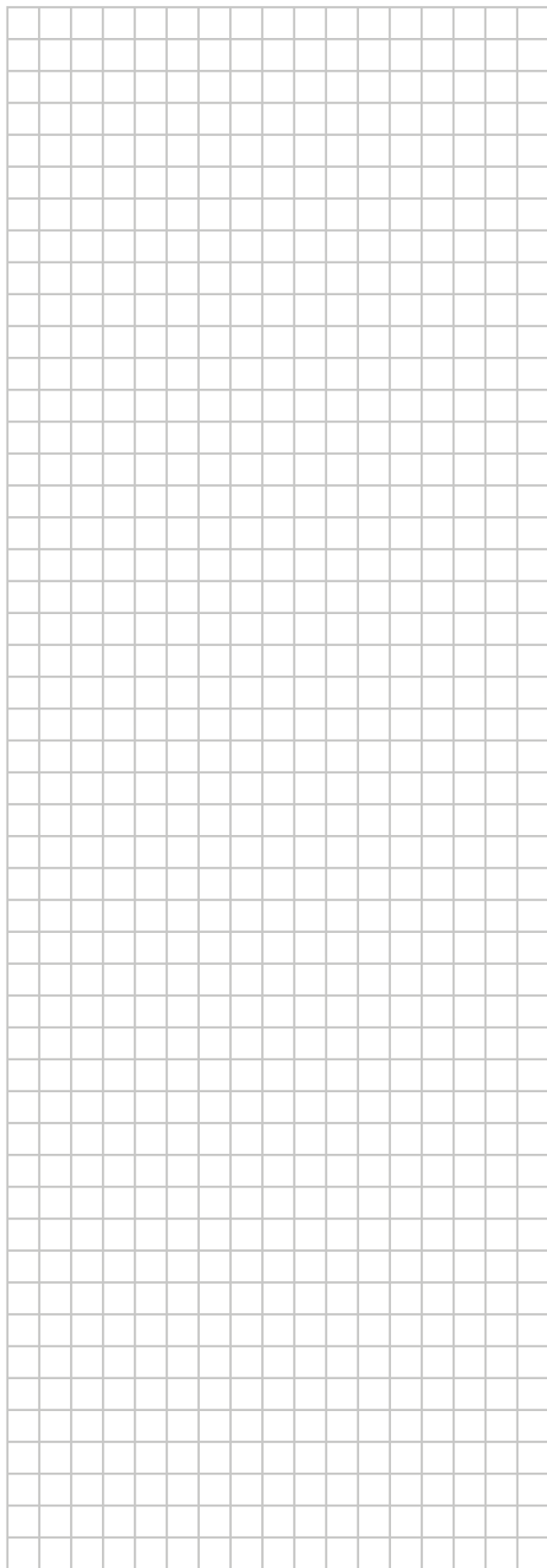
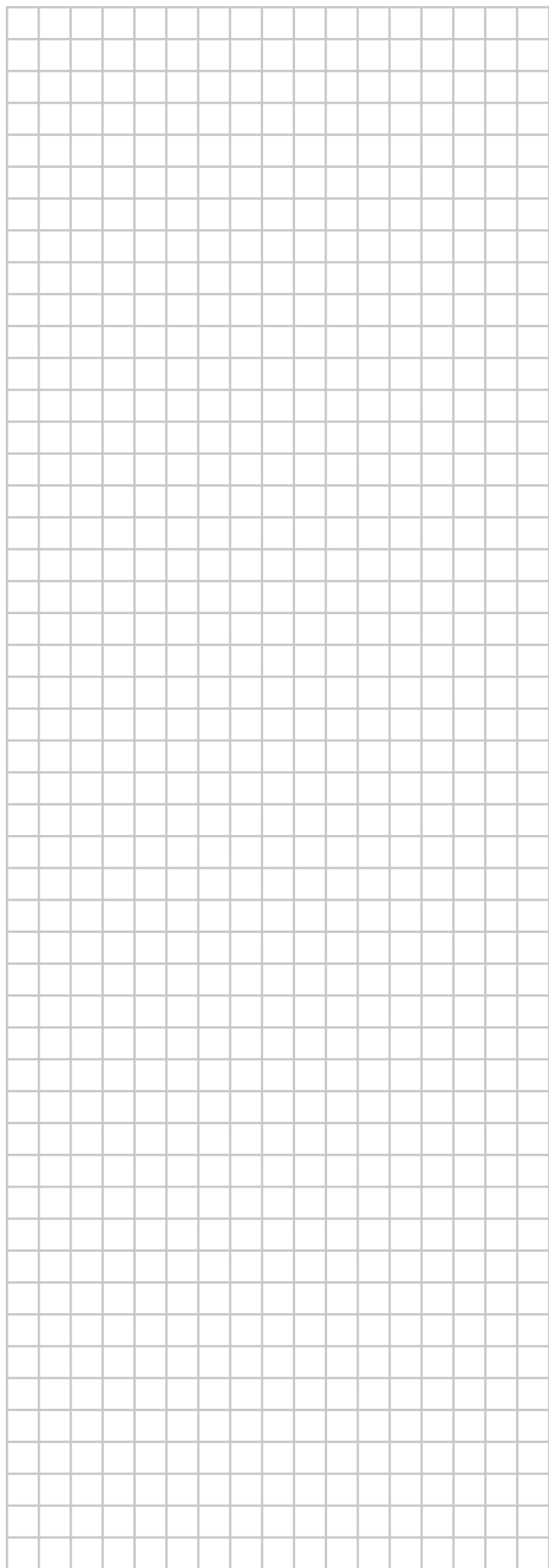
- For H values lower than 600 mm, the value of H considered is 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate  $dm$  values (i.e. when  $dm$  is between two  $dm$  values from the table), consider the value that corresponds to the higher  $dm$  value from the table. If  $dm=1.55$  kg, consider the value that corresponds to " $dm=1.6$  kg".

### 8.4 Table 2 – Minimum floor area: indoor unit

$m_c$ (kg)	Minimum floor area (m <sup>2</sup> )
	H=600 mm
1.84	28.81
1.86	29.44
1.88	30.08
1.90	30.72







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