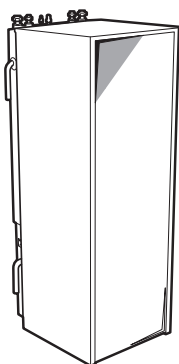




Installation manual

Daikin Altherma low temperature split



EHVH04S18CA3VF
EHVH08S18CA3VF

Installation manual
Daikin Altherma low temperature split

English

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1 About the documentation

1.1 About this document

Target audience

Authorised installers

Documentation set

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

Document	Contains...	Format
General safety precautions	Safety instructions that you must read before installing	Paper (in the box of the indoor unit)
Indoor unit installation manual	Installation instructions	
Outdoor unit installation manual	Installation instructions	Paper (in the box of the outdoor unit)
Installer reference guide	Preparation of the installation, technical specifications, good practices, reference data, ...	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	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.

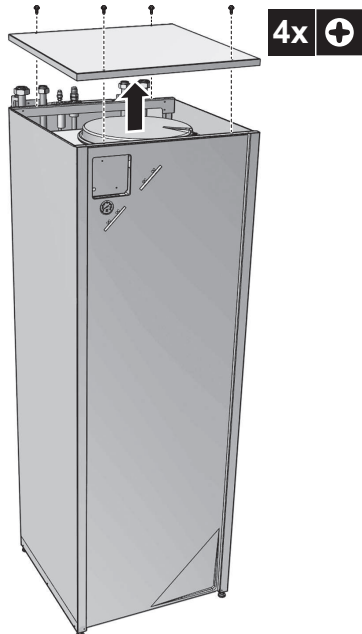
2 About the box

2 About the box

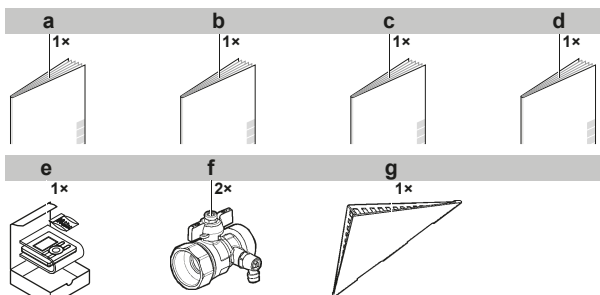
2.1 Indoor unit

2.1.1 To remove the accessories from the indoor unit

- 1 Remove the screws at the top of the unit.
- 2 Remove the top panel.



- 3 Remove the accessories.



- a General safety precautions
- b Addendum book for optional equipment
- c Indoor unit installation manual
- d Operation manual
- e User interface kit: user interface, 4 fixing screws, 2 plugs
- f Shut-off valve
- g User interface cover

- 4 Reinstall the top panel.

3 Preparation

3.1 Preparing water piping

3.1.1 To check the water volume

Minimum water volume

ONLY applicable for EHVH04+08S18CA3VF.

The system does not require a minimum water volume. Since an extra flow-through vessel was built into the unit, the total water volume in the installation can be **0 l**. It is however required that when all heat emitters are closed, the user interface displays a minimum water flow of 15 l/min.



INFORMATION

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



NOTICE

When circulation in each space heating loop is controlled by remote-controlled valves, it is important that a minimum water flow of **15 l/min** is guaranteed, even if all the valves are closed.

3.2 Preparing electrical wiring

3.2.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
Outdoor unit and indoor unit power supply			
1	Power supply for outdoor unit	2+GND or 3+GND	(a)
2	Power supply and interconnection cable to indoor unit	3	(c)
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
User interface			
6	User interface	2	(e)
Optional equipment			
12	Room thermostat	3 or 4	100 mA ^(b)
13	Outdoor ambient temperature sensor	2	(b)
14	Indoor ambient temperature sensor	2	(b)
15	Heat pump convector	4	100 mA ^(b)
Field supplied components			
16	Shut-off valve	2	100 mA(b)
17	Electricity meter	2 (per meter)	(b)
18	Domestic hot water pump	2	(b)
19	Alarm output	2	(b)

Item	Description	Wires	Maximum running current
20	Changeover to external heat source control	2	(b)
21	Space cool/heat operation control	2	(b)
22	Power consumption digital inputs	2 (per input signal)	(b)

- (a) Refer to name plate on outdoor unit.
(b) Minimum cable section 0.75 mm².
(c) Cable section 2.5 mm².
(d) Cable section 0.75 mm² till 1.25 mm²; maximum length: 50 m. Voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
(e) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual use interface connection.



NOTICE

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

Backup heater type	Power supply	Required number of conductors
*3V	1× 230 V	2+GND

4 Installation

4.1 Opening the units

4.1.1 To open the indoor unit

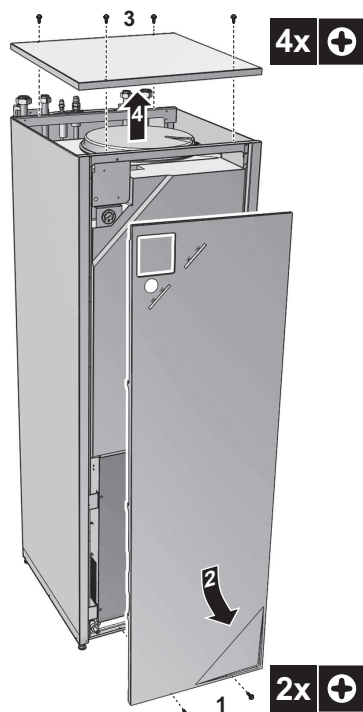
- Loosen and remove the screws at the bottom of the unit.
- Slide the front panel of the unit downwards and remove it.



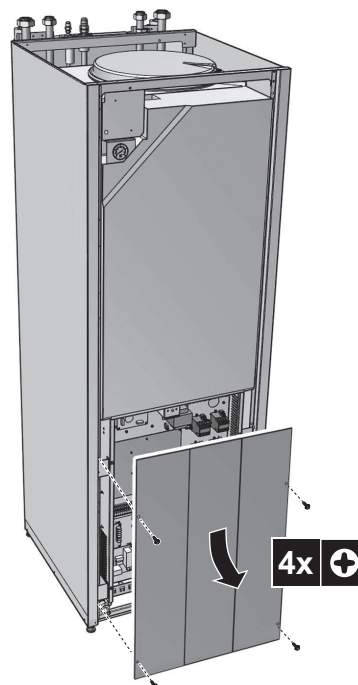
CAUTION

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

- Loosen and remove the 4 screws that fix the top panel.
- Remove the top panel from the unit.



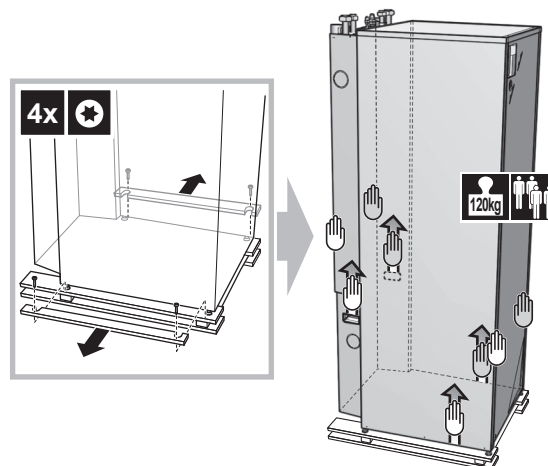
4.1.2 To open the switch box cover of the indoor unit



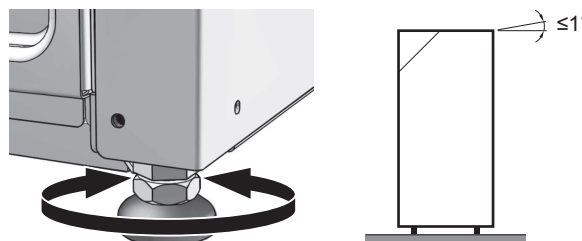
4.2 Mounting the indoor unit

4.2.1 To install the indoor unit

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



- Slide the indoor unit into position.
- Adjust the height of the leveling feet to compensate for floor irregularities. The maximum allowed deviation is 1°.



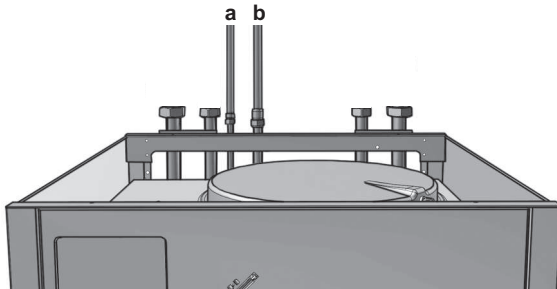
4 Installation

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

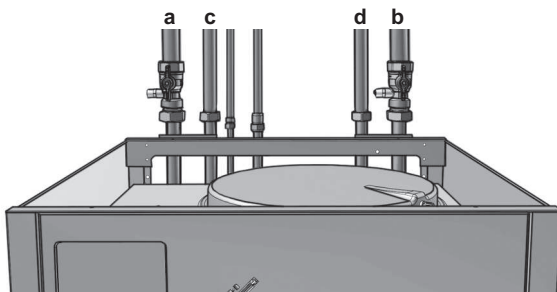


NOTICE

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

To facilitate service and maintenance, 2 shut-off valves are provided. Mount the valves on the water inlet and on the water outlet. Mind their the position. Orientation of the integrated drain and fill valves is important for servicing.

- 1 Install the shut-off valves on the water pipes.



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



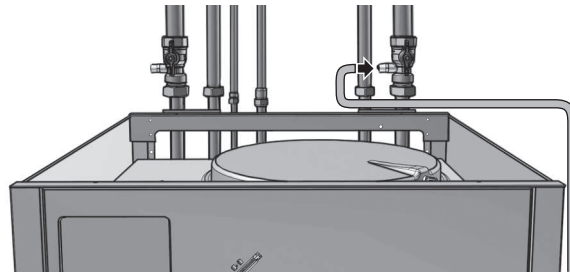
NOTICE

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

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

4.4.2 To fill the water circuit

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



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



INFORMATION

For location of the air purge valve, see Components: Indoor unit in the Installer reference guide.

- 4 Fill the circuit with water until the manometer indicates a pressure of ± 2.0 bar.
- 5 Purge as much air as possible from the water circuit.
- 6 Close the fill valve.
- 7 Disconnect the water supply hose from the fill valve.

4.4.3 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 that free water flow through the discharge pipe.

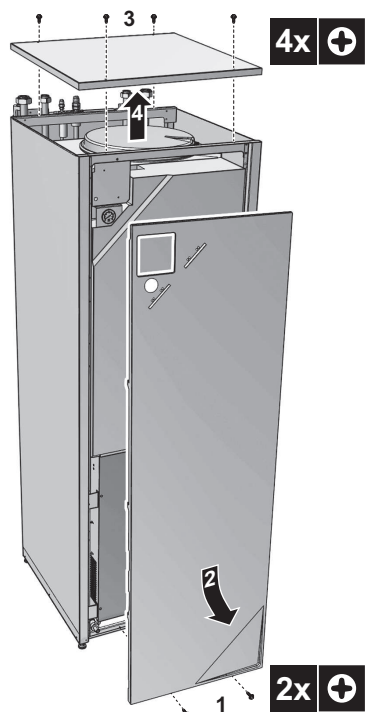
4.4.4 To insulate the water piping

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

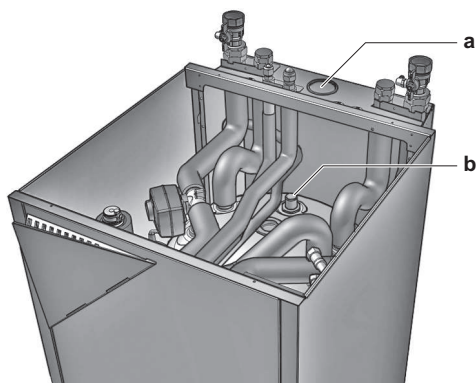
If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the sealing materials should be at least 20 mm to prevent condensation on the surface of the sealing.

4.4.5 To connect the recirculation piping

- 1 Loosen and remove the screws at the bottom of the unit.
- 2 Slide the front panel of the unit downwards and remove it.
- 3 Loosen and remove the 4 screws that fix the top panel.
- 4 Remove the top panel from the unit.

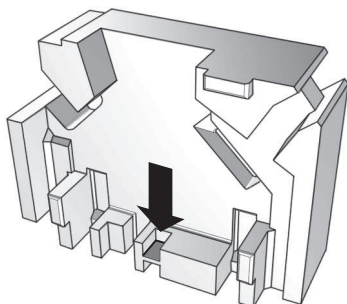


- 5 Remove the expansion vessel.
- 6 Remove the upper insulation cover of the unit.



- a Knock-out hole
- b Connection for recirculation piping

- 7 Remove the knock-out hole at the backside of the unit.
- 8 Connect the recirculation piping to the recirculation connection and route the piping through the knock-out hole at the backside of the unit.
- 9 Remove the indicated part in the figure below.



- 10 Re-attach the insulation, expansion vessel and casing.

4.5 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION



WARNING

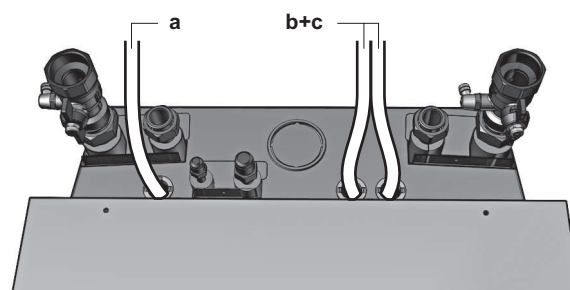
ALWAYS use multicore cable for power supply cables.

4.5.1 About electrical compliance

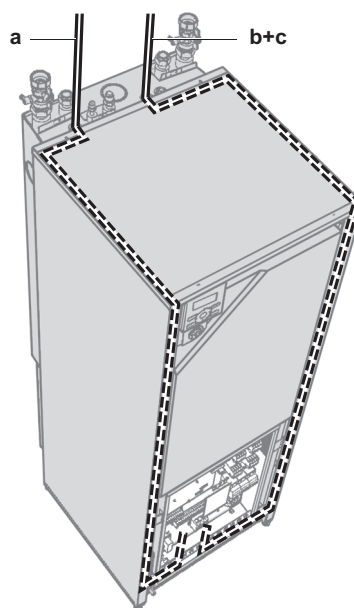
See "4.5.4 To connect the backup heater power supply" on page 8

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 5 and "4.1.2 To open the switch box cover of the indoor unit" on page 5.
- 2 Wiring should enter the unit from the top:



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



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

4 Installation

Routing	Possible cables (depending on unit type and installed options)
a Low voltage	<ul style="list-style-type: none"> User interface Power consumption digital inputs (field supply) Outdoor ambient temperature sensor (option) Indoor ambient temperature sensor (option) Electrical meters (field supply)
b High voltage power supply	<ul style="list-style-type: none"> Interconnection cable Normal kWh rate power supply Preferential kWh rate power supply Power supply for backup heater
c High voltage control signal	<ul style="list-style-type: none"> Preferential power supply contact Heat pump convector (option) Room thermostat (option) Shut-off valve (field supply) Domestic hot water pump (field supply) Alarm output Changeover to external heat source control Space heat operation control



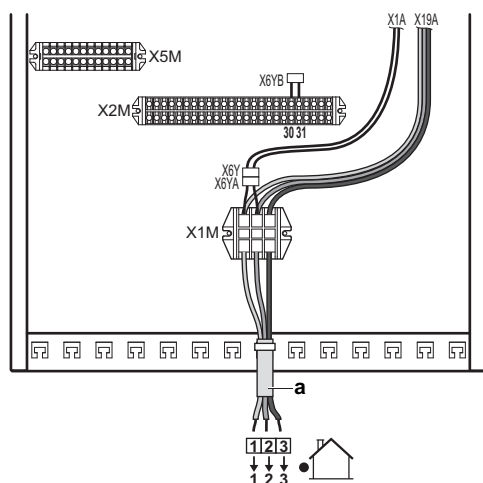
CAUTION

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

4.5.3 To connect the main power supply

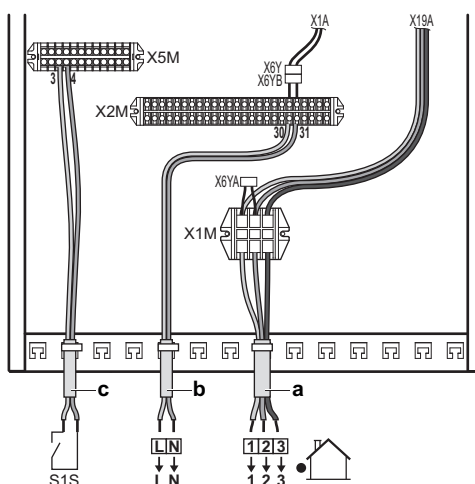
- 1 Connect the main power supply.

In case of normal kWh rate power supply



Legend: see illustration below.

In case of preferential kWh rate power supply



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



INFORMATION

In case of preferential kWh rate power supply, the necessity of separate normal kWh rate power supply to indoor unit (b) X2M30/31 depends on the type of preferential kWh rate power supply.

Separate connection to the indoor unit is required:

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

4.5.4 To connect the backup heater power supply

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
*3V	3 kW	1~ 230 V	13 A

- 1 Connect the backup heater power supply. Use a single pole fuse for F1B.

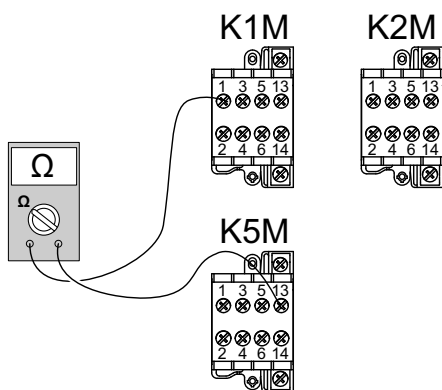
Backup heater type	Connections to backup heater power supply	Connections to terminals
3 kW 1~ 230 V (*3V)		

- 2 Fix the cable with cable ties to the cable tie mountings.
- 3 Configure the user interface for the respective power supply. See "5.2.2 Quick wizard: Standard" on page 12.

During connection of the backup heater, miswiring is possible. To detect possible miswiring, it is highly recommended to measure the resistance value of the heater elements. Depending on the different backup heater types, following resistance values (see table below) should be measured. ALWAYS measure the resistance on the contactor clamps K1M, K2M, and K5M.

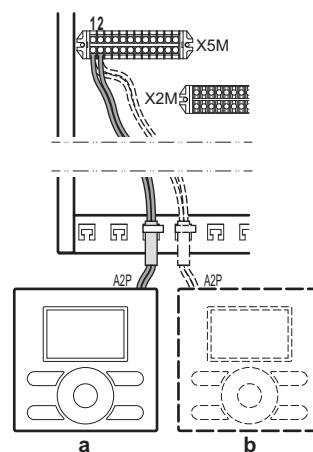
		3 kW 1~ 230 V
K1M/1	K5M/13	52.9Ω
	K1M/3	∞
	K1M/5	∞
K1M/3	K1M/5	26.5Ω
K2M/1	K5M/13	∞
	K2M/3	∞
	K2M/5	∞
K2M/3	K2M/5	52.9Ω
K1M/5	K2M/1	∞

Example measure resistance between K1M/1 and K5M/13:



4.5.5 To connect the user interface

- 1 Connect the user interface cable to the indoor unit.

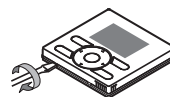


- a User interface delivered with the unit
b Optional user interface

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

To fix the user interface to the unit

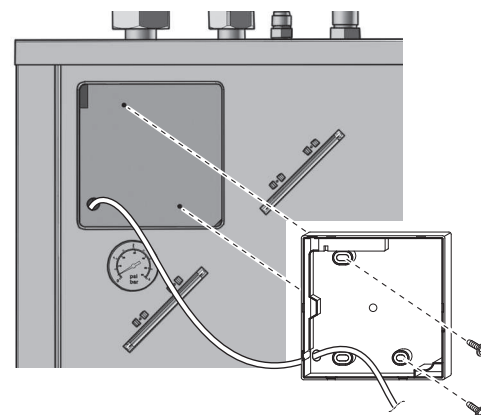
- 1 Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wallplate.



NOTICE

The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it.

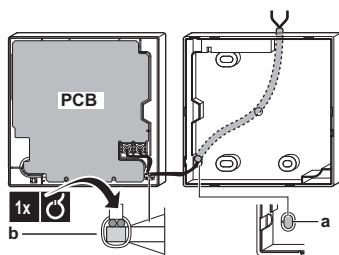
- 2 Fix the wallplate of the user interface to the frontplate of the unit.



- 3 Cut off a 2 wire conductor.
- 4 Connect the wires to the user interface as shown below.

4 Installation

From the rear

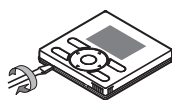


- a Notch this part for the wiring to pass through with nippers etc.
- b Secure the wiring to the front part of the casing using the wiring retainer and clamp.

5 Reinstall the faceplate onto the wallplate.

To fix the user interface to the wall in case of installation as room thermostat

- 1 Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wallplate.

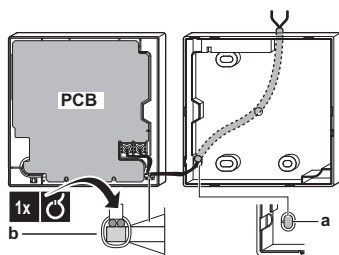


NOTICE

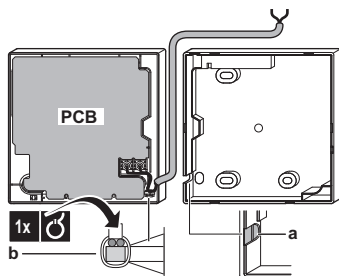
The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it.

- 2 Fix the wallplate of the user interface to the wall.
- 3 Connect the wires to the user interface as shown below

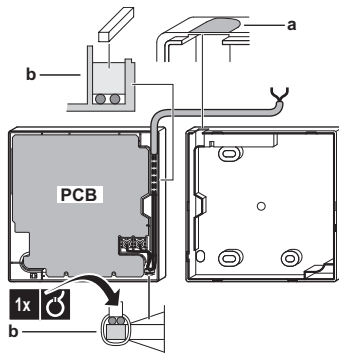
From the rear



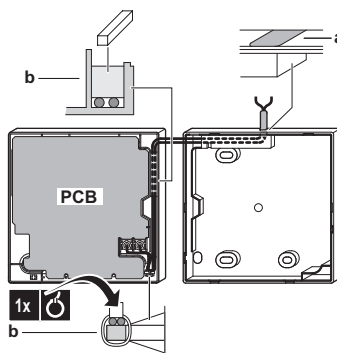
From the left



From the top



From the top center



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

4 Reinstall the faceplate onto the wallplate.

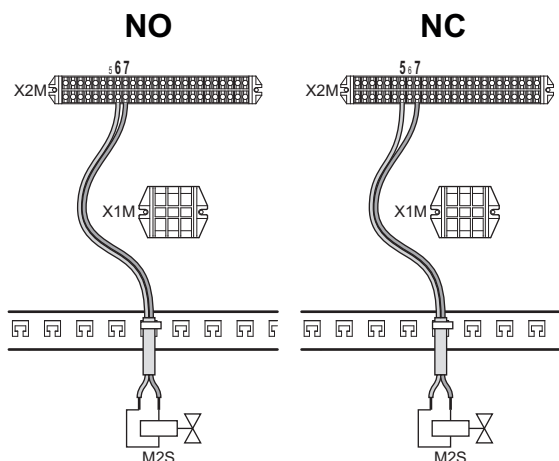
4.5.6 To connect the shut-off valve

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



NOTICE

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



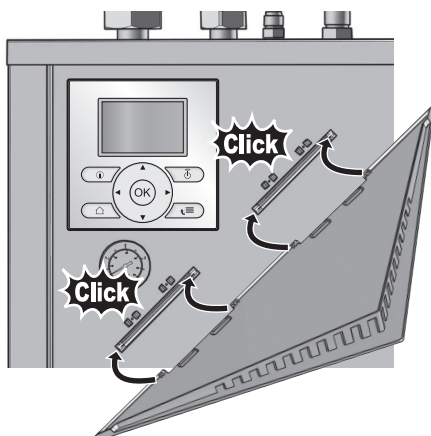
- 2 Fix the cable with cable ties to the cable tie mountings.

5 Configuration

4.6 Finishing the indoor unit installation

4.6.1 To fix the user interface cover to the indoor unit

- 1 Make sure that the front panel is removed from the indoor unit. See "4.1.1 To open the indoor unit" on page 5.
- 2 Plug the user interface cover into the hinges.



- 3 Mount the front panel to the indoor unit.

4.6.2 To close the indoor unit

- 1 Close the switch box cover.
- 2 Reinstall the top plate.
- 3 Reinstall the front panel.



NOTICE

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

5 Configuration

5.1 Overview: Configuration

If you do NOT configure the system correctly, it might NOT work as expected. You can configure the system with the user interface.

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



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.

The configuration influences the following:

- The calculations of the software
- What you can see on and do with the user interface

Legend for the settings tables:

- #: Breadcrumb in the menu structure
- Code: Code in the overview settings

When the installer settings are changed, the system will request to confirm. When confirmation is complete, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

The most commonly used installation settings are accessible through the menu structure. Their location is mentioned by the breadcrumb indication (#). Additionally, all installer settings can also be found in "5.3 Menu structure: Overview installer settings" on page 16.

For access to the setting codes, see "To access the installer settings" on page 12.

Not all settings are accessible through the menu structure. Some are only accessible through their code. Then in the table explained below, the bread crumb is set as N/A (not applicable).

To access the installer settings

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

To access the overview settings

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

To set the user permission level to Installer

- 1 Go to [6.4]: > Information > User permission level.
- 2 Press for more than 4 seconds.
Result: is displayed on the home pages.
- 3 If you do NOT press any button for more than 1 hour or press again for more than 4 seconds, the installer permission level switches back to End user.

To switch between user permission levels (End user and Advanced end user)

- 1 Go to [6] or any of its submenus: > Information.
- 2 Press for more than 4 seconds.
Result: The user permission level switches to Adv. end user. Additional information is displayed and "+" is added to the menu title.
- 3 If you do NOT press any button for more than 1 hour or press again for more than 4 seconds, the user permission level switches back to End user.

5.2 Basic configuration

5.2.1 Quick wizard: Language / time and date

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

5.2.2 Quick wizard: Standard

Space heating settings

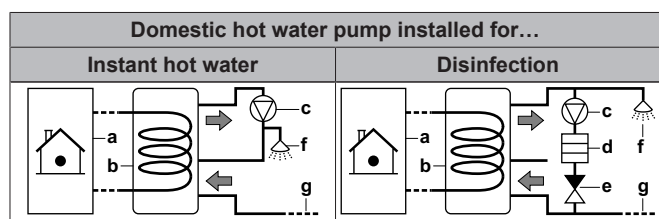
#	Code	Description
[A.2.1.7]	[C-07]	Unit temperature control: <ul style="list-style-type: none">▪ 0 (LWT control): Unit operation is decided based on the leaving water temperature.▪ 1 (Ext RT control): Unit operation is decided by the external thermostat.▪ 2 (RT control): Unit operation is decided based on the ambient temperature of the user interface.

#	Code	Description
[A.2.1.B]	N/A	Only if there are 2 user interfaces: User interface location: <ul style="list-style-type: none"> At unit In room
[A.2.1.8]	[7-02]	Number of water temperature zones: <ul style="list-style-type: none"> 0 (1 LWT zone): Main 1 (2 LWT zones): Main + additional
[A.2.1.9]	[F-0D]	Pump operation: <ul style="list-style-type: none"> 0 (Continuous): Continuous pump operation, regardless of thermo ON or OFF condition. 1 (Sample): When thermo OFF condition occurs, the pump runs every 5 minutes and the water temperature is checked. If the water temperature is below target, unit operation can start. 2 (Request): Pump operation based on request. Example: Using a room thermostat and thermostat creates thermo ON/OFF condition.

5.2.3 Quick wizard: Options

Domestic hot water settings

#	Code	Description
[A.2.2.1]	[E-05]	Domestic hot water tank: <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Yes): Installed
[A.2.2.3]	[E-07]	Tank booster heater: <ul style="list-style-type: none"> 0 (Horizontal BSH): N/A 1 (Backup heater): Installed for domestic hot water heating.
[A.2.2.A]	[D-02]	Domestic hot water pump: <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Secondary rtn): Installed for instant hot water 2 (Disinf. shunt): Installed for disinfection <p>See also illustrations below.</p>



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

Thermostats and external sensors

#	Code	Description
[A.2.2.4]	[C-05]	External room thermostat for the main zone: <ul style="list-style-type: none"> 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convactor can only send a thermo ON/OFF condition. 2 (C/H request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.
[A.2.2.5]	[C-06]	External room thermostat for the additional zone: <ul style="list-style-type: none"> 0: N/A 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convactor can only send a thermo ON/OFF condition. 2 (C/H request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.
[A.2.2.B]	[C-08]	External sensor: <ul style="list-style-type: none"> 0 (No): NOT installed. 1 (Outdoor sensor): Connected to PCB measuring the outdoor temperature. 2 (Room sensor): Connected to PCB measuring the indoor temperature.

Digital I/O PCB

#	Code	Description
[A.2.2.6.1]	[C-02]	External backup heater source: <ul style="list-style-type: none"> 0 (No): None 1 (Bivalent): Gas, oil boiler 2: N/A 3: N/A
[A.2.2.6.3]	[C-09]	Alarm output on optional EKR1HB PCB: <ul style="list-style-type: none"> 0 (Normally open): The alarm output will be powered when an alarm occurs. 1 (Normally closed): The alarm output will NOT be powered when an alarm occurs. This installer setting allows distinction between detection of an alarm and detection of a power failure to the unit. <p>See also table below (Alarm output logic).</p>

Alarm output logic

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

5 Configuration

Demand PCB

#	Code	Description
[A.2.2.7]	[D-04]	Demand PCB Indicates if the optional demand PCB is installed. <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Yes): Installed

Energy metering

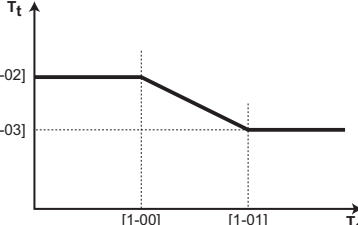
#	Code	Description
[A.2.2.8]	[D-08]	Optional external kWh meter 1: <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)
[A.2.2.9]	[D-09]	Optional external kWh meter 2: <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)

5.2.4 Quick wizard: Capacities (energy metering)

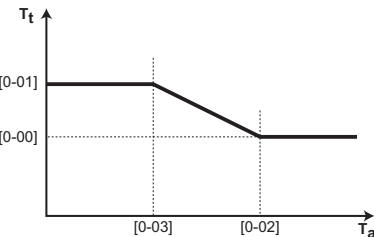
#	Code	Description
[A.2.3.1]	[6-02]	Booster heater capacity [kW]

5.2.5 Space heating control

Leaving water temperature: Main zone

#	Code	Description
[A.3.1.1.1]	N/A	Set point mode: <ul style="list-style-type: none"> 0 (Absolute): Absolute 1 (Weather dep.): Weather-dependent 2 (Abs + scheduled): Absolute + scheduled (only for leaving water temperature control) 3 (WD + scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[A.3.1.1.3]	[1-00] [1-01] [1-02] [1-03]	Weather-dependent curve (heating):  <ul style="list-style-type: none"> T_t: Target leaving water temperature (main) T_a: Outdoor temperature

Leaving water temperature: Additional zone

#	Code	Description
[A.3.1.2.1]	N/A	Set point mode: <ul style="list-style-type: none"> 0 (Absolute): Absolute 1 (Weather dep.): Weather-dependent 2 (Abs + scheduled): Absolute + scheduled (only for leaving water temperature control) 3 (WD + scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[A.3.1.2.3]	[0-00] [0-01] [0-02] [0-03]	Weather-dependent curve (heating):  <ul style="list-style-type: none"> T_t: Target leaving water temperature (additional) T_a: Outdoor temperature

Leaving water temperature: Delta T emitter

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

Leaving water temperature: Modulation

#	Code	Description
[A.3.1.1.5]	[8-05]	Leaving water temperature modulation: <ul style="list-style-type: none"> 0 (No): Disabled 1 (Yes): Enabled. The leaving water temperature is calculated according to the difference between desired and actual room temperature. This allows better matching of the heat pump capacity to actual required capacity and results in less start/stop cycles of the heat pump and more economic operation.

Leaving water temperature: Emitter type

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

5.2.6 Domestic hot water control

#	Code	Description
[A.4.1]	[6-0D]	Domestic hot water Setpoint mode: <ul style="list-style-type: none"> 0 (Reheat only): Only reheat operation is allowed. 1 (Reheat + sched.): Same as 2, but between the scheduled heatup cycles, reheat operation is allowed. 2 (Scheduled only): The domestic hot water tank can ONLY be heated according to a schedule.
[A.4.3.1]	N/A	How is the tank temperature to be displayed on the user interface? <ul style="list-style-type: none"> As temperature. 60°C ◆ As graphic: The temperature has to be displayed as available hot water for x persons. If you choose this, you also have to configure which number equals which temperature under [A.4.3.2.1]~[A.4.3.2.6]: ◆ 4 ◆
[A.4.5]	[6-0E]	The maximum temperature that users can select for the domestic hot water. You can use this setting to limit the temperature at the hot water taps.



INFORMATION

It is recommended NOT to use the selection of ([6-0D]=0, [A.4.1] Domestic hot water Setpoint mode=Reheat only).

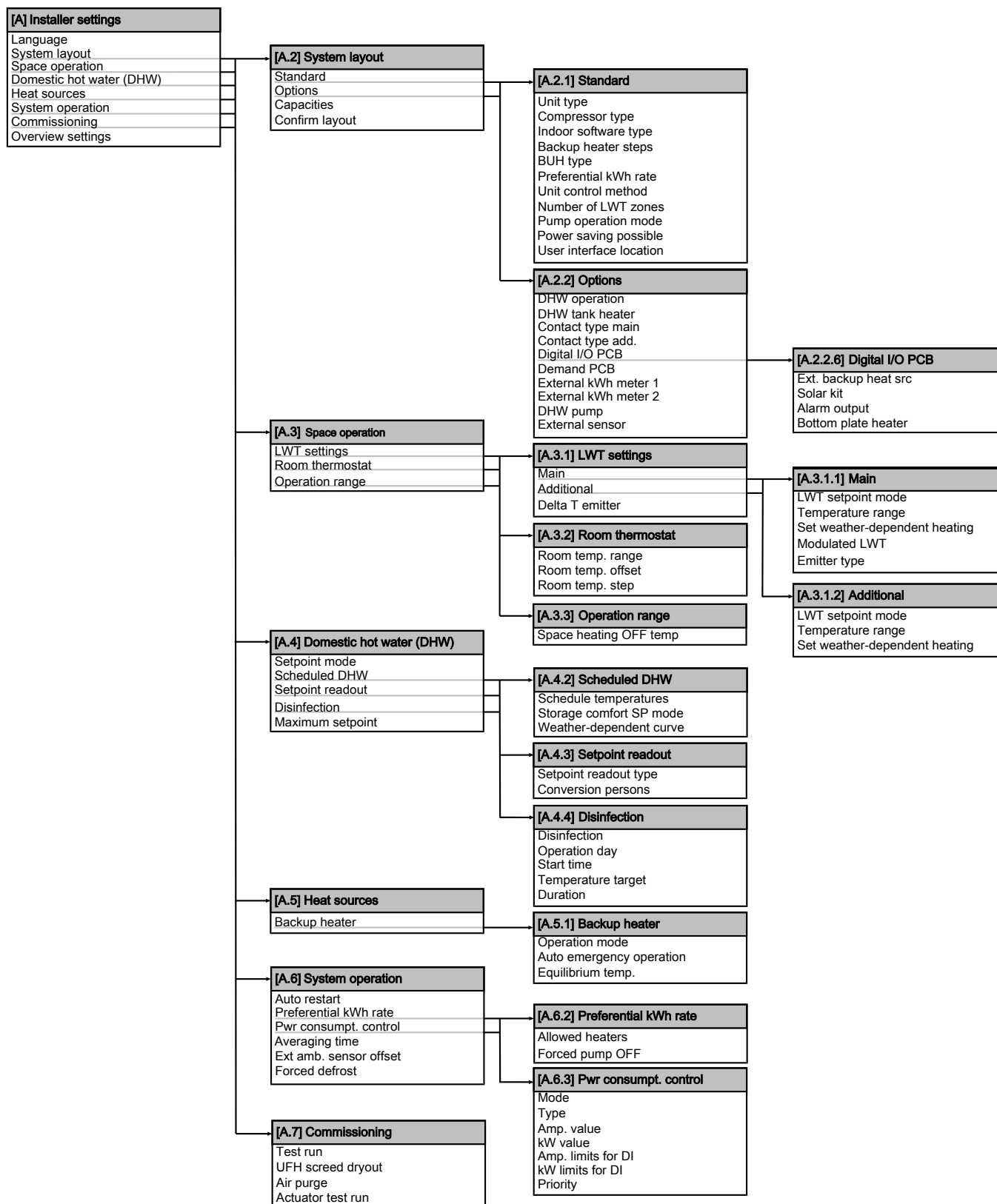
The risk of space heating capacity shortage/comfort problems is significant (in case of frequent domestic hot water operation, frequent and long space heating interruption will happen).

5.2.7 Contact/helpdesk number

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

5 Configuration

5.3 Menu structure: Overview installer settings



INFORMATION

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

6 Commissioning

6.1 Checklist before test run

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

<input type="checkbox"/>	The indoor unit is properly mounted.
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The following field wiring has been carried out according to this document and the applicable legislation: <ul style="list-style-type: none"> Between the local supply panel and the indoor unit Between the indoor unit and the valves (if applicable) Between the indoor unit and the room thermostat (if applicable) Between the indoor unit and the domestic hot water tank (if applicable) Between the gas boiler and the local supply panel (only applicable in case of hybrid system)
<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have not been bypassed.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
<input type="checkbox"/>	Depending on the backup heater type, the backup heater circuit breaker F1B or F3B on the switch box is turned ON.
<input type="checkbox"/>	There are NO refrigerant leaks .
<input type="checkbox"/>	The refrigerant pipes (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	There is NO water leak inside the indoor unit.
<input type="checkbox"/>	The shut-off valves are properly installed and fully open.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	The air purge valve is open (at least 2 turns).
<input type="checkbox"/>	The pressure relief valve purges water when opened.



NOTICE

NEVER operate the unit without thermistors, burning of the compressor may result.

6.2 To perform an air purge

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

- 1 Go to [A.7.3]: > Installer settings > Commissioning > Air purge.
- 2 Set the type, speed and circuit.
- 3 Select Start air purge and press **OK**.
- 4 Select OK and press **OK**.

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

6.3 To perform a test run

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

- 1 Go to [A.7.1]: > Installer settings > Commissioning > Test run.
- 2 Select a test and press **OK**. **Example:** Heating.
- 3 Select OK and press **OK**.

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



INFORMATION

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

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

6.4 To perform an actuator test run

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

- 1 Make sure the room temperature control, the leaving water temperature control and the domestic hot water control are turned OFF via the user interface.
- 2 Go to [A.7.4]: > Installer settings > Commissioning > Actuator test run.
- 3 Select an actuator and press **OK**. **Example:** Pump.
- 4 Select OK and press **OK**.

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

6.4.1 Possible actuator test runs

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



INFORMATION

Calibration of the produced heat calculation is included in this test.


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


7 Hand-over to the user

- Solar pump test
- 2-way valve test
- 3-way valve test
- Bottom plate heater test
- Bivalent signal test
- Alarm output test
- Cooling/heating signal test
- Quick heat-up test
- Circulation pump test

6.5 To perform an underfloor heating screed dryout

Prerequisite: Make sure the user interface shows the home screens and that the space heating and domestic hot water demands are turned off.

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

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

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 CD/DVD and the printed documentation and ask him/her to keep it for future reference.
- Explain the user how to properly operate the system and what he/she has to do in case of problems.
- Show the user what jobs he/she has to do in relation to maintenance of the unit.
- Explain the user about energy saving tips as described in the operation manual.

8 Technical data

8.1 Wiring diagram

8.1.1 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.



INFORMATION

Please note that the following features are NOT applicable for EHVH04+08S18CA3VF and any reference to them in the wiring diagram can be ignored:

- space cooling (units are heating only models),
- bottom plate heater (not present in outdoor unit),
- BUH step 2 (backup heater model is 3V),
- solar kit (not compatible with integrated domestic hot water tank).

NOTES to go through before starting the unit

X1M	: Main terminal	X6M, X7M	: Backup heater terminal
X2M	: Field wiring terminal for AC	X4M	: Booster heater terminal
X5M	: Field wiring terminal for DC		

— — — — —	: Earth wiring		
15	: Wire number 15		
— — — — —	: Field supply		
→ **/12.2	: Connection ** continues on page 12 column 2		
①	: Several wiring possibilities		
	: Option		
			: Not mounted in switch box
	: Wiring depending on model		: PCB

Backup heater configuration (only for *9W)

- ☐ 3V3 (1N~, 230 V, 3 kW)
- ☐ 6V3 (1N~, 230 V, 6 kW)
- ☐ 6WN (3N~, 400 V, 6 kW)
- ☐ 9WN (3N~, 400 V, 9 kW)
- ☐ 6T1 (3~, 230 V, 6 kW)

User installed options:

- ☐ Bottom plate heater
- ☐ Domestic hot water tank
- ☐ Domestic hot water tank with solar connection
- ☐ Remote user interface
- ☐ Ext. indoor thermistor
- ☐ Ext. outdoor thermistor
- ☐ Digital I/O PCB
- ☐ Demand PCB
- ☐ Solar pump and control station

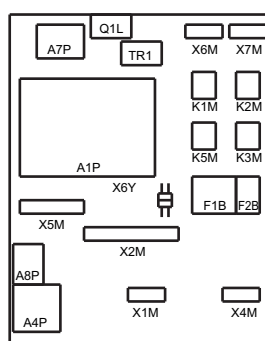
Main LWT:

- ☐ On/OFF thermostat (wired)
- ☐ On/OFF thermostat (wireless)
- ☐ Ext. thermistor
- ☐ Heat pump convactor

Add LWT:

- ☐ On/OFF thermostat (wired)
- ☐ On/OFF thermostat (wireless)
- ☐ Ext. thermistor
- ☐ Heat pump convactor

POSITION IN SWITCH BOX



LEGEND



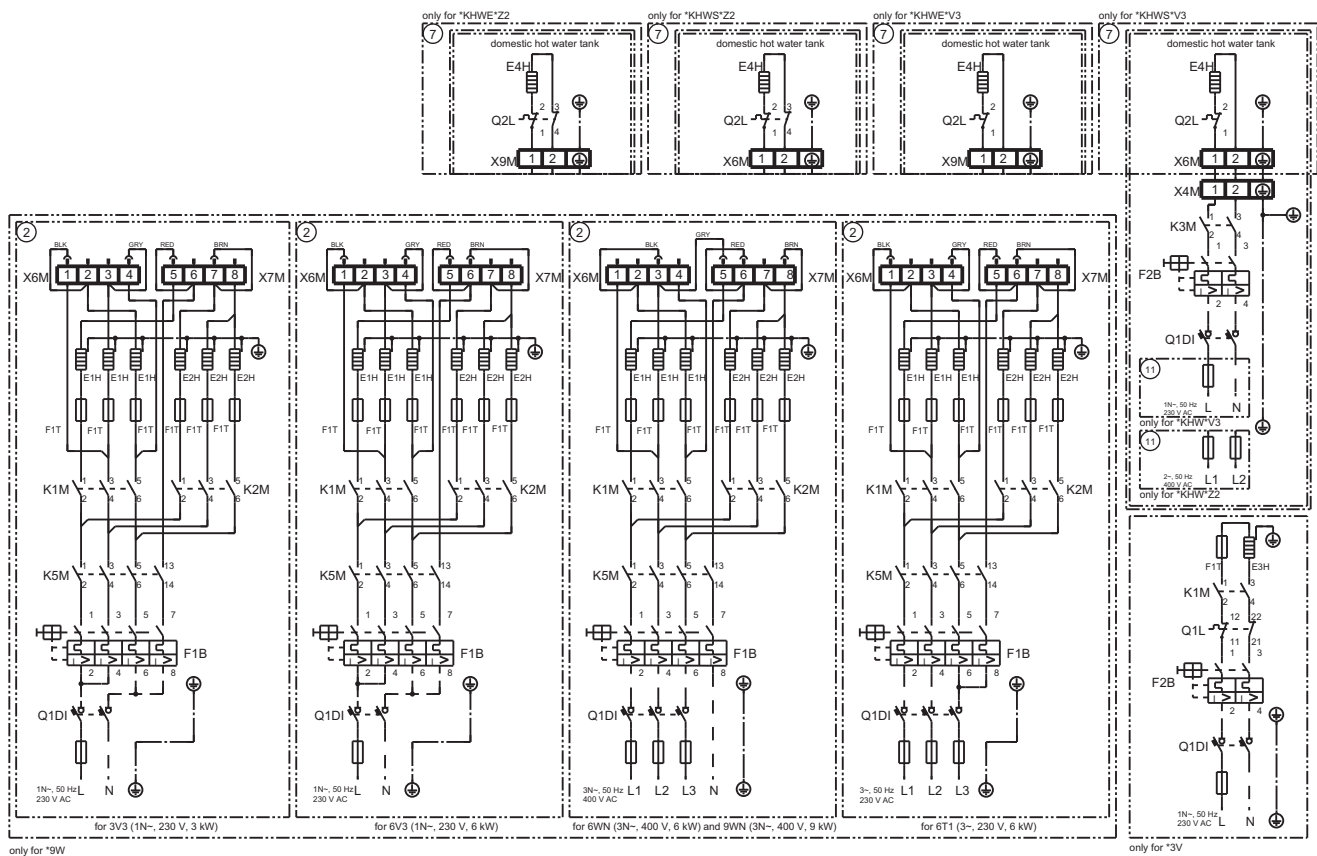
Translation can be found in the installation manual.

Part n°	Description	Part n°	Description
A1P	main PCB	M2P	# domestic hot water pump
A2P	user interface PCB	M2S	# 2 way valve for cooling mode
A3P	* solar pumpstation PCB	M3S	(*) 3 way valve for floorheating/ domestic hot water
A3P	* On/OFF thermostat (PC=power circuit)	Q1DI, Q2DI	# earth leakage circuit breaker
A3P	* heat pump convactor	Q1L	thermal protector backup heater
A4P	* digital I/O PCB	Q2L	* thermal protector booster heater
A4P	* receiver PCB (wireless On/OFF thermostat)	R1T	outlet water heat exchanger thermistor
A7P	pump driver PCB (only for *16*)	R1T (A2P)	ambient sensor user interface
A8P	* demand PCB	R1T (A3P)	* ambient sensor On/OFF thermostat
B1L	flow sensor	R2T	outlet backup heater thermistor
BSK	* solar pump station relay	R2T	* external sensor (floor or ambient)
DS1 (A8P)	* dipswitch	R3T	refrigerant liquid side thermistor
E1H	backup heater element (1 kW)	R4T	inlet water thermistor
E2H	backup heater element (2 kW)	R5T	(*) domestic hot water thermistor
E3H	backup heater element (3 kW)	R6T	* external indoor or outdoor ambient thermistor
E4H	* booster heater (3 kW)	R1H (A3P)	* humidity sensor
F1B	overcurrent fuse backup heater	S1S	# preferential kWh rate PS contact
F2B	* overcurrent fuse booster heater	S2S	# electrical meter pulse input 1
F1T	thermal fuse backup heater	S3S	# electrical meter pulse input 2
F1U, F2U	* fuse 5 A 250 V for digital I/O PCB	S6S-S9S	# digital power limitation inputs
FU1	fuse T 6.3 A 250 V for PCB	SS1 (A4P)	* selector switch
PHC1	* optocoupler input circuit	T1R (A7P)	rectifier bridge (only for *16*)
K1M, K2M	contactor backup heater	TR1	power supply transformer
K3M	* contactor booster heater	X*M	terminal strip
K5M	safety contactor BUH (only *9W)	X*Y	connector
K*R	relay on PCB		
M1P	main supply pump		

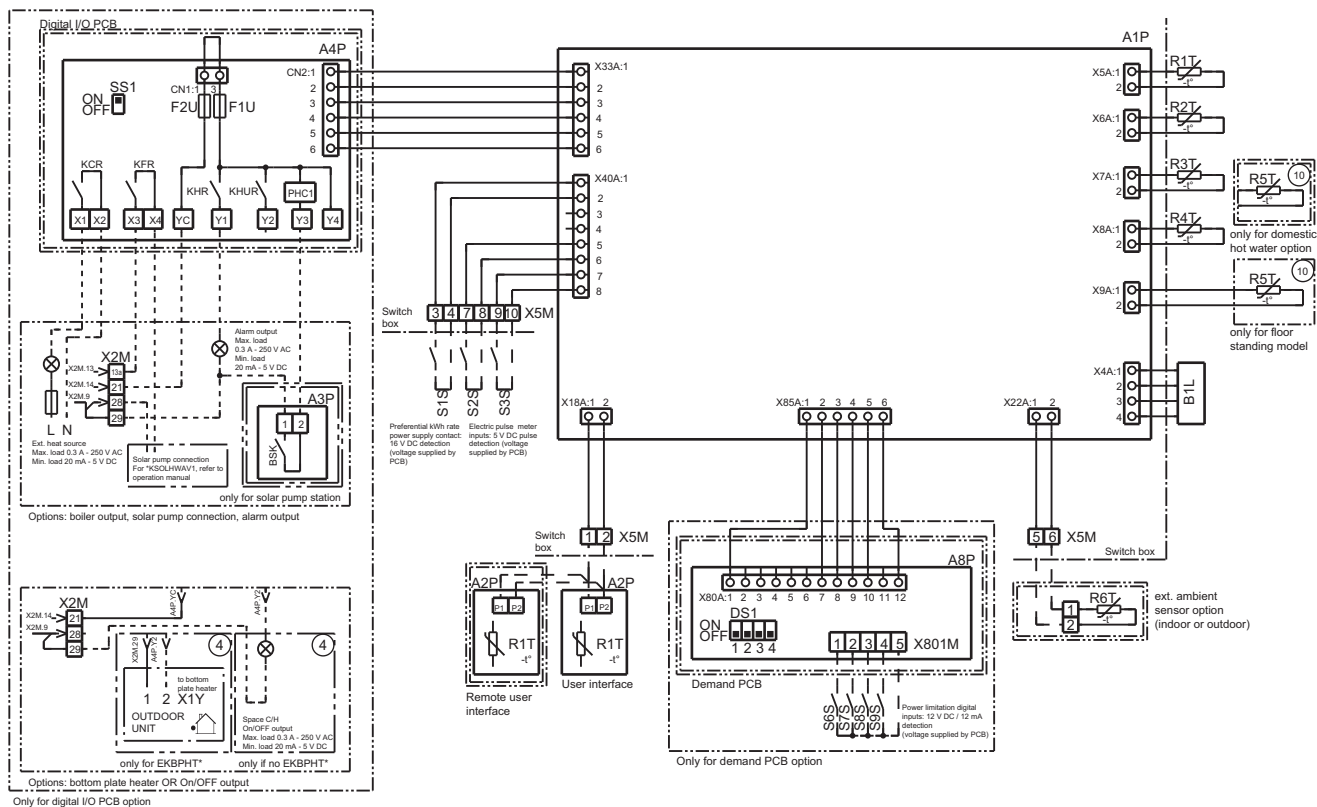
* : optional
(*) : standard for *HV*, optional for *HB*
: field supply

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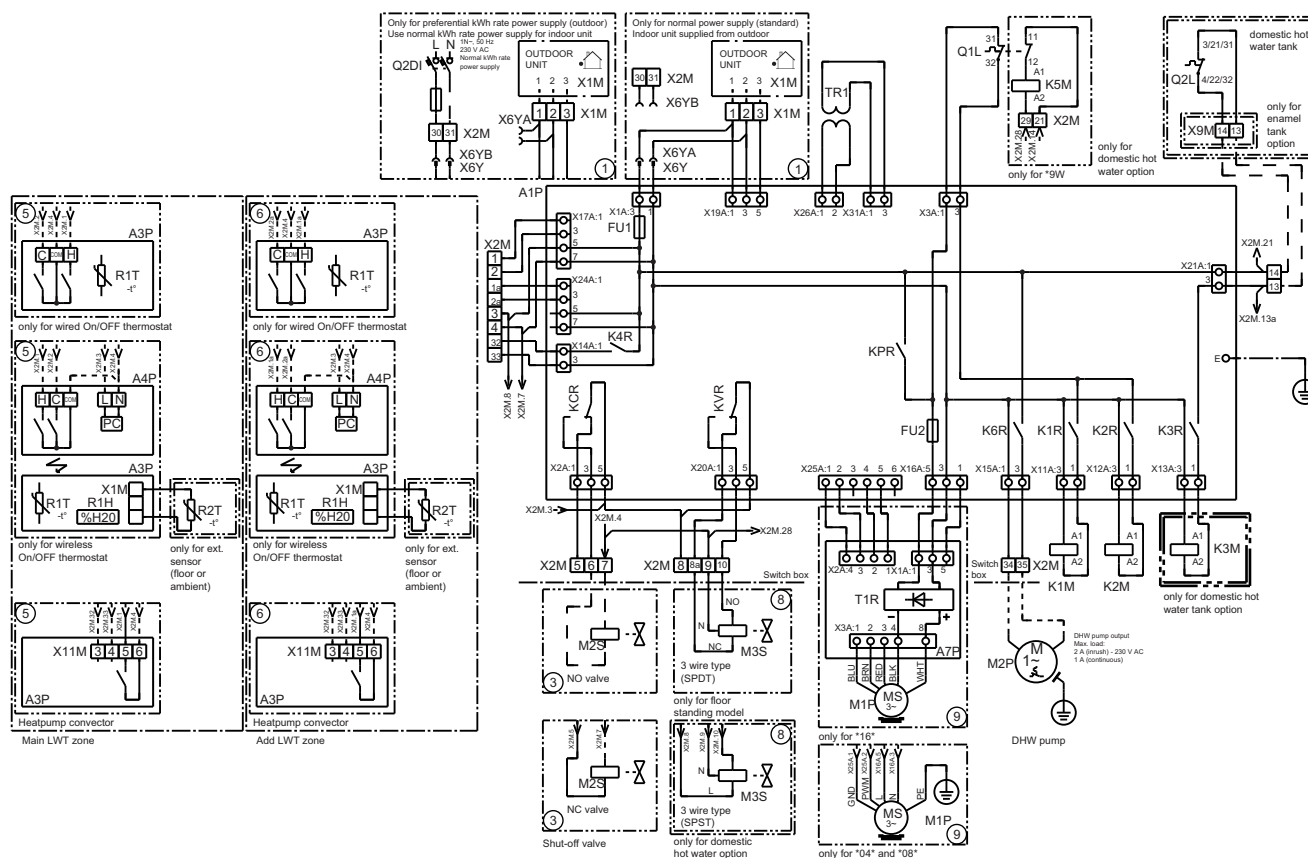
8 Technical data



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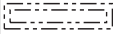

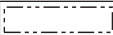

A1P	Main PCB	M1P	Main supply pump
A2P	User interface PCB	M2P	# Domestic hot water pump
A3P	* Solar pump station PCB	M2S	# 2-way valve for cooling mode
A3P	* On/OFF thermostat (PC=power circuit)	M3S	(*) 3-way valve for floor heating/domestic hot water
A3P	* Heat pump convactor		
A4P	* Digital I/O PCB		
A4P	* Receiver PCB (Wireless On/OFF thermostat)		
A7P	Pump driver PCB (not applicable)		
A8P	* Demand PCB		
B1L	Flow sensor		
BSK	* Solar pump station relay		
DS1(A8P)	* DIP switch		
E1H	Backup heater element (1 kW)		
E2H	Backup heater element (2 kW)		
E3H	Backup heater element (3 kW)		
E4H	* Booster heater (3 kW)		
F1B	Overcurrent fuse backup heater		
F2B	* Overcurrent fuse booster heater		
F1T	Thermal fuse backup heater		
F1U, F2U	* Fuse 5 A 250 V for digital I/O PCB		
FU1	Fuse T 6.3 A 250 V for PCB		
PHC1	* Optocoupler input circuit		
K1M, K2M	Contact backup heater		
K3M	* Contact booster heater		
K5M	Safety contact backup heater (only for *9W)		
K*R	Relay on PCB		
		M1P	Main supply pump
		M2P	# Domestic hot water pump
		M2S	# 2-way valve for cooling mode
		M3S	(*) 3-way valve for floor heating/domestic hot water
		Q1DI, Q2DI	# Earth leakage circuit breaker
		Q1L	Thermal protector backup heater
		Q2L	* Thermal protector booster heater
		R1T	Outlet water heat exchanger thermistor
		R1T (A2P)	Ambient sensor user interface
		R1T (A3P)	* Ambient sensor On/OFF thermostat
		R2T	Outlet backup heater thermistor
		R2T	* External sensor (floor or ambient)
		R3T	Refrigerant liquid side thermistor
		R4T	Inlet water thermistor
		R5T	(*) Domestic hot water thermistor
		R6T	* External indoor or outdoor ambient thermistor
		R1H (A3P)	* Humidity sensor
		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
		T1R (A7P)	Rectifier bridge (not applicable)
		TR1	Power supply transformer
		X*M	Terminal strip
		X*Y	Connector

8 Technical data

- * = Optional
 (*) = Not applicable
 # = Field supply

BLK	Black
BRN	Brown
GRY	Grey
RED	Red

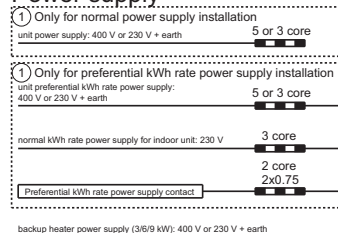
Notes to go through before starting the unit

English	Translation
X1M	Main terminal
X2M	Field wiring terminal for AC
X5M	Field wiring terminal for DC
X6M, X7M	Backup heater terminal
X4M	Booster heater terminal
-----	Earth wiring
15	Wire number 15
-----	Field supply
→ **/12.2	Connection ** continues on page 12 column 2
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB
Backup heater configuration (only for *9W)	Backup heater configuration (only for *9W)
User installed options	User installed options
Bottom plate heater	Bottom plate heater
Domestic hot water tank	Domestic hot water tank
Domestic hot water tank with solar connection	Domestic hot water tank with solar connection
Remote user interface	Remote user interface
Ext. indoor thermistor	Extended indoor thermistor
Ext outdoor thermistor	Extended outdoor thermistor
Digital I/O PCB	Digital I/O PCB
Demand PCB	Demand PCB
Solar pump and control station	Solar pump and control station
Main LWT	Main leaving water temperature
On/OFF thermostat (wired)	On/OFF thermostat (wired)
On/OFF thermostat (wireless)	On/OFF thermostat (wireless)
Ext. thermistor	Extended thermistor
Heat pump convector	Heat pump convector
Add LWT	Additional leaving water temperature

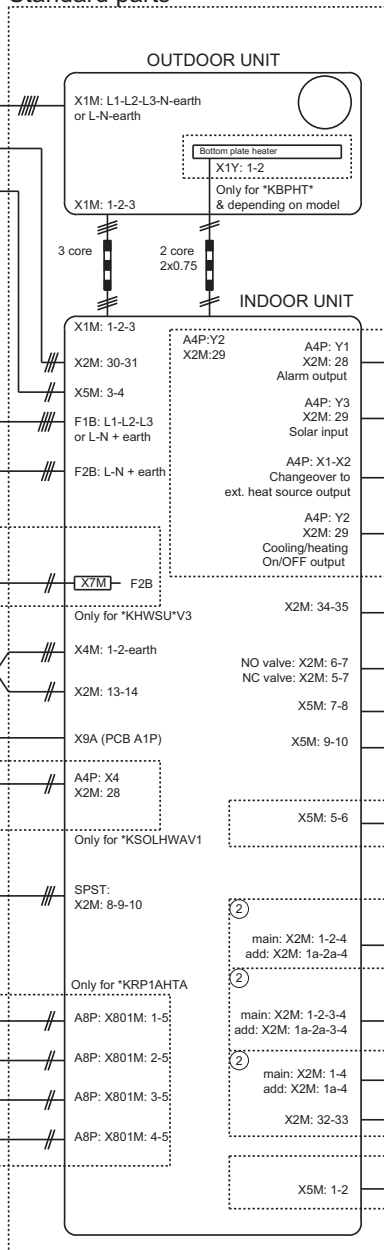
Electrical connection diagram Daikin Altherma

For more details please check unit wiring

Power supply



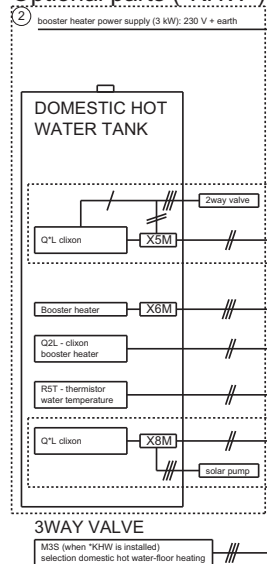
Standard parts



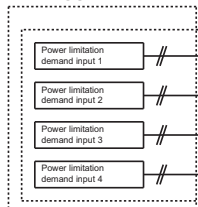
Notes:

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

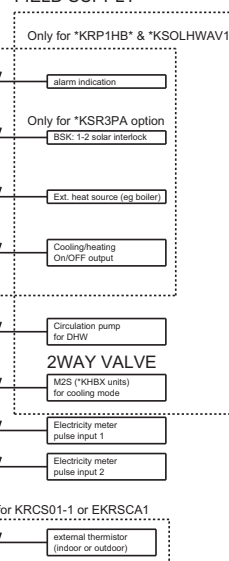
Optional parts (*KHW*)



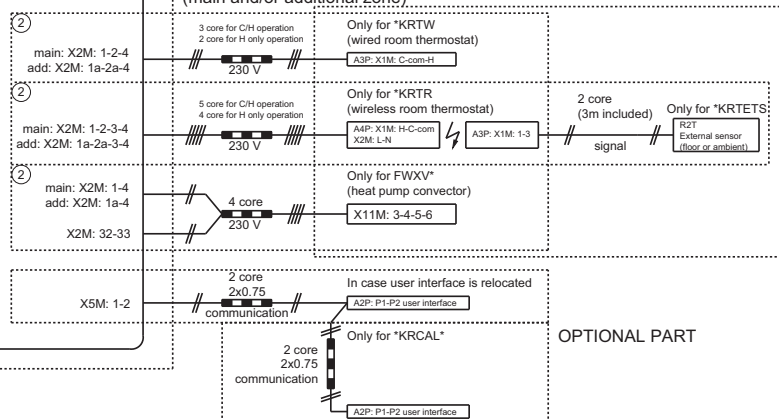
FIELD SUPPLY



FIELD SUPPLY



EXTERNAL ROOM THERMOSTAT / HEAT PUMP CONVECTOR (main and/or additional zone) OPTIONAL PART



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8 Technical data

* electrical meter specification

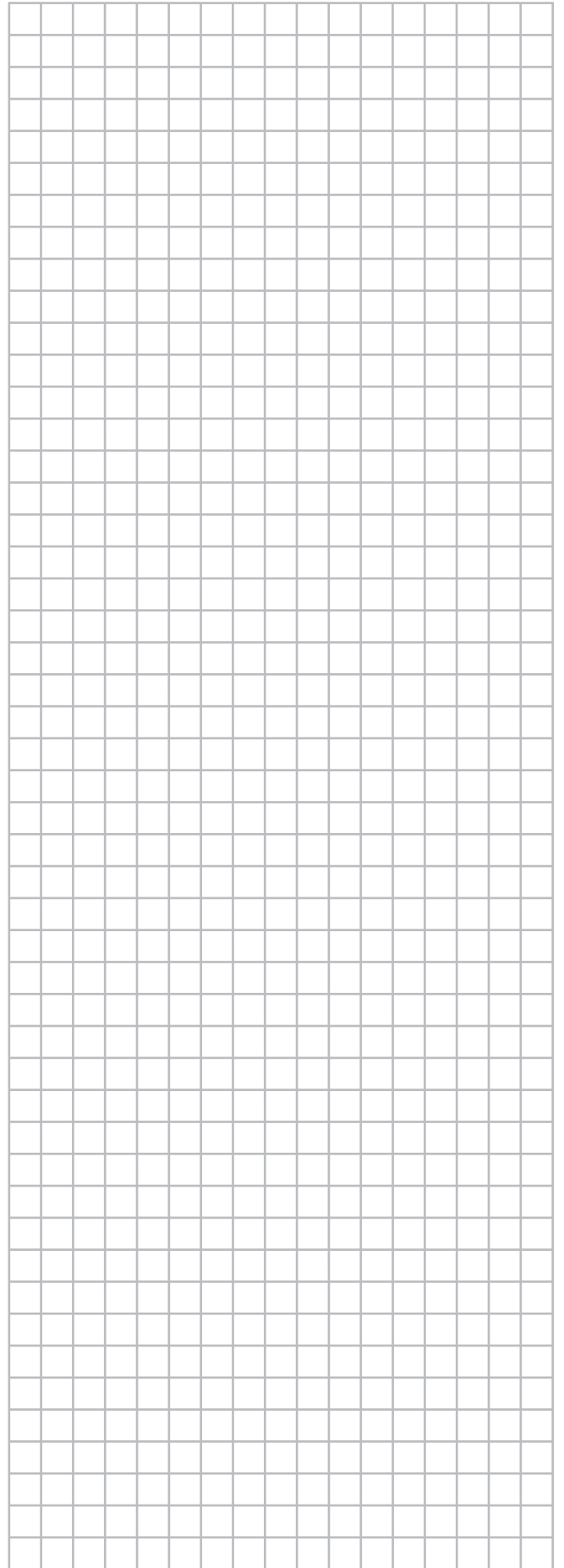
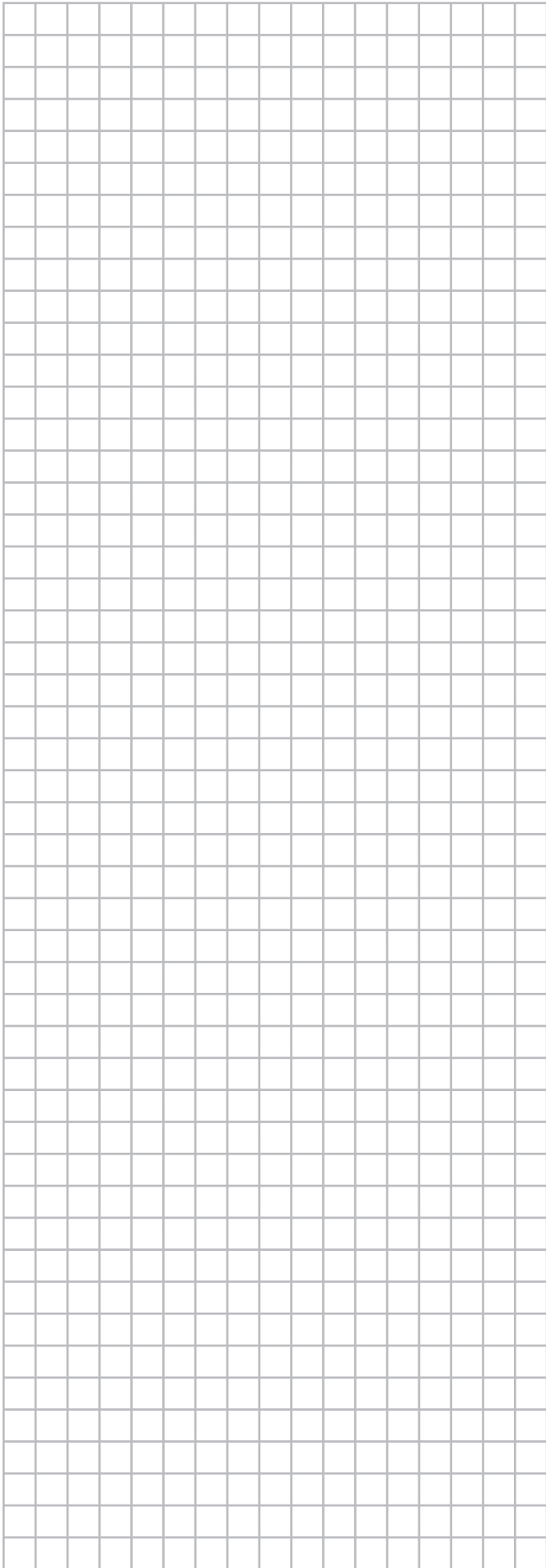
- pulse meter type/voltage free contact for 5 VDC detection by PCB
- possible number of pulse:
 - 0.1 pulse/kWh
 - 1pulse/kWh
 - 10pulse/kWh
 - 100 pulse/kWh
 - 1000 pulse/kWh
- pulse duration:
 - minimum On time 40ms
 - minimum OFF time 100ms
- measurement type (depending on installation):
 - single phase AC meter
 - three phase AC meter (balanced loads)
 - three phase AC meter (unbalanced loads)

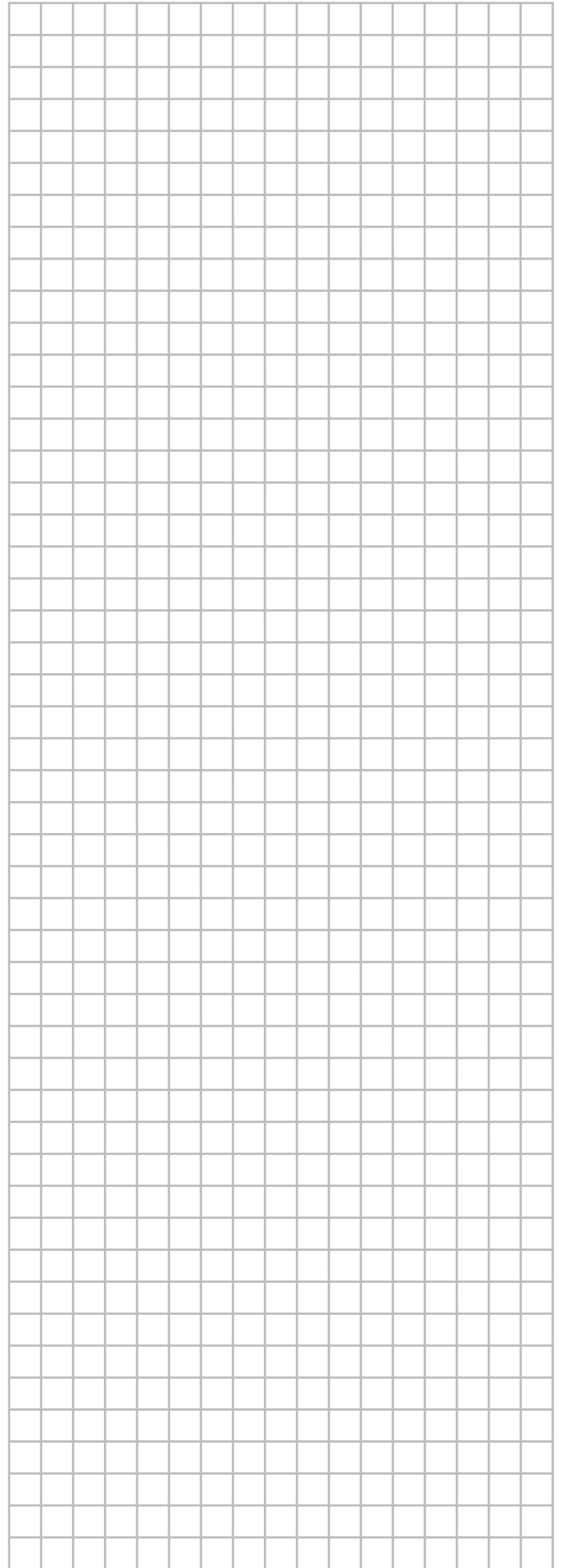
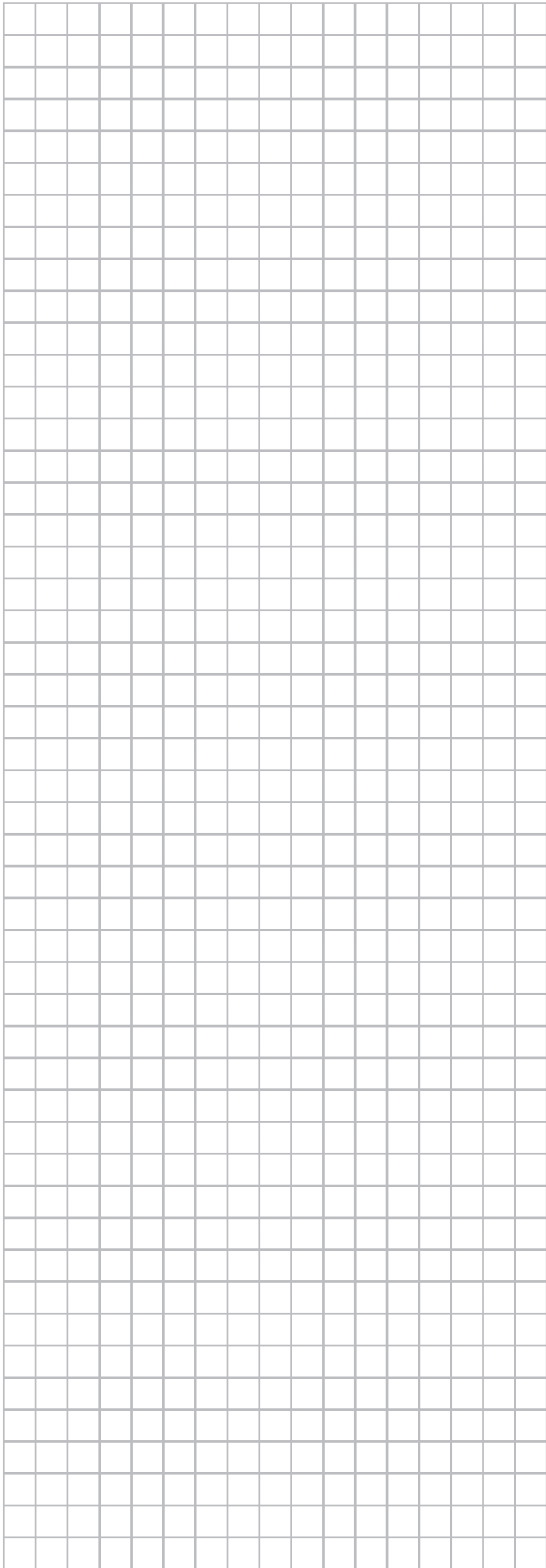
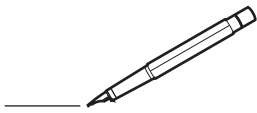
* electrical meter installation guideline

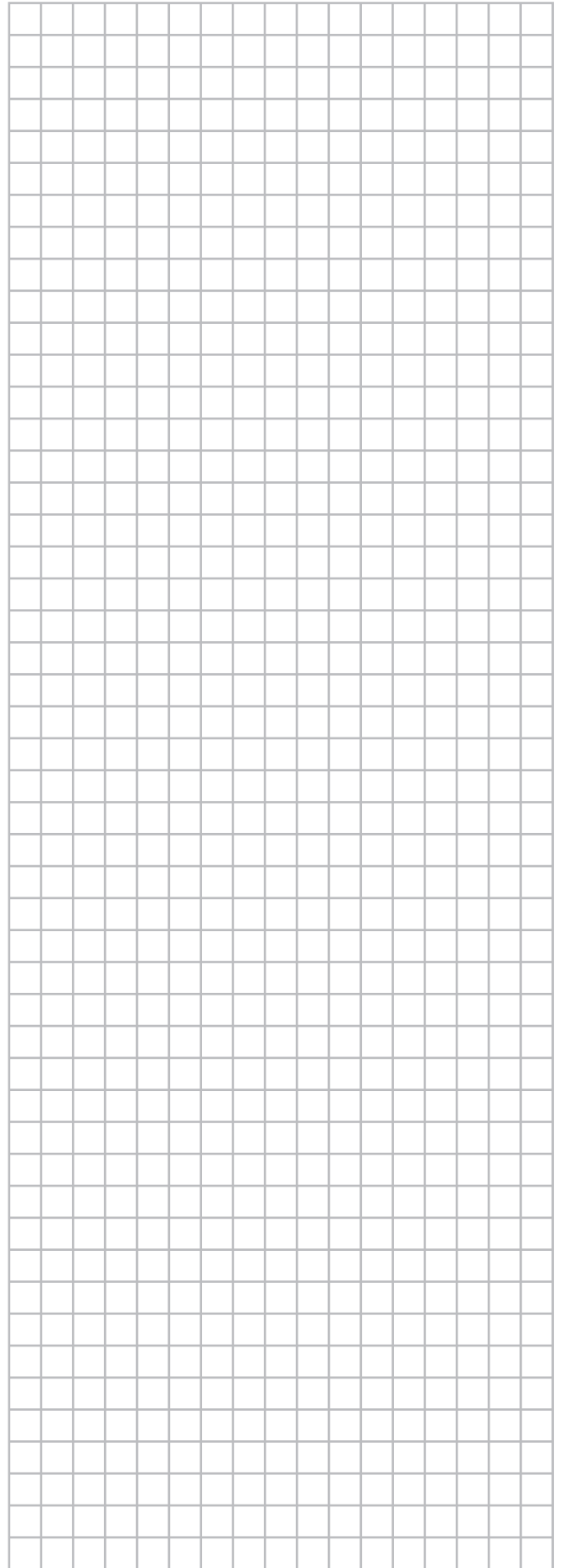
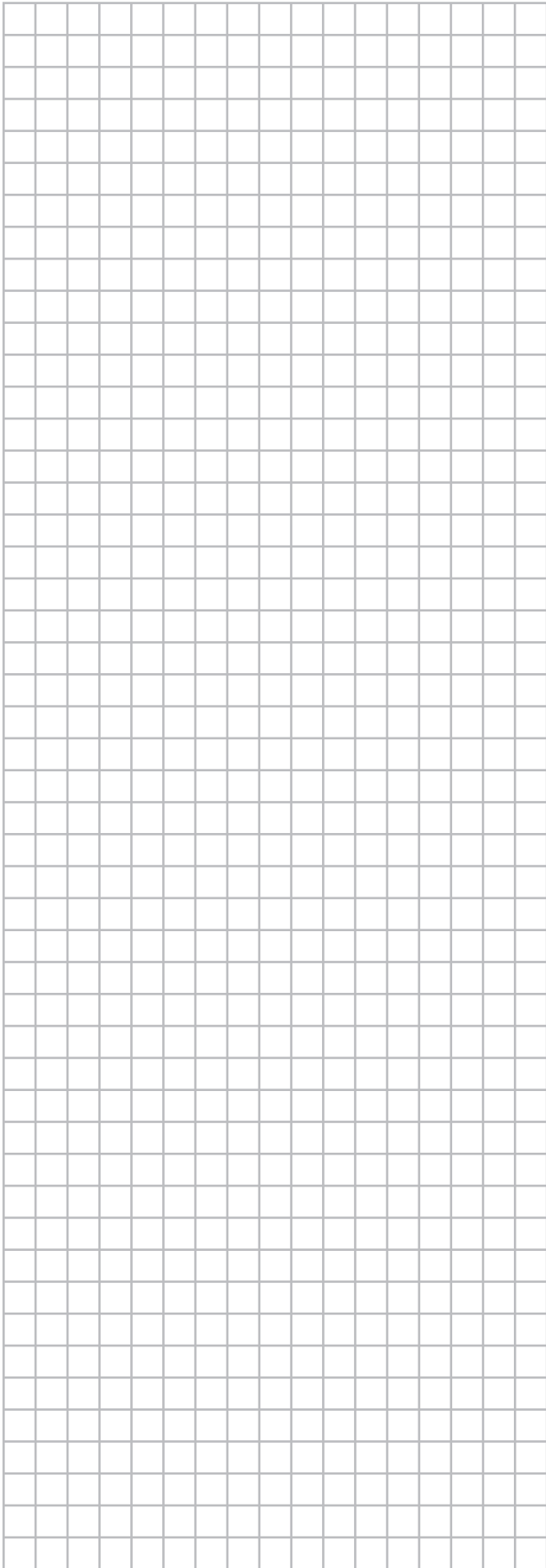
- General: it is the responsibility of the installer to cover the complete power consumption with electrical meters (combination of estimation and metering is not allowed)
- Required number of electrical meters:

Outdoor unit type		*RLQ(04/06/08)*				*R*Q(011/014/016)*V3				*R*Q(011/014/016)*W1				
Indoor unit type		*HB(H/X)(04/08)CA#				*HB(H/X)16CA#				*HB(H/X)16CA#				
	Backup heater type (#)	3V / 9W	9W	9W	3V / 9W	9W	9W	3V / 9W	9W	9W				
	Backup heater power supply	1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V				
	Backup heater configuration	3 / 6 kW	6 / 9 kW	6 kW	3 / 6 kW	6 / 9 kW	6 kW	3 / 6 kW	6 / 9 kW	6 kW				
		Regular kWh rate power supply												
Electrical meter type	1~	1	1	-	-	1	1	-	-	1	-	1	-	-
	3~ balanced	-	1	-	-	-	1	-	-	1	-	1	-	-
	3~ unbalanced	-	-	1	1	-	-	1	1	-	1	-	1	1
		Benefit kWh rate power supply												
Electrical meter type	1~	2	1	1	2	1	1	1	-	-				
	3~ balanced	-	-	-	-	-	-	1	1	1				
	3~ unbalanced	-	1	1	-	1	1	-	1	1				

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