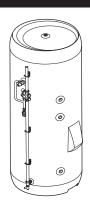


Installation manual

Domestic hot water tank with option kit for air to water heat pump system



EKHWSU150D3V3 EKHWSU180D3V3 EKHWSU200D3V3 EKHWSU250D3V3 EKHWSU300D3V3

EKEXPVES

Installation manual Domestic hot water tank with option kit for air to water heat pump system

English

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8 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:

8 2 = = derden folgenden Norm(en) oder einem anderen Normdokumentoder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:

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92

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amánding sker í överenssámmelse med vára instruktoner.

12. respektive ustyket noverenssemmelse med fogande standardej eller andre nomávende dokumentlen), under foutdssehning av at disse brukes i henhold til váre instrukes.

13. vaskada seuraavíns atkadden ja munden objevelisten dokumentlen raatimuksa edelpitásen etta nitta käydasta objevdenme mukasestit.

14. za pedopoklatu, že jou vyzikány v souladu s raskim poknyn, optomája násebelpitén nomám nebo nomaténím dokumentlum.

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20. on vrastavnes grignitis (Paradizardile) ga vile sele normativese dormanitese a se podorio valura ormanitese dormanitese dormani

návodom: ūrūnūn, talimatlanmiza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur;

cu amendamentele respective

18 Directhebr, cu amendamentele respecti 19 Direkthe z Nearing sorientmann. 20 Direktiny Koos muddatslega. na. 21 Injektinses u patiofymis. 22 Direktyose su patiofymis. 23 Direktyose su patiofymis. 24 Streinfox y datom zeni. 25 Diegkins jatiely e Yorenneikler.

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irányelv(ek) és módosításaik rendelkezéseit.

както е изложено в <A> и оценено положително от

a(z) <A> alapján, a(z) igazolta a megfelelést, a(z) 21 Забележка*

v platném znění. Smjemice, kako je izmijenjeno. z późniejszymi poprawkami.

01 Directives, as amended.
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04 Richtlighen, zoals geamendeerd.
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09 Juppernia so seeuen rongeaseue.

**

Machinery 2006/42/EC Low Voltage 2014/35/EU

Electromagnetic Compatibility 2014/30/EU

following the provisions of:
gemäß den Vorschriften der:
conformément aux stipulations des:
tovereenkomstig de bepalingen van: με τήρηση των διατάξεων των: de acordo com o previsto em: в cooтветствии с положениями: siguiendo las disposiciones de: secondo le prescrizioni per: EN60335-2-40

19 ob upošlevanju določb:
20 vastavati nobele:
21 cnepsalivu vrajevire + a:
22 lakanis nuostalu, paleikiamų;
22 lakanis nuostalu, paleikiamų;
23 lakalis nuostalu, paleikiamų;
24 odžiavajući ustanoventa:
25 burun ksyllarina uygun oleak; 10 under iggitagelse af bestemmelserne i: 11 enligt villoder i. 12 girt ihenhold ibestemmelserne i: 13 noudstlaen määräyksiä: 14 za doorben kisaloven předpisu: 15 prema odreboma: 16 követa al.; 17 zgodné z postanowiemmi Dyrektyw: 18 in uma pravedeníor.

zoals vermeld in <A> en positief beoordeeld door 09 Примечание* 07 Σημείωση* 10 Bemærk* 06 Nota* according to the Certificate <C>.

When I AP Angelfurund vor 48 positiv
when TAP Angelfurund vor 48 positiv
beurfeit gemäß Zerffittel <C>.

El que défini dans <4> et évalué positivement par 08 Nota*. as set out in <A> and judged positively by como se establece en <A> y es valorado positivamente por de acuerdo con el Certificado <C> conformément au Certificat <C> overeenkomstig Certificaat <C>

> 03 Remarque* 02 Hinweis*

01 Note*

04 Bemerk*

05 Nota*

11 Information* как указано в <A> и в соответствии с положительным 4 Poznámka* решением «В> сотласно Свидетельству «С>. som anført i «А> og positivt vurderet af «В> i henhold til 15 Napomena". Certifikat «С>. 13 Huom* από το **<B** σύμφωνα με το Πιστοποιητικό **<C>** tal como estabelecido em **<A>** e com o parecer positivo de **** de acordo com o **Certificado <C>**. delineato nel <A> e giudicato positivamente da secondo il Certificato <C> όπως καθορίζεται στο <A> και κρίνεται θετικά

16 Megjegyzés* 19 Opomba* igk bylo uvedeno v <A> a pozitivně zíjšěno

Pb. v souladu s sevetědením <C>.

Rako je boženo u <A> i pozitivno ocjenjeno od strane 20 Markus*

Rako je boženo u <A> i pozitivno ocjenjeno od strane 20 Markus*

Pb. prema Gerffilkatu <C>. 17 Uwaga* 18 Notă* som det fremkommer i <A> og gjennom positiv bedømmelse av ifølge Sertifikat <C> jotka on esitetty asiakiŋassa <A> ja jotka on hyväksynyt Sertifikaatin <C> mukaisesti. enligt <A> och godkänts av enligt Certifikatet <C>.

as a cum este stabilit în <A> și apreciat pozitiv de 23 Piezīmes* nagu on näidatud dokumendis <A> ja heaks kiidetud järgi vastavalt sertifikaadile <C>. kot je določeno v <A> in odobreno s strani zgodnie z dokumentacją <A>, pozytywną opinią i Świadectwem <C>. în conformitate cu Certificatul <C>. v skladu s certifikatom <

ako bolo uvedené v <A> a pozitívne zistené v súlade kā norādīts <A> un atbilstoši pozitīvajam vērtējumam съгласно **Сертификата <С>** кајр nustatyta **<A>** ir kajp teigiamai nuspręsta **** pagal <A>'da belirtildiği gibi ve <C> Sertifikasına göre tarafından olumlu olarak değerlendirildiği gibi. saskaņā ar sertifikātu < s osvedčením <C>. 24 Poznámka* 22 Pastaba* 25 Not*

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Shigeki Morita Director

Ostend, 2nd of November 2017

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Table of contents

1	Ger	neral s	afety precautions	3
	1.1	About t	he documentation	3
		1.1.1	Meaning of warnings and symbols	3
	1.2	For the	installer	4
		1.2.1	General	4
		1.2.2	Installation site	4
		1.2.3	Water	4
		1.2.4	Electrical	4
2	Δha	out the	documentation	5
_	2.1		his document	5
3	۸ha	out the		5
3				
	3.1		ew: About the box	5
	3.2	3.2.1	tic hot water tank	6
		3.2.1	To unpack the domestic hot water tank	•
		3.2.2	water tank	6
4	Abo	out the	units and options	6
•	4.1		ew: About the units and options	6
	4.2		cation	6
	4.2	4.2.1	Identification label: Domestic hot water tank	6
5		paratio		7
	5.1		ew: Preparation	7
	5.2		ing the installation site	7
		5.2.1	Installation site requirements of the domestic hot water tank	7
	5.3	Prenari	ng water piping	7
	5.5	5.3.1	Water circuit requirements	7
	5.4		ng electrical wiring	8
	3.4	5.4.1	About preparing electrical wiring	8
		5.4.2	Safety device requirements	8
6		tallatio		8
	6.1		ew: Installation	8
	6.2	•	g the units	8
		6.2.1	To open the switch box cover of the domestic hot	,
	6.3	Mountie	water tankng the domestic hot water tank	8
	0.3	6.3.1	Precautions when mounting the indoor unit	8
		6.3.2	To install the domestic hot water tank	8
	6.4			8
	0.4		cting the water piping About connecting the water piping	8
		6.4.2 6.4.3	Precautions when connecting the water piping To connect the water piping	9
			To fill the domestic hot water tank	
		6.4.4 6.4.5	To insulate the water piping	10
		6.4.6	To connect the 3-way valve	10
	6.5			11
	0.5	6.5.1	About connecting the electrical wiring	11
		6.5.2		
		6.5.3	To connect the electrical wiring on the indoor unit To connect the electrical wiring on the outdoor unit	11
		6.5.4	To connect the electrical wiring on the domestic hot	12
		0.0.4	water tank	13
	6.6	Finishir	ng the domestic hot water tank installation	13
		6.6.1	To close the domestic hot water tank	13
7	Cor	nmiss	ioning	14
-	7.1		ew: Commissioning	14
	7.2		ist before commissioning	14
	7.3		ist during commissioning	14
8	пar	ıa-ove	r to the user	14

9	Mai	ntenar	nce and service	14
	9.1	Overvie	ew: Maintenance and service	14
	9.2	Mainter	nance safety precautions	14
	9.3		st for yearly maintenance of the domestic hot water	
		tank		14
		9.3.1	To drain the domestic hot water tank	15
10	Tro	ublesh	nooting	15
	10.1	Overvie	w: Troubleshooting	15
	10.2	Precaut	tions when troubleshooting	15
	10.3	Solving	problems based on symptoms	16
		10.3.1	Symptom: No water flow from hot taps	16
		10.3.2	Symptom: The water from the hot taps is cold	16
		10.3.3	Symptom: Intermittent water discharge	16
		10.3.4	Symptom: Continuous water discharge	16
11	Dis	osal		16
12	Tec	hnical	data	17
	12.1	Compo	nents: Domestic hot water tank	17
	12.2	Compo	nents: G3 kit	17
	12.3	Outlook	diagram	18
	12.4	Wiring	diagram: Domestic hot water tank	18
13	Glo	ssary		19

1 General safety precautions

1.1 About the documentation

- The original documentation is written in English. All other languages are translations.
- The precautions described in this document cover very important topics, follow them carefully.
- The installation of the system, and all activities described in the installation manual and the installer reference guide MUST be performed by an authorised installer.

1.1.1 Meaning of warnings and symbols



DANGER

Indicates a situation that results in death or serious injury.



DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.



DANGER: RISK OF BURNING

Indicates a situation that could result in burning because of extreme hot or cold temperatures.



DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.



WARNING

Indicates a situation that could result in death or serious injury.



WARNING: FLAMMABLE MATERIAL



CAUTION

Indicates a situation that could result in minor or moderate injury.



NOTICE

Indicates a situation that could result in equipment or property damage.

1 General safety precautions



INFORMATION

Indicates useful tips or additional information.

Symbol	Explanation
i	Before installation, read the installation and operation manual, and the wiring instruction sheet.
	Before performing maintenance and service tasks, read the service manual.
	For more information, see the installer and user reference guide.

1.2 For the installer

1.2.1 General

If you are NOT sure how to install or operate the unit, contact your dealer.



NOTICE

Improper installation or attachment of equipment or accessories could result in electric shock, short-circuit, leaks, fire or other damage to the equipment. Only use accessories, optional equipment and spare parts made or approved by Daikin.



WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the Daikin documentation).



CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,...) when installing, maintaining or servicing the system.



WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially children, can play with them. Possible risk: suffocation.



DANGER: RISK OF BURNING

- Do NOT touch the refrigerant piping, water piping or internal parts during and immediately after operation. It could be too hot or too cold. Give it time to return to normal temperature. If you must touch it, wear protective gloves.
- Do NOT touch any accidental leaking refrigerant.



WARNING

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.



CAUTION

Do NOT touch the air inlet or aluminium fins of the unit.



NOTICE

- · Do NOT place any objects or equipment on top of the
- . Do NOT sit, climb or stand on the unit.



NOTICE

Works executed on the outdoor unit are best done under dry weather conditions to avoid water ingress.

In accordance with the applicable legislation, it might be necessary to provide a logbook with the product containing at least: information on maintenance, repair work, results of tests, stand-by periods,...

Also, at least, following information MUST be provided at an accessible place at the product:

- Instructions for shutting down the system in case of an emergency
- · Name and address of fire department, police and hospital
- · Name, address and day and night telephone numbers for obtaining service

In Europe, EN378 provides the necessary guidance for this logbook.

1.2.2 Installation site

- · Provide sufficient space around the unit for servicing and air circulation.
- Make sure the installation site withstands the unit's weight and vibration
- Make sure the area is well ventilated. Do NOT block any ventilation openings.
- · Make sure the unit is level.

Do NOT install the unit in the following places:

- In potentially explosive atmospheres.
- In places where there is machinery that emits electromagnetic waves. Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
- In places where there is a risk of fire due to the leakage of flammable gases (example: thinner or gasoline), carbon fibre, ignitable dust.
- In places where corrosive gas (example: sulphurous acid gas) is produced. Corrosion of copper pipes or soldered parts may cause the refrigerant to leak.

1.2.3 Water

If applicable. See the installation manual or installer reference guide of your application for more information.



NOTICE

Make sure water quality complies with EU directive 98/83 EC

1.2.4 **Electrical**



DANGER: RISK OF ELECTROCUTION

- Turn OFF all power supply before removing the switch box cover, connecting electrical wiring or touching electrical parts.
- Disconnect the power supply for more than 1 minute, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage MUST be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram.
- Do NOT touch electrical components with wet hands.
- Do NOT leave the unit unattended when the service cover is removed.



WARNING

If NOT factory installed, a main switch or other means for disconnection, having a contact separation in all poles providing full disconnection under overvoltage category III condition, MUST be installed in the fixed wiring.



WARNING

- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electric shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.



NOTICE

Precautions when laying power wiring:







- Do NOT connect wiring of different thicknesses to the power terminal block (slack in the power wiring may cause abnormal heat).
- When connecting wiring which is the same thickness, do as shown in the figure above.
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will damage the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.



WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.



NOTICE

Only applicable if the power supply is three-phase, and the compressor has an ON/OFF starting method.

If there exists the possibility of reversed phase after a momentary black out and the power goes on and off while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase can break the compressor and other parts.

2 About the documentation

2.1 About this document

Target audience

Authorised installers

Documentation set

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

- Domestic hot water tank installation manual:
 - Installation instructions
 - Format: Paper (in the box of the domestic hot water tank)

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).

3 About the box

3.1 Overview: About the box

It contains information about:

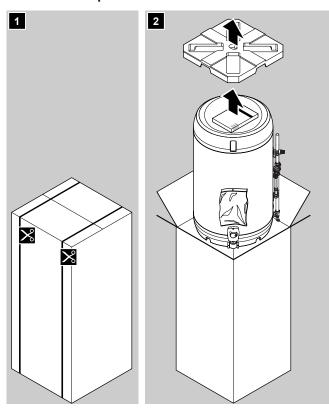
- · Unpacking and handling the units
- · Removing the accessories from the units

Keep the following in mind:

- At delivery, the unit MUST be checked for damage. Any damage MUST be reported immediately to the carrier's claims agent.
- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- Prepare the path along which you want to bring the unit inside in advance.

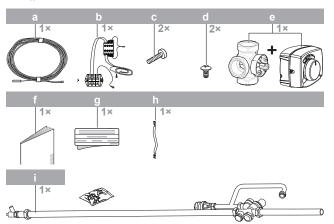
3.2 Domestic hot water tank

3.2.1 To unpack the domestic hot water tank



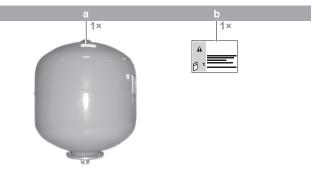
3.2.2 To remove the accessories from the domestic hot water tank

 Remove the accessories supplied with the domestic hot water tank.



- a Thermistor + connection wire (12 m)
- b Contactor K3M terminal X7M/X4M assembly
- c Contactor fixing screw
- d Tapping screw
- 3-way valve + motor
- f Installation manual
- g Booster heater power supply sticker
- 1 Jumper wire
- I G3 kit

2 Remove the accessories supplied with the EKEXPVES option kit for the domestic hot water tank (optional)



- a Expansion vessel of 18 litres 3/4" Male BSP
- **b** Instruction sheet

4 About the units and options

4.1 Overview: About the units and options

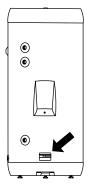
This chapter contains information about:

Identifying the domestic hot water tank

4.2 Identification

4.2.1 Identification label: Domestic hot water tank

Location



Model identification

Example: EK HWS 150 D 3 V3

Code	Description
EK	European Kit
HWS	Hot Water Stainless steel tank
U	Special version for United Kingdom only
	Standard version when no letter is mentioned
150	Indication of storage capacity in litres
D	Series
3	Capacity booster heater in kW
V3	Power supply: 1~, 220~240 V, 50 Hz

5 Preparation

5.1 Overview: Preparation

This chapter describes what you have to do and know before going on-site.

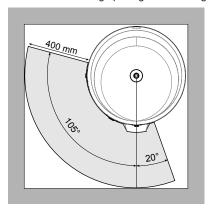
It contains information about:

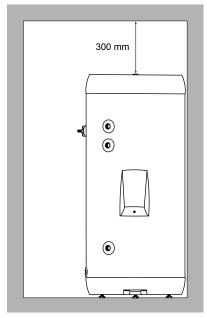
- · Preparing the installation site
- · Preparing the water piping
- Preparing the electrical wiring

5.2 Preparing the installation site

5.2.1 Installation site requirements of the domestic hot water tank

• Mind the following spacing installation guidelines:





- The domestic hot water tank is designed for indoor installation only and for ambient temperatures ranging from 0~35°C.
- Take care that in the event of a leak, water cannot cause any damage to the installation space and surroundings.

5.3 Preparing water piping

5.3.1 Water circuit requirements



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.



NOTICE

Do NOT use the pressure relief valve connection for other purposes.

- Connecting piping Legislation. Make all piping connections in accordance with the applicable legislation and the instructions in the "Installation" chapter, respecting the water inlet and outlet.
- Connecting piping Force. Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit.
- Connecting piping Tools. Only use appropriate tooling to handle brass, which is a soft material. If NOT, pipes will get damaged.
- Connecting piping Air, moisture, dust. If air, moisture or dust gets into the circuit, problems may occur. To prevent this:
 - · Only use clean pipes
 - Hold the pipe end downwards when removing burrs.
 - Cover the pipe end when inserting it through a wall, to prevent dust and/or particles entering the pipe.
 - · Use a decent thread sealant to seal connections.
- Glycol. For safety reasons, it is NOT allowed to add any kind of glycol to the water circuit.
- Field supply components Water pressure and temperature.
 Check that all components in the field piping can withstand the water pressure and water temperature.
- Drainage Low points. Provide drain taps at all low points of the system in order to allow complete drainage of the water circuit.
- Non-brass metallic piping. When using non-brass metallic piping, insulate the brass and non-brass properly so that they do NOT make contact with each other. This to prevent galvanic corrosion.
- Domestic hot water tank Capacity. To avoid stagnation of water, it is important that the storage capacity of the domestic hot water tank meets the daily consumption of domestic hot water.
- Domestic hot water tank After installation. Immediately after installation, the domestic hot water tank must be flushed with fresh water. This procedure must be repeated at least once a day the first 5 consecutive days after installation.
- Domestic hot water tank Standstills. In cases where during longer periods of time there is no consumption of hot water, the equipment MUST be flushed with fresh water before usage.
- Domestic hot water tank Pressure relief valve. A pressure relief valve (part of the inlet control group) with an opening pressure of 6 bar prevents excessive water pressure in the water circuit.
- Domestic hot water tank Temperature and pressure relief valve. The temperature and pressure relief valve prevents excessive water temperature (>95°C) and excessive water pressure (≥7 bar) in the domestic hot water tank.
- Domestic hot water tank G3 kit and EKEXPVES kit. When installing an EKHWSU* domestic hot water tank, installing the included G3 kit and the option kit EKEXPVES is obligatory. Refer to the UK Building Regulation G3.

5.4 Preparing electrical wiring

5.4.1 About preparing electrical wiring



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring.
- All components procured on the site and all electrical construction MUST comply with the applicable legislation.



WARNING

ALWAYS use multicore cable for power supply cables.

5.4.2 Safety device requirements

The booster heater in the domestic hot water tank is equipped with a thermal protector (setting 85°C).



WARNING

The switch box lid must only be opened by a licensed electrician. Switch off the power supply before opening the switch box lid



NOTICE

Do NOT install heaters without thermal cut-out.

To reset the thermal protector: first check possible reasons for the thermal cut-out button being released and when solved press the reset button located on the thermal protector.



The power supply must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage protector in accordance with the applicable legislation.

Selection and sizing of the wiring should be done in accordance with the applicable legislation based on the information mentioned in the table below.

Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this manual. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.

Fuse	Minimum circuit ampacity	Recommended fuses	Power supply
F2B (field	13 A	20 A	1~ 50 Hz
supply)			220-240 V

6 Installation

6.1 Overview: Installation

This chapter describes what you have to do and know on-site to install the system.

Typical workflow

Installation typically consists of the following stages:

- 1 Mounting the domestic hot water tank.
- 2 Connecting the water piping.
- 3 Connecting the electrical wiring.
- 4 Finishing the domestic hot water tank installation.

6.2 Opening the units

6.2.1 To open the switch box cover of the domestic hot water tank



6.3 Mounting the domestic hot water tank

6.3.1 Precautions when mounting the indoor unit



INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

6.3.2 To install the domestic hot water tank

- 1 Check if all domestic hot water tank accessories are enclosed.
- 2 Place the domestic hot water tank on a level surface. Make sure the tank is mounted level.

6.4 Connecting the water piping

6.4.1 About connecting the water piping

Typical workflow

Connecting the water piping typically consists of the following stages:

- Connecting the water piping.
- 2 Filling the domestic hot water tank.
- 3 Insulating the water piping.
- 4 Connecting the 3-way valve.

6.4.2 Precautions when connecting the water piping

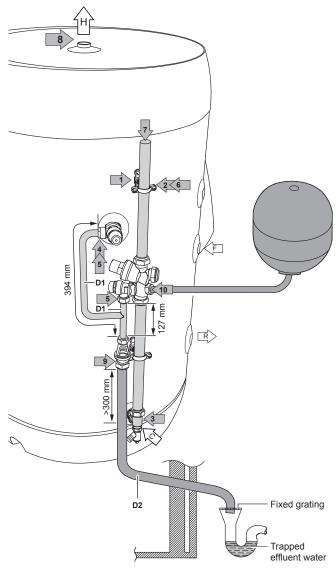


INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

6.4.3 To connect the water piping



Discharge piping requirements



WARNING

The discharge pipes from the pressure relief valves MUST terminate in a safe and visible position without forming any risk to persons in the vicinity.



WARNING

- Discharge piping, tundish, drain valves, etc. must be positioned away from any electrical components.
- The discharge pipe away from the tundish must terminate in a safe, visible position without forming any risk to persons in the vicinity.



WARNING

- Do not install any valves between the domestic hot water tank and relief valves/expansion vessel.
- Do not install shut-off valves between the expansion relief valve and the domestic hot water tank.



NOTICE

- Where the secondary return circuits are used, an additional expansion vessel may be required.
- All pipework and fittings must be flushed free of flux and debris prior to installing the domestic hot water tank kit. Failure to do this may cause irreparable damage to the tank kit controls. Flush the system by opening the hot water tap.
- The tundish pipework must be a 22 mm metal pipe with a minimal vertical length of 300 mm below the tundish before any elbows or bends in the pipework. All pipework must have a continuous fall of 1 in 200 thereafter. Maximum permitted (equivalent) length of 22 mm pipework is 9 m. Each bend or elbow is equivalent to 0.8 m of pipework.

Sizing of copper discharge pipe D2 for common temperature relief valve outlet sizes:

Valve outlet size	size D1	- 10 01101 J - P1P1	resistance ^(a)	Resistance created by each elbow or bend
15 mm	15 mm	22 mm	Up to 9 m	0.8 m

 (a) The maximum allowed resistance is expressed as a length of straight pipe (i.e. no elbows or bends)

If in any doubt, refer to Building Regulation G3.

Before installation

Locate the domestic hot water tank in a suitable position to facilitate the installation of water supply, discharge fittings and pipework. It is therefore recommended to first read through this whole procedure.

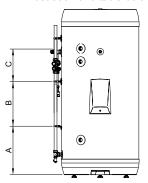
In the box all the needed components for G3-compliance have been installed from the factory.

Only the following steps need to be performed:

- Make the connection of the G3-kit to the cylinder.
- Connect the tundish to an effluent water connection.
- · Connect the expansion vessel (if required).

Installation procedure of the G3 kit

1 Install the clamps to support the G3 kit. The number of clamps and mounting distances depend on the tank size, see illustration and table below.



Tank size	150	180	200	250	300
# of clamps	2	2	3	3	3
A	370	370	370	370	370
В	408	570	340	350	560
С	_	_	335	560	590

Installation manual

6 Installation

- 2 Install the G3 kit loosely on the clamps
- 3 Fit the elbow/drain valve in the cold water connection of the domestic hot water tank.
- 4 Install the tundish pipe to the temperature and pressure valve.

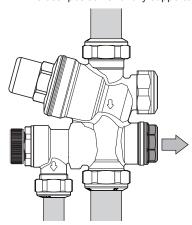


NOTICE

The temperature and pressure valve is factory installed on the tank. Do NOT remove the temperature and pressure valve

Prerequisite: Check good fit and position of all parts of the G3 kit.

- 5 Tighten both fittings of the tundish pipe.
- 6 Tighten the clamps that hold the G3 kit.
- 7 Connect the cold water mains to the pipe work.
- 8 Connect the hot water outlet from the tank to the hot water means of the house.
- 9 Connect a metal discharge pipe from the tundish. Refer to "Discharge piping requirements" in this chapter. All pipework must have a continuous fall and be fitted conform to the requirements of the Building Regulation G3.
- 10 The expansion vessel must be connected to the valve block: Remove the plug (% – female) (see illustration below) and use appropriate pipework to connect the expansion vessel in a vertical position and fully supported for its weight.



11 After completing the installation, the installer has to fill in the warning label on the tank with indelible ink. Refer to "12.3 Outlook diagram" on page 18 for location of the warning label.



6.4.4 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 temperature and pressure relief valve of the domestic hot water tank to ensure a free water flow through the discharge pipe.



NOTICE

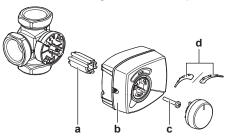
To operate the system, the domestic hot water tank needs to be filled completely. Turning on the system when the tank is not full can damage the integrated booster heater and cause electrical errors.

6.4.5 To insulate the water piping

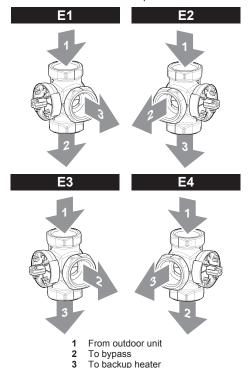
The piping in the complete water circuit MUST be insulated to prevent reduction of the heating capacity.

6.4.6 To connect the 3-way valve

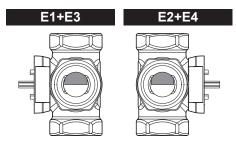
1 Unpack the 3-way valve body and 3-way valve motor and verify that the following accessories are provided with the motor.



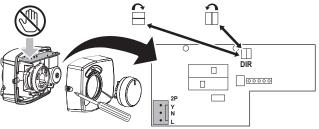
- a Sleeve
- **b** Valve motor cover
- c Screw
- d Scale
- 2 Connect the 3-way valve body to the water inlet of the backup heater, in accordance with one of the following four configurations. Position the shaft in such a way that the motor can be mounted and replaced.



3 Put the sleeve on the valve and turn it until the valve is positioned as in the figure below. It should be blocking the outlet connection to the bypass for 50% and the outlet connection to the backup heater for 50%.



4 When installing in accordance with configurations E3 or E4, open the valve motor cover by loosening the screw and change the jumper so as to change the rotation direction of the valve.



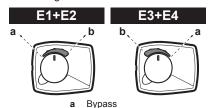
- Position of the jumper in case of installation according to configurations E1 and E2.
- Position of the jumper in case of installation according to configurations E3 and E4.



INFORMATION

The jumper is factory-set to apply for installation in accordance with configurations E1 and E2.

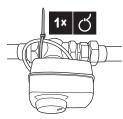
- 5 Put the knob on the motor in a 12 o'clock position and push the motor on the sleeve. Do NOT rotate the sleeve during this action, so as to maintain the valve position as set during step 4.
- **6** Put the scale on the valve according to the applicable configuration.



Backup heater

7 To provide stress relief, fix the power supply cable to the 3-way valve body with a cable tie (field supply). Fix it so that possible condensate cannot enter the 3-way valve motor via the cable.





6.5 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION



WARNING

ALWAYS use multicore cable for power supply cables.

6.5.1 About connecting the electrical wiring

Before connecting the electrical wiring

Make sure the water piping is connected.

Typical workflow

Connecting the electrical wiring typically consists of the following stages:

- 1 Connecting the electrical wiring on the indoor unit (or control box)
- 2 Connecting the electrical wiring on the domestic hot water tank.

6.5.2 To connect the electrical wiring on the indoor unit

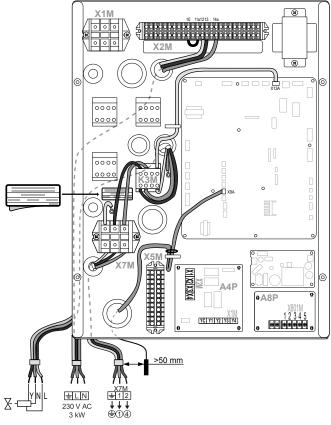
For EHBH/X only:

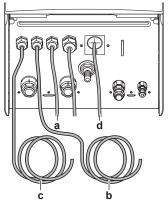
- 1 Install the booster heater power supply sticker in the unit switch box on the location shown in the illustration below.
- 2 Mount the contactor K3M and terminal block X7M. Fix the contactor with the 2 contactor fixing screws supplied. Fix the terminal block with the 2 tapping screws supplied.
- **3** Install the jumper wire from the accessory bag in between terminals X2M/10 and X2M/11a (see illustration below).
- 4 Route the booster heater power supply cable (coming from K3M) and the thermistor cable through the switch box board as shown in the illustration below.
- 5 Connect the earth wire of the booster heater power supply cable to the switch box earthing screw (located next to the contactor K3M).
- **6** Connect the N and L wires of the booster heater power supply cable to the lower contactor terminals of K3M.
- 7 Connect the upper terminals of X7M/1 and X7M/2 to the upper contactor terminals of K3M.
- 8 Plug the connector of the contactor K3M in socket X13A (RED) of the main PCB.
- 9 Plug the thermistor cable connector in socket X9A of the PCB.
- **10** Connect the earth wire of the terminal block X7M to the switch box earthing screw (located above the terminal).
- 11 Connect the booster heater power supply cable (field supply) to the contactor terminals X7M/1+2+earth.
- 12 Connect the 3-way valve cable to terminals X2M/12, X2M/13 and X2M/14a.
- **13** Fix the cables to the cable tie mountings with cable ties to ensure strain relief.
- **14** When routing out cables, make sure that these do not obstruct mounting of the unit cover.

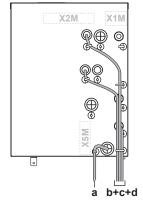


INFORMATION

Only the relevant field wiring is shown.







- a Thermistor cable
- **b** Booster heater power supply cable
- c 3-way valve cable
- d Booster heater cable

6.5.3 To connect the electrical wiring on the outdoor unit

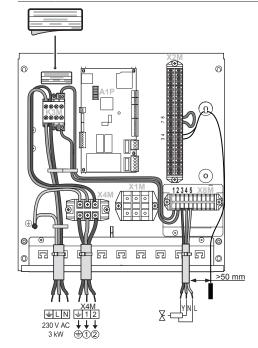
For EBLQ/EDLQ05+07CAV3 only:

- 1 Install the booster heater power supply sticker in the unit switch box on the location shown in the illustration below.
- 2 Mount the contactor K3M and terminal block X4M. Fix the contactor with the 2 contactor fixing screws supplied. Fix the terminal block with the 2 tapping screws supplied.
- 3 Install the jumper wire from the accessory bag in between terminals X2M/7 and X2M/8.
- **4** Connect the earth wire of the booster heater power supply cable to the switch box earthing screw.
- 5 Connect the N and L wires of the booster heater power supply cable to the lower contactor terminals of K3M.
- 6 Connect the upper terminals of X4M/1 and X4M/2 to the upper contactor terminals of K3M.
- 7 Connect the signal wires of contactor K3M (discard the connector) to control box terminals X8M/1 and X8M/2.
- 8 Connect the wires of the thermistor cable to the control box terminals X2M/3 and X8M/4.
- 9 Connect the earth wire of the control box terminal X4M to the switch box earthing screw (located above the terminal).
- 10 Connect the booster heater cable (field supply) to the control box terminals X4M/1+2+earth.
- 11 Connect the 3-way valve cable to control box terminals X8M/3, X8M/4 and X8M/5.
- **12** Fix the cables to the cable tie mountings with cable ties to ensure strain relief.
- 13 When routing out cables, make sure that these do not obstruct mounting of the unit cover.



INFORMATION

Only the relevant field wiring is shown.



6.5.4 To connect the electrical wiring on the domestic hot water tank



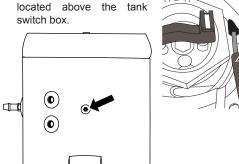
WARNING

Make sure all field wiring is insulated from the surface of the inspection hole or can resist temperatures to 90°C.

- 1 Remove the switch box cover from the tank.
- Route the booster heater power supply cable and the thermistor cable (for EKHWS200: ONLY booster heater power supply cable) through one of the recesses at the bottom of the tank and then through the cable conduit that leads to the tank switch hox



3 In case of EKHWS200, route the thermistor cable in a conduit to the thermistor inserting tube located above the tank switch box.

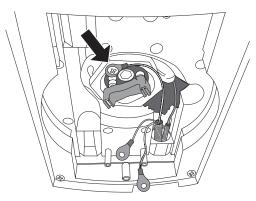


- Insert the thermistor in the thermistor inserting tube and fix it by using the PG.
- Fix the thermistor with insulation tape. Notice: Make sure that the thermistor has thermal contact with the metal tank wall.

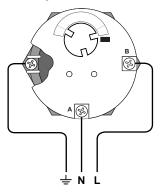
For all other models, insert the

thermistor in the opening.

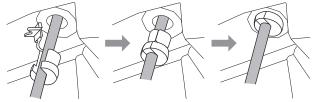
- 5 Carefully pull on the thermal protector to disengage it and temporarily remove it from the tank.
- 6 Connect the earth wire of the booster heater power supply cable to the booster heating element.



- 7 Re-install the thermal protector to the tank.
- 8 Connect the booster heater power supply cable (see also wiring diagram sticker on the inside of the switch box lid).



9 Fix the cable(s) using the cable clamp at the bottom of the tank to ensure strain relief.



10 Install the switch box cover

6.6 Finishing the domestic hot water tank installation

6.6.1 To close the domestic hot water tank

1 Close the switch box cover.



7 Commissioning

7.1 Overview: Commissioning

Typical workflow

Commissioning typically consists of the following stages:

- 1 Checking the "Checklist before commissioning".
- 2 Performing a test run for the system.
- 3 Checking the "Checklist before commissioning".

7.2 Checklist before commissioning

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

	You read the complete installation instructions, as described in the installer reference guide .		
	The domestic hot water tank is properly mounted.		
	The system is properly earthed and the earth terminals are tightened.		
	The fuses or locally installed protection devices are installed according to this document, and have NOT been bypassed.		
	The power supply voltage matches the voltage on the identification label of the unit.		
	There are NO loose connections or damaged electrical components in the switch box.		
	The booster heater circuit breaker F2B on the switch box is turned ON.		
	There is NO water leak on the connections of the domestic hot water tank.		
	The shut-off valves are properly installed and fully open.		
	The pressure relief valve purges water when opened.		
	The minimum water volume is guaranteed in all conditions. See "To check the water volume" in "5.3 Preparing water piping" on page 7.		
П	Field wiring		
	Be sure that the field wiring has been carried out according to the instructions described in the chapter "6.5 Connecting the electrical wiring" on page 11, according to the wiring diagrams and according to the		

7.3 Checklist during commissioning

To perform a wiring check.

8 Hand-over to the user

applicable legislation.

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

- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation 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.

9 Maintenance and service



NOTICE

Maintenance MUST be done by an authorized installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.

9.1 Overview: Maintenance and service

This chapter contains information about:

The yearly maintenance of the domestic hot water tank

9.2 Maintenance safety precautions



DANGER: RISK OF ELECTROCUTION



DANGER: RISK OF BURNING



NOTICE: Risk of electrostatic discharge

Before performing any maintenance or service work, touch a metal part of the unit in order to eliminate static electricity and to protect the PCB.



WARNING

- Before carrying out any maintenance or repair activity, ALWAYS switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Make sure you do NOT touch a conductive section.
- Do NOT rinse the outside of the unit. This may cause electric shocks or fire.

9.3 Checklist for yearly maintenance of the domestic hot water tank

Check the following at least once a year:

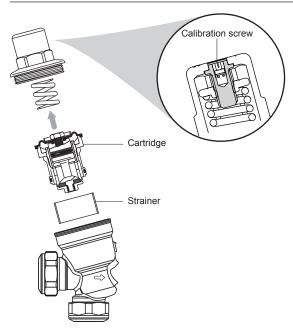
- Water pressure
- · Pressure relief valve hose
- Temperature and pressure relief valve
- Inlet control group (field supply)
- Relief valve of the domestic hot water tank
- Anti-legionella heater of the domestic hot water tank
- Descaling
- Chemical disinfection
- Switch box

Temperature and pressure relief valve

Check for correct operation of the temperature and pressure relief valve. Manually operate the temperature and pressure relief valve to ensure free water flow through discharge pipe. Turn knob left.

Inlet control group

The inlet control group is a pressure reducing valve with integrated non-return valve and line strainer. Depending on local water conditions, annual inspection of the integral line strainer, pressure reducing valve cartridge and seating may be necessary.



- 1 Unscrew the plastic cover of the pressure reducing valve.
- 2 Extract the cartridge with the aid of long nosed pliers to grip the head of the set screw.
- 3 Remove the strainer element.
- 4 Clean the strainer element and cartridge under clean running water.
- 5 Replace if the strainer or cartridge are damaged.
- 6 Refit the strainer, cartridge and cover.
- 7 If the cartridge has been replaced, calibrate the pressure reducing valve:
- Close the downstream isolating valve (field supply).
- Install an Allen key on the calibration screw in the centre of the plastic cover. Rotate it clockwise to increase the outlet pressure and anticlockwise to reduce it.

Relief valve of the domestic hot water tank (field supply)

Open the valve and check the correct operation. Water may be very hot!

Checkpoints are:

- The water flow coming from the relief valve is high enough, no blockage of the valve or in between piping is suspected.
- Dirty water coming out of the relief valve:
 - open the valve until the discharged water does not contain dirt anymore
 - flush and clean the complete tank, including the piping between the relief valve and cold water inlet.

To make sure this water originates from the tank, check after a tank heat up cycle.

It is recommended to do this maintenance more frequently.

Descaling

Depending on water quality and set temperature, scale can deposit on the heat exchanger inside the domestic hot water tank and can restrict heat transfer. For this reason, descaling of the heat exchanger may be required at certain intervals.

Chemical disinfection

If the applicable legislation requires a chemical disinfection in specific situations, involving the domestic hot water tank, please be aware that the domestic hot water tank is a stainless steel cylinder

containing an aluminium anode. We recommend to use a nonchloride based disinfectant approved for use with water intended for human consumption.



NOTICE

When using means for descaling or chemical disinfection, it must be ensured that the water quality remains compliant with EU directive 98/83 EC.

Switch box

- Carry out a thorough visual inspection of the switch box and look for obvious defects such as loose connections or defective wiring.
- Check for correct operation of contactor K3M by use of an ohmmeter. All contacts of this contactor must be in open position.

Pressure relief valve hose

Check whether the pressure relief valve hose is positioned appropriately to drain.

9.3.1 To drain the domestic hot water tank

Prerequisite: Turn OFF the respective circuit breaker.

Prerequisite: Close the cold water supply.

- 1 Connect a drain hose to the drain valve (field supply).
- 2 Open the drain valve.



INFORMATION

To drain the tank, all the hot water tapping points need to be opened to allow air to enter the system.

10 Troubleshooting

10.1 Overview: Troubleshooting

This chapter describes what you have to do in case of problems. It contains information about solving problems based on symptoms.

Before troubleshooting

Carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

10.2 Precautions when troubleshooting



WARNING

- When carrying out an inspection on the switch box of the unit, ALWAYS make sure that the unit is disconnected from the mains. Turn off the respective circuit breaker.
- When a safety device was activated, stop the unit and find out why the safety device was activated before resetting it. NEVER bridge safety devices or change their values to a value other than the factory default setting. If you are unable to find the cause of the problem, call your dealer.



DANGER: RISK OF ELECTROCUTION



WARNING

Prevent hazards due to inadvertent resetting of the thermal cut-out: this appliance MUST NOT be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly turned ON and OFF by the utility.



DAIKIN

DANGER: RISK OF BURNING

10.3 Solving problems based on symptoms

10.3.1 Symptom: No water flow from hot taps

Possible causes	Corrective action
The main water supply is OFF.	The cold water inlet pressure reducing valve is not fitted properly
The strainer is blocked.	Turn OFF the water supply, remove and clean the strainer of the Inlet control group (field supply).
The cold water inlet pressure reducing valve is not fitted properly.	Check and refit as required.

10.3.2 Symptom: The water from the hot taps is cold

Possible causes	Corrective action
The thermal cut-out(s) has/have operated.	Check and reset the button(s).
The unit is NOT operating.	Check unit operation. Refer to the manual delivered with the unit. If any faults are suspected, contact your dealer.

10.3.3 Symptom: Intermittent water discharge

Possible causes	Corrective action
Thermal control failure (water will be hot).	Turn OFF the power to the unit.
	 When discharge has stopped, check the thermal controls and replace if faulty.
	Contact your local dealer.
The expansion vessel is broken.	Replace the expansion vessel.

10.3.4 Symptom: Continuous water discharge

Possible causes	Corrective action			
Cold water inlet pressure.	Check the pressure reducing valve. Replace the pressure reducing valve if the measured pressure is >2.1 bar.			
Temperature and pressure relief valve.	Check and reset button.			
The expansion relief valve is not functioning properly.	Check for correct operation of the pressure relief valve by turning the red knob on the valve counter clockwise:			
	 If you do not hear a clacking sound, contact your local dealer. 			
	 In case the water keeps running out of the unit, close both the water inlet and outlet shut-off valves first and then contact your local dealer. 			

11 Disposal



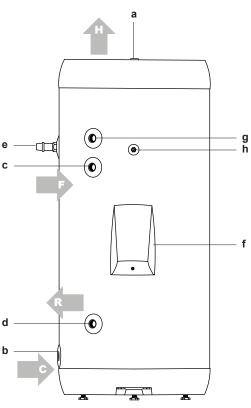
NOTICE

Do NOT try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, oil and other parts MUST comply with applicable legislation. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

12 **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).

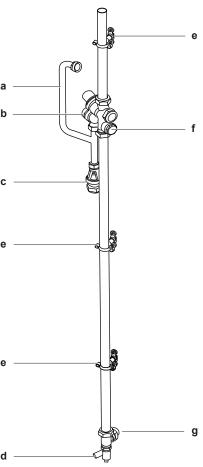
12.1 **Components: Domestic hot water** tank



- Hot water outlet, 3/4" BSP Cold water inlet, 3/4" BSP
- Entering water from heat pump, 3/4" BSP Returning water to heat pump, 3/4" BSP
- Temperature and pressure relief valve

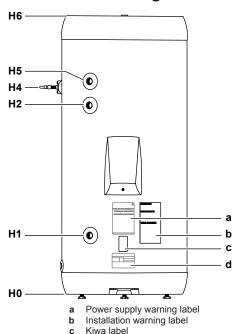
- Electrical connection box Recirculation hole, 3/4" BSP Thermistor inserting tube (ONLY for EKHWS200*)

12.2 Components: G3 kit



- Tundish pipe Inlet control group (pressure reducing valve with integrated non return valve and line strainer) Tundish (15 mm x 22 mm)
- Drain
- Support bracket (included in the accessory bag)
- Expansion vessel connection
- Straight connection (22 mm × 3/4")

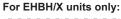
12.3 Outlook diagram

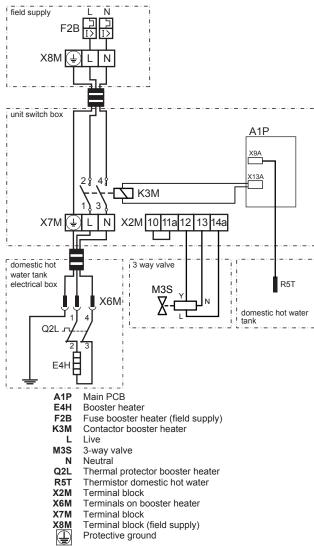


Identification label

	H1	H2	НЗ	H4	H5	H6
EKHWSU150D3V3	155 mm	266 mm	531 mm	676 mm	676 mm	1000 mm
						(-3/+10)
EKHWSU180D3V3	155 mm	266 mm	676 mm	841 mm	841 mm	1164 mm
						(-3/+10)
EKHWSU200D3V3	155 mm	266 mm	866 mm	941 mm	966 mm	1264 mm
						(-3/+10)
EKHWSU200D3V3	155 mm	266 mm	866 mm	1211 mm	1036 mm	1535 mm
						(-3/+10)
EKHWSU300D3V3	155 mm	266 mm	866 mm	1421 mm	1421 mm	1745 mm
						(-3/+10)

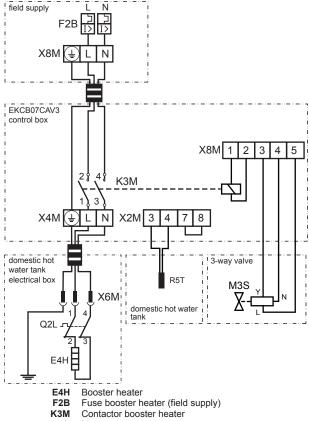
12.4 Wiring diagram: Domestic hot water tank





Field wiring

For EBLQ/EDLQ05+07CAV3 units only:



L Live

M3S 3-way valve

N Neutral

Q2L Thermal protector booster heater

R5T Thermistor domestic hot water

X2M Terminal block

X4M Terminal block

X6M Terminals on booster heater

X8M Terminal block (located in the control box)
X8M Terminal block (field supply)

Protective ground

Protective ground
Field wiring

13 Glossary

Dealer

Sales distributor for the product.

Authorized installer

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Technical skilled person who is qualified to install the product.

User

Person who is owner of the product and/or operates the product.

Applicable legislation

All international, European, national and local directives, laws, regulations and/or codes that are relevant and applicable for a certain product or domain.

Service company

Qualified company which can perform or coordinate the required service to the product.

Installation manual

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

Operation manual

Instruction manual specified for a certain product or application, explaining how to operate it.

Maintenance instructions

Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

Accessories

Labels, manuals, information sheets and equipment that are delivered with the product and that need to be installed according to the instructions in the accompanying documentation.

Optional equipment

Equipment made or approved by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

Field supply

Equipment NOT made by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

