Katherm QL

► Assembly, installation and operating instructions

Keep these instructions in a safe place for future use!

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1 General

1.1 About these instructions

These instructions ensure the safe and efficient handling of this equipment. These instructions form an integral part of the equipment and have to be kept in the direct vicinity of the equipment and available to personnel at all times.

All personnel must have carefully read through these instructions prior to commencing all work on the equipment. A fundamental prerequisite for safe working is compliance with all the stated safety instructions and other instructions contained in this manual.

In addition all local occupational health and safety at work regulations apply, as do general safety provisions governing the use of the equipment.

Illustrations in this guide are intended to provide a basic understanding and may differ from the actual model.

Ongoing tests and further developments may result in small variations between the unit supplied and the instructions.

1.2 Explanation of Symbols

DANGER!
This combination of symbol and signal word indicates an immediately dangerous situation caused by electrical power, which will cause death or serious injury if not avoided.

WARNING!
This combination of symbol and signal word indicates a possible hazardous situation.

IMPORTANT NOTE!
It represents a potentially hazardous situation, which could lead to damage to property or for a measure to optimise workflows.

IMPORTANT NOTE!
This symbol highlights useful hints, recommendations and information for efficient and trouble-free operation.

2 Safety

This section provides an overview of all important safety aspects to ensure optimum protection of personnel as well as safe and trouble-free operation. In addition to the safety instructions in these operating instructions, the valid safety, accident prevention and environmental protection regulations must be observed for the area of use of the unit. It is the duty of the operator to ensure that instructions relating to maintenance (e.g. relating to hygiene) are complied with.

2.1 Correct use

The units are used for heating and/or cooling all areas of buildings that need to be heated in winter and cooled in summer due to the high incidence of sunlight through the glass façades. Within the room, the unit needs to be connected to the building's heating/cooling/ventilation system and to the building's waste water and power network. The operating limits and limits of use described in Chapter 2.2 [▶ 7] must be observed.

Intended use of the unit also includes adherence to these instructions.

Information in accordance with EN60335-1

- This unit can be used by children aged 8 years or more and also by people with reduced physical, sensory or mental capabilities or a lack of experience and knowledge, if they are supervised or have been instructed in the safe use of the unit and the resulting dangers. Do not allow children to play with the unit. Do not allow children to clean and maintain the unit without supervision.
- This unit is not intended for permanent connection to the drinking water supply system.
- This unit is intended for being accessible to the general public.

Any use beyond or other than the stated intended use is considered as misuse.

Any change to the unit or use of non-original spare parts will cause the expiry of the warranty and the manufacturer’s liability.

2.2 Limits of operation and use

Limits of operation		
Min./max. water temperature	°C	4-90
Min./max. air intake temperature	°C	6--40
Min./max. air humidity	%	20-60
Min. operating pressure	bar/kPa	-
Max. operating pressure	bar/kPa	10/1000
Min./max. glycol percentage	%	0-50

Tab. 1: Limits of operation

Operating voltage	230 V/ 50/60 Hz
Power/Current consumption	On the type plate

Tab. 2: Operating voltage

We would refer to VDI-2035 Sheets 1 & 2, DIN EN 14336 and DIN EN 14868 with regard to the properties of the medium used to protect the equipment. The following values provide further guidance.

The water used should be free of contamination, such as suspended substances and reactive substances.

Water quality		
pH value (at 20 °C)		8-9
Conductivity (at 20 °C)	µS/cm	< 700
Oxygen content (O_2)	mg/l	< 0.1
Hardness	°dH	4-8.5
Sulphur ions		not measurable
Sodium ions (Na^+)	mg/l	< 100
Iron ions (Fe^{2+})	mg/l	< 0.1
Manganese ions (Mn^{2+})	mg/l	<0.05
Ammonia ions (NH^{4+})	mg/l	< 0.1
Chlorine ions (CI)	mg/l	< 100
CO_2		< 50
Sulfate ions (SO_4^{2-})	mg/l	< 50
Nitrite ions (NO_{2+})	mg/l	< 50
Nitrate ions (NO_{3+})	mg/l	< 50

Tab. 3: Water quality

IMPORTANT NOTE!

Danger of frost in cooling mode!

There is a risk of the heat exchanger freezing when used in unheated rooms.

- Make sure that the unit is equipped with a frost protection sensor and/or thermostat in this case.

IMPORTANT NOTE!

Warning of misuse!

In the event of misuse, as itemised below, there is a danger of limited or failing operation of the unit. Ensure that the airflow can circulate freely.

- Never operate the unit in humid areas, such as swimming pools, wet areas etc.
- Never operate the unit in rooms with an explosive atmosphere.
- Never operate the unit in aggressive or corrosive atmospheres (e.g. sea air).
- Never operate the unit above electrical equipment (such as switch cabinets, computers or other electrical units, or contacts that are not drip-proof).

2.3 Risk from electrocution!

DANGER!

Risk of fatal injury from electrocution!

Contact with live parts will lead to fatal injury from electrocution. Damage to the insulation or individual components can lead to a fatal injury.

- Only permit qualified electricians to work on the electrical system.
- Immediately disconnect the system from the power supply and repair it in the event of damage to the insulation.
- Keep live parts away from moisture. This can cause a short circuit.
- Properly earth the unit.

2.4 Personnel requirements - Qualifications

Specialist knowledge

The installation of this product requires specialist knowledge of heating, cooling, ventilation, installation and electrical engineering. This knowledge, generally learned in vocational training in one of the fields mentioned above, is not described separately.

Damage caused by improper installation is the responsibility of the operator or installer. The installer of these units should have adequate knowledge of the following gained from specialist vocational training

- safety and accident prevention regulations
- Guidelines and recognised technical regulations, i.e. Association of German Electricians (VDE) regulations, DIN and EN standards.
- VDI 6022; maintenance personnel must be trained to Category B (possibly Category C) to comply with hygiene requirements (as required).

The installation, operation and maintenance of this unit must comply with the applicable laws, standards, provisions and regulations in the respective country and the current state of the art!

2.5 Personal Protective Equipment

Personal protective equipment is used to protect people from impaired safety and health when working with the unit. The applicable accident prevention regulations at the place of use apply in all cases.

Personnel have to wear personal protective equipment during maintenance and troubleshooting on and with the unit.

3 Transport, storage and packaging

3.1 General transport instructions

Check on delivery for completeness and transport damage.

Proceed as follows in the event of visible damage:

- Do not accept delivery or only accept with reservations.
- Record any transport damage on the transportation documents or on the transport company's delivery note.
- Submit a complaint to the freight forwarder.

IMPORTANT NOTE!

Warranty claims can only be made within the applicable period for complaints. (More information is available in the T&Cs on the Kampmann website)

IMPORTANT NOTE!

2 people are needed to transport the unit. Wear personal protective clothing when transporting the unit. Only lift the unit on both sides and not by the pipes / valves.

IMPORTANT NOTE!

Material damage caused by incorrect transport!

Units being transported can drop or topple over if transported wrongly. This can cause serious material damage.

- Proceed carefully when unloading the equipment on delivery and when transporting it on site and note the symbols and instructions on the packaging.
- Only use the holding points provided.
- Only remove packaging shortly before assembling the unit.

3.2 Scope of delivery

IMPORTANT NOTE!

Check the scope of delivery!

- Check the delivery for damage.
- Check that the articles and type numbers are correct.
- Is the delivery and number of items delivered correct?

3.3 Storage

Store packaging under the following conditions:

- Do not store outdoors.
- Store in a dry and dust-free place.
- Store in a frost-free place.
- Do not expose to aggressive media.
- Protect from direct sunlight.
- Avoid mechanical vibrations and shocks.

IMPORTANT NOTE!
Under certain circumstances, packages can carry storage instructions that exceed the requirements listed here. Comply with these instructions accordingly.

3.4 Packaging

Handling packaging materials

IMPORTANT NOTE!
Dispose of packaging materials in line with the applicable statutory requirements and local regulations.

IMPORTANT NOTE!
The packaging is also use to protect the product from site dust and dirt. Only remove packaging shortly before assembling the unit.

4 Technical data

Unit	Katherm QL			
Model	QL 300	QL 300	QL 350	QL 350
Trench width [mm]	300	300	350	350
Trench height [mm]	150	180	150	180
Trench length [4] [mm]	700 - 2700	700 - 2700	700 - 2700	700 - 2700
Number of connection spigots	1 - 5	1 - 5	1 - 5	1 - 5
Air volume, max. [m³/h]	35 - 175	35 - 175	35 - 175	35 - 175
Heat output [6] [W]	131 - 783	166 - 996	156 - 936	195 - 1171
Heat output [5] [W]	107 - 666	143 - 879	133 - 819	172 - 1054
Water content [l]	0,14 - 0,59	0,27 - 1,18	0,21 - 0,92	0,42 - 1,84
Weight [kg]	10,88 - 41,97	12,29 - 47,39	11,52 - 44,45	12,97 - 50,03

[4] Length increment 500 mm

[6] at LPHW 75 / 65 °C, t_{L1} = 20 °C, without primary air volume.

Heat outputs were measured and determined in accordance with DIN EN 16430 "Fan-assisted radiators, convectors and trench convectors" Part 1: "Technical specifications and requirements" and Part 2: "Test procedures and evaluation of heat outputs".

[5] at LPHW 75/65°C, t_{L1}=20 °C, with maximum primary air flow per trench, primary air temperature 18 °C

5 Construction and function

5.1 Overview

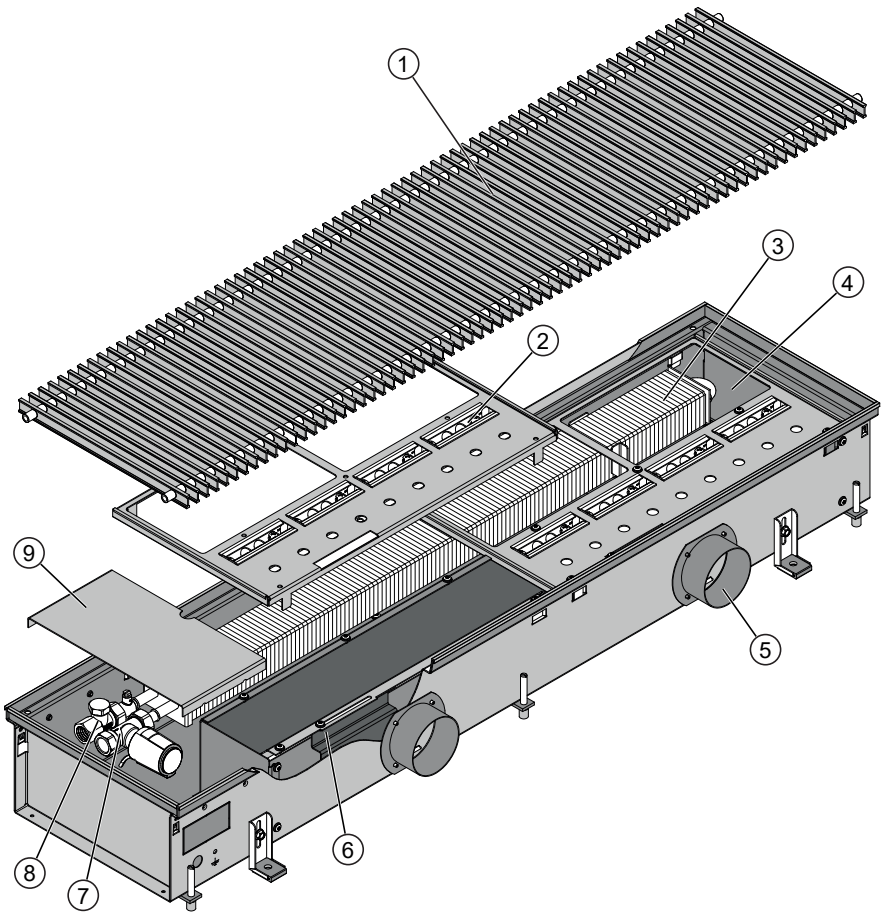


Fig. 1: Katherm QL at a glance

1	Roll-up grille	2	Air guide roller
3	Convector	4	Heating air inlet shaft
5	Supply air spigot	6	Air slider
7	Flow with valve and actuator, ½"	8	Return with return fitting, ½"
9	Connection cover		

5.2 Brief description

Katherm QL supplies the room with displacement air, guaranteeing a pleasant indoor climate. The discharged heated air rises up the glazed façade, screening the room from falling cold air. Conditioned cool air is fed in through the supply air spigot at 2 - 4 K below room temperature and blown into the room at an air velocity of less than 0.3 m/s.

6 Installation and wiring

6.1 Requirements governing the installation site

Only install and assemble the unit if the following conditions are met:

- Make sure that the wall/ceiling is sufficiently load-bearing to take the weight of the unit (Technical data [▸ 12]).
- Make sure that the unit is securely suspended/standing.
- Ensure that the airflow can circulate freely.
- Provide adequate space for appropriately sized flow and return water connections on site (Connection to the pipe network [▸ 20]).
- There is a power supply on site (Maximum electrical rating values).
- If need be, provide a condensation connection with a sufficient gradient on site.

6.2 Installation

2 people are needed to install the unit.

CAUTION!

Risk of injury from sharp metal housing!

The inner metal of the casing can have sharp edges.

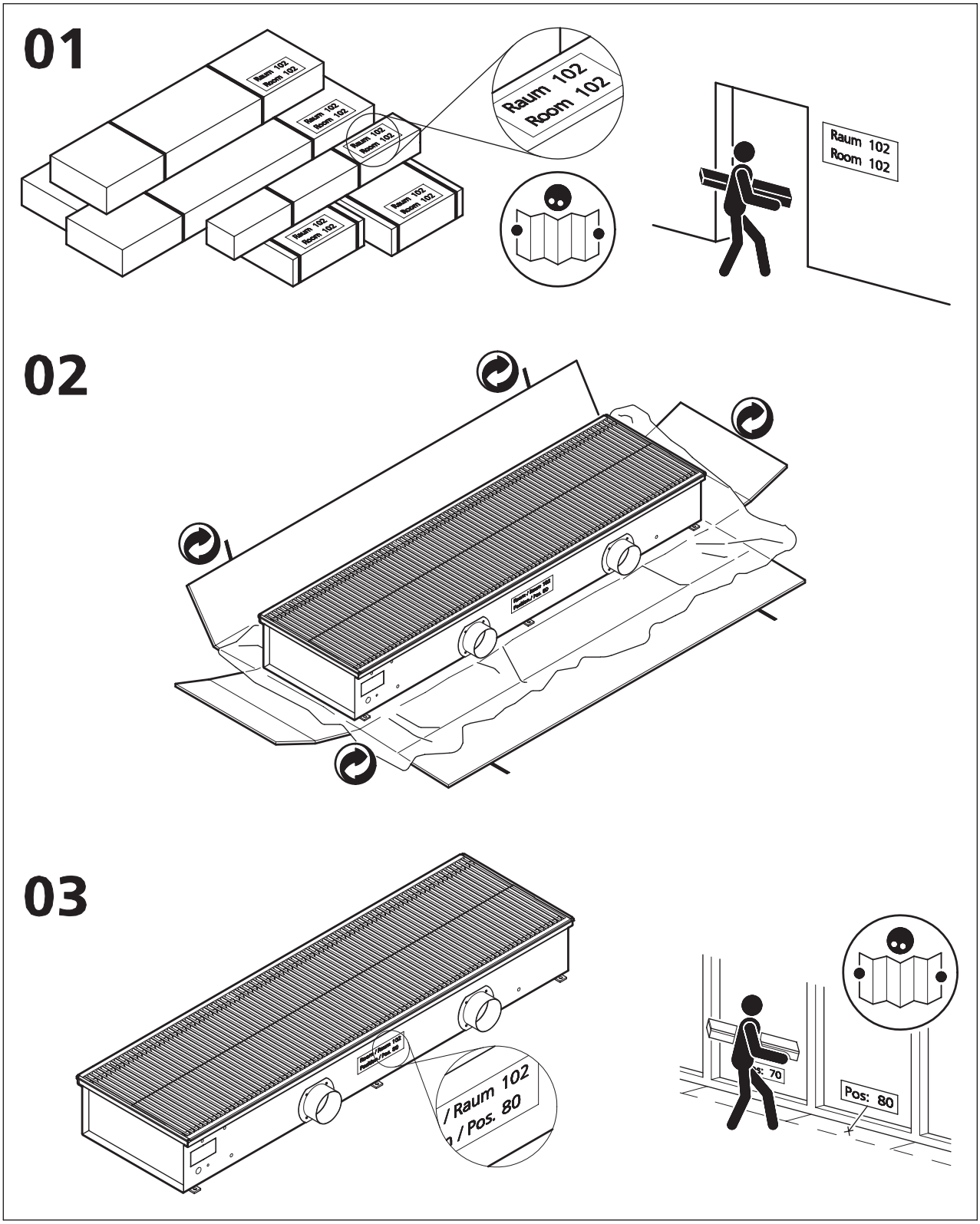
- Wear suitable protective gloves.

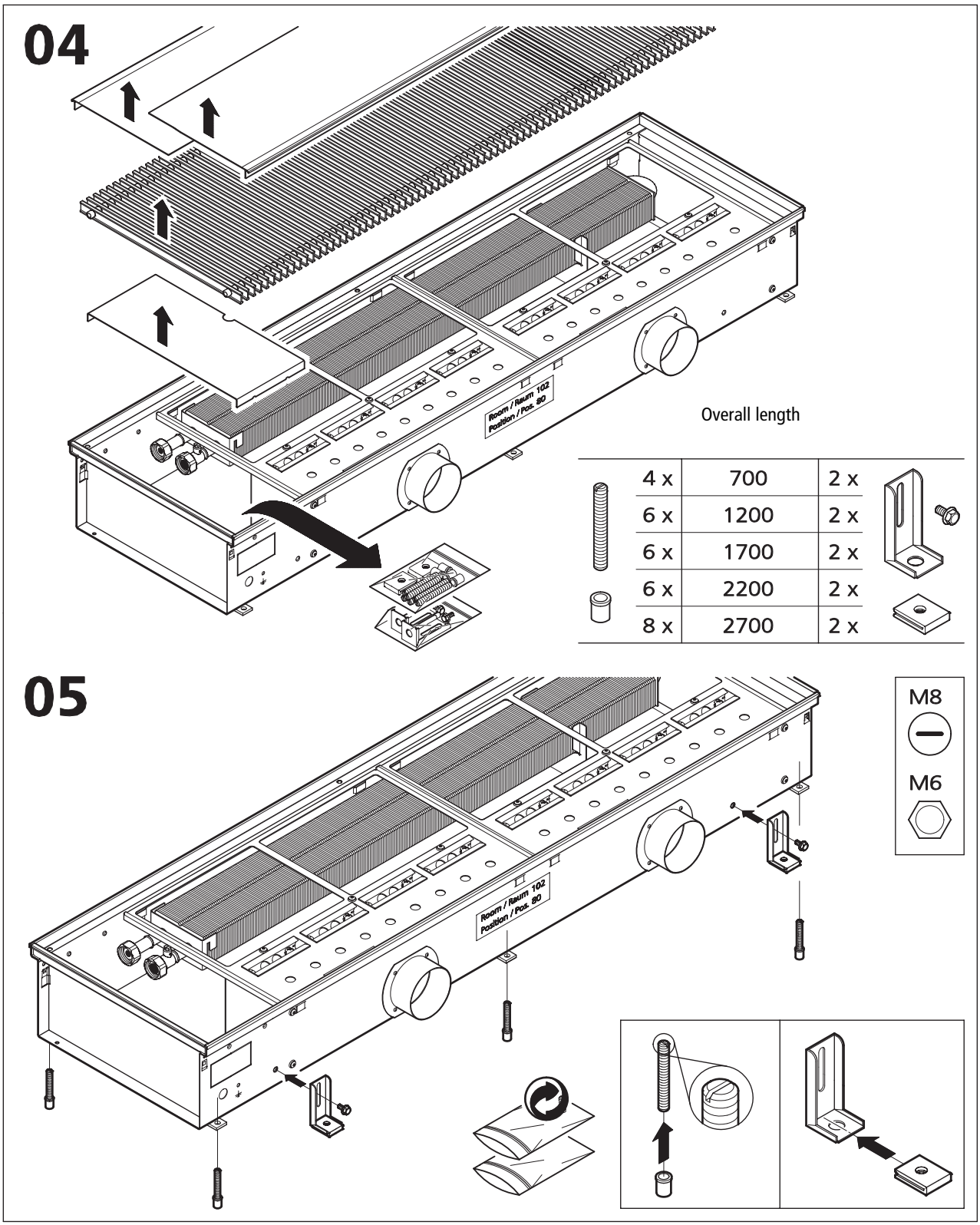
IMPORTANT NOTE!

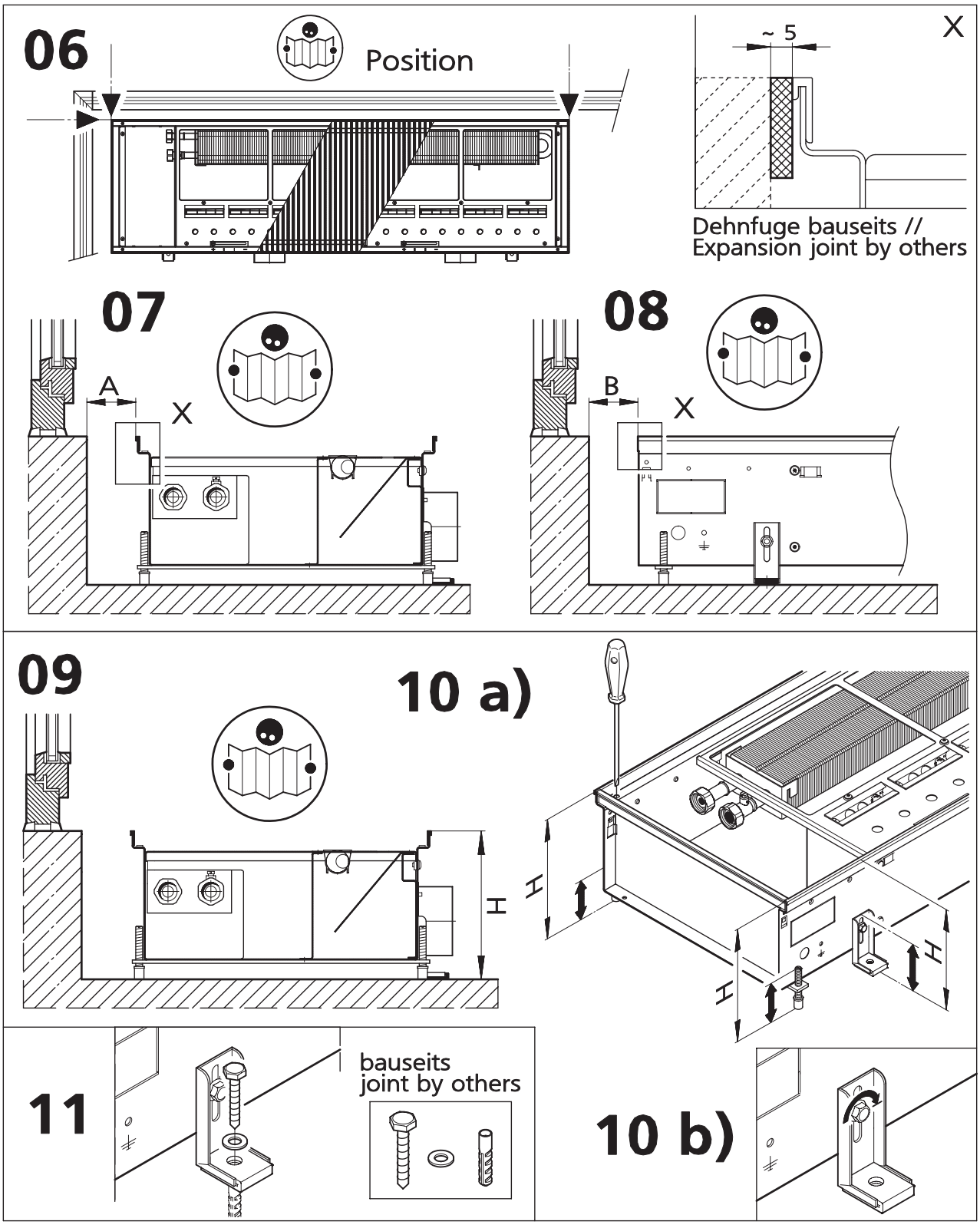
Horizontal installation of units!

When installing the units, ensure that they are completely horizontal to ensure proper operation.

6.2.1 Installation steps for Katherm QL




04
Room / Raum 102
Position / Pos. 80
Overall length
4 x 700 2 x
6 x 1200 2 x
6 x 1700 2 x
6 x 2200 2 x
8 x 2700 2 x
05
M8
M6
Room / Raum 102
Position / Pos. 80


06
Position
~ 5
X
Dehnfuge bauseits //
Expansion joint by others
07
A
X
08
B
X
09
H
10 a)
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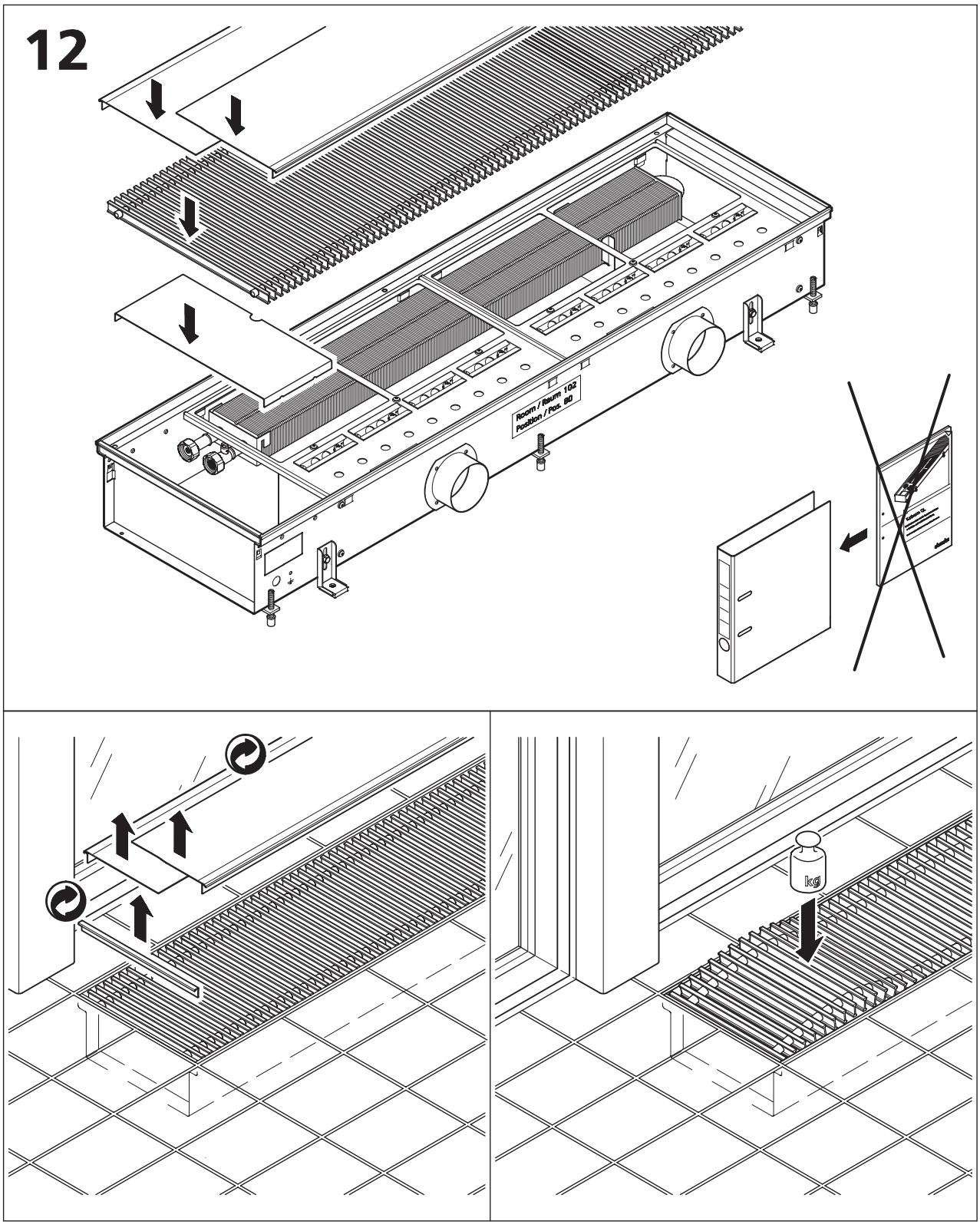
H
11
bauseits
joint by others
10 b)


12
Room / Raum 102
Position / Pos. 80
kg

6.3 Installation

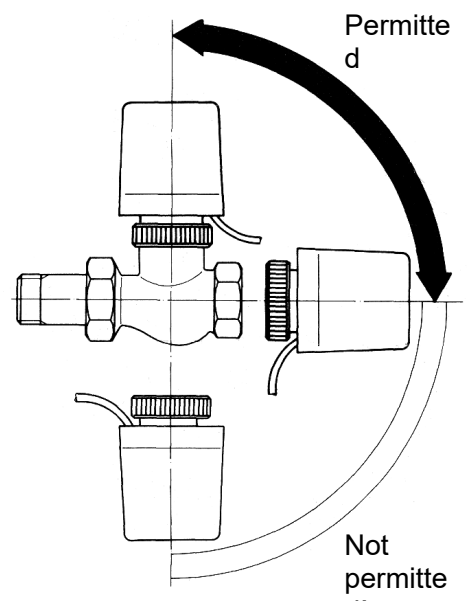


Fig. 2: Correct fitting position for 2-point actuator (thermoelectric shut-off valve).

Fit a thermoelectric actuator as follows if a thermoelectric shut-off valve is fitted:

- Place the thermoelectric actuator and manually tighten the union nut.
- Pull the electrical cable through the openings provided on the unit to the electrical junction box.
- Note the permissible fitting position for the thermoelectric actuator as shown on the illustration at the side.

Actuator with 'First Open' function

- When delivered, the actuator is normally open in a de-energised state, thanks to the First Open function. This enables heating mode to run even if the electric wiring is not yet completed.
- When subsequently commissioned and with the application of power (for longer than 6 minutes), the First Open function is automatically unlocked so that the actuator becomes fully operational.

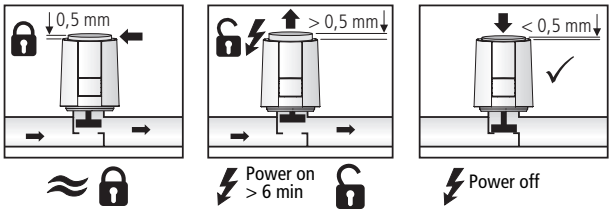


Fig. 3: "First Open" function

Hydraulic connection

Note the following points when connecting the hydraulic side:

- Install and test safety components (expansion vessels, pressure relief valves and overflow valves).
- Allow adequate space for the air flow (air inlet and outlet).

6.3.1 Connection to the pipe network

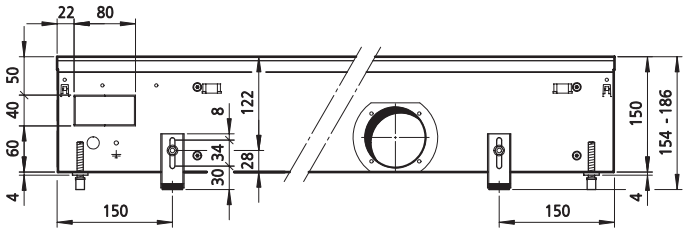
The flow and return connections are located as standard on the left side of the trench underneath the cover panel. Use the punched pipe openings on the room side for the water-side connection. The convectors have a Eurocone valve connection.

Proceed as follows when connecting up the unit's hydraulic pipework:

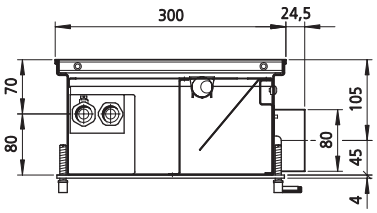
- Shut off the supply line from the heating medium.
- Remove the punched pipe opening.
- Connect up the pipework.
- Using a suitable sealant (e.g. NEO Fermit), screw fit the connection accessories, e.g. thermostat valve and return fitting, to the convector's Eurocone valve connection.

Important! Use an appropriate tool (e.g. wrench AF 32) to prevent the union nut of the Eurocone valve from shearing off and twisting. Ensure that the connections are installed tension-free!

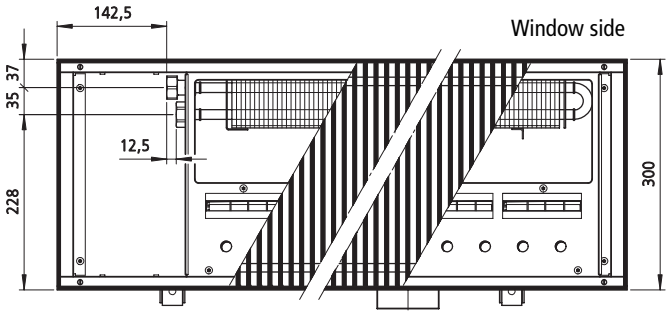
Connection dimensions width 300 mm, height 150 mm



Front view



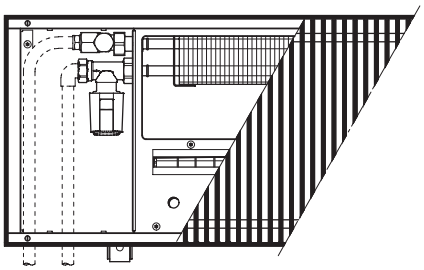
Cross-section



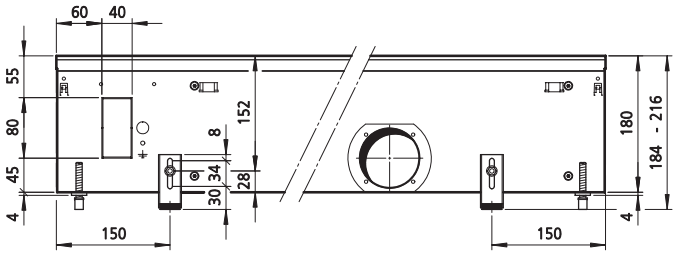
Top view

Room side

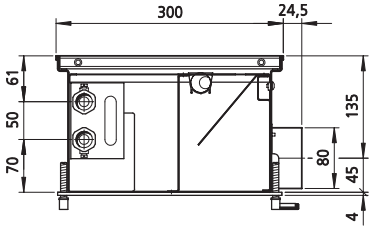
Top view with valve kit (optional)



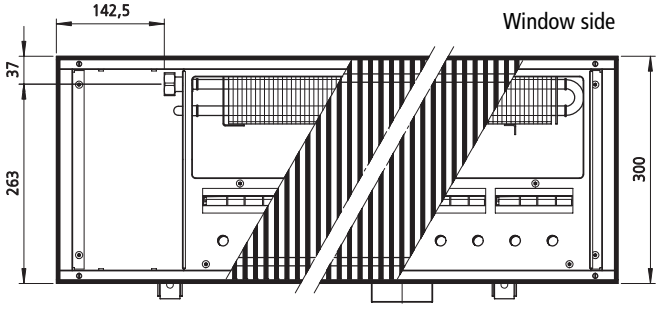
Connection dimensions width 300 mm, height 180 mm



Front view



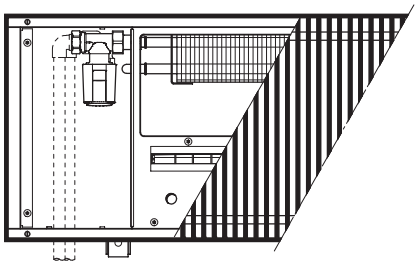
Cross-section



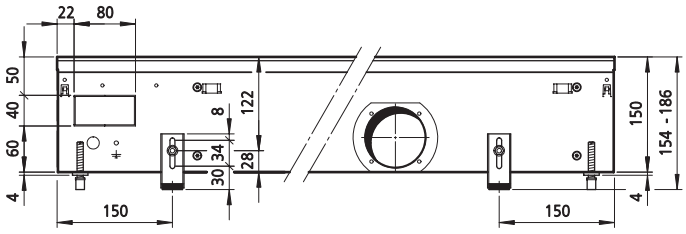
Top view

Room side

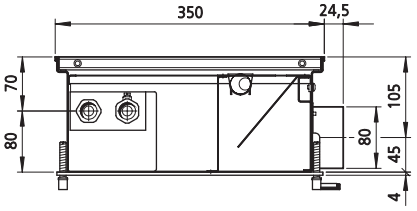
Top view with valve kit (optional)



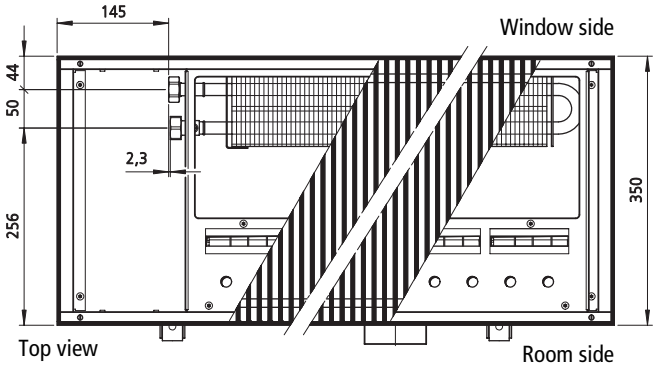
Connection dimensions width 350 mm, height 150 mm



Front view



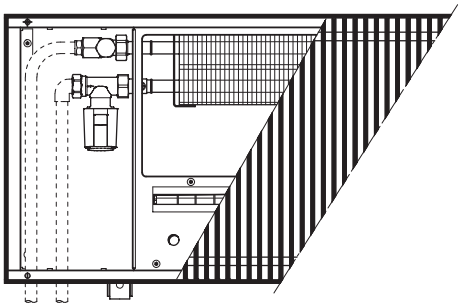
Cross-section



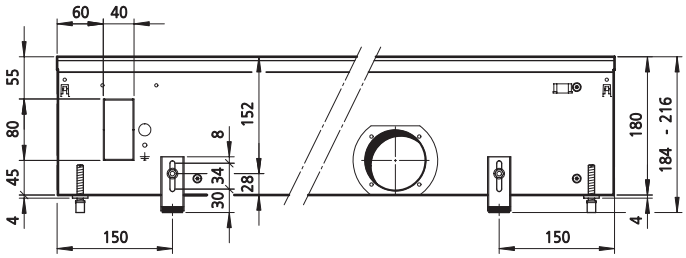
Top view

Room side

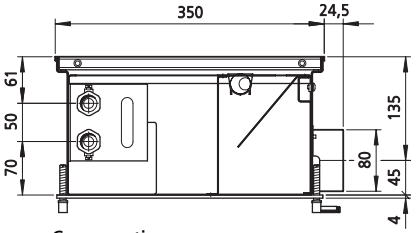
Top view with valve kit (optional)



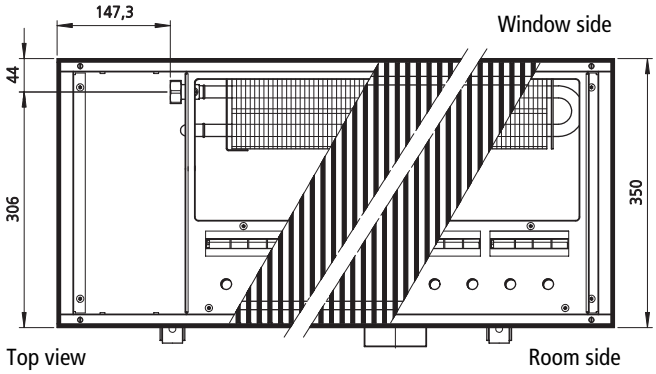
Connection dimensions width 350 mm, height 180 mm



Front view



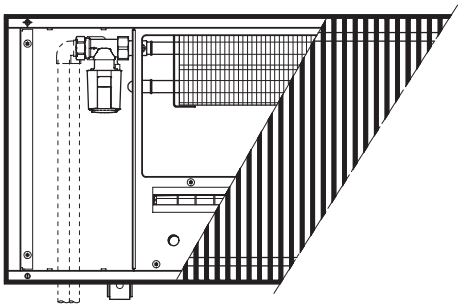
Cross-section



Top view

Room side

Top view with valve kit (optional)



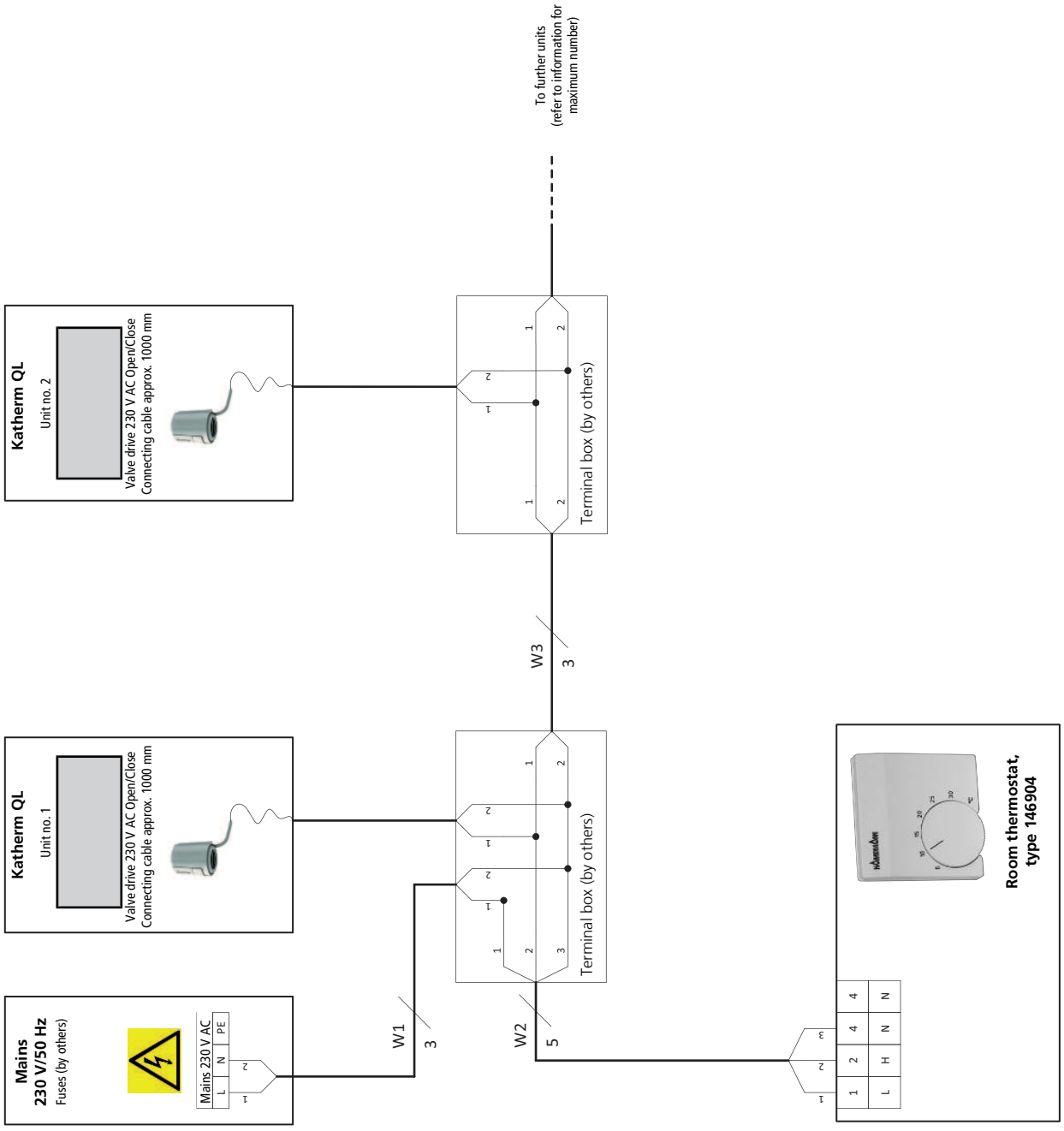
7 Electrical connection

7.1 Connection (*00)

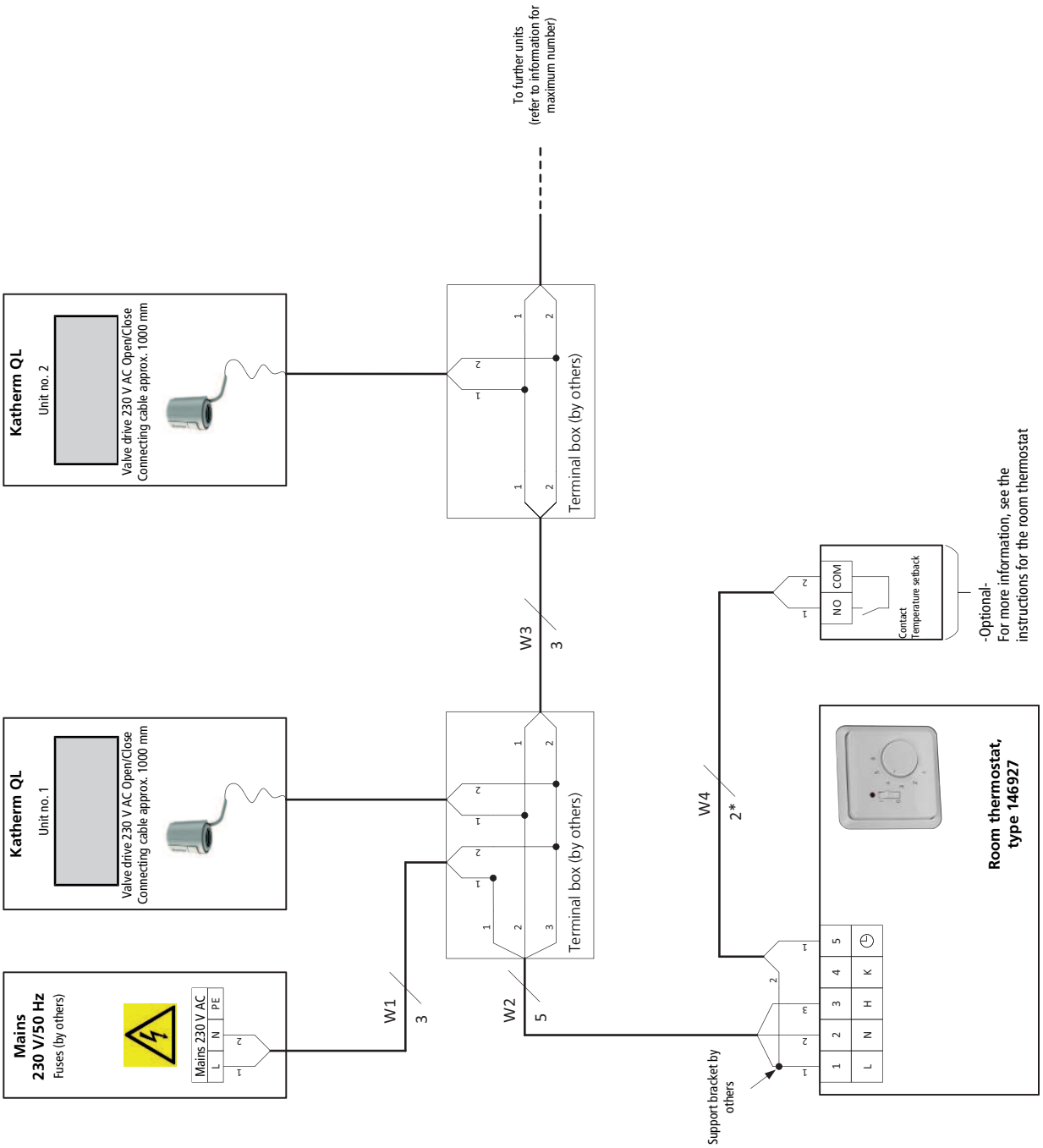
Note these points in the following Katherm QL wiring diagrams:

- Comply with the details on cable types and cabling with due consideration of VDE 0100.
- Without *: NYM-J. The requisite number of wires, including protective earth, is stated on the cable. Cross-sections are not stated, as the cable length is involved in the calculation of the cross-section.
- With *: J-Y(ST)Y 0.8mm. Lay separately from power lines. If other types of cables are used, they must be at least equivalent.
- The electrical data of the thermoelectric actuator needs to be considered when rating the mains power supply and fuses on site.

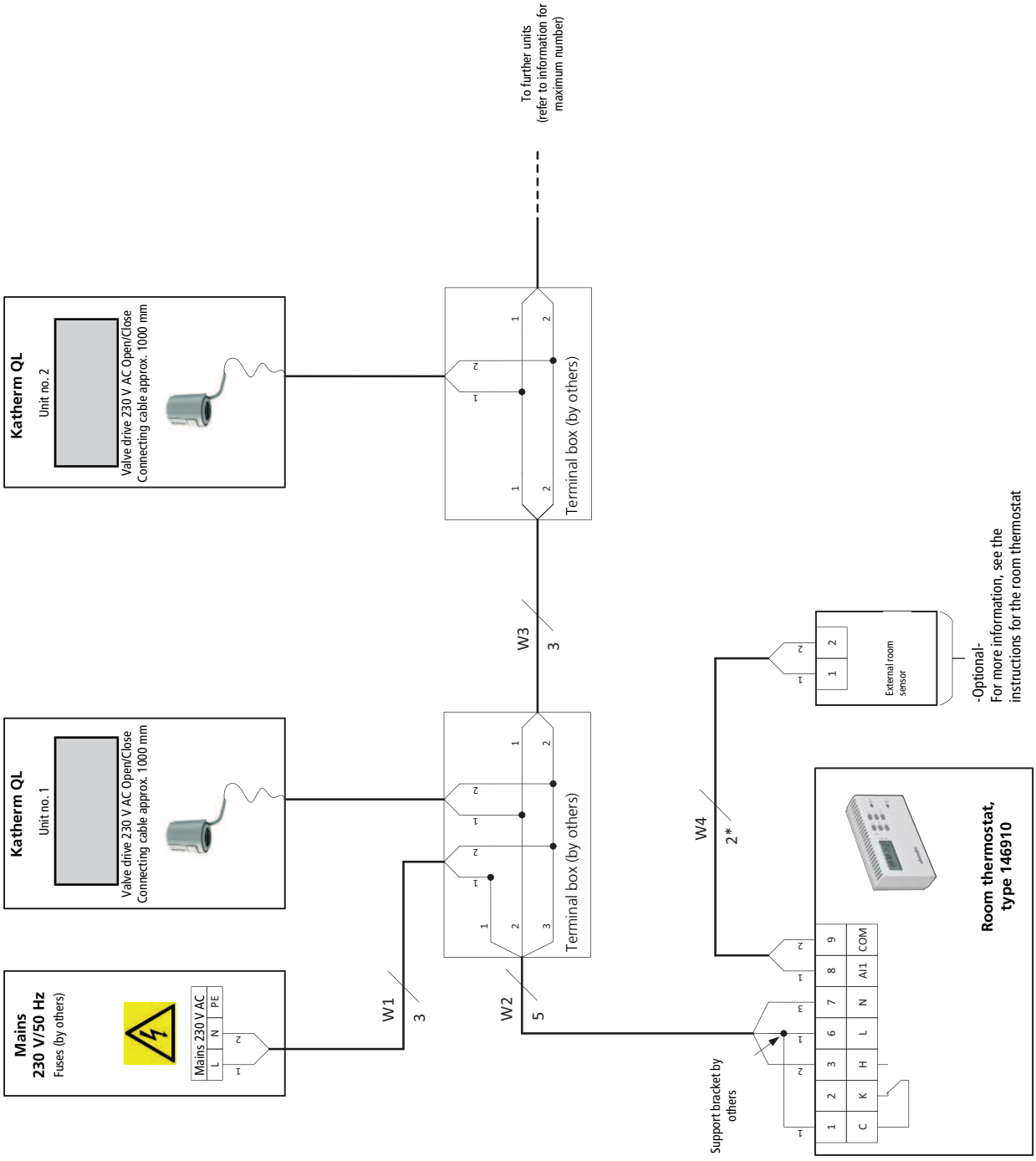
7.2 Cabling of Katherm QL (*00), actuation by room thermostat, type 146904



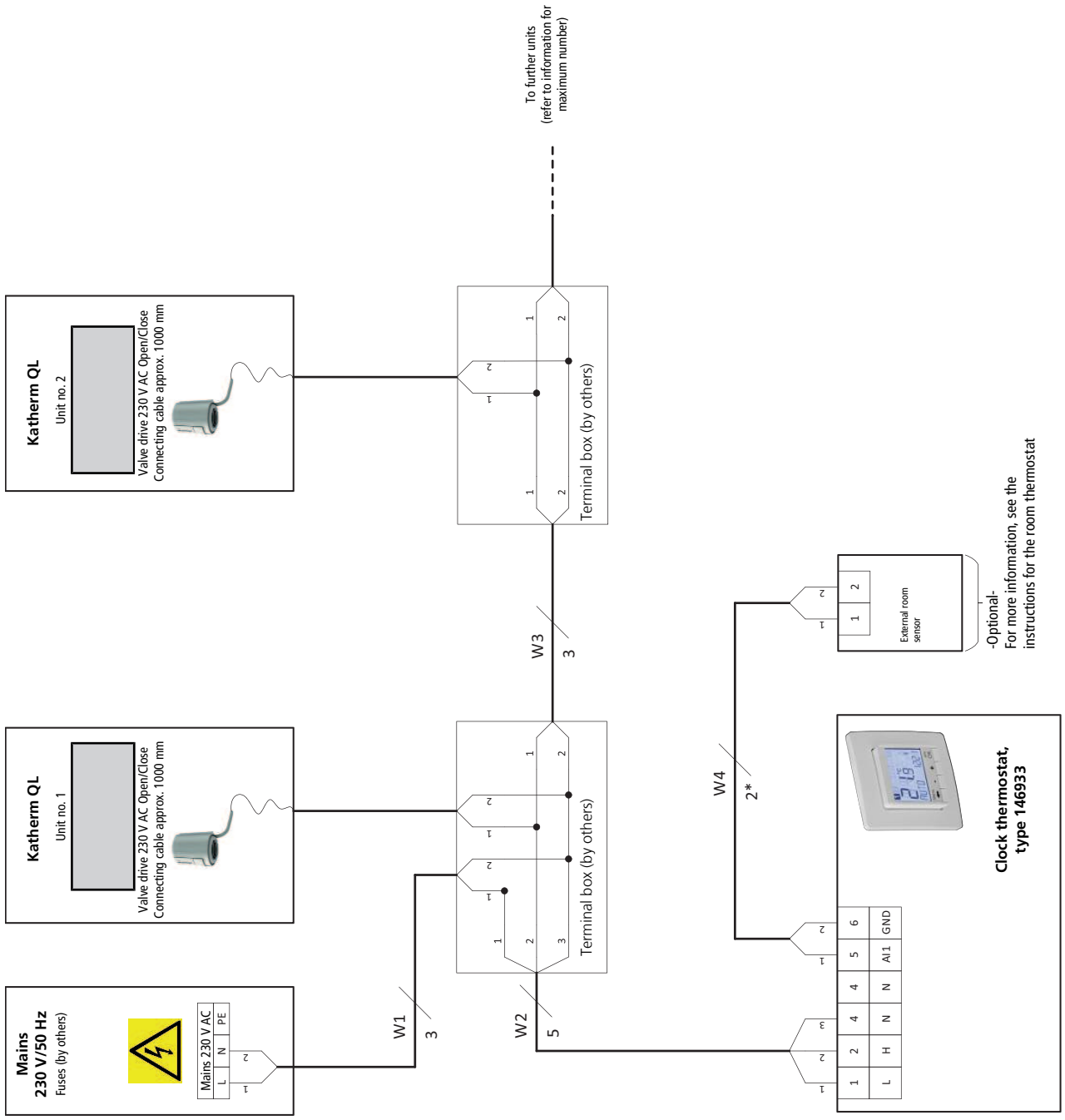
7.3 Cabling of Katherm QL (*00), actuation by room thermostat, type 146927



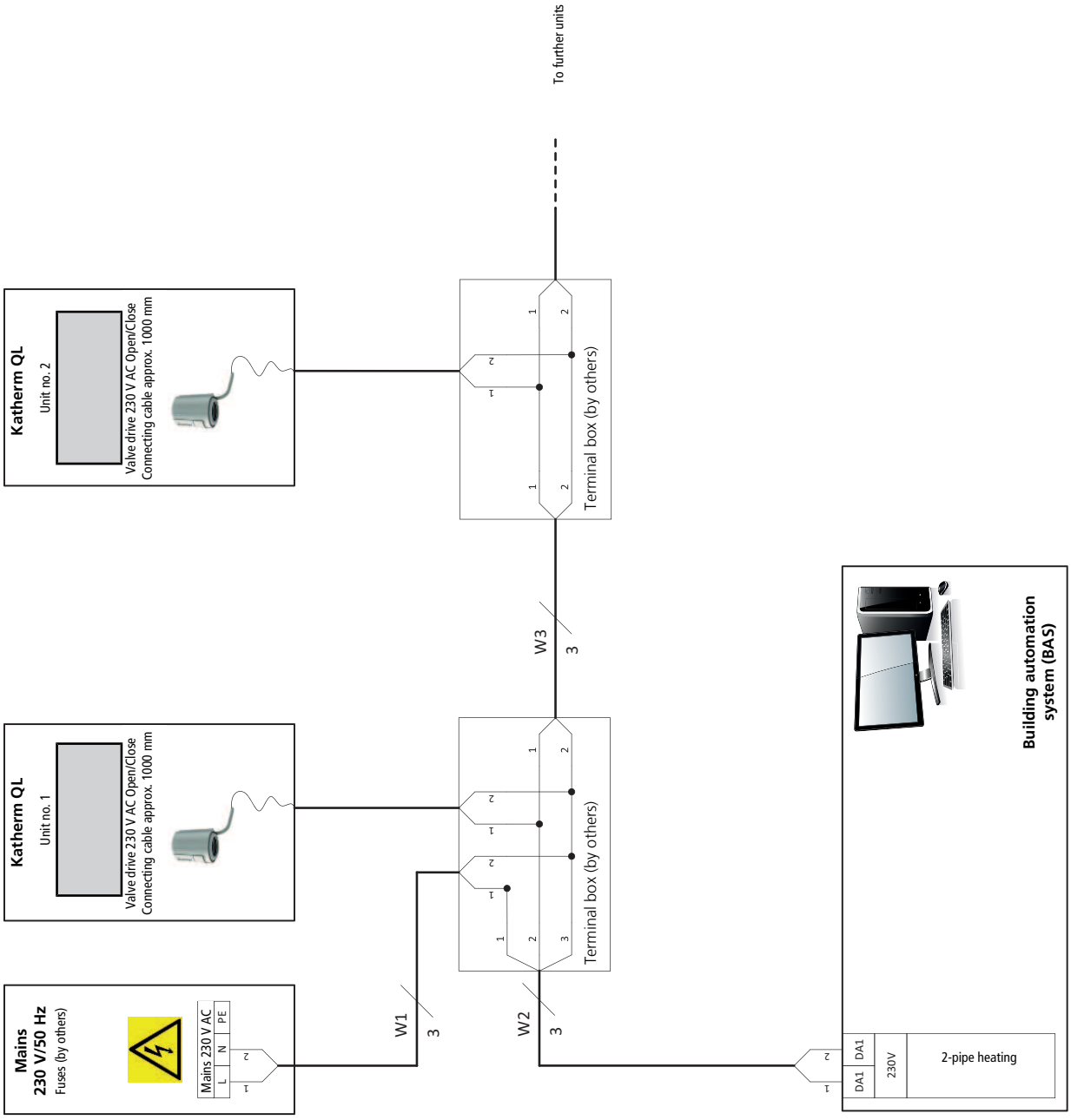
7.4 Cabling of Katherm QL (*00), actuation by clock thermostat, type 146910



7.5 Cabling of Katherm QL (*00), actuation by clock thermostat, type 146933



7.6 Cabling of Katherm QL (*00), actuation by building automation system



8 Pre-commissioning checks

Check before initial commissioning whether all necessary conditions have been met so that the unit can function safely and properly.

Structural tests
▸ Check that the unit is securely standing and fixed.
▸ Check the horizontal installation/suspension of the unit.
▸ Check whether all components are properly fitted.
▸ Check whether all dirt, such as packaging or site dirt, has been removed.

Electrical tests
▸ Check whether all lines have been properly laid.
▸ Check whether all lines have the necessary cross-section.
▸ Are all wires connected in accordance with the electric wiring diagrams?
▸ Is the earth wire connected and wired throughout?
▸ Check all external electrical connections and terminal connections are fixed in place and tighten if necessary.
▸ Check whether DIP switches have been correctly set in accordance with the wiring diagram.

Water-side checks
▸ Check whether all supply and drainage lines have been properly connected.
▸ Fill pipes and unit with water and bleed.
▸ Check whether all bleed screws are closed.
▸ Check leak tightness (pressure test and visual inspection).
▸ Check whether the parts carrying water have been flushed through.
▸ Check whether any shut-off valves fitted on site are open.
▸ Check whether any electrically actuated shut-off valves have been properly connected.
▸ Check whether all valves and actuators are working properly (note permitted mounting position).

Air-side checks
▸ Check whether there is unimpeded flow at the air inlet and outlet.

Once all checks have been completed, initial commissioning can be carried out in line with Chapter 9 “Operation” [▸ 30].

9 Operation

9.1 Operation of electromechanical control

Fig. 4: Room thermostat, type 194000146904

Room thermostat, type 194000146904

- Room thermostat in a flat surface-mounted housing, with thermal feedback
- 230 V, white, temperature setting range 5 - 30 °C, temperature range limitation is possible
- Protection class IP 30. Switching capacity 250 V AC, 50 Hz, 10 (4) A
- Dimensions W x H x D: 74 x 74 x 27 mm
- Max. 10 valve drives can be connected

Fig. 5: Room thermostat, type 194000146927

Room thermostat, type 194000146927

- Room thermostat, flush-mounted, Jung
- Setpoint adjustment with dial
- Main switch with indicator light
- With thermal feedback and separate switching input for night setback
- Central plate and cover frame, alpine white
- Temperature adjustment range 5 - 30 °C
- Switching difference approx. 0.5 K
- Night setback 4 K
- Protection class IP 20
- Voltage 230 V / 50 Hz
- Max. current load 4 A
- Dimensions W x H x D: 65 x 65 x 42 mm
- Max. 10 valve drives can be connected

Fig. 6: Room thermostat, type 194000146933

Clock thermostat, type 194000146933

- Clock thermostat 230 V/ 50 Hz, flush-mounted, white cover and frame
- Large-area display with backlight at the touch of a button for display of setpoint and actual value
- Four-button control panel for setting day or week programs, party function, frost protection, pre-set and customisable timer programs with automatic summer/winter time changeover
- max. 9 switching times per day with block formation of switching times
- Temperature adjustment range 5 - 30 °C
- Protection class IP 30
- Power reserve approx. 10 years
- max. current load 4 A
- Dimensions: 80.5 x 80.5 mm
- Overall height: 17.5 mm
- Max. 10 valve drives can be connected

Fig. 7: Room thermostat, type 194000146910

Electronic clock thermostat, type 194000146910

- Clock thermostat 230 V / 50 Hz in an attractive white surface-mounted housing
- with electronic 2-point room temperature control and digital weekly timer
- Power reserve approx. 4 hours, party switch, switching status display with mode switch, Automatic/Day/Night/Off, adjustable switching difference
- Temperature adjustment range 10-30 °C
- Night setback 2-10 K
- Protection class IP 20
- Voltage 230 V / 50 Hz
- Max. current load 4 A
- Dimensions W x H x D: 140 x 70 x 30 mm
- Max. 10 valve drives can be connected

10 Maintenance

10.1 Securing against reconnection

DANGER!

Risk of death by unauthorised or uncontrolled restart!

Unauthorised or uncontrolled restarting of the equipment can result in serious injury or death.

- Before restarting, ensure that all safety devices are fitted and working properly and that there is no hazard to humans.

Always follow the procedure described below to prevent accidental restart:

1. de-energise.
2. Prevent accidental re-connection.
3. Check that the equipment is de-energised.
4. Cover and cordon off adjacent live parts.

WARNING!

Risk of injury from rotating parts!

The fan impeller can cause severe injuries.

- Switch off the unit and prevent it from reconnection before commencing any work on moving components of the fan. Wait until all parts have come to a standstill.

10.2 Maintenance Schedule:

The sections below describe maintenance work needed for the proper and trouble-free operation of the equipment.

If there are signs of increased wear during regular checks, shorten the required maintenance intervals to the actual wear and teat. Contact the manufacturer with any questions about maintenance work and intervals.

Interval	Maintenance task	Personnel
As required	Regular visual checks and acoustic checks for damage, dirt and function.	User
quarterly	Check filter for dirt, clean and change filter when needed.	User
every six months	Clean unit components (heat exchanger, condensate tray, condensate pump, float switch).	User
every six months	Check water-side connections, valves and fittings for dirt, leak-tightness and function.	User
every six months	Check the electrical wiring.	Qualified personnel
every six months	Clean components/surfaces that come into contact with air.	User
quarterly	Check the heat exchanger for dirt, damage, corrosion and leak-tightness. Carefully vacuum the heat exchanger if dirty.	User

10.3 Maintenance work

10.3.1 Clean the inside of the unit

Check all elements that come into contact with air (internal surfaces of the unit, outlet elements etc.) for dirt or deposits during maintenance and use a commercially available product to remove.

 Fig. 8: Loosening screws in the cover	Loosen screws in the cover.
 Fig. 9: Lift the baffle plate	Lift and remove the baffle plate.
 Fig. 10: Cleaning the air duct	Wipe the air duct with a damp cloth.

11 Faults

The following chapter describes possible causes of faults and the work needed to rectify them. Should faults occur frequently, shorten the maintenance intervals in line with the actual loading on the unit.

Contact the manufacturer with any faults that cannot be rectified using the following informatio.

Behaviour in the event of faults

The following applies:

1. Immediately switch off the unit with faults that pose an immediate danger to persons or property!
2. Determine the cause of the fault!
3. Switch off the unit and prevent it from being reconnected if rectifying the fault requires work in the hazard area. Immediately advise a supervisor on site about the fault.
4. Either rectify the fault yourself or have it repaired by authorised personnel, depending on the nature of the fault.

The fault table, Chapter 11.1 "Fault table" [▶ 34], provides information on who is authorised to rectify and remedy faults.

11.1 Fault table

Fault	Possible cause	Remedy
No function.	No power supply.	Check voltage, switch on repair switch.
		Replace fuse.
Water outlet	Fault on the heat exchanger.	Replace the heat exchanger if you need to.
	Hydraulic connection not properly done.	Check flow and return and tighten, if necessary.
Unit not heating or cooling sufficiently (LPHW/ CHW)	Fan is not switched on.	Switch on fan at controller.
	Air volume is too low.	Set a higher speed.
	Filter is dirty.	Replace filter.
	No heating or cooling medium.	Switch on heating and/or cooling system, switch on circulation pump, vent unit/system.
	Valves not operating.	Replace faulty valves.
	Water volume too low.	Check pump output, check hydraulics.
	Setpoint temperature on the controller set too low/high.	Adjust temperature setting on the controller.
	Operating unit with integral sensor and/or external sensor is exposed to direct sunlight or positioned over a heat source.	Place operating unit with integral sensor and/or external sensor in a suitable position.
	Air cannot blow out or in freely.	Remove obstacles at the air outlet/air inlet.
	Heat exchanger dirty.	Clean heat exchanger.
	Air in the heat exchanger.	Vent heat exchanger.
Unit too loud	Speed too high.	Set a lower speed, if possible.
	Air inlet/outlet opening is obstructed.	Free air ducts.
	Filter dirty.	Replace filter.
	Rotating parts unbalanced	Clean and/or replace impeller. Please make sure that no balancing clips are removed during cleaning.
	Fan dirty.	Clean dirt from fan.
	Heat exchanger dirty.	Clean dirt from Heat exchanger.

11.2 Start-up after rectification of fault

After correction of the fault, carry out the following steps to re-start:

1. Make sure that all maintenance covers and access openings are sealed.
2. Switch off the unit.
3. Acknowledge fault on controller, if necessary.

12 Certificates

EU-Konformitätserklärung

EU Declaration of Conformity
Déclaration de Conformité CE
Deklaracja zgodności CE
EU prohlášení o konformite

Wir (Name des Anbieters, Anschrift):
We (Supplier's Name, Address):
Nous (Nom du Fournisseur, Adresse):
My (Nazwa Dostawcy, adres):
My (Jméno dodavatele, adresa):

KAMPMANN GMBH & Co. KG
Friedrich-Ebert-Str. 128-130
49811 Lingen (Ems)

erklären in alleiniger Verantwortung, dass das Produkt:
declare under sole responsibility, that the product:
déclarons sous notre seule responsabilité, que le produit:
deklarujemy z pełną odpowiedzialnością, że produkt:
deklarujeme, vědomi si své odpovědnosti, že produkt:

Type, Modell, Artikel-Nr.:	**Katherm QL**	**141*** **
Type, Model, Articles No.:	**Katherm NK**	**145*** **
Type, Modèle, N° d'article:	**Katherm ID**	**241*** **
Typ, Model, Nr artykułu:		
Typ, Model, Číslo výrobku:		

auf das sich diese Erklärung bezieht, mit der / den folgenden Norm(en) oder normativen Dokumenten übereinstimmt:
to which this declaration relates is in conformity with the following standard(s) or other normative document(s):
auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou autre(s) document(s) normatif(s):
do którego odnosi się niniejsza deklaracja, jest zgodny z następującymi normami lub innymi dokumentami normatywnymi:
na který se tato deklarace vztahuje, souhlasí s následující(mi) normou/normami nebo s normativními dokumenty:

DIN EN 16430-1; -2; -3	**Gebläseunterstützte Heizkörper, Konvektoren und Unterflurkonvektoren**
DIN EN 442-1 ; -2	**Radiatoren und Konvektoren**

Gemäß den Bestimmungen der Richtlinien:
Following the provisions of Directive:
Conformément aux dispositions de Directive:
Zgodnie z postanowieniami Dyrektywy:
Odpovídající ustanovení směrnic:

305/2011/EU **Bauproduktenverordnung**

Hendrik Kampmann

Lingen (Ems), den 01.09.2020

Ort und Datum der Ausstellung
Place and Date of Issue
Lieu et date d'établissement
Miejsce i data wystawienia
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Name und Unterschrift des Befugten
Name and Signature of authorized person
Nom et signature de la personne autorisée
Nazwisko i podpis osoby upoważnionej
Jméno a podpis oprávněné osoby

Kampmann GmbH & Co. KG
Friedrich-Ebert-Straße 128–130
49811 Lingen (Ems)

Registergericht: Osnabrück, HRA 205688
USt-IdNr: DE313505294
Kampmann.de

Persönlich haftende Gesellschafterin:
Kampmann Beteiligungsgesellschaft mbH
Sitz: Lingen (Ems)

Registergericht: Osnabrück, HRB 211684
Geschäftsführer: Hendrik Kampmann

Table

www.kampmanngroup.com/hvac/products/trench-technology/katherm-ql

Land	Kontakt
Germany	Kampmann GmbH & Co. KG
	Friedrich-Ebert-Str. 128 - 130
	49811 Lingen (Ems)
	T +49 591/ 7108-660
	F +49 591/ 7108-173
	E export@kampmann.de
	W Kampmann.eu

Country	Contact
Great Britain	Kampmann UK Ltd.
	Dial House, Govett Avenue
	Shepperton, Middlesex, TW17 8AG
	T +44 1932/ 228592
	F +44 1932/ 228949
	E info@kampmann.co.uk
	W Kampmann.co.uk

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