



Katherm QE

► 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.



DANGER!

Danger

This combination of symbol and signal word indicates an immediately hazardous situation caused by hot surfaces, which will cause death or serious injury if not avoided.

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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

Katherm QE are used to heat indoor spaces (e.g. living rooms, commercial spaces and showrooms). Within the room to be heated, the unit needs to be connected to the in-situ power grid. Observe the operating limits and limits of use described in Chapter 2.2 [► 6].

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

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

Any use that goes beyond the intended use or any other type of use may result in fire, electric shock or personal injury.

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

2.2 Limits of operation and use

Operating voltage	208 V/ 50/60 Hz; 240 V/ 50/60 Hz; 277 V/ 50/60 Hz
Power/Current consumption	On the typeplate

Tab. 1: Operating voltage



WARNING!

Danger due to incorrect operating voltage

It is essential that the operating voltage given on the type label of the unit is observed. Incorrect operating voltage will result in incorrect operation of the unit and can cause serious damage.



IMPORTANT NOTE!

Warning of misuse!

In the event of misuse, as outlined below, there is a danger of restricted or failed operation of the unit. Ensure that the air flow 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 use the unit as a site heater.
- ▶ Never use in rooms with a high dust content.
- ▶ Never operate the unit at the wrong operating voltage.
- ▶ Never operate the unit in a covered state.
- ▶ Never operate the unit without the cover grille supplied.

2.3 Risk from electrocution!



DANGER!

Risk of fatal injury from electrocution!

Contact with live parts will lead to fatal injury from electric shocks. Damage to the insulation or individual components can lead to a fatal injury. There is a risk of fatal injury if the wiring is incorrect or cables are transposed.

- ▶ Only permit qualified electricians to work on the electrical system.
- ▶ Disconnect and de-energise the unit before working on it and prevent it from being re-connected.
- ▶ After shut-down, wait until the fan has come to a standstill.
- ▶ 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.

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2.4 Dangers from hot surfaces



DANGER!

Risk of fatal injury from hot surfaces

This unit is hot when in operation. Do not touch the unit to prevent burns. Keep combustible materials, such as furniture, cushions, bedding, paper, clothing, curtains etc., away from the unit. The unit has hot and arcing or sparking components inside. Never use the unit in areas in which petrol, paint or flammable vapours or liquids are used or stored.

Extreme caution should be exercised when the unit is used by or near children or people with disabilities and when the unit is left unattended when in operation.

Do not operate the unit if it is malfunctioning. Disconnect the power supply and have the unit checked by an approved electrician before re-using it.

Do not insert foreign objects into the ventilation or exhaust air openings, as they can cause electrical shock, fire, or damage the unit. Never block the air inlets and outlets in any way to prevent a possible fire.

This unit is equipped with an audible alarm to warn that parts of the unit are becoming excessively hot.

When the alarm sounds, immediately turn off the unit and check for objects on or near the unit that are blocking the air flow or causing high temperatures. Do not operate the unit when the alarm sounds!

2.5 Personnel requirements - Qualifications

Expertise

The installation of this product requires expertise in heating, installation and electrical engineering, in compliance with national regulations. As this knowledge is normally acquired through professional training in one of the above fields, it is not dealt with further here.

Damage caused by improper installation is the responsibility of the operator or installer. Installers of these units should have adequate knowledge of the following based on their qualifications

- ▶ Safety and accident prevention regulations
- ▶ Guidelines and recognised technical regulations, e.g. National Electric Code (NEC) and Canadian Electric Code (CEC).
- ▶ ANSI/ NFPA
- ▶ Technical wiring regulations (TABs) specified by the regional power suppliers

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.

2.6 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.

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4 Technical data

Operating level [V]	Control signal [V]	Heat output [W]	Fan electrical power consumption [W]	Nominal current 208 V [A]	Nominal current 240 V [A]	Nominal current 277 V [A]	Sound pressure level [dB (A)] ¹	Sound power level [dB(A)]	Air volume flow [m³/h]	Leaving air temperature [°C]
Trench length 825 mm / 32.5 inch										
Boost stage	10	660	6	3.2	2.8	2.4	28	36	91	41.6
Design stages	8	530	5	2.5	2.2	1.9	26	34	86	38.4
	6	400	4	1.9	1.7	1.4	21	29	70	37.1
	4	260	3	1.3	1.1	0.9	< 20 ²	< 28 ²	52	34.9
Minimum stage	2	130	3	0.6	0.5	0.5	< 20 ²	< 28 ²	43	29
Trench length 1250 mm / 49.2 inch										
Boost stage	10	1300	7	6.3	5.4	4.7	31	39	183	41.2
Design stages	8	1040	6	5	4.3	3.8	29	37	172	38.0
	6	780	5	3.8	3.3	2.8	24	32	139	36.8
	4	520	4	2.5	2.2	1.9	< 20 ²	< 28 ²	104	34.9
Minimum stage	2	260	3	1.3	1.1	0.9	< 20 ²	< 28 ²	87	28.9
Trench length 1700 mm / 66.9 inch										
Boost stage	10	2000	7	9.6	8.3	7.2	33	41	274	41.8
Design stages	8	1600	6	7.7	6.7	5.8	31	39	258	38.5
	6	1200	5	5.8	5	4.3	26	24	209	37.1
	4	800	4	3.8	3.3	2.9	< 20 ²	< 28 ²	156	35.3
Minimum stage	2	400	3	1.9	1.7	1.4	< 20 ²	< 28 ²	130	29.2

Tab. 2: Technical data for Katherm QE

¹ The sound pressure level was calculated with an assumed room insulation of dB(A). This corresponds to a distance of inches, a room volume of cft and a reverberation period of s.

² Sound pressure level < 20 dB (A) and sound power level < 28 dB (A) outside the usual measuring and audible range.

5 Construction and function

5.1 Overview

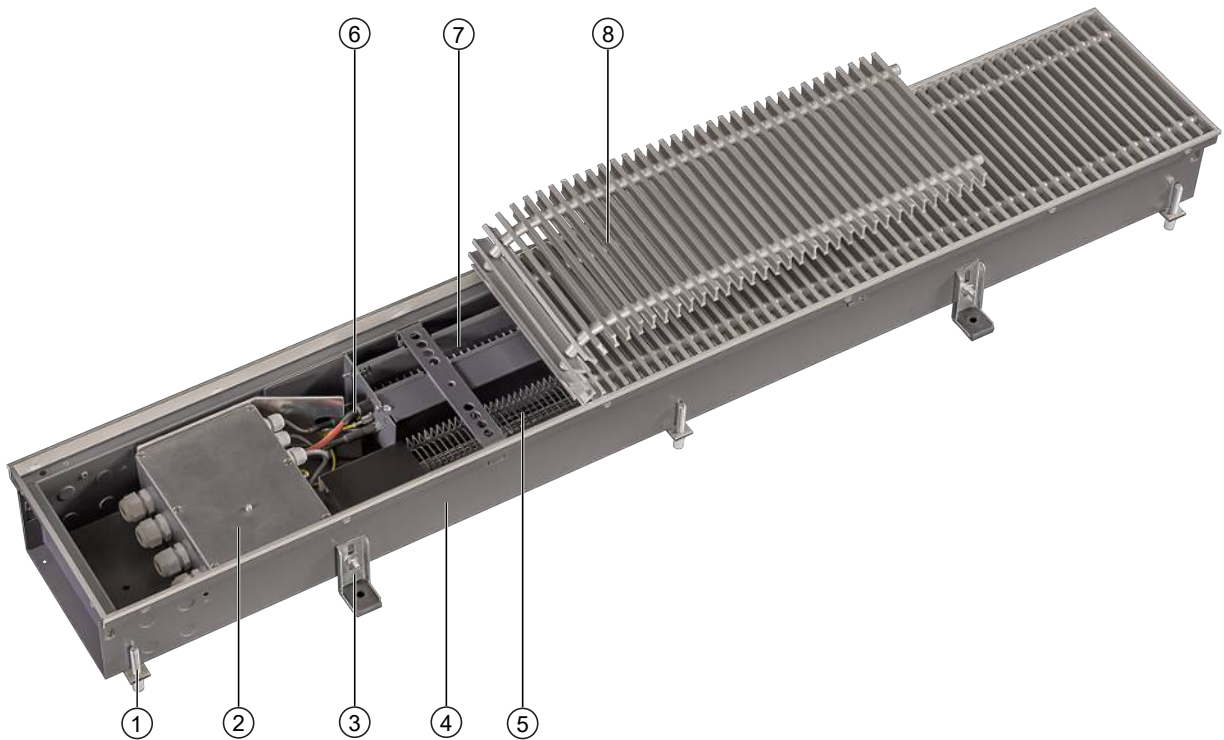


Fig. 1: Katherm QE at a glance

1	Load-bearing height adjustment feet	2	Junction and control box
3	Height adjustment feet with sound insulation	4	Floor trench
5	EC tangential fan	6	Safety pipe
7	Electric heating coil	8	Roll-up grille

5.2 Brief description

Katherm QE are decentralised units to heat room air, for use in hotels, offices and business premises, among others. Secondary air is drawn in by the fan and passed through the electric heating coil. The temperature-controlled air rises up the façade of the building to create a pleasant indoor climate.

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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 unit is securely suspended/standing.
- ▶ Ensure that the airflow can circulate freely.
- ▶ There is a power supply on site (Maximum electrical rating values [▶ 24]).

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.

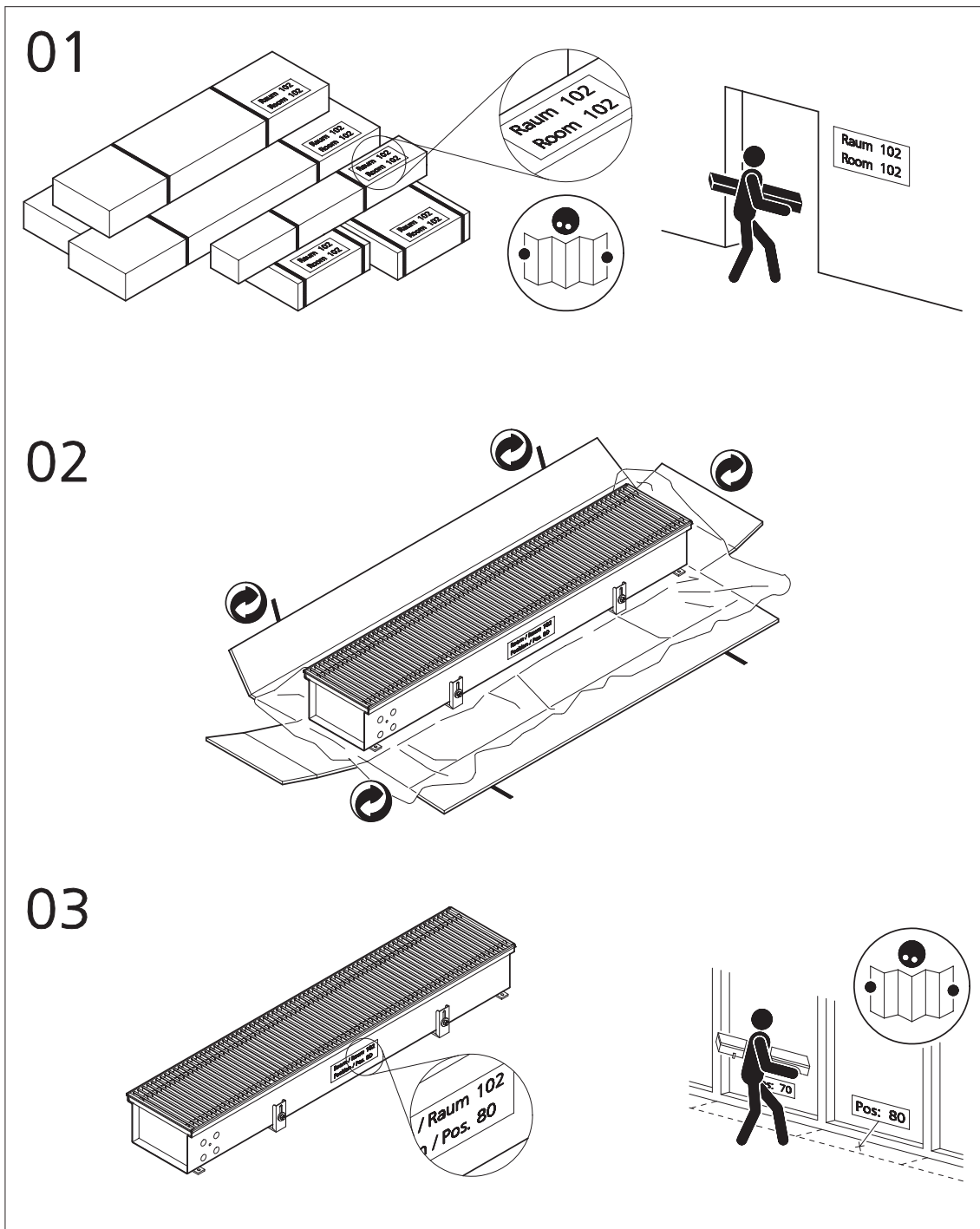


IMPORTANT NOTE!

Horizontal installation of units!

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

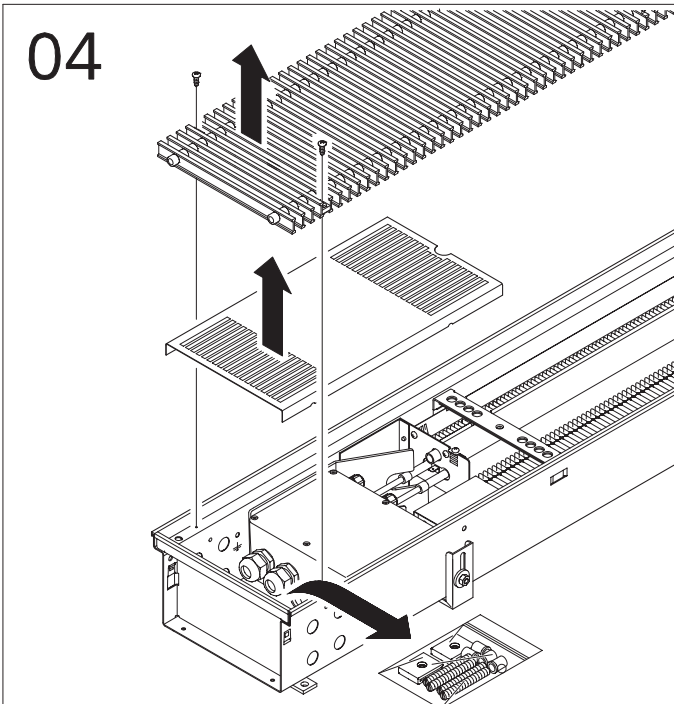
6.2.1 Installation steps



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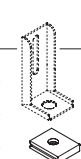


M8

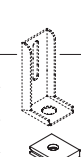
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M6

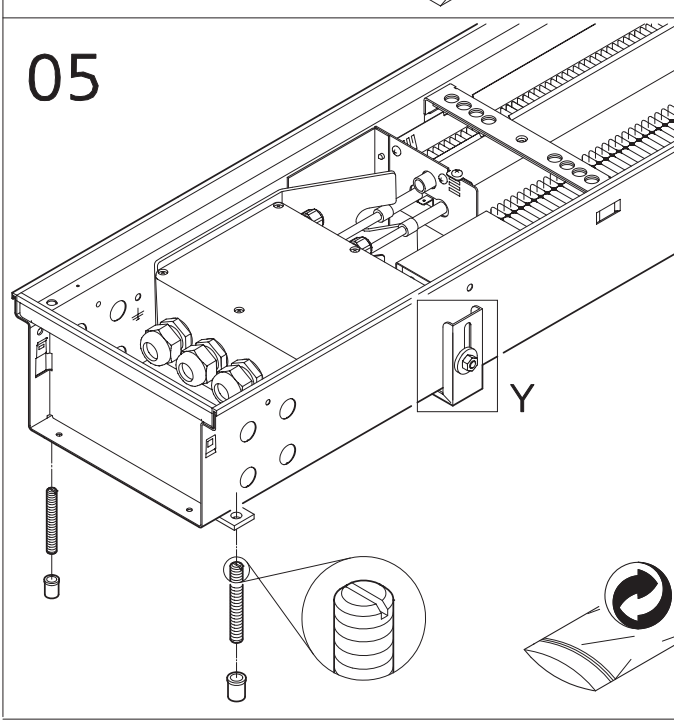
Katherm QE [mm]			
825	4 x		2 x
1250	6 x		2 x
1700	8 x		2 x



Katherm QE [Inch]			
32.5	4 x		2 x
49.2	6 x		2 x
66.9	8 x		2 x



05



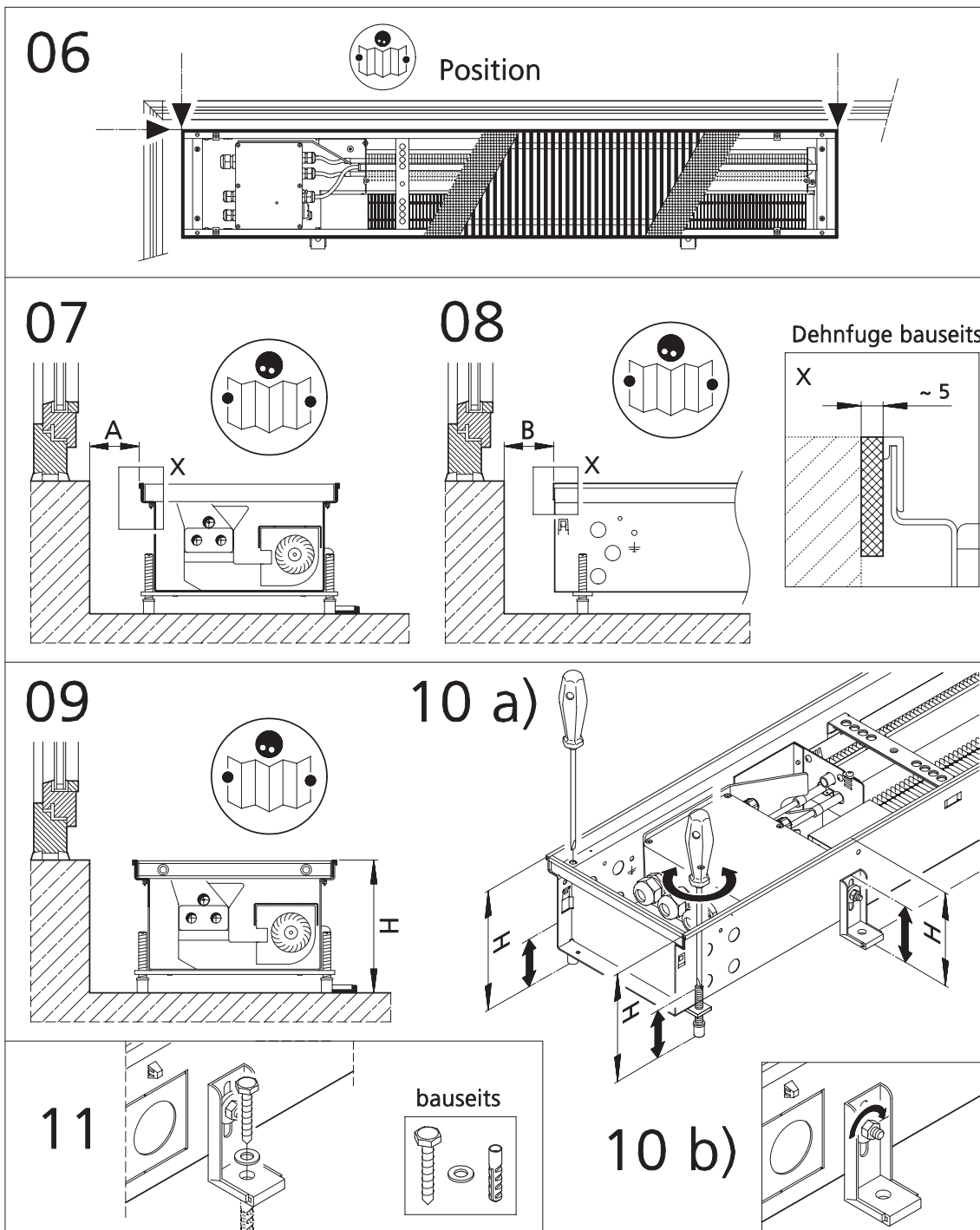
Y

Y

a)

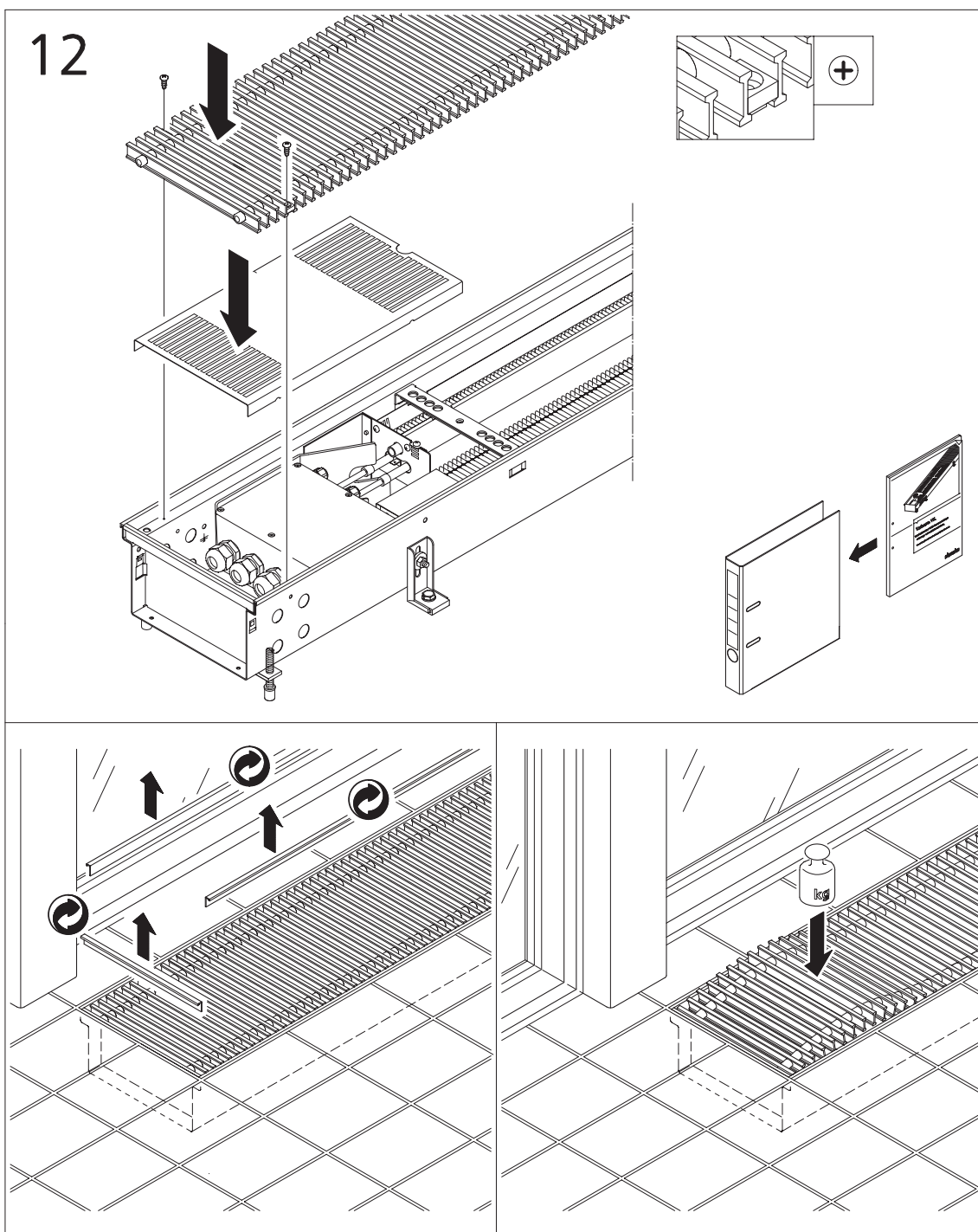
b)

c)



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Separately packed roll-up grilles, for instance when using installation covers to protect the trenches from dirt, are rolled up in the factory. The grille can become slightly over-long due to the steel springs extending. Unrolling the grille and laying it flat for a few hours can return the grille to its original length. Laying the grille into the trench helps it to fit more easily into the frame.

6.2.2 Screed work

The following work steps must be completed before screed work:

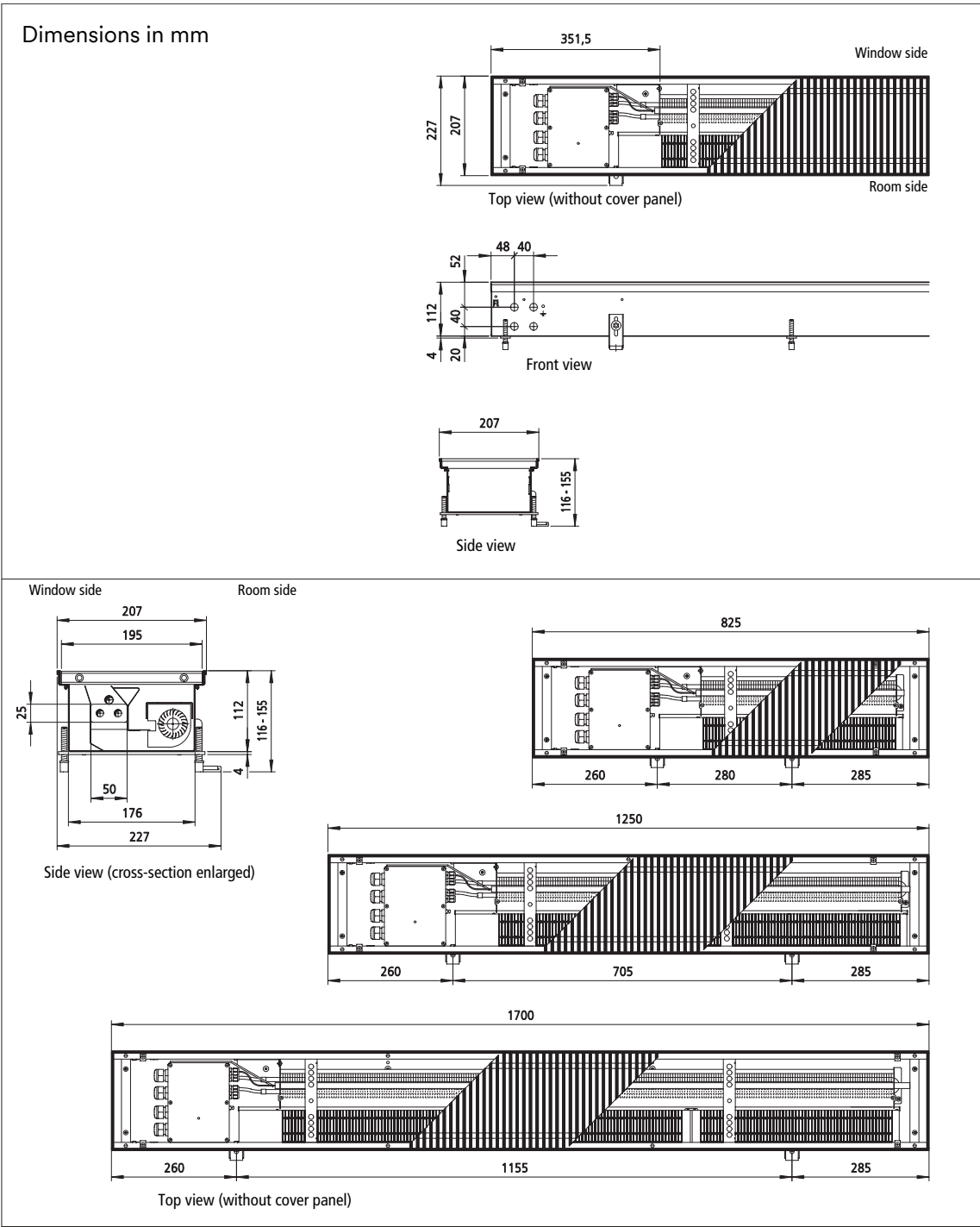
- ▶ The electrical connection has been made correctly.
- ▶ The appliance is correctly positioned and aligned.
- ▶ There are no sound bridges to the bare concrete, especially in the area of the mounting aids.
- ▶ Expansion joints have been provided on site to prevent the appliance from being compressed by the screed or floor.
- ▶ All necessary empty conduits have been laid.
- ▶ All punched holes and openings in the appliance are sealed against screed with suitable material. If flowing screed or other low-viscosity floor coverings are used, these must also be sealed!
- ▶ Cover the grate and floor channel with the transparent construction protection cover to protect against dirt or cement.

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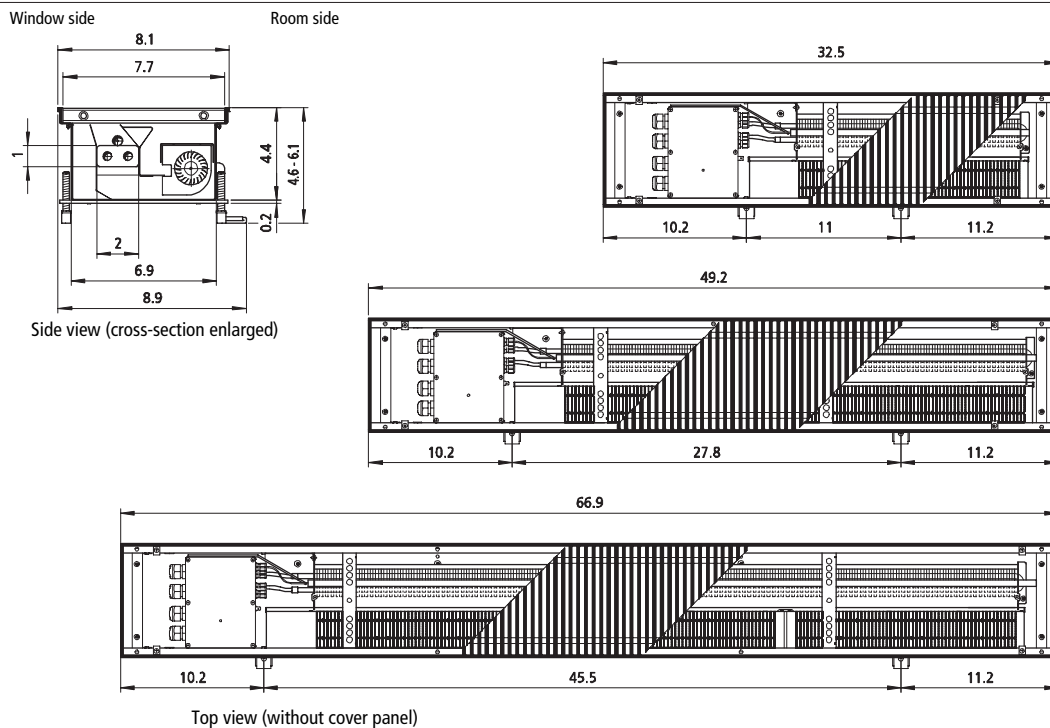
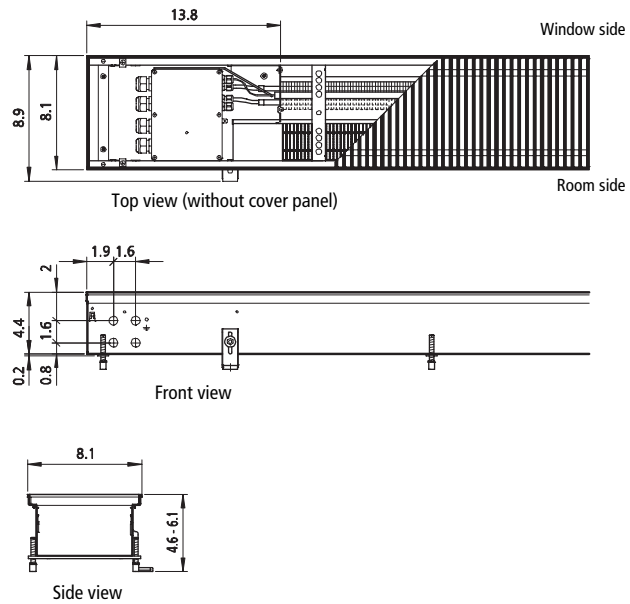
Assembly, installation and operating instructions

6.3 Installation

6.3.1 Connection to the pipe network



Dimensions in inches



6.3.2 Fitting the grille

High surface temperatures occur at the electric heating coil. For this reason, additional grille fixings are factory-fitted on both longitudinal sides of the duct as a safety guard. They can be removed using a screwdriver. The grille fixing only needs to be removed on one side, the electrical connection side, when wiring. Once wiring has been completed, attach the grille fixing again as per the figure.

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Installation cover:

Caution: Do not operate the Katherm QE or the electric heating coil with the installation cover in place. After removing the installation cover, position the grille and screw in place with the grille fixings and the self-tapping screws.

Do not cover the roll-up grille when the unit is in operation!

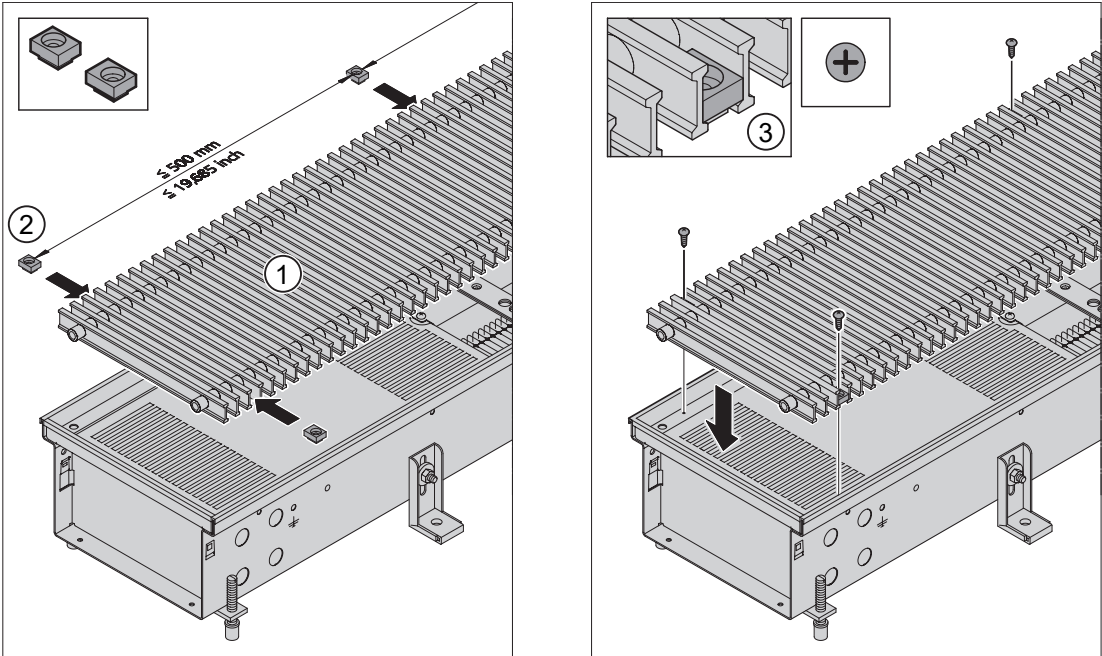


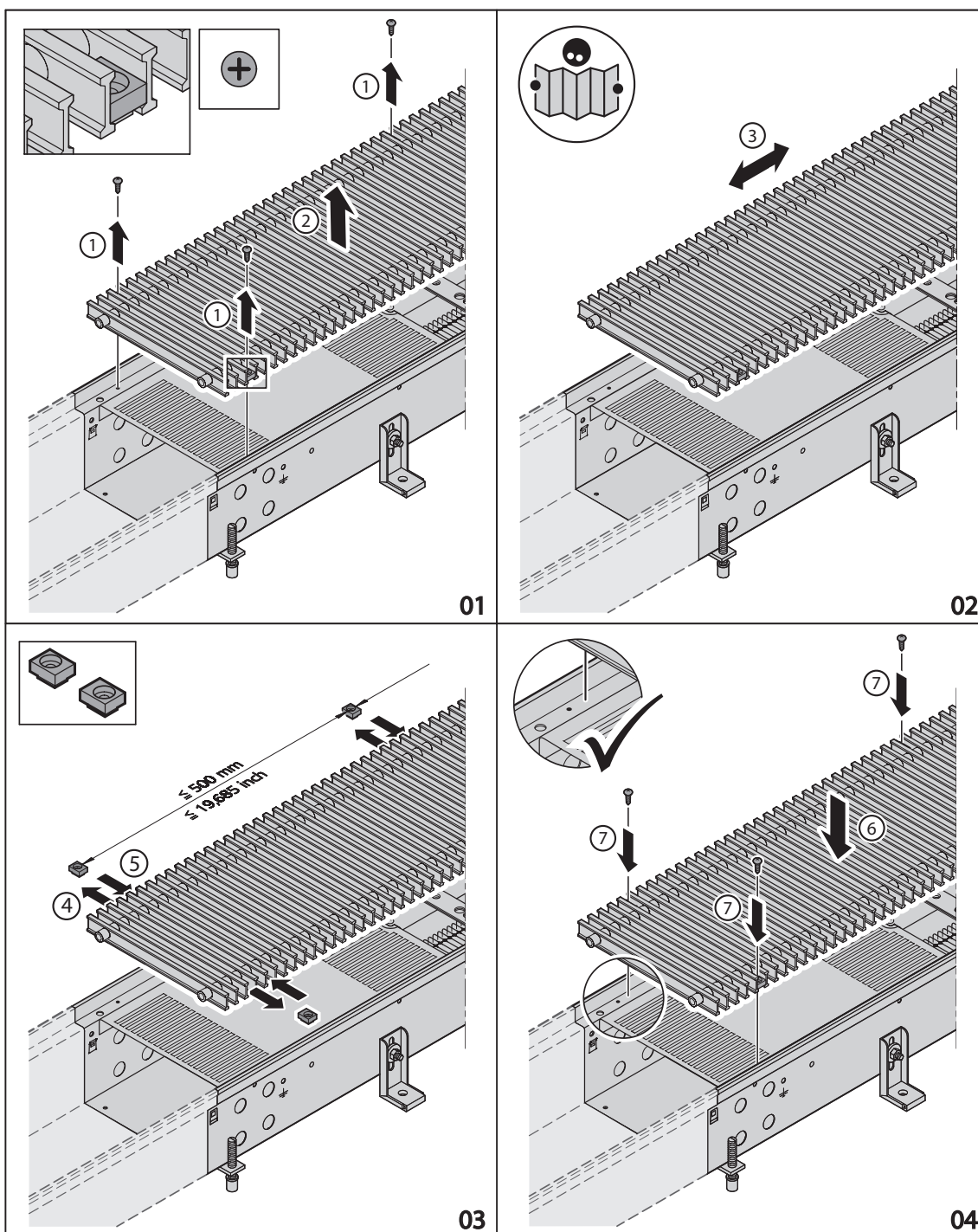
Fig. 2: Grille fixing

1	Roll-up grille	2	Grille fixing with self-tapping screws
3	Detail of grille fixing		

Fixing the grille on trench extensions

Proceed as follows to adapt the grille to structural conditions on site with trench extensions:

- ▶ Loosen the fastening screws.
- ▶ Position the grille.
- ▶ Re-position and attach the grille fixings.
- ▶ Note the spacing of the grille fixings.



7 Electrical connection



IMPORTANT NOTE!

Electrical work

Only have qualified electricians carry out electrical work. Additional connections, e.g. to building management systems or external controls, may be required. Refer to the manufacturer's literature for this.

- ▶ Wire the unit according to the enclosing wiring diagram.
- ▶ Wire the unit in accordance with the applicable national regulations and technical wiring regulations stipulated by the power supply companies.
- ▶ Only connect the unit to permanently routed cables.



IMPORTANT NOTE!

Provide an all-pole mains separator in the electrical installation on site that can be reliably secured to avoid the system being reconnected (e.g. a lockable switch with a contact opening of at least 3 mm up to a rated voltage of 480 V). No protective measures are indicated in the wiring diagrams. These must be provided when installing the system and when connecting the units in accordance with the regulations of each energy supply company. According to the National Electrical Code, ANSI/NFPA 70, 14 AWG (2.1 mm²) is the smallest wire gauge that may be used to wire branch lines and also the smallest wire gauge that can be provided on a terminal for connection of a power supply wire. AWG 14 is also the largest wire gauge that can be connected to the terminals.

7.1 Maximum electrical rating values

Katherm QE, UL version (*UL, *U04, *U06)

Length [mm / inch]	Nominal voltage [V AC]	Mains fre- quency [Hz]	Nominal power [W]	Nominal current [A]	Ri analogue input [kΩ]	IP class	Protection class
825 / 32.5	208	60	660	3.2	100	21	I
	240			2.8			
	277			2.4			
1250 / 49.2	208	60	1300	6.3			
	240			5.4			
	277			4.7			
1700 / 66.9	208	60	2000	9.6			
	240			8.3			
	277			7.2			

Tab. 3: Maximum electrical connection values, electromechanical model

7.2 Electromechanical connection, 230 V (*00)

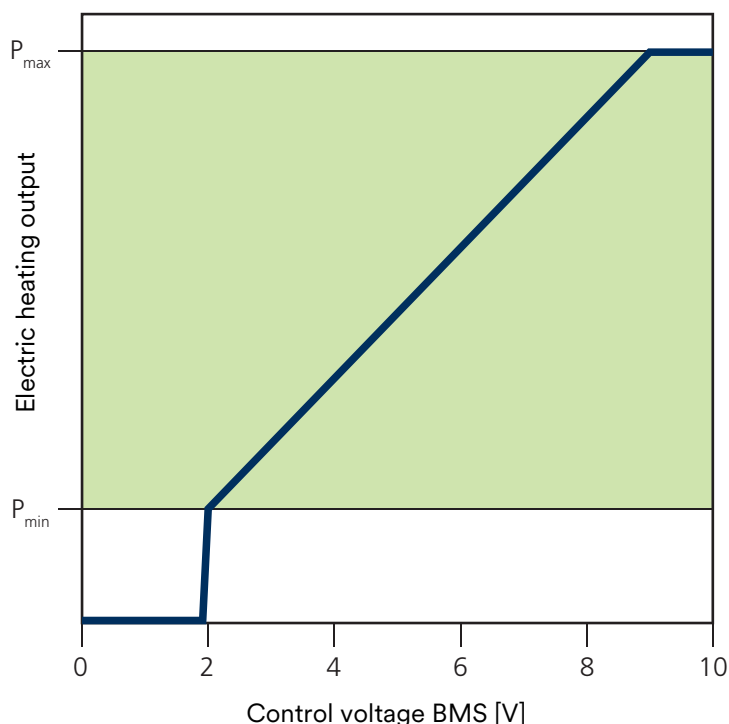
Circuit description Katherm QE

- ▶ Katherm QE requires a 208 / 240 / 277 V AC power supply.
- ▶ The output of the electric heating coil and EC fan can be controlled continuously variably by a 0-10 V DC signal.
- ▶ Internal safety shut-down: In the event of improper use, the heat output is reduced or switched off.
- ▶ The temperature is monitored by an additional NTC10K sensor in the safety chain. The heat output is automatically lowered above a temperature of 65 °C (149 °F). The heating element is switched off at a temperature of 80 °C (176 °F).
- ▶ Faults (motor malfunction, electric heater fault etc.) are issued by a potential-free collective alarm contact (max. 60 V / 1 A).
- ▶ Once the cause of the fault has been remedied, the fault message is acknowledged by resetting the supply voltage.

Control via 0 – 10 V DC

At a control signal of 2 V, the EC tangential fan is operated at minimum fan speed and the electric heating coil is activated at the lowest heat output.

Control signal	Function
0 V	Off
2 V – 9 V	0 – 100 %



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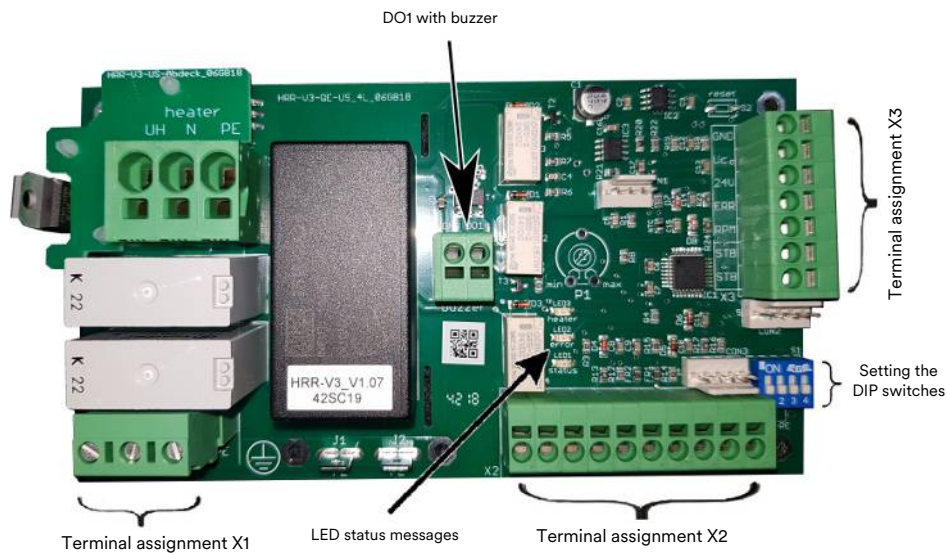


Fig. 3: Katherm QE PCB (only for 208 V and 240 V)

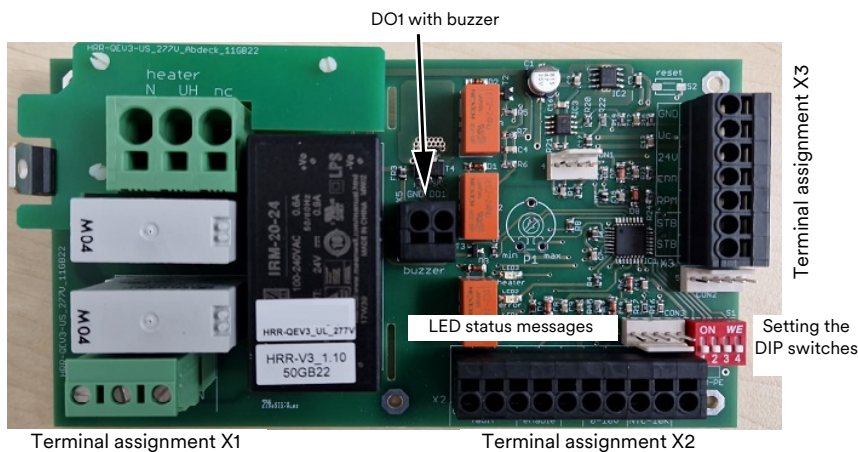


Fig. 4: Katherm QE 277 V PCB

Terminal assignment		
X1	mains	Mains connection (208/ 240/ 277 V/ 60 Hz)
X2	Fault	Potential-free fault alert output (max. load 60 V AC/DC 1 A)
	Enable	DI1, potential-free enable contact
	24 V	Voltage output 24 V DC (max. 40 mA)
	0 - 10 V	AI1, Control signal 0...10 V = Heat output 0...100% (Ri = 100 KΩ)
	NTC 10 K	AI2, temperature sensor
X3	Safety temperature limiter	Safety temperature limiter
	RPM	Input signal of the number of revolutions of the EC tangential fan
	ERR	Input signal of the status of the EC tangential fan
	24 V	Supply voltage (+) for the EC tangential fan
	GND	Supply voltage (-) for the EC tangential fan

DIP switch settings

DIP	Factory setting	OFF	ON
DIP 1	OFF	Enable not required	Enable required
DIP 2	OFF	Fan speed increase Off	Fan speed increase On
DIP 3	OFF	Minimum heat output = 20%	Minimum heat output = 30%
DIP 4	OFF	Power reduction 100%	Power reduction 90%

LED status messages

LED	Function	Colour	Code	Description
1	Status	Green	OFF	No voltage / Error
			Flashes cyclically	Control active
			Alternating fast/slow flashing	No DI1 enable
			Lights up	Standby
2	Fault alarm	Red	1x flashing	EC motor fault
			2x flashing	EC motor fan speed
			3x flashing	PCB temperature sensor has triggered
			4x flashing	Power reduction over 50%
			5x flashing	Sensor short circuit
			Lights up	Safety temperature limiter has tripped, buzzer sounds
3	Heating	Yellow	Flashes cyclically	Electric heater PWM signal
			Lights up	Electric heater 100%

Status coding of the red LED fault signal

Lights up = Continuously lit

1 x flashing = On (0.2 sec.) Off (0.8 sec.) ...

2 x flashing = On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (2 sec.) ...

3 x flashing = On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (2 sec.) ...

4 x flashing = On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (2 sec.) ...

5 x flashing = On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (0.8 sec.) On (0.2 sec.) Off (2 sec.) ...

Alternating = On (0.5 sec.) Off (0.2 sec.) On (0.1 sec.) Off (0.2 sec.) ...

Information on cable laying:

The following information on cable types and cable laying must be observed in compliance with National Electric Code.

The installation, operation and maintenance of these devices must comply with the country-specific applicable laws, standards, regulations and directives.

Without *: NYM-J. The required number of cores incl. protective conductor is indicated on the cable. Cross sections are not indicated, as the cable length is included in the calculation of the cross section.

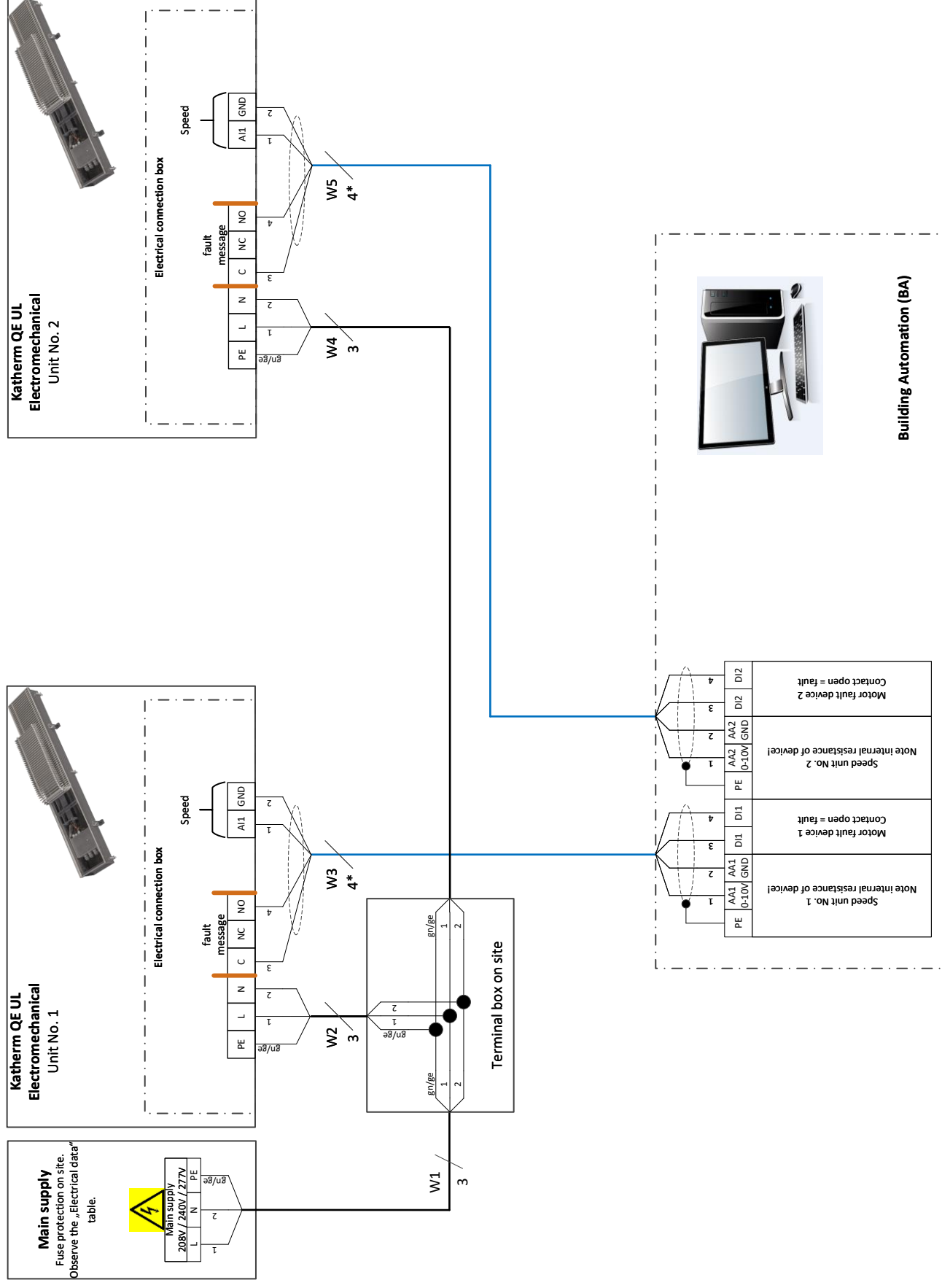
*) : Shielded cable, J-Y(ST)Y 0.8mm. Lay separately from power lines.

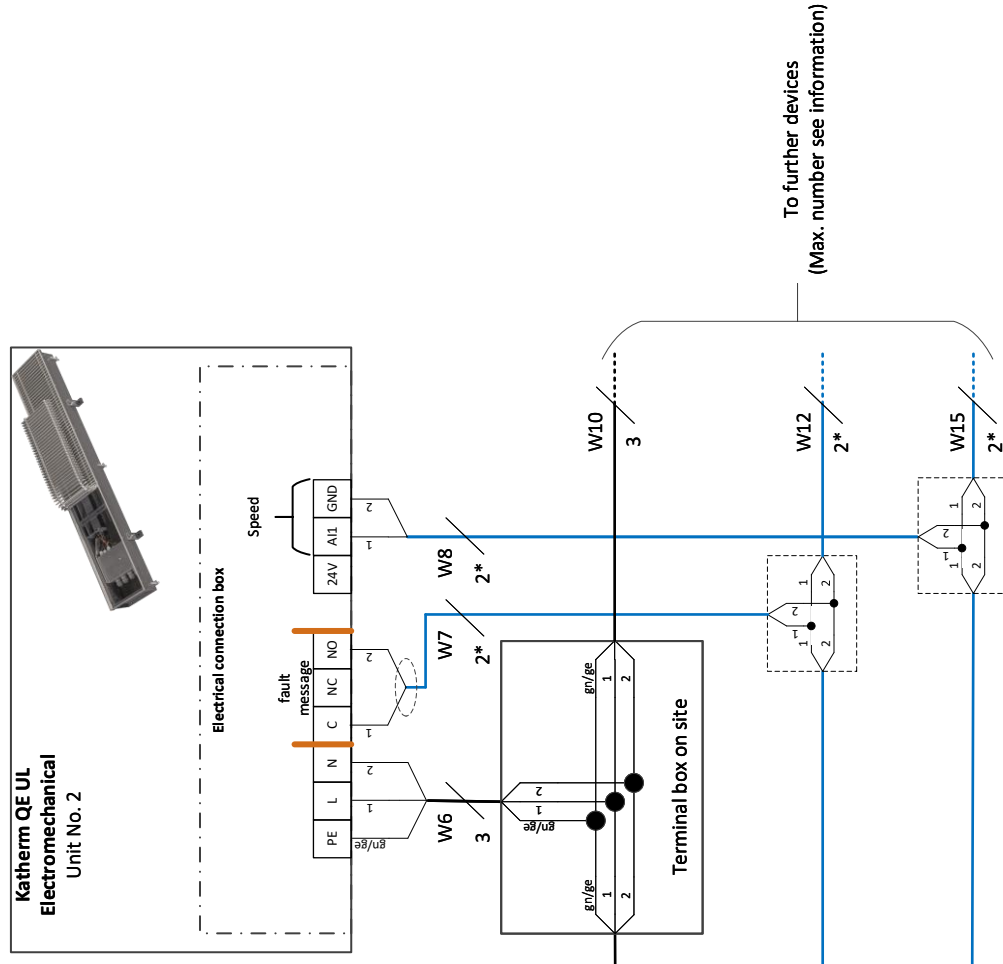
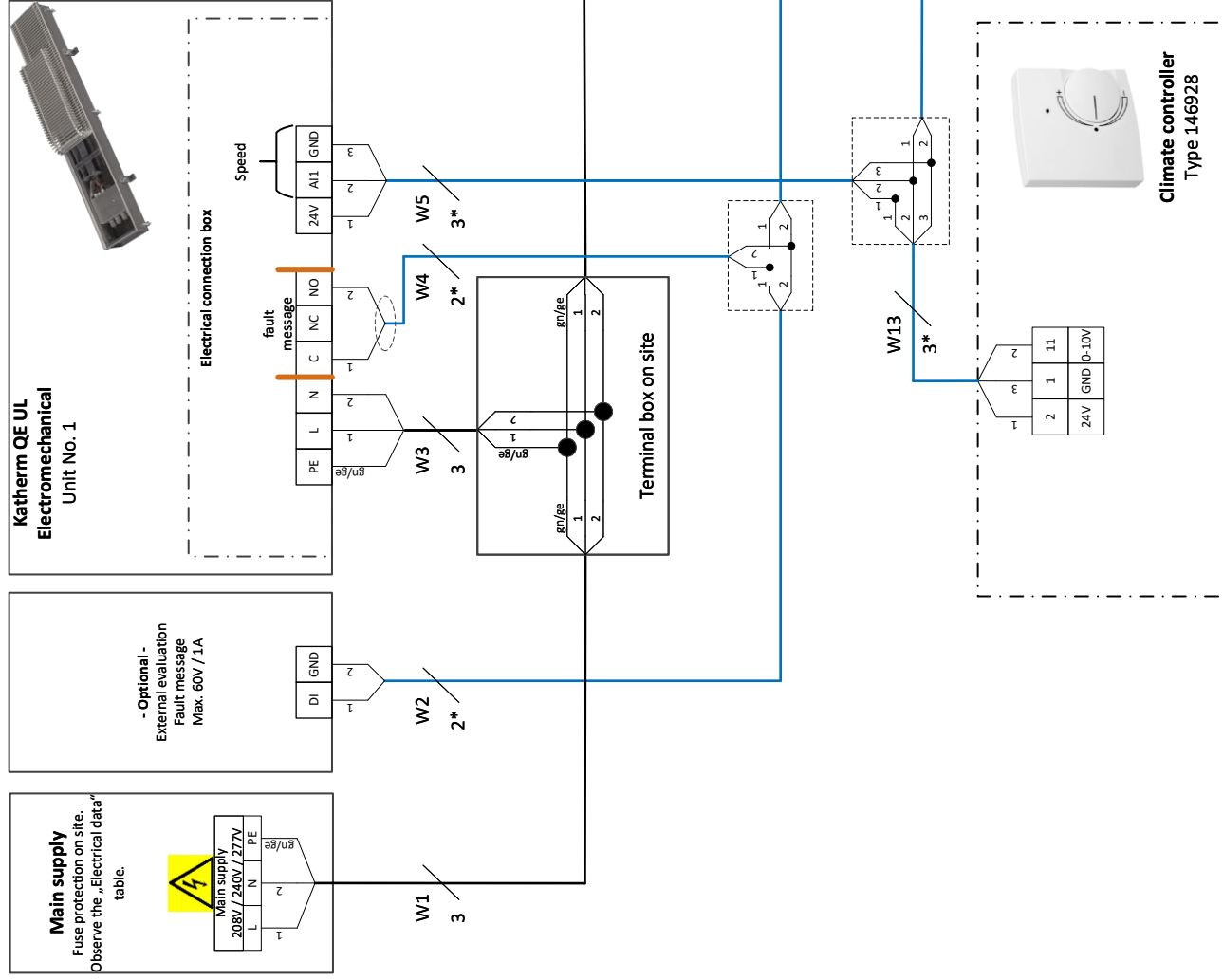
**) : Shielded cable stranded in pairs, e.g. UNITRONIC® BUS LD 2x2x0.22, UNITRONIC® BUS LD 3x2x0.22. Install separately from power lines.

- If other cable types are used, they must be at least equivalent.

- Lines for data or bus signals are shown with shield connected at one end. Lines for analog signals are shown with the shield not connected. Due to structural or local conditions and depending on the type and level of interference, which can be caused by magnetic and/or electric fields in high and/or low frequency ranges, among other things, a different connection of the shield (connected at both ends or not connected) may be necessary. This must be checked by the customer and, if necessary, carried out deviating from the specifications in the documentation!

	Bearbeiter:	Projekt:	General Information		Blatt-Nr.:	
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8 Pre-commissioning checks

During initial commissioning, it must be ensured that all necessary requirements are met so that the appliance can function safely and as intended.

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.

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" [▶ 32].

Katherm QE

Assembly, installation and operating instructions

9 Operation

9.1 Operation of electromechanical control

	<p>Room temperature controller type 146928</p> <ul style="list-style-type: none">▶ room temperature controller for 2- and 4-pipe applications, surface-mounted wall installation on a flush-mounted box▶ setpoint display by threshold arrows▶ heating or cooling via active 0-10 V signals▶ option for external room sensor connection▶ digital input for ECO operation▶ for use with Katherm QE, max. 5 units
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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 tear. Contact the manufacturer with any questions about maintenance work and intervals.

Interval	Maintenance work
If necessary	Regular visual inspections and acoustic tests for damage, soiling and function.
annually	Check electrical connections.
annually	Clean air-conducting components/surfaces.
Annually	Check the electric heating coil for dirt, damage, corrosion and leaks. Carefully vacuum the electric heating coil if it is dirty.

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.

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 information.

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 [► 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.
Unit is not heating sufficiently	Fan is not switched on.	Switch on fan at the controller.
	Air output is too low.	Set a higher fan speed.
	Filter is dirty.	Replace filter.
	Setpoint temperature on the controller is set too low.	Adjust the temperature setting on the controller.
	Control unit with integral sensor and/or external sensor is exposed to direct sunlight or positioned over a heat source.	Locate the control unit with integral sensor and/or external sensor in a suitable position.
	Air cannot blow out or in freely.	Remove obstacles at the air intake / air discharge.
	Electric heating coil is dirty.	Clean the electric heating coil.
Unit too loud	Fan speed too high.	Set a lower fan speed, if possible.
	Air intake / air discharge opening is obstructed.	Free air routes.
	Filter dirty.	Replace filter.
	Rotating parts unbalanced	Clean and/or replace impeller. Make sure that no balancing brackets are removed during cleaning.
	Fan dirty.	Clean dirt from fan.
	Electric heating coil dirty.	Clean dirt from the Electric heating coil.

11.2 Start-up after rectification of fault

After correction of the fault, carry out the following steps for recommissioning:

1. Make sure that all maintenance covers and access openings are sealed.
2. Make sure that the cover grille is securely reattached to the unit.
3. Switch off the unit.
4. Acknowledge the fault on the controller, if necessary.

Table

Tab. 1	Operating voltage	6
Tab. 2	Technical data for	12
Tab. 3	Maximum electrical connection values, electromechanical model	24

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
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Standard(s): Fixed And Location-Dedicated Electric Room Heaters [UL 2021:2015 Ed.4+R:14Dec2016]

Electric Air-Heaters (R2018) [CSA C22.2#46:2013 Ed.9]

Product: Electric Heater

Models: Katherm QE

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Product: Electric Heater

Models: Katherm QE

<https://www.kampmann.ca/en/hvac/products/trench-technology/katherm-qe>

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