



Katherm NK

► 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 to heat all areas of buildings that need to be heated in winter. Within the room to be heated, the unit needs to be connected to the building's heating/cooling/ventilation system and to the building's sewage system and power grid. The operating limits and limits of use described in Chapter 2.2 [► 6] 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.
- ▶ The unit is not intended for operation above 2,000 m.a. s.l.
- ▶ This unit is not intended for permanent connection to the drinking water network.
- ▶ This unit is designed to be accessible to the general public.

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

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

Limits of operation		
Min./max. water temperature	°C	15-90
Min./max. air intake temperature	°C	15-40
Min./max. air humidity	%	15-75
Min. operating pressure	bar/kPa	-
Max. operating pressure	bar/kPa	10/1000
Min./max. glycol percentage	%	25-50

Tab. 1: Limits of operation

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 (Cl)	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. 2: Water quality

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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).
- ▶ Never use the unit as a construction site heater.
- ▶ Never operate the unit in areas with a high dust content.

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

Expertise

The installation of this product requires specialist expertise in heating, cooling, ventilation, installation and electrical engineering. 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, i.e. VDE regulations (Association of German Electricians, 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.

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4 Technical data

Duct width [mm]	Duct height [mm]	Duct length [mm]	Heat output ¹ [W]	Water content [l]	Weight [kg]
137	92	800 - 5000	79 - 981	0.07 - 0.82	5.49 - 30.96
137	120	800 - 5000	84 - 1050	0.07 - 0.82	6.01 - 34.01
182	92	800 - 5000	132 - 1295	0.10 - 0.99	6.43 - 36.88
182	120	800 - 5000	162 - 1594	0.10 - 0.99	6.93 - 39.92
182	150	800 - 5000	206 - 1857	0.23 - 2.01	8.12 - 47.27
182	200	800 - 5000	232 - 2084	0.23 - 2.01	9.08 - 52.69
232	92	800 - 5000	157 - 1530	0.17 - 1.67	7.69 - 43.98
232	120	800 - 5000	193 - 1881	0.17 - 1.67	8.26 - 47.05
232	150	800 - 5000	309 - 2778	0.38 - 3.39	9.57 - 55.58
232	200	800 - 5000	334 - 3010	0.38 - 3.39	10.59 - 61.04
300	92	800 - 5000	209 - 2036	0.26 - 2.52	9.51 - 54.13
300	120	800 - 5000	268 - 2609	0.26 - 2.52	10.27 - 57.53
300	150	800 - 5000	394 - 3545	0.56 - 5.08	11.62 - 68.34
300	200	800 - 5000	445 - 4003	0.56 - 5.08	12.85 - 74.17
380	92	800 - 5000	279 - 2717	0.34 - 3.35	11.87 - 67.94
380	120	800 - 5000	344 - 3353	0.34 - 3.35	12.26 - 70.07
380	150	800 - 5000	485 - 4362	0.75 - 6.77	14.43 - 83.89
380	200	800 - 5000	621 - 5590	0.75 - 6.77	15.59 - 89.51

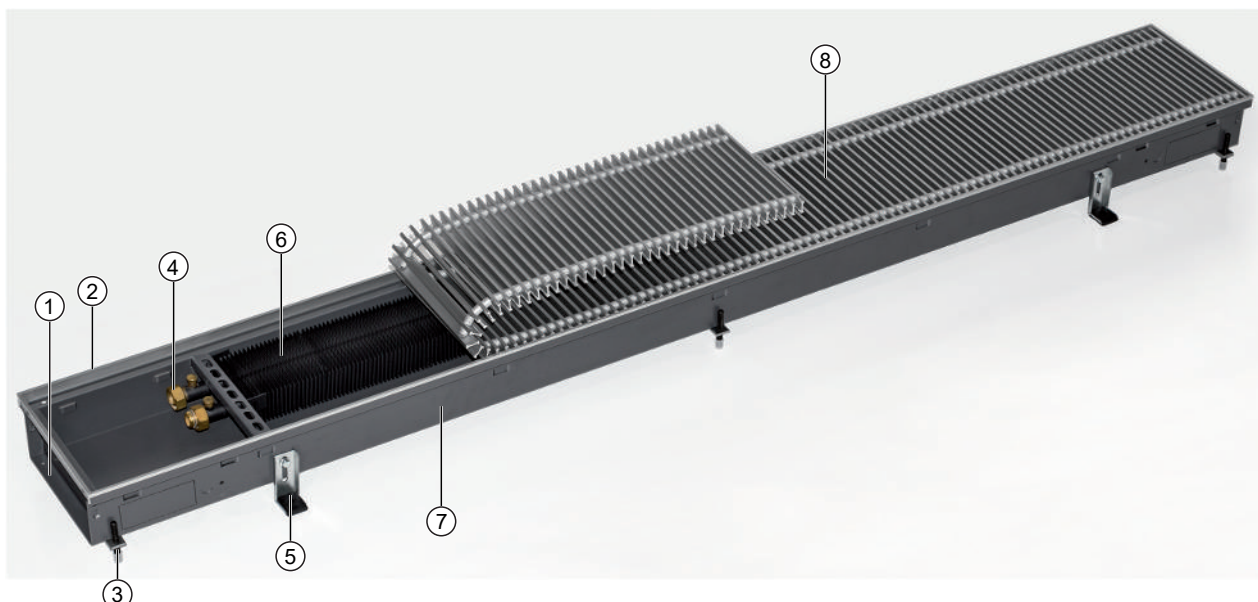
Tab. 3: Technical data Katherm NK

¹

at LPHW 75 / 65°C, t_l = 20°C

5 Construction and function

5.1 Overview



1	Easy to connect	2	Frame edge (matches grille colour)
3	Load-bearing height adjustment feet	4	Eurokonus valve connection
5	Height adjustment feet with sound insulation	6	Coil
7	Floor trench	8	Roll-up grille

5.2 Brief description

Katherm NK are decentralised units for the heating of room air, for use in hotels, offices and business premises, among others. Cooled room air sinks into the floor trench, flows below or at the side of the water-heated coil, passes through it, and then rises as heated air towards the glazing. The warm air enters the room draught-free and falls to the ground when it cools, producing gentle air recirculation in the room.

Katherm NK

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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.
- ▶ Provide adequate space for appropriately sized flow and return water connections on site (Connection to the pipe network [▶ 19]).
- ▶ There is a power supply on site (Maximum electrical rating values [▶ 29]).

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.

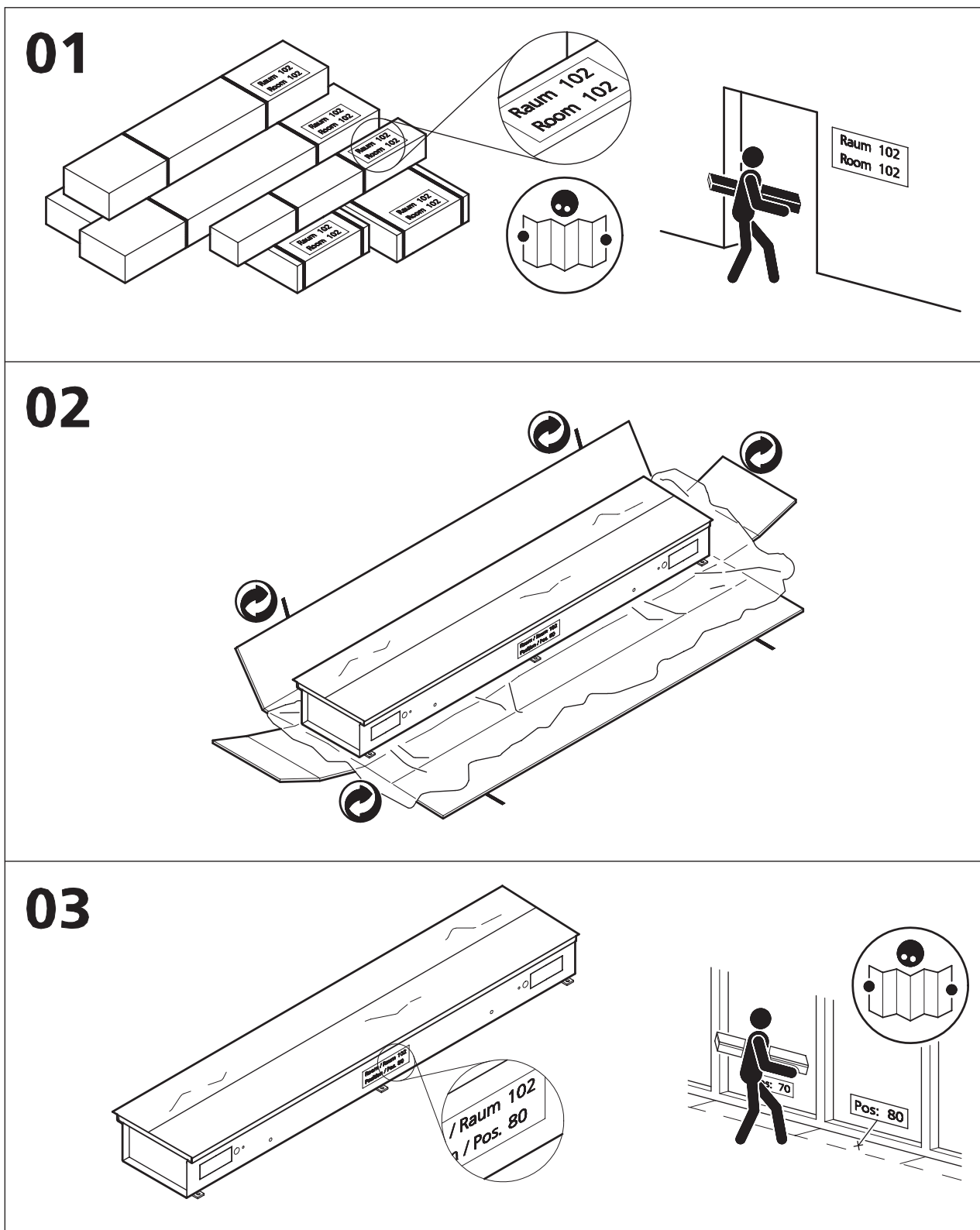


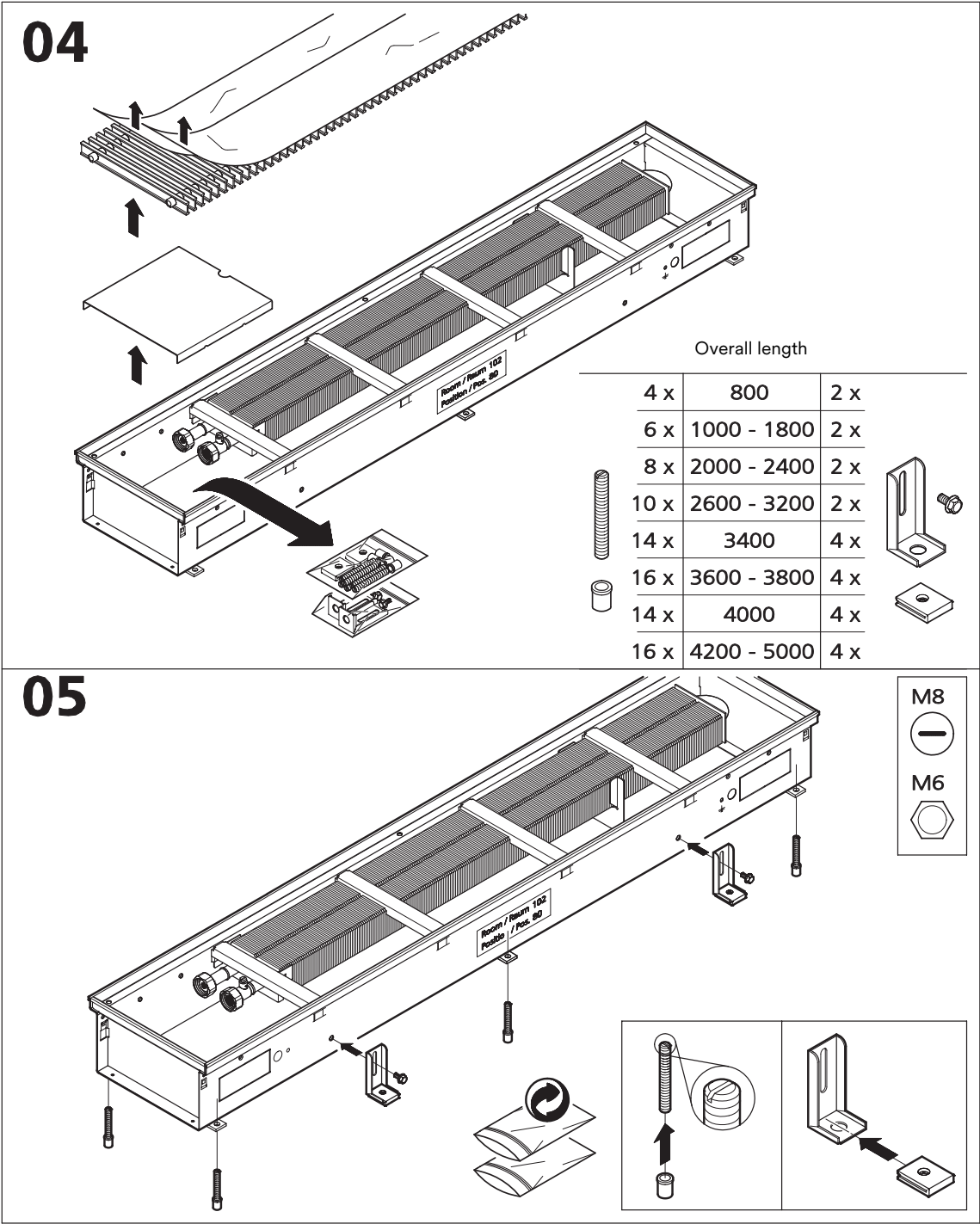
IMPORTANT NOTE!

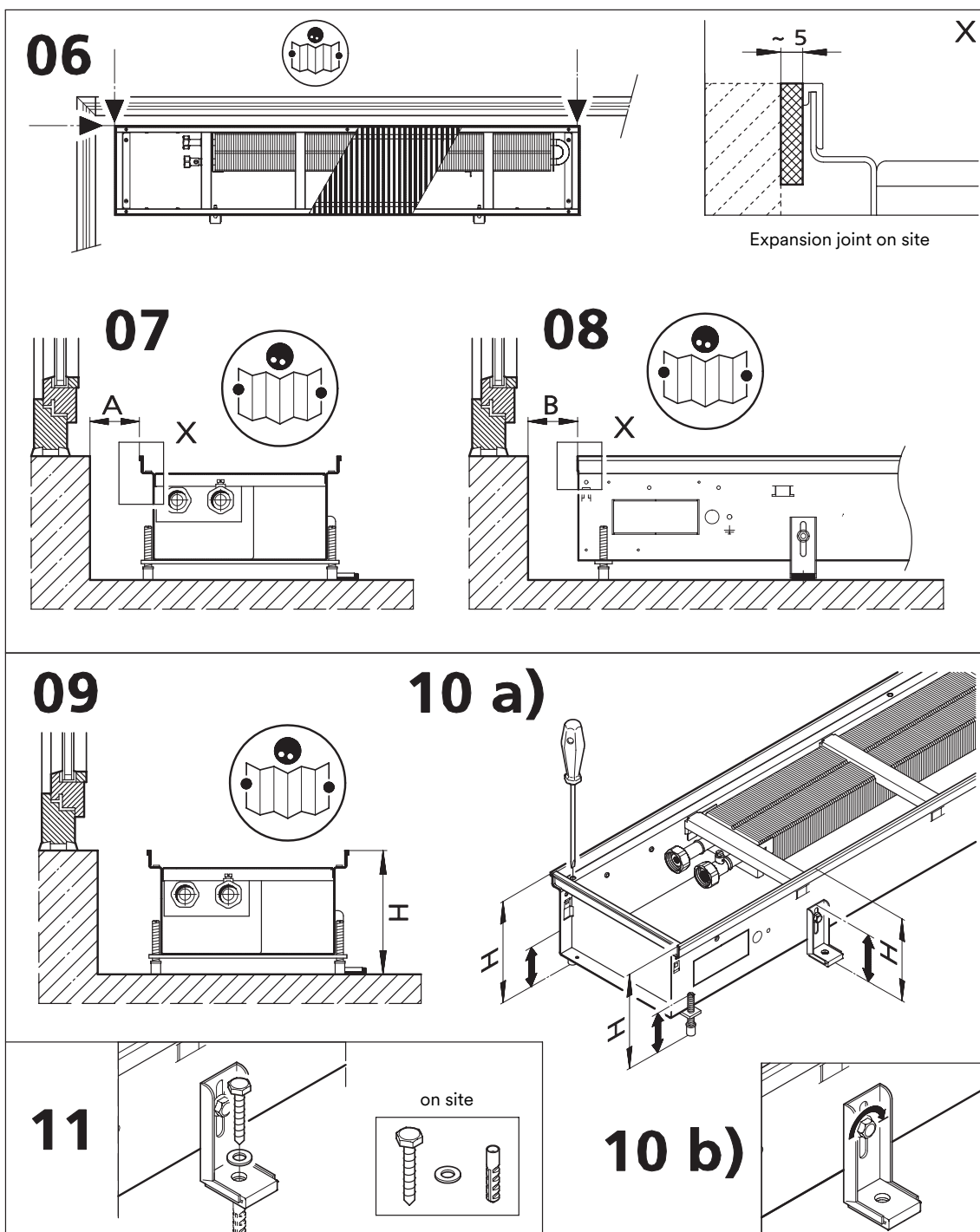
Horizontal installation of units!

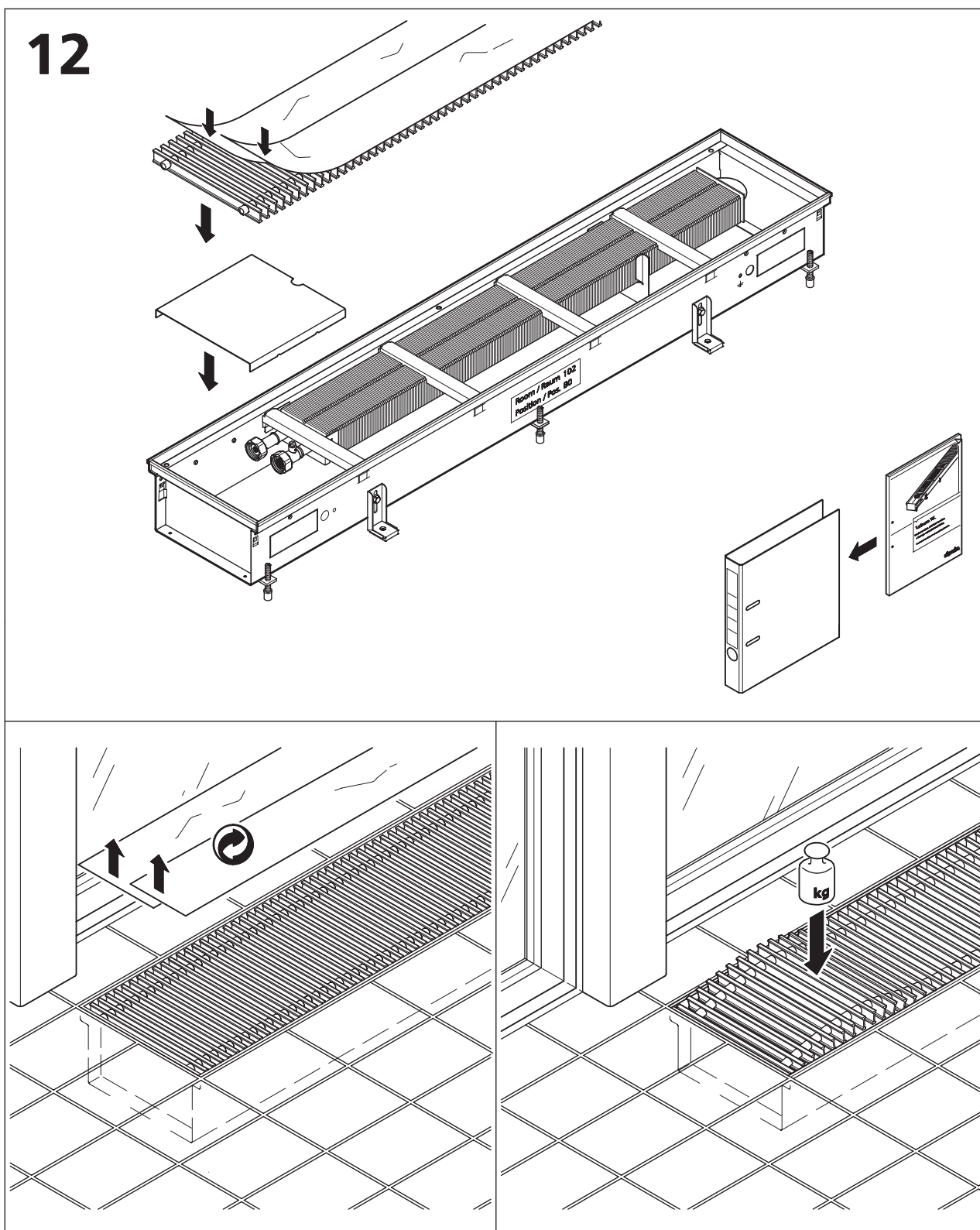
When installing the units, ensure that they are completely horizontal to ensure proper operation.

6.2.1 Installation steps









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:

- ▶ Water has been correctly connected.
- ▶ 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.

6.3 Installation

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.

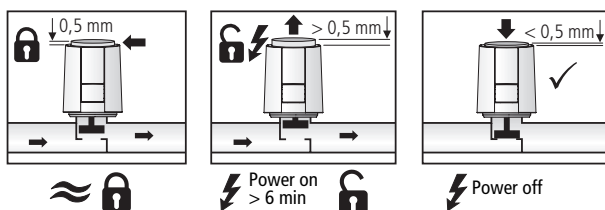


Fig. 1: "First Open" function

Valve and return shut-off valve connection

- ▶ Using a suitable sealant (e.g. NEO Fermit), screw the thermostatic valve and the return shut-off valve to the convactor's Eurocone valve connections.
- ▶ Fit the flow and return pipes. Use the punched pipe openings on the room side for the water-side connection.
- ▶ Perform a pressure test.

Flushing the system

The system needs to be flushed during commissioning in accordance with DIN EN 14336. System components, such as units and valves, which could disrupt the flushing process or become blocked or damaged during flushing, need to be clearly identified and replaced or bypassed by a temporary connection before the process can be continued.

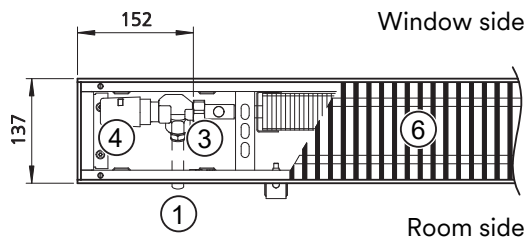
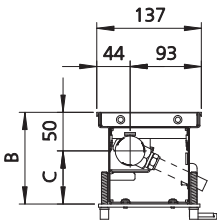
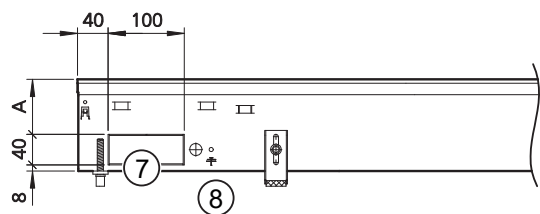
Katherm NK

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6.3.1 Connection to the pipe network

Katherm 137 (only reciprocal connection)

Connection side left

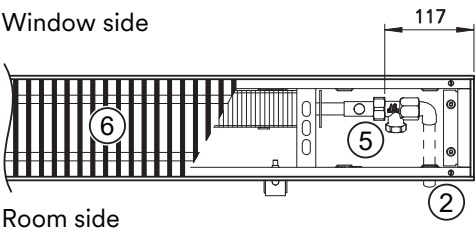
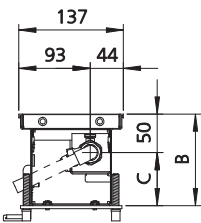
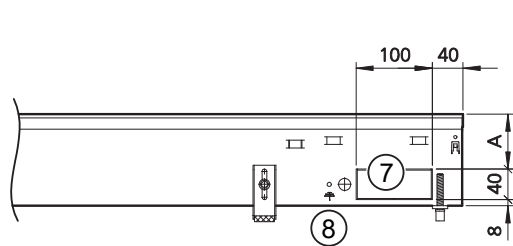


Connection alternating, connection side left

Katherm NK 137	A	B	C
Trench height 92 mm	44	92	42
Trench height 120 mm	72	120	70

All dimensions in mm

Connection side right

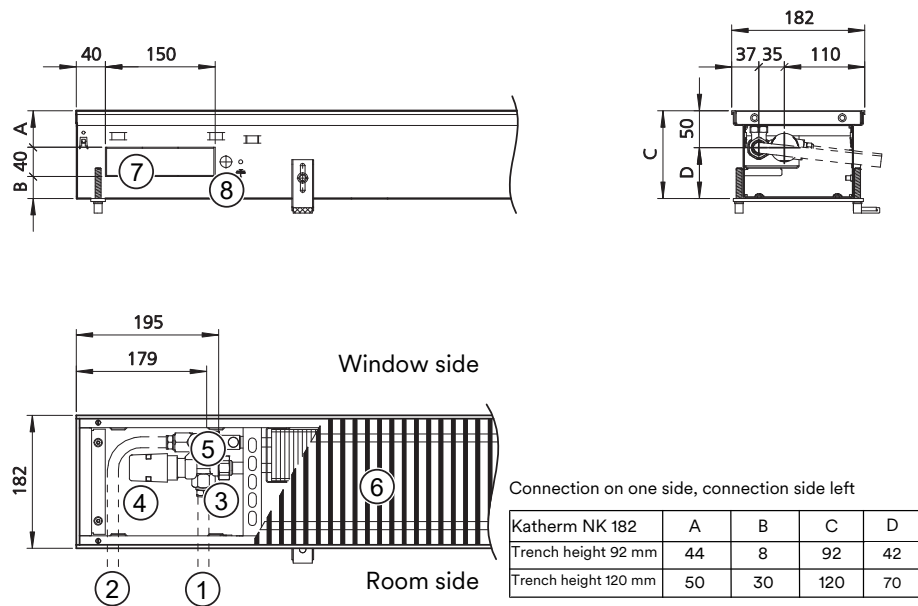


Connection alternating, connection side right

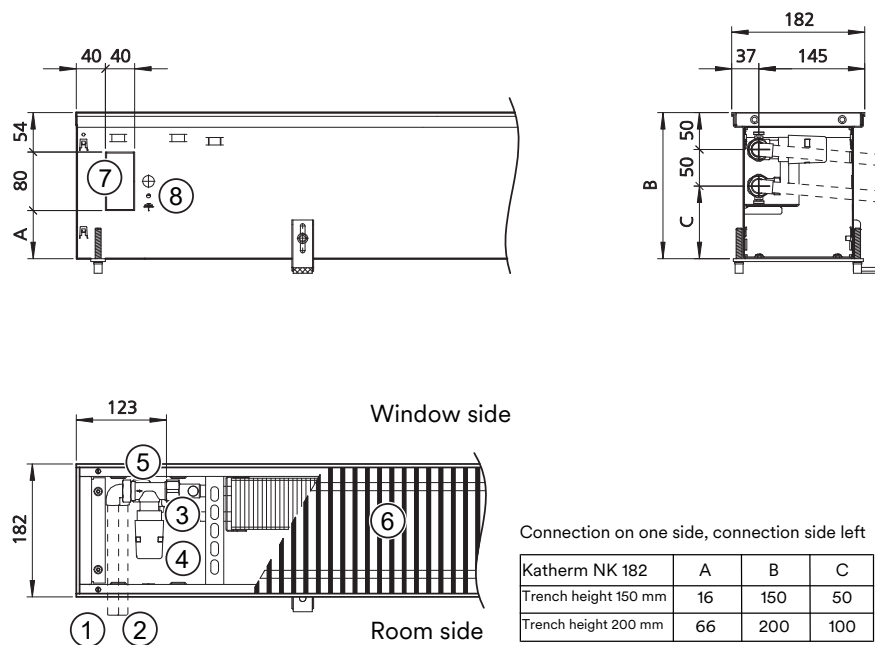
Katherm NK 137	A	B	C
Trench height 92 mm	44	92	42
Trench height 120 mm	72	120	70

1	Supply	2	Return
3	Axial valve body, type 194000346911 (presetable)	4	Thermoelectric actuator, type 194000146905
5	Shut-off return fitting, straight, type 194000145952	6	Example with roll-up grille
7	Pipe feedthroughs, punched	8	Cable entries

Katherm NK 182, one-sided connection



All dimensions in mm

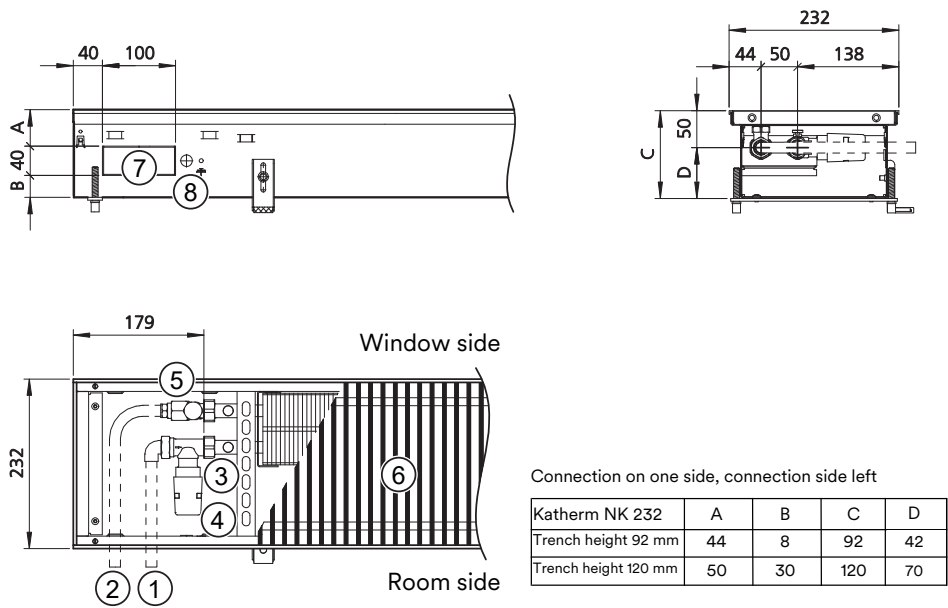


1	Supply	2	Return
3	Trench height 92/120: Axial valve body, type 194000346911 (presettable)	3	Trench height 150/200: Valve body straight, type 194000346909 (presettable)
4	Thermoelectric actuator, type 194000146905	5	Shut-off return fitting, straight, type 194000145952
6	Example with roll-up grille	7	Pipe feedthroughs, punched
8	Cable entries		

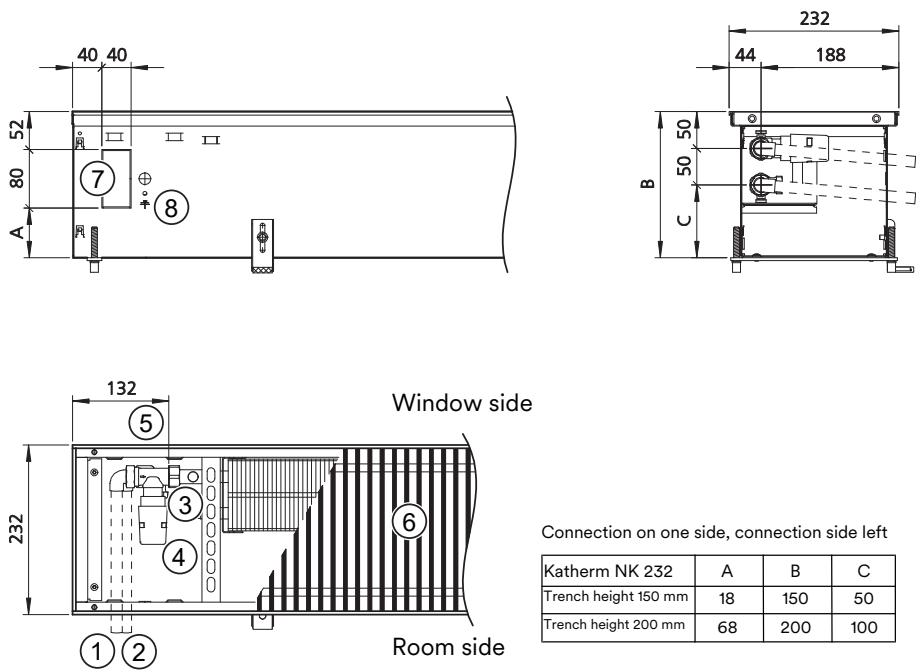
Katherm NK

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Katherm NK 232, one-sided connection

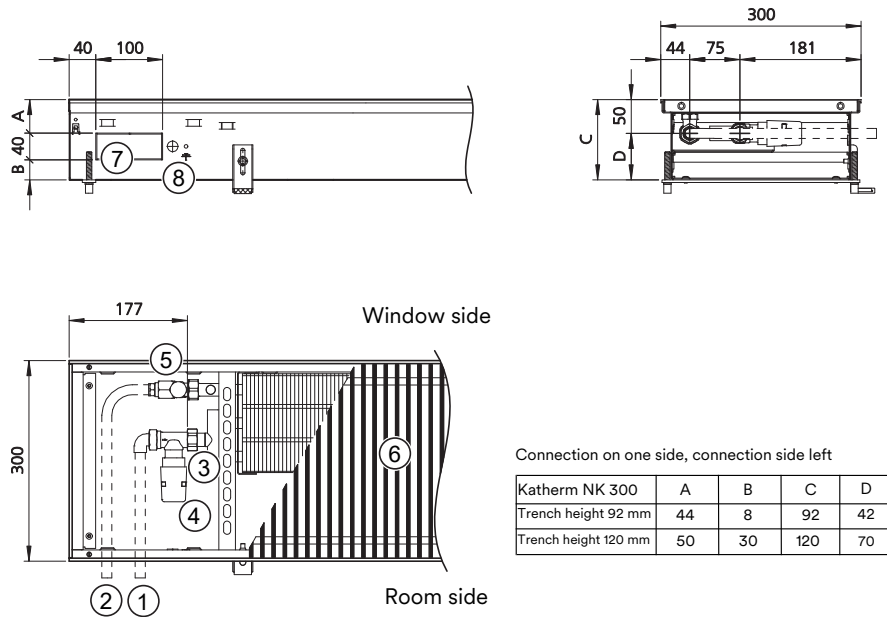


All dimensions in mm

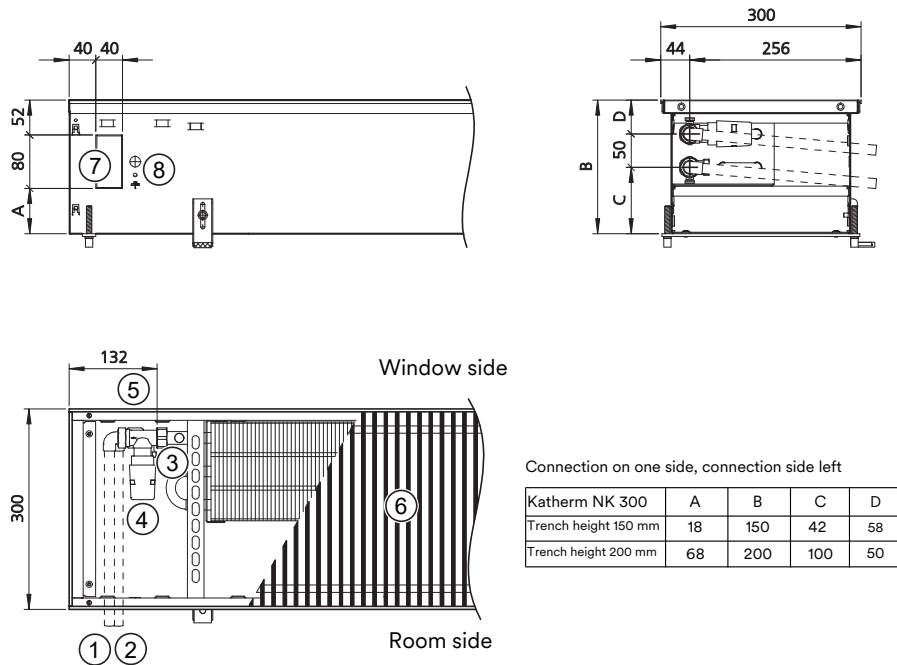


1	Supply	2	Return
3	Trench height 92/120: Axial valve body, type 194000346909 (presettable)	3	Trench height 150/200: Valve body straight, type 194000346909 (presettable)
4	Thermoelectric actuator, type 194000146905	5	Shut-off return fitting, straight, type 194000145952
6	Example with roll-up grille	7	Pipe feedthroughs, punched
8	Cable entries		

Katherm NK 300, one-sided connection



All dimensions in mm

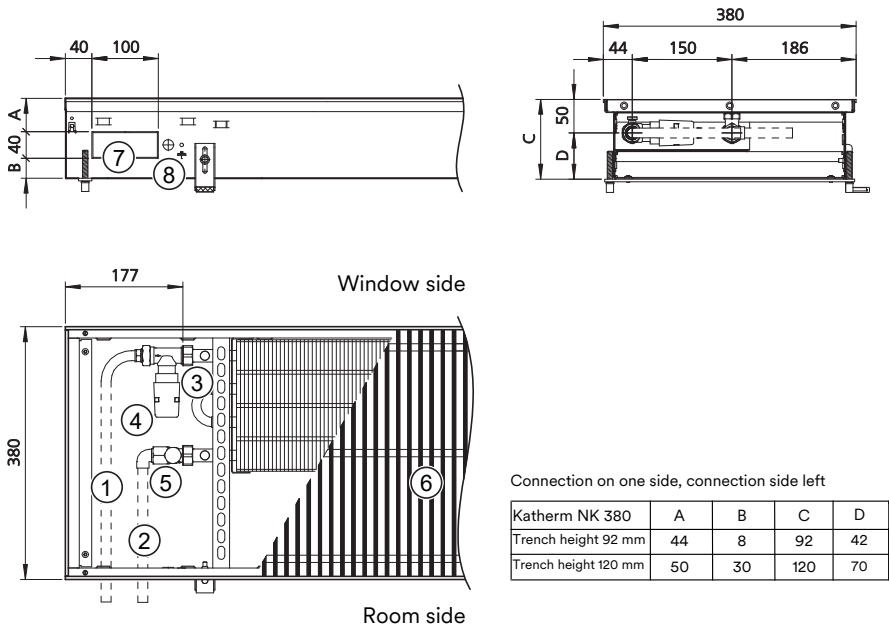


1	Supply	2	Return
3	Trench height 92/120: Axial valve body, type 194000346909 (presettable)	3	Trench height 150/200: Valve body straight, type 194000346909 (presettable)
4	Thermoelectric actuator, type 194000146905	5	Shut-off return fitting, straight, type 194000145952
6	Example with roll-up grille	7	Pipe feedthroughs, punched
8	Cable entries		

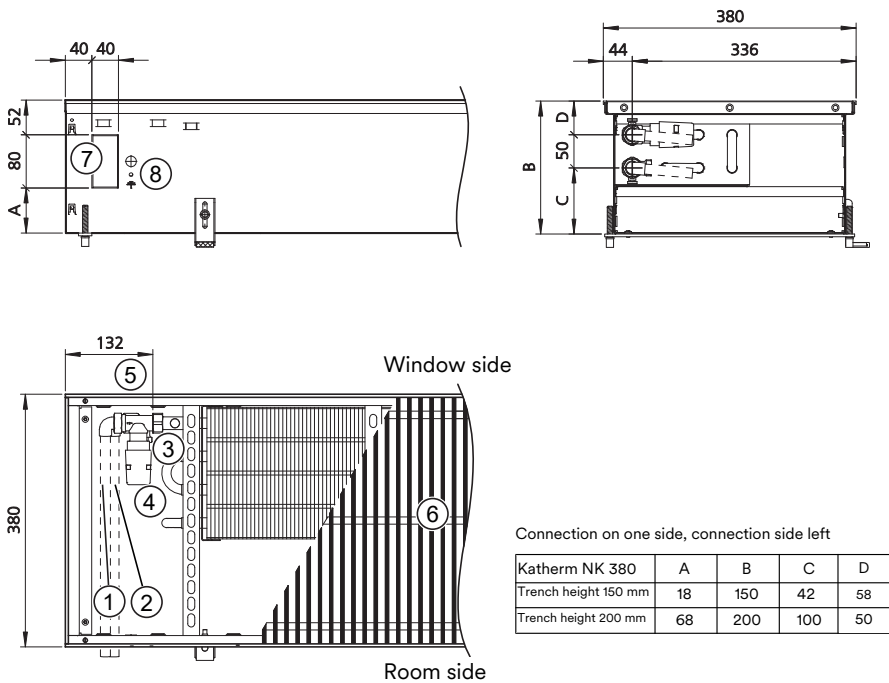
Katherm NK

Assembly, installation and operating instructions

Katherm NK 380, one-sided connection



All dimensions in mm



1	Supply	2	Return
3	Trench height 92/120: Axial valve body, type 194000346909 (presettable)	3	Trench height 150/200: Valve body straight, type 194000346909 (presettable)
4	Thermoelectric actuator, type 194000146905	5	Shut-off return fitting, straight, type 194000145952
6	Example with roll-up grille	7	Pipe feedthroughs, punched
8	Cable entries		

Type overview of valve bodies, presettable / lockable return fittings

Trench height [mm]	Supply connection Eurocone	Return connection Eurocone
NK 137		
92	Valve, axial type Type 194000346911	Shut-off return fitting, straight type 194000145952
120		
NK 182		
92	Valve axial form type 194000346911	Shut-off return fitting, straight type Type 194000145952
120		
150	Straight valve, type 194000346909	
200		
NK 232, NK 300, NK 380		
92	Straight valve 194000346909	Shut-off return fitting, straight type 194000145952
120		
150		
200		

Height adjustment

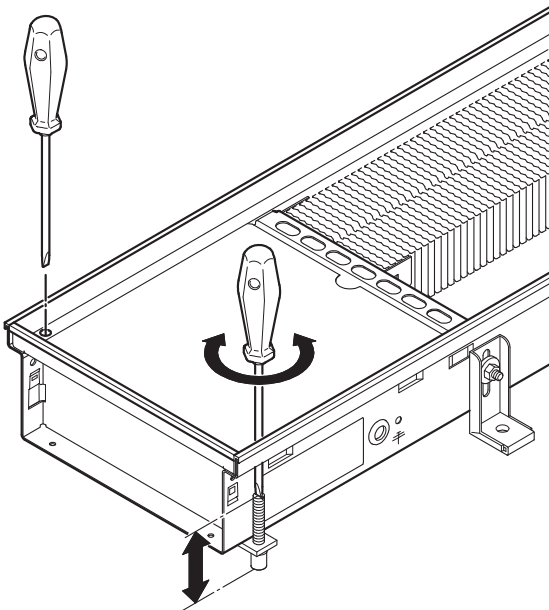


Fig. 2: Height adjustment with screwdriver

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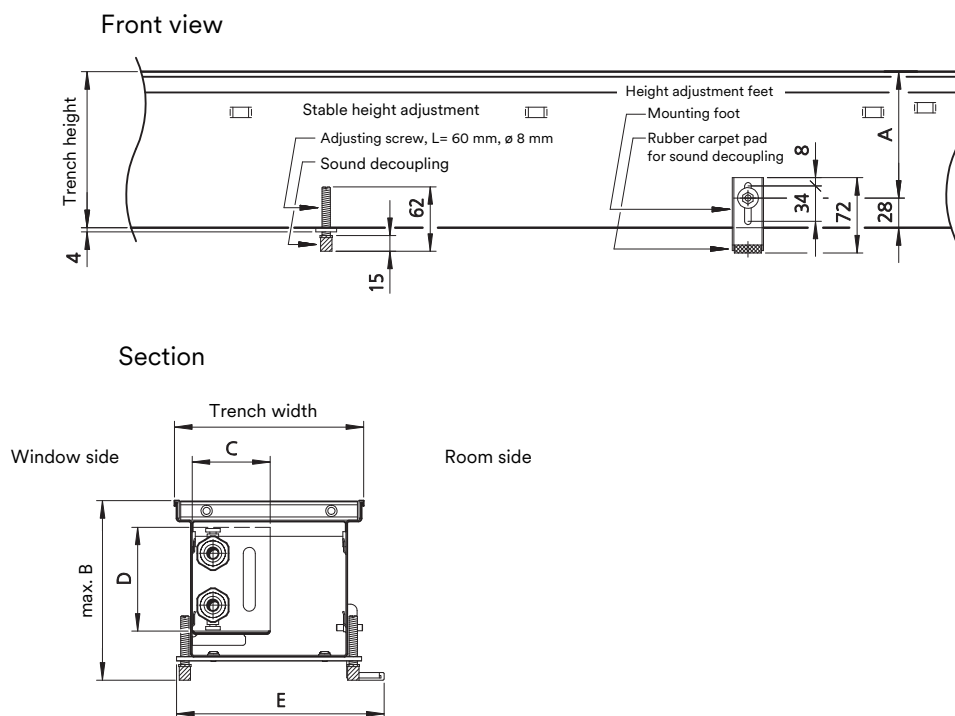
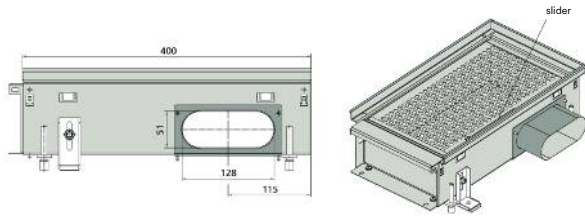


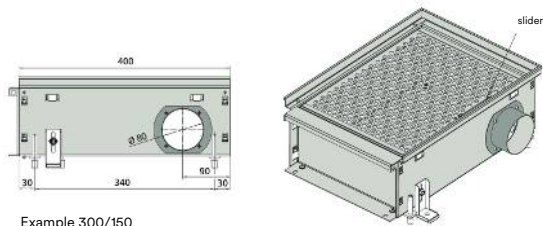
Fig. 3: Height adjustment Dimensions

Trench width/ trench height [mm]	A [mm]	Max. B [mm]	C [mm]	D [mm]	E [mm]
132/92	64	126	50	50	155
137/120	92	154	50	50	155
182/92	64	126	70	50	200
182 / 120	92	154	70	50	200
182 / 150	122	184	70	100	200
182 / 200	172	234	70	100	200
232 / 92	64	126	100	50	250
232 / 120	92	154	100	50	250
232 / 150	122	184	100	100	250
232 / 200	172	234	100	100	250
300 / 92	64	126	150	50	320
300 / 120	92	154	150	50	318
300 / 150	122	184	150	100	318
300 / 200	172	234	150	100	318
380 / 92	64	126	200	50	398
380 / 120	92	154	200	50	398
380 / 150	122	184	200	100	398
380 / 200	172	234	200	100	398

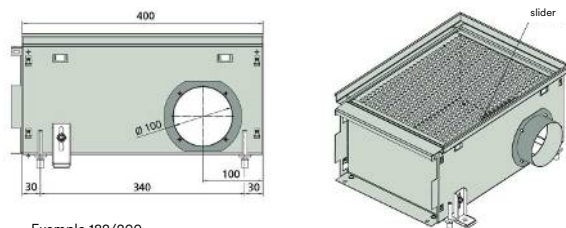
6.3.2 Supply air modules



Example 232/120



Example 300/150



Example 182/200

Setting the slider positions

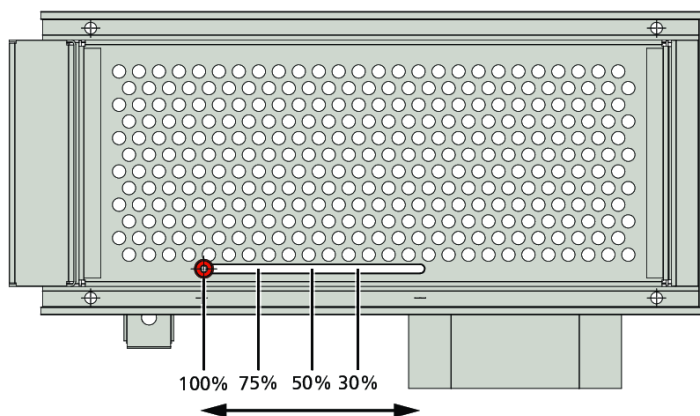
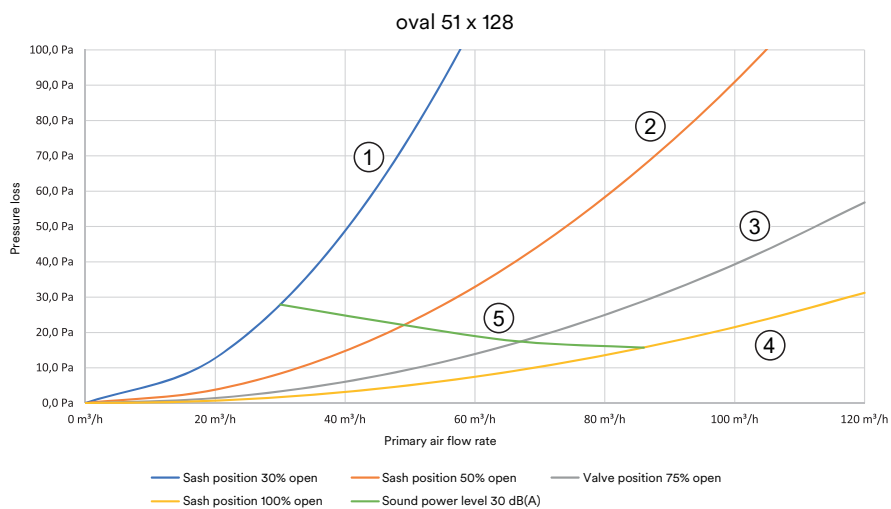
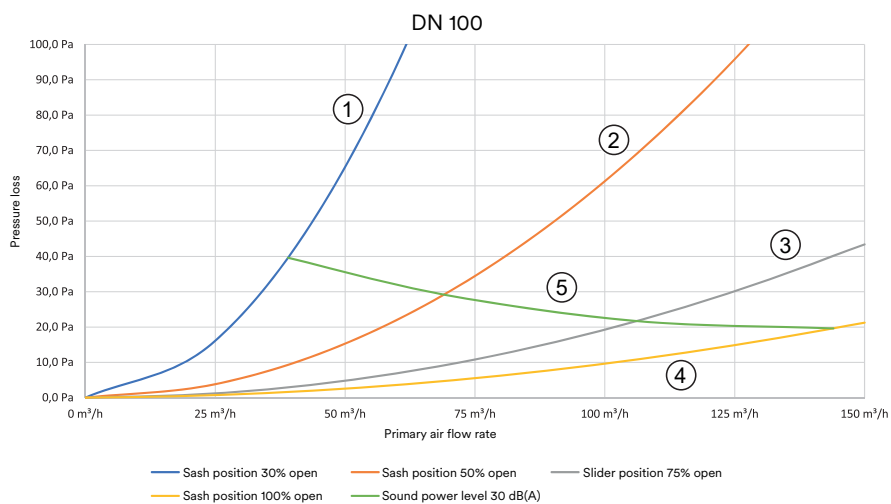
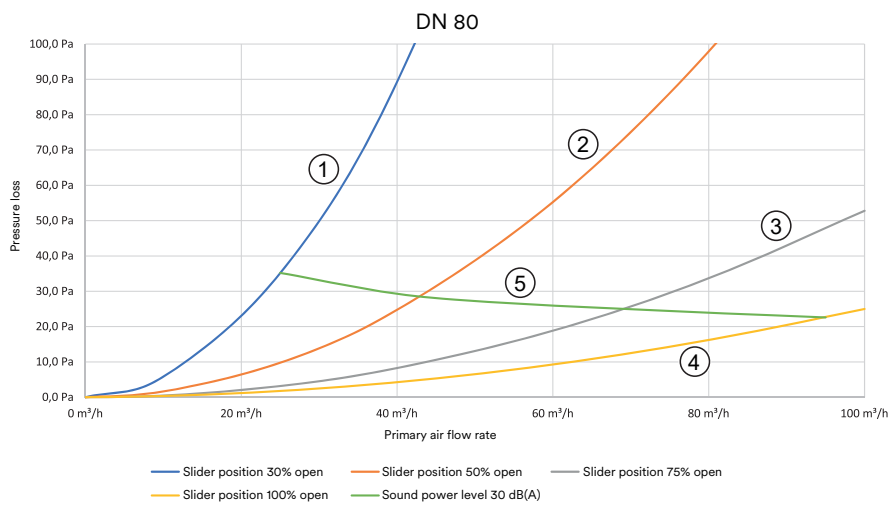


Fig. 4: Slider adjustment

The supply air module is height-adjusted using threaded rods and connected to the substrate using the mounting bracket. To set the desired volumetric flow on the supply air module, the slider can be moved to different positions. Four different slider positions (100%, 75%, 50% and 30% open) are shown in the drawing. These are also shown in the design diagrams, in which the desired pressure losses, sound levels and air volume flows can be read. Intermediate values can be interpolated.

Design diagrams



1	Slider position 30% open	2	Valve position 50% open
3	Slider position 75% open	4	Slider position 100% open
5	Sound power level 30 dB(A)		

7 Electrical connection

7.1 Maximum electrical rating values

Mains voltage [VAC]	Mains frequency [Hz]	Rated power [W]	Inrush current [mA]	IP class
230	50/60	1	550	IP54

Tab. 4: Technical data actuator, type 146905

Information on cable laying:

The following information on cable types and cable laying must be observed in compliance with VDE 0100.

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!

- Cable length between speed controller and the last device: maximum 100 m, from 20 m connect shield on one side.

- Cable length between room thermostat and temperature sensor or switch contact: maximum 50 m.

- Cable length between speed controller and temperature sensor or switching contact: maximum 100 m.

	Bearbeiter:	Projekt:	General Information	Blatt-Nr.:
	Erstelldatum: 16.04.2024	Projekt-Nr.:		

Main supply
230V

Fuse protection on site.
Observe the „Electrical data“
table.

1

2

3

4

L

N

PE

Katherm NK
Device no. 1





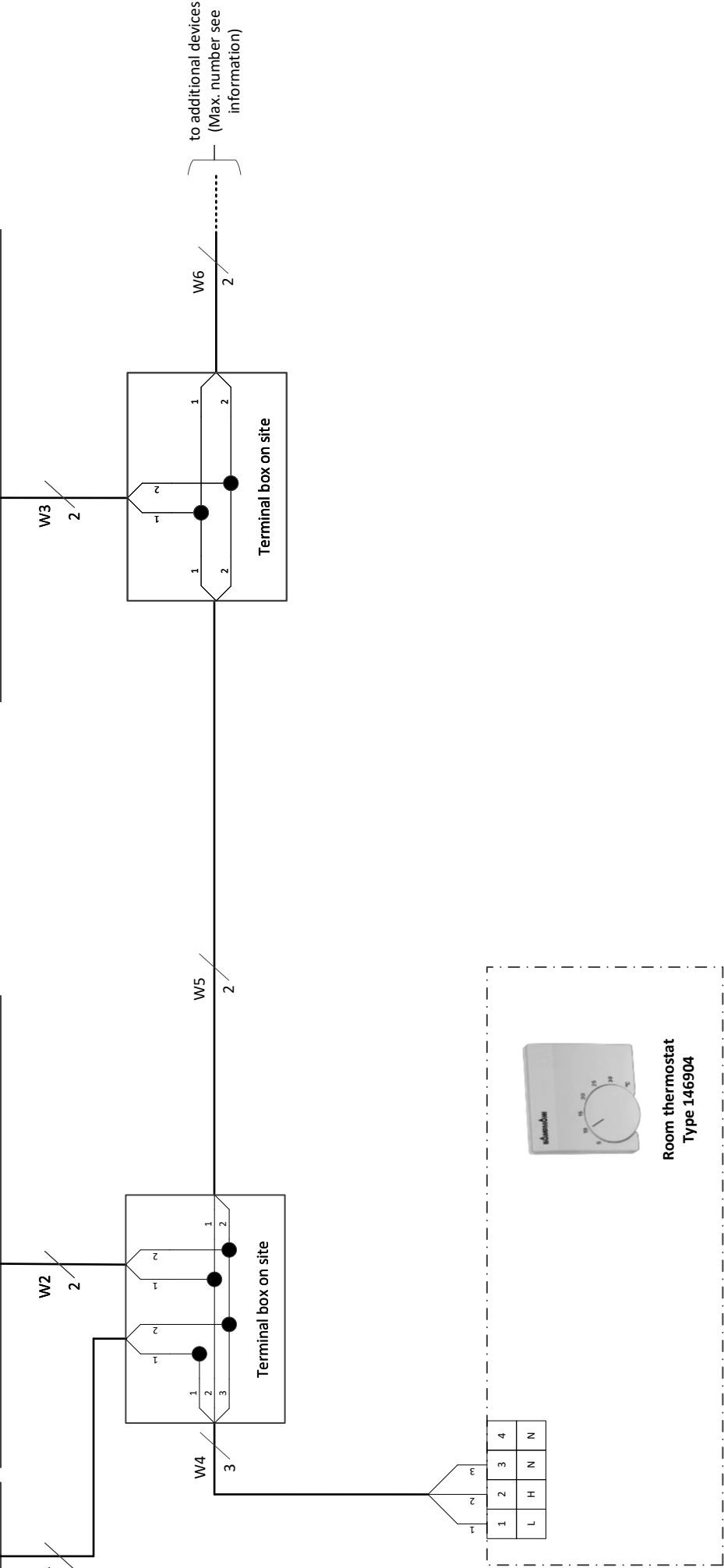
Thermoelectric
shut-off valve
230 V
normally closed

Katherm NK
Device no. 2





Thermoelectric
shut-off valve
230 V
normally closed



Main supply
230V
Fuse protection on site.
Observe the „Electrical data“
table.

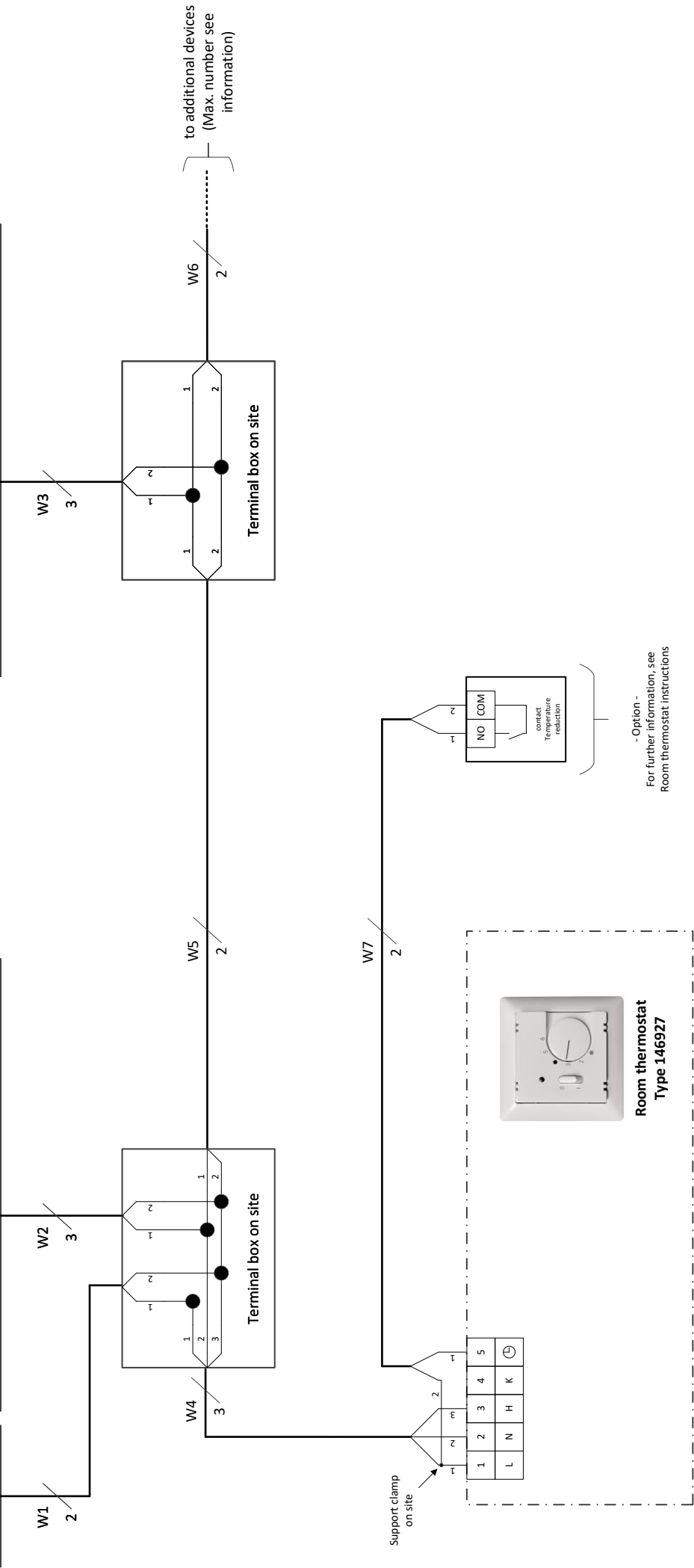
Main supply 230V			
L	N	PE	

Katherm NK
Device no. 1

Thermoelectric
shut-off valve
230 V
normally closed

Katherm NK
Device no. 2

Thermoelectric
shut-off valve
230 V
normally closed





Katherm NK
Device no. 1



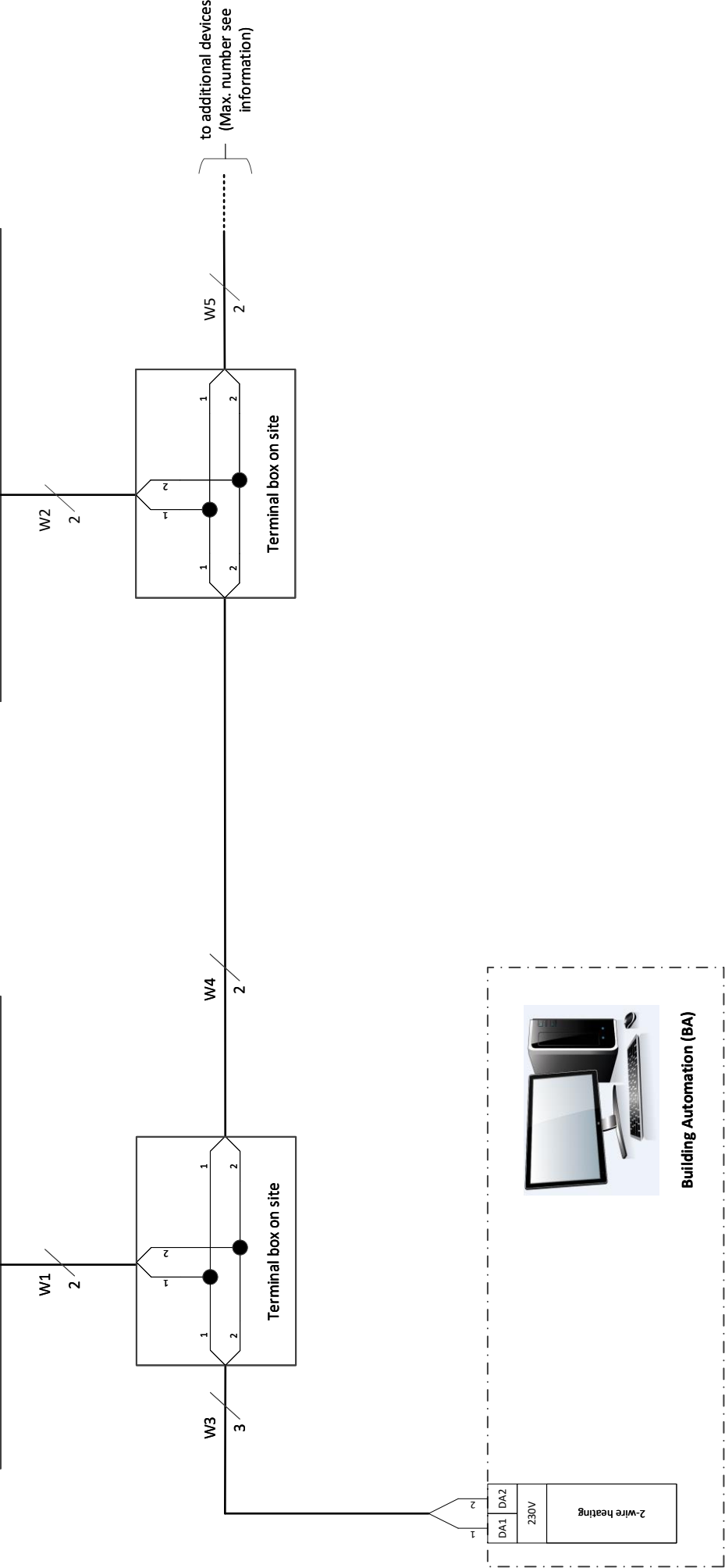
Thermoelectric
shut-off valve
230 V
normally closed



Katherm NK
Device no. 2



Thermoelectric
shut-off valve
230 V
normally closed



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.
- ▶ Is the earth wire connected and wired throughout?
- ▶ Check all external electrical connections and terminal connections are fixed in place and tighten if necessary.

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" [▶ 37].

9 Operation

9.1 Operation of electromechanical control




 <p>A white, square room thermostat with a circular dial. The dial has numbers 5, 10, 15, 20, 25, and 30, with a degree symbol at the end. The needle points to approximately 12. The brand name 'KAMPDMANN' is visible at the top.</p>	<p>Room thermostat, type 194000146904</p> <ul style="list-style-type: none"> ▶ 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
 <p>A white, square room thermostat with a circular dial and a switch. The dial has numbers 1 through 6. The switch is on the left, with a red indicator light above it. The brand name 'KAMPDMANN' is visible at the top.</p>	<p>Room thermostat, type 194000146927</p> <ul style="list-style-type: none"> ▶ 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
 <p>A white, square clock thermostat with a large LCD display. The display shows '21.9 °C' and '12:21'. Below the display are buttons for 'Menu', '+', and 'OK'. The brand name 'KAMPDMANN' is visible at the top.</p>	<p>Clock thermostat, type 194000146933</p> <ul style="list-style-type: none"> ▶ 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. 8: 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.

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.
Humid cooling: every six months Dry cooling: annually	Check and clean appliance components (heat exchanger, condensate tray, condensate pump, condensate drain, float switch).
every six months	Check water-side connections, valves and screw connections for dirt, leaks and function.
annually	Check electrical connections.
annually	Clean air-conducting components/surfaces.

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 [► 40] provides information on who is authorised to rectify and remedy faults.

11.1 Fault table

Fault	Possible cause	Remedy
System water leakage	Heat exchanger defect.	Replace heat exchanger if necessary.
	Hydraulic connection not correct.	Check flow and return, retighten if necessary.
No function.	No power supply	Check the voltage.
		Replace fuse.

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. Switch off the unit.
3. Acknowledge the fault on the controller, if necessary.

12 Disposal

Electrical and electronic appliances

Waste electrical and electronic equipment must be disposed of separately from unsorted municipal waste. This is indicated by the crossed-out wheeled garbage can symbol. If the old appliance contains batteries or accumulators, these must generally be removed from the old appliance before it is handed in at a collection point.

As a manufacturer of electrical and electronic appliances, we offer the option of returning old appliances. Owners of old appliances from private households can return them free of charge to the collection points of the public waste disposal authorities or to the collection points set up by manufacturers or distributors.

Old appliances may contain sensitive personal data. The end user is responsible for deleting the data on the old appliances to be disposed of.

Katherm NK

Assembly, installation and operating instructions

13 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.:

Type, Model, Articles No.:

Type, Modèle, N° d'article:

Typ, Model, Nr artykułu:

Typ, Model, Číslo výrobku:

Katherm QL 141***

Katherm NK 145***

Katherm ID 241***

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

DIN EN 442-1 ; -2

**Gebläseunterstützte Heizkörper, Konvektoren und
Unterflurkonvektoren
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

Místo a datum vystavení

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

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<https://www.kampmanngroup.com/hvac/products/trench-technology/katherm-nk>

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