

# Katherm QK nano

## ► 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.

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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

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 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	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

Operating voltage	230 V/ 50/60 Hz
Power/current consumption	On the typeplate

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 <sub>2</sub> )	mg/l	< 0.1
Hardness	°dH	4-8.5
Sulphur ions		not measurable
Sodium ions (Na <sup>+</sup> )	mg/l	< 100
Iron ions (Fe <sup>2+</sup> )	mg/l	< 0.1
Manganese ions (Mn <sup>2+</sup> )	mg/l	< 0.05
Ammonia ions (NH <sub>4</sub> <sup>+</sup> )	mg/l	< 0.1
Chlorine ions (Cl)	mg/l	< 100
CO <sub>2</sub>		< 50
Sulfate ions (SO <sub>4</sub> <sup>2-</sup> )	mg/l	< 50
Nitrite ions (NO <sub>2</sub> <sup>-</sup> )	mg/l	< 50
Nitrate ions (NO <sub>3</sub> <sup>-</sup> )	mg/l	< 50

Tab. 3: 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.



## IMPORTANT NOTE!

### **Energy losses due to misuse!**

Operating the unit with open windows (or other room openings) can result in significant energy losses.

- ▶ Heating and cooling modes (particularly when operating different units) need to be coordinated with each other.

## 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.

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## 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

Unit	Katherm QK nano	
Control configuration	KaControl, 230 V electromechanical	24 V electromechanical
Trench width [mm]	165	165
Trench height [mm]	70	70
Trench length [mm]	1100 - 2700	900 - 2600
Air volume flow [m³/h]	25 - 345	25 - 345
Heat output, 2-pipe <sup>8</sup>	248 - 3524	248 - 3524
Sound pressure level [dB (A)] <sup>4, 6</sup>	<20 - 41	<20 - 41
Sound power level [dB(A)] <sup>6</sup>	<28 - 49	<28 - 49
Power consumption [W]	2.0 - 14.0	1.0 - 13.0
Power consumption [mA]	59 - 561	17 - 477
Water content [l]	0.21 - 0.85	0.21 - 0.85
Weight [kg]	8.2 - 19.1	6.7 - 18.1

Tab. 4: Technical data for Katherm QK nano

<sup>8</sup> at LPHW 75 / 65 °C,  $t_{L1}$  = 20°C, with fan-assisted convection

<sup>4</sup> The sound pressure level was calculated with an assumed room insulation of 8 dB(A). This corresponds to a distance of 2 m, a room volume of 100 m³ and a reverberation time of 0.5 s (in accordance with VDI 2081).

<sup>6</sup> 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

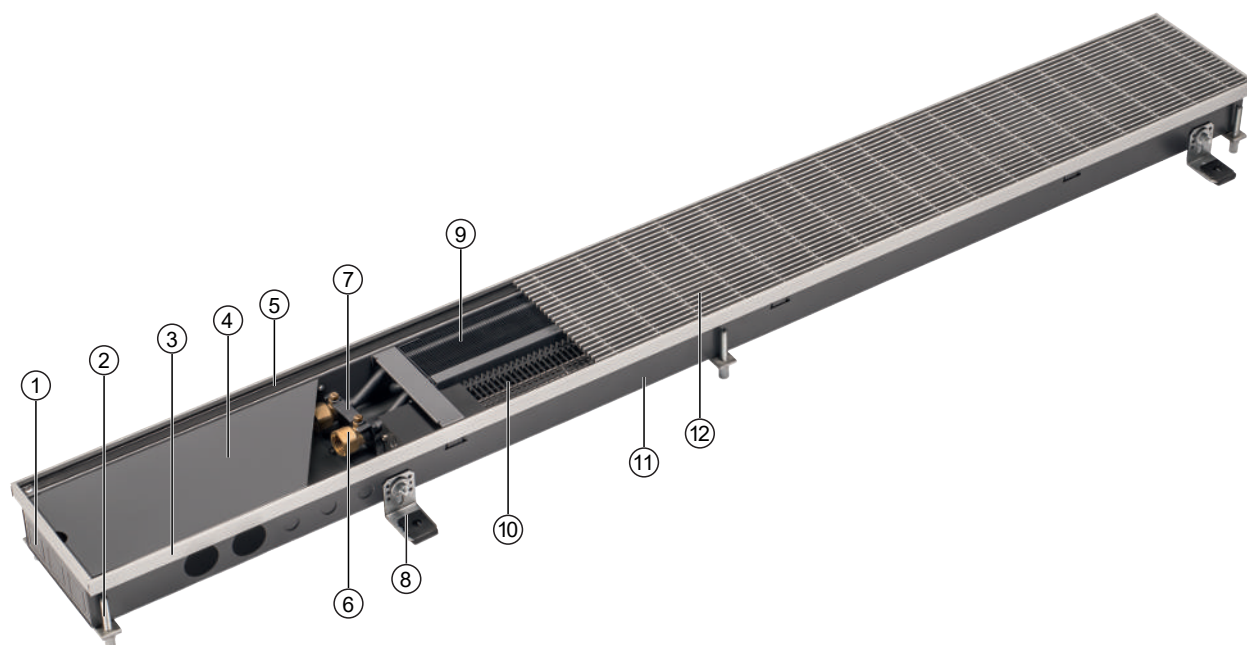


Fig. 1: Katherm QK nano at a glance

1	Easy to connect	2	Load-bearing height adjustment feet
3	Frame (matches grille colour)	4	Cover for connection area
5	Grille seat	6	Connection 1/2" female thread
7	Anti-torsion device	8	Height adjustment feet
9	Coil	10	EC tangential fan
11	Floor trench with cross members	12	Linear grille

### 5.2 Brief description

Katherm QK nano are decentralised units for the heating of room air, for use in hotels, offices and business premises, among others. Secondary air is drawn in by the fan and passed through the copper/aluminium heat exchanger. 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.
- ▶ 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 [► 22]).
- ▶ 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.

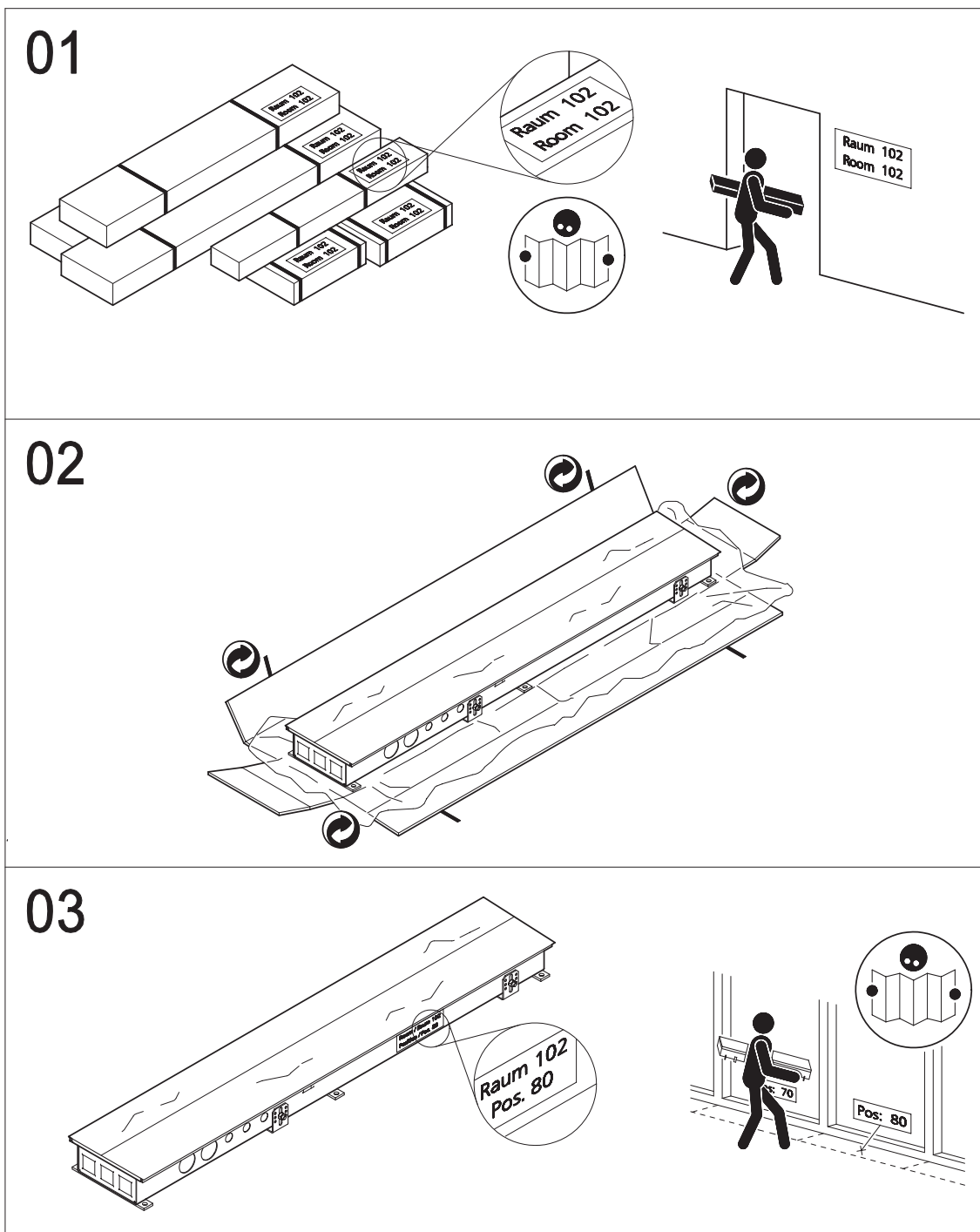


#### **IMPORTANT NOTE!**

##### **Horizontal installation of units!**

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

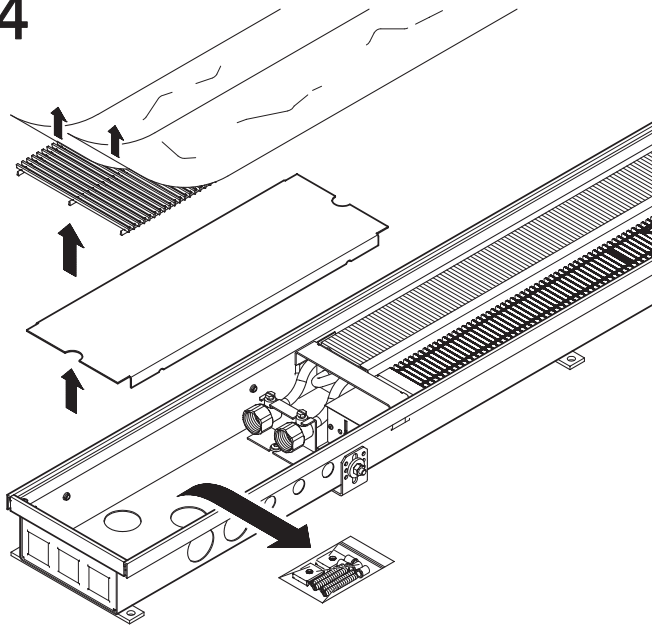
## 6.2.1 Installation steps





# Katherm QK nano



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### 04



overall length			
4 x	800	2 x	
6 x	900 - 1600	2 x	
8 x	1800 - 2300	2 x	
10 x	2600	2 x	

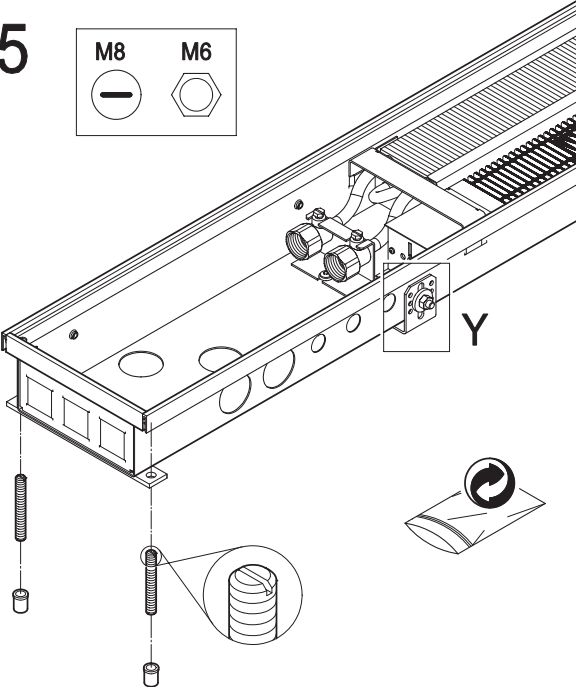
  

4 x	31.5	2 x	
6 x	35.43 - 62.99	2 x	
8 x	70.87 - 90.55	2 x	
10 x	102.36	2 x	

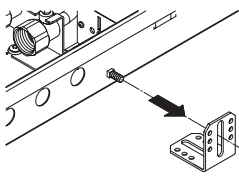
### 05

M8

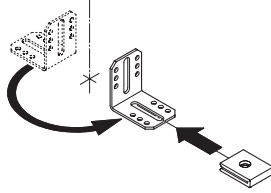
M6



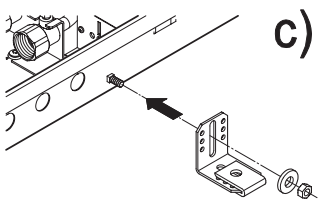
#### Y



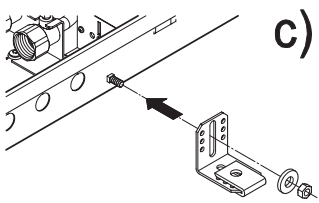
#### a)



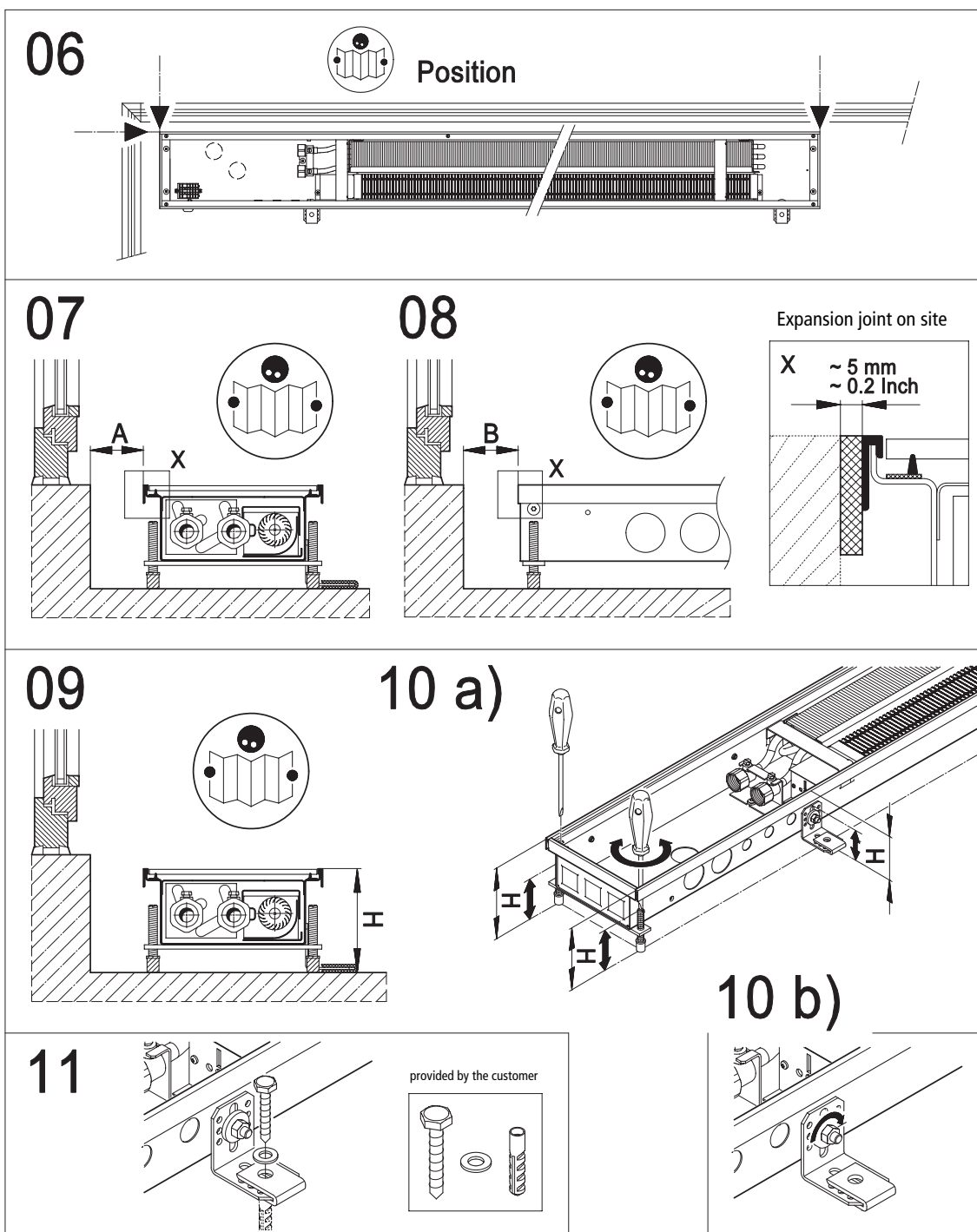
#### b)



#### c)

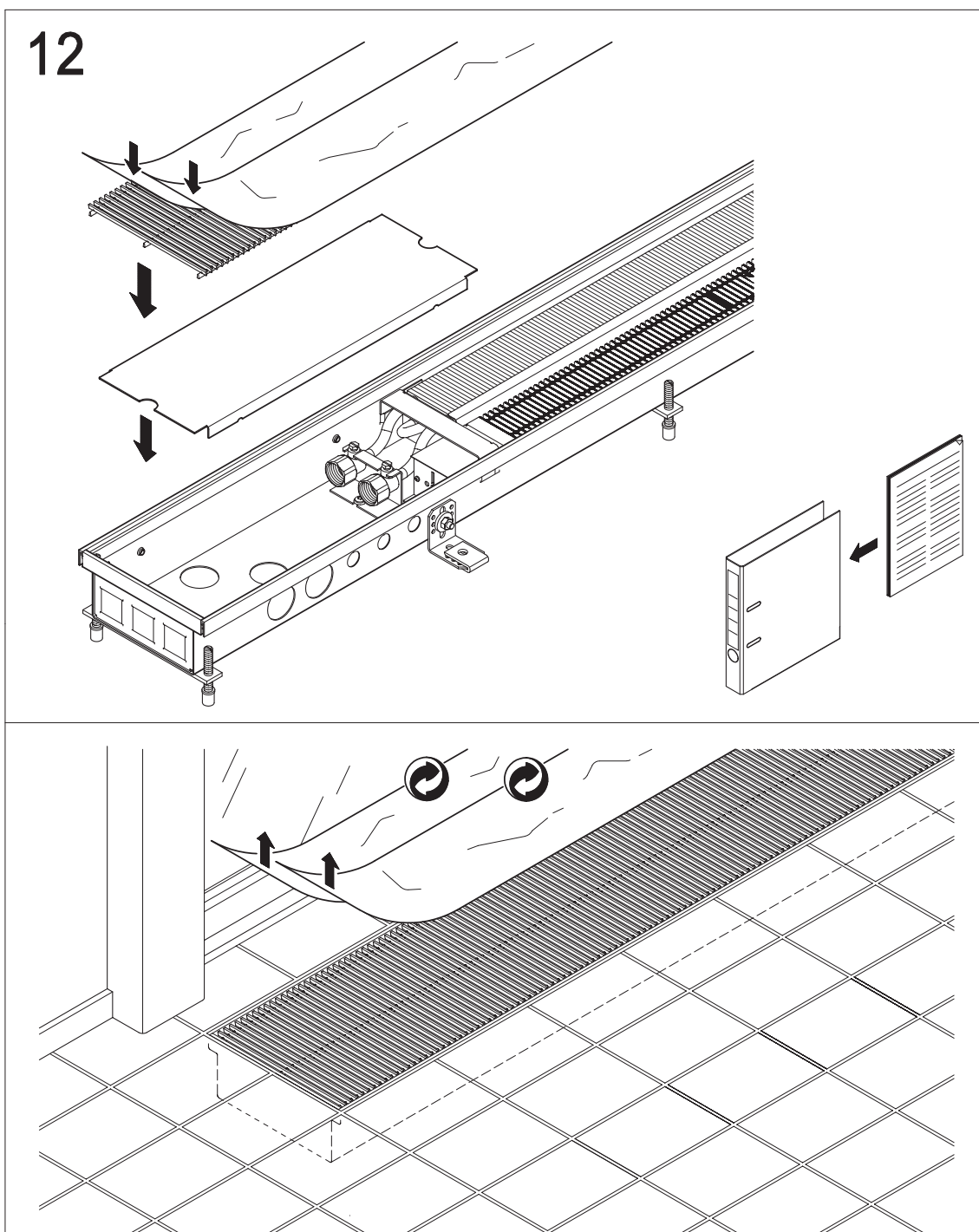






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## 6.2.2 Screed work

The following work needs to have been completed before screeding can begin:

- ▶ Water has been correctly connected.
- ▶ The electrical connections have been correctly wired.
- ▶ The unit is correctly positioned and levelled.
- ▶ There are no sound bridges to the concrete slab, especially in the area of the height adjustment feet.
- ▶ Expansion joints have been provided on site to prevent the unit from being compressed by the floor or screed.
- ▶ All the appropriate cable conduits have been laid.
- ▶ Appropriate material has been used to seal all the openings and punched openings in the unit. They also need to be additionally sealed when using floating screed or other low-viscosity floor coverings!
- ▶ Cover the grille and floor trench with the transparent installation cover to protect the trench from 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.

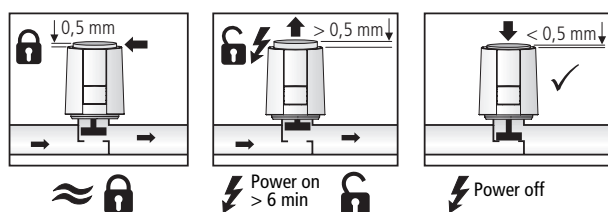


Fig. 2: "First Open" function

### 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

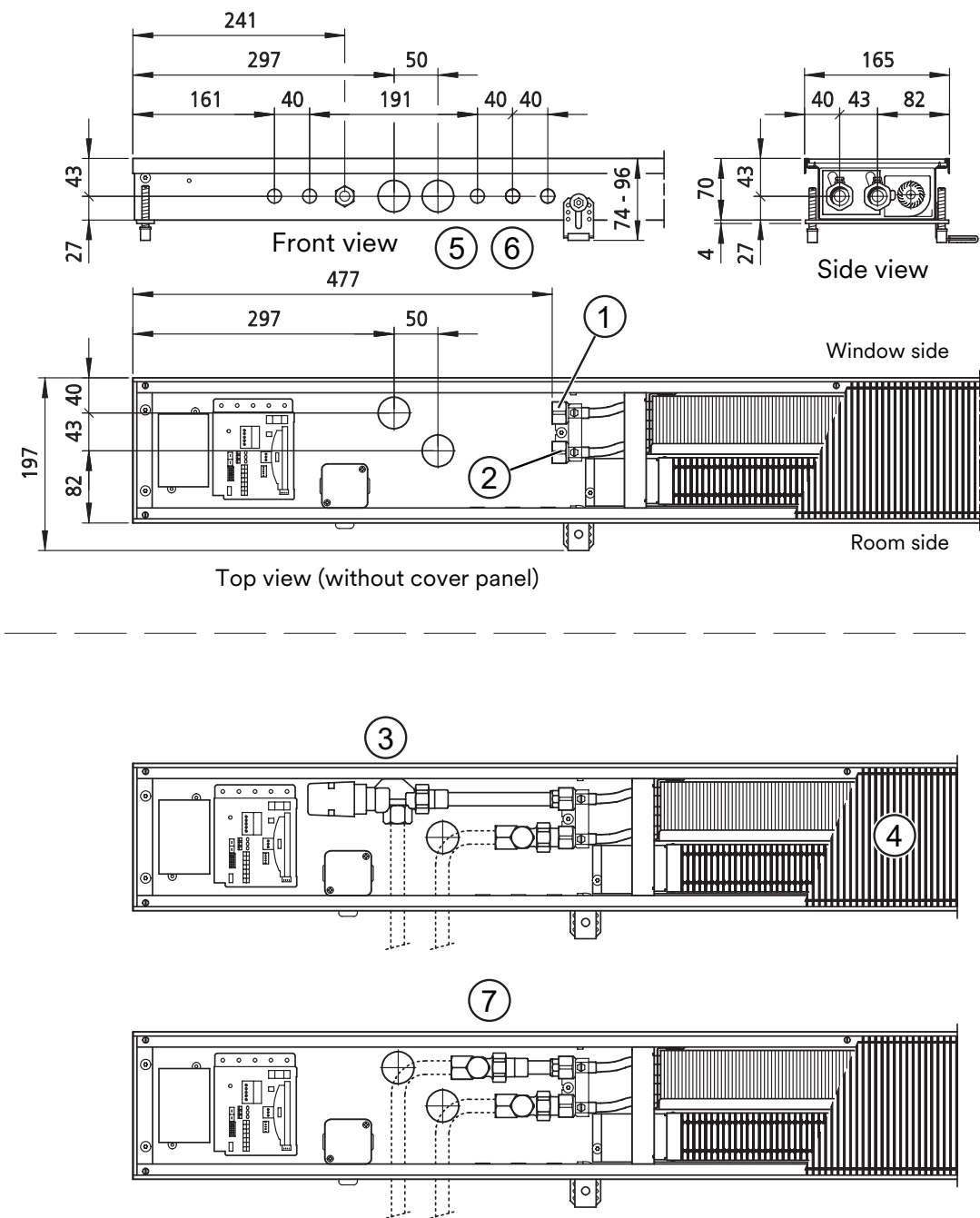
The system needs to be flushed during commissioning in accordance with DIN EN 14336. System components, such as units and valves, which could disrupt the flushing process or become blocked or damaged during flushing, need to be clearly identified and replaced or bypassed by a temporary connection before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

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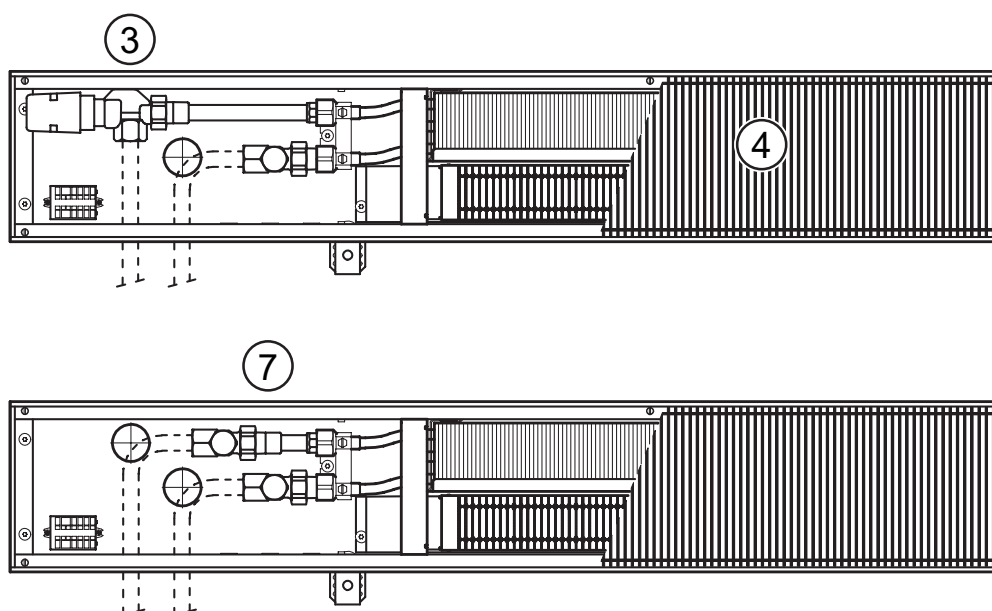
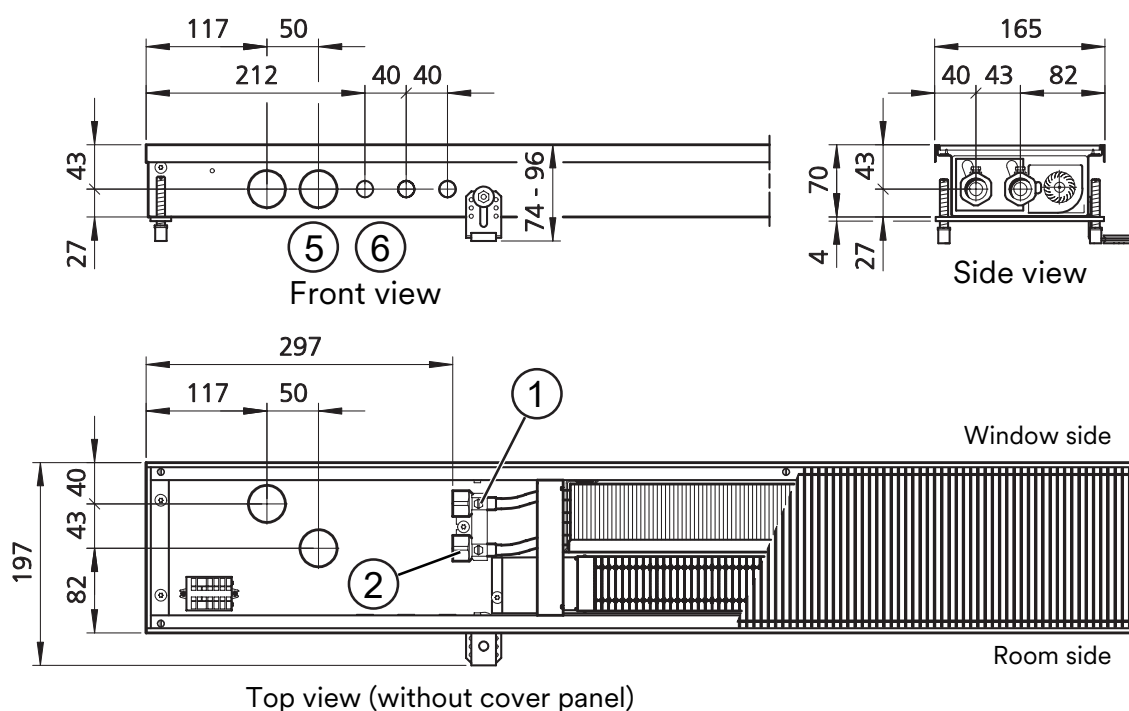
## 6.3.1 Connection to the pipe network

Katherm QK nano, 230 V electromechanical and KaControl control configurations, trench height 70 mm



1	Supply	2	Return
3	Valve kit type 442100, consisting of valve body, axial, 1/2" pre-settable, 24 V actuator, and 1/2" return shut-off valve	4	Unit shown with roll-up grille
5	Pipe openings for water connection, punched	6	Cable entry, stamped
7	Alternatively: Connection kit type 442101, consisting of 2 return shut-off valves, straight, 1/2" and connecting piece		

## Katherm QK nano, 24 V electromechanical control configuration, trench height 70 mm



1	Supply	2	Return
3	Valve kit type 442100, consisting of valve body, axial, 1/2" pre-settable, 24 V actuator, and 1/2" straight return shut-off valve	4	Unit shown with roll-up grille
5	Pipe openings for water connection, punched	6	Cable entry, stamped
7	Alternatively: Connection kit type 442101, consisting of 2 return shut-off valves, straight, 1/2" and connecting piece		

# Katherm QK nano

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## 7 Electrical connection

### 7.1 Maximum electrical rating values

#### Katherm QK nano, 24 V electromechanical version (\*24)

Trench length [mm / inch]	Nominal voltage [V DC]	Mains frequency [Hz]	Nominal power [W]	Nominal current [A]	Leakage current [mA]	Ri analogue input [kΩ]	IP class	Protection class
900	24	-	5	0.21	-	200	IP00	III
1400	24	-	6	0.25	-	200	IP00	III
1800	24	-	8	0.33	-	200	IP00	III
2100	24	-	13	0.54	-	200	IP00	III
2600	24	-	7	0.29	-	100	IP00	III

Tab. 5: Maximum electrical rating values Katherm QK nano

#### Katherm QK nano, 230 V electromechanical version (\*00)

Trench length [mm]	Nominal voltage [V AC]	Mains frequency [Hz]	Nominal power [W]	Nominal current [A]	Leakage current [mA]	Ri analogue input [kΩ]	IP class	Protection class
1100	230	50	8	0.09	-	200	IP00	I
1600	230	50	9	0.09	-	200	IP00	I
2000	230	50	10	0.11	-	200	IP00	I
2300	230	50	12	0.12	-	200	IP00	I
2700	230	50	15	0.14	-	100	IP00	I

Tab. 6: Maximum electrical rating values Katherm QK nano

#### Katherm QK nano, KaControl version (\*C1 )

Trench length [mm / inch]	Nominal voltage [V DC]	Mains frequency [Hz]	Nominal power [W]	Nominal current [A]	Leakage current [mA]	Ri analogue input [kΩ]	IP class	Protection class
1100	230	50	8	0.09	-	20	IP00	I
1600	230	50	9	0.09	-	20	IP00	I
2000	230	50	10	0.11	-	20	IP00	I
2300	230	50	12	0.12	-	20	IP00	I
2700	230	50	15	0.14	-	20	IP00	I

Tab. 7: Maximum electrical rating values Katherm QK nano

7.2 Electromechanical connection, 24 V (\*24)

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.

- The connection terminals on the device are suitable for a maximum wire cross-section of 2.5 mm².

- When using residual current circuit breakers, these must be at least mixed frequency sensitive (type F). For the design of the rated residual current, the specifications from DIN VDE 0100 Parts 400 and 500 must be observed.

- For the design of the on-site mains supply and fuse protection (C16A, max. 10 devices), the electrical data in the table below must be observed.

- 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!

Electromechanical:

- 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.


KaControl:

- Cable length temperature sensor or switching contact: maximum 30m (maximum 100m with minimum wire cross-section of 1.0 mm²).

- Cable length BUS cable room control unit KaController to unit 1: maximum 30 m.

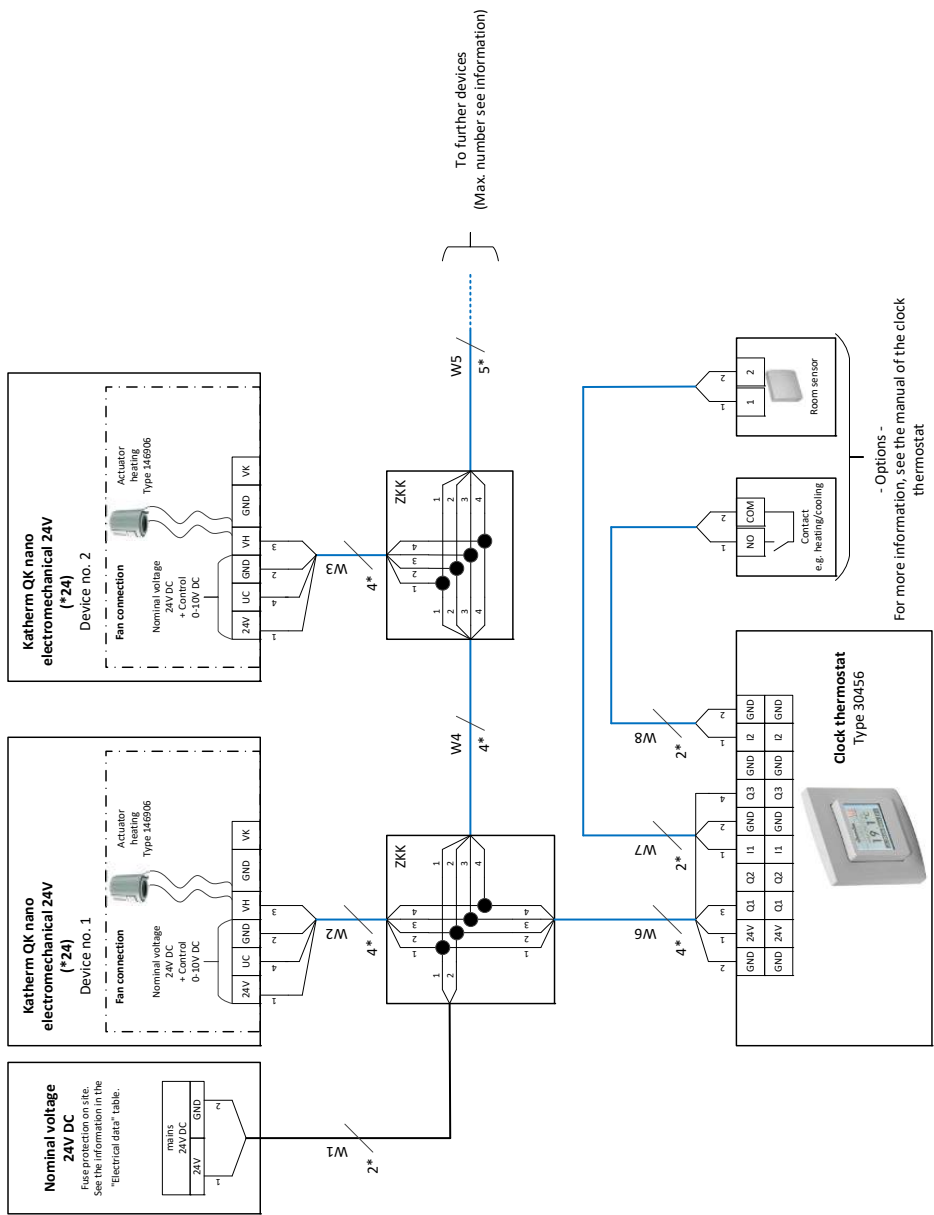
- Maximum number of devices in parallel: 6 pieces. With CANbus card type 3260301 (see accessories) required for each unit: maximum 30 units.

- BUS cable length from device 1 to device 6: maximum 30 m. With CANbus card type 3260301 (see accessories) required for each device: maximum 500 m.

	Bearbeiter:	Projekt:	General Information		Blatt-Nr.: 2 von 5	 Genau mein Klima.
	Erstelldatum: 03.11.2023	Projekt-Nr.:				

# Katherm QK nano

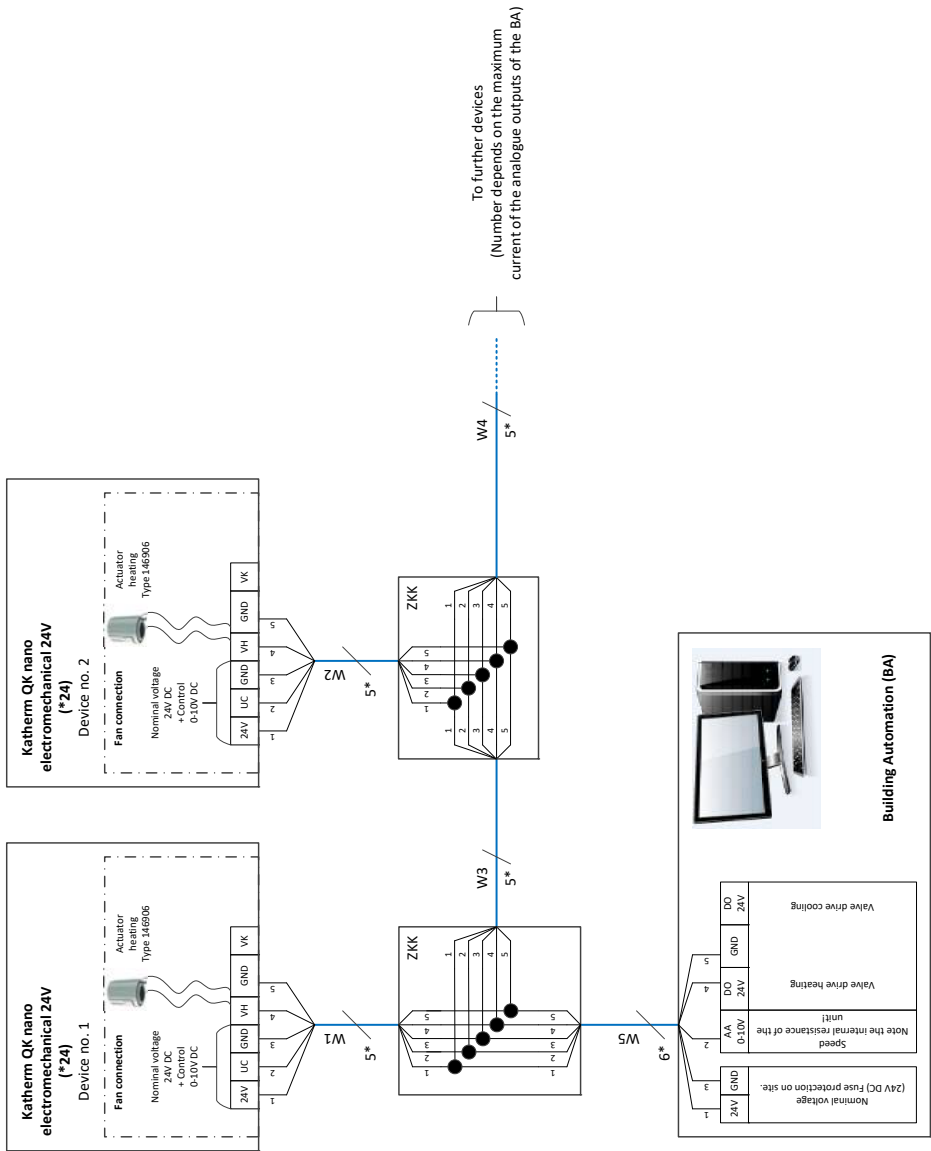
Assembly, installation and operating instructions



<b>KaControl®</b>	Bearbeiter:	Projekt:	Katherm QK nano, elektromechanical 24V, 2-pipe, valve drive 24V AC/DC open/close, Clock thermostat Type 30456		Blatt-Nr.:	3	von	5
	Erstelldatum:	03.11.2023	Projekt-Nr.:					







<b>KaControl®</b>	Bearbeiter:	Projekt:	Katherm QK nano electromechanical 24V, 2-pipe, valve drive 24V AC/DC open/close, Control via GA	Blatt-Nr.: 4 von 5	<b>KAMPMANN</b> Genau mein Klima.
	Erstelldatum: 03.11.2023	Projekt-Nr.:			

7.3 Electromechanical connection, 230 V (\*00)

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(STY) 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.
- The connection terminals on the device are suitable for a maximum wire cross-section of 2.5 mm².
- When using residual current circuit breakers, these must be at least mixed frequency sensitive (type F). For the design of the rated residual current, the specifications from DIN VDE 0100 Parts 400 and 500 must be observed.
- For the design of the on-site mains supply and fuse protection (C16A, max. 10 devices), the electrical data in the table below must be observed.
- 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!

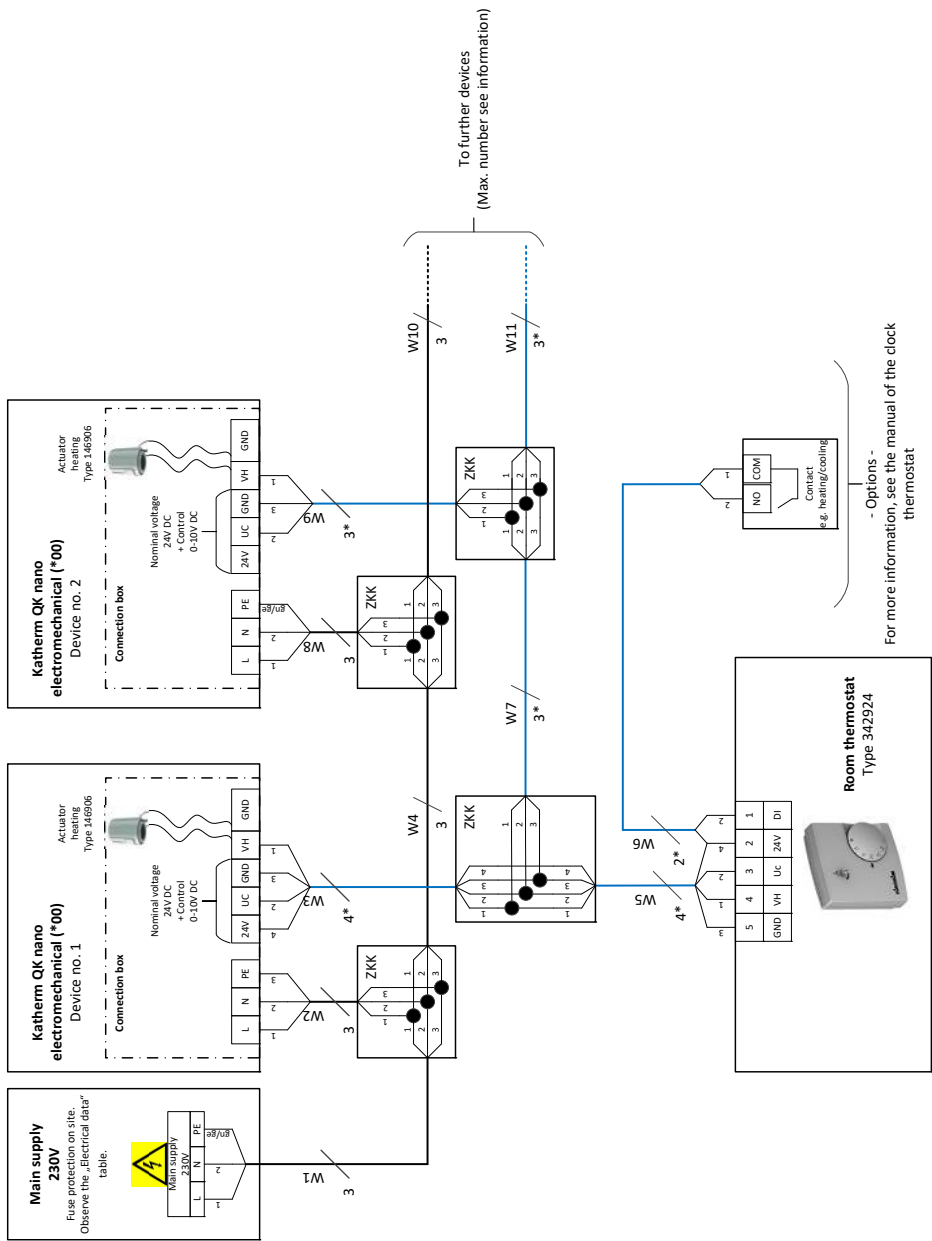
Electromechanical:

- 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.

KaControl:

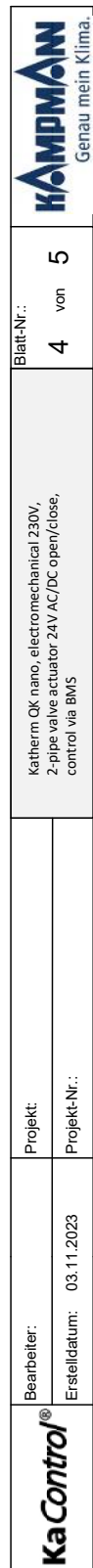
- Cable length temperature sensor or switching contact: maximum 30m (maximum 100m with minimum wire cross-section of 1.0 mm²).
- Cable length BUS cable room control unit KaController to unit 1: maximum 30 m.
- Maximum number of devices in parallel: 6 pieces. With CANbus card type 3260301 (see accessories) required for each unit: maximum 30 units.
- BUS cable length from device 1 to device 6: maximum 30 m. With CANbus card type 3260301 (see accessories) required for each device, maximum 500 m.

<b>KaControl®</b>	Bearbeiter:	Projekt:	General Information		Blatt-Nr.: 2 von 5	 Genau mein Klima.
	Erstelldatum: 03.11.2023	Projekt-Nr.:				



<b>KaControl®</b>	Bearbeiter:	Projekt:	Katherm QK nano, electromechanical 230V, 2-pipe valve actuator 24V AC/DC open/close, Room thermostat type 342924		Blatt-Nr.:
			Erstelldatum: 03.11.2023		3 von 5





## 7.4 KaControl (\*C1)

### 7.4.1 KaController installation

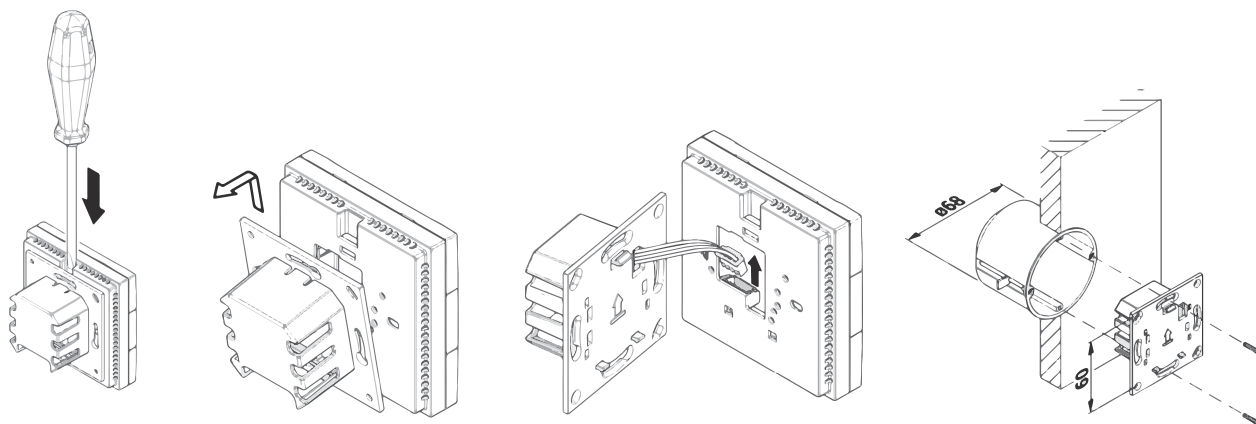


Fig. 3: Installation of flush-mounted back box

	<p><b>Electrical connection</b></p> <ul style="list-style-type: none"> <li>► Connect the KaController to the nearest KaControl unit in line with the wiring diagram. The maximum bus length between the KaController and the KaControl master unit is 30 m.</li> <li>► The respective KaControl automatically becomes the master unit in the control circuit when a KaController is connected to it.</li> </ul>
	<p><b>DIP switch setting</b></p> <p>The DIP switches on the rear of the KaController should be set according to the illustration:</p> <ul style="list-style-type: none"> <li>► DIP switch 1: ON</li> <li>► DIP switch 2: OFF</li> </ul>

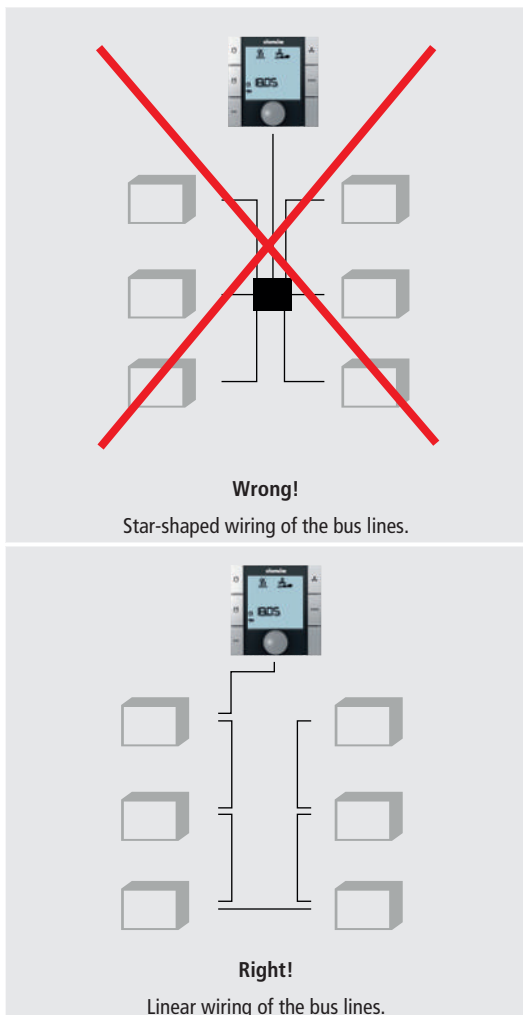
Fig. 4: KaController terminals

Fig. 5: DIP switch setting on KaController

# Katherm QK nano

Assembly, installation and operating instructions

## 7.4.2 Connection (\*C1)



### General information

- ▶ Route all low voltage cables along the shortest route.
- ▶ Ensure that low-voltage and power cables are separated, using metal partitions on cable harnesses.
- ▶ Use only shielded cables as low-voltage and bus cables.
- ▶ Lay all BUS cables in a linear pattern. Star-shaped wiring is not permitted.
- ▶ The KaController is connected via a bus connection to the respective control PCB on the unit.

Tab. 8: Wiring of bus lines



### IMPORTANT NOTE!

Use shielded, paired cables as bus cables, UNITRONIC® BUS LD 2x2x0.22, but at least of the same value or higher.



### IMPORTANT NOTE!

When laying bus cables, avoid the formation of star points, for instance in junction boxes. Loop the cables through to the units!

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.
- The connection terminals on the device are suitable for a maximum wire cross-section of 2.5 mm².
- When using residual current circuit breakers, these must be at least mixed frequency sensitive (type F). For the design of the rated residual current, the specifications from DIN VDE 0100 Parts 400 and 500 must be observed.
- For the design of the on-site mains supply and fuse protection (C16A, max. 10 devices), the electrical data in the table below must be observed.
- 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!

Electromechanical:

- 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.

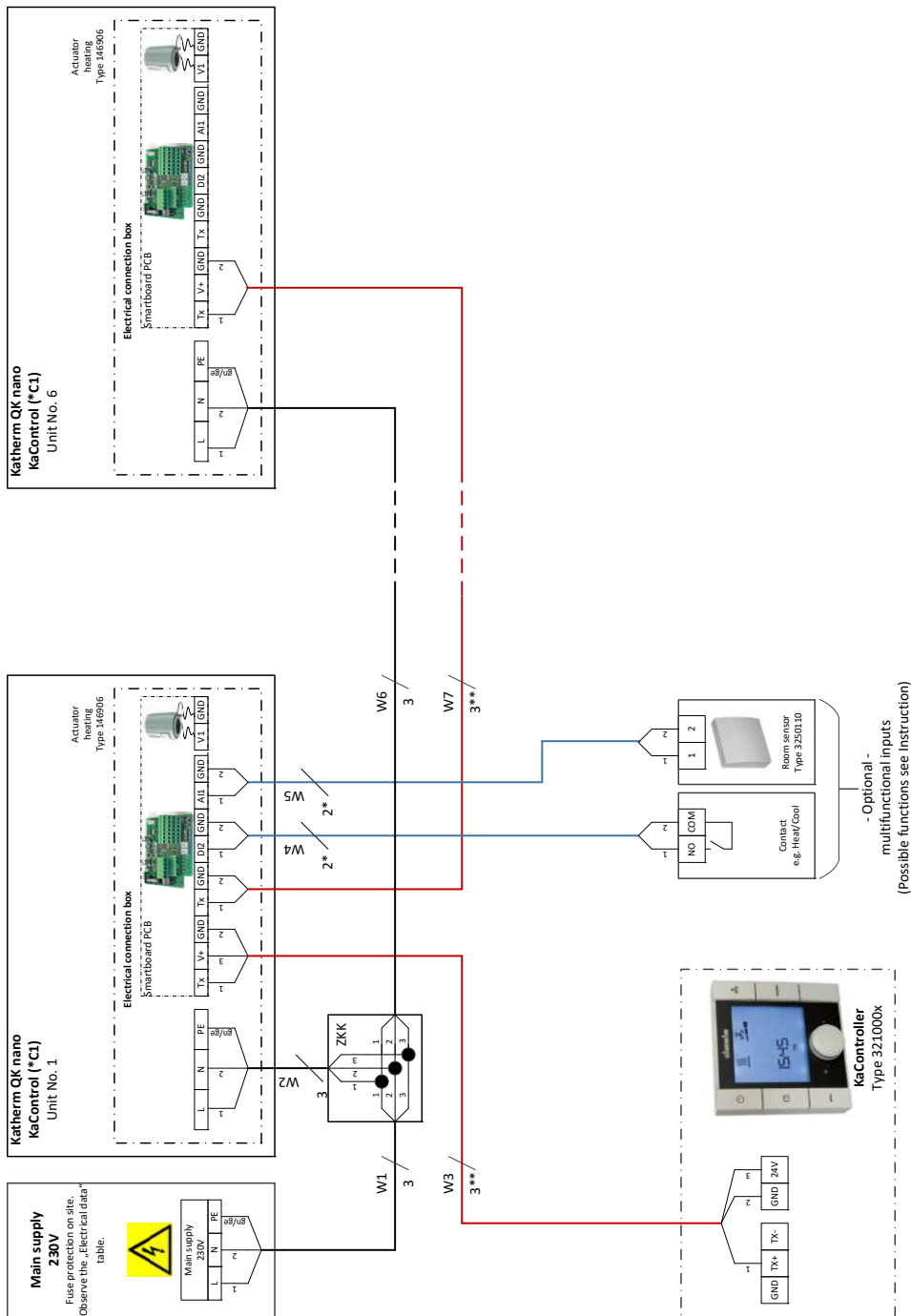
KaControl:

- Cable length temperature sensor or switching contact: maximum 30m (maximum 100m with minimum wire cross-section of 1.0 mm²).
- Cable length BUS cable room control unit KaController to unit 1: maximum 30 m.
- Maximum number of devices in parallel: 6 pieces. With CANbus card type 3260301 (see accessories) required for each unit: maximum 30 units.
- BUS cable length from device 1 to device 6: maximum 30 m. With CANbus card type 3260301 (see accessories) required for each device, maximum 500 m.

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	Erstelldatum: 03.11.2023	Projekt-Nr.:				

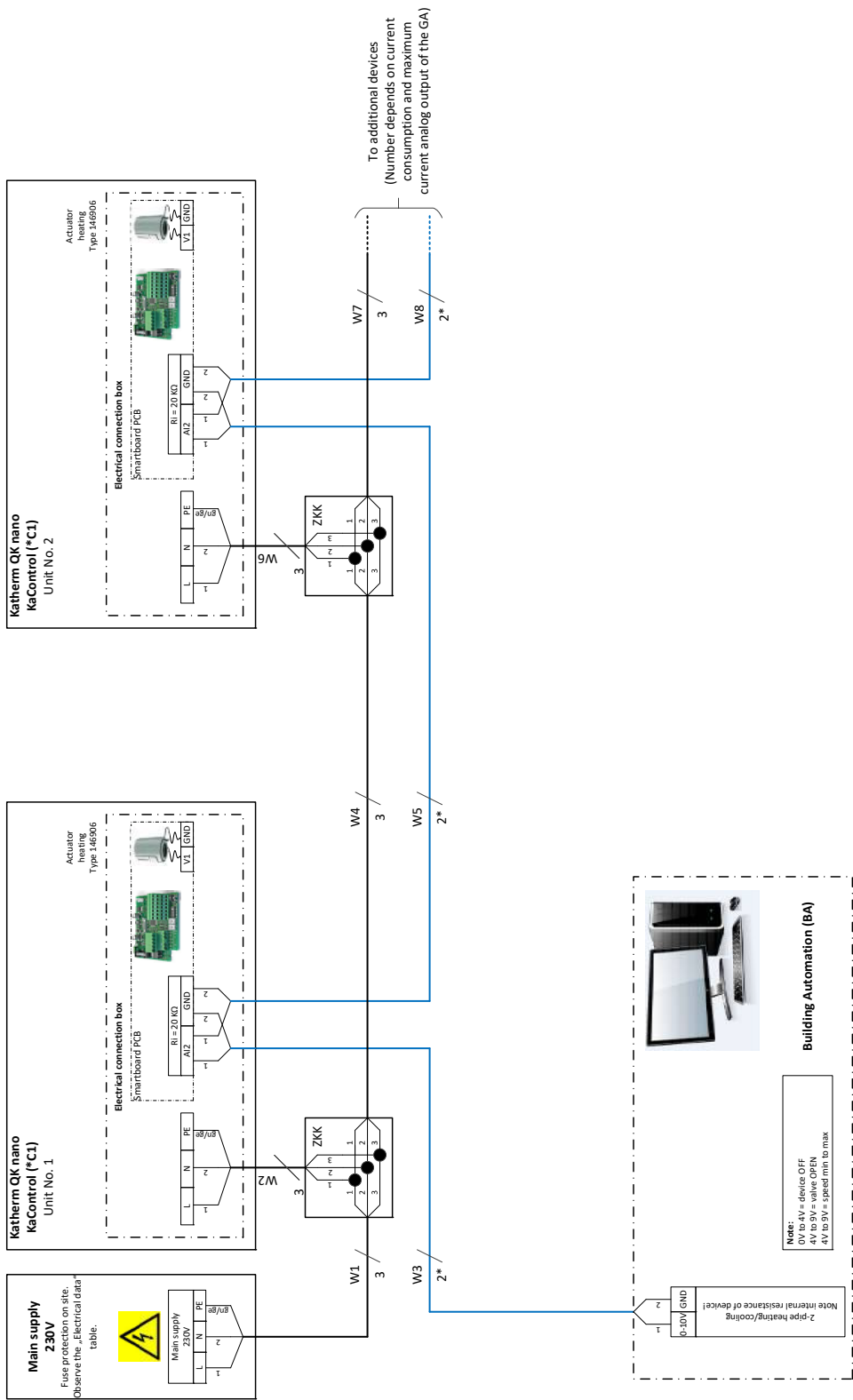
# Katherm QK nano

Assembly, installation and operating instructions



<b>KaControl®</b>	Bearbeiter:	Projekt:	Katherm QK nano, KaControl C1, 2-pipe, valve 24VDC open/close, KaController Type 321000x	Blatt-Nr.: 3 von 5	<b>KAMPMANN</b> Genau mein Klima.
	Erstelldatum: 03.11.2023	Projekt-Nr.:			





<b>KaControl®</b>	Bearbeiter:	Projekt:	Katherm QK nano, KaControl C1, 2-pipe, valve 24VDC open/close, Control via on-site 0-10VDC signal	Blatt-Nr.: 4 von 5	<b>KAMPMANN</b> Genau mein Klima.
	Erstelldatum: 03.11.2023	Projekt-Nr.:			

# Katherm QK nano

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## 8 Pre-commissioning checks

Before initial commissioning, check whether all the necessary conditions have been met so that the unit can operate safely and properly.

### Structural tests

- ▶ Check that the unit is securely standing and fixed.
- ▶ Check the horizontal installation/suspension of the unit.
- ▶ Check the completeness and correct seating of all filters (dirt side).
- ▶ 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.

### 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.
- ▶ Check whether the air inlet filter is fitted and dirt-free.

Once all checks have been completed, initial commissioning can be carried out in line with Chapter 9 "Operation" [► 35].

## 9 Operation

### 9.1 Operation of electromechanical control



 <p>A white, rectangular room thermostat with a rotary dial on the front. The dial has markings for 15, 20, 25, and 30 degrees Celsius. There is a small knob above the dial and the KAMPMANN logo at the bottom left.</p>	<p><b>Room thermostat type 194000342924</b></p> <ul style="list-style-type: none"> <li>▶ Electronic room thermostat with infinitely variable speed adjustment, surface-mounted on in-wall box with visually unobtrusive design</li> <li>▶ With thermal return, room temperature setting and speed pre-setting with rotary knobs</li> <li>▶ Internal temperature sensor NTC</li> <li>▶ Digital input for Day/Eco changeover</li> <li>▶ Parallel operation of max. units is possible</li> </ul>
 <p>A white, square clock thermostat with a digital display. The display shows 'KAMPMANN Komfort', a target temperature of '28.0°C', and a current temperature of '19.1°C'. There are four sensor keys and a 'Mode Menu' button at the bottom.</p>	<p><b>Clock thermostat 24 V, type 30456</b></p> <ul style="list-style-type: none"> <li>▶ Electronic clock thermostat for 2- and 4-pipe applications, surface-mounted wall installation on a flush-mounted box in visually unobtrusive design</li> <li>▶ operation using 4 sensor keys</li> <li>▶ timer with automatic summer/winter switch-over</li> <li>▶ option for external room sensor connection</li> <li>▶ control input for heating/cooling changeover with 2-pipe applications</li> <li>▶ digital input can be set to Comfort/ECO or ON/OFF switchover</li> </ul>

Fig. 6: Room thermostat type 194000342924

Fig. 7: Clock thermostat, type 30456

### 9.2 Operation of the KaController

The following information is limited to the key content on the operation of the KaController and KaControl system. More information is included separately in the KaControl SmartBoard user manual.

# Katherm QK nano

Assembly, installation and operating instructions

## 9.2.1 Function keys, display elements

All menus can be selected and set using the navigator dial.

The LED background lighting is automatically switched off 5 seconds after the KaController is last used. The LED background lighting can be permanently disabled using a parameter setting.

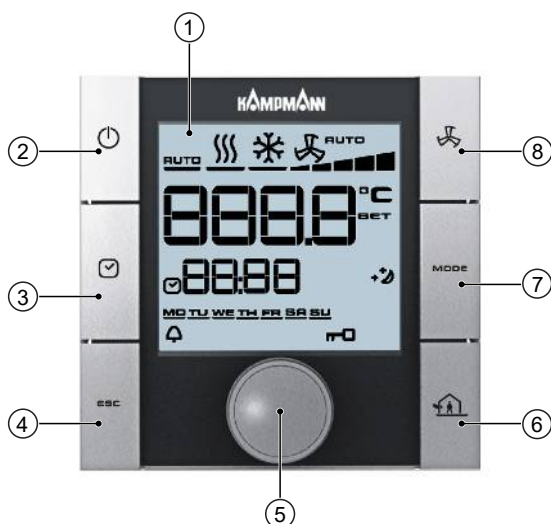
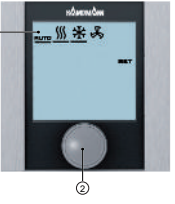



Fig. 8: KaController with function keys, type 3210002

1	Display with LED background lighting	2	ON/OFF key (depending on setting) ► ON/OFF ► Eco mode/Day mode (factory setting)
3	TIMER button ► Set time ► Set timer programs	4	ESC button ► back to standard view
5	Navigator dial ► Change settings ► Call up menus	6	House symbol ► External ventilation
7	MODE button ► Set operating modes (disabled with 2-pipe applications)	8	FAN button ► Set fan control

 <p>Fig. 9: KaController type 3210001</p>	<p>KaController without operating keys (one-button operation) type 3210001</p> <ol style="list-style-type: none"> <li>1. Display with LED background lighting</li> <li>2. Navigator dial <ul style="list-style-type: none"> <li>► Change settings</li> <li>► Call up menus</li> </ul> </li> </ol>
 <p>Fig. 10: KaController black, type 3210006</p>	<p>KaController, black without function keys (one-button operation) type 3210006</p> <ol style="list-style-type: none"> <li>1. Display with LED background lighting</li> <li>2. Navigator dial <ul style="list-style-type: none"> <li>► Change settings</li> <li>► Call up menus</li> </ul> </li> </ol>

The symbols shown on the display depend on the application (2-pipe, 4-pipe etc.) and the parameters set.

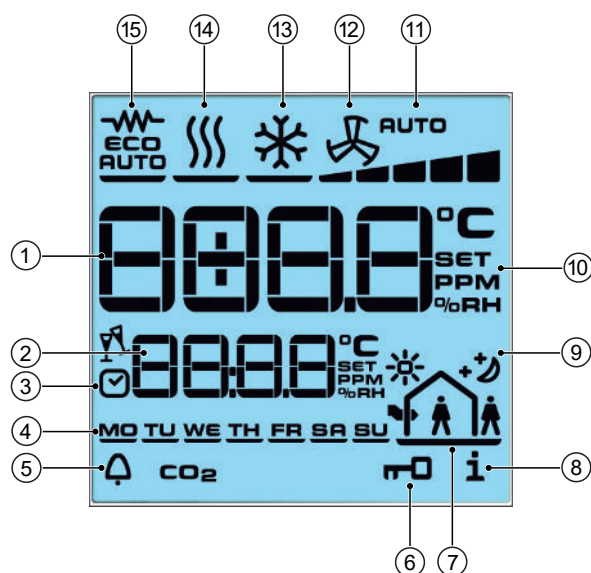


Fig. 11: Display



1	Display of setpoint room temperature	2	Current time
3	Timer program enabled	4	Weekday
5	Alarm	6	Selected function is locked
7	"External ventilation" mode is locked	8	Filter alert
9	Eco mode	10	Setpoint setting enabled
11	Fan control setting Auto-0-1-2-3-4-5	12	Ventilation mode
13	Cooling mode	14	Heating mode
15	Automatic Heating/Cooling changeover mode		

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## 9.2.2 KaController type 3210001, type 3210002, type 3210006

Press and hold down the navigator dial for 3 seconds to move from one menu to the next.

 <p>Standard view</p>	 <p>Standard view</p>	<p><b>Switching on the unit</b></p> <p>Option 1: Turn the navigator dial.</p> <p>Option 2: Press the ON/OFF button.</p> <p><b>Switching off the unit</b></p> <p>Option 1: Press the navigator dial for 3 seconds.</p> <p>Option 2: Press the ON/OFF button.</p> <p>Option 3: Turn the navigator dial anti-clockwise until OFF appears.</p> <p><b>Setting the temperature setpoint</b></p> <p>Option 1: Turn the navigator dial.</p>
 <p>Fan setting</p>	 <p>Fan setting</p>	<p><b>Fan setting</b></p> <p>Option 1: Turn the navigator dial.</p> <p>Option 2: Press the FAN button several times.</p> <p><b>Fan stages</b></p> <p>Setting values: 0, 1, 2, 3, 4, 5, AUTO</p>
 <p>Time setting</p>	 <p>Time setting</p>	<p><b>Time setting</b></p> <p>Adjust the current time by turning and pressing the navigator dial.</p>
 <p>Timer programs</p>	 <p>Timer programs</p>	<p><b>Timer programs</b></p> <p>Adjust the switching times by turning and pressing the navigator dial.</p> <p><b>Sequence for entering a timer program:</b></p> <pre> graph LR     A[Timer start screen] --&gt; B[Day of the week entry]     B --&gt; C[Timer program no. entry]     C --&gt; D[Switching-on time entry]     D --&gt; E[Switching-off time entry]     E --&gt; F[Switching-on time entry]     F --&gt; G[Switching-off time entry]     G --&gt; C     </pre>
 <p>Operating modes</p>	 <p>Operating modes</p>	<p><b>Setting the operating modes</b></p> <p>Option 1: Turn the navigator dial.</p> <p>Option 2: Press the MODE button several times.</p> <p>The "Operating mode" menu item is locked in 2-pipe applications and cannot be accessed!</p>
 <p>External ventilation</p>	 <p>External ventilation</p>	<p><b>External ventilation</b></p> <p>Enable and disable external ventilation by turning and pressing the navigator dial. A house symbol with an arrow appears on the display when external ventilation is activated.</p>

Tab. 9: KaController user interfaces

## 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 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.	Qualified personnel
quarterly	Check the heat exchanger for dirt, damage, corrosion and leak-tightness. Carefully vacuum the heat exchanger if dirty.	User

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## 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 [► 41] 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.
System water leakage	Heat exchanger defect.	Replace heat exchanger if necessary.
	Hydraulic connection not correct.	Check flow and return, retighten 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.

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## 11.2 KaControl faults

Code	Alarms	Priority
A11	Faulty control sensor.	1
A12	Motor fault.	2
A13	Room frost protection.	3
A14	Condensation alarm.	4
A15	General alarm.	5
A16	Sensor AI1, AI2 or AI3 faulty.	6
A17	Unit frost protection.	7
A18	EEPROM error.	8
A19	Offline slave in the CAN bus network.	9

Tab. 10: KaControl unit alarms

Code	Alarms
tAL1	Temperature sensor in the KaController faulty.
tAL3	Real-time clock in the KaController faulty.
tAL4	EEPROM in the KaController faulty.
Cn	Communication fault with the external control.

Tab. 11: KaController alarms



### IMPORTANT NOTE!

#### Important note!

More information on control settings can be found in the separate KaControl SmartBoard user manual.

## 11.3 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 List of KaControl parameters

### 12.1 Parameter list

Parameter	Function	Standard	Min.	Max.	Unit	Katherm QK nano *
P000	Software version	24	0	255	-	24
P001	Basic setpoint for setpoint input $\pm 3K$	22	8	32	°C	22
P002	Switch-on and switch-off hysteresis for valves	3	0	255	K/10	1
P003	Neutral zone in a 4-pipe system (only in automatic mode)	3	0	255	K/10	20
P004	Cooling without fan assistance (natural convection)	0	0	255	K/10	0
P005	Heating without fan assistance (natural convection)	5	0	255	K/10	0
P006	Fan On/Off hysteresis (only in ventilation mode)	5	0	255	K/10	5
P007	P-band, heating	20	0	100	K/10	25
P008	P-band, cooling	20	0	100	K/10	25
P009	Shift to the basic setpoint for setpoint input $\pm 3K$	3	0	10	C	3
P010	Contact sensor: temperature limit value to activate fan stages 1 and 2 in heating mode	26	0	255	°C	26
P011	Contact sensor: temperature limit value to activate fan stages 3 and 4 in heating mode	28	0	255	°C	28
P012	Contact sensor: temperature limit value to activate fan stage 5 in heating mode	30	0	255	°C	30
P013	Contact sensor: hysteresis for limit temperatures P010, P011, P012, P014	10	0	255	K/10	10
P014	Contact sensor: limit value temperature to activate fan stages in cooling mode	18	0	255	°C	18
P015	Function of input AI1	0	0	19	-	0
P016	Function of input AI2	0	0	19	-	0
P017	Function of input AI3	0	0	9	-	0
P018	Temperature increase of cooling setpoint in Eco mode	30	0	255	K/10	30
P019	Temperature reduction of heating setpoint in Eco mode	30	0	255	K/10	30
P020	ADC limit coefficient	6	0	15	-	6
P021	ADC average coefficient	6	0	15	-	6
P022	Activation/deactivation of sun symbol in Comfort mode	0	0	1	-	0
P023	Difference for compensation when cooling	0	-99	127	K/10	0
P024	Coefficient for compensation when cooling	0	-20	20	1/10	0
P025	Difference for compensation when heating	0	-99	127	K/10	0
P026	Coefficient for compensation when heating	0	-20	20	1/10	0
P027	Fan setting: maximum run-time for manual fan mode	0	0	255	min.	0
P028	Flushing function: fan stage during the rinsing function	2	1	5	-	2
P029	Activation of continuous fan mode	0	0	1	-	0
P030	Ventilation temperature activation	12	0	255	°C	12
P031	Ventilation interval	27	0	255	°C	27
P032	Flushing function: maximum idle time of fan	15	0	255	min.	15
P033	Flushing function: duration of the flushing function	120	0	255	s	120
P034	Flushing function: activation in operating modes	0	0	3	-	0
P035	Fan run-on time after an operating mode is switched to stage 1	0	0	255	s	0
P036	Type of setpoint setting	0	0	1	-	0

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Parameter	Function	Standard	Min.	Max.	Unit	Katherm QK nano *
P037	Display	1	0	7	-	1
P038	Lock/disable function on the control unit	72	0	255	-	72
P039	Function of digital output V2 (in a 2-pipe system)	0	0	3	-	0
P040	Valve control by pulse width modulation	0	0	1	-	0
P041	Reset time of PI controller to activate the fan in automatic fan mode	0	0	20	min.	0
P042	Fan setting: lock and activate fan stages	0	0	127	-	0
P043	Function of digital input DI1	0	0	22	-	5
P044	Function of digital input DI2	0	0	22	-	0
P045	Threshold voltage for potentiometer to switch on the unit	10	0	100	kiloohm	10
P046	Temperature setting corresponds to the minimum resistance value = 10 kiloohm in the potentiometer	18	12	34	°C	18
P047	Temperature setting corresponds to the maximum resistance value = 100 kiloohm in the potentiometer	24	13	35	°C	24
P048	Threshold voltage for potentiometer for starting up the fans	10	0	100	kiloohm	10
P049	Threshold voltage for potentiometer for maximum fan speed	90	0	100	kiloohm	90
P050	Fan setting: max. fan speed	100	0	100	%	100
P051	Fan setting: min. fan speed	0	0	90	%	15
P052	Fan setting: activation of fan speed limit	0	0	1	-	1
P053	Valve activation by pulse width modulation of the valve switching cycle	15	10	30	min.	15
P054	Configuration of bus system	0	0	2	-	0
P055	Display of heating/cooling symbols in automatic mode	0	0	1	-	1
P056	DI2 setting (polarity) when DIP 4 = ON	1	0	1	-	1
P057	Reset setpoint to the value of P01 (after changing an operating program)	0	0	1	-	0
P058	Sensor adjustment: sensor AI1	0	-99	127	K/10	0
P059	Supply air temperature setpoint in heating mode	35	0	50	°C	35
P060	Supply air temperature setpoint in cooling mode	18	0	50	°C	18
P061	Sensor adjustment: sensor in the KaController	0	-99	127	K/10	0
P062	Sensor adjustment: sensor AI2	0	-99	127	K/10	0
P063	Outside temperature <P63 fan increase by P122	0	-99	127	°C	0
P064	Sensor adjustment: sensor AI3	0	-99	127	K/10	0
P065	reserved	-	-	-	-	-
P066	Master/slave assignment in CAN bus	0	0	1	-	0
P067	Serial CAN bus address	1	1	125	-	1
P068	Logic of the hydronic algorithms	0	0	7	-	0
P069	Network address	1	0	207	-	1
P070	Dependence of the hydronic algorithms (on slaves)	0	0	7	-	0
P071	Serial address of slave 1	0	0	207	-	0
P072	Serial address of slave 2	0	0	207	-	0
P073	Serial address of slave 3	0	0	207	-	0
P074	Serial address of slave 4	0	0	207	-	0
P075	Serial address of slave 5	0	0	207	-	0
P076	Serial address of slave 6	0	0	207	-	0
P077	Serial address of slave 7	0	0	207	-	0

Parameter	Function	Standard	Min.	Max.	Unit	Katherm QK nano *
P078	Serial address of slave 8	0	0	207	-	0
P079	Serial address of slave 9	0	0	207	-	0
P080	Serial address of slave 10	0	0	207	-	0
P081	Dependence of the hydronic algorithms, slave 1	0	0	7	-	0
P082	Dependence of the hydronic algorithms, slave 2	0	0	7	-	0
P083	Dependence of the hydronic algorithms, slave 3	0	0	7	-	0
P084	Dependence of the hydronic algorithms, slave 4	0	0	7	-	0
P085	Dependence of the hydronic algorithms, slave 5	0	0	7	-	0
P086	Dependence of the hydronic algorithms, slave 6	0	0	7	-	0
P087	Dependence of the hydronic algorithms, slave 7	0	0	7	-	0
P088	Dependence of the hydronic algorithms, slave 8	0	0	7	-	0
P089	Dependence of the hydronic algorithms, slave 9	0	0	7	-	0
P090	Dependence of the hydronic algorithms, slave 10	0	0	7	-	0
P091	Load default values	0	0	255	-	0
P092	Password management	0	0	255	-	0
P093	Type of pre-comfort (room occupancy)	0	0	3	-	0
P094	Pre-comfort timer	60	1	255	min.	60
P095	Disable DIP switch settings	0	0	1	-	0
P096	Digital outputs continuously activated	0	0	1	-	0
P097	Read off DIP switch	-	0	63	-	-
P098	0..10 V control: valve switch on limit	30	0	100	V/10	40
P099	0..10 V control: min. switch-on limit for fan speed	40	0	100	V/10	40
P100	0..10 V control: max. switch-on limit for fan speed	90	0	100	V/10	90
P101	Valve activation by pulse width modulation of P-band in heating mode	15	0	100	K/10	15
P102	Valve activation by pulse width modulation of P-band in cooling mode	15	0	100	K/10	15
P103	Valve activation by pulse width modulation of PI controller reset time	0	0	20	min.	0
P104	Minimum ON time with PWM valve activation	3	0	20	min.	3
P105	Compensation: max. negative delta setpoint	50	0	150	K/10	50
P106	Compensation: max. positive delta setpoint	50	0	150	K/10	50
P107	Duration of valve open to check water temperature	5	0	255	min.	5
P108	Duration of valve closed	240	35	255	min.	240
P109	Dead zone PI control for 3-way valve	10	0	100	K/10	10
P110	Hysteresis to switch between heating/fan mode	0	0	20	°C	0
P111	Threshold to switch between heating/fan mode	0	0	50	°C	0
P112	reserved	-	-	-	-	-
P113	reserved	-	-	-	-	-
P114	reserved	-	-	-	-	-
P115	reserved	-	-	-	-	-
P116	reserved	-	-	-	-	-
P117	Lock function buttons on the KaController	0	0	7	-	0
P118	On delay time	0	0	255	sec	0
P119	Off delay time	0	0	255	sec	0
P120	reserved	-	-	-	-	-

# Katherm QK nano

## Assembly, installation and operating instructions

Parameter	Function	Standard	Min.	Max.	Unit	Katherm QK nano *
P121	reserved	-	-	-	-	-
P122	Relative fan speed increase via contact	2	0	5	-	2
P123	Maximum valve running time	150	0	255	sec	150
P124	Minimum P + I output variation for valve movement (0 to 10)	5	0	100	%	5
P125	reserved	-	-	-	-	-
P126	Operating weeks	0	0	255	week	0
P127	Information on operating weeks reached (filter message)	0	52	255	week	0
P128	Reset operating week counter	0	0	1	-	0
P129	Fan speed limiter activation in certain operating modes	0	0	1	-	0
P130	Absolute fan speed increase via contact	2	0	5	-	2
P131	External ventilation, delay time	0	0	255	min.	0
P132	Operating level, master password	22	0	255	-	22
P133	Hysteresis for outside temperature to switch between heating/fan mode	0	0	255	K/10	0
P134	Threshold for outside temperature to switch between heating/fan mode	0	0	50	°C	0
P135	Activate virtual sensor	0	0	1	-	0
P136	Activate external ventilation	0	0	2	-	0

Tab. 12: Parameter key Katherm QK nano, standard revision 1.024 from 10.07.2020

## 12.2 KaController parameter list

Parameter	Function	Standard	Min.	Max.	Unit	Comment
t001	Serial address	1	0	207	-	Address in Mod-bus network
t002	Baud rate 0 = Baud rate 4800 1 = Baud rate 9600 2 = Baud rate 19200	2	0	2	-	
t003	Background lighting function 0 = Slow fade in, fast fade out 1 = Slow fade in, slow fade out 2 = Fast fade in, fast fade out	0	0	2	-	
t004	Strong background lighting	4	0	5	-	
t005	Sensor calibration of KaController sensor	0	60	60	°C	
t006	LCD display contrast	15	0	15	-	
t007	BEEP setting 0 = BEEP ON 1 = BEEP OFF	0	0	1	-	
t008	Password for KaController Parameter menu	11	0	999	-	
t009	Minimum settable setpoint temperature	8	0	20	°C	
t010	Maximum settable setpoint temperature	35	10	40	°C	
t011	Interval of setpoint setting 0 = Automatic setting depending on PCB (parameterisable, freely programmable) 1 = Increment of 1 °C (parameterisable PCBs) 2 = Increment of 0.5 °C (freely programmable PCBs)	0	0	2	-	
t012	Date/Time setting: Year	9	0	99	-	
t013	Date/Time setting: Month	1	1	12	-	
t014	Date/Time setting: Day	1	1	31	-	
t015	Date/Time setting: Weekday	1	1	7	-	
t016	Date/Time setting: Hour	0	0	23	-	
t017	Date/Time setting: Minute	0	0	59	-	

## 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:

<b>Type, Modell, Artikel-Nr.:</b>	<b>Katherm QK</b>	<b>142***</b>
Type, Model, Articles No.:	<b>Katherm HK</b>	<b>143***</b>
Type, Modèle, N° d'article:	<b>Katherm QK nano</b>	<b>442***</b>
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:

<b>DIN EN 16430-1; -2; -3</b>	<b>Gebläseunterstützte Heizkörper, Konvektoren und Unterflurkonvektoren</b>
<b>DIN EN 442-1 ; -2</b>	<b>Radiatoren und Konvektoren</b>
<b>DIN EN 55014-1 ; -2</b>	<b>Elektromagnetische Verträglichkeit</b>
<b>DIN EN 61000-3-2 ; -3-3</b>	<b>Elektromagnetische Verträglichkeit</b>
<b>DIN EN 61000-6-1 ; -6-2 ; -6-3</b>	<b>Elektromagnetische Verträglichkeit</b>
<b>DIN EN 60335-1 ; -2-40</b>	<b>Sicherheit elektr. Geräte für den Hausgebrauch und ähnliche Zwecke</b>





**Gemäß den Bestimmungen der Richtlinien:**

Following the provisions of Directive:  
Conformément aux dispositions de Directive:  
Zgodnie z postanowieniami Dyrektywy:  
Odpovídající ustanovení směrnic:

2014/30/EU  
2014/35/EU

EMV-Richtlinie  
Niederspannungsrichtlinie

**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

**Hendrik Kampmann**

**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.kampmann.co.uk/hvac/products/trench-technology/katherm-qk-nano>

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