

Katherm QK

Trench convector with EC tangential fan

► **Assembly and installation instructions**

Keep these instructions in a safe place for future use!

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

Key to symbols:



Caution! Danger!

Non-compliance with this information can lead to serious personal injuries or damage to property.



Danger from electrocution!

Non-compliance with this information can lead to serious personal injuries or damage to property by electrocution.

Carefully read these instructions in full prior to any assembly and installation work!

Anyone involved with the installation, commissioning and use of this product is obliged to pass these instructions on to trades people who are involved at the same time or subsequently, as well as to end users or operators. Retain these instructions until final decommissioning!

Content or design-related changes may be made without any prior notice!

Table of contents

1.	Intended use	3
2.	Safety information	5
3.	Scope of delivery	6
4.	Alignment and positioning	6
	4.1 Alignment using height adjustment feet and raised floor brackets.....	6
	4.2 Positioning and fixing at the installation site.....	7
5.	Water connection	8
6.	Screeding / Protection from dirt	9
7.	Connection openings Pipe openings Water connection ..	10
8.	Number of height adjustment feet and raised floor feet ..	12
9.	Katherm QK supply air modules	12
10.	Maintenance	14
	10.1 Maintenance schedule	15
11.	Electrical wiring	16
	11.1 Controls at a glance	17
	11.2 Electrical wiring	17
	11.3 24 V electromechanical model	18
	11.4 230 V electromechanical model	21
	11.5 KaControl model	24
	11.5.1 Single-circuit controls	28
12.	Declaration of Conformity	32



1. Intended use

Kampmann **Katherm** QK are constructed in line with the state of the art and recognised safety regulations. Nevertheless their use can result in danger to people or damage to the unit or other material property if they are not properly installed or properly used.

Katherm QK should only be used indoors (e.g. residential properties, offices, show-rooms etc.) They are not suitable for use in humid environments, such as swimming pools or outdoors. Protect the products from any moisture during installation. Check the application with the manufacturer in case of any doubt. Any use other than the use specified above is deemed not to be correct and proper. The operator of the unit is solely responsible for any damage arising as a result of this. Intended use is deemed to include observing the installation instructions described in these instructions.

The installation of this product requires specialist knowledge of heating, cooling, ventilation and electrical engineering. This knowledge, generally learned in vocational training in the fields mentioned in section 2, is not described separately. Errors caused by connection or modifications can lead to the unit being damaged! The manufacturer is not liable for any damage caused by the wrong connection and/or improper handling.

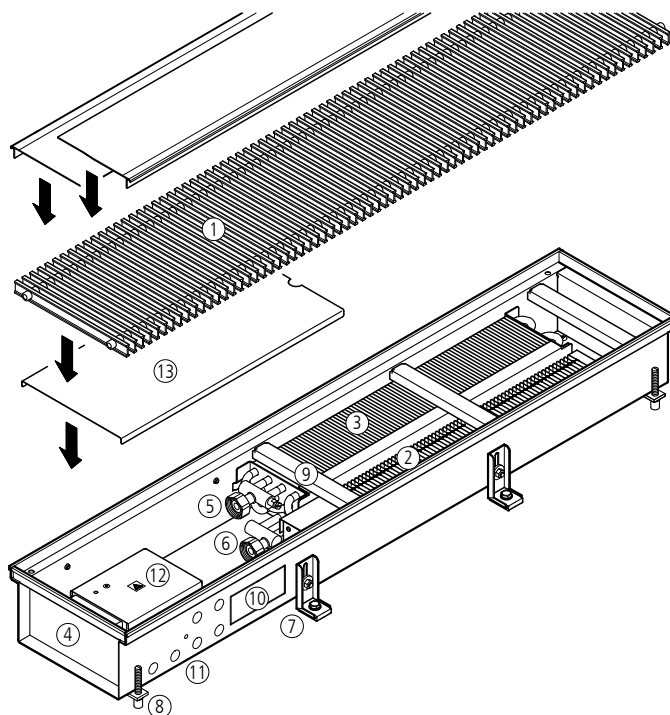
Important: Roll-up and linear grilles can be walked upon. Avoid point loads (e.g. chair legs)! They can result in lasting damage to the grilles.

Katherm QK

- ① Roll-up grille (alternatively: linear grille)
- ② Compact EC tangential fan
- ③ Cu/Al high-performance convector
- ④ Floor trench
- ⑤ Flow, 1/2", Eurokonus
- ⑥ Return, 1/2", Eurokonus
- ⑦ Height adjustment feet with sound insulation
- ⑧ Raised floor feet with sound insulation
- ⑨ Bracing
- ⑩ Water pipe opening
- ⑪ Cable openings
- ⑫ Electrical wiring and control box
- ⑬ Cover plate

Important: Do not remove bracing

Example: **Katherm** QK 215



1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

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
Max. operating pressure	bar	10
Min./max. glycol percentage	%	25-50

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 ^{*1}		8-9
Conductivity ^{*1}	µS/cm	< 700
Oxygen content (O ₂)	mg/l	< 0.1
Hardness	°dH	4-8.5
Sulphur ions (S)		not measurable
Sodium ions (Na ⁺)	mg/l	< 100
Iron ions (Fe ²⁺ , Fe ³⁺)	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	ppm	< 50
Sulfate ions (SO ₄ ²⁻)	mg/l	< 50
Nitrite ion (NO ₂ ⁻)	mg/l	< 50
Nitrate ion (NO ₃ ⁻)	mg/l	< 50



2. Safety information

Only allow a qualified electrician to perform installation, assembly and maintenance work on electrical units in compliance with VDE guidelines. Wiring should comply with the applicable VDE regulations and provisions laid down by the regional electricity providers. Non-compliance with the regulations and operating instructions can result in the units malfunctioning with consequential damage and danger to people. There is a danger of fatal injury caused by wires being crossed due to incorrect wiring! Disconnect all parts of the system from the mains power supply and prevent them from being reconnected before starting any connection and maintenance work! The unit should only be connected to fixed cabling. Please read this manual in full to ensure correct and proper installation.

Please note the following safety-relevant information:

- Disconnect all parts of the system that are being worked on.
- Ensure that the system cannot be accidentally re-connected!
- Before commencing installation/maintenance work, wait until the fan has come to a standstill after the unit has been switched off.
- Caution! Pipes, casings and fittings can become very hot depending on the operating mode!
- Qualified personnel must have undergone training to provide them with adequate knowledge of the following:
 - Safety and accident prevention regulations
 - Guidelines and recognised technical regulations, i.e. Association of German Electricians (VDE)
 - DIN and EN standards
 - Accident prevention regulations VBG, VBG4, VBG9a
 - DIN VDE 0100, DIN VDE 0105
 - EN 60730 (Part 1)
 - Technical wiring regulations (TABs) issued by the regional electricity providers

Modifications to the unit

Do not undertake any modifications or upgrades on the **Katherm QK** without discussing them with the manufacturer as they can impair the safety and operation of the unit. Do not carry out any measures on the unit not described in this manual. Make sure that on-site systems and cabling are suitable for connection to the intended system!



The floor duct has openings provided for the installation of a potential compensation line.

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

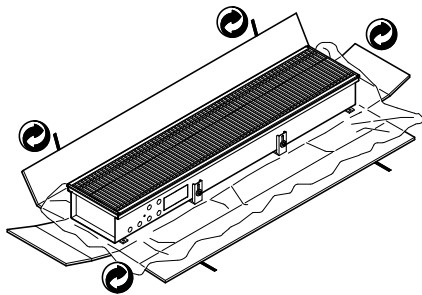
Ready-to-install convector-based trench convectors

Assembly and installation instructions

3. Scope of delivery

Katherm QK trench convectors are supplied as standard in a box with:

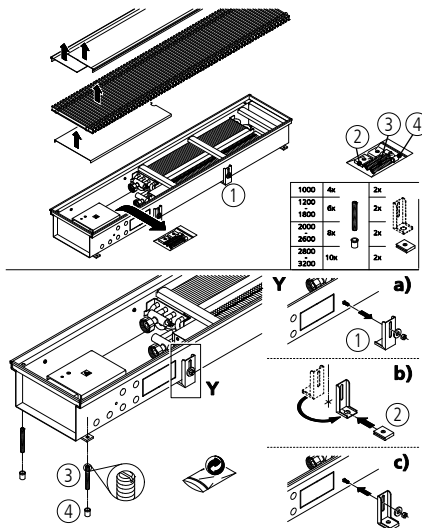
- Height adjustment feet ① with rubber pads for acoustic decoupling ②, screws and rawlplugs to be provided on site
- Raised floor feet with plastic cap for acoustic decoupling ③, ④.



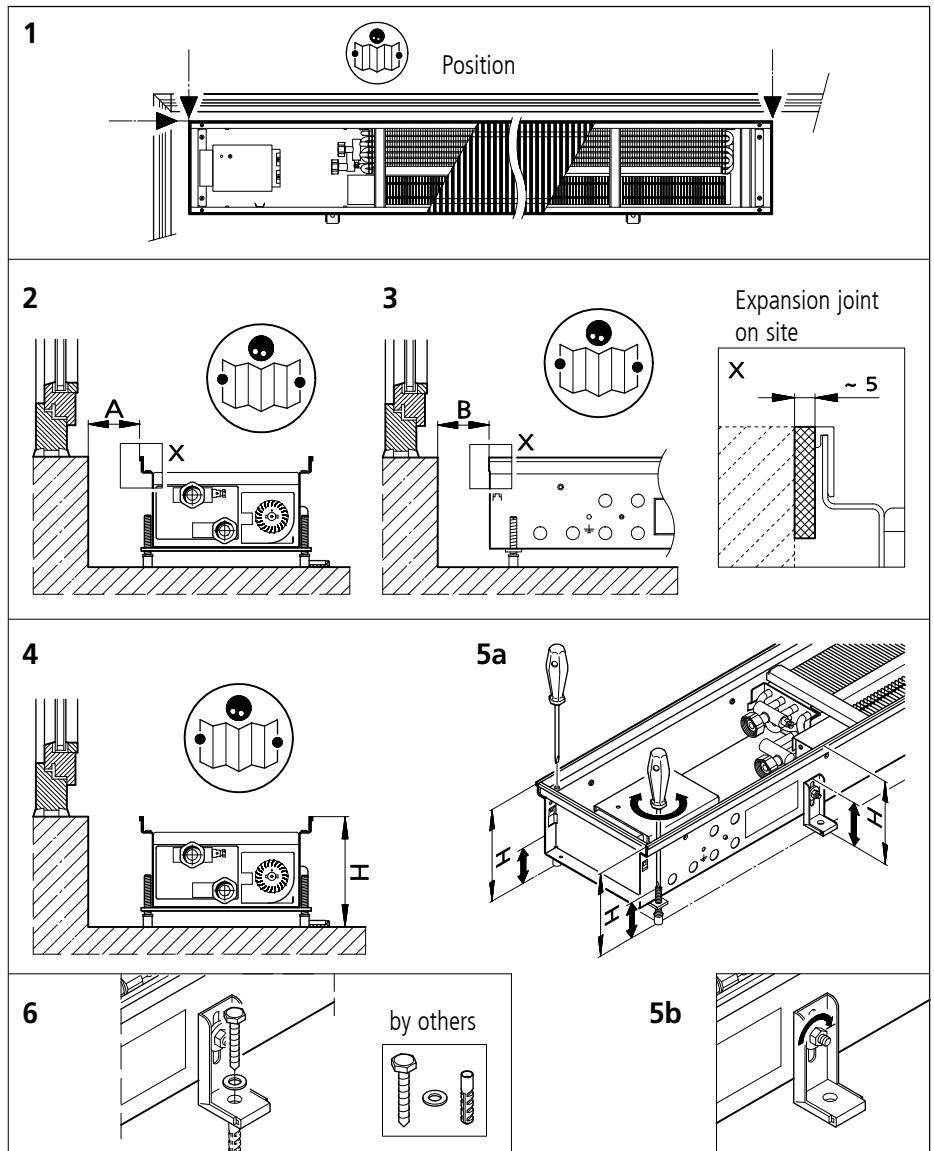
4. Alignment and positioning

4.1 Alignment using height-adjustment feet and raised floor brackets

- Remove the outer film and the packaging.
 - Flap open the transparent protective cover.
 - Arrange the **Katherm** QK with the convector on the window side.
- Important:** Do not remove bracing during installation and operation.
- Important:** The height adjustment feet are already fitted to the trench convector. They are fixed the wrong way round for transport reasons. To install and adjust the height of the trench, loosen the outer fixing nuts on the adjustment feet and turn the height adjustment feet 180° so that the foot is pointing outwards (see Fig.)
- Then level the trench convector and adjust the height using the adjustment feet and adjustment screws on the raised floor brackets ③.
 - Ensure that the trench is horizontal and not twisted. Otherwise the grille will not fit into the floor trench.
 - Use screws and dowels to fix the height-adjustment feet ① with rubber pads for sound insulation ②.



4.2. Positioning and fixing at the installation site



Move the **Katherm QK** into its final installation position (1). Pay attention to the prescribed spacings to walls and façades (2) and (3) on site. Align the **Katherm QK** into its final horizontal position (4, 5a and 5b) and used screws and rawlplugs (by others) to fix the **Katherm QK** to the floor (6).

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

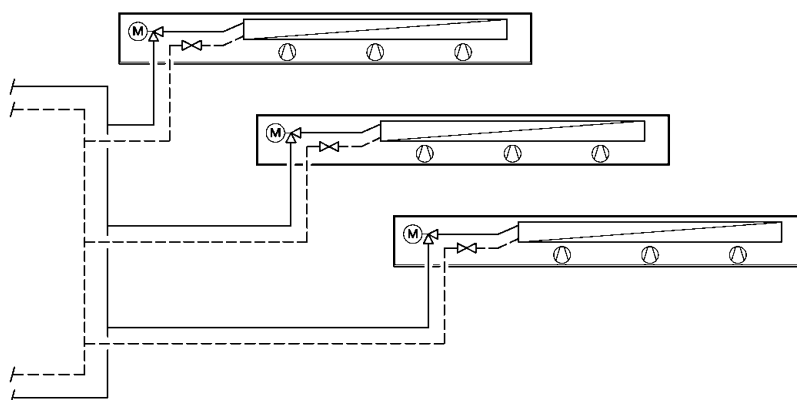
Ready-to-install convector-based trench convectors

Assembly and installation instructions

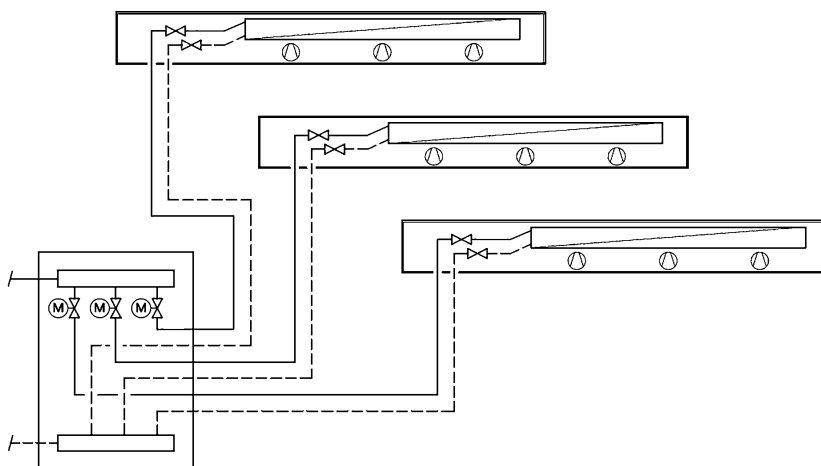
5. Water connections

- Use the punched pipe openings for the water-side connection. Screw the connecting accessories until tight onto the convector connections. Remove the punched pipe opening. Screw the thermostat valve and the return shut-off valve using an appropriate sealant (e.g. NEO Fermit) to the Eurokonus connections on the convector.
- Then fit the flow and return pipes.
- Perform a pressure test.
- Adhere these installation instructions very visibly to the trench heater for subsequent trades.
- Cover the grille and trench with the installation cover to protect it from dirt or cement.

Hydraulic set-up options

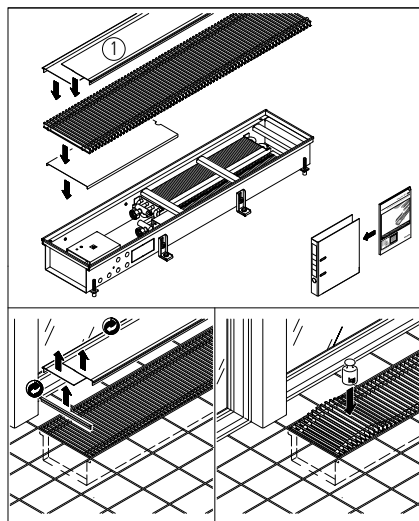


Decentralised valve control



Central heating circuit distributor

6. Screeding / Protection from dirt



① Dust and protective cover:
(remove the transparent dust and protective cover before commissioning the unit)

Before commencing screeding, check whether

- the water connection has been correctly done
- the electrical connection has been correctly done
- the height and distance of the trench from the window is correct
- the grille is covered (Caution! Cement destroys the surface of the grille!)
- sound insulation (not with raised floors) is fitted underneath the trench heater
- there are no sound bridges to the concrete slab, especially close to the height-adjustment feet
- appropriate materials have been used to seal all openings and punched openings of the trench convector from the ingress of screed
- the openings and punched openings of the trench convector are sealed when using screed or other low-viscosity floor coverings.

Important: Do not allow screed or the floor to press the floor trench. Provide expansion joints if necessary.

Roll-up grilles packed separately, 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, as shown on the figure above, helps it to fit more easily into the frame.

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

7. Connection openings · Pipe openings · Water connection

Katherm QK 190

Design	Room-side connection
<p>Katherm QK 190</p> <p>① Flow</p> <p>② Return</p> <p>③ Valve body, 1/2" straight, type 346909, pre-settable</p> <p>④ Thermoelectric actuator 24 V, type 146906</p> <p>⑤ 1/2" return shut-off valve, straight, type 145952</p> <p>⑥ Unit shown with roll-up grille</p> <p>⑦ Pipe openings for water connection, punched</p> <p>⑧ Electrical cable openings, punched</p> <p>⑨ Alternatively: Valve kit type 142110, consisting of valve body 1/2" pre-settable, actuator 24 V and return shut-off valve 1/2"</p>	<div> <p>Front view</p> </div> <div> <p>Side view (cross-section)</p> </div> <div> <p>Top view (without cover panel)</p> <p>Window side</p> <p>Room side</p> </div> <div> <p>Top view (without cover panel)</p> <p>Window side</p> <p>Room side</p> </div>

Katherm QK 215

Design	Room-side connection
<p>Katherm QK 215</p> <ul style="list-style-type: none"> ① Flow ② Return ③ Valve body, 1/2" straight, type 346909, pre-settable ④ Thermoelectric actuator 24 V, type 146906 ⑤ 1/2" return shut-off valve, straight, type 145952 ⑥ Unit shown with roll-up grille ⑦ Pipe openings for water connection, punched ⑧ Electrical cable openings, punched ⑨ Alternatively: Valve kit type 142110, consisting of valve body 1/2" pre-settable, actuator 24 V and return shut-off valve 1/2" 	<p>The technical drawings include:</p> <ul style="list-style-type: none"> Front view: Shows the top of the unit with dimensions: 203 (total width), 100 (distance to right edge), 63 (distance to first pipe opening), 40 (distance between pipe openings), 40 (distance between pipe openings), 40 (distance between pipe openings), 45 (distance to right edge of pipe openings), 50 (distance to right edge of unit), 17 (distance to right edge of unit), 34 (distance to right edge of unit), 28 (distance to right edge of unit), 84 (distance to right edge of unit), 116 - 146 (total height), 4 (distance to bottom edge), 19 (distance to bottom edge), 40 (distance to bottom edge), 53 (distance to bottom edge), 62 (distance to bottom edge). Side view (cross-section): Shows the side of the unit with dimensions: 215 (total width), 65 (distance to left edge), 150 (distance to right edge), 105 (distance to left edge), 110 (distance to right edge), 112 (total height), 4 (distance to bottom edge), 21 (distance to bottom edge), 44 (distance to bottom edge), 47 (distance to bottom edge). Top view (without cover panel): Shows the top of the unit with dimensions: 344 (total width), 328 (distance to right edge), 215 (total height). It includes labels ①, ②, ③, ④, ⑤, ⑥, ⑦, ⑧, ⑨. Side view (cross-section): Shows the side of the unit with dimensions: 215 (total width), 65 (distance to left edge), 150 (distance to right edge), 105 (distance to left edge), 110 (distance to right edge), 112 (total height), 4 (distance to bottom edge), 21 (distance to bottom edge), 44 (distance to bottom edge), 47 (distance to bottom edge).

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

8. Number of height-adjustment feet and raised floor feet

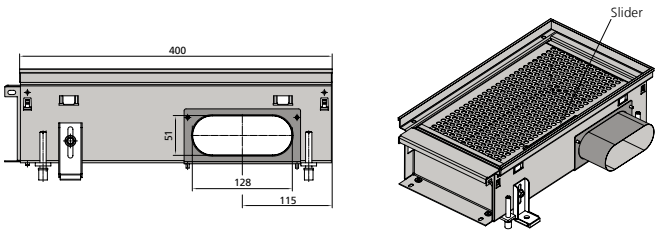
Katherm QK 190 Katherm QK 215	Height adjustment feet	Raised floor height adjustment feet
Trench length [mm]	Number of	Number of
1000	2	2
1200	2	3
1400	2	3
1600	2	3
1800	2	3
2000	2	4
2200	2	4
2400	2	4
2600	2	5
2800	2	5
3000	2	5
3200	2	5

9. Supply air modules, Katherm QK

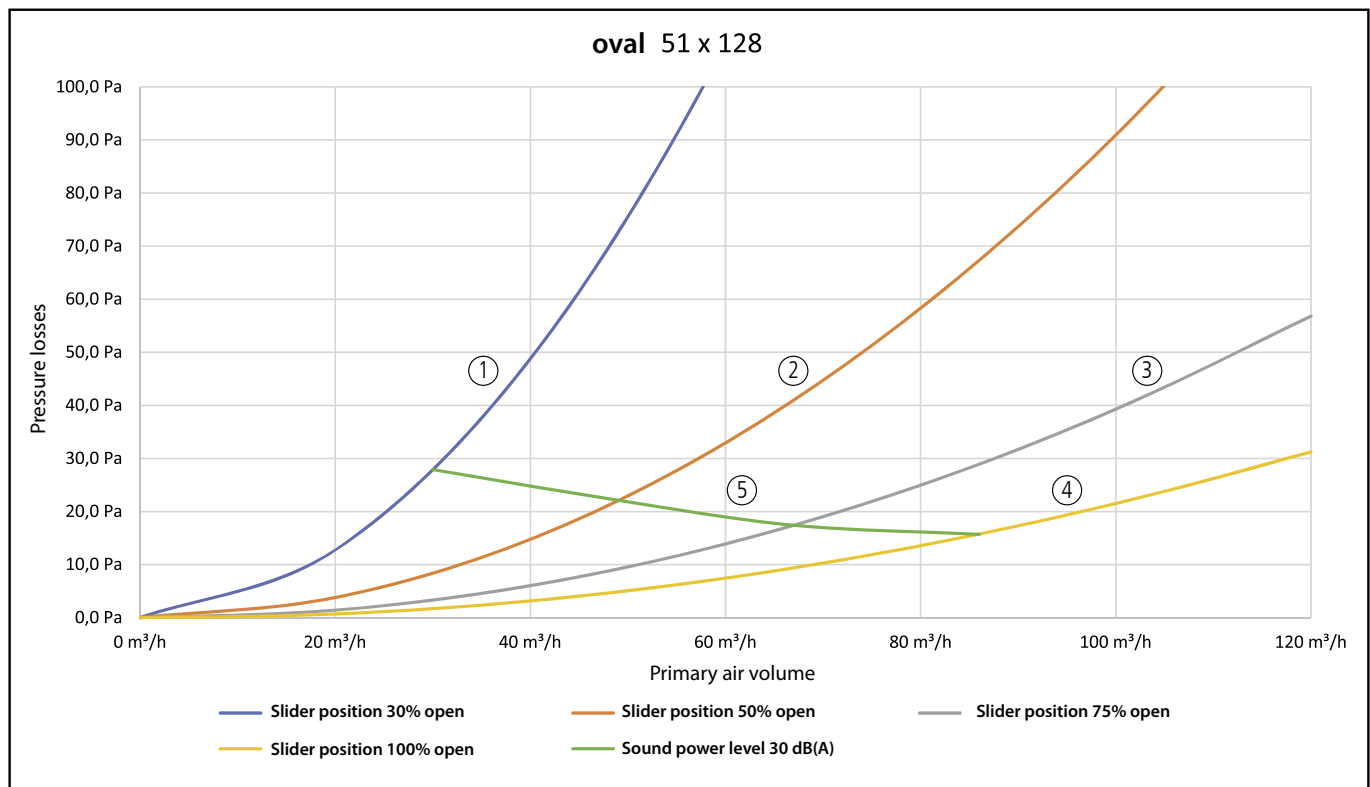
- 1 Supply air module with supply air spigot
- 2 Connecting brackets
- 3 Supply air slider
- 4 Reinforcing struts
- 5 Perforated plate
- 6 Filter
- 7 Example of Optiline roll-up grille
- 8 Kampmann QK shown with Optiline roll-up grille

Combination of Katherm QK with supply air module

Trench width	Trench length	Trench height	Supply air spigot	Design air volume
[mm]	[mm]	[mm]	[mm]	[m³/h]
190	400	112	oval 51x128	70
215	400	112	oval 51x128	70

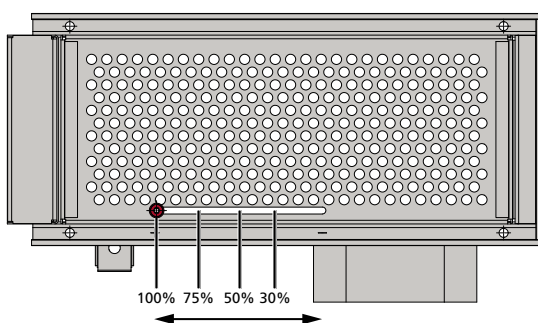


Example of 190/112



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

Adjusting the slider position



Like all standard units, the height of the supply air module is adjusted using the threaded rods and connected by the installation brackets to the substrate. The slider can be moved into different positions to adjust the required volumetric flow at the supply air module. The drawing on the left shows 4 different slider positions (100%, 75%, 50% and 30% opened). They are also shown in the design diagrams below in which the pressure losses, sound levels and airflows can be seen. Intermediate values can be interpolated.

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

10. Maintenance

Important

Only permit trained qualified personnel to perform maintenance work on **Katherm** QK trench heaters in compliance with the installation and operating instructions as well as any regulations currently in force. Regularly maintain and inspect **Katherm** QK units to ensure their proper function and performance.

Important: Disconnect and de-energise all equipment before commencing maintenance work and prevent it from being re-connected.

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

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

10.1 Maintenance schedule

Interval	Maintenance task
as required	Visual inspection of the grilles (roll-up or linear), if dirty, remove and use a cloth to clean
every six months	Visual inspection of the tangential fans; remove and clean if dirty (see "Cleaning tangential fans")
every six months	Visual inspection of the floor trench; remove internal components and clean if dirty (see "Cleaning the floor trench").
every six months	Visual inspection of the convector; clean if dirty (see "Cleaning the convector")
every six months	Check the water-side connections and valves for leaks.
every six months	Check that the electrical cables and connections are tight.

Cleaning the tangential fan

A dirty tangential fan impairs the airflow and thus also the output of the unit.

- If dirty, carefully clean the surfaces of the tangential fan with a cloth.

Clean the floor trench

A dirt floor trench, possibly caused by coarse dirt, impairs the airflow.

- If dirty, carefully vacuum the floor trench or use a cloth to clean if after removing all components (grille, lid, bracing, tangential fans).

Clean the convector

A dirt convector, e.g. dusty deposits between the fins, impairs the airflow, heat transfer and thus also the output of the unit.

- Carefully vacuum the heat exchanger if dirty. Do not use water to clean the heat exchanger!

Caution: Fins bend easily!

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

11. Electrical wiring

Personnel:

- Installation personnel
- Qualified electrician

Protective equipment:

- Safety shoes
- Protective gloves
- Workwear



Only allow qualified electricians to perform electrical work. Further connections, for instance to building control systems or external controllers, may be necessary. Refer to the manufacturer's literature in this respect.

- Wire the unit in accordance with the enclosed wiring diagram.
- Only wire the unit in accordance with currently applicable VDE and EN guidelines, as well as Technical Wiring Regulations stipulated by the regional energy supply companies.
- Only connect the unit to fixed cables.

Only use the room or clock thermostat as a room control unit with the 230 V electromechanical model.

Only use the KaController in conjunction with the KaControl system.

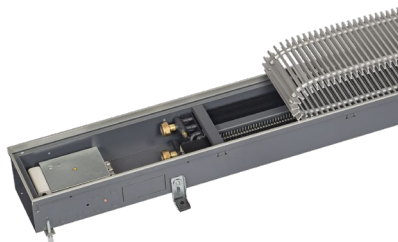
Important:

Provide an all-pole mains separator in the wiring on site that can be reliably secured to avoid the system being reconnected (e.g. a lockable switch with a contact opening of at least 3 mm up to a rated voltage of 480 V).



No protective measures are indicated in the Kampmann wiring diagrams. These must be provided additionally when installing the system and when connecting the units in accordance with VDE 0100 and the regulations of each of the respective energy supply companies.

11.1 Overview of controls



The **Katherm** QK comes in a series of different electrical versions. Connect it via a terminal strip in the electrical junction box. This is located on the side of the **Katherm** QK's water connection. Wire the unit as per the wiring diagram, which is different for each version.

Design	Art. no. suffix
24 V electromechanical	_24
230 V electromechanical	_00
KaControl	_C1

Ask a qualified electrician to determine the type of cable and cable cross-sections: The cable cross sections basically depend on the fuses for the cable length and the wiring capacity of the electric motors on site .

Lay control lines separately from supply lines.
Use UNITRONIC® BUS LD 2x2x0.22 or similar as data cables.
Wire the unit in series: star cabling is not allowed.

11.2 Electrical wiring

Suggested layout for control option KaControl C1

The connection for the electrical cables is in the control box. To connect the electrical cables, open the control box, insert the cables and connect them up according to the wiring diagram (supplied with the unit).

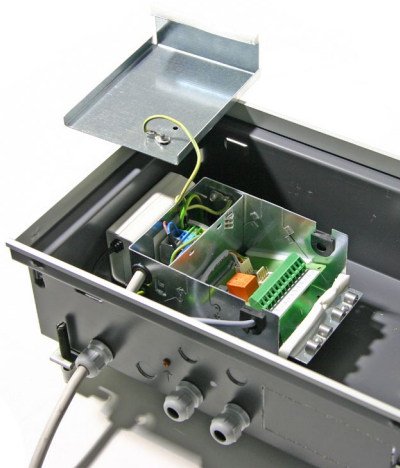


Fig. Katherm QK with control box and mains feed

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

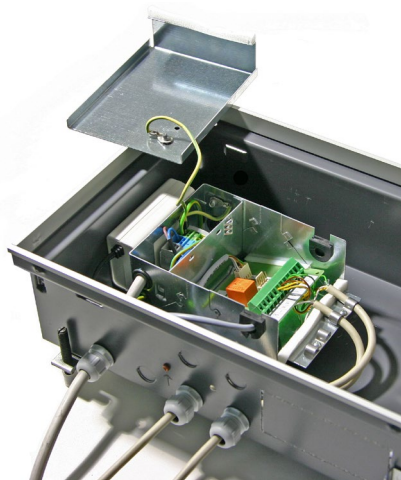


Fig. Stripping control cables

Insert control lines, stripe to size, sheathe and wire as per the wiring diagram (supplied with the unit).

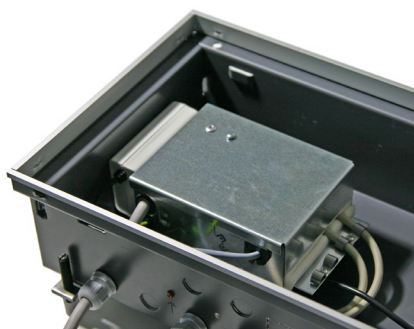


Fig. Wiring the valve actuator

Wire the valve actuators according to the wiring diagram (supplied with the unit). Close the housing of the control box.

11.3 24 V electromechanical electrical model

Model for complete in situ control of the Katherm QK

Product features

The operating voltage must be provided by a central on-site 24 V DC voltage supply.

Kampmann offers a range of switching power units in different output classes as accessories for the voltage supply (24 V DC).

The fan automatically switches off in the event of a motor fault.

Katherm QK - Trench convector with energy-efficient EC tangential fan 1.42

Ready-to-install convector-based trench convectors

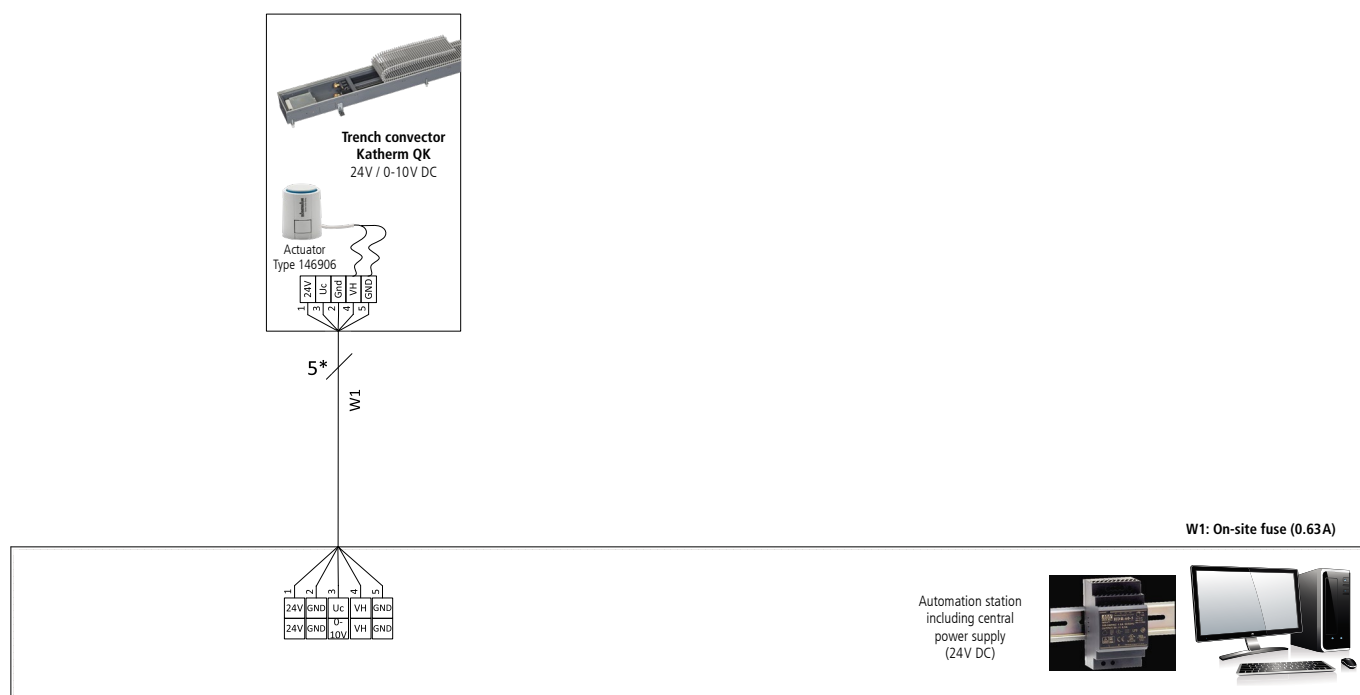
Assembly and installation instructions

Table with rating values

Trench length [mm]	QK 190 / QK 215 Power consumption P [W] Current consumption I [mA] at fan speed									
	20%		40%		60%		80%		100%	
	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]
1000	2.6	39	3.1	44	3.5	47	4.2	55	5.3	64
1200	2.8	41	3.5	48	4.2	54	5.1	61	6.7	75
1400	3.2	44	3.8	51	5.0	60	6.4	73	8.2	86
1600	3.4	46	4.2	54	5.7	67	7.6	84	9.9	104
1800	3.5	51	4.4	59	5.8	70	7.7	85	10.5	104
2000	3.5	51	4.4	59	5.8	70	7.7	85	10.5	104
2200	5.1	57	6.0	64	6.8	71	7.8	86	11.1	105
2400	5.3	57	6.3	65	7.3	72	9.5	88	12.6	108
2600	5.5	60	6.5	66	7.8	76	10.3	93	14.0	119
2800	5.6	62	6.7	69	8.9	85	11.9	107	16.4	138
3000	5.7	62	7.0	71	9.5	88	12.8	112	18.4	151
3200	5.8	63	7.2	73	9.8	92	13.6	119	20.1	165

The power and current consumption of the actuators (1 W) is not taken into account.

Electrical cabling - BMS control



* Lay shielded cables (e.g. IY(ST)Y, 0.8 mm), separately from high-voltage cables.

W1: Voltage supply and control signal for (on-site fuse 0.63 A) and actuator.

Subject to technical modifications: Refer to the control accessory documentation in the event of deviation from the circuit diagrams!

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions



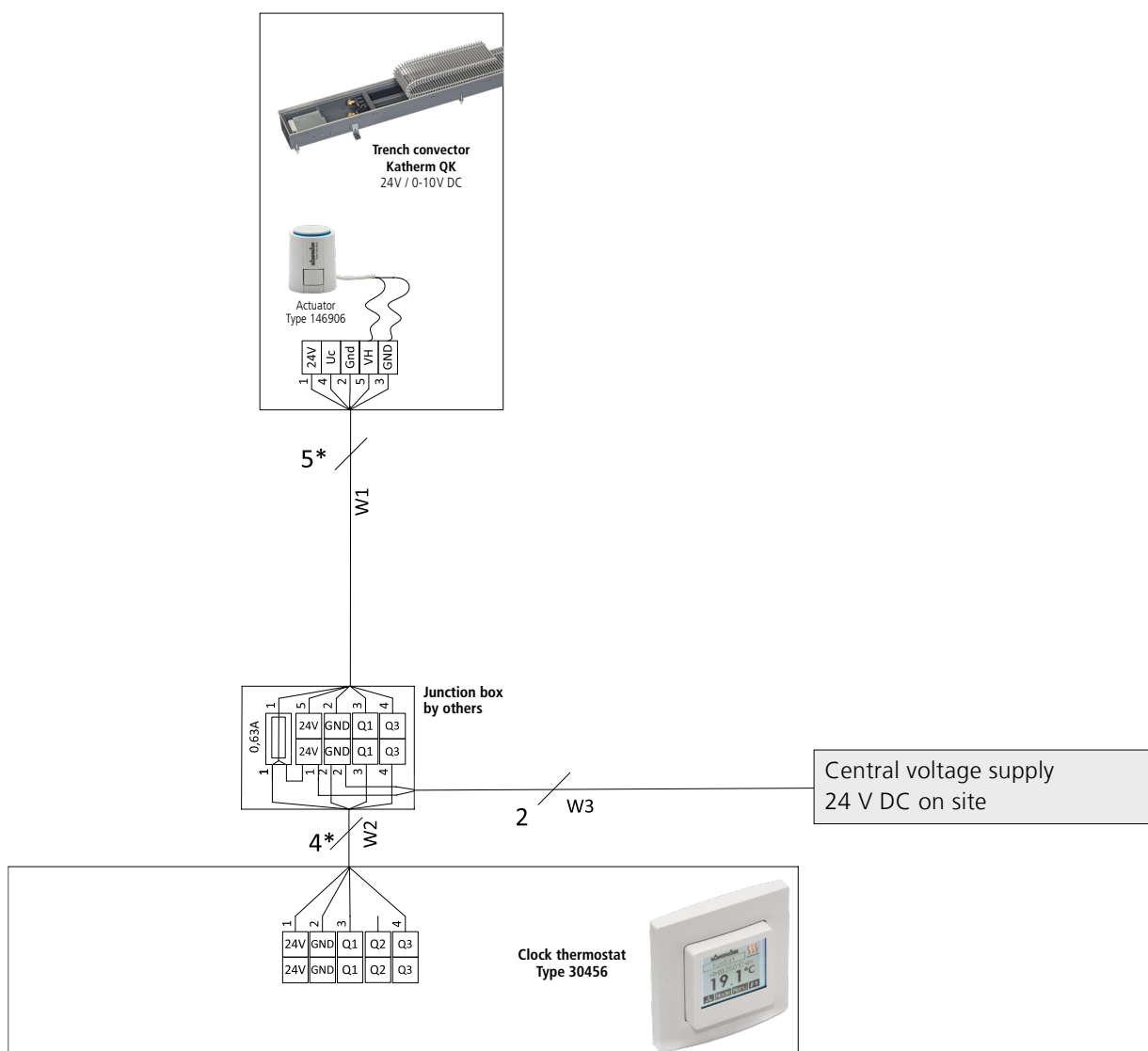
Fig.: Clock thermostat type 30456

The clock thermostat type 30456 permits the operation and temperature control of 24 V electromechanical **Katherm** QK units.

The room temperature is set by sensor-controlled functional keys.

Complete with 10-stage fan speed adjustment in manual and automatic operating mode, including automatic summer/winter changeover and a day or week program.

Electrical cabling – Control via clock thermostat, type 30456



* Lay shielded cables (e.g. IY(ST)Y, 0.8 mm) separately from power cables.

W1: Voltage supply and control signal for fan (on-site fuse 0.63 A) and actuator.

W2: Voltage supply and control signal for fan and actuator.

W3: Voltage supply (fuse by others).

11.4 230 V electromechanical electrical model

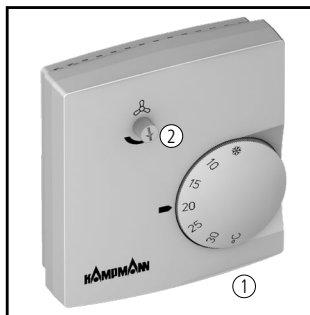


Fig.: Room thermostat type 342924

Design for on-site control or for room regulation with intuitive operation of the **Katherm QK**.

Product features

The **Katherm QK** features an integral switch power supply to connect to the 230 V AC voltage supply.

- In the event of a motor fault, the fan automatically switches off and a fault signal is issued at the potential-free contact.

The required room temperature is set on the room thermostat type 342924. If this falls below the set value, the cross-flow fan starts up at the set speed and the thermoelectric actuator valve opens the water-side valve.

If the speed controller is switched to zero (Off), only the water-side valve opens (natural convection operation).

Room thermostat with continuously variable speed setting, in a flat surface-mounted housing, white, with thermal feedback; for the continuously variable parallel control of max. 10 **Katherm QK** 230 V electromechanical models, room temperature and fan presetting using dials; temperature setting range 5 - 30°C; IP30 rated, voltage 230V/50Hz, max. current load 4A, switching difference 0.5 K, temperature drop approx. 4 K, fuse and EMC in line with DIN EN 60730

Dimensions W x H x D: 78 X 83 x 27 mm

① Dial for temperature setting

② Dial for fan speed setting

Table with rating values

Trench length [mm]	QK 190 / QK 215 Power consumption P [W] Current consumption I [mA] at fan speed									
	20%		40%		60%		80%		100%	
	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]
1000	3.6	54	4.1	58	4.5	61	5.2	68	6.3	76
1200	3.8	56	4.5	62	5.2	67	6.1	73	7.7	86
1400	4.2	58	4.8	64	6.0	72	7.4	84	9.2	97
1600	4.4	60	5.2	67	6.7	79	8.6	95	10.9	114
1800	4.5	65	5.4	74	6.8	84	8.7	95	11.5	114
2000	4.5	65	5.4	74	6.8	84	8.7	95	11.5	114
2200	6.1	68	7.0	75	7.8	84	8.8	96	12.1	114
2400	6.3	68	7.3	75	8.3	85	10.5	97	13.6	117
2600	6.5	71	7.5	76	8.8	86	11.3	102	15.0	128
2800	6.6	73	7.7	79	9.9	95	12.9	116	17.4	146
3000	6.7	73	8.0	81	10.5	97	13.8	121	19.4	159
3200	6.8	74	8.2	83	10.8	101	14.6	128	21.1	173

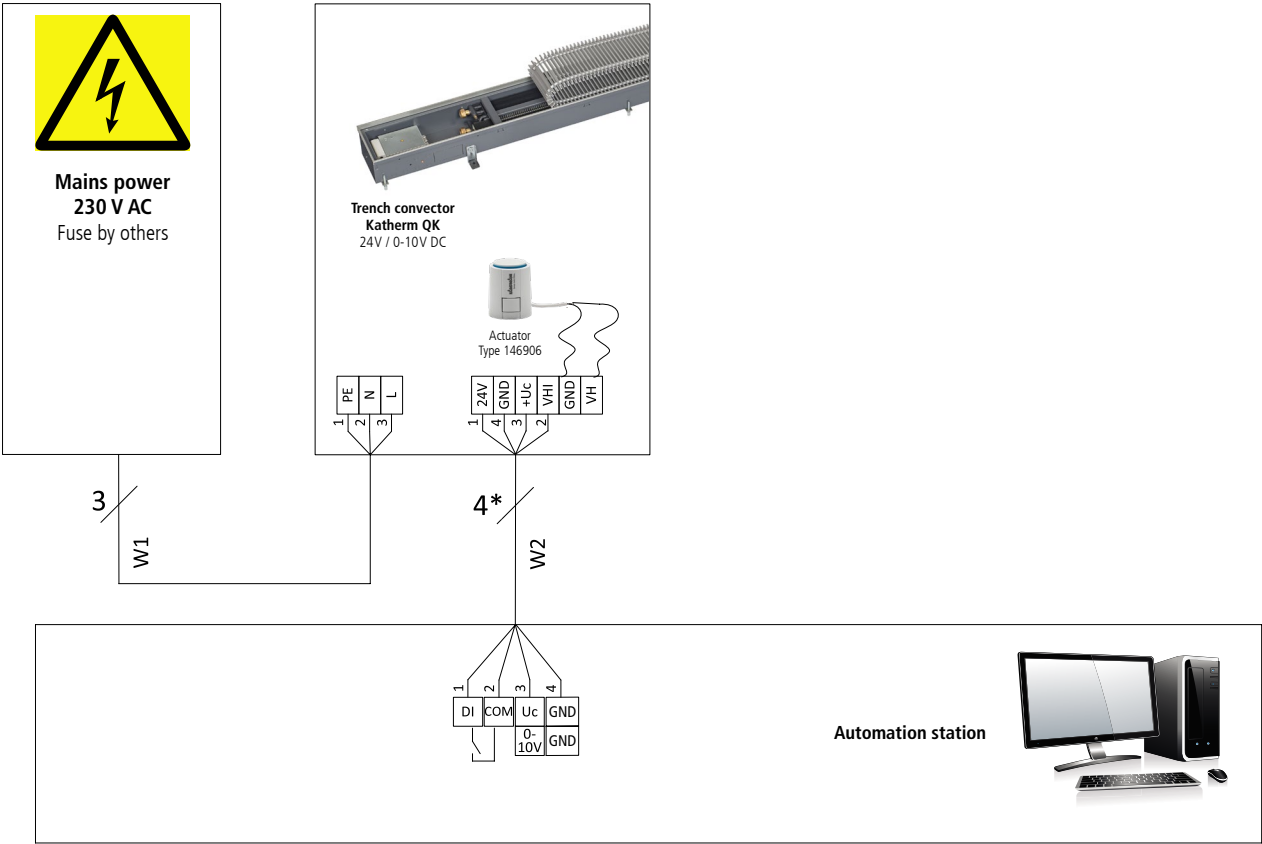
The power and current consumption of the actuators (1 W) is not taken into account.

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

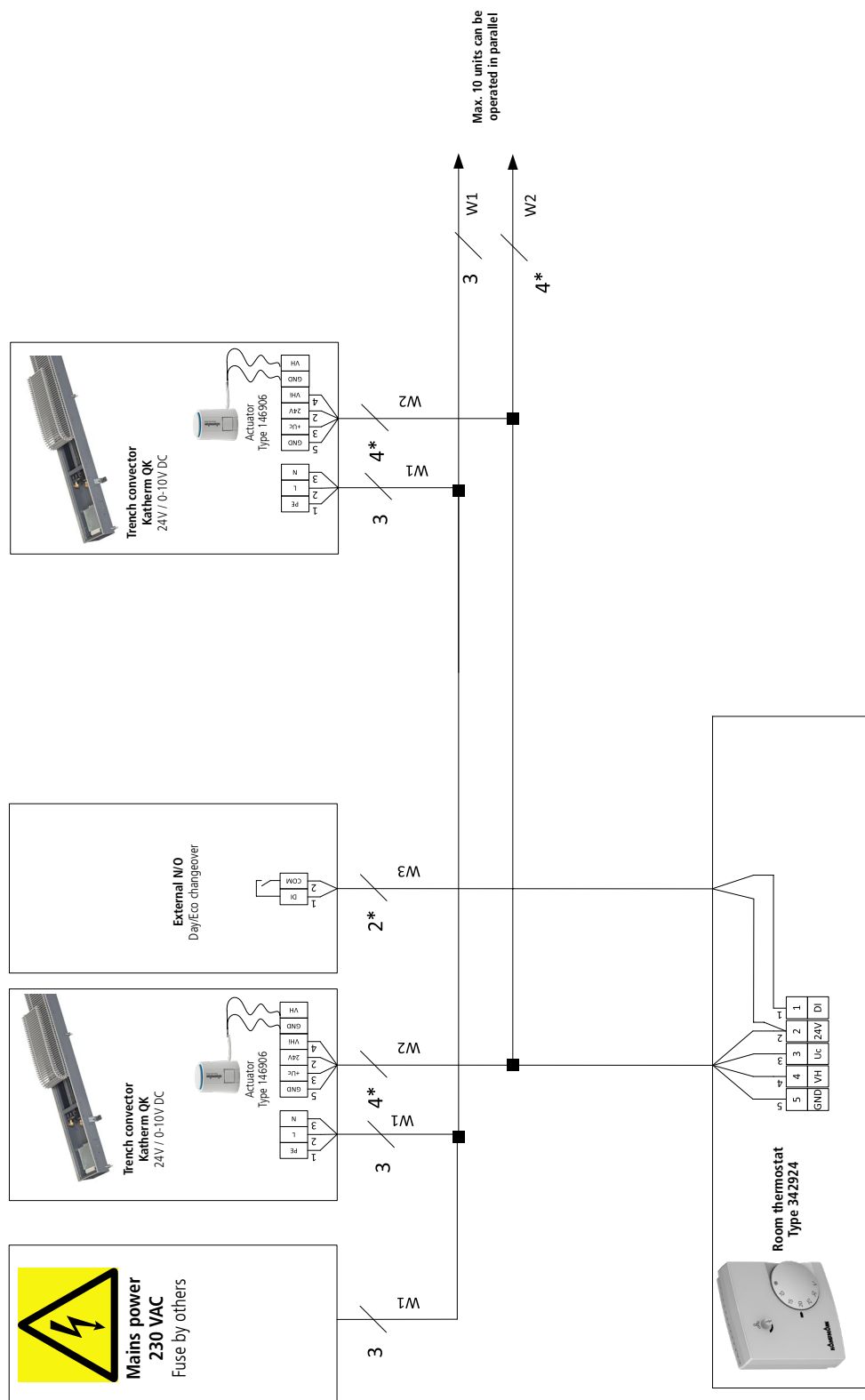
Assembly and installation instructions

Electrical cabling - BMS control



* Lay shielded cables (e.g. IY(ST)Y, 0.8 mm) separately from power cables.
W1: power supply
W2: Control signal for fan and actuator
Subject to technical modifications: Refer to the control accessory documentation in the event of deviation from the circuit diagrams!

Electrical cabling – Control via room thermostat, type 342924



* Lay shielded cables (e.g. IY(ST)Y, 0.8 mm) separately from power cables.

W1: power supply

W2: Control signal for fan and actuator

W3: Operating mode changeover (optional)

Subject to technical modifications: Refer to the control accessory documentation in the event of deviation from the circuit diagrams!

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

11.5 KaControl model

Model for room automation and networking.

Product features

- A high-performance parametrised microprocessor is designed to carry out all necessary functions. Each **Katherm** QK is therefore equipped with its own "intelligence" and can be operated in groups via Kampmann networks.

Connection to building automation systems

- **Katherm** QK with KaControl option can be equipped with plug-in communication interfaces for controlled operation in individual rooms or for linking into higher-order control systems: BACnet, CAN bus, LON, KNX and Modbus. Direct control via an active 0-10 V signal from the on-site building management system is alternatively possible.

Motor protection

- Any faults with the motor e.g. overloading are analysed by the electronics within the EC motor. This then switches the fan off.

KaControl

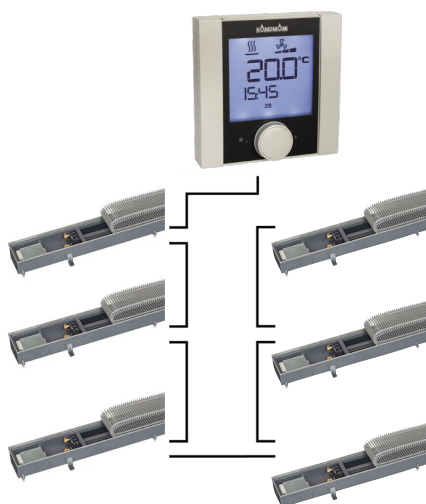
The parametrisable KaControl offers a wide range of functions:

- Optional: 5 fan speed settings; manually adjustable
- Valve control for 2-pipe applications for thermoelectric valve actuators 24 V DC OPEN/CLOSE
- Integrated timer program for programming day and week switching functions in the KaController unit
- Motor monitoring with fault signal processing

Applications of the KaController

The **Katherm** QK and associated room control units can only be used:

- indoors (for instance in residential properties and offices, showrooms etc.)
- KaControllers should not be used
- outdoors
 - in humid areas, such as swimming pools, in wet rooms
 - in areas where there is a risk of explosion
 - in areas with a high dust content
 - in areas with an aggressive atmosphere



Description of control, basic settings

The KaControl version provides the option of controlling the **Katherm QK** by means of a control unit supplied separately or on-site building management technology.

A number of different settings and configurations are possible using the DIP switches on the PCB and parameters that can be set by the control unit.

This manual provides only a brief overview. Please refer to the separate KaControl instruction manual for further setting options.

The KaControl system offers the possibility of grouping, although an extension board (CANbus), available as an accessory, then needs to be provided.

Lay control lines separately from supply lines.

Use UNITRONIC® BUS LD 2x2x0.22 or similar as data cables.

Wire the unit in series: star cabling is not allowed.

Table with rating values

Trench length [mm]	QK 190 / QK 215 Power consumption P [W] Current consumption I [mA] at fan speed									
	20%		40%		60%		80%		100%	
	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]	P [W]	I [mA]
1000	3.6	54	4.1	58	4.5	61	5.2	68	6.3	76
1200	3.8	56	4.5	62	5.2	67	6.1	73	7.7	86
1400	4.2	58	4.8	64	6.0	72	7.4	84	9.2	97
1600	4.4	60	5.2	67	6.7	79	8.6	95	10.9	114
1800	4.5	65	5.4	74	6.8	84	8.7	95	11.5	114
2000	4.5	65	5.4	74	6.8	84	8.7	95	11.5	114
2200	6.1	68	7.0	75	7.8	84	8.8	96	12.1	114
2400	6.3	68	7.3	75	8.3	85	10.5	97	13.6	117
2600	6.5	71	7.5	76	8.8	86	11.3	102	15.0	128
2800	6.6	73	7.7	79	9.9	95	12.9	116	17.4	146
3000	6.7	73	8.0	81	10.5	97	13.8	121	19.4	159
3200	6.8	74	8.2	83	10.8	101	14.6	128	21.1	173

The power and current consumption of the actuators (1 W) is not taken into account.

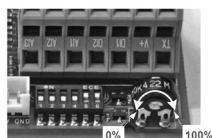
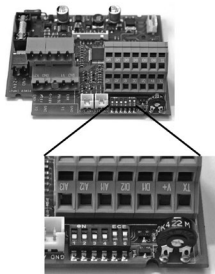
1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

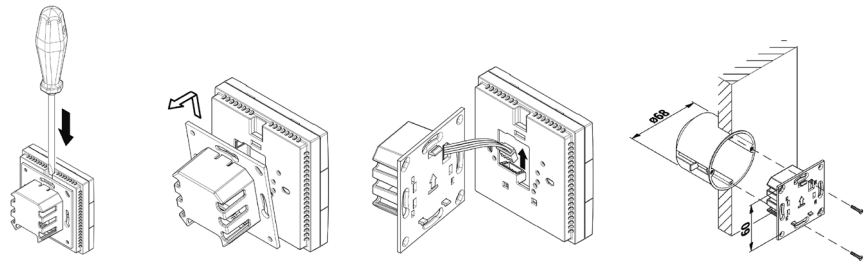
Assembly and installation instructions

Configuration

DIP	Function	Position	Factory settings	Description
1	---	OFF	OFF	Changing to ON means that the unit is no longer controlled by the KaControl unit, rather by means of a 0-10V signal on the AI2/GND and AI3/GND input (see separate KaControl instructions).
	External control 0-10 V	ON		
2	---	OFF	OFF	Changing to ON means that the unit is no longer controlled by the KaControl unit, rather by means of an external 0-100 kOhm potentiometer signal on the AI2/GND and AI3/GND input (see separate KaControl instructions).
	Activation by potentiometer 0-100 kOhm	ON		
3	Clip-on sensor fitted	ON	OFF	The clip-on sensor is available as an accessory and can be used as a changeover sensor. If used, set the DIP switch to ON.
	No clip-on sensor fitted	OFF		
4	Heating/Cooling/ External changeover	ON	ON	If the function is activated, the operating mode of the unit can be changed by an external potential-free contact. The contact acts on input DI2/GND.
	---	OFF		
5	4-pipe	ON	OFF	
	Katherm QK is configured as a 2-pipe heating unit.			
6	Temperature detection on the cassette	OFF	OFF	The units have an air intake temperature sensor for room temperature setting. Set the DIP switch to ON if the temperature is to be detected at the control unit. If several cassettes are integrated in a group, the DIP switch has to be set to ON.
	Temperature detection on the control unit	ON		
Potentiometer	The maximum speed can be set using the potentiometer. The maximum speed and thus also the air volume and sound pressure level can be reduced, for example if a maximum sound level is not to be exceeded. The maximum cooling and/or heating output is correspondingly reduced by this.			



Installation of the control unit

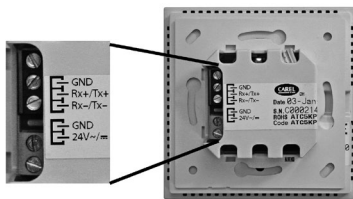


Installation/dismantling

Electrical wiring

Connect the KaController to the nearest **Katherm QK** according to the wiring diagram. The maximum BUS length between the KaController and the unit is 30 m.

- The respective **Katherm QK** automatically becomes the master unit in the control circuit when a KaController is connected to it.

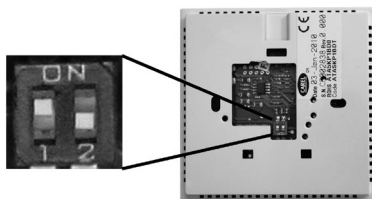


KaController terminals



DANGER!

Disconnect the unit prior to embarking on any wiring work!
Only connect the bus lines when the unit is fully disconnected.



DIP switch setting

KaController

DIP switch no. 1: **ON**

DIP switch no. 2: **OFF**

DIP switch setting

- The DIP switches on the rear of the KaController should be set according to the illustration at the side:

DIP switch no. 1: **ON**

DIP switch no. 2: **OFF**

PCB fault messages

Any fault messages are shown in the KaControl remote controller display.

Code	Alarm
A11	Faulty control sensor
A13	Room frost protection
A14	Condensation alarm
A15	General alarm
A16	Faulty A11, A12 or A13 sensor
A17	Unit frost protection
A18	Faulty EEPROM
A19	Offline slave in the CANbus network
tAL1	Temperature sensor in KaController faulty
tAL3	Real-time clock in KaController faulty
tAL4	EEPROM in KaController defective
Cn	Communication fault with the external control board (PCB)

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

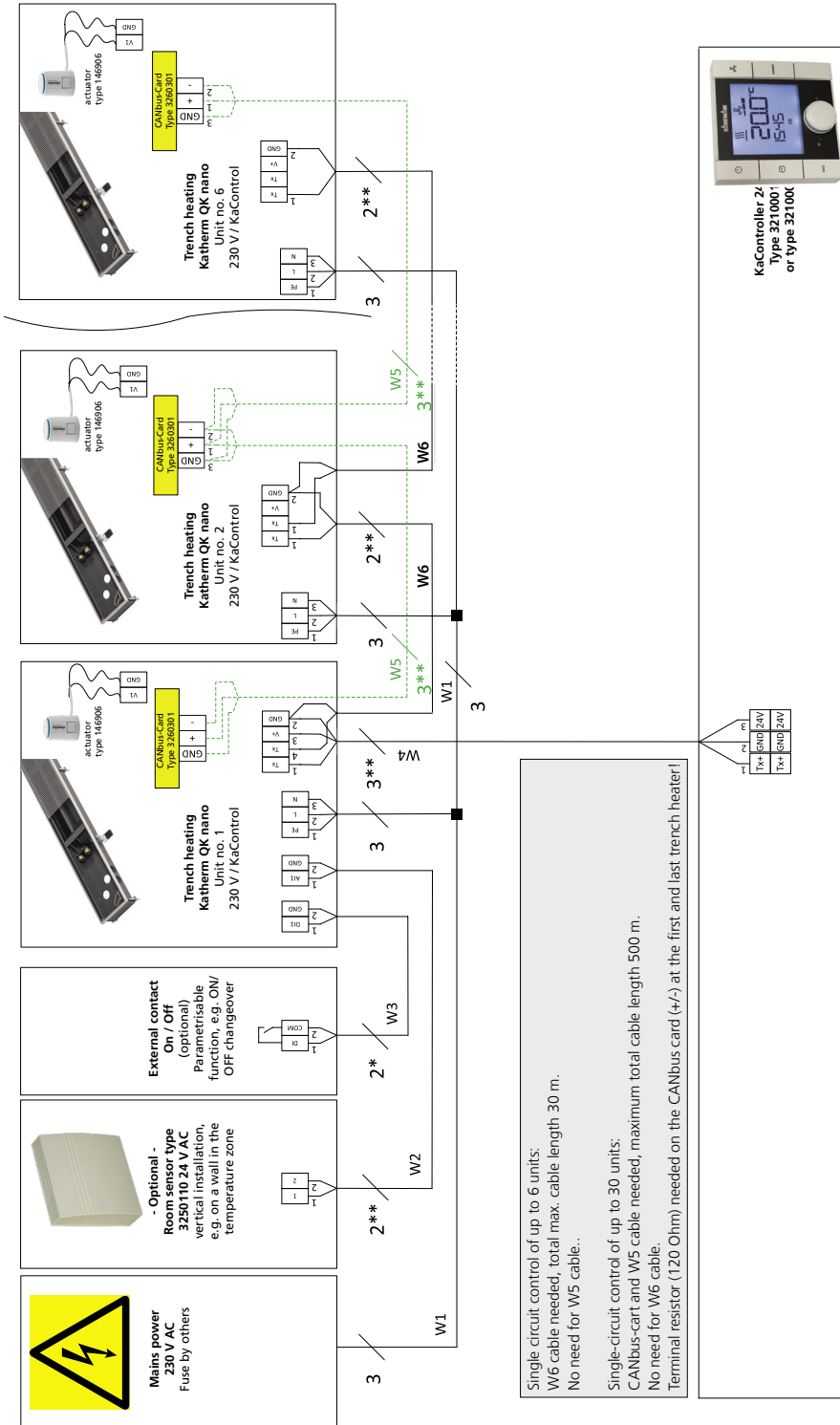
Assembly and installation instructions

11.5 1 Single-circuit controls

Katherm QK with KaController

Single-circuit control, or maximum 30 Katherm QK units by CAN bus.

Electrical cabling - 24 V Open / Close valve, external KaController



* Lay shielded cables (e.g. IY(STY) 0,8 mm) separately from high-voltage cables.

** Lay shielded, paired cables, e.g. UNITRONIC® BUS LD 2x2x0,22 or equivalent, separately from high-voltage cables.

W1: Power supply

W2: Analogue input AI1 (optional connection), max. cable length 10 m, from 1 mm² 30 m.

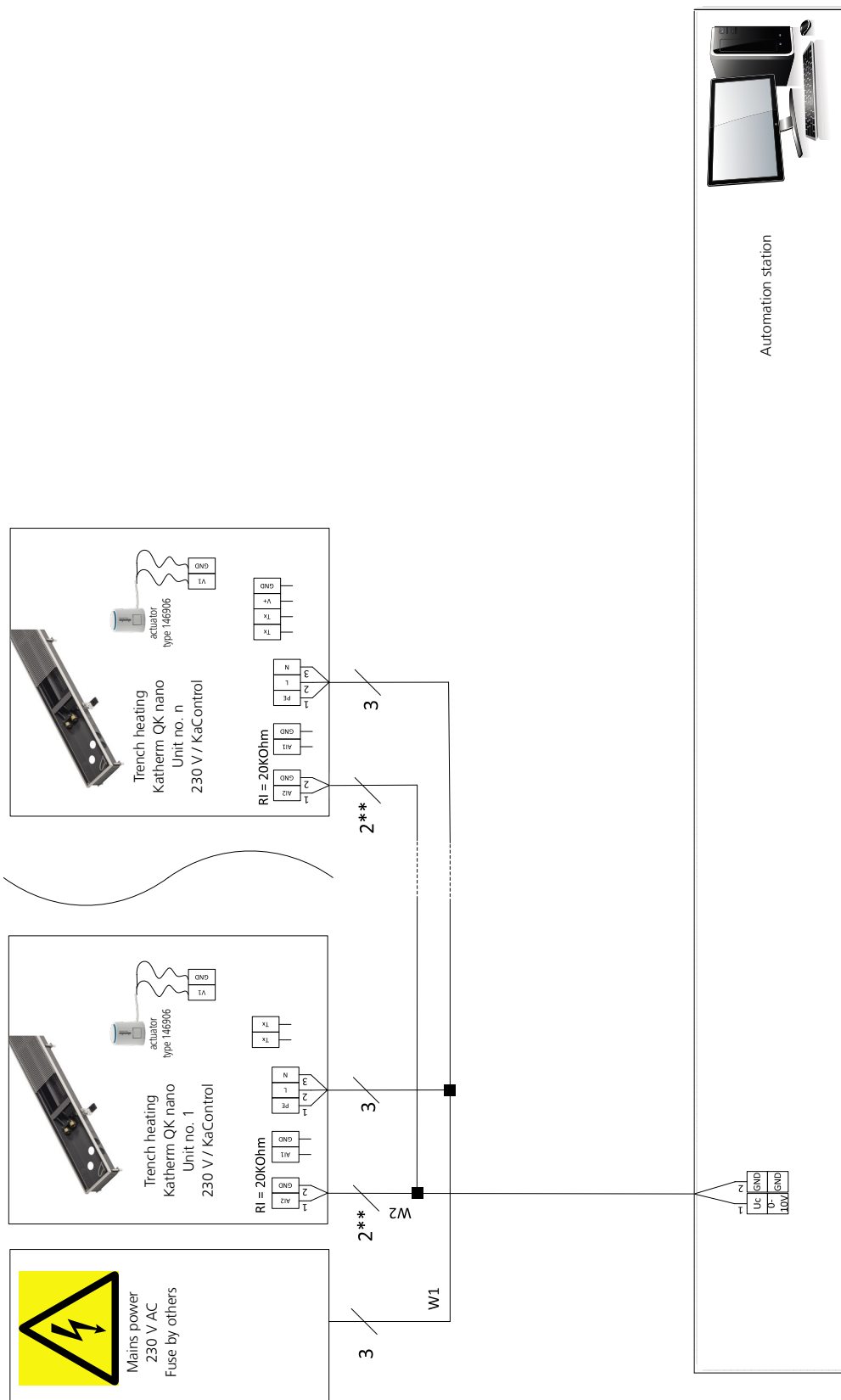
W3: Digital input DI1 (optional connection), max. cable length 30 m, from 1 mm² 100 m.

W4/W6: Bus signal (tLan), each max. total cable length 30 m.

W5: Bus signal (CANbus) only needed in a single-circuit control of up to 30 units.

Subject to technical modifications: Refer to the control accessory documentation in the event of deviation from the circuit diagrams!

KaControl electrical cabling - BMS control



** Lay shielded, paired cables, e.g. CAT5 (AWG23) of at least the same value, separately from high-voltage cables.

W1: Power supply

W2: Control signal for fan and actuator.

Subject to technical modifications: Refer to the control accessory documentation in the event of deviation from the circuit diagrams!

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

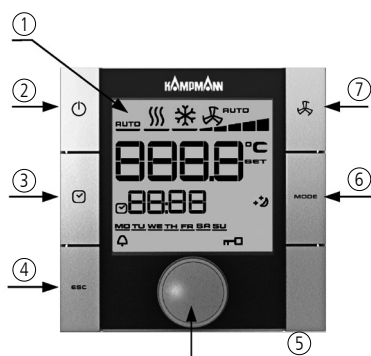
Ready-to-install convector-based trench convectors

Assembly and installation instructions

EC fans KaControl

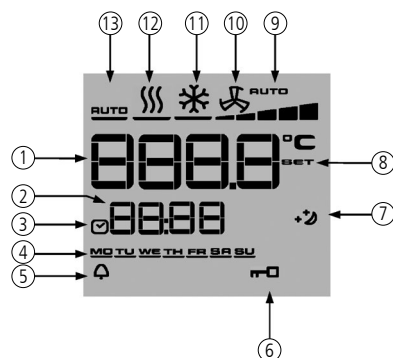
Operating of control unit

The operation of the **Katherm** QK can be changed using the control unit. There are two models of control unit. One with side keys and one without. Both control units can be used to call up all functions, with the keys offering the possibility of quick access to some functions.



No.	Description
①	Display of the operating mode set
②	QK On/Off (ECO/Day can be set)
③	Set timer
④	ESC, to move from a menu item to the basic view
⑤	"NAVIGATOR dial" – turn to the left or right to set values. Press the NAVIGATOR dial to confirm the setting
⑥	Mode to change operating mode: heating, cooling, recirculation
⑦	Increase or lower fan speed

LCD display symbols



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

Operation of the basic functions

Function	Description
Switch On/Off	Switch on by pressing key 2 or the navigator dial. When switched on, the display shows a temperature. Switch off by pressing button 2 or the navigator dial. OFF is shown.
Change temperature	Turn the navigator dial to the left to lower, and to the right to increase, the required temperature. Confirm the entry by pressing the navigator dial.
Fan speed	Change by pressing the side fan button or using the navigator dial. Briefly press the navigator dial once. Turn the navigator dial to the left to lower, and to the right to increase, the required fan speed. Press the navigator dial once more to confirm the display. In Automatic mode, the speed is adjusted when the room temperature deviates from the setpoint temperature.
Heating/Cooling/Recirculation	Change by pressing the side fan button or using the navigator dial. To change using the navigator dial, first press the navigator dial for approx. 1 second to move to the Fan stage selection. Then press the navigator dial once again for 3 seconds to go to the Time setting. Press again for approx. 3 seconds to move to the Timer menu. Press again for approx. 3 seconds to move to the Mode menu. Press briefly to confirm the entry.
Timer program	The KaControl provides the option of setting a weekly timer. Refer to the separate KaControl instructions for this.

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions

12. Declaration of Conformity

Information requirements for fan coils according to regulation (EU) No 2016/2281
Informationsanforderungen für Fan Coils gemäß Verordnung (EU) Nr. 2016/2281

Katherm QK heating only nur heizen 2-pipe unit 2-Rohrsystem		cooling capacity (sensible) Kühlleistung (sensibel)	cooling capacity (latent) Kühlleistung (latent)	Heating capacity Wärmeleistung	Total electric power input Elektrische Gesamtleistungsaufnahme	Sound power level (per speed setting, if applicable) Schallleistungspegel (ggf. je Geschwindigkeits- einstellung)
Overall frame width Rahmenaußenbreite	length Länge	P _{rated,c} kW	P _{rated,c} kW	P _{rated,h} kW	P _{elec} kW	L _{WA} dB (A)
190	1000 mm	-	-	0,3	0,005	<28/<28/<28/30/34
	1200 mm	-	-	0,5	0,005	<28/<28/29/33/37
	1400 mm	-	-	0,6	0,006	<28/<28/31/36/39
	1600 mm	-	-	0,8	0,007	<28/<28/33/38/41
	1800 mm	-	-	0,9	0,007	<28/29/34/39/43
	2000 mm	-	-	0,9	0,007	<28/29/34/39/43
	2200 mm	-	-	1,2	0,008	<28/30/36/40/44
	2400 mm	-	-	1,3	0,008	<28/31/37/41/45
	2600 mm	-	-	1,5	0,009	28/32/38/42/45
	2800 mm	-	-	1,6	0,010	29/33/39/43/47
	3000 mm	-	-	1,8	0,011	30/34/40/44/48
215	3200 mm	-	-	2,0	0,011	30/35/40/45/49
	1000 mm	-	-	0,3	0,005	<28/<28/<28/30/34
	1200 mm	-	-	0,5	0,005	<28/<28/29/33/37
	1400 mm	-	-	0,7	0,006	<28/<28/31/36/39
	1600 mm	-	-	0,9	0,007	<28/<28/33/38/41
	1800 mm	-	-	1,0	0,007	<28/29/34/39/43
	2000 mm	-	-	1,0	0,007	<28/29/34/39/43
	2200 mm	-	-	1,3	0,008	<28/30/36/40/44
	2400 mm	-	-	1,5	0,008	<28/31/37/41/45
	2600 mm	-	-	1,6	0,009	28/32/38/42/45
	2800 mm	-	-	1,8	0,010	29/33/39/43/47
	3000 mm	-	-	2,0	0,011	30/34/40/44/48
	3200 mm	-	-	2,1	0,011	30/35/40/45/49

Standard rating conditions for fan coil units according to regulation (EU) No 2016/2281

Norm-Prüfbedingungen für Gebläsekonvektoren gemäß Verordnung (EU) Nr. 2016/2281

Cooling Test	Air temperature	27 °C (dry bulb) 19 °C (wet bulb)	Inlet water temperature	7 °C	Water temperature rise	5 °C
Test Kühlbetrieb	Lufttemperatur	27 °C (Trockenkugel) 19 °C (Feuchtkugel)	Wassertemperatur am Einlass		Anstieg der Wassertemperatur	
Heating Test	Air temperature	20 °C (dry bulb)	Inlet water temperature	45 °C for 2-pipe units 65 °C for 4-pipe units	Water temperature decrease	5 °C for 2-pipe units 10 °C for 4-pipe units
Test Heizbetrieb	Lufttemperatur	20 °C (Trockenkugel)	Wassertemperatur am Einlass	45 °C für 2-Rohrsysteme 65 °C für 4-Rohrsysteme	Sinken der Wassertemperatur	5 °C für 2-Rohrsysteme 10 °C für 4-Rohrsysteme
Sound power test	At ambient conditions without water flow					
Test Schallleistungspegel	Bei Umgebungsbedingungen ohne Wasserdurchsatz					

Contact Details	Kampmann GmbH
Kontaktinformationen	Friedrich-Ebert-Straße 128-130, D-49811 Uingen (Ems), Germany



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 QK 142*****Katherm HK 143*******Katherm QK nano 442*******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****DIN EN 55014-1 ; -2****DIN EN 61000-3-2 ; -3-3****DIN EN 61000-6-1 ; -6-2 ; -6-3****DIN EN 60335-1 ; -2-40****Gebläseunterstützte Heizkörper, Konvektoren und Unterflurkonvektoren****Radiatoren und Konvektoren****Elektromagnetische Verträglichkeit****Elektromagnetische Verträglichkeit****Elektromagnetische Verträglichkeit****Sicherheit elektr. Geräte für den Hausgebrauch und ähnliche Zwecke**

1.42 Katherm QK – Trench convector with energy-efficient EC tangential fan

Ready-to-install convector-based trench convectors

Assembly and installation instructions



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

2/2

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Friedrich-Ebert-Straße 128–130
49811 Lingen (Ems)

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USt-IdNr: DE313505294
Kampmann.de

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

Registergericht: Osnabrück, HRB 211684
Geschäftsführer: Hendrik Kampmann

KAMPMANN
Genau mein Klima.

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