

Tandem door air curtains

► Assembly, installation and operating instructions

Keep these instructions in a safe place for future use!

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1 General

1.1 About these instructions

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

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

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

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

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

1.2 Explanation of Symbols



DANGER!

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



WARNING!

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



IMPORTANT NOTE!

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



IMPORTANT NOTE!

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

2 Safety

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

2.1 Correct use

The units are solely intended for the protection of open doors to prevent the ingress of the outdoor climate and to heat entrance areas in the winter months. They may solely be used indoors (for instance in offices, showrooms, department stores etc.) and in frost-free and dry areas. Within the room, the unit needs to be connected to the building's heating/cooling/ventilation system and to the building's waste water and power network. The operating limits and limits of use described in Chapter 2.2 [► 8] must be observed.

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

Information in accordance with EN60335-1

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

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

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

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2.2 Limits of operation and use

Limits of operation		
Min./max. water temperature	°C	40-90
Min./max. air intake temperature	°C	6-40
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 type plate

Tab. 2: Operating voltage

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

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

Water quality		
pH value (at 20 °C)		8-9
Conductivity (at 20 °C)	µS/cm	< 700
Oxygen content (O ₂)	mg/l	< 0.1
Hardness	°dH	4-8.5
Sulphur ions		not measurable
Sodium ions (Na ⁺)	mg/l	< 100
Iron ions (Fe ²⁺)	mg/l	< 0.1
Manganese ions (Mn ²⁺)	mg/l	<0.05
Ammonia ions (NH ₄ ⁺)	mg/l	< 0.1
Chlorine ions (Cl)	mg/l	< 100
CO ₂		< 50
Sulfate ions (SO ₄ ²⁻)	mg/l	< 50
Nitrite ions (NO ₂ ⁻)	mg/l	< 50
Nitrate ions (NO ₃ ⁻)	mg/l	< 50

Tab. 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 heating medium contains sufficient glycol.



IMPORTANT NOTE!

Energy losses due to misuse!

Series positive or negative pressure in a room can impair the function of the door air curtain.

- ▶ If a ventilation system is fitted, operate it with a balanced ratio between the supply and exhaust air.
- ▶ Avoid doors and doorways facing each other.



IMPORTANT NOTE!

Warning of misuse!

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

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

2.3 Risk from electrocution!



DANGER!

Risk of fatal injury from electrocution!

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

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

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2.4 Personnel requirements - Qualifications

Specialist knowledge

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

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

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

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

2.5 Personal Protective Equipment

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

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

3 Transport, storage and packaging

3.1 General transport instructions

Check on delivery for completeness and transport damage.

Proceed as follows in the event of visible damage:

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



IMPORTANT NOTE!

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



IMPORTANT NOTE!

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



IMPORTANT NOTE!

Material damage caused by incorrect transport!

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

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

3.2 Scope of delivery



IMPORTANT NOTE!

Check the scope of delivery!

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

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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	Tandem 300			
Model	12	20	25	30
Length [mm]	1250	2000	2500	3000
Weight [kg]	64	109	136	158
Max. discharge height [m]	3.2	3.2	3.2	3.2
Air volume, total [m³/h]	700 – 2030	1200 – 3830	1480 – 5410	1850 – 5810
Heat output [kW] ¹	4.6 – 9.6	8.3 – 18.5	10.8 – 26.5	13.5 – 30.1
Outlet air temperature [°C] ₁	43.1 – 52.2	43.7 – 53.9	44.0 – 55.7	45.4 – 55.8

Tab. 4: Technical data | Tandem 300

Unit	Tandem In-ceiling Unit			
Model	12	20	25	30
Length [mm]	1200	1950	2450	2950
Weight [kg]	64	103	130	152
Max. discharge height [m]	3.2	3.2	3.2	3.2
Air volume, total [m³/h]	700 – 2030	1200 – 3830	1480 – 5410	1850 – 5810
Heat output [kW] ¹	4.6 – 9.6	8.3 – 18.5	10.8 – 26.5	13.5 – 30.1
Outlet air temperature [°C] ₁	43.1 – 52.2	43.7 – 53.9	44.0 – 55.7	45.4 – 55.8

Tab. 5: Technical data | Tandem ceiling cassette unit

Unit	Tandem 365		
Model	12	20	27
Length [mm]	1250	2000	2750
Weight [kg]	95	152	200
Max. discharge height [m]	4	4	4
Air volume, total [m³/h]	1090 – 3090	1860 – 5830	2550 – 8480
Heat output [kW] ¹	7.1 – 14.3	12.8 – 27.8	18.1 – 41.3
Outlet air temperature [°C] ¹	42.7 – 52.1	43.4 – 53.6	43.9 – 54.8

Tab. 6: Technical data | Tandem 365

¹ at LPHW 75 / 65°C, t_{l1} = 20°C

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5 Construction and function

5.1 Overview

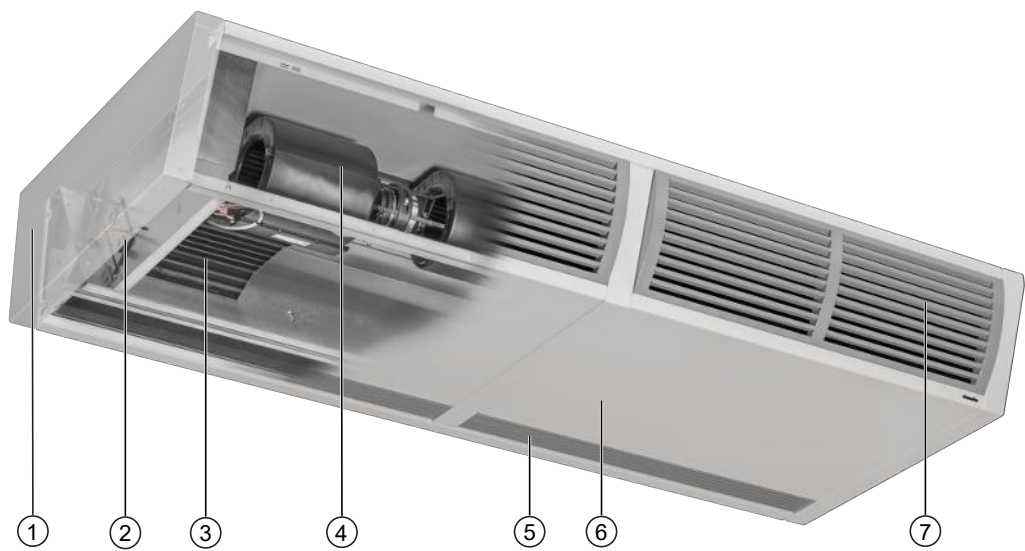



Fig. 1: Tandem at a glance

1	Side panel	2	Torsion prevention mechanism
3	High-output heat exchanger	4	Radial fan
5	Outlet air rectifier	6	Service hatch
7	Air inlet grille with filter (optional)		

5.2 Brief description

Tandem door air curtains are used to screen open doors from the ingress of cold air. Room air is drawn in by a radial fan through the inlet grille (with optional filter) and passed through the heat exchanger or partially passed through the heat exchanger (Tandem technology). The air stream is directed downwards in a low-turbulence manner by the adjustable rectifier.

5.3 Wear parts list

Figure	Article	Properties	Suitable for	Art. no.
	Replacement filter with frame	1 no. (2 required with Model 20 and larger)	Tandem 300, Tandem 300 ceiling cassette unit	Model 12: 251003112925
				Model 20: 251003120925
				Model 25: 251003125925
				Model 30: 251003130925
			Tandem 365	Model 12: 252003212825
				Model 20: 252003220825
				Model 27: 252003227825

6 Installation and wiring

6.1 Requirements governing the installation site

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

- ▶ Make sure that the wall/ceiling is sufficiently load-bearing to take the weight of the unit (Technical data [▶ 13]).
- ▶ Make sure that the ceiling is sufficiently load-bearing to take the weight of the unit (Technical data [▶ 13]).
- ▶ 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 [▶ 26]).
- ▶ There is a power supply on site (Maximum electrical rating values [▶ 29]).
- ▶ If need be, provide a condensation connection with a sufficient gradient on site.

6.2 Minimum clearances

Allow sufficient space beside the unit (min. 30 cm recommended!) to fit and access the valves.

6.3 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.

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6.3.1 Suspension points for Tandem 300 model 12 - 30 with wall brackets

Important: Tandem 300, model 30 are fixed by 3 bracket.

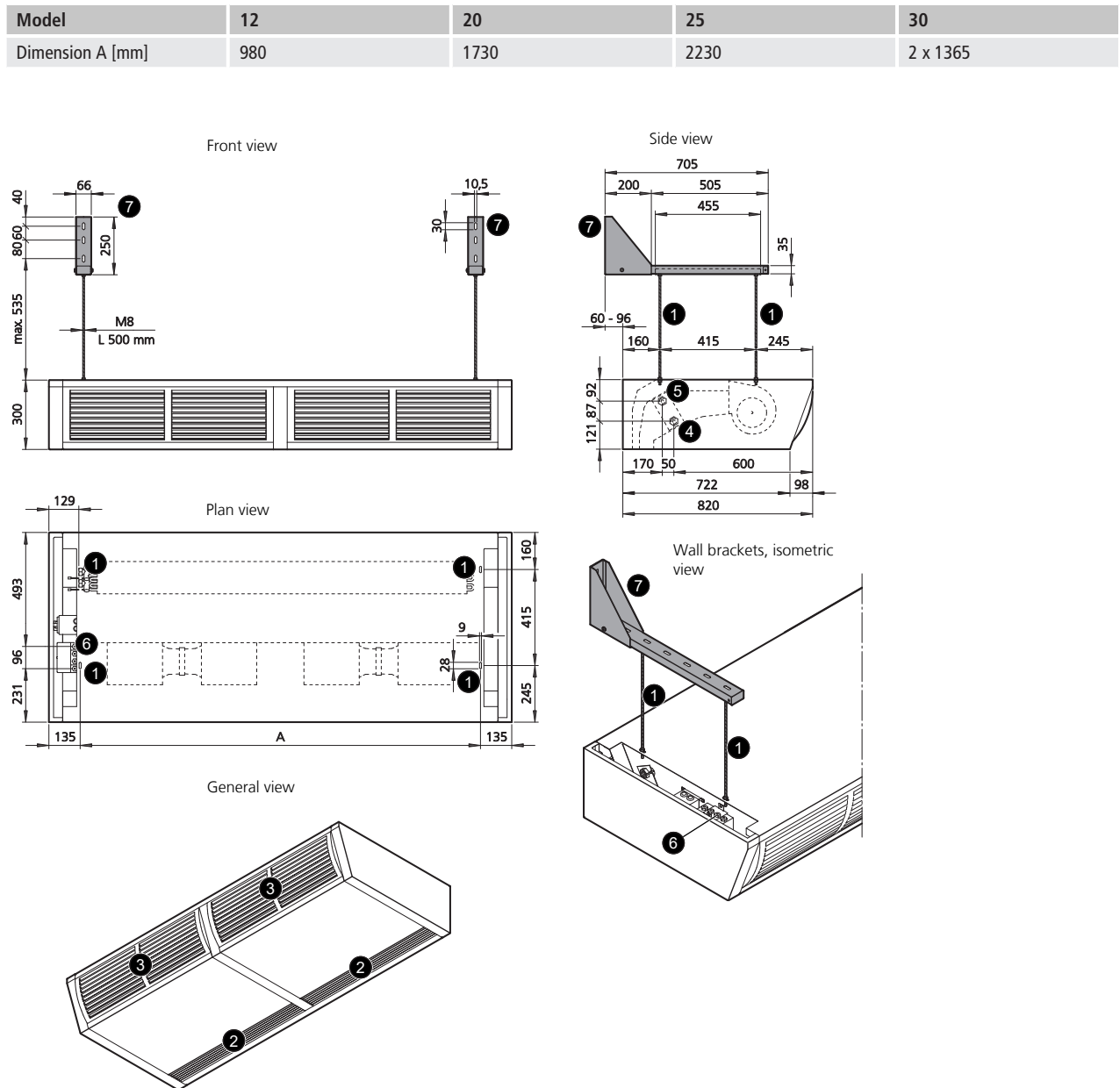


Fig. 2: Suspension points for Tandem 300 model 12 - 30 with wall brackets

1	Fixing points for brackets	2	Outlet air rectifier
3	Air intake grille with filter insert (optional)	4	Flow ¾"
5	Return ¾"	6	Electrical connection area
7	Wall bracket		

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6.3.2 Suspension points for Tandem 300 model 12 - 30 with ceiling brackets

Important: Tandem 300, model 30 are fixed by 3 bracket.

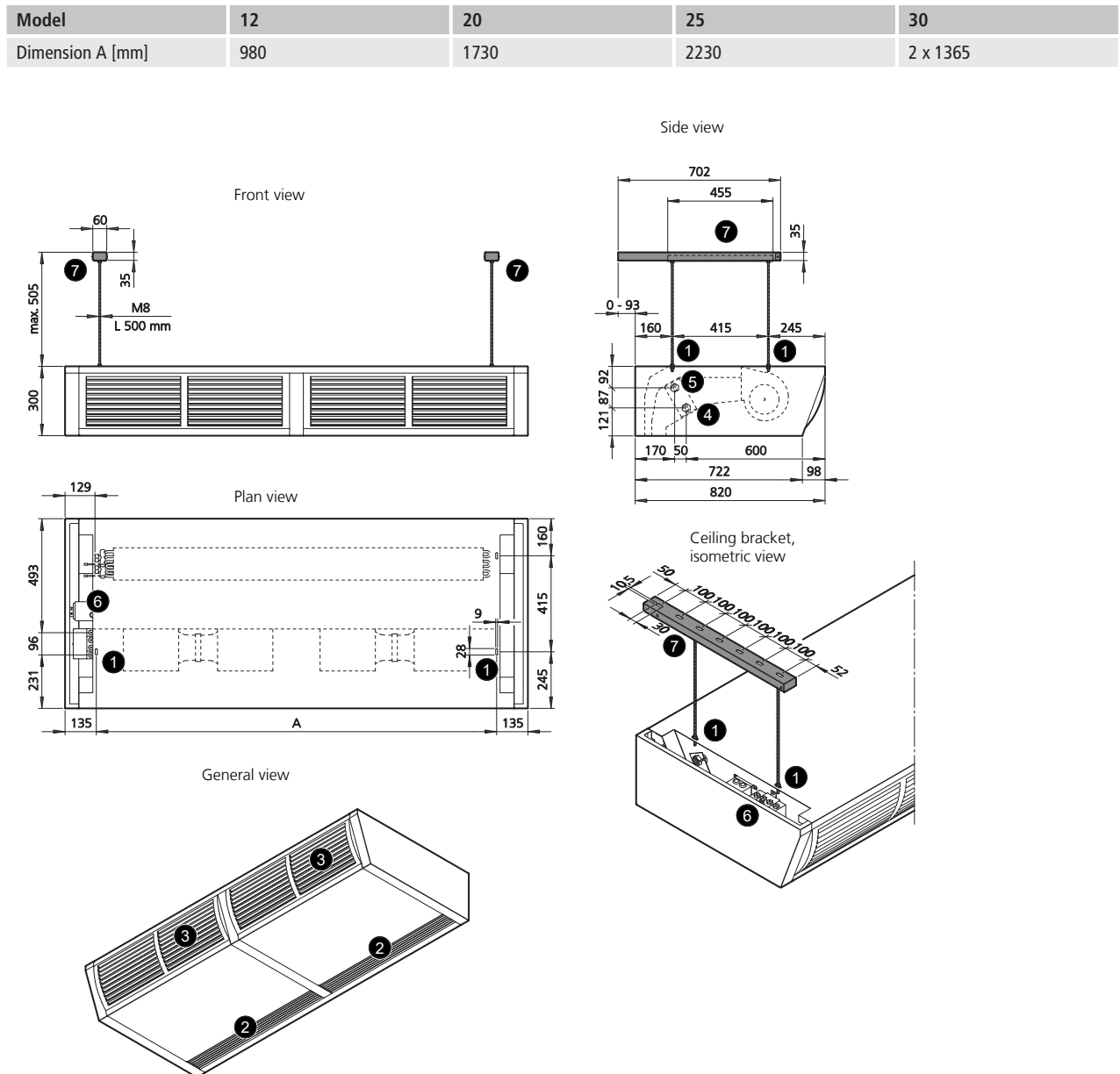


Fig. 3: Suspension points for Tandem 300 model 12 - 30 with ceiling brackets

1	Fixing points for brackets	2	Air outlet rectifier
3	Air intake grille with filter insert (optional)	4	Flow ¾"
5	Return ¾"	6	Electrical connection area
7	Ceiling bracket		

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6.3.3 Suspension points for Tandem ceiling cassette model 12 - 30 with wall brackets

Important: Tandem ceiling cassette installation, model 30, are fixed by 3 bracket.

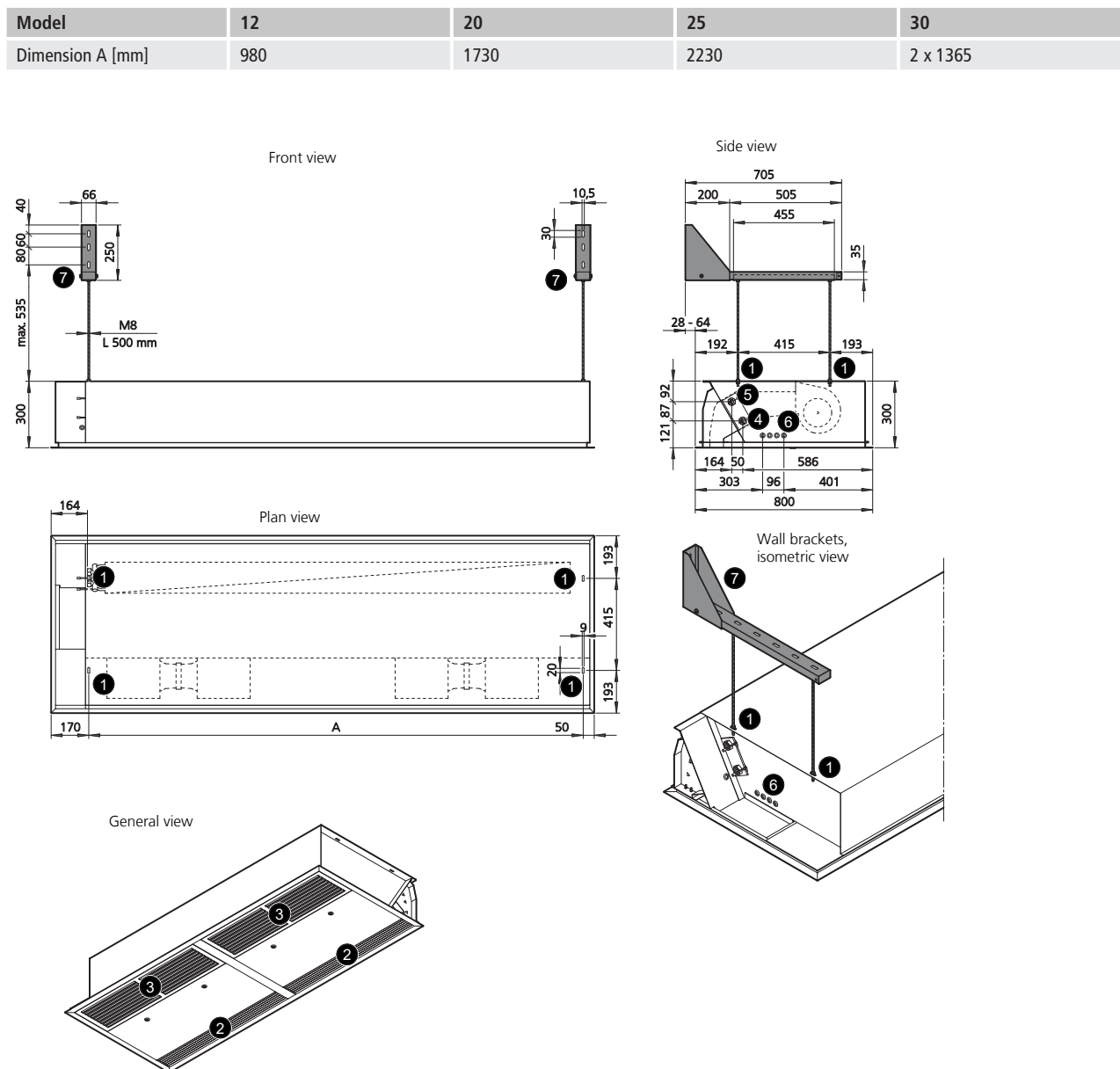


Fig. 4: Suspension points for Tandem 300 ceiling cassette model 12 - 30 with wall brackets

1	Fixing points for brackets	2	Outlet air rectifier
3	Air intake grille with filter insert (optional)	4	Flow 3/4"
5	Return 3/4"	6	Electrical connection area
7	Ceiling bracket		

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6.3.4 Suspension points for Tandem ceiling cassette model 12 - 30 with ceiling brackets

Important: Tandem ceiling cassette installation, model 30, are fixed by 3 bracket.

Model	12	20	25	30
Dimension A [mm]	980	1730	2230	2 x 1365

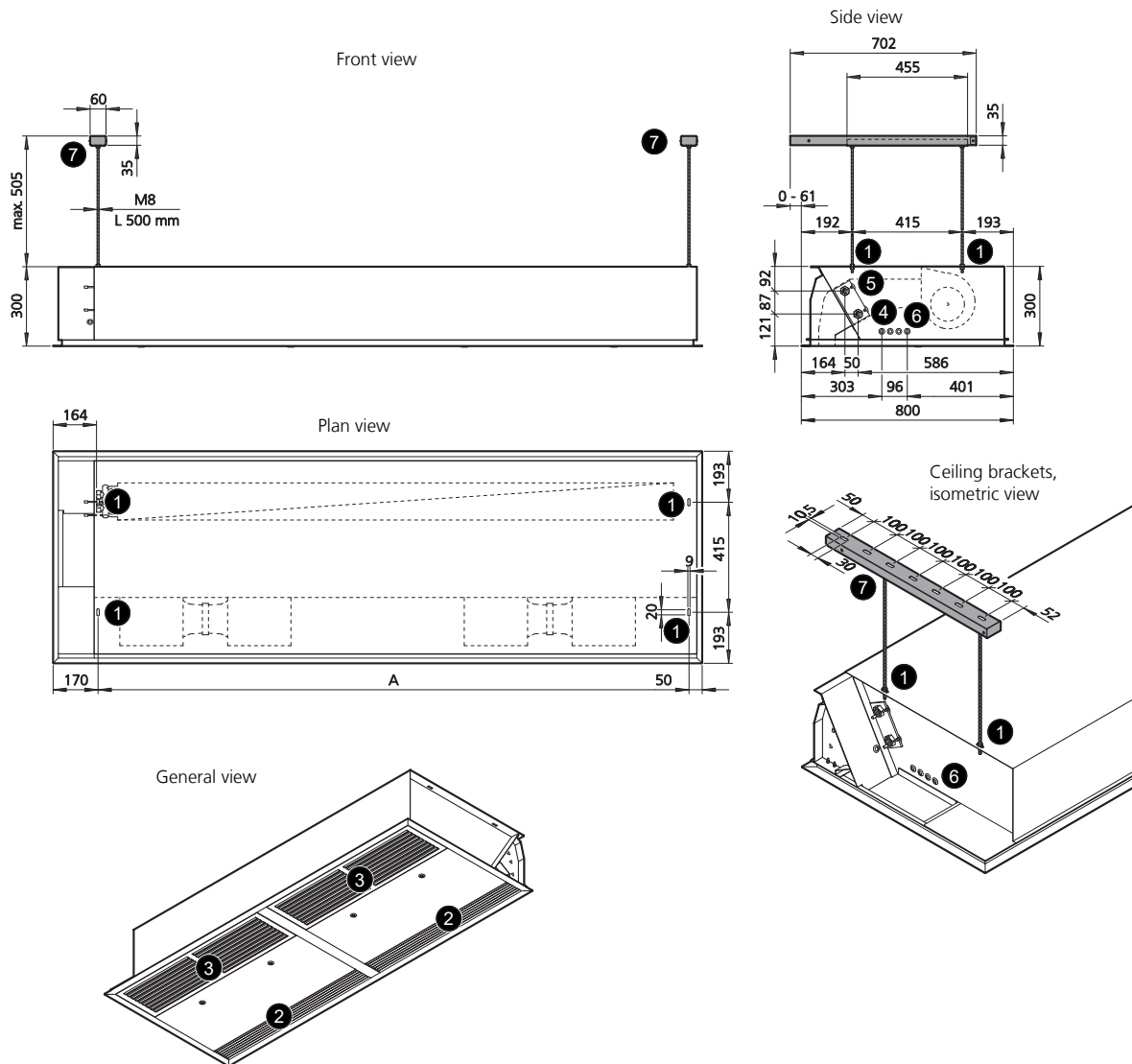


Fig. 5: Suspension points for Tandem 300 ceiling cassette model 12 - 30 with ceiling brackets

1	Fixing points for brackets	2	Outlet air rectifier
3	Air intake grille with filter insert (optional)	4	Flow $\frac{3}{4}$ "
5	Return $\frac{3}{4}$ "	6	Electrical connection area
7	Ceiling bracket		

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6.3.5 Suspension points for Tandem 365 model 12 - 27 with wall brackets

Important: Tandem 365, model 27 are fixed by 3 bracket.

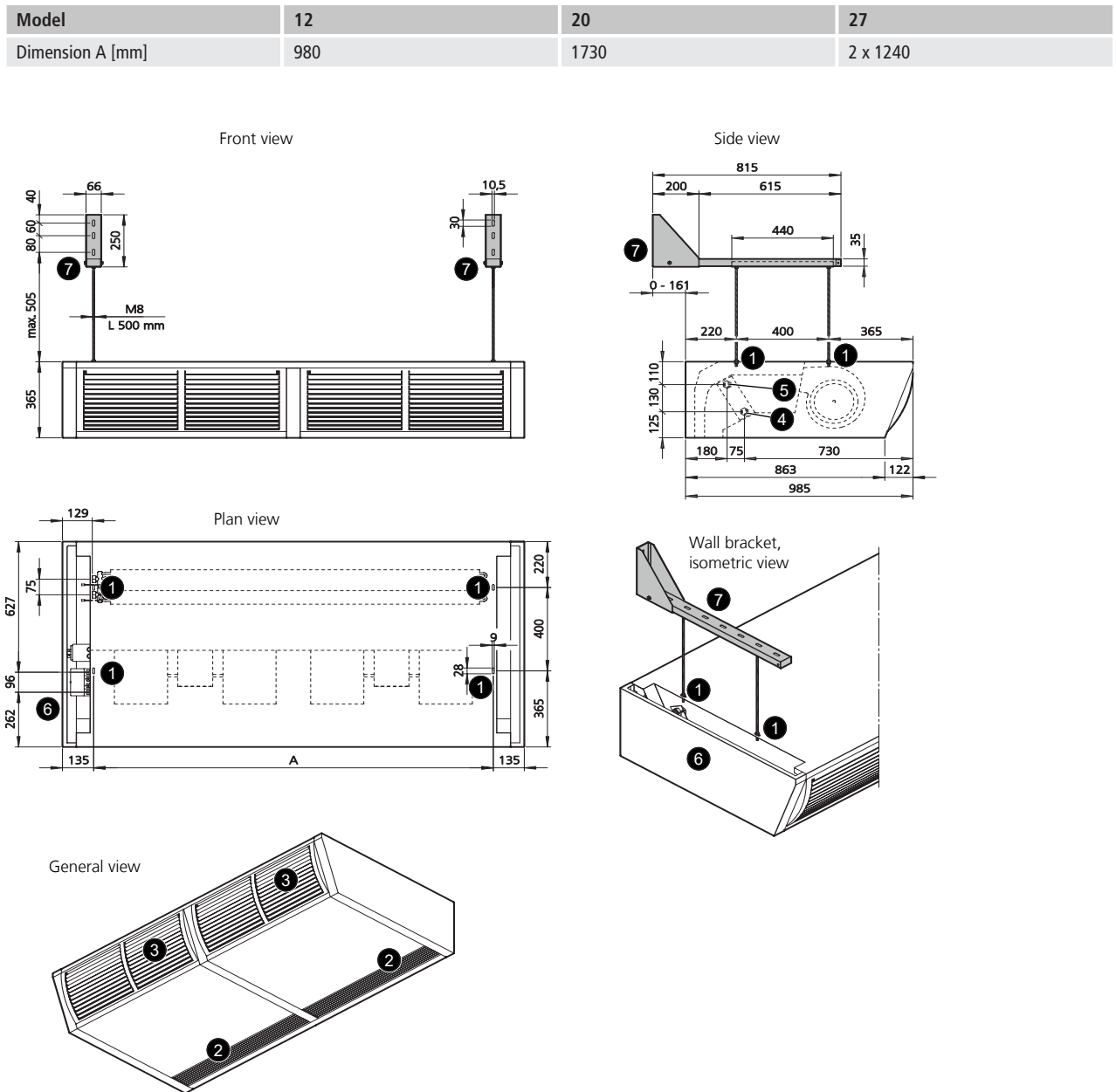


Fig. 6: Suspension points for Tandem 365 model 12 - 27 with wall brackets

1	Fixing points for brackets	2	Outlet air rectifier
3	Air intake grille with filter insert (optional)	4	Flow ¾"
5	Return ¾"	6	Electrical connection area
7	Wall bracket		

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6.3.6 Suspension points for Tandem 365 model 12 - 27 with ceiling brackets

Important: Tandem 365, model 27 are fixed by 3 bracket.

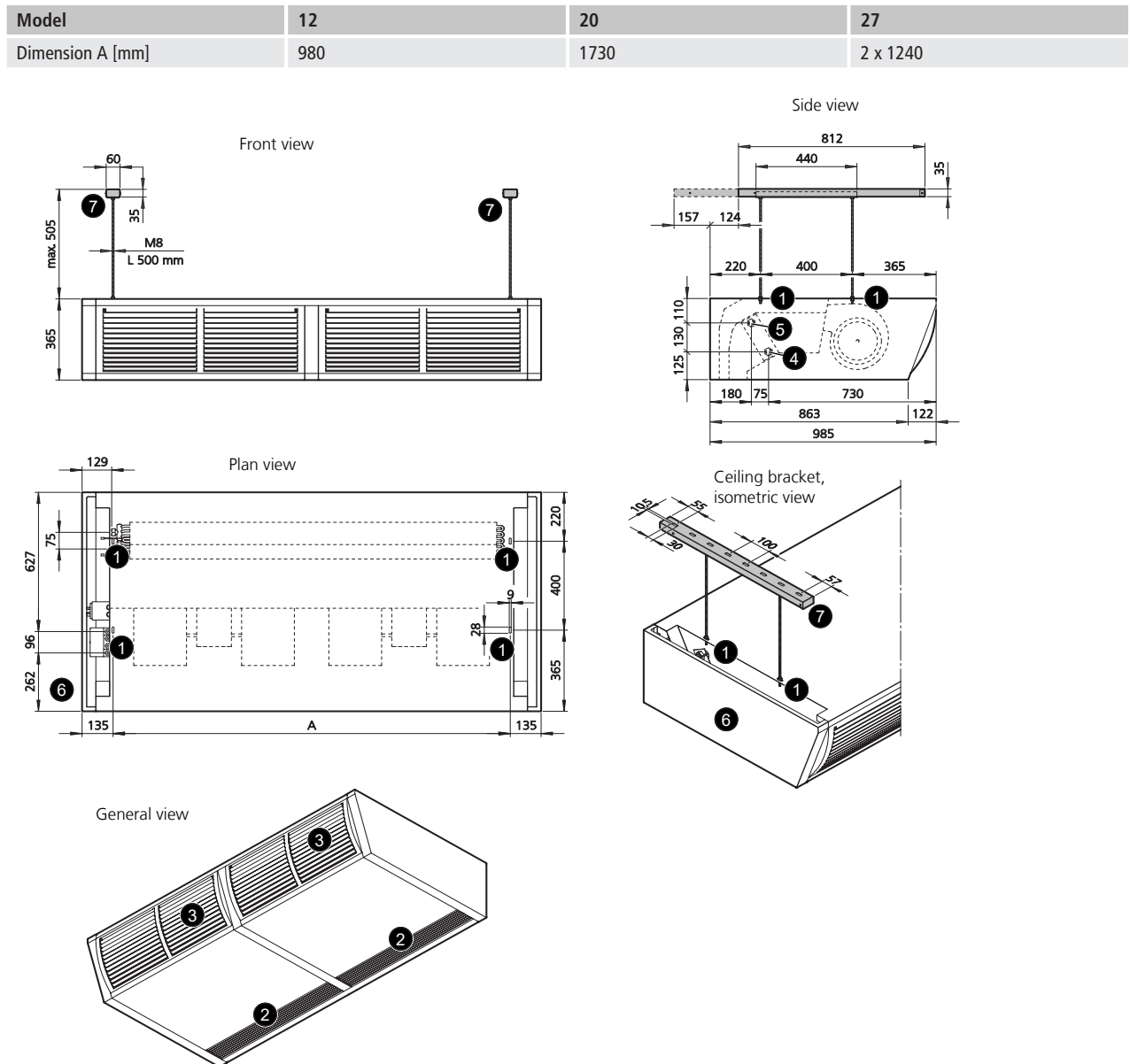


Fig. 7: Suspension points for Tandem 365 model 12 - 27 with ceiling brackets

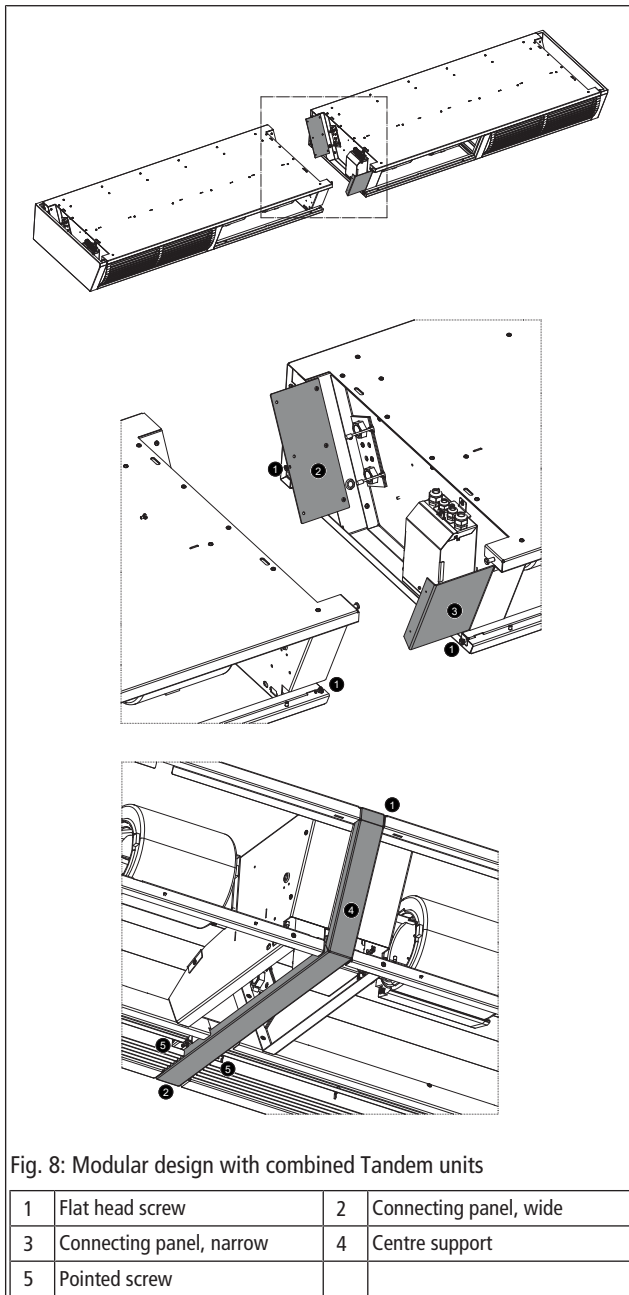
1	Fixing points for brackets	2	Air outlet rectifier
3	Air intake grille with filter insert (optional)	4	Flow ¾"
5	Return ¾"	6	Electrical connection area
7	Ceiling bracket		

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6.3.7 Tandem extension



Tandem units can be installed beside each other and create a continuous run using connection set type 3100910 or 3200810.

Proceed as follows:

- ▶ Dismantle the air intake grille, service hatches and side panels at the connection point.
- ▶ Remove flat-head screws ① at the connection point.
- ▶ Fit the wide connection panel ② (using the screws from the door air curtain).
- ▶ Fit the narrow connection panel ③ (using the shoulder screws 4.8 x 9.5 supplied).
- ▶ Connect the door air curtains to each other.
- ▶ Clip in the central support ④ and fix in place with the screws ⑤ provided (the pointed screws 3.9 x 9.5 provided).

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6.4 Installation

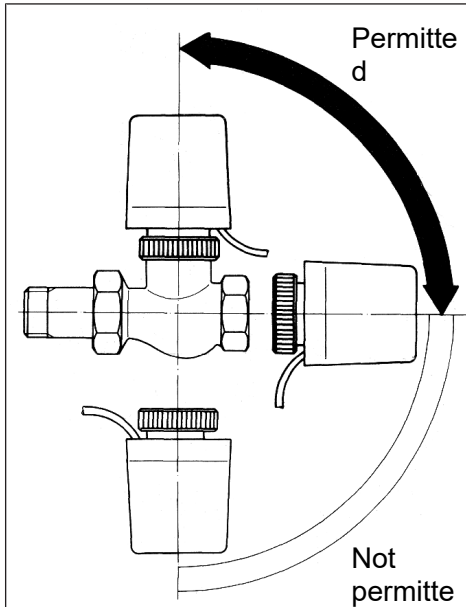


Fig. 9: Correct fitting position for 2-point actuator (thermoelectric shut-off valve).

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

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

Actuator with 'First Open' function

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

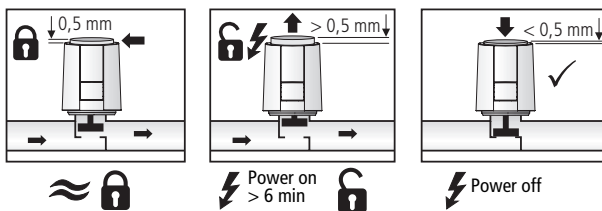


Fig. 10: "First Open" function

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6.4.1 Opening the connection area

Tandem connection area

The Tandem connection area and type plate are located on the left side of the unit (seen from the air inlet) behind the side panel. Proceed as follows to open the side panel:

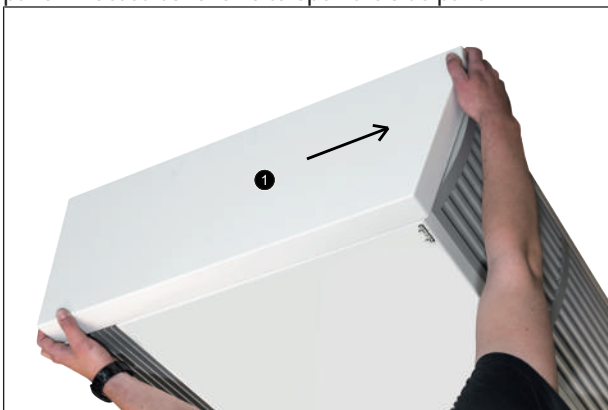


Fig. 11: Opening the connection area

- Pull the side panel ① to the front (towards the air intake).



Fig. 12: Connection area without side panel



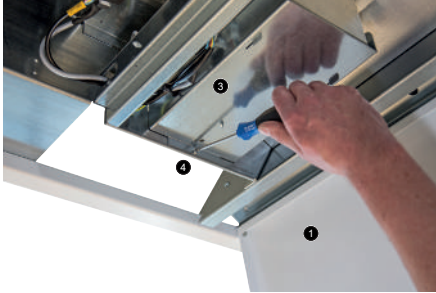

- Place the side panel ① to the side.
- Close the side panel in reverse order.

Connection area of Tandem ceiling cassette unit

The hydraulic connection area of the Tandem ceiling cassette unit and the type plate are located on the left side of the unit (seen from the air intake). The electrical connection is located behind the service hatch. Proceed as follows to open the service hatch ① and the electrical junction box ③ :

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 <p>Fig. 13: Opening the inspection flap, Tandem ceiling cassette unit</p>	<p>► Open the latch ② in the service hatch ① .</p>
 <p>Fig. 14: open service hatch</p>	<p>► Open the service hatch ① .</p>
 <p>Fig. 15: Loosening the retaining screw</p>	<p>► Loosen the screw ④ and remove the junction box ③ .</p>
 <p>Fig. 16: Fixing the junction box</p>	<p>► Insert the junction box vertically and fix in place with the retaining screw ④ . Open the cover ③ and pass the cables through the cable openings ⑤ .</p>

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6.4.2 Connection to the pipe network

The flow and return connections are located as standard at the side of the casing on the left side of the unit, as seen from the air intake. The heat exchanger connection is 3/4".

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

- ▶ Shut off the supply line from the heating medium.
- ▶ Connect up the pipework.
- ▶ Remove protective caps from the flow and return.
- ▶ Seal and screw in connections, holding the nut to prevent it from shearing off and twisting.

Important! Use an appropriate tool (e.g. wrench AF 32) to protect terminal nuts from being sheared off and twisted. The connections must be installed without tension!

6.4.3 Fitting the thermoelectric shut-off valve and outlet temperature limit valve

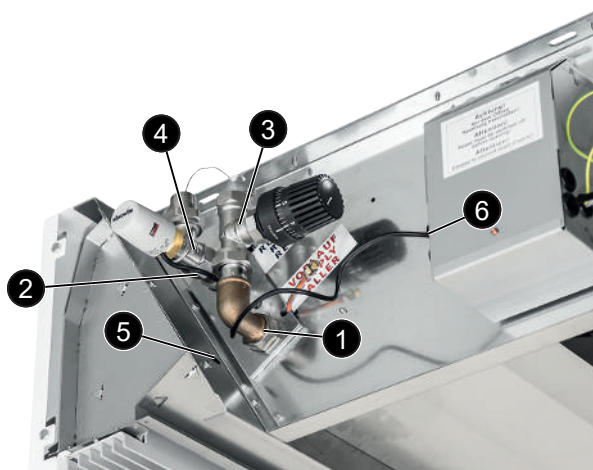


Fig. 17: Thermoelectric shut-off valve and outlet temperature limit valve, shown on Tandem 300

1	Flow 3/4"	2	Return 3/4"
3	Outlet temperature limit valve, type 103968; installation in the flow	4	Thermoelectric shut-off valve, type 100912
5	Opening for remote sensor for outlet temperature limit valve (accessory)	6	Opening for connecting cable for thermoelectric shut-off valve (accessory) and electrical wiring

6.4.4 Installation of remote sensor for outlet air temperature limit valve



Fig. 18: Fit the pipe clips ② .

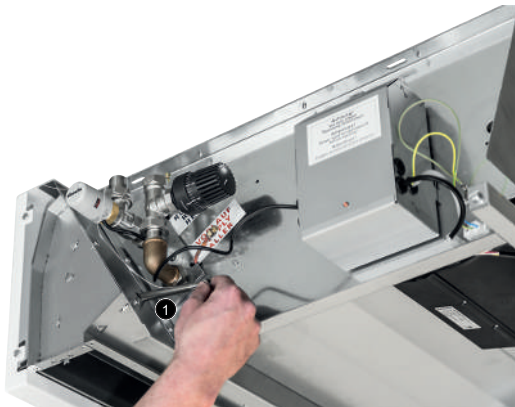


Fig. 19: Pass the remote sensor ① through the cable opening.



Fig. 20: Remote sensor ① and pipe clips ② fitted.

Tandem door air curtains

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6.5 Adjusting the air outlet rectifier

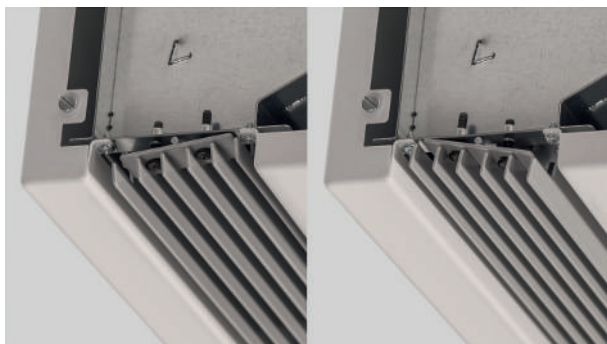


Fig. 21: Air outlet adjustment inwards or outwards

The air outlet rectifier has an adjustment range of 20° to tailor the air outlet to individual requirements. The air stream can be specifically and operationally reliably directed outwards or inwards. The air outlet rectifier is factory-set for vertical air outlet. To adjust the air outlet rectifier, tighten the screws of the air outlet rectifier or loosen them, depending on the discharge direction required.

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7 Electrical connection



IMPORTANT NOTE!

Only pulse and/or all-current sensitive residual current protective devices (type A or B) are permitted. It is impossible to protect personnel when operating the unit with residual-current protection devices, as well as with frequency converters.

When power is applied to the unit, pulse-like capacitor load currents in the integrated EMC filter of the EC fans can lead to the RCCB being immediately tripped.

We recommend residual current protective switches with a threshold of 300 mA and delayed triggering (super resistant, characteristic K).



IMPORTANT NOTE!

If the fan is activated from idle by a door contact, a certain time is needed before a door air curtain can provide actual screening. When operating via a door contact, set operation as basic speed to forced boost (possible with compact controller type 30158 and KaControl).

7.1 Maximum electrical rating values

Description	Model	Number of fans	Voltage	Output	Electricity	Ri (*00)	Ri (*T)
Tandem 300, Tandem ceiling cassette unit	12	1 x TD	230 V AC 50/60 Hz	250 W	1.8 A	100 KΩ	100 KΩ
	20	2 x TD	230 V AC 50/60 Hz	500 W	3.6 A	50 KΩ	100 KΩ
	25	3 x TD	230 V AC 50/60 Hz	750 W	5.4 A	33 KΩ	100 KΩ
	30	3 x TD	230 V AC 50/60 Hz	750 W	5.4 A	33 KΩ	100 KΩ
Tandem 365	12	1 x TD	230 V AC 50/60 Hz	400 W	2.5 A	100 KΩ	100 KΩ
	20	2 x TD	230 V AC 50/60 Hz	800 W	5.0 A	50 KΩ	100 KΩ
	27	3 x TD	230 V AC 50/60 Hz	1200 W	7.5 A	33 KΩ	100 KΩ
Insulate valve drive normally closed (N/C)	-	-	230 V AC 50/60 Hz	1 W	0.55 A	- KΩ	- KΩ

Tab. 7: Maximum electrical rating values

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7.2 Electromechanical without fault alarm contact (*00)

7.2.1 Connection (*00)

Description of wiring

- ▶ The mains voltage is wired to the voltage supply terminals on the door air curtain.
- ▶ Continuously variable speed control via an active 0..10 VDC signal (speed controller type 30510, compact controller type 30158 or by the customer).
- ▶ Internal evaluation of a possible motor fault and EC fans switched off.
- ▶ The heating valve (if fitted) can be opened or closed by the compact controller type 30158 or an on-site 230 V AC voltage output.

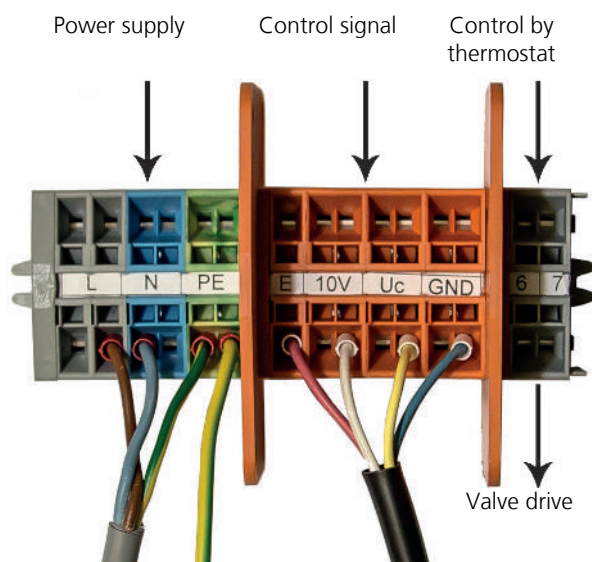


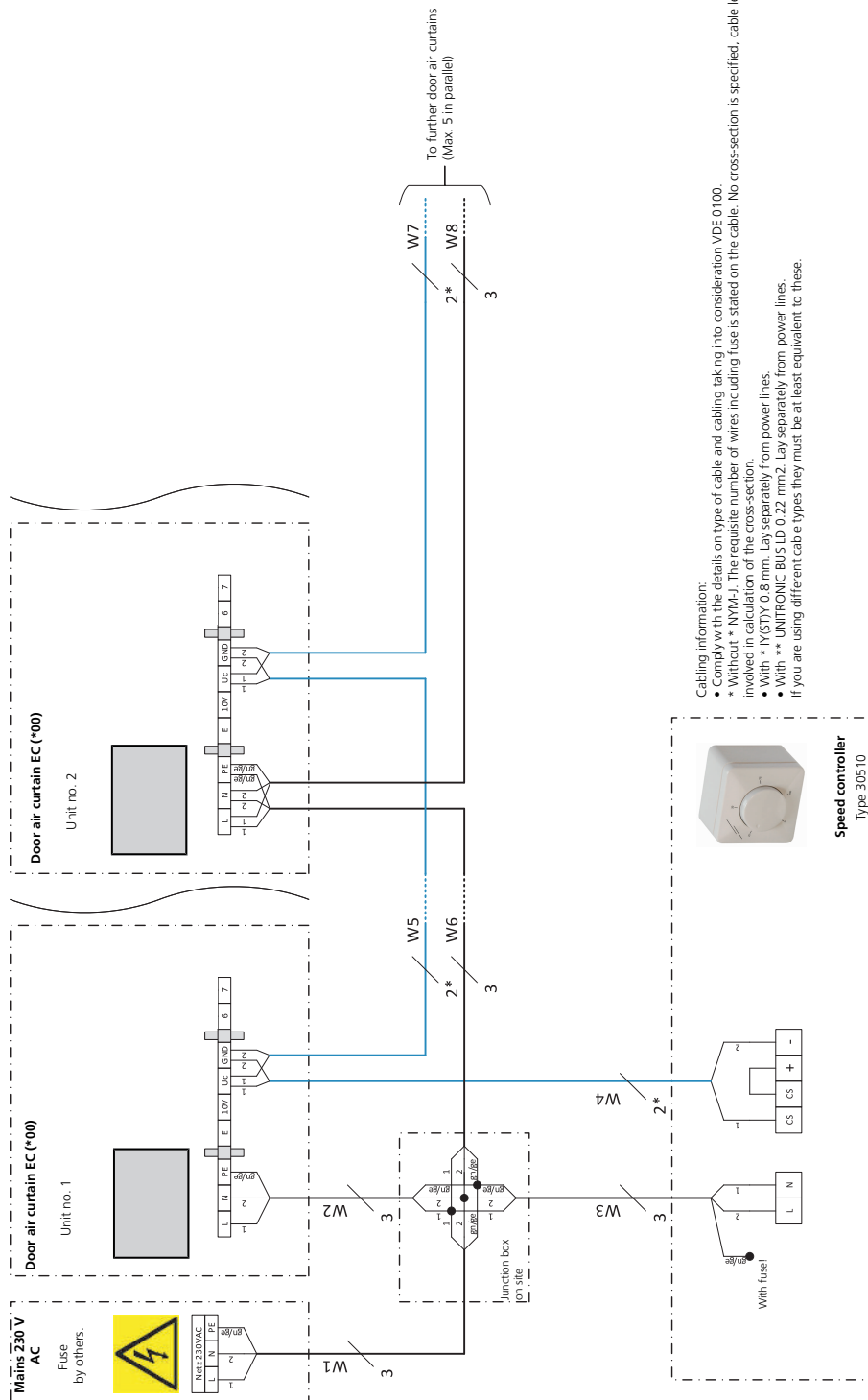
Fig. 22: Terminal strip in the junction box (*00)

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7.2.2 Cabling (*00), actuation by speed controller type 30510



Cabling information:

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- Without * NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With * Y(SY) 0.8 mm. Lay separately from power lines.
- With ** UNIFRONIC BUS LD 0.22 mm². Lay separately from power lines.

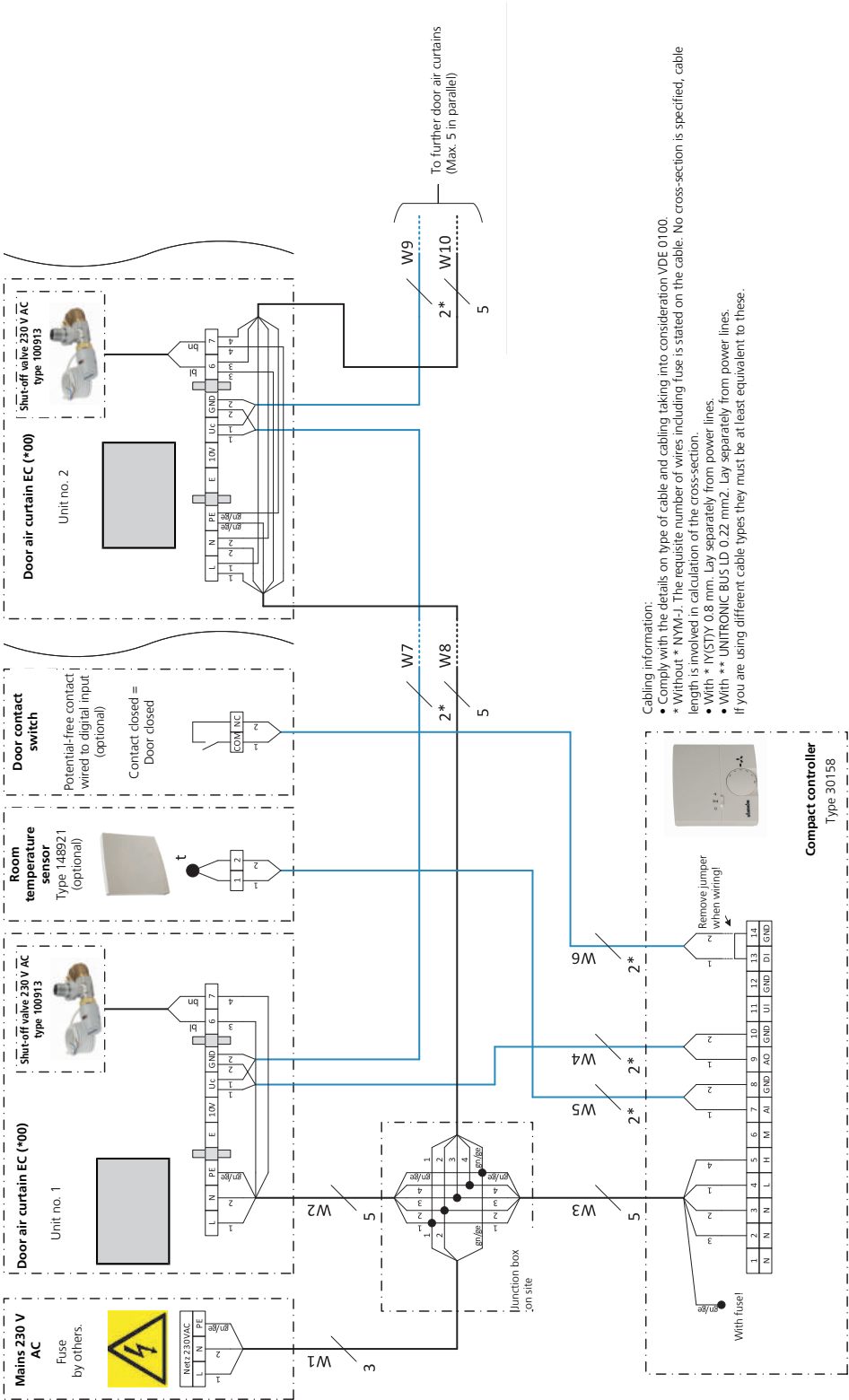
If you are using different cable types they must be at least equivalent to these.

Tandem door air curtains

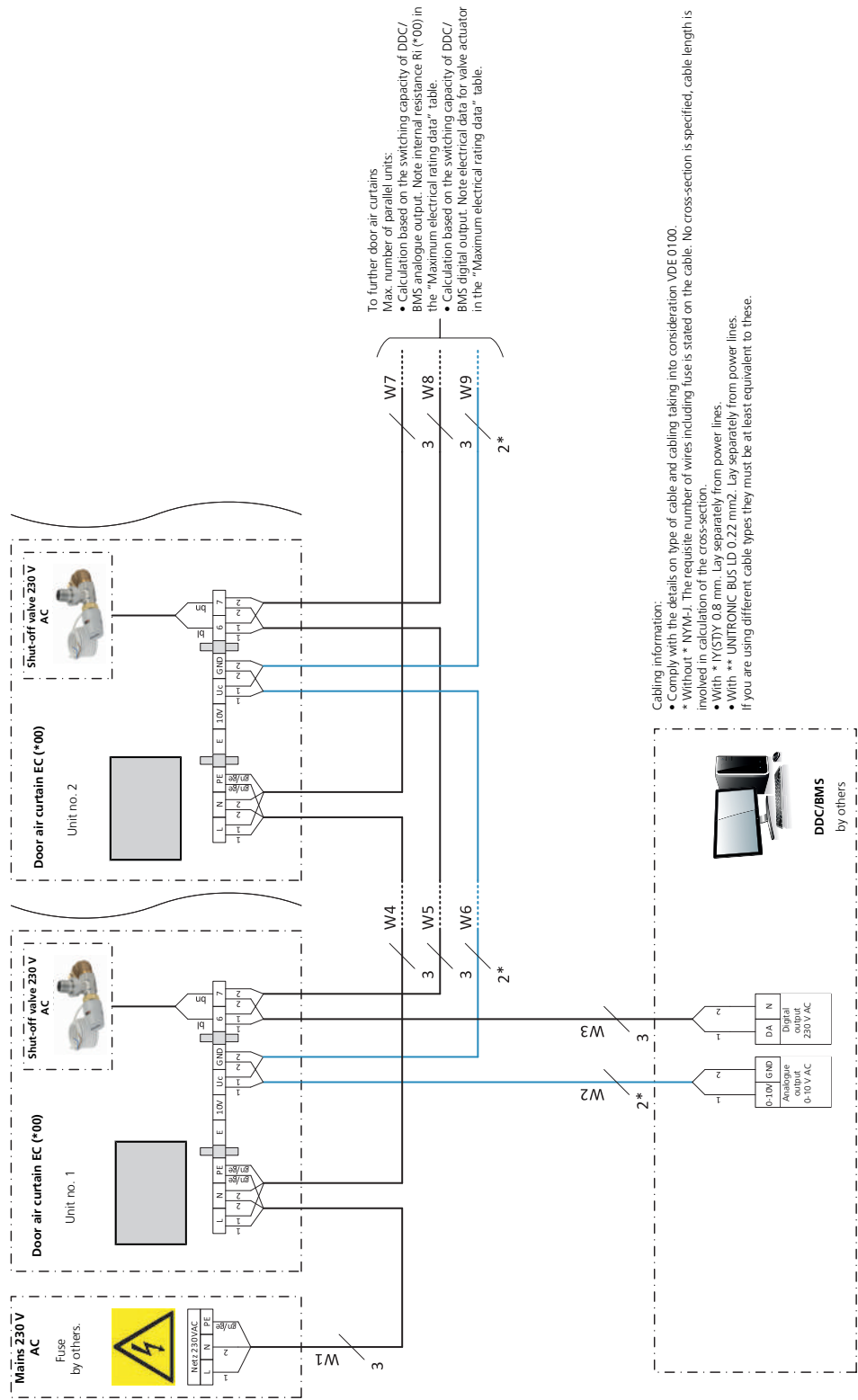
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7.2.3 Cabling (*00), control by Compact controller type 30158



7.2.4 Cabling (* 00), control by DDC/BMS



Cabling information:

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- Without ** NYY-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With ** YSYTY 0.8 mm. Lay separately from power lines.
- With ** UNITRONIC BUS LD 0.22 mm². Lay separately from power lines.

If you are using different cable types they must be at least equivalent to these.

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7.3 Electromechanical with fault alarm contact (*T)

7.3.1 Connection (*T)

Wiring description:

- ▶ The mains voltage is wired to the voltage supply terminals on the door air curtain.
- ▶ Continuously variable speed control via an active 0-10 VDC signal (speed controller type 30510, compact controller type 30158 or by the customer).
- ▶ Internal evaluation of a possible motor fault and switch off of the EC fans and potential-free fault signal contact.
- ▶ Setting option for maximum speed of EC fans via potentiometer.
- ▶ The heating valve (if fitted) can be opened or closed by the compact controller type 30158 or an on-site 230 V AC voltage output.

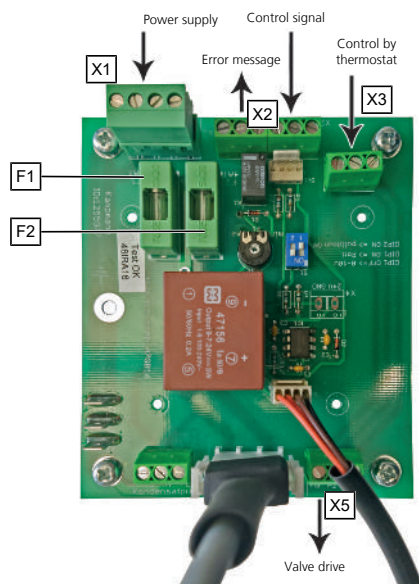


Fig. 23: Circuit board in junction box

Technical details for inputs/outputs and fuses on the PCB	
Input impedance 0-10 V	100 kΩ
Fault signal contact	U = max. 60 V AC/DC I = max. 1 A
Fuse F1	1 A
Fuse F2	4 A

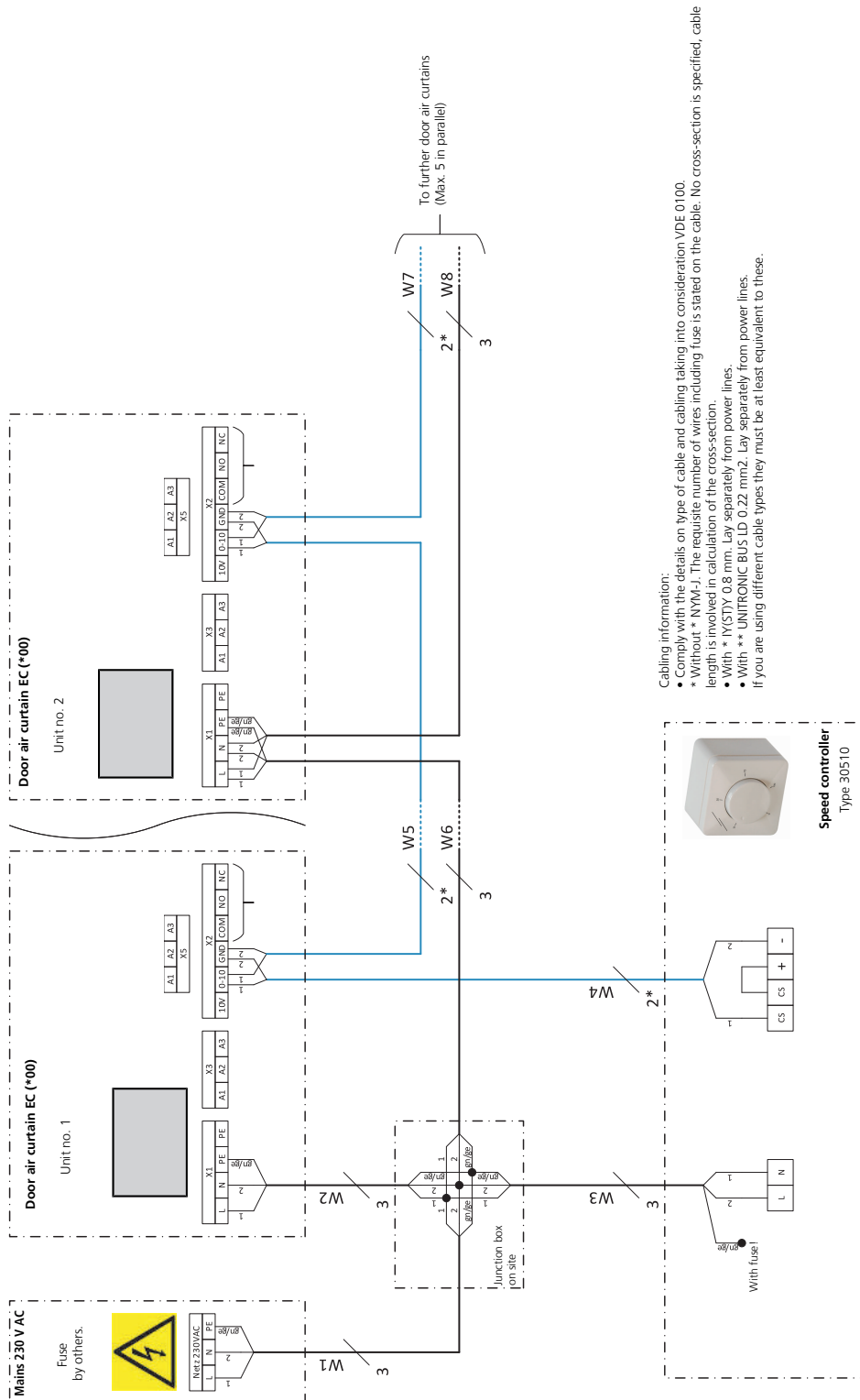
Tab. 8: Inputs and outputs on the power board

Tandem door air curtains

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7.3.2 Cabling with fault message (*T), control by speed controller type 30510



Cabling information:

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- * Without * NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With * TYSY 0.8 mm. Lay separately from power lines.
- With ** UNTRONIC BUS LD 0.22 mm². Lay separately from power lines.

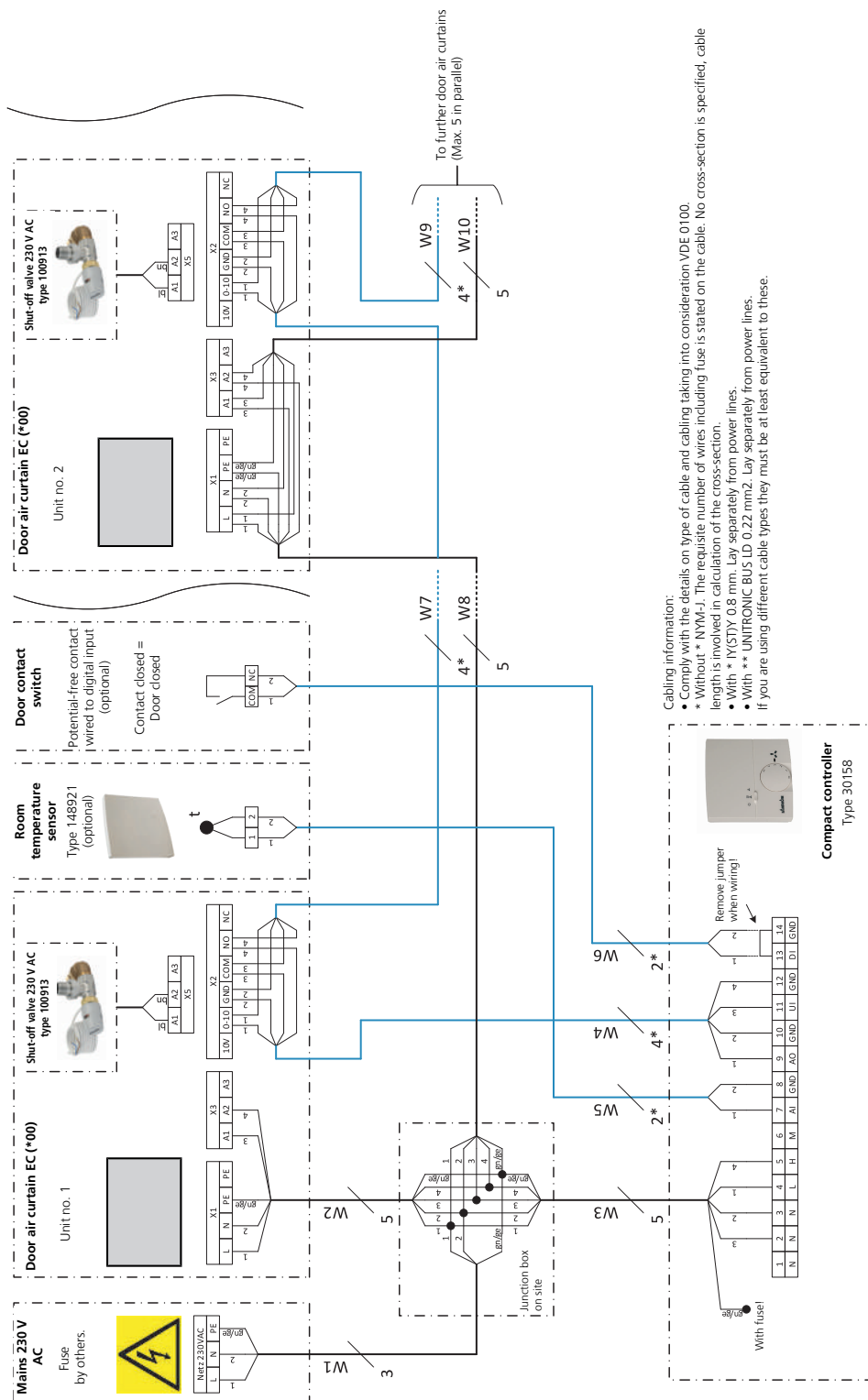
If you are using different cable types they must be at least equivalent to these.

Tandem door air curtains

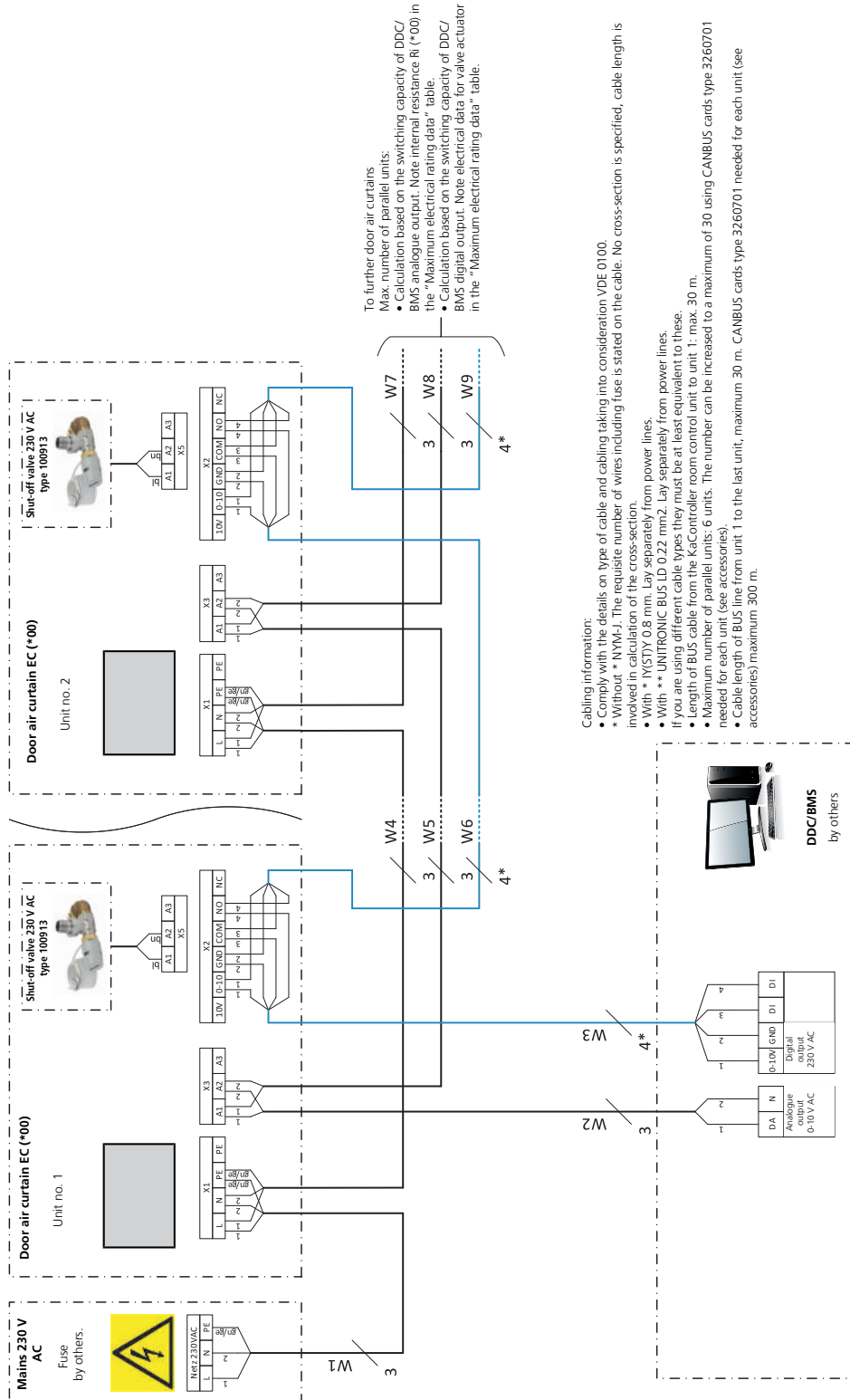
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7.3.3 Cabling with fault message (*T), control by Compact controller type 30158



7.3.4 Cabling with fault message (*T), control by DDC/BMS



- Cabling information:**
- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
 - Without ** NYY-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
 - With ** TRISTY 0.8 mm. Lay separately from power lines.
 - With ** UNITRONIC BUS LD 0.22 mm². Lay separately from power lines.
 - If you are using different cable types they must be at least equivalent to these.
 - Length of BUS cable from the KaController room control unit to unit 1: max. 30 m.
 - Maximum number of parallel units: 6 units. The number can be increased to a maximum of 30 using CANBUS cards type 3260701 needed for each unit (see accessories).
 - Cable length of BUS line from unit 1 to the last unit, maximum 30 m. CANBUS cards type 3260701 needed for each unit (see accessories) maximum 300 m.

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7.4 KaControl (*C1)

7.4.1 KaController installation

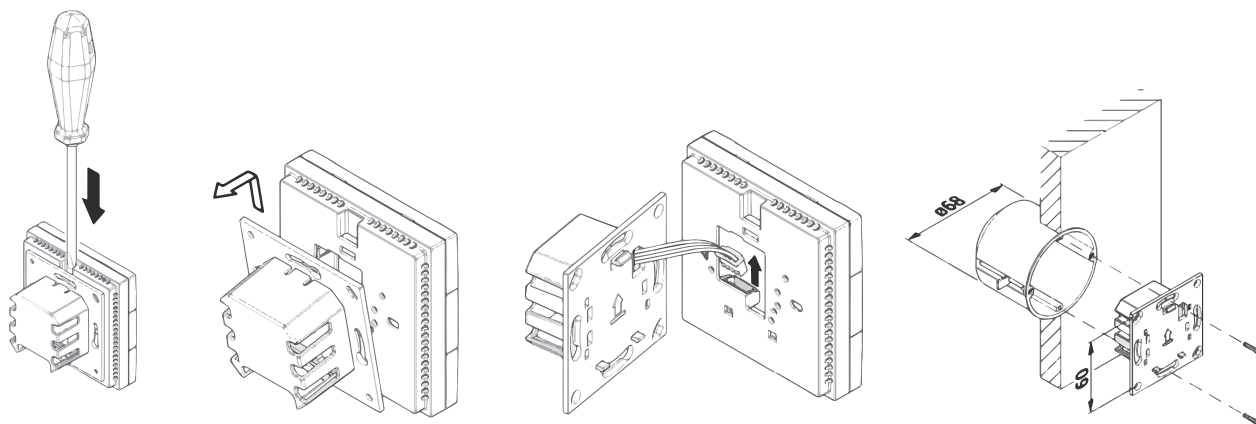


Fig. 24: Installation of flush-mounted back box

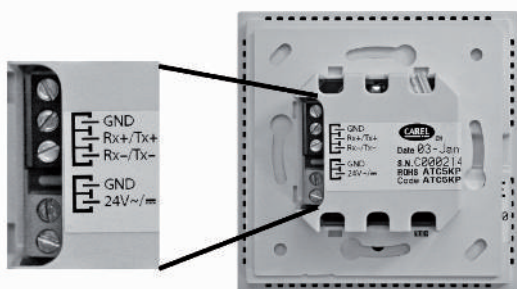


Fig. 25: KaController terminals

Electrical connection

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

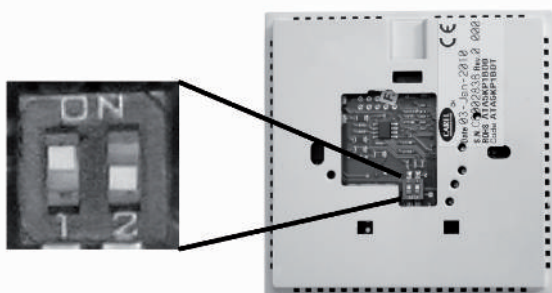


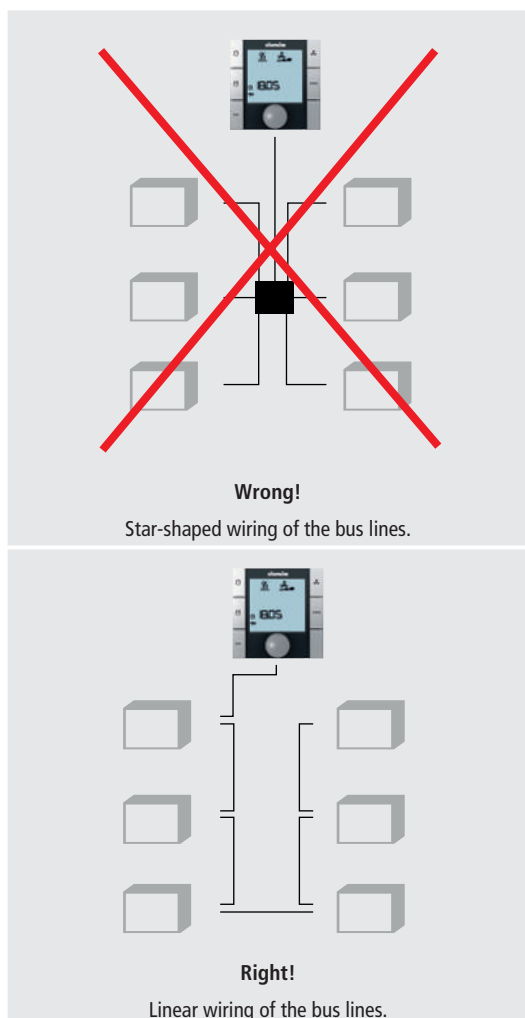
Fig. 26: DIP switch setting on KaController

DIP switch setting

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

- DIP switch 1: ON
- DIP switch 2: OFF

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. 9: 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!

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Wiring description:

- ▶ The mains voltage is wired to the voltage supply terminals on the door air curtain.
- ▶ Continuously variable speed control via an active 0-10 VDC signal (KaController type 3210002).
- ▶ Internal evaluation of a possible motor fault and switch off of the EC fans and potential-free fault signal contact.
- ▶ Setting option for maximum speed of EC fans via potentiometer.
- ▶ The heating valve (if fitted) can be opened or closed by the KaController type 3210002.



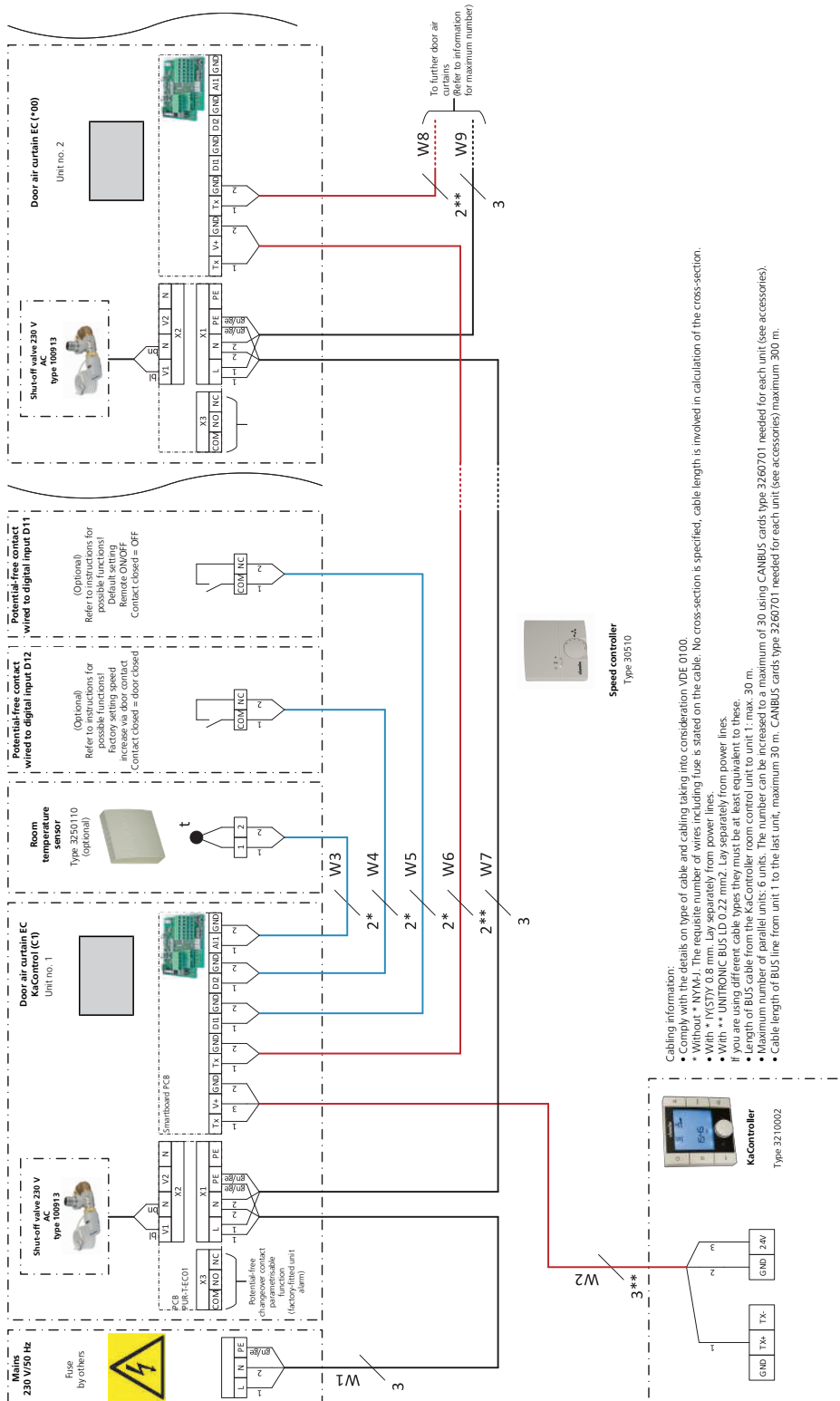
Fig. 27: Circuit board in junction box

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7.4.3 Cabling of Tandem with KaControl (*C1)



- Cabling information:
- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
 - Without * (NYM-J). The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
 - With * (YSTY) 0.8 mm. Lay separately from power lines.
 - With ** UNITRONIC BUS LD 0.22 mm². Lay separately from power lines.
 - If you are using different cable types they must be at least equivalent to these.
 - Length of BUS cable from the KaControl room control unit to unit 1: max. 30 m.
 - Maximum number of parallel units: 6 units. The number can be increased to a maximum of 30 using CANBUS cards type 3260701 needed for each unit (see accessories).
 - Cable length of BUS line from unit 1 to the last unit, maximum 30 m. CANBUS cards type 3260701 needed for each unit (see accessories) maximum 300 m.

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8 Pre-commissioning checks

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

Structural tests

- ▶ Check whether there are adequate inspection openings for maintenance work and cleaning.
- ▶ 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.
- ▶ Check whether DIP switches have been correctly set in accordance with the wiring diagram.

Water-side checks

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

Air-side checks

- ▶ Check whether there is unimpeded flow at the air inlet and outlet.
- ▶ 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" [▶ 43].

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9 Operation

9.1 Operation of electromechanical control



Fig. 28: Speed controller, type 30510

Speed controller, type 30510

The speed controller is used to activate the fan and pre-set the fan speed. Actuation of a thermoelectric shut-off valve is not possible.



Fig. 29: Compact controller type 30158

Compact controller type 30158

Combination of operating mode selector switch and speed sensor with options for external control and operation. The required room temperature is set on the compact controller. The door air curtain is disabled in standby mode. In winter mode the fan speed can be set by the knob and the actuator is open. In summer mode the fan speed can be set by the knob and the actuator is closed. The fan can be allowed to run on or increase the speed by connecting a door contact switch and corresponding parametrisation. Additionally, a room temperature control can be activated in winter mode and when the speed controller is at position 0, which closes the hot water valve and disables the fan when the set temperature is reached.

Compact control in flat surface-mounted housing, white

Rating IP 30, voltage 230 V/50 Hz

Dimensions W x H x D: 110 x 110 x 27 mm

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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.

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.

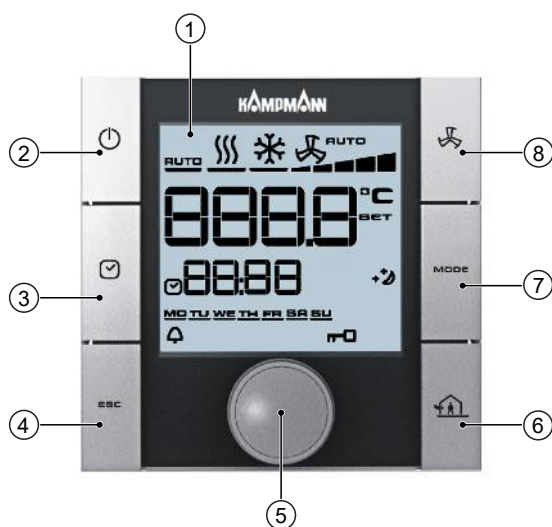


Fig. 30: KaController with function keys, type 3210002

1	Display with LED background lighting	2	ON/OFF key (depending on setting) <ul style="list-style-type: none"> ▶ ON/OFF ▶ Eco mode/Day mode (factory setting)
3	TIMER button <ul style="list-style-type: none"> ▶ Set time ▶ Set timer programs 	4	ESC button <ul style="list-style-type: none"> ▶ back to standard view
5	Navigator dial <ul style="list-style-type: none"> ▶ Change settings ▶ Call up menus 	6	House symbol <ul style="list-style-type: none"> ▶ External ventilation
7	MODE button <ul style="list-style-type: none"> ▶ Set operating modes (disabled with 2-pipe applications) 	8	FAN button <ul style="list-style-type: none"> ▶ Set fan control

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

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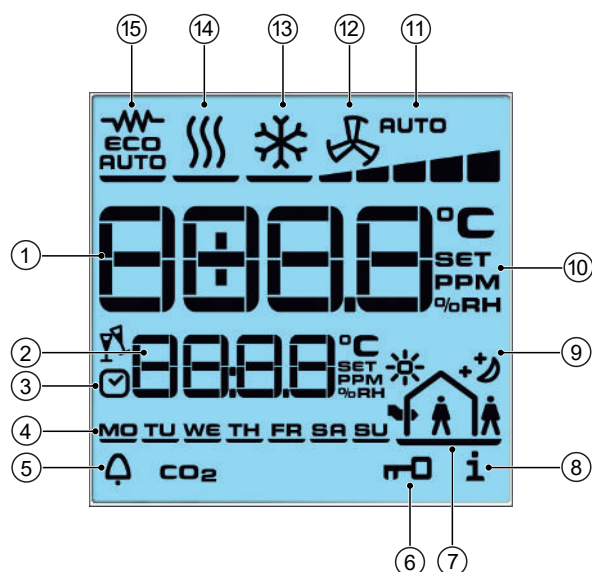


Fig. 31: Display

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		

KaControl

The parametrisable KaControl microprocessor control offers a wealth of functions. The following default settings are factory set for the door air curtain:

- ▶ Remote ON/OFF for activation via external NO contact at digital input DI1.
- ▶ Basic stage can be set using the KaController operating uni.
- ▶ Door contact to increase speed including run-on function at DI2.
- ▶ ECO mode (room temperature control) can be activated when the door is closed using a key or optional KaController timer program.
- ▶ Optional use of the internal or external room temperature sensor (accessory).
- ▶ Heating (winter) / ventilation (summer) switchover to close thermoelectric shut-off valve in summer using KaController mode key.
- ▶ Room frost protection at a room temperature of < 8°C.
- ▶ Any alert that occurs, such as a motor fault, is detected by the KaControl and issued on the KaController.
- ▶ Potential-free, changeover contact wired to terminals for the signalling of internal information to external systems.

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10 Maintenance

10.1 Securing against reconnection



DANGER!

Risk of death by unauthorised or uncontrolled restart!

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

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

Always follow the procedure described below to prevent accidental restart:

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



WARNING!

Risk of injury from rotating parts!

The fan impeller can cause severe injuries.

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

10.2 Maintenance Schedule:

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

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

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

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10.3 Maintenance work

10.3.1 Opening the inspection flap



IMPORTANT NOTE!

Damage to air inlet grille

Remove the air inlet grille [► 48] before opening the service hatch to avoid damage.

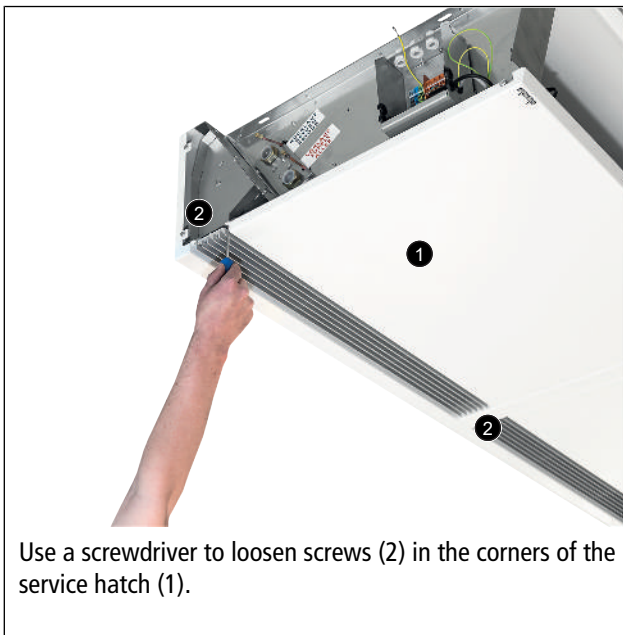


Fig. 32: Opening the service hatch, Tandem

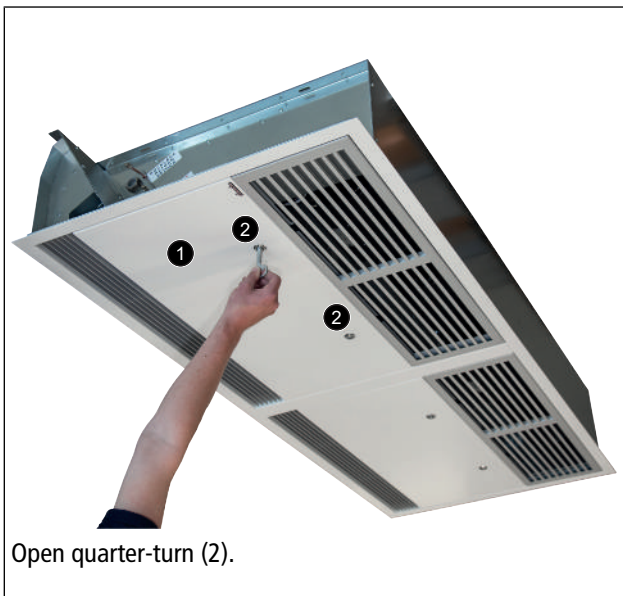


Fig. 33: Opening the service hatch, Tandem ceiling cassette unit

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10.3.2 Replacing the filter.



CAUTION!

Risk of injury from sharp metal housing!

The inner metal of the casing can have sharp edges.

- ▶ Wear suitable protective gloves.

Tandem

The heat output of the unit will be reduced with dirty filters and the fans can be damaged by overloading. Regularly check the intake filters.

- ▶ Check the air inlet filter quarterly for dirt and clean if necessary.
- ▶ Check the air inlet filter for dirt, depending on the air pollution and dust in the room, and clean if necessary.


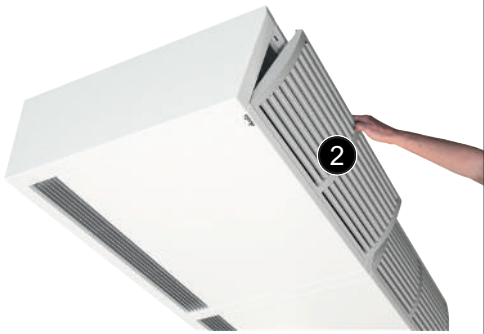

	Use a screwdriver to open the latches at the top corners of the inlet grille (1) to inspect and clean the filter.
	Open the inlet grille (2) and remove it out of the top of the unit. (Install the inlet grill with filter fitted in reverse order).
	Push filter frame (3) out of the side of the inlet grille. Use a damp cloth to clean off any dirt on the filter fleece. Replace the filter in the event of serious dirt.

Fig. 34: Changing the filter, Tandem

Tandem In-ceiling Unit

The heat output of the unit will be reduced with dirty filters and the fans can be damaged by overloading. Regularly check the intake filters.

- ▶ Check the air inlet grille quarterly for dirt and clean if necessary.
- ▶ Check the air inlet grille for dirt, depending on the air pollution and dust in the room, and clean if necessary.

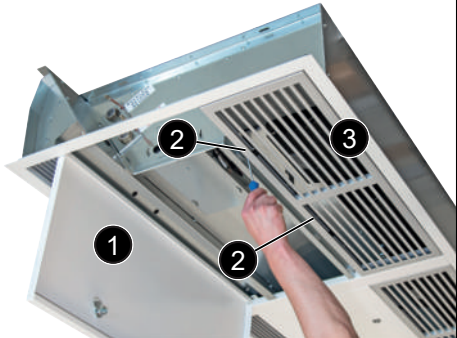
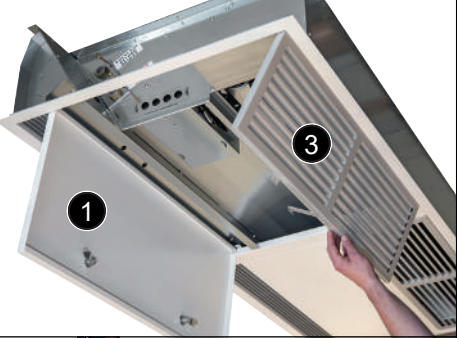

	<p>Open the service hatch (1) as described in chapter 10.3.1 and open the screws (2) of the inlet grille (3).</p>
	<p>Open the inlet grille (3), flap it downwards and pull it out of the bracket.</p>
	<p>Push filter frame (4) out of the side of the inlet grille.</p> <p>Use a damp cloth to clean off any dirt on the filter fleece. Replace the filter in the event of serious dirt.</p>



Fig. 35: Replacing the filter, Tandem ceiling cassette unit

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10.3.3 Visual checks

	<p>Tandem</p> <ul style="list-style-type: none">▶ Opening the service hatch ① .▶ Loosen screws pointing downwards and carefully remove the heat exchanger service panel ② .▶ Carefully vacuum the heat exchange if dirty, avoiding damage to the pipe-work and fins.▶ Repair work on the fan and heat exchanger can be carried out with the service hatch open, paying attention to the safety information [▶ 9].
	<p>Tandem In-ceiling Unit</p> <ul style="list-style-type: none">▶ Opening the service hatch ① .▶ Loosen screws pointing downwards and carefully remove the heat exchanger service panel.▶ Carefully vacuum the heat exchange if dirty, avoiding damage to the pipe-work and fins.▶ Repair work on the fan and heat exchanger can be carried out with the service hatch open, paying attention to the safety information.

10.3.4 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 informatio.

Behaviour in the event of faults

The following applies:

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

The fault table, Chapter 11.1 "Fault table" [► 51], provides information on who is authorised to rectify and remedy faults.

11.1 Fault table

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

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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 to re-start:

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

12 List of KaControl parameters

12.1 List of door air curtain parameters

Parameter	Function	Standard	Min.	Max.	Unit	Door air curtain ⁵
P000	Software version	24	0	255	-	24
P001	Base setpoint for setpoint input $\pm 3K$	22	8	32	°C	32
P002	Switching on / 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	3
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	5
P006	Fan On/Off hysteresis (only in ventilation mode)	5	0	255	K/10	5
P007	P-band, heating	20	0	100	K/10	20
P008	P-band, cooling	20	0	100	K/10	20
P009	Offset to the base setpoint for setpoint input $\pm 3K$	3	0	10	C	3
P010	Clip-on sensor: limit temperature to enable fan stages 1 and 2 in heating mode	26	0	255	°C	26
P011	Clip-on sensor: limit temperature to enable fan stages 3 and 4 in heating mode	28	0	255	°C	28
P012	Clip-on sensor: limit temperature to enable fan stage 5 in heating mode	30	0	255	°C	30
P013	Clip-on sensor: hysteresis for limit temperatures P010, P011, P012, P014	10	0	255	K/10	10
P014	Clip-on sensor: limit temperature for enabling the 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 decrease of heating setpoint in Eco mode	30	0	255	K/10	100
P020	ADC limit coefficient	6	0	15	-	6
P021	ADC average coefficient	6	0	15	-	6
P022	Activation/disabling of sun symbol in Comfort mode	0	0	1	-	0
P023	Difference for compensation during cooling	0	-99	127	K/10	0
P024	Coefficient for compensation during heating	0	-20	20	1/10	0
P025	Difference for compensation during heating	0	-99	127	K/10	0
P026	Coefficient for compensation during 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 flushing function	2	1	5	-	2
P029	Activation of continuous fan mode	0	0	1	-	0
P030	Vent temperature enable	12	0	255	°C	12
P031	Vent interval	27	0	255	°C	27
P032	Flushing function: maximum idle time of fan	15	0	255	min	15
P033	Flushing function: duration of flushing function	120	0	255	s	120
P034	Flushing function: activation in operating modes	0	0	3	-	0

⁵ Parameter key for door air curtain SAP no. 9001162, dated 1.05.2019

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Parameter	Function	Standard	Min.	Max.	Unit	Door air curtain ⁵
P035	Fan run-on time after operating mode is switched to stage 1	0	0	255	s	0
P036	Type of setpoint	0	0	1	-	1
P037	Display	1	0	7	-	1
P038	Lock/disable function on control unit	72	0	255	-	3
P039	Function of digital output V2 (in 2-pipe system)	0	0	3	-	3
P040	Valve actuation via 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	-	3
P043	Function of digital input DI1	0	0	22	-	1
P044	Function of digital input DI2	0	0	22	-	15
P045	Threshold voltage for potentiometer, which switches on unit	10	0	100	kOhm	10
P046	Temperature setting corresponds to minimum resistance value = 10 kOhm in the potentiometer	18	12	34	°C	18
P047	Temperature setting corresponds to maximum resistance value = 100 kOhm in the potentiometer	24	13	35	°C	24
P048	Threshold voltage for potentiometer for starting up fans	10	0	100	kOhm	10
P049	Threshold voltage for potentiometer for maximum fan speed	90	0	100	kOhm	90
P050	Fan setting: max. fan speed	100	0	100	%	100
P051	Fan setting: min. fan speed	0	0	90	%	0
P052	Fan setting: enable speed limit	0	0	1	-	0
P053	Valve activation via pulse width modulation of 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	-	0
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 calibration: 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 calibration: sensor in the KaController	0	-99	127	K/10	0
P062	Sensor calibration: sensor AI2	0	-99	127	K/10	0
P063	Outside temperature <P63 fan increase by P122	0	-99	127	°C	0
P064	Sensor calibration: 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 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

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Parameter	Function	Standard	Min.	Max.	Unit	Door air curtain ⁵
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
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 DIP switch	-	0	63	-	-
P098	Activation 0..10V: switch on limit for valves	30	0	100	V/10	30
P099	Activation 0..10V: min. switch on limit for fan speed	40	0	100	V/10	40
P100	Activation 0..10V: 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 reset time of PI controller	0	0	20	min	0
P104	Minimum ON time with valve activation PWM	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 operation	0	0	20	°C	0
P111	Threshold for switching between heating/fan operation	0	0	50	°C	0
P112	reserved	-	-	-	-	-
P113	reserved	-	-	-	-	-
P114	reserved	-	-	-	-	-
P115	reserved	-	-	-	-	-

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Parameter	Function	Standard	Min.	Max.	Unit	Door air curtain ⁵
P116	reserved	-	-	-	-	-
P117	Lock function buttons on KaController	0	0	7	-	0
P118	On delay time	0	0	255	sec	10
P119	Off delay time	0	0	255	sec	30
P120	reserved	-	-	-	-	-
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 motion (0 to 10)	5	0	100	%	5
P125	reserved	-	-	-	-	-
P126	Weeks of operation	0	0	255	week	0
P127	Info weeks of operation reached (filter message)	0	52	255	week	0
P128	Reset weeks of operation 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	-	4
P131	External ventilation, delay time	0	0	255	min	0
P132	Operating level, master password	22	0	255	-	22
P133	Hysteresis for outside temperature for switching between heating/fan mode	0	0	255	K/10	0
P134	Threshold for outside temperature for switching between heating/fan mode	0	0	50	°C	0
P135	Enable virtual sensor	0	0	1	-	0
P136	Enable external ventilation	0	0	2	-	0

Tab. 12: Key parameters, standard revision 1.024 from 01.05.2018

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	-	

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Parameter	Function	Standard	Min.	Max.	Unit	Comment
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 (parametrisable 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	-	

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13 Certificates

EU-Konformitätserklärung

EU Declaration of Conformity

Déclaration de Conformité CE

Deklaracja zgodności CE

EU prohlášení o konformite

Wir (Name des Anbieters, Anschrift):

We (Supplier's Name, Address):

Nous (Nom du Fournisseur, Adresse):

My (Nazwa Dostawcy, adres):

My (Jméno dodavatele, adresa):

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

erklären in alleiniger Verantwortung, dass das Produkt:

declare under sole responsibility, that the product:

déclarons sous notre seule responsabilité, que le produit:

deklarujemy z pełną odpowiedzialnością, że produkt:

deklarujeme, vědomi si své odpovědnosti, že produkt:

Type, Modell, Artikel-Nr.:

Type, Model, Articles No.:

Type, Modèle, N° d'article:

Typ, Model, Nr artykułu:

Typ, Model, Číslo výrobku:

Tandem 300

Tandem 365

Uniline 260

Uniline 380

251***

252***

253***

254***

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 55014-1; -2

DIN EN 61000-3-2; -3-3

DIN EN 61000-6-1; -6-2; -6-3

DIN EN 60335-1

Elektromagnetische Verträglichkeit

Elektromagnetische Verträglichkeit

Elektromagnetische Verträglichkeit

**Sicherheit elektr. Geräte f. den Hausgebrauch und
ähnliche Zwecke**

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**EMV-Richtlinie****2014/35/EU****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

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

Tandem EC heating only nur heizen 2-pipe unit 2-Rohrsystem		cooling capacity (sensible)	Kühlleistung (sensible)	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)
Version	Size	P _{rated,c}	P _{rated,c}	P _{rated,c}	P _{rated,c}	P _{rated,h}	P _{rated,h}	P _{elec}	P _{elec}	L _{WA}	L _{WA}
	Baugröße	kW	kW	kW	kW	kW	kW	kW	kW	dB (A)	dB (A)
Tandem 300	12	-	-	-	-	3,5	3,5	0,128	0,128	48/63/70/75/77	48/63/70/75/77
	20	-	-	-	-	6,6	6,6	0,231	0,231	51/64/72/77/79	51/64/72/77/79
	25	-	-	-	-	9,2	9,2	0,308	0,308	53/64/73/78/79	53/64/73/78/79
	30	-	-	-	-	10,5	10,5	0,344	0,344	53/67/74/79/81	53/67/74/79/81
Tandem 365	12	-	-	-	-	4,8	4,8	0,174	0,174	49/63/70/76/80	49/63/70/76/80
	20	-	-	-	-	9,1	9,1	0,314	0,314	53/64/72/78/82	53/64/72/78/82
	27	-	-	-	-	13,3	13,3	0,445	0,445	54/65/73/79/83	54/65/73/79/83

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 Lingen (Ems), Germany

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