



► **TIP**
Unit heaters


TIP

Wall- and ceiling-mounted unit heaters

► **Technical catalogue**

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TIP:
The economic miracle
of unit heaters



Ceiling-mounted TIP unit heaters heat the showrooms belonging to the Seyfarth car dealership in Gotha, Germany.

01 ► Product information



TIP – Temperature-controlled air. As much as you need.

With its TIP unit heater, Kampmann has a simple solution for the optimum centrally controlled heating and ventilation of buildings of all kinds, industrial and commercial workplaces, warehouses or greenhouses.

With a housing made of sendzimir galvanised sheet steel with threaded rods fitted as standard, TIP unit heaters are ideal for wall-mounting as well as ceiling-mounting. Their standard equipment also includes a single-row louvre and motor guard.

Operating principle

Air is drawn in through the whisper-quiet sickle-blade fan and is blown through the copper/aluminium heat exchanger into the room. Models with large heat exchanger capacity are ideal for use with low water temperatures.

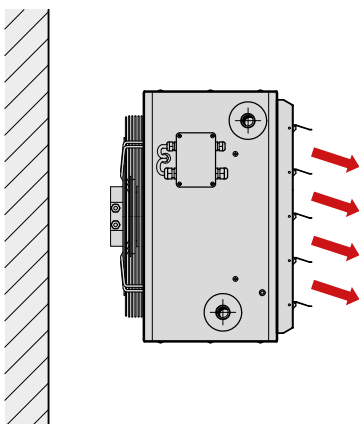
Air guidance

TIP unit heaters are supplied as standard with a single-row louvre. The air can optionally be discharged through a double-row louvre or air diffuser, both available as accessories.

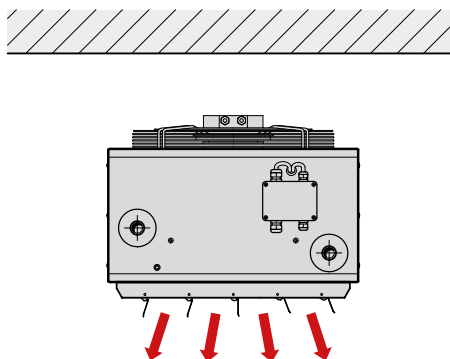
Available ex-stock

Four different models are available ex-stock.

Example of wall-mounted heating unit



Example of ceiling-mounted heating unit



Product data



Product benefits

- ▶ Unbeatable in terms of value for money
- ▶ Sickle-blade, whisper-quiet fan with optimised full nozzle
- ▶ Neutral in colour, hard-wearing and tough
- ▶ Fully regulable and centrally controllable
- ▶ Copper/aluminium heat exchanger, suitable for use with low water temperature systems
- ▶ Single-row ceiling or wall louver and motor guard as standard



Features

- ▶ Continuously variable single-phase EC motor
- ▶ Copper/aluminium heat exchanger
- ▶ Three sizes
- ▶ Different air outlets are available

Installation	▶ Wall- or ceiling-mounted
Air stream	▶ Recirculating air
Heating	▶ LPHW
Cooling	▶ ---
Hybrid Eco	▶ ---
KaControl	▶ ---

Performance data

Heat output [kW]1) > 5.1 – 50.0

Air flow [m³/h] > 370 – 5830

Sound pressure level [dB(A)]2) > 23 – 63

Sound power level [dB(A)] > 39 – 79

1) at LPHW 75/65 °C, tL1 = 20 °C

2) The sound pressure levels were calculated with an assumed room insulation of 16 dB(A). This corresponds to a distance of 5 m, a room volume of 3000 m³ and a reverberation time of 2.0 s (in accordance with VDI 2081).

Operating limits

- ▶ Max. operating pressure: 16 bar
- ▶ Max. entering water temperature: 120 °C
- ▶ Min. entering water temperature: 35 °C
- ▶ Max. air inlet temp.: 40 °C
- ▶ Max. glycol volume: 50 %

Applications

Buildings of all kinds, which are to be ideally heated and ventilated with centralised or decentralised control.

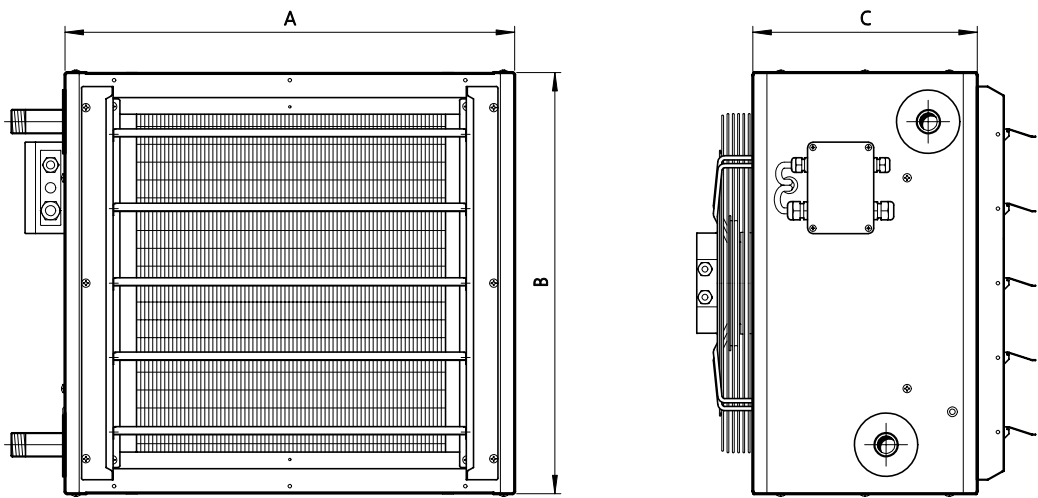


Selection guide

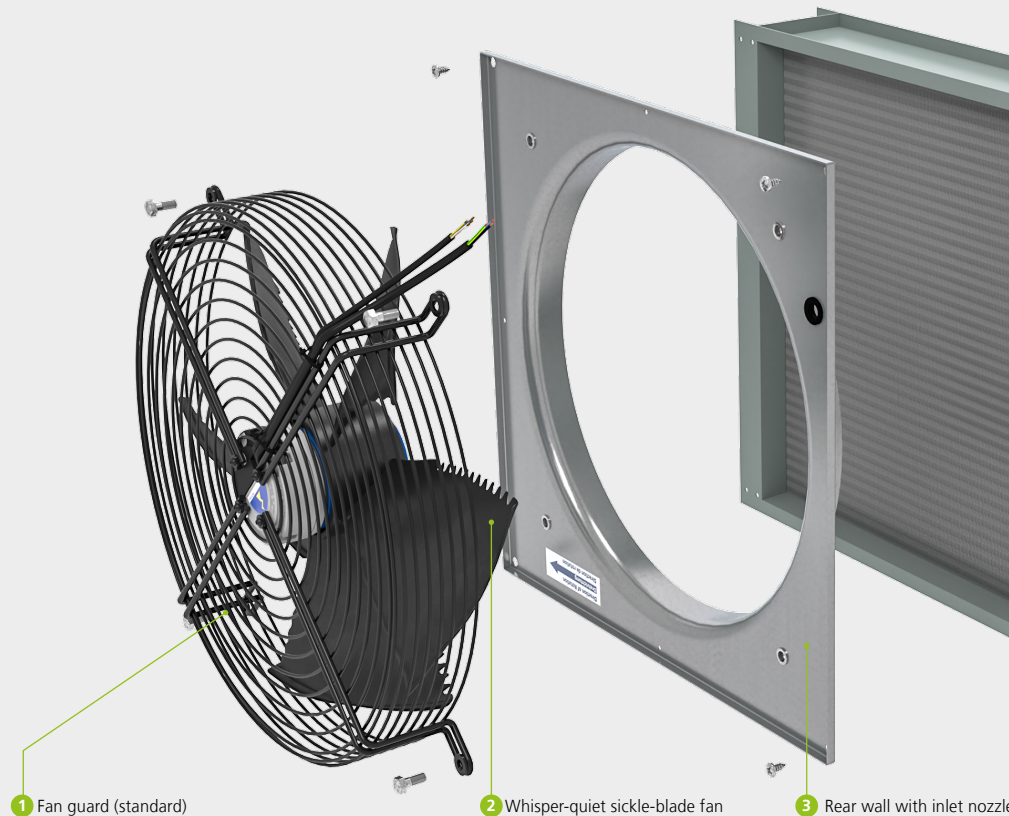
Fan version	Model	Width (A) [mm]	Dimensions Height (B) [mm]	Depth (C) [mm]	Heat exchanger model1) copper/aluminium	
					Heat output [kW]	Air flow [m³/h]
EC fan	4	540	500	320	5.1 – 18.1	370 – 2710
	5	640	600		10.0 – 39.0	890 – 4940
	6	740	700		12.8 – 50.0	1240 – 5830

1) at LPHW 75/65 °C, tL1 = 20 °C

Technical drawing (Dimensions in mm)



TIP at a glance



Features

1 Fan guard (standard):

- ▶ screw-fixed as standard with whisper-quiet sickle-blade fan

2 Whisper-quiet, sickle-blade fan, ErP 2015-compliant:

- ▶ continuously variable EC single-phase whisper-quiet sickle-blade fan
- ▶ excellent efficiency due to the aerodynamic design of the rotor housing
- ▶ electrical thermal class F model
- ▶ motor protection: IP 54
- ▶ balanced at two levels; balancing quality according to G6, 3 DIN ISO 1940 Part 1

- ▶ fan characteristic line coordinated to the unit housing enables the speed to be controlled by voltage reduction
- ▶ external rotor motor integrated in the fan impeller
- ▶ complies with Directive (EU) 327/2011 ("LOT 11")

3 Rear wall with inlet nozzle:

- ▶ inlet nozzle optimised to the flow characteristics of the fan

4 Heat exchanger:

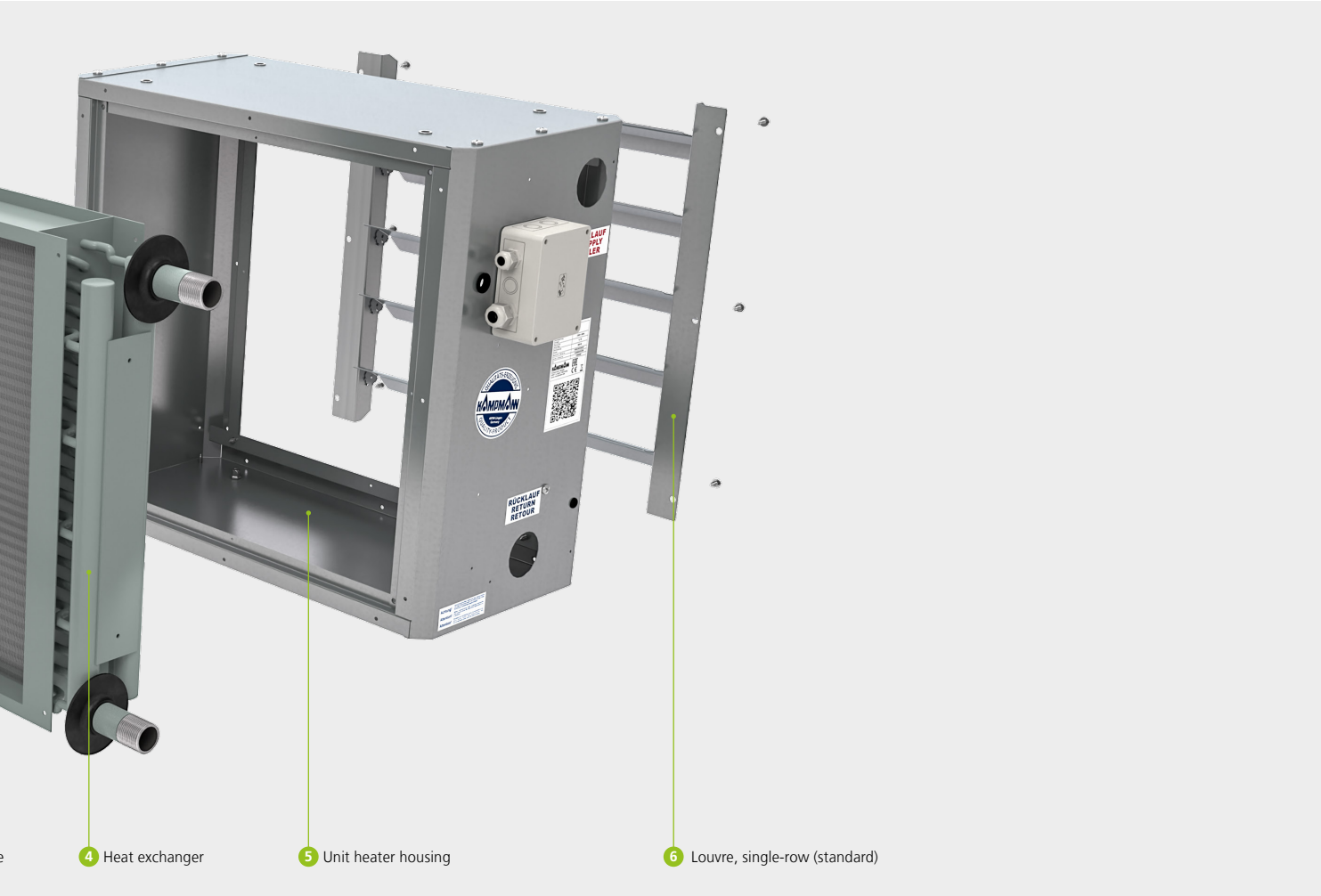
- ▶ copper/aluminium heat exchanger, especially lightweight, with high heat outputs from minimal dimensions
- ▶ suitable for low temperature heating systems and LPHW heating systems
- ▶ steel distributor and collector
- ▶ not suitable for steam and thermal oil
- ▶ hollow copper tubes with aluminium fins, connected by expanded pipes, perfect for lasting heat transfer
- ▶ cannot be used in areas with high levels of dust or oil in which extensive cleaning is needed

5 Unit heater housing:

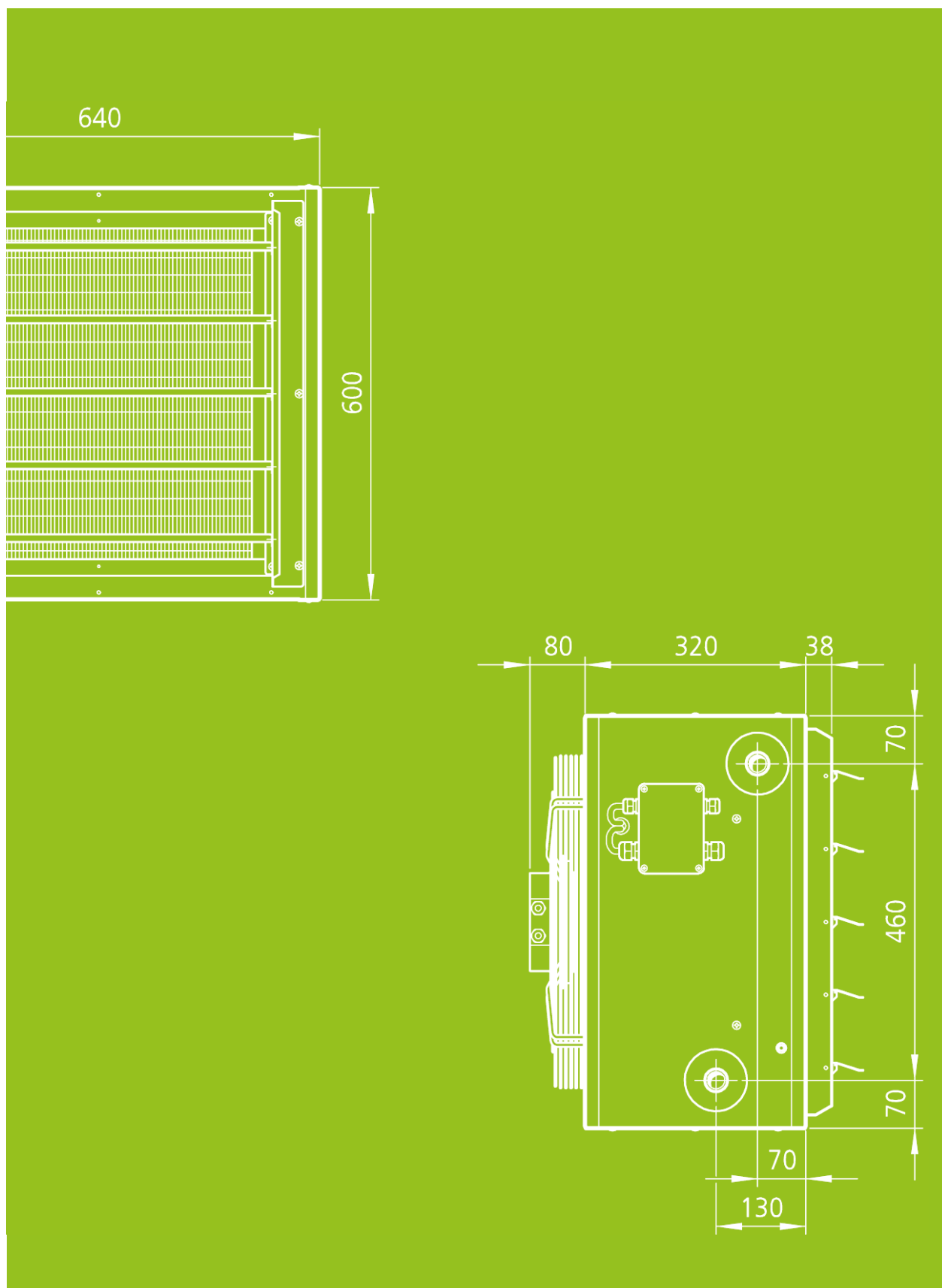
- ▶ self-supporting, made of galvanised sheet steel
- ▶ standard fixing holes for wall- or ceiling-mounting
- ▶ resistant to damage
- ▶ shallow depth, ideal for the simple attachment of outlet-side accessories

6 Single-row air louvre (standard):

- ▶ for wall or ceiling-mounting
- ▶ achieves excellent throw



02 ► Technical data



General

EU Directive 2009/125/EU

Compliance with the ErP Directive 2015

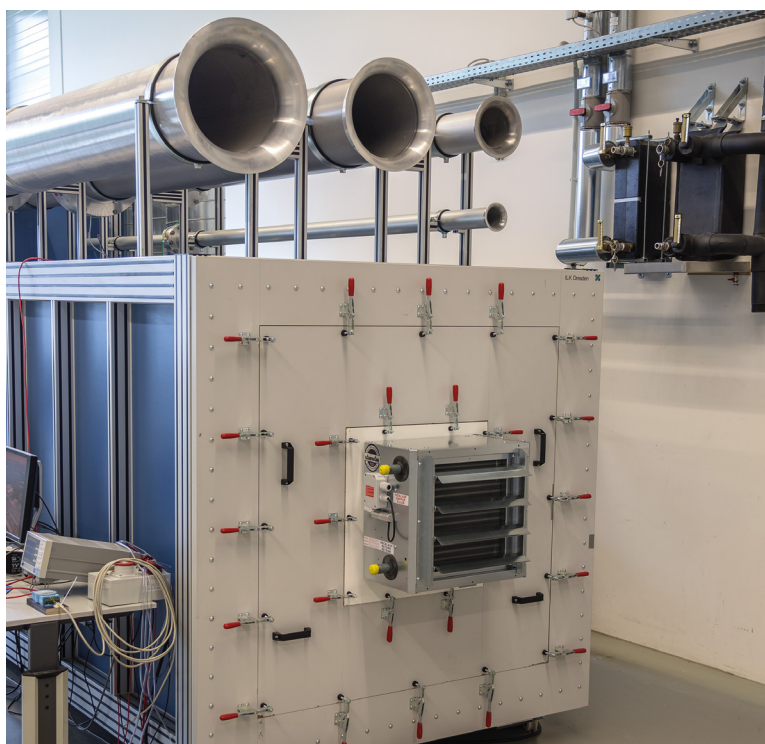
The European Commission's ErP Directive ("Energy-related Products") evaluates and modifies the requirements of technical products in energy-related applications.

According to the Directive (EU) 327/2011 ("LOT 11"), the efficiency requirements have become more stringent for fans with an electric drive output of 125 watts to 500 kilowatts. A number of fans can no longer be marketed since the second stage entered into force on 1 January 2015.

The inlet nozzle used in the unit must be taken into account along with the fan, in terms of energy.

The TIP range of unit heaters is solely fitted with ErP-compliant fans. The conformity of the TIP range has been laboratory-tested and proved. The measurements can be provided on request.

The TIP unit heater range and components used are produced and tested in line with the applicable state of the art. The requirements of the applicable norms, e.g. Machinery Directive, EN60335 (Safety of Electrical Equipment) and EMC are all met.

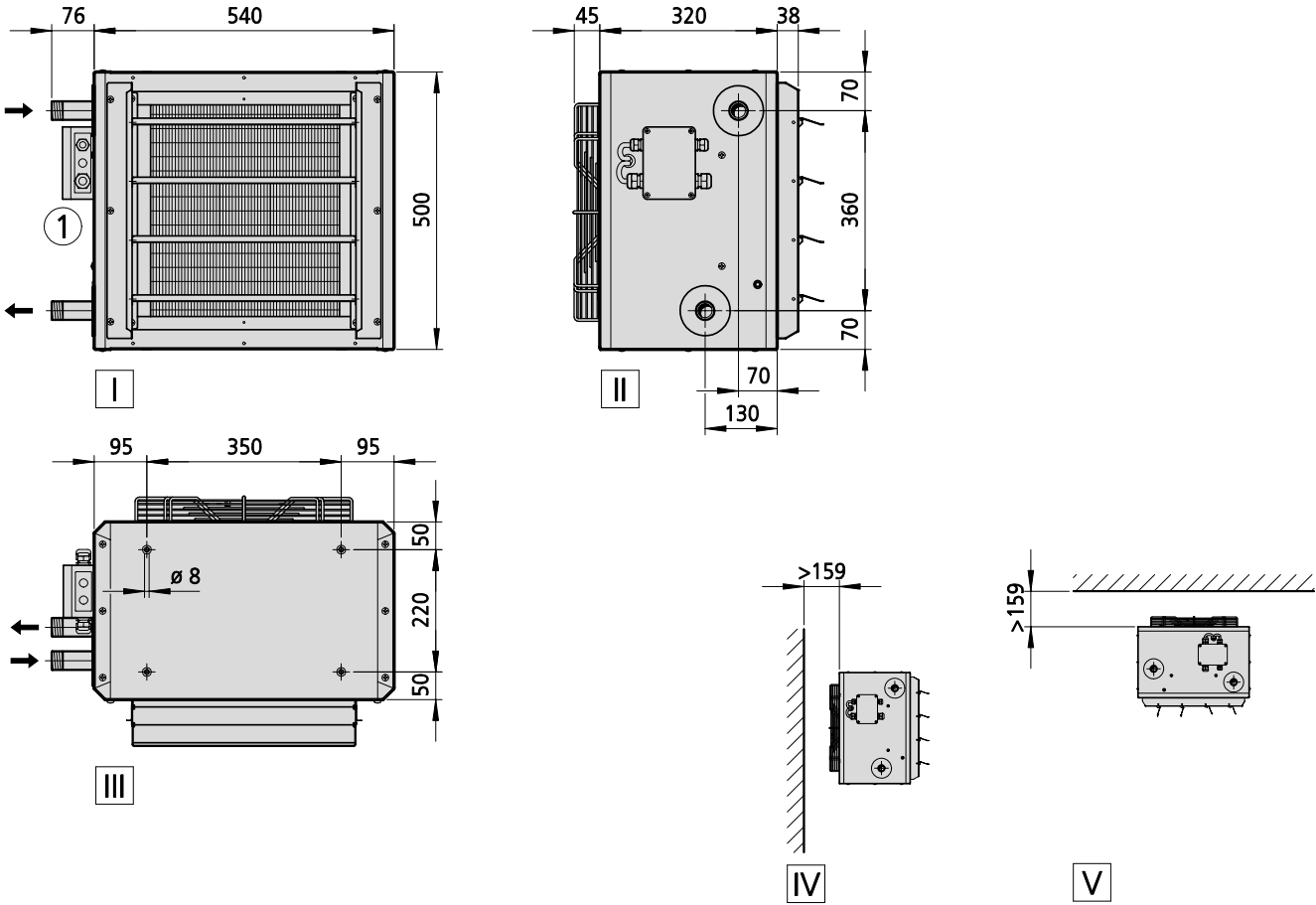


Test chamber for air performance measurements according to DIN EN ISO 5801, Kampmann R&D Centre

TIP, Heat exchanger copper/aluminium, Model 4

EC fan

Technical drawing (Dimensions in mm)



Specifications

Type	Weight [kg]	Water content [l]	Connection
542057	25	1.6	1"
543057	25	2.1	1"
544057	26	2.6	1"

Performance data

Type	Inlet air temperature	Control voltage	Heat output ¹⁾	Outlet air temperature	Air flow	Nominal fan speed	Power consumption	Amperage	Max. mounting height when ceiling-mounted		SFP	Sound pressure level ³⁾	Sound power level
									Louvre ²⁾	Diffuser			
	[°C]	[V]	[kW]	[°C]	[m³/h]	[1/min]	[W]	[A]	[m]	[m]	[Ws/m³]	[dB(A)]	[dB(A)]
542057	20	10	12.7	34.1	2710	1530	166	1.4	6.0	3.6	221	58	74
		8	11.7	34.9	2360	1400	122	1.1	5.6	3.4	186	55	71
		6	11.2	35.4	2190	1300	109	1.0	5.3	3.2	179	52	68
		4	8.7	39.3	1360	862	32	0.3	3.9	2.5	85	42	58
		2	6.1	42.6	520	424	7	0.1	2.3	2.3	48	27	43
543057	20	10	14.9	38.5	2440	1530	166	1.4	5.6	3.4	245	56	72
		8	13.8	39.3	2160	1400	122	1.1	5.3	3.2	204	53	69
		6	13.1	39.8	1990	1300	109	1.0	5.0	3.1	198	50	66
		4	9.8	44.3	1220	862	32	0.3	3.6	2.3	95	40	56
		2	6.4	48.0	460	424	7	0.1	2.3	2.3	55	25	41
544057	20	10	18.1	47.2	2010	1530	166	1.4	5.0	3.1	298	54	70
		8	16.7	47.7	1820	1400	122	1.1	4.7	3.0	242	51	67
		6	15.6	48.1	1670	1300	109	1.0	4.4	2.8	235	48	64
		4	10.3	51.1	1000	862	32	0.3	3.2	2.3	115	38	54
		2	5.1	53.6	370	424	7	0.1	2.3	2.3	69	23	39

Use our calculation tools on our website to easily calculate heat outputs and other technical data with just a few clicks!

► <https://www.kampmann.co.uk/hvac/products/unit-heaters/tip#Calculate-performance-data>

1) at LPHW 75/65 °C, tL1 = 20 °C

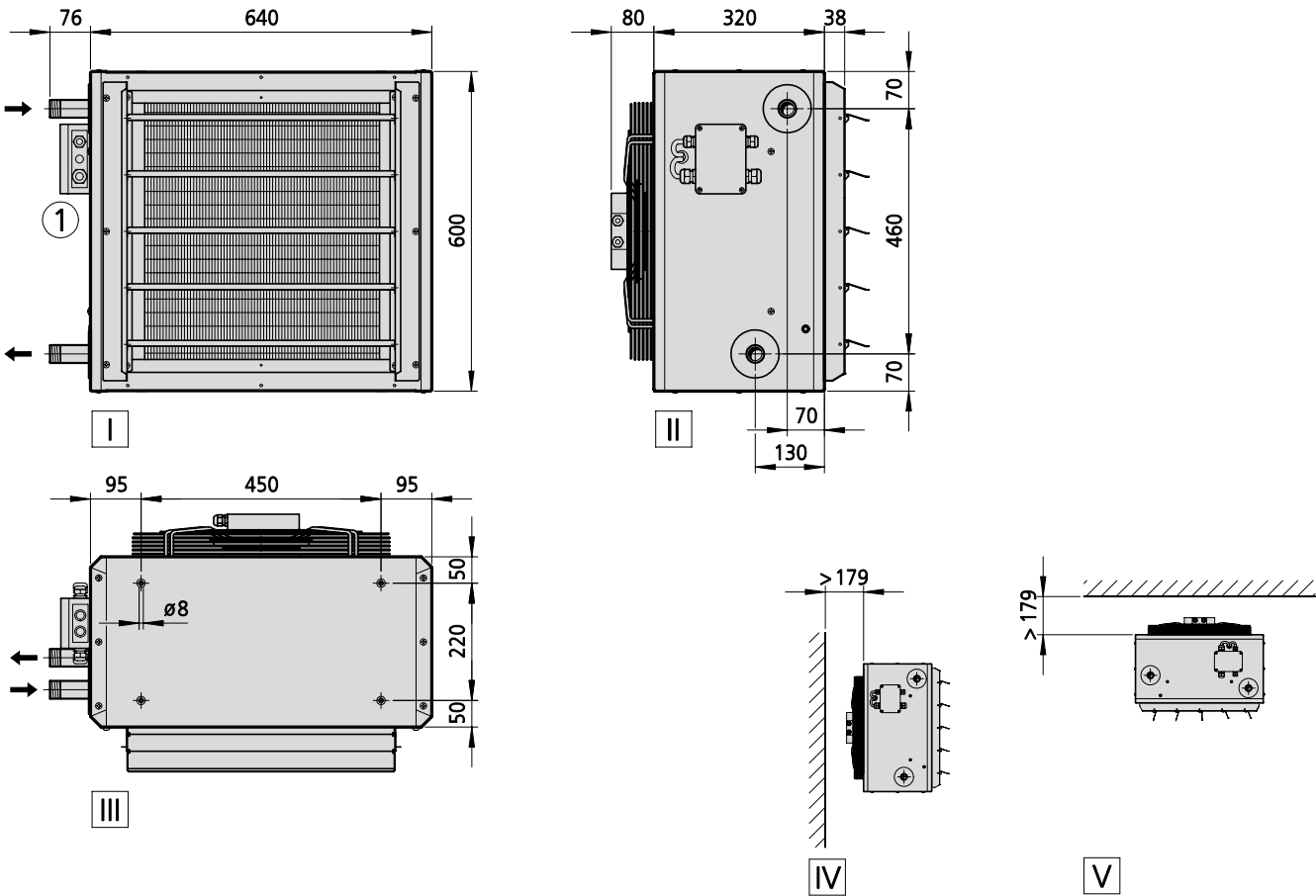
2) The maximum mounting heights only apply for a leaving air temperature of up to 15 K above room temperature (see also design information).

3) The sound pressure levels were calculated with an assumed room insulation of 16 dB(A). This corresponds to a distance of 5 m, a room volume of 3000 m³ and a reverberation time of 2.0 s (in accordance with VDI 2081).

TIP, Heat exchanger copper/aluminium, Model 5

EC fan

Technical drawing (Dimensions in mm)



- View**
- I Front view
 - II side view
 - III top view
 - IV Wall-mounted
 - V Ceiling-mounted

Further information

① Electrical connection for EC model, electromechanical

Specifications

Type	Weight [kg]	Water content [l]	Connection
552057	32	2.2	1"
553057	32	3.0	1"
554057	34	3.8	1"

Performance data

Type	Inlet air temperature	Control voltage	Heat output ¹⁾	Outlet air temperature	Air flow	Nominal fan speed	Power consumption	Amperage	Max. mounting height when ceiling-mounted		SFP	Sound pressure level ³⁾	Sound power level
									Louvre ²⁾	Diffuser			
	[°C]	[V]	[kW]	[°C]	[m³/h]	[1/min]	[W]	[A]	[m]	[m]	[Ws/m³]	[dB(A)]	[dB(A)]
552057	20	10	24.3	34.8	4940	1710	426	1.9	7.3	4.4	311	63	79
		8	23.2	35.1	4640	1620	400	1.8	7.0	4.3	311	62	78
		6	22.5	35.2	4450	1540	262	1.2	6.8	4.1	212	60	76
		4	18.1	36.5	3320	1240	136	0.6	5.7	3.5	148	55	71
		2	10.0	38.9	1250	530	19	0.2	3.2	2.3	55	33	49
553057	20	10	29.6	39.3	4620	1710	426	1.9	7.0	4.3	332	61	77
		8	28.1	39.5	4330	1620	400	1.8	6.7	4.1	332	60	76
		6	26.9	39.7	4100	1540	262	1.2	6.5	4.0	230	58	74
		4	21.4	41.0	3070	1240	136	0.6	5.5	3.4	160	53	69
		2	10.8	43.5	1120	530	19	0.2	3.0	2.3	61	31	47
554057	20	10	39.0	49.1	4030	1710	426	1.9	6.4	4.0	381	59	75
		8	36.6	49.4	3760	1620	400	1.8	6.2	3.8	383	58	74
		6	34.5	49.6	3510	1540	262	1.2	5.9	3.7	269	56	72
		4	26.6	50.5	2630	1240	136	0.6	5.0	3.2	187	51	67
		2	10.4	52.6	890	530	19	0.2	2.6	2.3	77	29	45

Use our calculation tools on our website to easily calculate heat outputs and other technical data with just a few clicks!

► <https://www.kampmann.co.uk/hvac/products/unit-heaters/tip#Calculate-performance-data>

1) at LPHW 75/65 °C, tL1 = 20 °C

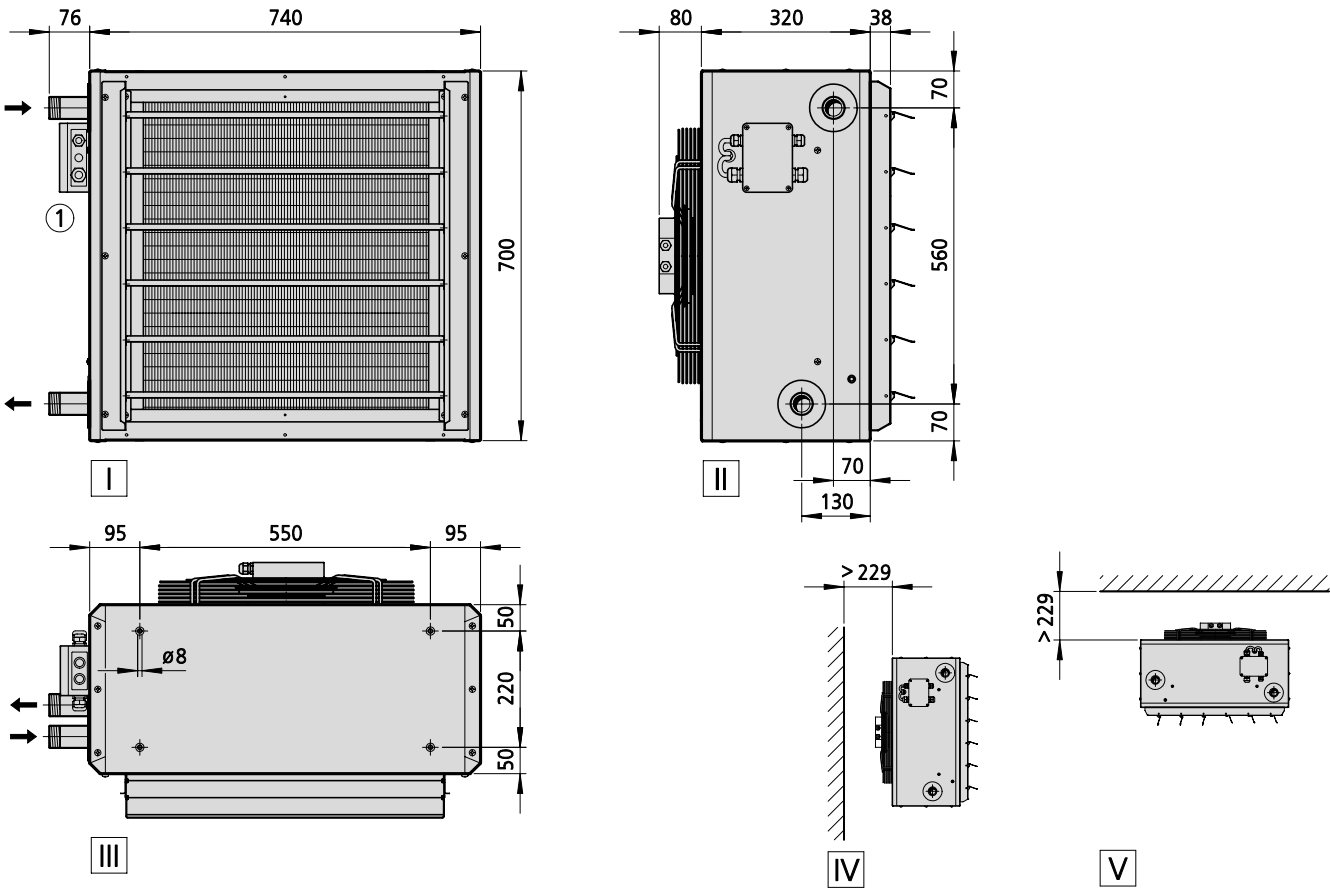
2) The maximum mounting heights only apply for a leaving air temperature of up to 15 K above room temperature (see also design information).

3) The sound pressure levels were calculated with an assumed room insulation of 16 dB(A). This corresponds to a distance of 5 m, a room volume of 3000 m³ and a reverberation time of 2.0 s (in accordance with VDI 2081).

TIP, Heat exchanger copper/aluminium, Model 6

EC fan

Technical drawing (Dimensions in mm)



- View**
- I Front view
 - II side view
 - III top view
 - IV Wall-mounted
 - V Ceiling-mounted

Further information

① Electrical connection for EC model, electromechanical

Specifications

Type	Weight [kg]	Water content [l]	Connection
562057	39	3.4	1 1/4"
563057	41	4.5	1 1/4"
564057	44	5.6	1 1/4"

Performance data

Type	Inlet air temperature	Control voltage	Heat output ¹⁾	Outlet air temperature	Air flow	Nominal fan speed	Power consumption	Amperage	Max. mounting height when ceiling-mounted		SFP	Sound pressure level ³⁾	Sound power level
									Louvre ²⁾	Diffuser			
	[°C]	[V]	[kW]	[°C]	[m³/h]	[1/min]	[W]	[A]	[m]	[m]	[Ws/m³]	[dB(A)]	[dB(A)]
562057	20	10	28.2	34.6	5830	1710	417	1.9	7.3	4.2	257	63	79
		8	26.9	34.8	5450	1620	372	1.9	7.0	4.1	246	62	78
		6	26.2	35.0	5260	1540	261	1.2	6.7	3.9	179	60	76
		4	21.4	36.5	3910	1240	134	0.6	5.7	3.4	123	55	71
		2	12.8	39.4	1570	530	15	0.2	3.3	2.3	34	33	49
563057	20	10	39.3	41.7	5450	1710	417	1.9	7.0	4.1	275	61	77
		8	37.2	42.0	5100	1620	372	1.9	6.7	3.9	263	60	76
		6	35.5	42.2	4810	1540	261	1.2	6.5	3.8	195	58	74
		4	28.1	43.6	3590	1240	134	0.6	5.4	3.2	134	53	69
		2	14.5	46.5	1400	530	15	0.2	3.1	2.3	39	31	47
564057	20	10	50.0	49.8	5050	1710	417	1.9	6.7	3.9	297	59	75
		8	47.0	50.1	4710	1620	372	1.9	6.4	3.8	284	58	74
		6	44.1	50.3	4380	1540	261	1.2	6.1	3.6	215	56	72
		4	34.0	51.3	3270	1240	134	0.6	5.1	3.1	147	51	67
		2	14.8	53.6	1240	530	15	0.2	2.8	2.3	44	29	45

Use our calculation tools on our website to easily calculate heat outputs and other technical data with just a few clicks!

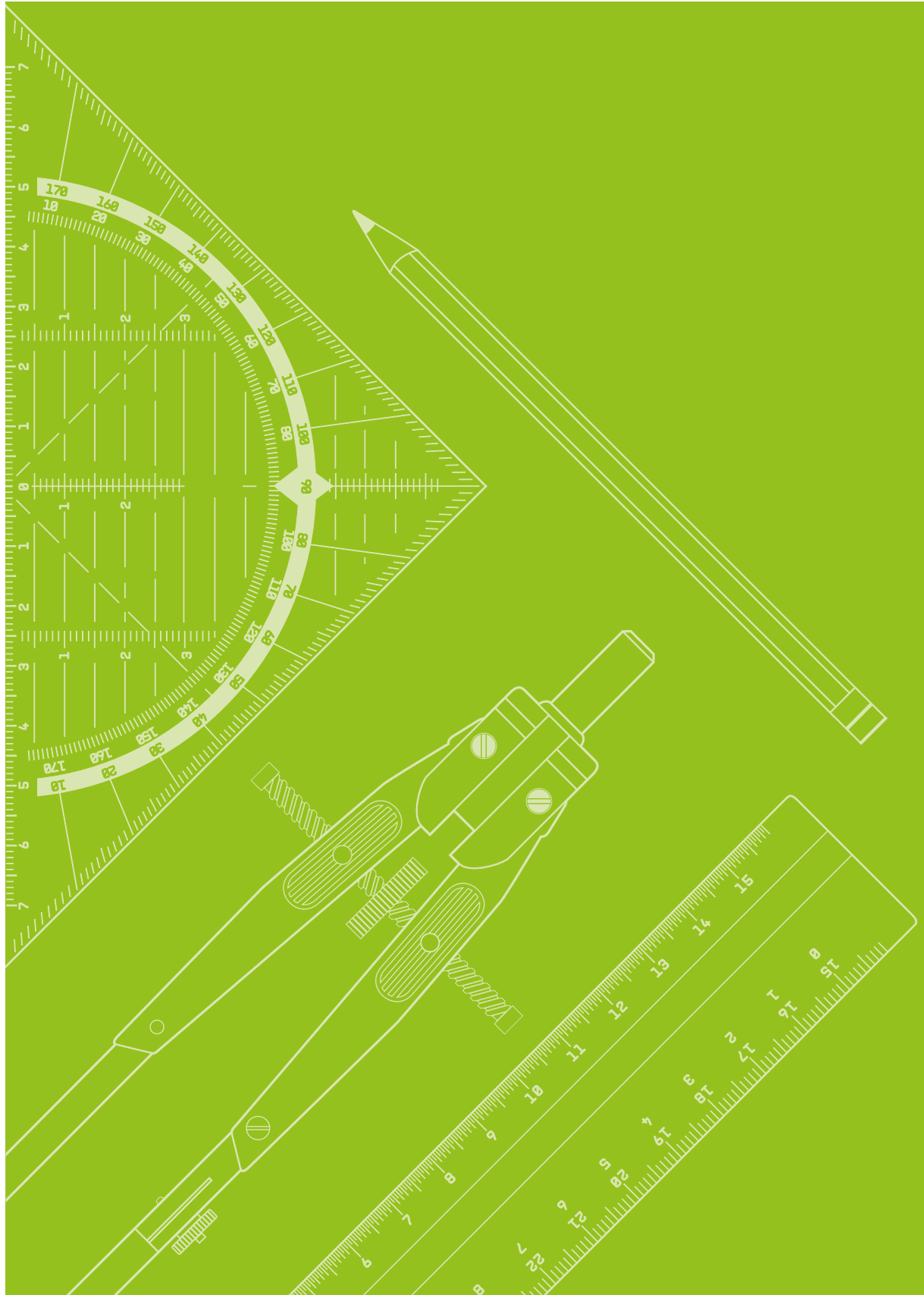
► <https://www.kampmann.co.uk/hvac/products/unit-heaters/tip#Calculate-performance-data>

1) at LPHW 75/65 °C, tL1 = 20 °C

2) The maximum mounting heights only apply for a leaving air temperature of up to 15 K above room temperature (see also design information).

3) The sound pressure levels were calculated with an assumed room insulation of 16 dB(A). This corresponds to a distance of 5 m, a room volume of 3000 m³ and a reverberation time of 2.0 s (in accordance with VDI 2081).

03 ► Design information



Information on planning and design

The selection and configuration of TIP unit heaters depends on more than just the heat load calculated. The required air circulation, structural and acoustic conditions and unit-specific properties need to be taken into consideration, among other things.

Water resistance

Please use our online calculation programs to determine the water resistance:

- Kampmann.de/tip

The water resistance is formed from:

- the heat output Q_{eff}
- the heating medium temperature difference $\Delta t_w = t_{w1} - t_{w2}$
- the heating medium volumetric flow $m = \frac{Q_{\text{eff}}}{\Delta t_w} \times 0.86$

Noise

There is minimal noise from these units due to the aerodynamic design of the whisper-quiet sickle-blade fan. Flow noise is reduced because of the sickle-shaped design of the profiled blades combined with the optimised inlet nozzle.

The uniform spread over the entire frequency range, minimising blade passing noise, reduces unpleasant peaks of noise. Nonetheless, take into account the permissible noise levels when designing unit heaters.

Sound pressure level

The A-rated sound pressure levels given in the technical data (*pages 14 to 27*) have been calculated with an assumed room insulation of 16 dB(A). This corresponds to a clearance of 5 m, a room volume of 3000 m³ and a reverberation time of 2.0 s (in accordance with VDI 2081). The actual sound pressure level may differ significantly from the stated figures, depending on the room geometry, absorption capacity of the space, equipment, accessories etc.

Sound power level

The sound power level describes the noise emission from the units, independently of the space and distance. The sound pressure levels can be calculated when the room geometry and absorption values are known. The sound power levels have been determined using the enveloping surface process according to DIN 45635-56.

04 ► Control



Control of TIP – electromechanical model

Product features

The fan speed of the EC fans used can be continuously variably controlled by a 0–10 V DC signal.

The “intelligent” motor electronics detect any possible motor malfunction and automatically switch off the fan. This fault can be externally evaluated. The entire group or individual units are shut down in the event of a motor fault, depending on the control version. The fan speed can be limited to approx. 50% of the maximum speed by the potentiometer in the junction box. Actuation by Modbus-RTU instead of by a 0–10 V DC signal is possible depending on the type of unit heater.

Control units

Four different control units are available for operation and control.

Speed controller, type 30510

Continuously variable speed controller for use in conjunction with a thermostat for room temperature-dependent two-point control of heating or cooling units in closed rooms. The fan speed is set manually on the speed controller at between 0–100%. The thermostats activate the ventilation units at the pre-set speed depending on the temperature. It is possible to automatically switch between day and night mode using timer program solutions (type 30056; type 30076).

Room thermostat, type 30155

The EC recirculating air control unit type 30155 enables the operation and temperature control of heating/cooling recirculating air units in 2- or 4-pipe mode. The room temperature can be set using a rotary dial. The temperature is controlled by a fan and valve. In principle, the ventilation unit is switched on and off depending on the temperature and, at the same time, the valve is opened/closed. The fan can be operated manually at 3 stages or continuously variably in Automatic mode. The control unit is also equipped with a frost protection function.

Clock thermostat, type 30256

The EC recirculating air control unit type 30256 enables the operation and temperature control of heating/cooling recirculating air units in 2- or 4-pipe mode. The room temperature can be set using the functional keys. The temperature is controlled by a fan and valve. In principle, the ventilation unit is switched on and off depending on the temperature and, at the same time, the valve is opened/closed. The fan can be controlled at 10 stages, both in Automatic mode as well as in Manual mode. The control is also equipped with an automatic summer/winter changeover and a frost protection function. The built-in timer program also enables day or week programs to be set.

Electronic speed controller, type 30515

The continuously variable electronic compact controller is designed for the operation of up to 10 recirculating air units (2-pipe heating/cooling) with EC fans to heat or cool rooms. The controller has a temperature control, which works with a fan and shut-off valve. The temperature setpoint can be set for day and night mode. A digital timer, including day, night and week program, is also included. The room sensor supplied is installed separately.

A mean value can optionally be formed using 2 or 4 room sensors. Apart from continuously variable speed control, the fan speed can also be manually set. In addition, the control has a frost protection function, an external enable switch and a potential-free operating and collective fault alert, among other things. If required, the fan can also be used for pure air circulation without heating or cooling.

Information on cable laying

The following points need to be taken into account with the cable laying and wiring diagrams below:

- ▶ Comply with the details on the type of cable and cabling, taking into consideration VDE 0100.
- ▶ Without *: NYM-J. The requisite number of wires, including PE conductor, is stated on the cable. Cross-sections are not stated, as the cable length is involved in the calculation of the cross-section.
- ▶ With *: J-Y(ST)Y 0.8 mm, max. 100 m between the fan speed controller and the last unit heater; provide a shield on one side when longer than 20 m. Lay separately from high voltage lines.
- ▶ With **: Sensor line 1.5 mm², e.g. J-Y(ST)Y, 4 x 2 x 0.8 mm, max. 100 m, lay separately from power lines.
- ▶ With ***: J-Y(ST)Y, 0.8 mm, max. 50 m, lay separately from power lines.
- ▶ With ****: J-Y(ST)Y, 0.8 mm, max. 100 m. Lay separately from high voltage lines.
- ▶ If other types of cables are used, they must be at least equivalent.
- ▶ The terminals on the unit are suitable for a maximum wire cross-section of 2.5 mm², the mains plug for max. 4.0 mm².
- ▶ Any RCCBs used must be pulsating current-sensitive (type A). When the power supply to the unit is switched on, pulsating charging currents from the capacitors in the integral EMC filter can cause residual current safety devices to trip. We recommend the use of RCCBs with a tripping threshold of 300 mA.
- ▶ The electrical data listed in the following table needs to be considered when configuring the mains supply and fuses on site.

Maximum connectible unit heaters with EC fan per speed control unit

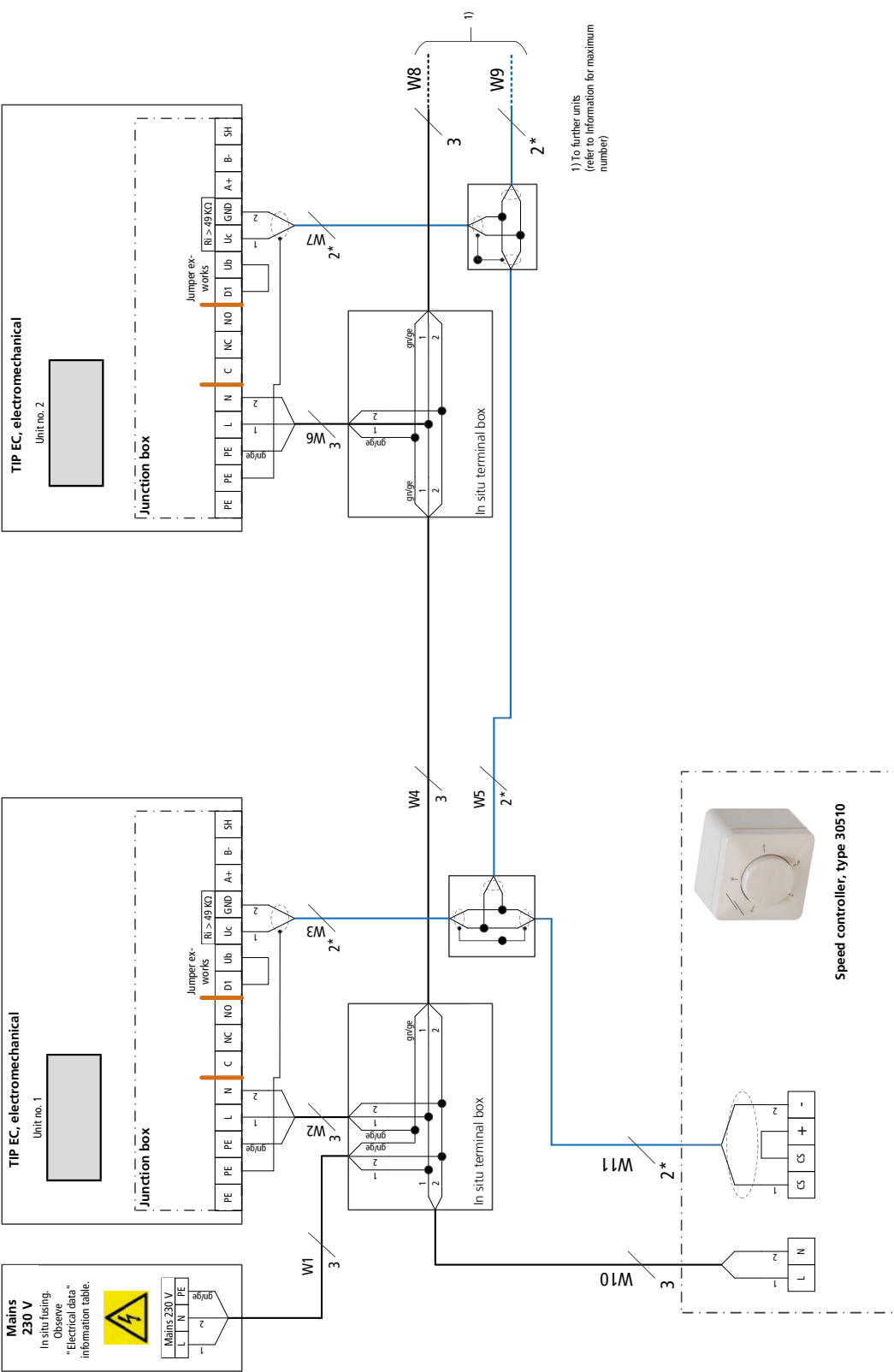
Speed control unit			
Type 30510	Type 30155	Type 30256	Type 30515
[Quantity]	[Quantity]	[Quantity]	[Quantity]
10	2	2	10

Electrical data for TIP, electromechanical model

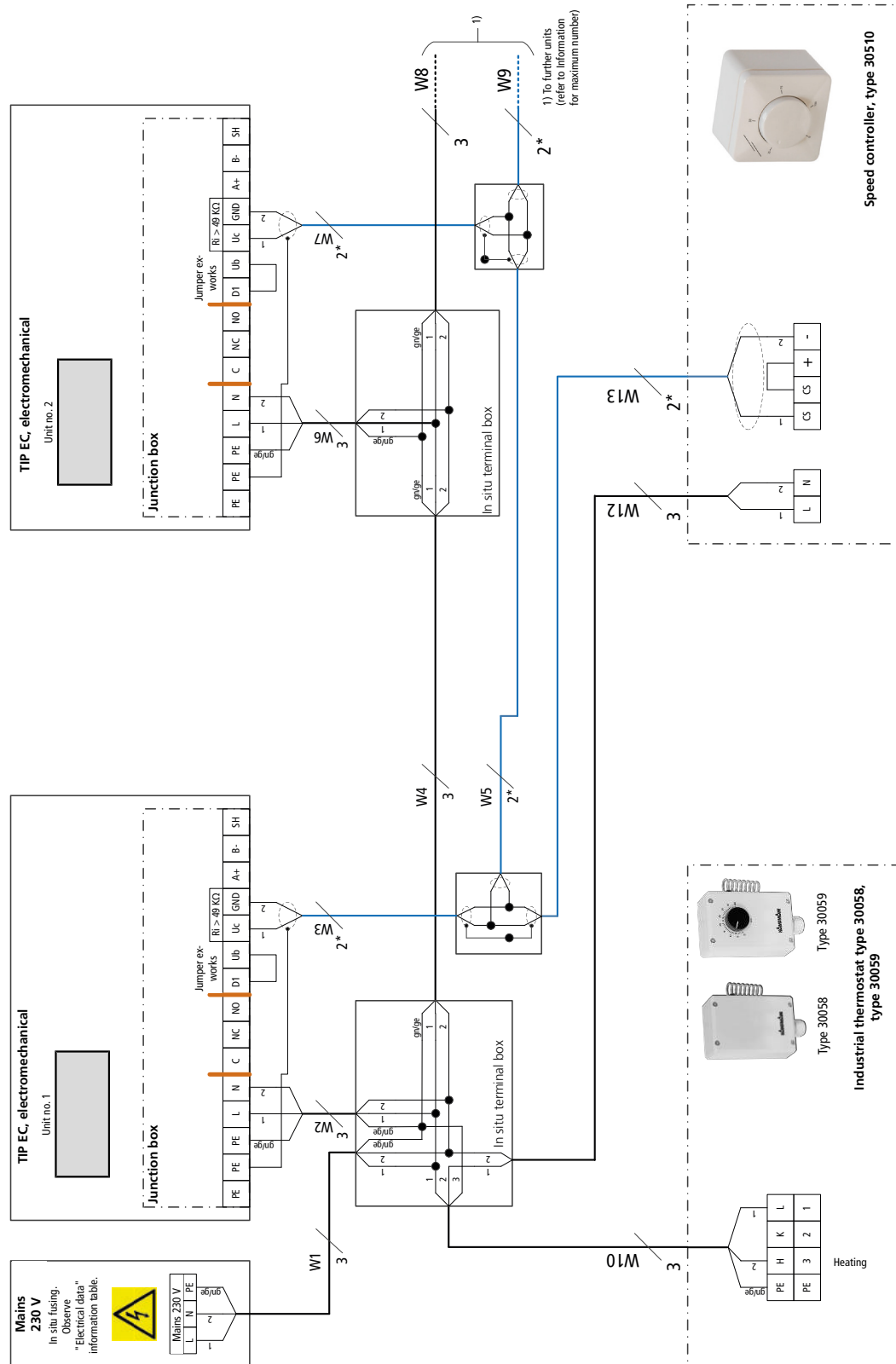
Unit heater type	Nominal voltage [V]	Mains frequency [Hz]	Active power [kW]	Nominal current [A]	Leakage current [mA]	Max. Preliminary fuse [A]	IP class	Protection class
54xx57	230	50/60	0,17	1,2	0,6	B10	44	I
55xx57	230	50/60	0,42	1,9	0,6	B10	44	I
56xx57	230	50/60	0,42	1,9	0,6	B10	44	I

xx Heat exchanger model

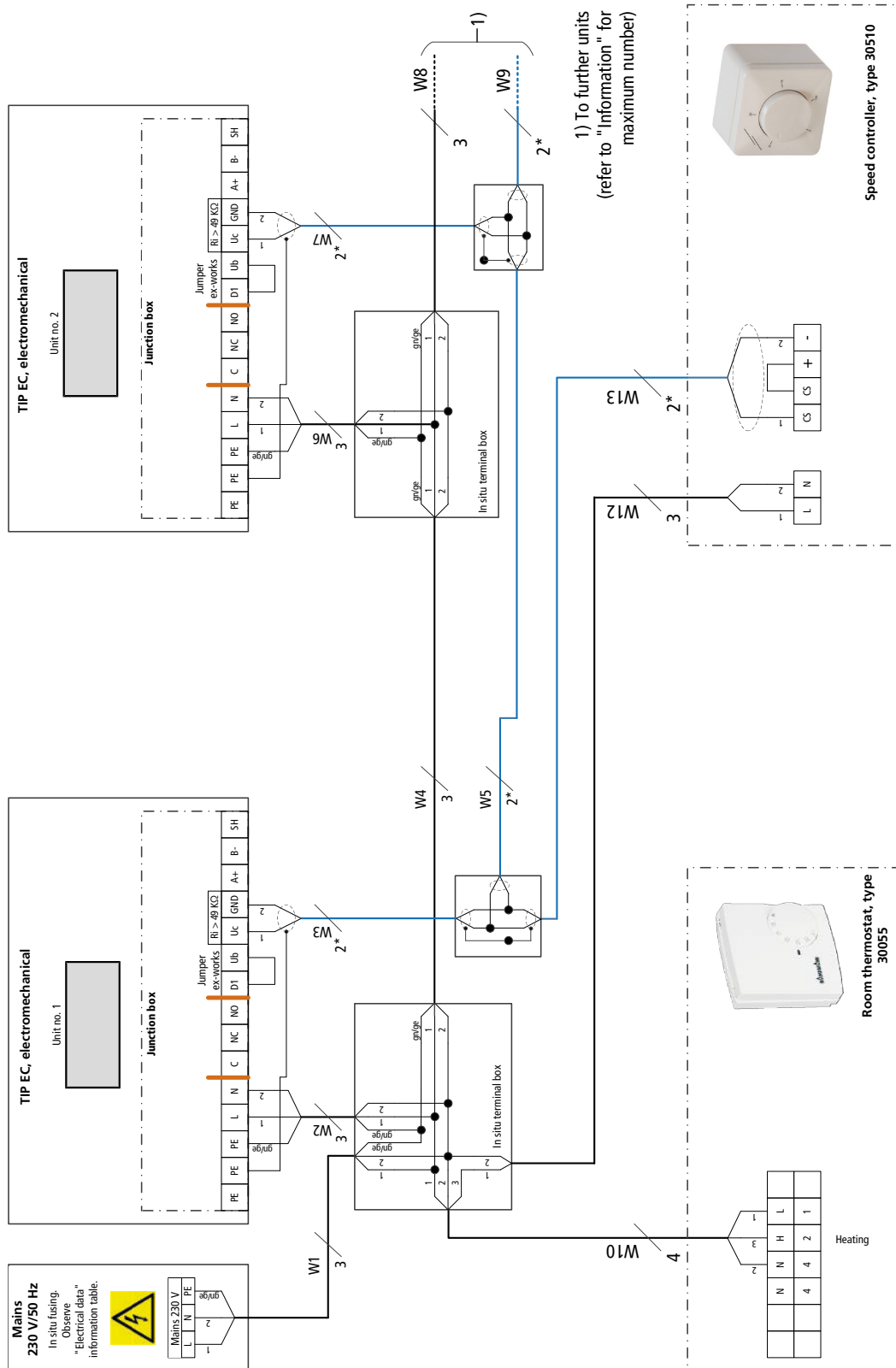
Cabling of TIP (**00), actuation by speed controller type 30510



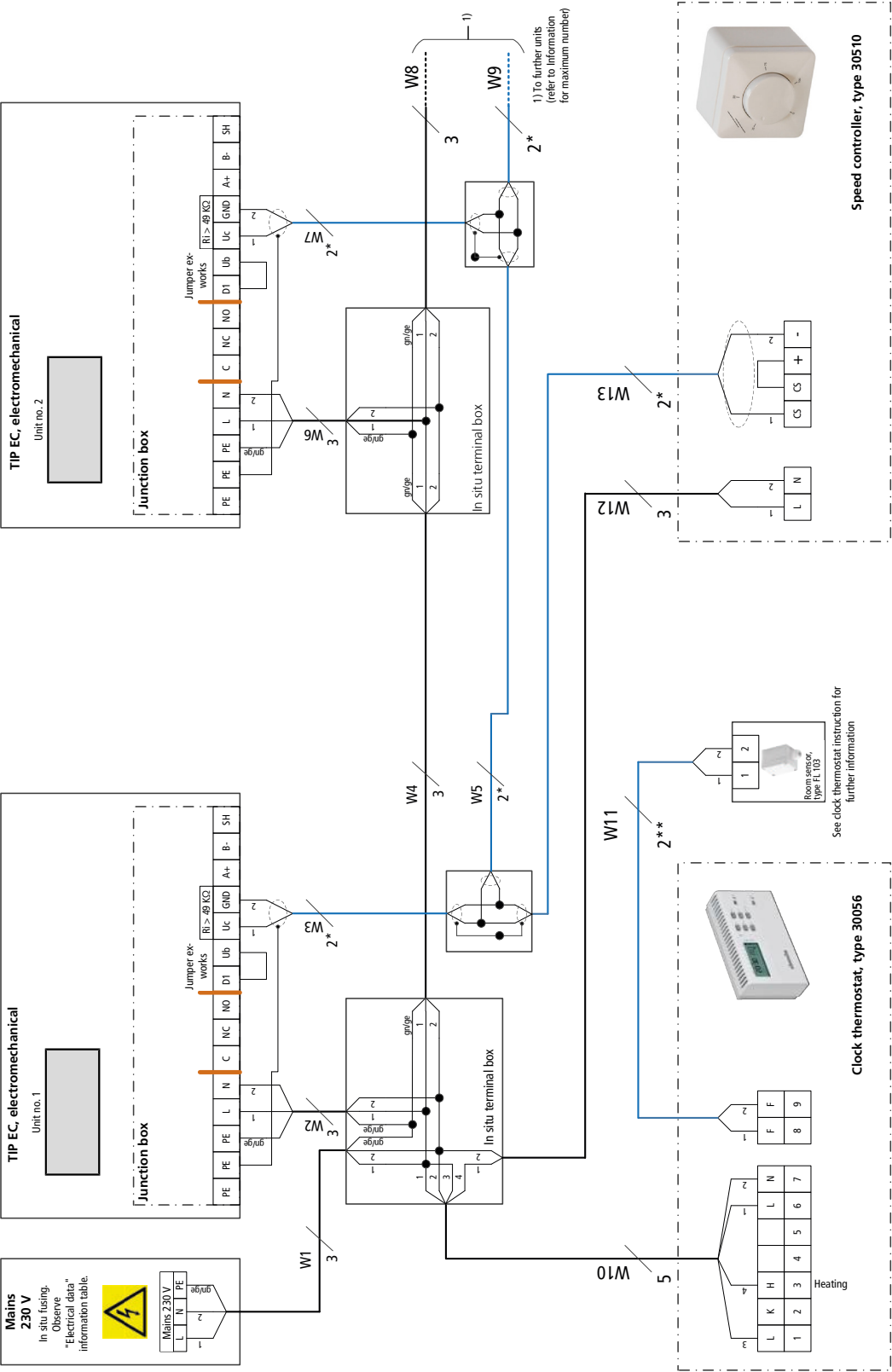
Cabling of TIP (**00), actuation by speed controller type 30510 with industrial thermostat type 30058/30059



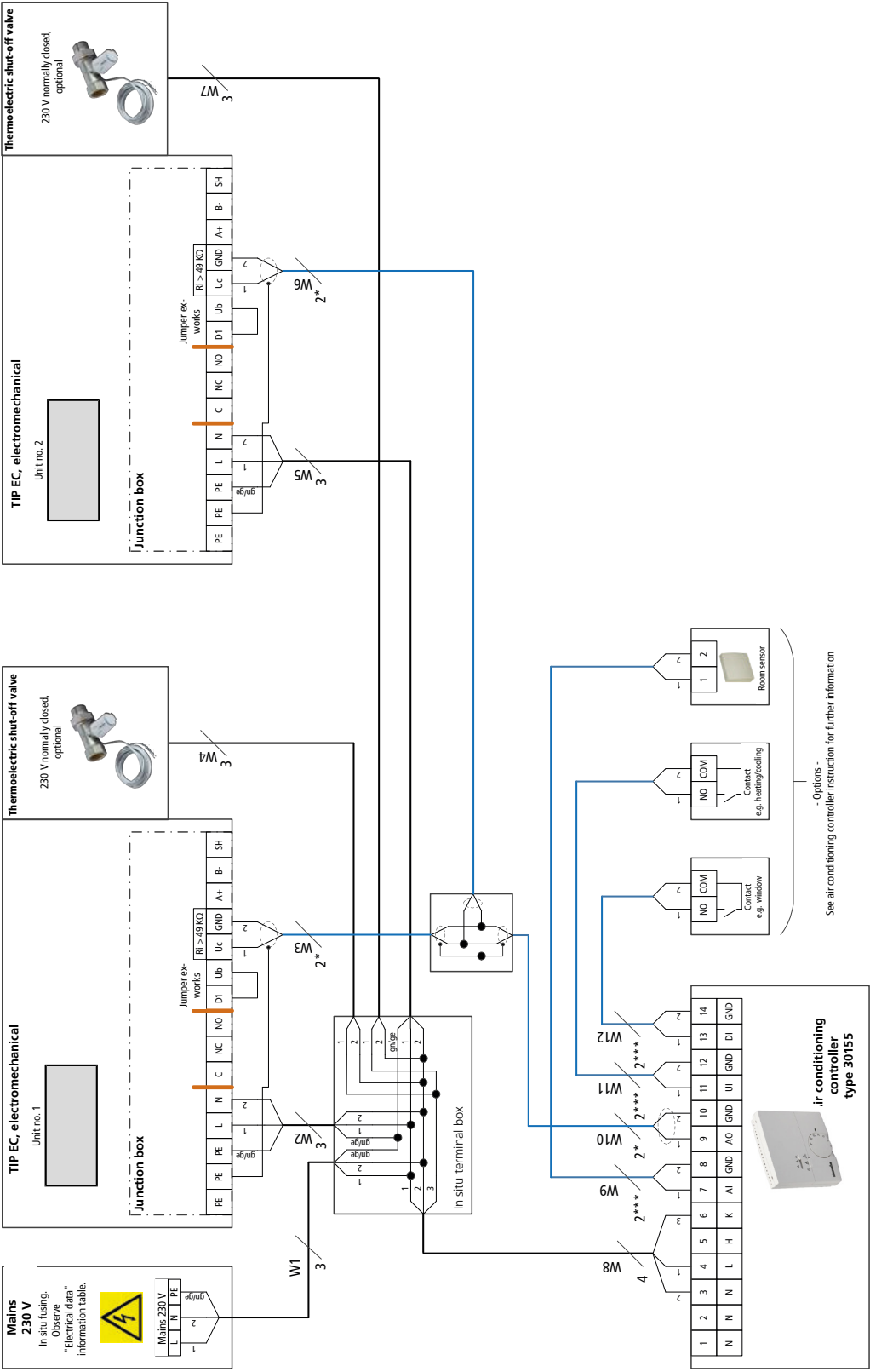
Cabling of TIP (**00), actuation by speed controller type 30510 with room thermostat type 30055



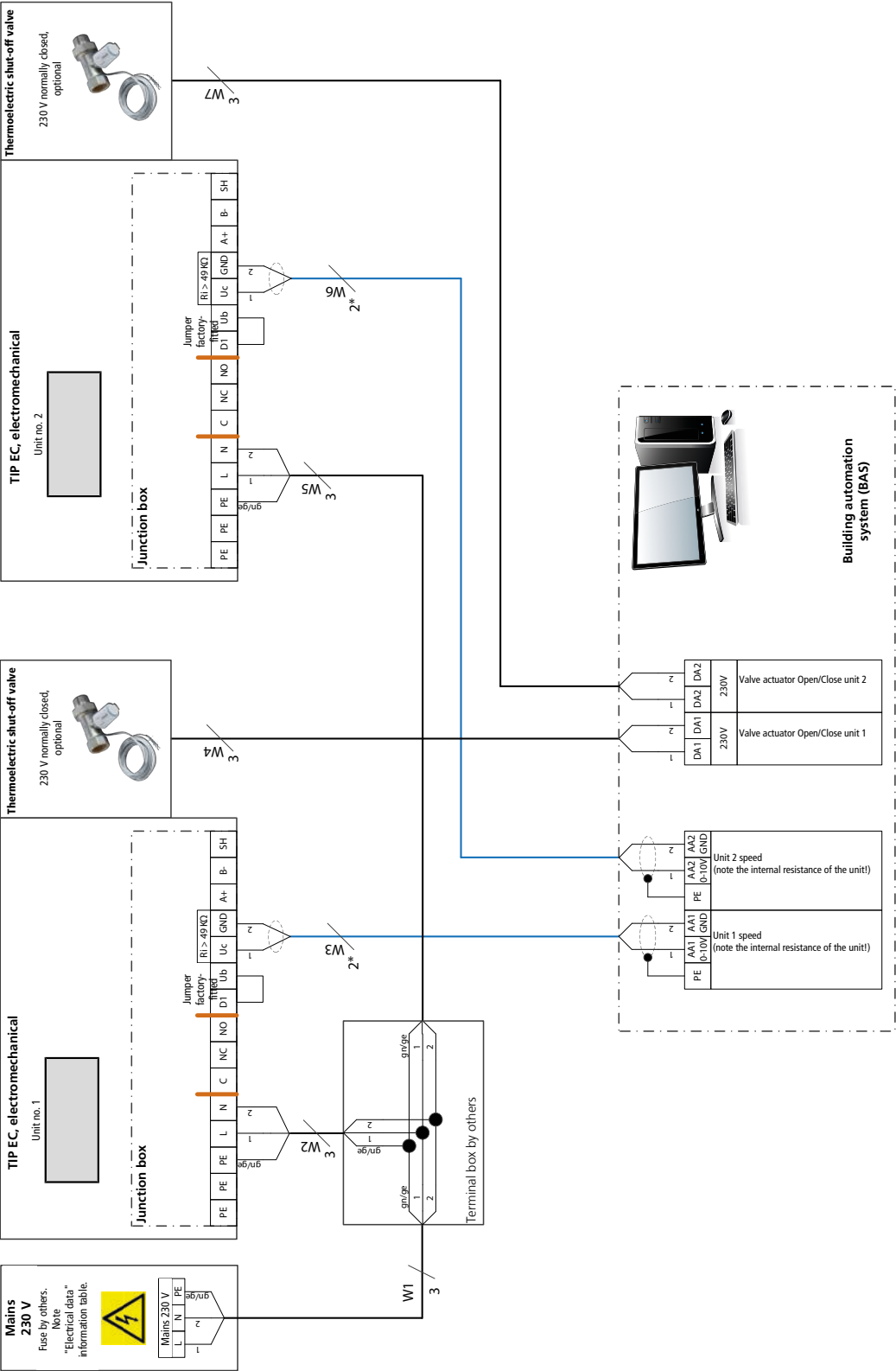
Cabling of TIP (**00), actuation by speed controller type 30510
with clock thermostat type 30056



Cabling of TIP (**00), actuation by climate controller type 30155, 2-pipe valve actuator 230 V AC, Open/Close



Cabling of TIP (**00), actuation by DDC/BMS, 2-pipe valve actuator 230 V AC, Open/Close







05 ▶ Ordering information

Accessories

Article	Article	Properties	Dimensions	Suitable for	Article no.
			[mm]		

Control accessories electromechanical 230 V





	Room thermostat	Heating/Cooling, 2- and 4-pipe, 3-stage. Only in conjunction with valves/ valve kits with actuator, 230 V AC, Open/Closed, with OFF/Manual/Automatic fan switchover, Surface-mounted, Temperature setting range 5 - 30 °C, similar to RAL 9010 pure white, Type 30155	110 x 111 x 26	EC units electromechanical, 5 Katherm HK Trench Technology, 2 TOP or Ultra Unit Heaters, 5 Venkon Fan Coils, 2 KaCool D AF, KaCool W or KaDeck Fan Coils	196000030155
	Clock thermostat	Heating/Cooling, 2- and 4-pipe, 230 V AC, continuously variable, with LCD operating menu and integrated timer program, 1 W, flush-mounted, Protection class IP 30, similar to RAL 9010 pure white, Type 30256	85 x 46 x 81	EC units electromechanical, 2 TOP or Ultra Unit Heaters, 5 Venkon Fan Coils, 2 KaCool D AF, KaCool W or KaDeck Fan Coils	196000030256
	Speed controller	continuously variable fan operation, 0-100% presettable, 230 V AC, 0-100%, On/ Off via room thermostat, surface-mounted protection class IP 54, flush-mounted protection class IP 44, Surface-mounted, Protection class IP 54, similar to RAL 9010 pure white, Type 30510 plastic	82 x 82 x 68	EC units electromechanical, 2 ProtecTor Door Air Curtains, 5 UniLine or Tandem Door Air Curtains, 10 TOP or Ultra Unit Heaters, 10 Venkon Fan Coils, 2 KaCool D AF or KaCool W Fan Coils	196000030510
	Electronic speed controller	microprocessor-controlled control with integrated digital timer, 230 V AC, with lockable transparent cover, with day, night, week programme, continuously variable fan operation 0 to 100 %, manual or automatic, 0-10 VDC, recirculation air, Protection class I, Protection class IP 40, including sensor IP 66, Type 30515	262 x 277 x 153	EC units electromechanical, 10 TIP, TOP or Ultra Unit Heaters, 10 Venkon Fan Coils, 2 KaCool D AF or KaCool W EC Fan Coils	196000030515

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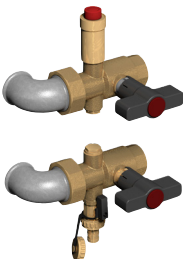
Accessories

Article	Article	Properties	Dimensions	Suitable for	Article no.
			[mm]		

Thermostats

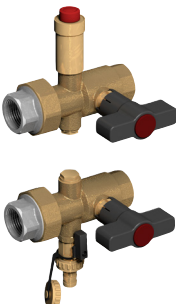
	Room thermostat	with thermal feedback, 230 V AC, Surface-mounted, Protection class IP 30, Temperature setting range 5 - 30 °C, similar to RAL 9010 pure white, Type 30055	78 x 28 x 83	Unit Heaters	196000030055
	Industrial thermostat	with setpoint adjustment by tool, Protection class IP 54, Temperature setting range 40 °C, Type 30058	113 x 71 x 158	Unit Heaters, ProtecTor Door Air Curtains	196000030058
	Industrial thermostat	with setpoint adjustment using a dial, Protection class IP 54, Temperature setting range 40 °C, Type 30059	113 x 71 x 158	Unit Heaters, ProtecTor Door Air Curtains	196000030059
	Clock thermostat	with integral digital timer, with day/night/week programme, with night set-back, Protection class IP 20, Temperature setting range 5 - 40 °C, similar to RAL 9010 pure white, Type 30056	84 x 33 x 133	Unit Heaters	196000030056

Valves


	Thermoelectric shut-off valve	as a straight valve body with thermoelectric actuator 230 V / 50 Hz, 230 V AC, Connection 1", kvs value 3.3 m³/h, max. operating pressure 10 bar, Type 30911	200 x 50 x 300	all unit heaters	196000030911
	Unit heater shut-off set, angled version	Connection 1", max. operating pressure 10 bar, Type 34976	150 x 95 x 188	Model 4	198000034976
		Connection 1", max. operating pressure 10 bar, Type 35976	150 x 95 x 188	Model 5	198000035976
		Connection 1 1/4", max. operating pressure 10 bar, Type 36976	145 x 160 x 170	Model 6	198000036976

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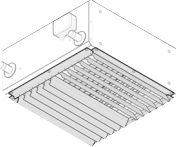
Accessories

Article	Article	Properties	Dimensions	Suitable for	Article no.
			[mm]		
	Unit heater shut-off set, straight version	Connection 1", max. operating pressure 10 bar, Type 34977	140 x 95 x 185	Model 4	198000034977
		Connection 1", max. operating pressure 10 bar, Type 35977	140 x 95 x 185	Model 5	198000035977
		Connection 1 1/4", max. operating pressure 10 bar, Type 36977	165 x 100 x 220	Model 6	198000036977

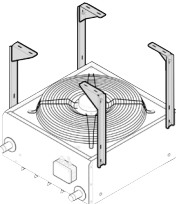
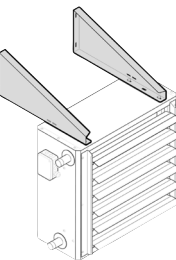
Repair switch

	Repair switch	EC, Enables individual units in a switching group to be decommissioned by voltage disconnection. The thermal contacts are bridged in advance, and subsequently opened on the motor side so that the other units in the group can continue to operate without interruption., Protection class IP 65, 25 A, supplied separately, Type 3160	82 x 127 x 82	all unit heaters, air curtains with EC-motors	196000030160
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Air outlets

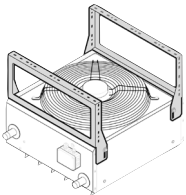
	Louvre	two-row for wall- and ceiling-mounted units	495 x 35 x 495	Model 4	198000034002
			595 x 35 x 595	Model 5	198000035002
			695 x 35 x 695	Model 6	198000036002

Brackets

	Universal 4-point brackets	recirculating air only, made of sendzimir galvanised sheet steel, as a 4-point fixing for ceiling installation, 1 complete set	172 x 498 x 165	Model 4 - 7	198000030042
	Wall brackets	recirculating air only, made of sendzimir galvanised sheet steel for wall mounting, a complete set TIP and TOP unit heaters can be installed standing and also suspended. price for 1 complete set	251 x 50 x 585	Model 4	198000034044
			268 x 50 x 635	Model 5	198000035044
				Model 6	198000036044

CONTINUED ►

Accessories

Article	Article	Properties	Dimensions	Suitable for	Article no.
	Ceiling-wall brackets	for ceiling or wall mounting, consisting of 2 multi-edged brackets with slotted holes and screws price for 1 complete set	[mm]		
			420 x 100 x 510	Model 4	198000034049
			420 x 100 x 610	Model 5	198000035049
			470 x 100 x 710	Model 6	198000036049

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Subject to technical modifications. 457/12.2022 UK

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