



TKW + TKWFG



TKW + TKWDG



Ceiling convector TKW

Silent ceiling convector for cooling and heating, for water connection

Ceiling convector TKW provides both heating and cooling in one product, making it ideal for applications such as offices, shops, conference facilities and restaurants.

Front grilles in different designs are available allowing air distribution in 2, 3 or 4 directions. There is also the possibility of distributing air to adjoining areas via duct connections.

TKW is especially adapted for installation in standard suspended ceilings, and can also be suspended from the ceiling.

- The unique circular heat exchanger, aerodynamic fan blades and acoustic insulation, along with optimising the fan speed, result in a low sound level.
- To be used with a front grille TKWFG (standard) or TKWDG (design).
- Available in versions with 2-pipe and 4-pipe systems.
- Fitted with an energy-efficient EC motor.
- Integrated condensation water pump.
- Low profile height with perfect integration in standard suspended ceiling of 600x600 or 900x900 ceiling tiles.
- Designed for fast, simple installation and ease of maintenance.
- Can be controlled and monitored by a BMS system.

Ceiling convector TKW, 2-pipe system, with water heating/cooling (IP10)

Type	Heat output* ¹ [kW]	Cooling output (total)* ² [kW]	Cooling output (sensible)* ² [kW]	Airflow [m ³ /h]	Sound power* ³ [dB(A)]	Sound pressure* ⁴ [dB(A)]	Motor [W]	Amperage motor [A]	Voltage [V]	Weight [kg]
TKW202EC	2,71	2,38	1,98	660	47	23/38	23	0,19	230V~	14,8
TKW302EC	3,65	3,99	3,04	735	52	23/43	33	0,27	230V~	16,5
TKW402EC	5,23	4,69	3,61	900	57	33/48	57	0,46	230V~	16,5
TKW502EC	7,32	6,90	4,72	980	47	25/38	25	0,23	230V~	37,0
TKW602EC	9,10	7,22	5,44	1160	53	28/44	46	0,40	230V~	39,6
TKW702EC	11,8	9,58	7,15	1600	61	31/52	115	0,89	230V~	39,6

Ceiling convector TKW, 4-pipe system, with water heating/cooling (IP10)

Type	Heat output* ¹ [kW]	Cooling output (total)* ² [kW]	Cooling output (sensible)* ² [kW]	Airflow [m ³ /h]	Sound power* ³ [dB(A)]	Sound pressure* ⁴ [dB(A)]	Motor [W]	Amperage motor [A]	Voltage [V]	Weight [kg]
TKW204EC	0,97	2,00	1,86	660	47	23/38	23	0,19	230V~	14,8
TKW304EC	3,16	3,37	2,64	735	54	24/45	32	0,29	230V~	16,5
TKW404EC	3,36	4,01	3,29	900	57	33/48	57	0,46	230V~	16,5
TKW604EC	5,82	6,64	5,12	1160	53	28/44	46	0,40	230V~	37,1
TKW704EC	8,11	7,93	6,28	1600	61	31/52	115	0,89	230V~	39,6

*¹) Applicable at water temperature 50/40 °C, air temperature, in +20 °C.

*²) Applicable at water temperature +7/12 °C, air temperature in +27 °C, relative humidity 47%.

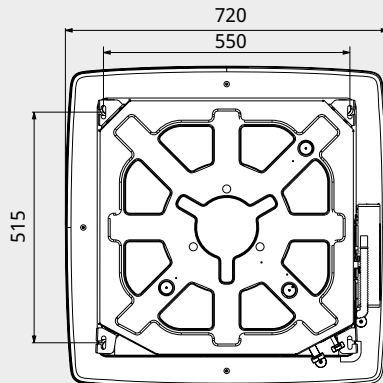
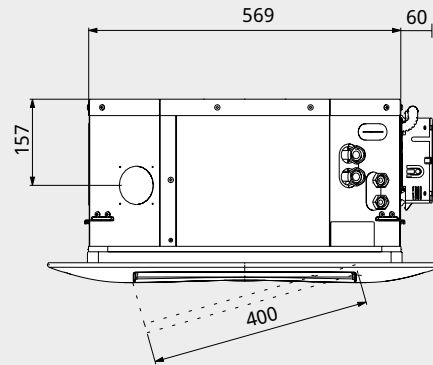
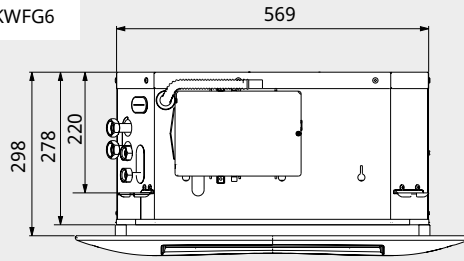
*³) Sound power (L_{WA}).

*⁴) Sound pressure (L_{pA}). Conditions: Distance to the unit 3 metres. Directional factor: 2. Equivalent absorption area: 40 m². At lowest/highest airflow.

Ceiling convector TKW

Dimensions - TKW with standard front grille

TKW20-40 + TKWFG6



Connection dimensions, inside thread

TKW20 DN20 (3/4")

TKW30 DN20 (3/4")

TKW40 DN20 (3/4")

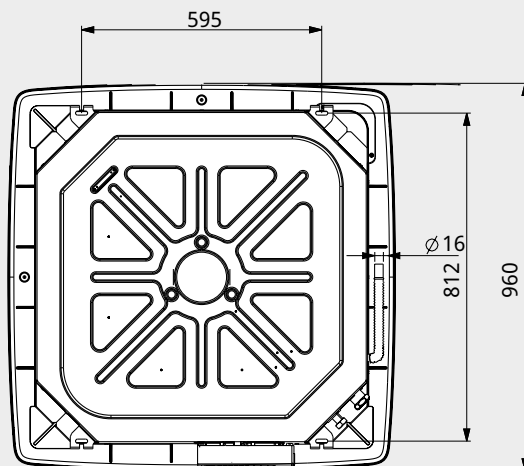
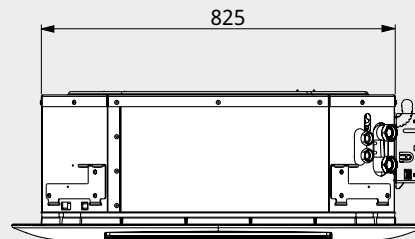
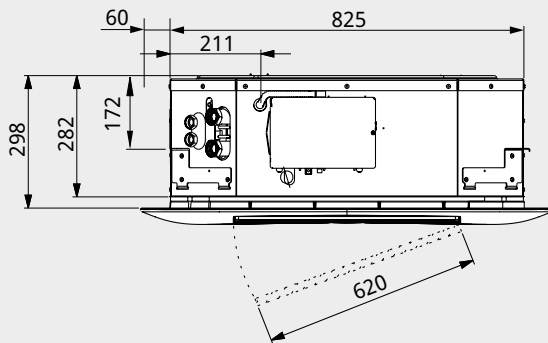
Heating mode

TKW204 DN15 (1/2")

TKW304 DN15 (1/2")

TKW404 DN15 (1/2")

TKW50-70 + TKWFG9



Connection dimensions, inside thread

TKW50 DN25 (1")

TKW60 DN25 (1")

TKW70 DN25 (1")

Heating mode

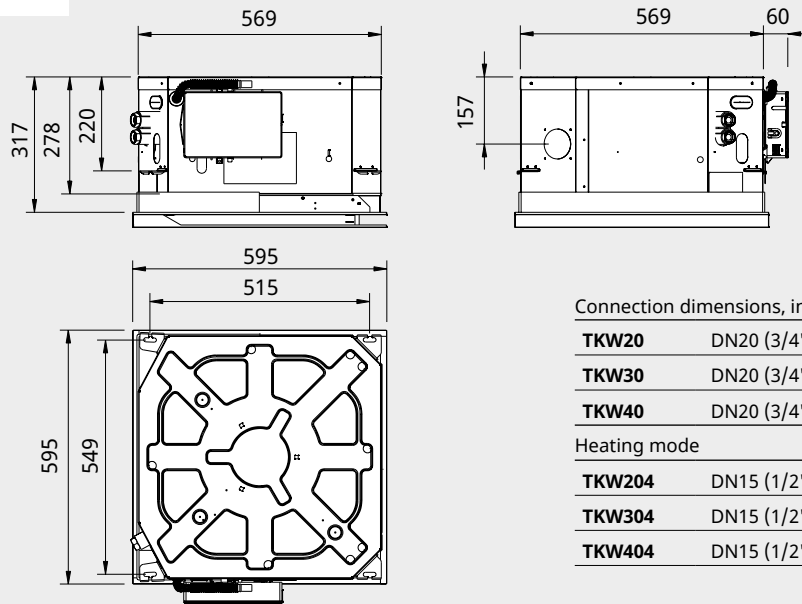
TKW604 DN20 (3/4")

TKW704 DN20 (3/4")

Ceiling convector TKW

Dimensions - TKW with design front grille

TKW20-40 + TKWDG6



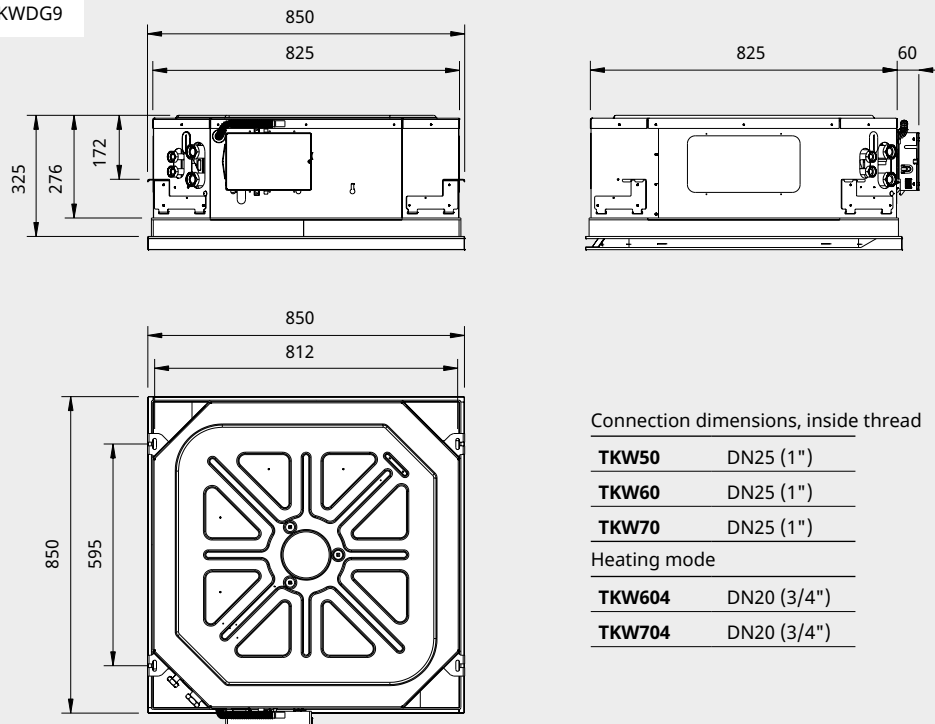
Connection dimensions, inside thread

TKW20	DN20 (3/4")
TKW30	DN20 (3/4")
TKW40	DN20 (3/4")

Heating mode

TKW204	DN15 (1/2")
TKW304	DN15 (1/2")
TKW404	DN15 (1/2")

TKW50-70 + TKWDG9



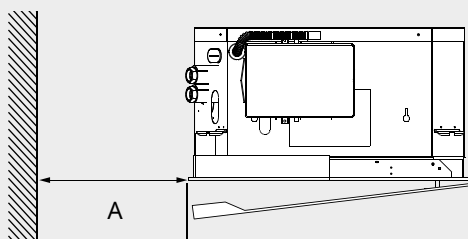
Connection dimensions, inside thread

TKW50	DN25 (1")
TKW60	DN25 (1")
TKW70	DN25 (1")

Heating mode

TKW604	DN20 (3/4")
TKW704	DN20 (3/4")

Minimum distances for TKW with design front grille.



A	
TKW20/30/40 + TKWDG6	450 mm
TKW50/60/70 + TKWDG9	600 mm

Ceiling convector TKW

Mounting and connection

Mounting

Ceiling convector TKW is adapted for installation within suspended ceiling systems, but can also be suspended from the ceiling. There are four fittings on the sides of the unit for suspension. See figure.

The front grille is mounted on the underside of the fan, guiding the air in several directions (min. 2, max. 4 directions). For minimum distances for TKW with design front grille, see dimension diagrams.

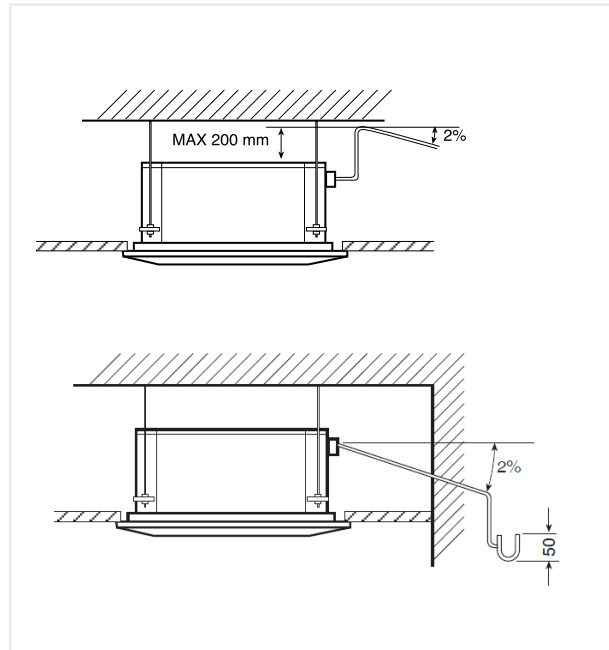
Connection

The fan motor is connected to a terminal box located on one side of the unit.

Water connection

The ceiling convector is fitted with pipe connections with female coupling (for connection dimensions, see dimension diagram).

The condensate drain has a 16 mm diameter connection. Condensate may be discharged at a maximum height of 200 mm above the unit. To ensure correct condensate water flow, the drain pipe should have a gradient of 2% without obstructions. If the drain pipe cannot be led to a floor drain with a water trap, it is recommended that a water trap of at least 50 mm depth be made to prevent unpleasant odors from reaching the room. See figure.



Accessories



TKWFG



TKWDG A
360°



TKWDG B
180°



TKWDT

TKWFG, front grille

TKWFG allows air distribution in 2, 3 or 4 directions and is made of plastic. Colour: white, RAL 9010.

TKWDG, design front grille

TKWDG has an appealing design in galvanized steel panels. TKWDGxA allows air distribution in 4 directions, TKWDGxB in 3 directions. Colour: white, RAL 9003.

TKWDT, drip tray

Used to collect condensation when the unit is used for cooling.

Type	Used for						Dimensions
	TKW20	TKW30	TKW40	TKW50	TKW60	TKW70	
TKWFG6	•	•	•				720x720x35 mm
TKWFG9				•	•	•	960x960x35 mm
TKWDG6A	•	•	•				595x595x24 mm
TKWDG9A				•	•	•	849x849x30 mm
TKWDG6B	•	•	•				595x595x36 mm
TKWDG9B				•	•	•	849x849x38 mm
TKWDT6	•	•	•				394x141 mm
TKWDT9				•	•	•	250x145 mm

Ceiling convector TKW

Control options

Heating/cooling

The FCR230 regulates airflow and valve steplessly according to the set room temperature.

Complete regulation kit:

- FCR230, room regulator
- VPTK, valve kit

Change over

The FCR230 regulates airflow and valve steplessly according to the set room temperature. In “change over” mode between heating and cooling, the clamp-on sensor TG-A1/PT1000 must be used, which detects the temperature in the supply pipe.

Complete regulation kit:

- FCR230, room regulator
- TG-A1/PT1000, clamp-on sensor
- VPTK, valve kit

Control



FCR230, room regulator

FCR230 is a room regulator for control of heating and/or cooling in a room. It is intended to control 230V thermic actuators and has fan control that regulates the fan speed steplessly with an analogue 0-10V signal. Communication via Modbus, BACnet or EXOline. The regulator has an integrated sensor, alternatively an external room sensor (ECG1) can be connected. FCR230 can control up to 5 ceiling convectors.

ECG1, external room temperature sensor

Room sensor which is used in the event of concealed installation in conjunction with room regulator FCR230.

TG-A1/PT1000, clamp-on sensor

Sensor in “change over” mode when unit is switching between heating and cooling. The sensor detects the temperature in the supply pipe.

VPTK, valve kit

Valve kit with two-way valve and 230V actuator. Available in four models: DN15 Kvs 0.4 or 0.6 and DN20 Kvs 2.4 or 4.0.

Type	Description	Dimensions
FCR230	Room regulator 0-10, IP20	120x102x29 mm
ECG1	External room temperature sensor, IP30	86x86x30 mm
TG-A1/PT1000	Clamp-on sensor PT1000, IP65	
VPTK1504	Valve kit DN15 Kvs 0,4	
VPTK1506	Valve kit DN15 Kvs 0,6	
VPTK2025	Valve kit DN20 Kvs 2,5	
VPTK2040	Valve kit DN20 Kvs 4,0	

Ceiling convector TKW

Output charts water

			Heating			Cooling			
			Water temperature 50/40 °C Air temperature in +20 °C			Water temperature 7/12 °C Air temperature in +27 °C, relative humidity 47 %			
Type	Fan position	Airflow [m³/h]	Heat-output [kW]	Water flow [l/s]	Pressure drop [kPa]	Cooling output (total) [kW]	Cooling output (sensible) [kW]	Water flow [l/s]	Pressure drop [kPa]
TKW202EC	max	660	2,71	0,065	3,9	2,38	1,98	0,11	11,2
	min	360	1,90	0,045	2,4	1,55	1,29	0,074	5,6
TKW302EC	max	735	3,65	0,087	4,2	3,99	3,04	0,19	14,6
	min	320	1,92	0,045	1,8	1,89	1,42	0,090	4,4
TKW402EC	max	900	5,23	0,125	5,9	4,69	3,61	0,22	18,6
	min	485	3,12	0,074	2,9	2,80	2,13	0,13	7,9
TKW502EC	max	980	7,32	0,175	8,2	6,90	4,72	0,29	22,2
	min	529	4,06	0,097	3,5	3,36	2,60	0,16	8,4
TKW602EC	max	1160	9,10	0,217	5,5	7,22	5,44	0,35	11,7
	min	500	4,12	0,098	1,9	3,71	2,68	0,18	4,3
TKW702EC	max	1600	11,8	0,282	10,5	9,58	7,15	0,46	24,6
	min	600	4,69	0,112	2,8	4,06	2,98	0,19	6,4
TKW204EC	max	659	0,97	0,023	12,3	2,00	1,86	0,010	14,0
	min	360	0,63	0,015	6,5	1,36	1,19	0,07	7,6
TKW304EC	max	734	3,16	0,075	8,4	3,37	2,64	0,16	11,7
	min	320	1,80	0,043	3,7	2,00	1,50	0,010	5,2
TKW404EC	max	900	3,36	0,191	9,4	4,01	3,29	0,19	15,5
	min	486	2,51	0,122	6,0	2,57	2,06	0,12	7,6
TKW604EC	max	1159	5,82	0,139	5,4	6,64	5,12	0,32	22,5
	min	500	3,06	0,073	2,3	2,99	2,33	0,14	6,5
TKW704EC	max	1598	8,11	0,194	8,7	7,93	6,28	0,38	30,1
	min	601	3,73	0,089	2,9	3,19	2,57	0,15	7,2

For wiring diagrams and other technical information, please see the manual and www.frico.net.