

Topvex Specification Data

Energy efficient Air Handling Units



Topvex



Topvex is a series of efficient ventilation units designed for offices, shops, schools, daycare centres, apartment houses or similar premises. The units are especially designed to meet the coming energy requirements and have therefore a very low energy use. To simplify the installation and commissioning the units are included with control system and pre-configured.

It could not be easier!

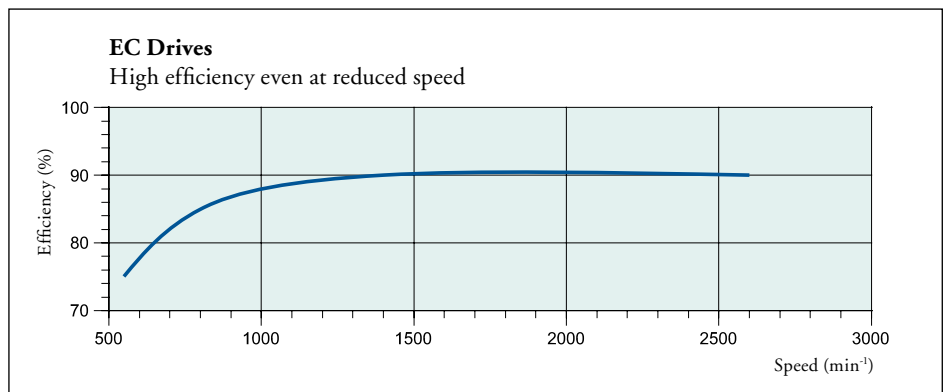
Topvex are delivered pre-programmed, tested and ready for installation. Connect the Topvex unit to the duct system, connect any external components, connect the main supply, set the time and date, adjust the week scheduler, temperatures, airflows and the unit is installed. It could not be easier!

EC fan motors – low energy use and low noise

Unlike AC motors with frequency converters, the EC motors operate with high efficiency even at low RPM (see the diagram). This contributes to good energy saving performance. The EC motors are also very quiet at both high and low RPM.

Easy inspection

To facilitate inspection and maintenance, both fans and the rotating/counter/crossflow heat exchanger are removable. SR07, 09 and 11 have a fixed heat exchanger. All power cables have quick release couplings – the fans and heat exchanger can be released easily.



Easy electrical connections and service

All electrical connections are done at the same terminal block, with clear markings.

General

Topvex units are delivered enclosed in plastic and mounted on pallets. Topvex SC06, 08 and 11 are delivered divided as three packages on one pallet. The units are fully connected internally. The automatic control system is preset and has been test-run at the factory.

Any cables to external components should be connected to terminals in the connection space. The same applies to valve actuators for heating coils.

Measurement at Systemair's Development Centre

Topvex are measured and tested at Systemair's Development Centre. The air volume is measured in accordance with AMCA 210-07 "Laboratory methods of testing fans for rating". Sound is measured in accordance with AMCA 300-08 "Test Code for Sound Rating".

Unit housing

The unit's casing is made up from double-skinned aluzinc sheet metal, AZ 185, with internal mineral insulation. Topvex TR, TX, SR, SC and SX stands on fixed sections that raise the units about 100-130 mm above the floor. Topvex FR assemblies lying horizontal on the floor, suspended in the ceiling, standing horizontal on the units long side or mounted horizontal or vertically (supply air pointing upwards) on the wall. Topvex has large inspection doors that have lockable handles and removable hinges. Topvex FR has slide doors as an accessory. A separate safety switch is included. The control panel is connected with 10 m cable (included).

Components

Fans

Topvex has effective plug-fans with maintenance-free external rotormotors. The fans have been selected to provide optimal operation in respect of air volume, sound level and efficiency. The units have electronically commutated motors,

so called EC-motors with very high efficiency. The EC motors are controlled via the control unit. To facilitate maintenance and servicing the fans have quick release connections for the electrical cables.



Heat exchanger – Rotating

The rotating heat exchanger is non-hygroscopic and belt driven. A spare belt is mounted on the rotor wheel on delivery (TR, SR). The rotor belt is a round plastic belt of the elastic type with high friction. A rotor guard will give

an alarm if the rotating heat exchanger stops. The rotor construction with pleated aluminium is optimised in respect of high efficiency and low pressure drop. The rotor have a robust construction which makes it stable and reliable also after a very long time of operating.

At balanced airflows the efficiency is up to 85%. The heat exchanger is removable with quick release connections for the power cables. SR07, 09 and 11 have a fixed heat exchanger.



Heat exchanger – Counter flow

The counter flow heat exchanger is non-hygroscopic. The construction with pleated aluminium

is optimized in respect of high efficiency and low pressure drop. At balanced airflow the efficiency is up to 90% (wet efficiency). The heat exchanger is removable.

Heat exchanger – Crossflow



The cross-flow heat exchanger is non-hygroscopic. The construction with pleated aluminium is optimised in

respect of high efficiency and low pressure drop. At balanced airflow the efficiency is up to 60%. The heat exchanger is removable.

By-pass damper

Topvex TX/SX is equipped with a stepless by-pass damper as standard. The damper is used to by-pass the supply air during warm season (no need of heat recovering) and to de-ice the heat exchanger during cold season (selectable). Topvex SC is equipped with two stepless by-pass dampers as standard. The outdoor air damper is used to by-pass the outdoor air during the warm season (no need of heat recovering) and to de-ice the heat exchanger during cold season (selectable). The extract air damper is used to by-pass the exchanger and extract air filter when the heating capacity is too high and thereby reducing the energy use.

De-icing function – TX/SC/SX

Ice accretion of the heat exchanger is depending on the outdoor temperature and the humidity in the extract air. The humidity in the extract air is varying a lot depending on the activities in the building e.g. an industry premises is normally producing much less humidity than a day-care centre. Therefore has the aggressiveness of the de-icing function been made settable (1-5) so that it can be optimized to different applications.

Heating coil – water

The hot water coil is located after the supply air fan and the water pipes connect throughout the gable/top of the unit. The material is copper piping with a frame of galvanized sheet steel and aluminum fins. The coil has venting nipples and an immersion sensor as frost guard. If there is a risk of freezing in the hot water coil, the control valve is forced open to prevent freezing. If there is still a risk of freezing, the unit is stopped and the outdoor air damper (accessory) is closing. After a freezing situation, the unit will re-start when the return water temperature is above 7°C and the alarm has been acknowledged.

Topvex TR, SR, FR, TX and SX hot water coils are available in:

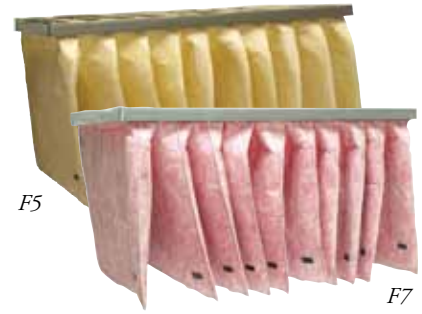
Low power HWL
High power HWH

Heating coil – electric

The heating coil is located after the supply air fan. It has elements of stainless steel. The electric heating coil has two overheating protection one with automatic reset and one with manual reset.

When the unit is switched off, through the overheating protections, the built-in clock or the hand/auto switch, the electrical heater is immediately stopped while the fans are kept running during 3 minutes for cooling down the heater. After an overheating situation, the unit will re-start when the overheating protection has been reset and the alarm has been acknowledged.

Filters



The units are delivered with bag filters as standard. Both of the filters are placed before the heat exchanger, to keep the exchanger clean. The filters are mounted in guide rails that facilitate insertion and removal for inspection and service. Topvex are fitted with sealing strips to provide optimal sealing against the filters. Filter class F7 on supply air and F5 on extract air are used as standard. Filter monitoring is done via the built-in timer (Standard controller) or via built in pressure transmitters measuring the filter pressure drop (Advanced controller). See page 8 for more info about controller.

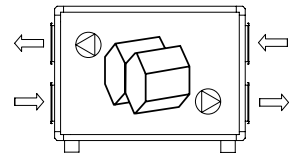
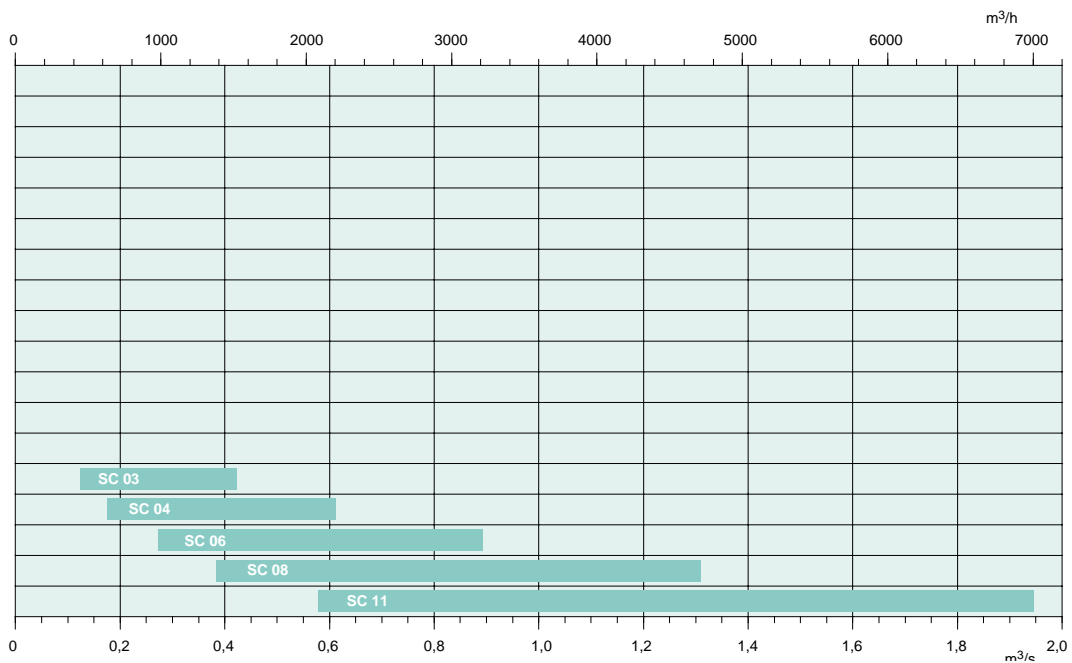
Duct connection

Circular connections with rubber sealing, rectangular have flanged connections.

Topvex	Rectangular	Circular
TR03		ø250
TR04		ø315
TR06	250x500	
TR09	300x700	
TR12	350x800	
TR15	350x1000	
SR03		ø315
SR04	500x250	
SR06	600x300	
SR07	600x300	
SR09	600x400	
SR11	800x400	
FR03		ø315
FR06		ø400
FR08		ø500
FR11		ø630
TX03		ø250
TX04		ø315
TX06	300x500	
SC03		ø315
SC04		ø400
SC06	600x300	
SC08	600x400	
SC11	600x500	
SX03		ø315
SX04	500x250	
SX06	600x300	

Overview

Min/max airflow



Side connection

	Width	Height	Depth	Divisible
SC 03	1656	1631	730	–
SC 04	2021	1631	730	–
SC 06	2279	1722	895	671+937+671**
SC 08	2702	1871	895	803+1139+803**
SC 11	3315	1871	895	881+1552+881**

* Height when using slide doors


** SC 06, 08 and 11 are delivered in 3 pieces for on site assembly.

Controls

Display

The illuminated display has 4 rows of 20 characters each and 20 different languages are available. Arrows are used to simplify the usage. The background illumination is normally switched off, and is activated by pushing one of the buttons. The illumination is then switched off again after a period of inactivity.

LEDs

The alarm LED is marked with a  symbol.

The "write enable" LED is marked with a  symbol.

Push-Buttons

All functions can be set (configured) by using the information in the display and the push-buttons on the controller.

Standard & Advanced control

Systemair are using two different controls depending on Air Handling Unit. To facilitate the use of the controllers both controllers have the same menu structure and using the same technical terms. For further information, see page 60-61.

<u>Standard, E17S</u>	<u>Advanced, E28</u>
TX03-06	TR09-15
SX03-06	TR03-06
	SR07-11
	SR03-06
	SC03-11
	FR03-11

Standard is a controller equipped with the most common functions used in smaller AHU's. This controller is very easy to handle.

Advanced is a fully equipped controller designed to cover the most of the market needs. The menu system adapts to what functions that is activated, this together with a start up wizard makes the controller easy to handle.



SCP control panel
Width = 115 mm
Height = 94 mm
Depth = 26 mm

Main difference between Standard and Advanced control:

	Standard, E17S	Advanced, E28
Using of E-tool, a PC-based commissioning software.	No	Yes
Temperature control	3 control modes	6 control modes
Time controlled airflow	Week timer	Week timer + Holidays + Digital timer channels for e.g. door locks
Fan control	Settable between 0-100% control signal.	CAV, constant air volume or VAV, variable air volume. Outdoor temp. dependent airflow.
Demand control	Possible to use external equipment with relay output for increasing airflow one step.	Possible to use external equipment with analogue output for step-less increasing of air flow or relay output.
DX cooling control, (External DX cooler)	Step controller for converting the analogue controls signal to a digital 2-step, binary control necessary (accessory).	Up to 3-step, binary control is standard.
HW/CW Pump control	No	Yes
Filter supervising	Time controlled	Pressure drop controlled

Regulations

Control system

S=standard settings P=possible settings C=choose when ordering O=option

		Topvex	
		TX/SX 03, 04, 06	TR, SR, FR, SC
Controller		Standard, E17S	Advanced, E28
Control Panel	Remote with 10 meter cable	S	S
Repeater	When more than 10 meter between unit and control panel	O	O
Commissioning software	E-tool	–	O
Temperature control	Extract air	P	S
	Supply air	S	P
	Outdoor temperature compensated Supply air	P	P
	Cascaded Room control	–	P
	Outdoor temp. dependent switching between Supply / Extract air or Supply / Room control	–	P
Airflow control	Week timer, two separate running periods	S	S
Fan control	Stepless voltage control	S	–
	Airflow control, CAV	–	C
	Pressure control, VAV	–	C
	Outdoor compensated airflow	–	S
	Heat exchanger	By-pass damper, stepless. Outdoor/Supply air.	S
	By-pass damper, stepless. Extract/Exhaust air	–	S***
Cooler	Cold water coil. 0...10VDC output signal.	P	P
	DX cooling. 24VAC (1, 2 or 3-stage binary) output.	P *	P
Night cooling	Using the cold night air to cool down the building	P	–
Night, Free cooling	Using the cold outdoor air, day and/or night, to cool down the building	–	P
Cool recovering		P	P
Demand ventilation, CO2	2-step, CO2 sensor with a potential free switch.	P	–
	Stepless, CO2 sensor with 0...10VDC output signal.	–	P
Pump control	Heating/Cooling, 24VAC output signal	–	P
Exchanger efficiency	Exhaust temp. sensor necessary	–	P
Extended running		S	S
Week schedule	Changing between Normal run, Reduced run or Off.	S	S
Damper control	Outdoor/Exhaust air	S	S
Alarm	Alarm messages	S	S
	High and low priority	–	S
	Sum alarm, 24VAC output signal	S	S
	Filter alarm on time (month)	S	–
	Filter alarm on pressure difference (Pa)	–	S
Communication	Exoline, Modbus via RS 485	S	S
	Exoline via TCP/IP. WEB	O	S

* Step controller SC2/D is necessary. Converts 0..10V signal to relay output

** 0-25% differentiation of fans possible

*** Applies for Topvex SC

SC



SC03-11

- S – Side connection**
- F – Flat design**
- R – Rotating heat exchanger**
- C – Counter flow heat exchanger**
- X – Cross flow heat exchanger**

Topvex SR, FR, SC and SX is a “Plug and play” air handling unit with a modern design intended for ventilating offices, day-care centres or used as zone ventilation in larger buildings e.g. schools. To meet the new restricted energy requirements with low SFP (Specific Fan Power) Topvex is equipped with EC fan motors. EC-motors consume an average of 30% less energy than AC motors. In some applications, the saving can be 50% or more.

Topvex SR/FR is equipped with a high efficiency rotating heat exchanger with an efficiency of up to 85%. Rotating heat exchangers do not need condense water drainage and is therefore very flexible to install.

Topvex FR with the unique design of double rotating heat exchangers makes the unit very flat. Using the enclosed suspension device, the Topvex FR can be installed in a false ceiling. The units are delivered with doors on hinges as standard. A sliding door kit is available as accessory. The kit includes rails and wheels and is to be mounted on the standard unit.

Topvex SC is equipped with high efficiency counterflow heat exchangers. Counterflow exchanger is used where it is required to separate supply air from exhaust air and where a high energy recovery efficiency is required. Double by-pass damper ensures low SFP in all operating situations. The unit have an efficient de-icing function.

Topvex SX with its crossflow heat exchanger is normally used where it is a requirement that the supply and exhaust air must be kept separated. The unit have an efficient de-icing function.

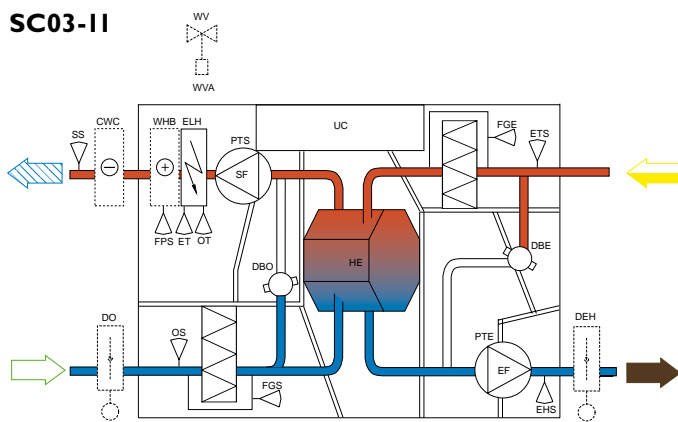
Topvex SR, FR, SC and SX have energy saving functions like:

- Week schedule.
- Cool recovering to recover the chilliness in the extract air during warm season. If using an external cooling unit.
- Demand controlled airflow by using a CO₂/humidity sensor, movement detector etc.
- Sum alarm output for central supervision of many units.
Central supervision secures that incorrect operating, like dirty filters, detects early.

Explanatory sketch

SC

SC03-II

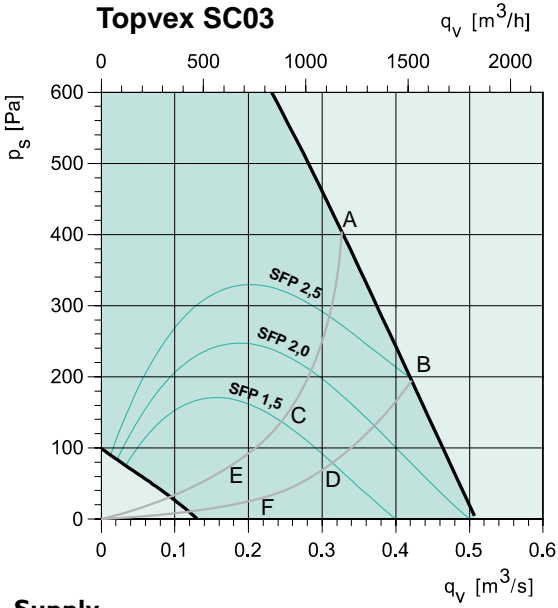


EF	Exhaust air fan	SS	Supply air temp. sensor
PTE	Pressure transmitter extract air fan	ETS	Extract air temp. sensor
OS	Outdoor air temp. sensor	EHS	Exhaust air temp. Sensor
UC	Unit control	FGS	Filter pressure guard, supply air
SF	Supply air fan	FGE	Filter pressure guard, extract air
PTS	Pressure transmitter supply air fan	WV*	Water valve
FPS	Frost protection temp. sensor	WHB	Heating coil, water
ELH	Heater electrical	WVA*	Water valve actuator
ET	Emergency thermostat (electric heater)	DEH*	Damper exhaust air
OT	Overheating thermostat (electric heater)	DO*	Damper outdoor air
		DBO	Damper By-pass outdoor air
		DBE	Damper By-pass extract air
		CWC*	Cold water coil

** accessory*

Performance SC03

Supply



Supply

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	80	60	63	74	73	73	72	68	59
B	10V	79	61	63	75	72	72	71	67	59
C	6.6V	72	55	62	64	66	67	65	60	51
D	6.6V	73	56	63	64	67	67	66	60	51
E	4.9V	65	53	58	55	57	60	58	51	41
F	4.9V	65	50	57	55	57	60	58	51	40

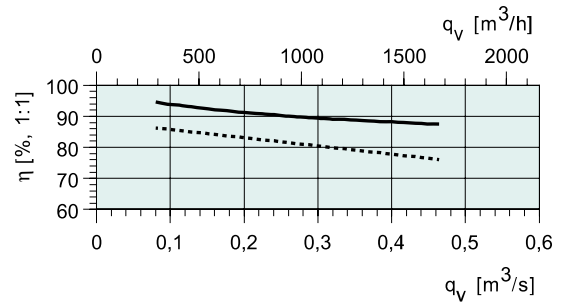
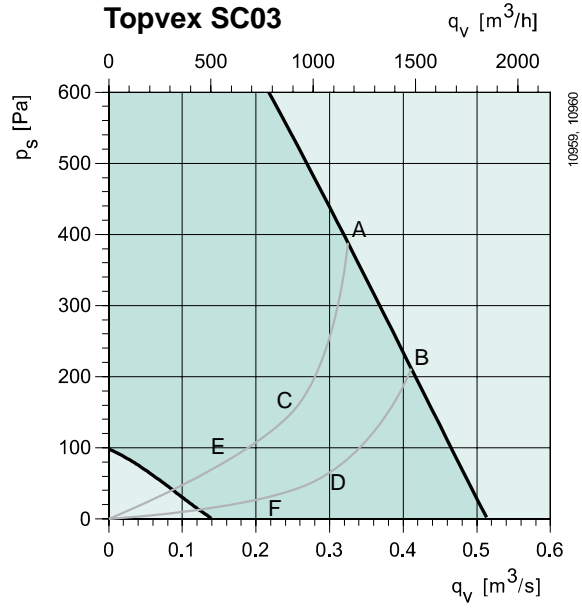
Extract

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	62	52	50	55	55	55	52	47	37
B	10V	62	54	48	57	55	56	52	48	40
C	6.6V	56	46	50	48	49	50	46	39	29
D	6.6V	56	47	48	48	49	50	46	39	28
E	4.9V	52	44	50	36	41	43	37	29	22
F	4.9V	51	42	48	36	41	43	37	28	21

Surrounding

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	61	43	45	59	52	48	46	43	36
B	10V	61	44	44	60	52	48	46	44	37
C	6.6V	52	38	44	47	46	43	40	35	28
D	6.6V	52	38	44	48	46	43	40	35	28
E	4.9V	45	35	39	39	38	36	32	26	19
F	4.9V	44	33	38	39	37	36	32	25	19

Extract



— = With condensation
 --- = Without condensation

SFP = Specific Fan Power (kW/m³/s)

The SFP value stated applies to the complete unit.

Thermal efficiency

With air ratio 1:1 and air humidity at 50%.

Extract air 22°C

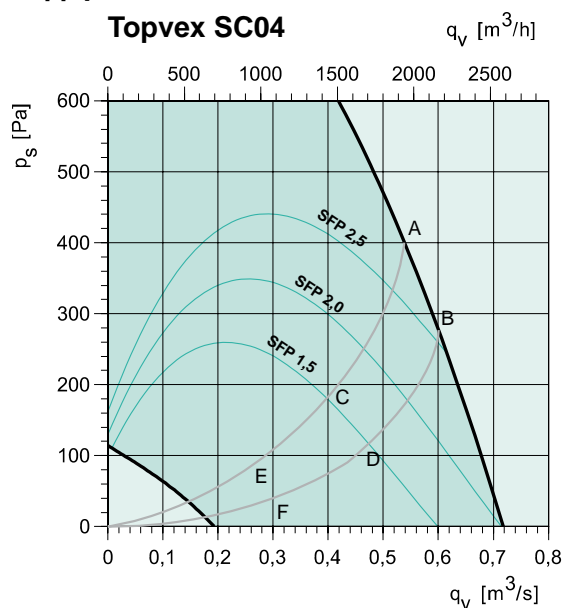
Outdoor air -10°C

Sound data

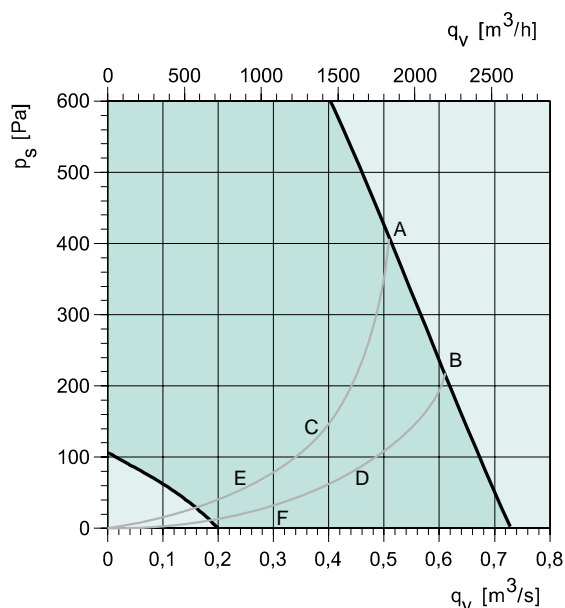
The sound data tables indicate the sound power level L_{wA} , which should not be confused with the sound pressure level.

Performance SC04

Supply

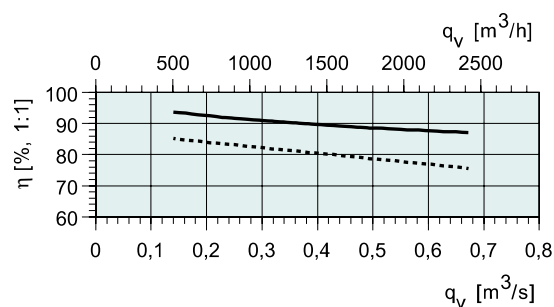


Extract



Supply

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	83	60	63	75	75	77	77	72	63
B	10V	84	60	64	75	76	79	78	72	64
C	6.4V	77	53	58	71	68	71	71	65	55
D	6.4V	78	53	59	72	69	72	71	65	56
E	4.2V	66	44	59	55	57	62	60	52	42
F	4.2V	67	45	60	56	58	62	61	53	42



Extract

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	70	59	52	63	62	62	63	61	47
B	10V	71	59	54	64	63	63	64	61	49
C	6.4V	65	53	47	59	56	57	58	54	40
D	6.4V	65	53	48	60	57	57	58	54	39
E	4.2V	54	41	45	43	46	48	47	41	28
F	4.2V	55	45	44	45	47	49	49	42	27

SFP = Specific Fan Power ($kW/m^3/s$)

The SFP value stated applies to the complete unit.

Thermal efficiency

With air ratio 1:1 and air humidity at 50%.

Extract air 22°C

Outdoor air -10°C

Sound data

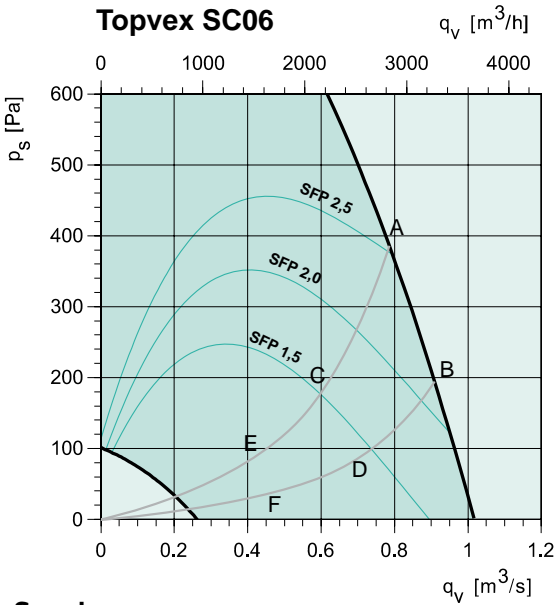
The sound data tables indicate the sound power level L_{wA} , which should not be confused with the sound pressure level.

Surrounding

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	63	44	45	60	57	53	55	50	41
B	10V	64	45	46	60	59	53	56	50	42
C	6.4V	59	38	40	57	53	57	50	43	34
D	6.4V	60	38	41	58	53	58	50	43	33
E	4.2V	47	27	41	40	42	38	40	30	21
F	4.2V	48	30	41	42	43	39	41	31	21

Performance SC06

Supply



Supply

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	85	52	61	75	79	80	79	75	69
B	10V	86	54	61	77	80	81	80	75	70
C	6.5V	79	47	56	70	72	74	74	69	61
D	6.5V	80	48	56	72	73	75	74	69	62
E	4.5V	70	40	55	57	62	67	64	58	50
F	4.5V	71	41	57	57	63	67	65	59	50

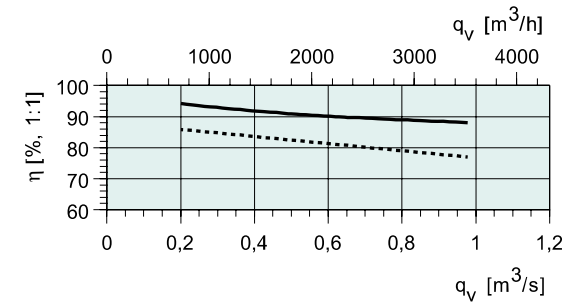
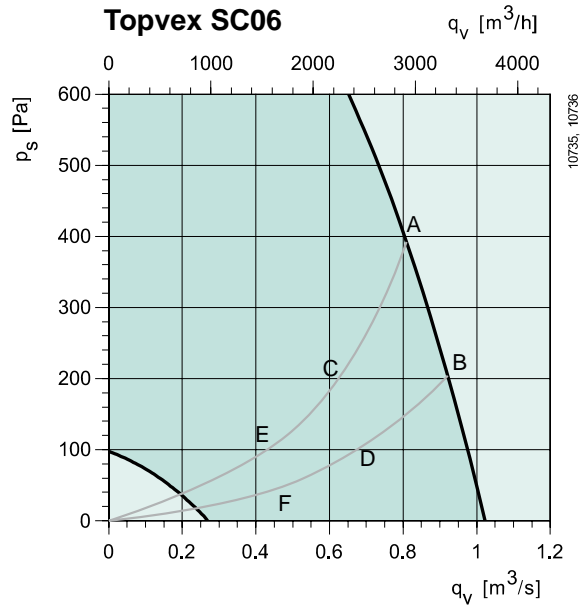
Extract

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	65	44	43	58	61	57	58	53	45
B	10V	66	46	45	61	62	58	57	52	44
C	6.5V	65	40	40	63	57	54	54	49	42
D	6.5V	68	40	40	67	59	53	53	46	36
E	4.5V	52	33	40	41	46	48	45	36	26
F	4.5V	53	43	40	42	47	47	45	35	24

Surrounding

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	66	37	49	60	61	60	57	48	42
B	10V	67	39	49	63	62	60	57	48	41
C	6.5V	61	33	44	57	55	55	53	43	36
D	6.5V	63	33	44	60	56	55	52	42	34
E	4.5V	53	25	45	42	44	49	44	31	22
F	4.5V	53	29	47	43	45	49	44	32	21

Extract



— = With condensation
 --- = Without condensation

SFP = Specific Fan Power ($\text{kW}/\text{m}^3/\text{s}$)

The SFP value stated applies to the complete unit.

Thermal efficiency

With air ratio 1:1 and air humidity at 50%.

Extract air 22°C

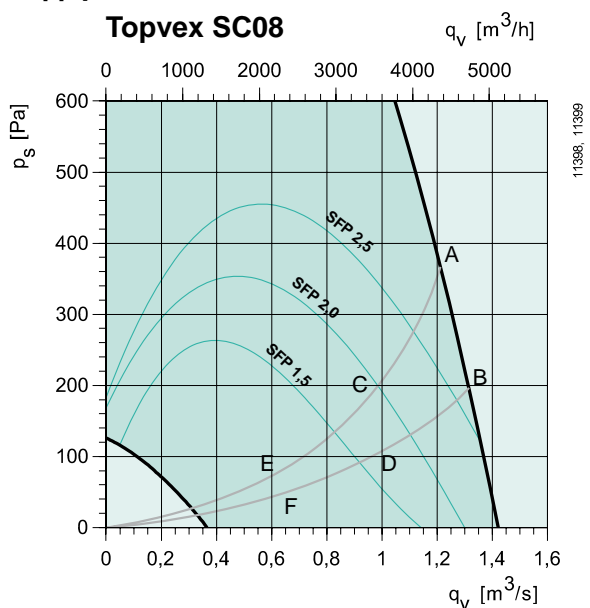
Outdoor air -10°C

Sound data

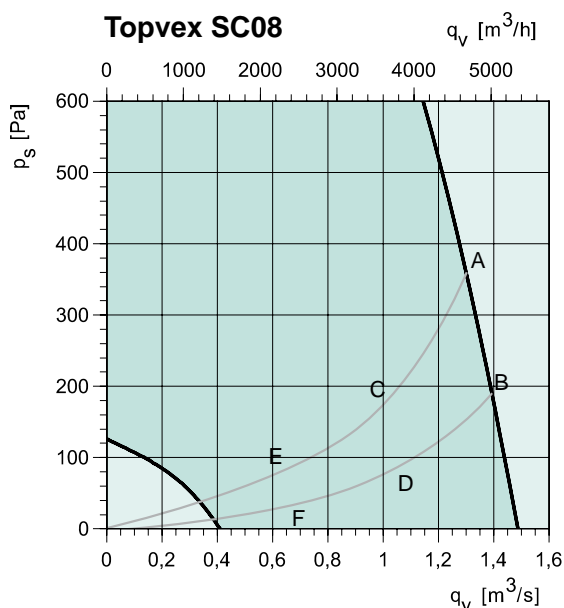
The sound data tables indicate the sound power level L_{wA} , which should not be confused with the sound pressure level.

Performance SC08

Supply

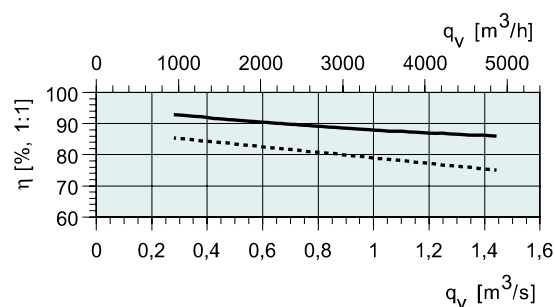


Extract



Supply

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	89	63	68	79	81	84	83	79	71
B	10V	90	65	68	82	82	85	84	79	72
C	6.8V	85	57	62	82	75	77	77	71	63
D	6.8V	87	57	63	85	76	78	77	71	64
E	4.5V	72	47	65	60	63	68	66	58	51
F	4.5V	73	52	66	61	64	68	66	58	50



— = With condensation
 --- = Without condensation

Extract

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	80	60	65	79	70	68	65	58	49
B	10V	81	62	66	80	71	68	65	59	49
C	6.8V	70	53	60	67	63	62	58	51	41
D	6.8V	71	55	62	67	64	62	59	51	41
E	4.5V	69	45	68	62	52	53	49	39	28
F	4.5V	66	48	65	63	53	53	50	39	28

SFP = Specific Fan Power ($\text{kW}/\text{m}^3/\text{s}$)

The SFP value stated applies to the complete unit.

Thermal efficiency

With air ratio 1:1 and air humidity at 50%.

Extract air 22°C

Outdoor air -10°C

Sound data

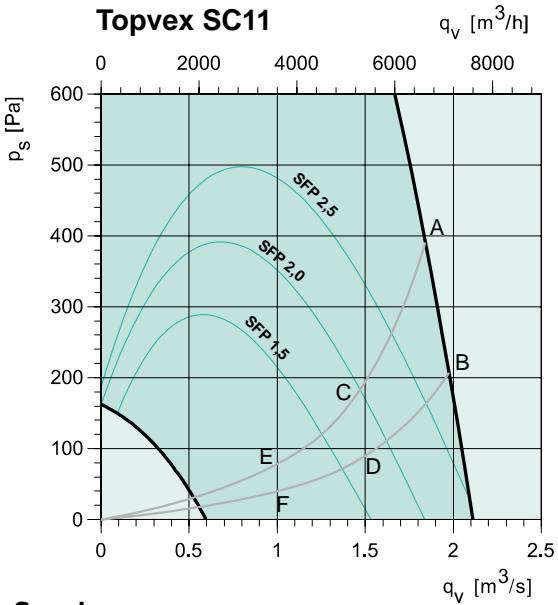
The sound data tables indicate the sound power level L_{wA} , which should not be confused with the sound pressure level.

Surrounding

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	78	49	58	77	67	66	65	61	60
B	10V	79	51	60	78	68	67	65	61	61
C	6.8V	68	43	53	65	60	60	58	53	53
D	6.8V	69	45	55	67	61	61	59	53	53
E	4.5V	62	34	60	49	49	51	49	40	41
F	4.5V	60	39	58	50	49	51	49	41	40

Performance SC11

Supply



Supply

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	94	66	70	84	85	90	87	82	75
B	10V	95	67	71	85	86	91	88	83	76
C	6.2V	87	60	65	79	78	82	80	75	68
D	6.2V	88	61	66	82	79	83	81	75	69
E	4.3V	77	50	70	65	68	72	69	64	56
F	4.3V	78	51	72	66	69	72	70	65	56

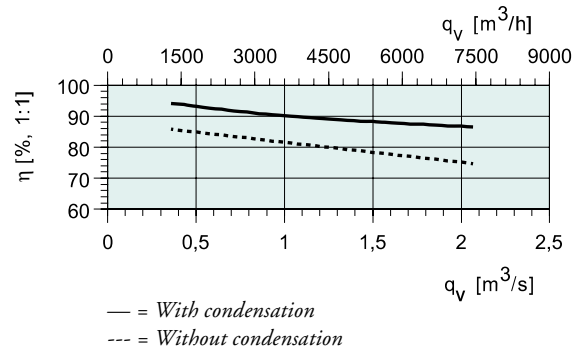
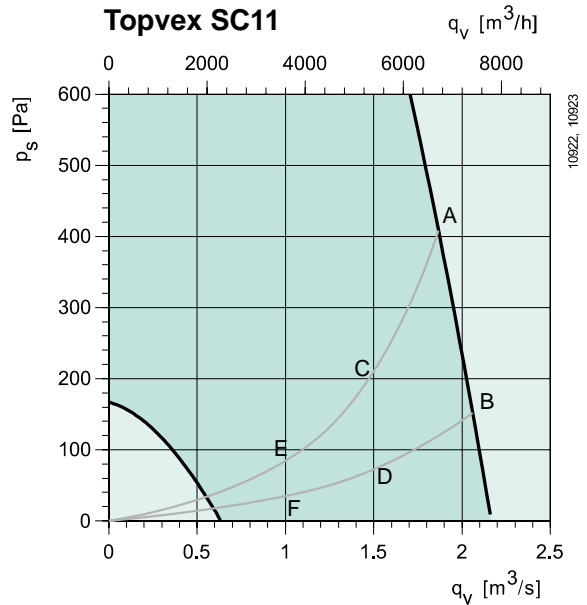
Extract

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	80	63	65	78	73	70	67	61	53
B	10V	81	65	66	79	74	71	67	61	53
C	6.2V	75	58	59	73	66	64	61	54	46
D	6.2V	75	59	60	73	67	65	61	55	47
E	4.3V	68	49	66	58	56	55	53	44	33
F	4.3V	69	51	68	59	57	56	54	45	33

Surrounding

Sound power (L_w), dB(A) – Mid-frequency band, Hz										
	Step	Tot	63	125	250	500	1k	2k	4k	8k
A	10V	83	58	60	77	77	78	75	69	64
B	10V	84	59	61	78	78	79	76	70	64
C	6.2V	76	52	55	70	70	71	68	62	56
D	6.2V	77	53	55	72	71	72	68	62	57
E	4.3V	66	43	60	56	60	60	58	51	45
F	4.3V	67	44	62	57	61	61	58	52	45

Extract



SFP = Specific Fan Power ($\text{kW}/\text{m}^3/\text{s}$)

The SFP value stated applies to the complete unit.

Thermal efficiency

With air ratio 1:1 and air humidity at 50%.

Extract air 22°C

Outdoor air -10°C

Sound data

The sound data tables indicate the sound power level L_{wA} , which should not be confused with the sound pressure level.

Hot water coil SC

An extract air temperature of 21°C and a heat exchanger efficiency of 80% has been used for the calculations below. In practice the heat exchanger efficiency or extract air temperature may be higher, which may give a few degrees higher supply air temperatures than in the below tables.

		Topvex SC03 HW					Topvex SC04 HW					Topvex SC06 HW				
Water temp.	°C	50/30	60/40	70/50	80/60	90/70	50/30	60/40	70/50	80/60	90/70	50/30	60/40	70/50	80/60	90/70
Air flow	m ³ /h	1080	1080	1080	1080	1080	1440	1440	1440	1440	1440	2160	2160	2160	2160	2160
Outdoor air temp. 0°C																
Supply air temp.	°C	22.1	28.1	33.1	38.0	42.8	23.8	29.0	34.0	38.8	43.7	23.7	28.3	32.8	37.3	41.7
Water flow	l/s	0.02	0.05	0.07	0.09	0.12	0.04	0.07	0.10	0.13	0.16	0.06	0.10	0.14	0.18	0.22
Pressure drop	kPa	0.4	1.6	2.9	4.5	6.4	1.4	3.7	6.6	10.0	14.0	3.0	7.3	12.8	19.3	27.0
Capacity	kW	2.0	4.1	6.0	7.8	9.5	3.4	6.0	8.4	10.8	13.1	5.0	8.4	11.7	15.0	18.3
Outdoor air temp. -10°C																
Supply air temp.	°C	21.5	27.0	32.0	36.9	41.7	22.8	27.9	32.9	37.7	42.6	22.6	27.2	31.7	36.1	40.5
Water flow	l/s	0.03	0.05	0.08	0.10	0.12	0.05	0.08	0.11	0.14	0.17	0.07	0.11	0.15	0.19	0.23
Pressure drop	kPa	0.7	1.8	3.2	4.9	6.8	1.8	4.2	7.2	10.8	14.9	3.8	8.3	13.9	20.7	28.6
Capacity	kW	2.4	4.5	6.3	8.1	9.8	3.9	6.4	8.8	11.2	13.6	5.7	9.1	12.4	15.6	18.8
Outdoor air temp. -20°C																
Supply air temp.	°C	20.6	26.0	30.9	35.8	40.6	21.8	26.9	31.8	36.7	41.5	21.4	26.0	30.5	35.0	39.4
Water flow	l/s	0.03	0.06	0.08	0.10	0.12	0.05	0.08	0.11	0.14	0.17	0.08	0.12	0.16	0.20	0.24
Pressure drop	kPa	0.9	2.1	3.5	5.2	7.2	2.2	5.3	8.5	12.3	16.6	4.5	9.3	15.2	22.2	30.3
Capacity	kW	2.8	4.8	6.6	8.4	10.2	4.4	7.3	9.7	12.1	14.4	6.3	9.7	13.0	16.2	19.4
Outdoor air temp. -30°C																
Supply air temp.	°C	19.6	24.9	29.8	34.7	39.5	20.7	25.8	30.7	35.6	40.4	20.3	24.9	29.4	33.8	38.2
Water flow	l/s	0.04	0.06	0.08	0.11	0.13	0.06	0.09	0.12	0.15	0.18	0.08	0.12	0.16	0.20	0.25
Pressure drop	kPa	1.1	2.3	3.8	5.6	7.6	2.7	5.3	8.5	12.3	16.6	5.4	10.4	16.5	23.7	32.0
Capacity	kW	3.2	5.1	6.9	8.7	10.5	4.8	7.3	9.7	12.1	14.4	6.9	10.3	13.5	16.8	20.0
Outdoor air temp. -40°C																
Supply air temp.	°C	18.6	23.8	28.7	33.6	38.4	19.7	24.7	29.6	34.5	39.3	19.2	23.7	28.2	32.6	37.0
Water flow	l/s	0.04	0.07	0.09	0.11	0.13	0.06	0.09	0.12	0.15	0.18	0.09	0.13	0.17	0.21	0.25
Pressure drop	kPa	1.3	2.6	4.1	5.9	8.0	3.1	5.9	9.2	13.1	17.5	6.2	11.5	17.8	25.2	33.7
Capacity	kW	3.6	5.5	7.3	9.0	10.8	5.3	7.7	10.1	12.5	14.8	7.6	10.9	14.1	17.4	20.6

		Topvex SC08 HW					Topvex SC11 HW				
Water temp.	°C	50/30	60/40	70/50	80/60	90/70	50/30	60/40	70/50	80/60	90/70
Air flow	m ³ /h	2880	2880	2880	2880	2880	3960	3960	3960	3960	3960
Outdoor air temp. 0°C											
Supply air temp.	°C	21.8	26.9	31.4	35.8	40.1	24.7	29.6	34.3	39.0	43.6
Water flow	l/s	0.06	0.12	0.17	0.23	0.28	0.13	0.21	0.29	0.36	0.44
Pressure drop	kPa	0.7	2.5	4.7	7.4	10.5	5.1	11.5	19.6	29.3	40.6
Capacity	kW	4.9	9.9	14.3	18.6	22.8	10.6	17.2	23.5	29.8	36.1
Outdoor air temp. -10°C											
Supply air temp.	°C	20.8	25.7	30.2	34.6	39.0	23.7	28.5	33.2	37.9	42.5
Water flow	l/s	0.07	0.13	0.18	0.24	0.29	0.14	0.22	0.30	0.38	0.46
Pressure drop	kPa	1.0	2.8	5.1	7.9	11.2	6.2	13.0	21.4	31.4	43.0
Capacity	kW	5.9	10.7	15.0	19.3	23.6	11.9	18.4	24.7	31.0	37.2
Outdoor air temp. -20°C											
Supply air temp.	°C	19.8	24.6	29.0	33.4	37.8	22.6	27.4	32.1	36.8	41.4
Water flow	l/s	0.08	0.14	0.19	0.25	0.3	0.16	0.24	0.31	0.39	0.47
Pressure drop	kPa	1.3	3.2	5.6	8.5	11.9	7.4	14.5	23.3	33.6	45.5
Capacity	kW	6.8	11.5	15.8	20.1	24.3	13.1	19.6	25.9	32.1	38.3
Outdoor air temp. -30°C											
Supply air temp.	°C	18.7	23.4	27.8	32.2	36.6	21.5	26.3	31.0	35.7	40.3
Water flow	l/s	0.09	0.15	0.20	0.25	0.31	0.17	0.25	0.33	0.41	0.48
Pressure drop	kPa	1.6	3.7	6.2	9.1	12.6	7.4	16.1	25.2	35.8	48.0
Capacity	kW	7.7	12.2	16.6	20.9	25.1	13.1	20.8	27.0	33.3	39.5
Outdoor air temp. -40°C											
Supply air temp.	°C	17.6	22.2	26.7	31.0	35.4	20.4	25.2	29.9	34.5	39.2
Water flow	l/s	0.1	0.16	0.21	0.26	0.32	0.19	0.27	0.34	0.42	0.5
Pressure drop	kPa	2.0	4.1	6.7	9.7	13.3	10.0	17.8	27.2	38.1	50.5
Capacity	kW	8.5	13.0	17.4	21.6	25.8	15.6	21.9	28.2	34.4	40.6

Heater battery, electric SC

		Topvex SC03 EL				Topvex SC04 EL				Topvex SC06 EL			
Capacity kW		5	5	5	5	7,5	7,5	7,5	7,5	12	12	12	12
Airflow m ³ /h		720	900	1080	1440	900	1080	1440	2160	1440	1800	2160	3240
		Supply air temp. °C				Supply air temp. °C				Supply air temp. °C			
Outdoor	0°C	38	33	31	27	42	38	32	27	42	37	33	28
	-10°C	36	31	29	25	40	36	30	25	40	35	31	26
	-20°C	34	29	27	23	38	34	28	23	38	33	29	24
	-30°C	32	27	25	21	36	32	26	21	36	31	27	22
	-40°C	30	25	23	19	34	30	24	19	34	29	25	20

		Topvex SC08 EL				Topvex SC11 EL			
Capacity kW		15	15	15	15	22,5	22,5	22,5	22,5
Airflow m ³ /h		1980	2520	2880	4680	2520	3240	3960	6840
		Supply air temp. °C				Supply air temp. °C			
Outdoor	0°C	40	35	32	26	44	38	34	27
	-10°C	38	33	30	24	42	36	32	25
	-20°C	36	31	28	22	40	34	30	23
	-30°C	34	29	26	20	38	32	28	21
	-40°C	32	27	24	18	36	30	26	19

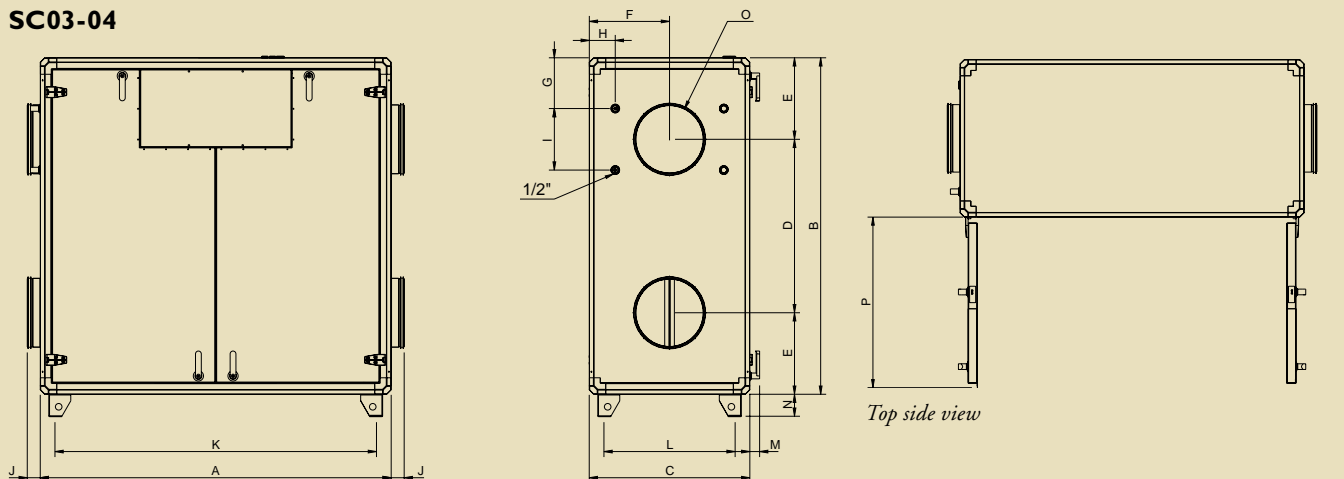
An extract air temperature of 21°C and a heat exchanger efficiency of 80% has been used for the calculations below. In practice the heat exchanger efficiency or extract air temperature may be higher, which may give a few degrees higher supply air temperatures than in the above tables.

Technical data

Topvex		SC03	SC04	SC06	SC08	SC11
Voltage/Frequency EL	V/50 Hz	400	400	400	400	400
Voltage/Frequency HW	V/50 Hz	230	230	400	400	400
Phase EL	-	3N	3N	3N	3N	3N
Phase HW	-	1	1	3N	3N	3N
Input power, motors	W	2x506	2x763	2x1016	2x1894	2x3132
Input power, el heating battery	kW	5	7,5	12	15	22,5
Fuse EL	A	3x16	3x20	3x25	3x32	3x50
Fuse HW	A	10	10	3x10	3x10	3x13
Weight	kg	280		470		683
Filter	(Supply/extract)	F7/F5	F7/F5	F7/F5	F7/F5	F7/F5

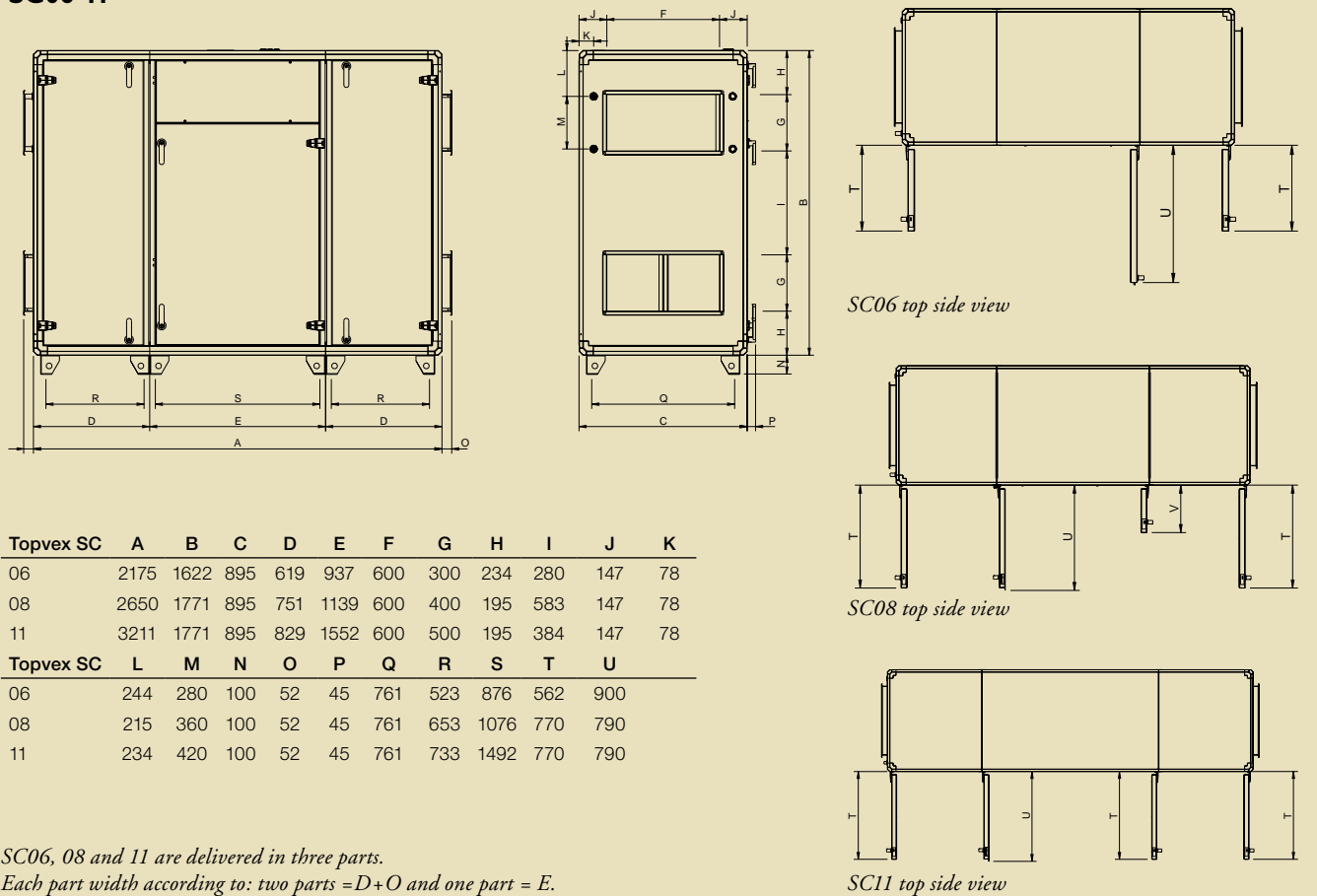
Dimensions SC

SC03-04



Topvex SC	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
03	1597	1531	730	790	371	365	231	118	280	59	1463	597	45	100	315	792
04	1941	1531	730	790	371	365	181	118	380	80	1814	597	45	100	400	965

SC06-11



Topvex SC	A	B	C	D	E	F	G	H	I	J	K
06	2175	1622	895	619	937	600	300	234	280	147	78
08	2650	1771	895	751	1139	600	400	195	583	147	78
11	3211	1771	895	829	1552	600	500	195	384	147	78

Topvex SC	L	M	N	O	P	Q	R	S	T	U
06	244	280	100	52	45	761	523	876	562	900
08	215	360	100	52	45	761	653	1076	770	790
11	234	420	100	52	45	761	733	1492	770	790

SC06, 08 and 11 are delivered in three parts.
 Each part width according to: two parts = D+O and one part = E.

Accessories SC

	Topvex SC03	Topvex SC04	Topvex SC06	Topvex SC08	Topvex SC11
Repeater, 230V main supply *	E0-R230K	E0-R230K	E0-R230K	E0-R230K	E0-R230K
E-Tool cable	ETC	ETC	ETC	ETC	ETC
Shut-off damper (info on page 70)	EFD 315	EFD 400	EFD 60-30	EFD 60-40	EFD 60-50
Valve actuator (info on page 69)	RVAZ4 24A	RVAZ4 24A	RVAZ4 24A	RVAZ4 24A	RVAZ4 24A
Valve, 2-way (info on page 73)	ZTV 15-1,0	ZTV 15-1,0	ZTV 15-1,6	ZTV 15-1,6	ZTV 20-2,5
Valve, 3-way (info on page 73)	ZTR 15-1,0	ZTR 15-1,6	ZTR 20-2,0	ZTR 20-2,5	ZTR 20-4,0
Cooling coil, water (info on page 72)	PGK	PGK	PGK	PGK	PGK
Cooling coil, water (info on page 74)	DXRE	DXRE	DXRE	DXRE	DXRE
Room temperature sensor	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000
Combi grille (info on page 70)	CVVX 315	CVVX 400	CVVX 500	–	–
Baffle silencer	LDC-B 315	LDC-B 400	LDR-B 60-30	LDR-B 60-40	LDR-B 90-50
Timer	T 120	T 120	T 120	T 120	T 120
Presence detector	IR24-PC	IR24-PC	IR24-PC	IR24-PC	IR24-PC
CO ₂ Room sensor (digital 1/0)	CO2RT-DR	CO2RT-DR	CO2RT-DR	CO2RT-DR	CO2RT-DR
CO ₂ Room sensor (analog 0...10V DC)	CO2RT	CO2RT	CO2RT	CO2RT	CO2RT
Filter F5 (extract air)	BFT SC03/04 F5	BFT SC03/04 F5	BFT SC06 F5	BFT SC08 F5	BFT SC11 F5
Filter F7 (supply air)	BFT SC03/04 F7	BFT SC03/04 F7	BFT SC06 F7	BFT SC08 F7	BFT SC11 F7
Converter EXOline to BACnet	E-Bacnet-V	E-Bacnet-V	E-Bacnet-V	E-Bacnet-V	E-Bacnet-V

* Used when the distance between unit and control panel is more than 10 m

Ordering code SC

SC03-11

- Model: SC03, SC04, SC06, SC08 and SC11.
- Heating coil: EL (*electric*), HW (*hotwater*), No heater (*E.g. Unit name: Topvex SC06-L-CAV 400V*).
- Right or Left model: R (*Right*), L (*Left*). The sides were the supply air is located when viewed from access side, standing on the electrical box side.
- Airflow control: CAV (*Constant air volume*), VAV (*Variable air volume = constant duct pressure control*)

Functions included in the Standard, E17S controller:

Menu Languages	More than 20 different languages.
Temperature control	Constant supply air. Constant supply air with outdoor temp. compensation. Extract air (cascade).
Air flow control	Week timer, two separate running periods/twenty-four hours.
Fan control	Stepless settable between 0-100%. Transformer control.
Re-heater control	Hot water coil (0...10V control signal). Electric heating.
Cold water cooler control	External coil (0...10V control signal).
DX cooling control	External coil (Step controller SC2/D is required, accessory).
Cool recovering	Automatically recovers the cold in the indoor air to cool down the warmer outdoor air.
Night cooling	Night cooling is used during the summer to cool the building night-time by using cool outdoor air, thereby reducing the need for cooling during the day and thereby saving energy.
Demand ventilation	The units have one digital input for extended/forced running using an external signal, e.g. an external timer, movement detector, CO ₂ -sensor or similar sensor with a voltage free contact. Extended/forced running is when the unit goes from shut down mode, low or medium fan-speed to the chosen fan speed.
Extended running	The units have a digital input for extended/forced running. The function activates by using an external signal from e.g. a push button or a timer. The function can also be activated by using the control panel. Extended running can be set between 0-240 minutes.
Week schedule	Two separate running periods/week day.
Damper control	24V output to control one or two shut-off dampers.
Alarm	Alarm messages in clear text. Sum alarm output (24V). Fire alarm input (potential free contact). Stop the unit or continuous running.
Communication	When more than 10 meter cable between the unit and control panel is needed a repeater (E0-R accessory) can be used. One E0-R can control up to 6 AHU's. Exoline and Modbus via RS 485.

Functions included in the Advanced, E28 controller:

Menu Languages	More than 20 different languages.
Temperature control	Supply air. Supply air with outdoor temp. compensation. Extract air. Cascaded room temperature control. Outdoor temperature dependent switching between room control and supply air control. Outdoor temperature dependent switching between exhaust air control and supply air control.
Air flow control	Year-based clock function. This means that a week-schedule with holiday periods for a full year can be set. Each day has up to two individual running periods for normal speed and reduced speed.
Fan control	Constant air volume control, CAV. Constant duct pressure control, VAV. Outdoor temperature compensated air volume/duct pressure.
Re-heater control	Hot water coil (0...10V control signal). Electric heating.
Cold water cooler control	External coil (0...10V control signal).
DX cooling control	External coil (Up to 3-step, binary control).
Cool recovering	Automatically recovers the cold in the indoor air to cool down the warmer outdoor air.
Free cooling	Free cooling is used to save energy by using the cold outdoor air, e.g. during night time, to

cool down the building.

Demand ventilation

In applications with varying occupancy the fan speeds or mixing dampers can be controlled by the air quality as measured by a CO₂-sensor.

It is also possible to use a digital input for extended/forced running using an external signal, e.g. an external timer, movement detector or a similar sensor with a voltage free contact.

Extended running

The units have a digital input for extended/forced running. The function activates by using an external signal from e.g. a push button or a timer. The function can also be activated by using the control panel. Extended running can be set between 0-240 minutes.

Yearly schedule

Year-based clock function. This means that a week-schedule with holiday periods for a full year can be set. Each day has up to two individual running periods for normal speed and reduced speed.

Digital timer channels for door locks, lighting etc.

Damper control

24V output to control one or two shut-off dampers.

Alarm

Alarm messages in clear text.

Alarm priorities, alarms can be given different priority levels, A-alarm, B-alarm, C-alarm or not active.

Sum alarm output (24V).

Fire alarm input (potential free contact). Different fan control modes at fire.

Communication

When more than 10 meter cable between the unit and control panel is needed a repeater (E0-R accessory) can be used. One E0-R can control up to 6 AHU's.

Standard – Exoline and Modbus via RS 485 and Exoline/Built-in Web via TCP/IP.

Option – LON.

E-tool software

A PC-based commissioning software.

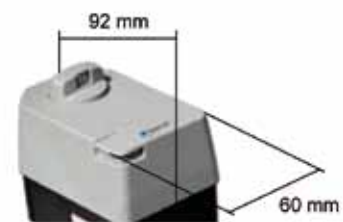
Accessories

RVAZ4 – Valve motor, water valve

RVAZ4 24A is a valve actuator for control with 0...10V signal. 24 V AC supply voltage. Suitable for controlling ZTV/ZTR valves.



RVAZ4 24A



This product conforms with the EMC requirements of European harmonised standards EN60730-1:2000 and EN60730-2-8:2002 and carries the CE mark.

Voltage supply	24 V AC +/- 15%
Power consumption	Max. 6 W
Frequency	50/60 Hz
Max. stroke	5.5 mm
Full stroke time	121 sec
Stem force	400 Nm
Permitted max ambient humidity	95 %RH
Permitted range for ambient temperature	0...50°C
Enclosure class	44 IP

Damper for outdoor air



Shutter damper EFD is a shut-off damper suitable for Topvex. The damper is provided with 24V AC motors with spring-return actuators. EFD are made in leakage performance class 3 according to EN 1751:1998 Annex C.2. Outdoor air dampers are used to prevent the hot water battery from freezing and also prevent cold air to chill down the building if the unit stops. EFD is connected to terminals in the electrical connection box.

Maintenance

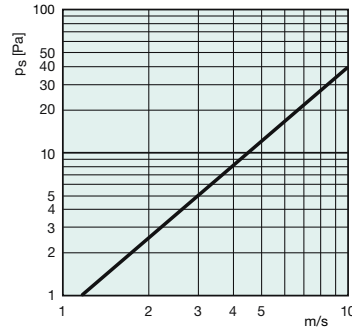
We recommend preventive maintenance of the damper twice per year for optimum performance. If the damper gets dirty, the blade/s should be cleaned. The gasket sealing should be checked and the blade/s axle/s lubricated as necessary.

Circular damper

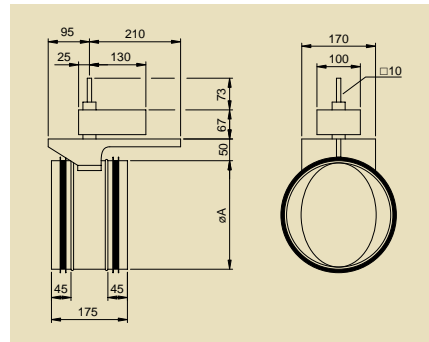
The circular damper consists of a tubular housing equipped with a damper blade pivoting on an axle. The blade fits into the circular duct. The connec-

tion ends are equipped with silicon rubber sealing rings. The damper is made from hot-dip galvanised sheet steel. The shut-off damper is prepared for external insulation and has arrows showing the damper blade position.

Pressure drop circular damper



Dimensions circular damper

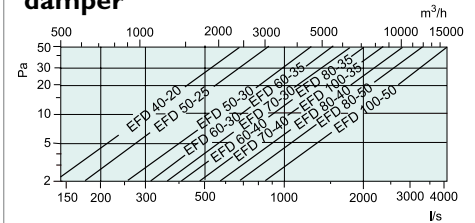


EFD	ϕA
200	200
250	250
315	315
400	400
500	500
630	630

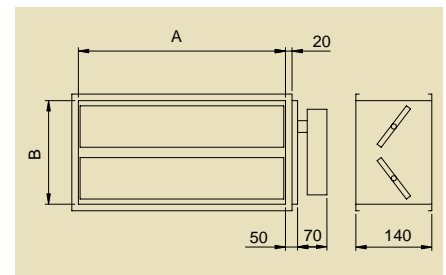
Rectangular damper

The rectangular multi-leaf damper comprises a number of opposed blades, swivelling on nylon bearings in a sheet metal framework. The blades are connected via a system of linkages (protected) on the outside of the frame. The damper is made of hot-dip galvanised sheet steel. The shut-off damper is prepared for external insulation and has arrows showing the damper blade position.

Pressure drop rectangular damper



Dimensions rectangular damper

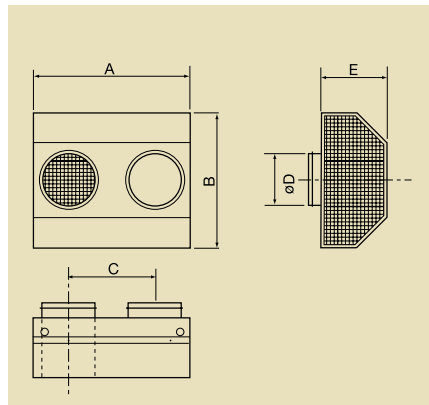


EFD	A	B
40-20	400	200
50-25	500	250
50-30	500	300
60-30	600	300
60-40	600	400
70-30	700	300
70-40	700	400
80-35	800	350
80-40	800	400
100-35	1000	350



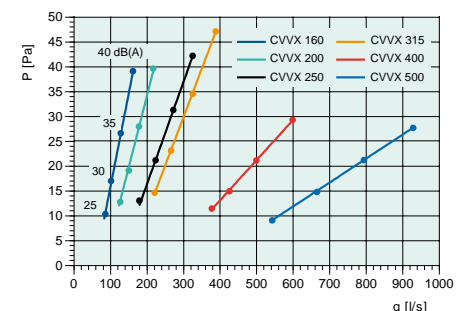
Combi grid CVVX

The Combi grid, suitable for mounting on an outside wall is produced from galvanised sheet steel, finished in dark grey enamel. The outside air intake, and exhaust air outlet are separated from each other so that the air cannot "short circuit". Four screws on the front facilitate dismantling for cleaning of the grid. **Mounting:** The back plate is first screwed and fitted to the wall. The grid can be mounted with exhaust-air outlet either on the right or on the left.



CVVX	A	B	C	ϕD	E
160	420	362	215	160	130
200	500	402	255	200	133
250	680	550	350	250	136
315	810	658	415	315	139
400	1012	694	465	400	193
500	1162	994	565	500	223

Pressure drop, inlet



Cooling battery – water

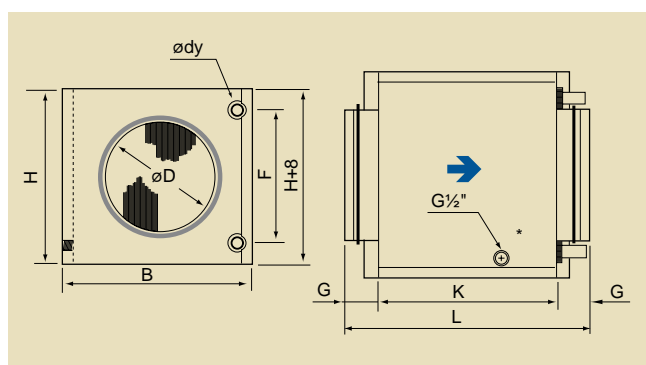


CWK, cold water-cooling battery for circular ducts. Casing of galvanised sheet steel with copper tubes and aluminium fins. Inspection covers for easy cleaning and maintenance.

Connection sleeves with rubber seal.
Max working pressure 1.6 MPa (16 bar).

Technical data CWK

	Air flow (m ³ /h)	Air velocity (m/s)	Air pressure drop (Pa)	Air before (°C)	Air before (% RH)	Air after (°C)	Capacity (kW)	Water flow (l/s)	Water pressure drop (kPa)
100-3-2.5	54	2	7	25	50	14.3	0.2	0.01	< 0.5
	54	2	7	30	45	15.8	0.4	0.01	1
	100	3.5	22	25	50	16.4	0.3	0.01	1
	100	3.5	22	30	45	18.5	0.5	0.02	2
	145	5	58	25	50	17.5	0.4	0.02	1
145	5	58	30	45	20	0.6	0.02	3	
125-3-2.5	85	2	3	25	50	12.6	0.5	0.02	3
	85	2	3	30	45	13.5	0.7	0.03	5
	150	3	9	25	50	14.5	0.7	0.03	5
	150	3	9	30	45	15.7	1.1	0.04	10
	215	4.5	18	25	50	15.6	0.8	0.03	7
215	4.5	18	30	45	17.0	1.4	0.05	16	
160-3-2.5	145	2	9	25	50	14.4	0.7	0.03	4
	145	2	9	30	45	15.6	1.0	0.04	10
	250	3.5	24	25	50	16.1	0.9	0.04	8
	250	3.5	24	30	45	17.4	1.5	0.06	20
	355	5	45	25	50	17.0	1.1	0.04	11
355	5	45	30	45	18.4	1.3	0.08	32	
200-3-2.5	225	2	6	25	50	14.1	1.0	0.05	2
	225	2	6	30	45	15.3	1.6	0.06	5
	390	3.5	17	25	50	15.9	1.4	0.06	4
	390	3.5	17	30	45	17.3	2.3	0.09	9
	555	5	33	25	50	16.9	1.7	0.07	5
555	5	33	30	45	18.4	3.1	0.12	15	
250-3-2.5	360	2	6	25	50	14.2	1.6	0.06	2
	360	2	6	30	45	15.4	2.5	0.10	5
	630	3.5	18	25	50	16.0	2.2	0.09	4
	630	3.5	18	30	45	17.3	3.8	0.15	10
	900	5	34	25	50	17.0	2.7	0.11	6
900	5	34	30	45	18.2	5.1	0.20	17	
315-3-2.5	560	2	7	25	50	14.5	2.4	0.10	3
	560	2	7	30	45	15.4	3.9	0.16	7
	985	3.5	20	25	50	16.1	3.4	0.13	5
	985	3.5	20	30	45	17.2	6.1	0.24	14
	1410	5	39	25	50	17.0	4.3	0.17	8
1410	5	39	30	45	18.1	8.3	0.33	25	
400-3-2.5	900	2	9	25	50	15.2	3.4	0.14	2
	900	2	9	30	45	16.3	5.8	0.23	5
	1590	3.5	25	25	50	16.8	4.8	0.19	4
	1590	3.5	25	30	45	17.8	9.3	0.37	12
	2280	5	49	25	50	17.6	6.1	0.24	6
2280	5	49	30	45	18.6	12.8	0.51	22	



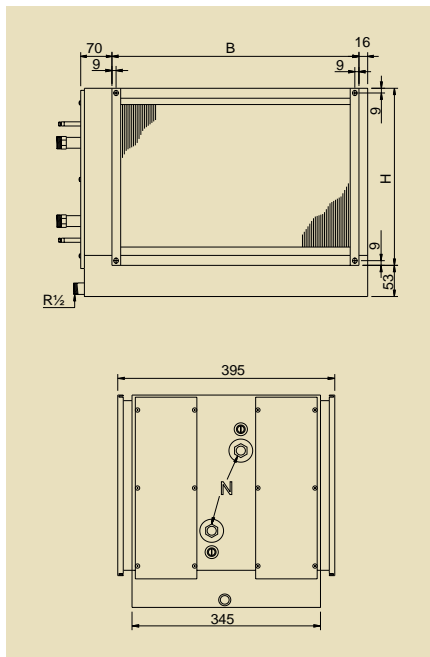
CWK	øD	B	H	ødy	F	G	K	L	Weight
100-3-2.5	100	251	180	10	100	40	276	356	4.4
125-3-2.5	125	326	255	10	175	40	276	356	6.5
160-3-2.5	160	326	255	10	175	40	276	356	6.7
200-3-2.5	200	411	330	22	250	40	276	356	9.4
250-3-2.5	250	486	405	22	325	40	276	356	11
315-3-2.5	315	560	504	22	400	40	276	356	14.3
400-3-2.5	400	710	529	22	425	65	330	460	19.5

PGK



PGK, cold water-cooling battery for rectangular ducts. Casing of galvanised sheet steel with copper tubes and aluminium fins. Air vent and drain valve included. Condensation tray of stainless steel and condensate connection (R $\frac{1}{2}$ "). Max working pressure 1.6 MPa (16 bar). For water connection left or right.

Two inspection covers for cleaning and maintenance. Droplet eliminator DE as an accessory regardless of air direction. Recommended for air velocities from 3 m/s.



PGK	B	H	N	DE
40-20-3-2.0	438	238	R 3/4	DE 40x20
50-25-3-2.0	538	288	R 3/4	DE 50x25
50-30-3-2.0	538	338	R 3/4	DE 50x30*
60-30-3-2.0	638	338	R 3/4	DE 60x30*
60-35-3-2.0	638	388	R 3/4	DE 60x35*
70-40-3-2.0	738	438	R1	DE 70x40*
80-50-3-2.0	838	538	R1	DE 80x50*
100-50-3-2.0	1038	538	R1	DE 100x50*

* use 2 pcs DE

Technical data PGK

PGK	Air flow (m ³ /h)	Air velocity (m/s)	Water temperature 6/12°C				Capacity (kW)	Water flow (l/s)	Water pressure drop (kPa)
			Air pressure drop (Pa)	Air before (0°C)	Air before (%RH)	Air after (0°C)			
400x200-3-2.0	576	2	31	25	50	17.0	1.53	0.06	1
	576	2	49	30	45	19.0	2.50	0.10	3
	864	3	66	25	50	18.4	1.89	0.08	2
	864	3	103	30	45	20.2	3.26	0.13	5
	1152	4	113	25	50	19.2	2.20	0.09	2
	1152	4	175	30	45	20.8	4.15	0.17	7
500x250-3-2.0	900	2	31	25	50	17.0	2.38	0.09	2
	900	2	49	30	45	18.6	4.27	0.17	5
	1350	3	66	25	50	18.2	3.02	0.12	3
	1350	3	103	30	45	19.4	6.16	0.25	9
	1800	4	113	25	50	18.9	3.61	0.14	4
	1800	4	175	30	45	19.8	8.34	0.33	15
500x300-3-2.0	1080	2	31	25	50	17.1	2.83	0.11	1
	1080	2	49	30	45	18.8	4.93	0.20	4
	1620	3	66	25	50	18.4	3.56	0.14	2
	1620	3	103	30	45	19.7	6.94	0.28	7
	2160	4	113	25	50	19.1	4.22	0.17	3
	2160	4	175	30	45	20.1	9.40	0.37	12
600x300-3-2.0	1296	2	31	25	50	17.3	3.3	0.13	1
	1296	2	49	30	45	19.0	5.69	0.23	3
	1944	3	66	25	50	18.6	4.13	0.16	2
	1944	3	103	30	45	19.8	8.12	0.32	6
	2592	4	113	25	50	19.3	4.90	0.20	3
	2592	4	175	30	45	20.1	11.18	0.45	11
600x350-3-2.0	1512	2	31	25	50	17.3	3.86	0.15	1
	1512	2	49	30	45	19.0	6.64	0.26	3
	2268	3	66	25	50	18.6	4.82	0.19	2
	2268	3	103	30	45	19.8	9.48	0.38	6
	3024	4	113	25	50	19.3	5.72	0.23	3
	3024	4	175	30	45	20.1	13.05	0.52	11
700x400-3-2.0	1920	2	47	25	50	17.1	5.02	0.20	1
	1920	2	74	30	45	18.1	8.66	0.35	3
	2880	3	91	25	50	18.5	6.20	0.25	1
	2880	3	142	30	45	18.8	12.94	0.52	4
	3840	4	142	25	50	19.3	7.26	0.29	2
	3840	4	222	30	45	19.0	18.41	0.73	8
800x500-3-2.0	2743	2	47	25	50	17.1	7.20	0.29	1
	2743	2	74	30	45	17.6	13.59	0.54	3
	4115	3	91	25	50	18.4	9.04	0.36	1
	4115	3	142	30	45	18.0	21.61	0.86	6
	5486	4	142	25	50	19.0	10.82	0.43	2
	5486	4	222	30	45	18.6	28.41	1.13	10
1000x500-3-2.0	3429	2	47	25	50	17.5	8.56	0.34	1
	3429	2	74	30	45	17.9	16.13	0.64	2
	5144	3	91	25	50	18.7	10.72	0.43	1
	5144	3	142	30	45	18.0	26.77	1.07	6
	6858	4	142	25	50	19.3	12.85	0.51	2
	6858	4	222	30	45	18.6	35.52	1.41	10
	m³/h	m/s	Pa	0°C	%RH	0°C	kW	l/s	kPa

NB! Droplet eliminator DE must be ordered separately. Pressure drop at page 76.

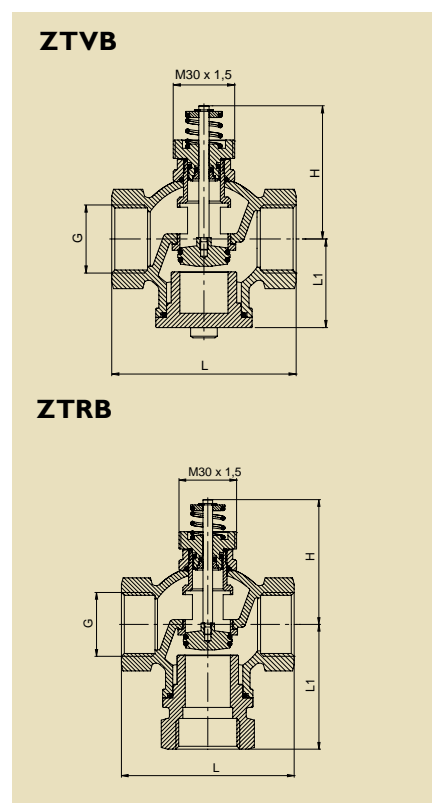
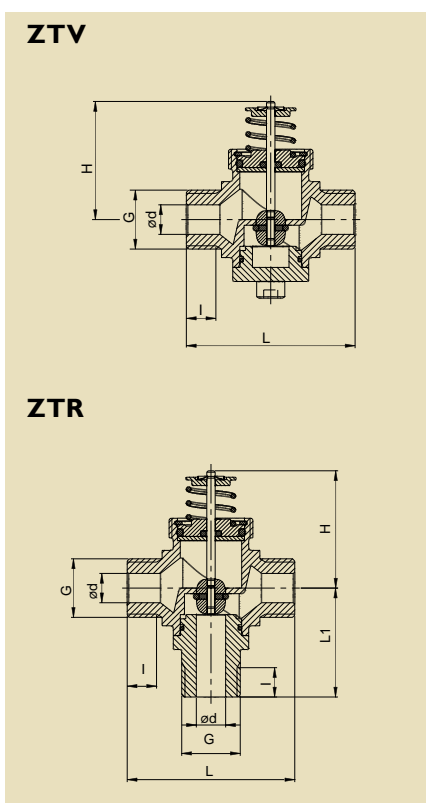
ZTV/ZTR – Water valve/heating water, 2/3-way

ZTV/ZTR is a 2 and 3-way control valve to control the hotwater to the heating battery. They are intended for use together with the RVAZ4 24A actuator.



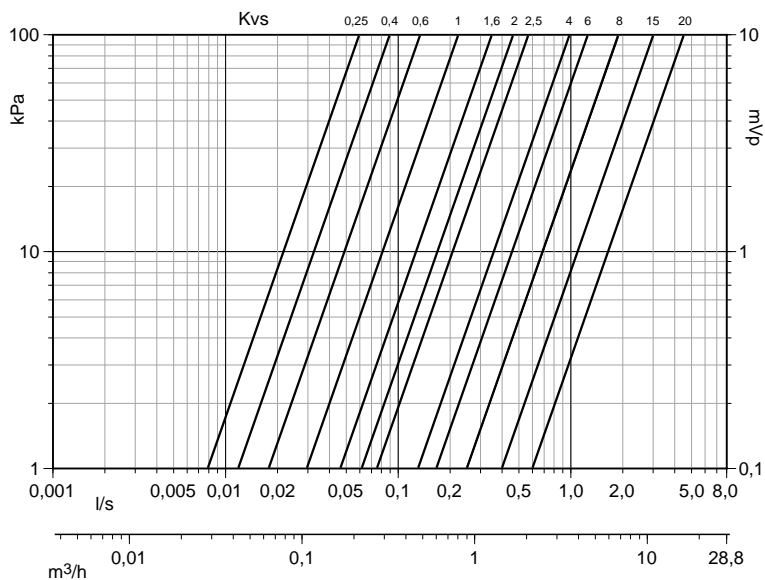
Technical data

Flow charac.	Percental increase
Media temp.	1...+110°C
Media	Hot, cold, glycol mixed (max. 30% glycol)
Stroke	5 mm
Leakage	0% in closed position
Pressure class	PN16 (1.6MPa)
Rangeability	50:1
Mat: Body	Brass
Mat: Spindle	Stainless steel
Mat: Seat	Brass
O-ring	EPDM



	Connection	G	L	L1	I	H
ZTV/ZTR 15-0.25	DN15	1/2"	60	40	9	42
ZTV/ZTR 15-0.4	DN15	1/2"	60	40	9	42
ZTV/ZTR 15-0.6	DN15	1/2"	60	40	9	42
ZTV/ZTR 15-1.0	DN15	1/2"	60	40	9	42
ZTV/ZTR 15-1.6	DN15	1/2"	60	40	9	42
ZTV/ZTR 20-2.0	DN20	3/4"	60	40	12.5	42
ZTV/ZTR 20-2.5	DN20	3/4"	60	40	12.5	42
ZTV/ZTR 20-4.0	DN20	3/4"	60	50	11.5	42
ZTV/ZTR 20-6.0	DN20	3/4"	60	50	11.5	42
ZTVB/ZTRB 25-8	DN25	1"	90	44	–	65
ZTVB/ZTRB 32-15	DN32	1 1/4"	105	43	–	66
ZTVB/ZTRB 40-20	DN40	1 1/2"	120	48	–	68

Pressure drop



DXRE – Duct coolers with DX Coil



DXRE are used for central cooling of the ventilation air in ventilation systems. The DXRE is also used for individual cooling of the air supplied to individual rooms (zones).

- 8 standard sizes
- Same model for left-hand or right-hand installation (reversible coil).
- Stainless steel condensate drip tray. A droplet eliminator can be fitted regardless of the direction of air flow
- Easily removable drip tray to simplify cleaning and inspection.

Droplet eliminator DE

We recommend that a droplet eliminator should be installed on the outlet side of the coil if the air velocity is in excess of 2.5 m/s. This prevents water droplets being entrained by the air flow out into the duct system. The collected water is discharged through the stainless steel condensate drip tray. The droplet eliminator is easily accessible after the drip tray has been removed.

Operating data

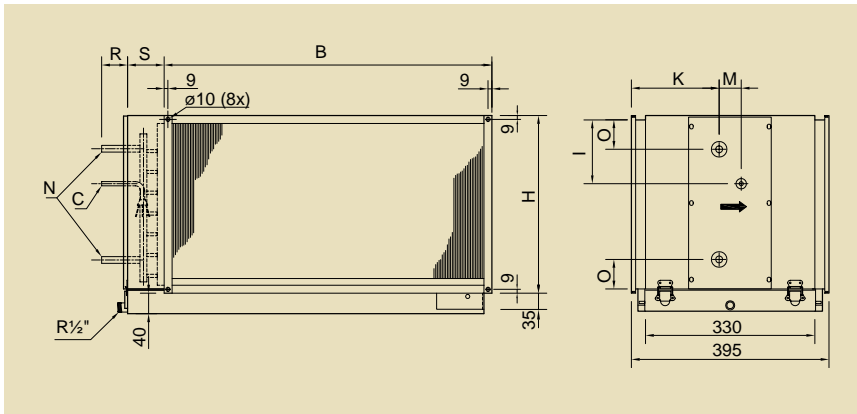
Max. operating press.: 2.8 MPa (28 Bar)
The coils are tested for leakage.

Design

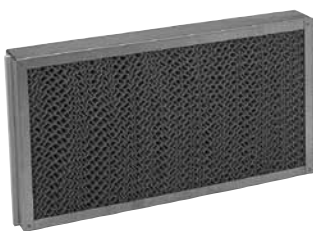
The casing is made of Aluzinc-coated sheet steel. The coil has copper tubes and aluminium fins. Stainless steel drip tray for collecting the condensate, with R½ drain connection. Removable drip tray for inspection and cleaning of the coil.

Installation

The DXRE is intended for installation in a horizontal duct, with the air flow in either direction (reversible coil).

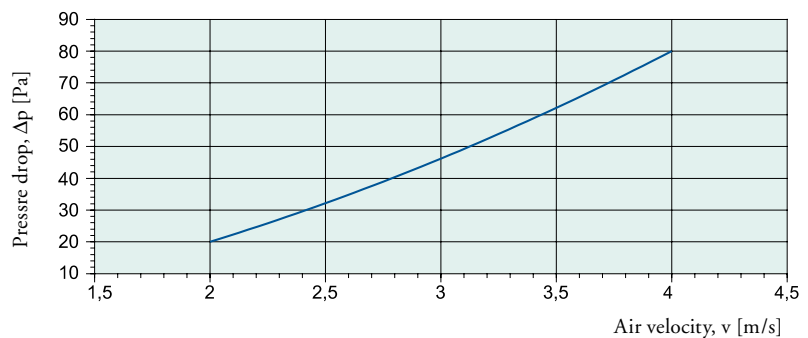


DXRE duct cooler	B mm	H mm	S mm	R mm	I mm	O mm	K mm	M mm	N ø mm	C Connection R	Droplet eliminator Dim
DXRE 400x200-3-2,5	438	238	90	105	45	100	165	60	19	1/2"	DE 40x20
DXRE 500x250-3-2,5	538	288	90	105	70	30	165	60	22	1/2"	DE 50x25
DXRE 500x300-3-2,5	538	338	90	105	95	30	165	60	22	1/2"	DE 50x30
DXRE 600x300-3-2,5	638	338	90	105	95	30	165	60	22	5/8"	DE 60x30
DXRE 600x350-3-2,5	638	388	90	105	120	30	165	60	22	5/8"	DE 60x35
DXRE 700x400-3-2,5	738	438	120	115	135	30	160	75	35	5/8"	DE 70x40
DXRE 800x500-3-2,5	838	538	120	115	180	30	160	75	35	5/8"	DE 80x50
DXRE 1000x500-3-2,5	1038	538	120	115	180	30	160	75	35	5/8"	DE 100x50



NB! Droplet eliminator DE must be ordered seperately.

Pressure drop across droplet eliminator



Capacity, refrigerant R407C, 5 °C

Standard sizes of DXRE

The tables on the following pages give examples of the capacity for each size. If none of these is suitable, we shall be pleased to carry out a computer calculation.

DXRE	Air flow (m ³ /h)	Air pressure drop (Pa)	Air in (°C)	Air in (% RH)	Air out (°C)	Output (kW)	Refrigerant flow (kg/h)	Refrigerant pressure drop (kPa)
400x200-3-2.5	575	32	25	50	15,8	2,2	51	3
	575	36	30	50	18,8	3,2	75	6,1
	865	60	25	50	16,9	2,7	63	4,3
	865	68	30	50	20,4	3,9	90	8,7
	1150	91	25	50	17,5	2,8	65	4,9
	1150	107	30	50	21,2	4,4	104	11,3
500x250-3-2.5	900	32	25	50	15,8	3,4	80	3,2
	900	36	30	50	18,7	5	118	6,6
	1350	60	25	50	16,9	4,2	99	5
	1350	69	30	50	20,1	6,3	147	9,8
	1800	92	25	50	18	4,4	103	5,2
	1800	108	30	50	21,2	7,1	165	12,1
500x300-3-2.5	1080	32	25	50	15,5	4,3	101	6,1
	1080	36	30	50	18,3	6,4	149	11,9
	1620	62	25	50	16,6	5,4	126	8,8
	1620	70	30	50	19,8	7,9	186	17,6
	2160	97	25	50	17,3	6,3	147	11,6
	2160	110	30	50	20,9	8,9	208	21,7
600x300-3-2.5	1300	33	25	50	15,4	5,3	116	8,4
	1300	37	30	50	17,8	8,2	180	18,5
	1950	63	25	50	16,5	6,6	145	12,6
	1950	71	30	50	19,6	9,7	213	25,2
	2600	99	25	50	17,3	7,7	170	16,7
	2600	112	30	50	20,8	11	241	31,5
600x350-3-2.5	1510	32	25	50	15,5	6	131	7,5
	1510	36	30	50	18,4	8,7	192	12,8
	2270	62	25	50	16,7	7,5	164	10,1
	2270	70	30	50	19,8	11	242	18,6
	3025	97	25	50	17,4	8,6	189	12,5
	3025	110	30	50	21	12,4	272	22,6
700x400-3-2.5	2015	40	25	50	14,7	8,6	188	7,6
	2015	44	30	50	17,4	12,5	274	13,3
	3020	72	25	50	16,3	9,6	211	9
	3020	83	30	50	19,3	14,7	323	17,4
	4030	112	25	50	16,5	11,2	246	11,3
	4030	130	30	50	20,2	16,9	370	20
800x500-3-2.5	2880	39	25	50	14,6	12,4	272	8,8
	2880	44	30	50	17,3	18,1	398	15,7
	4320	73	25	50	16,2	14,1	309	10,6
	4320	84	30	50	19,1	21,8	477	21,2
	5760	113	25	50	16,4	16,2	356	13,2
	5760	131	30	50	20,2	24,5	538	25,9
1000x500-3-2.5	3600	40	25	50	14,3	16,3	356	15,1
	3600	45	30	50	16,9	23,6	517	28
	5400	74	25	50	15,9	18,7	411	19
	5400	86	30	50	18,6	29,1	638	40,2
	7200	116	25	50	16,7	21,4	470	23,8
	7200	134	30	50	19,9	31,9	699	47

