

**TA**  
Supply air unit  
Air flow 450-4500 m<sup>3</sup>/h

# Specification data



Updated "11#1")

# TA Supply air unit



**TA is a series of efficient ventilation units designed for schools, shops and offices, etc. The units are complete with controls and are delivered ready for operation. They are compact in design.**

### **It could not be easier!**

TA units are delivered pre-programmed, tested and ready for installation. Connect the unit to the duct system, (connect any external components), connect the mains power, set the timer and fan speed in the controller and the unit is installed. It could not be easier!

### **Low overall height**

Supply units TA are a series of efficient ventilation units suitable for petrol stations, schools, shops, offices and other smaller premises. The units have a low overall height and are easy to install. It is possible to place TA over a 60x120 cm grid in a false ceiling. Door handles are removable by using a 16 mm cap key so that the unit can be installed in narrow spaces (see dimensions on page 11.) The hinges are also removable with a screw driver (see below).

### **General**

TA units are delivered enclosed in plastic and mounted on pallets. The units are fully wired internally. The controller is preset and has been test-

run at the factory. Cables for external components (outdoor air dampers, etc.) are connected to terminals in the electrical connection box. The same applies to the valve actuator for the heating coil.

### **Measurement and control accuracy**

The supply air sensor, operates with an accuracy of  $\pm 0.4K$ . The accuracy of the controlled temperature is the same.

### **Unit housing**

The unit housing and doors are made of galvanised sheet steel with 50 mm mineral wool insulation for low noise to the surroundings. The insulation has a protective coating to



secure that no fibres come loose. The coating also protects the insulation during cleaning of the duct and unit.

The TA units have large doors that make inspection and maintenance easy. The doors are lockable. The electrical connections are collected in one place to make it easy for the installer. Mounting brackets are included for installation of TA unit in the ceiling or on a wall. The controls display is connected with a 10 m cable (included).

### Fan



The fan in the TA unit is a direct-driven plug fan with external rotor motor. The impellers have backward-curved blades. The fan has been selected to provide optimal operation in respect of air volume, sound level and efficiency. The fan is controlled in two speeds with a built-in transformer and is easy to reach for cleaning and inspection. It is also possible to remove the fan by loosening 4 screws.

### Heating battery – Water



The hot water coil is located after the fan. The coil is mounted for easy connection through the short side of

the unit. At the same time, it is designed in such a way that it is easy to access the pipe connections. The material is copper piping with a frame of galvanised sheet steel and aluminium fins. The coil has a venting nipple and an immersion sensor as a frost guard.

### Heating battery – Electrical



The heating coil is located after the fan and the material is stainless steel. The electric heating coil has both automatic and manual overheating protection. The electric heating coil is designed to give a comfortable supply air temperature even at very low outdoor temperature (see page 14).

The power demand of the electric heating coil is controlled by a triac power controller (Pulser) according to the desired supply air temperature, which is set on the control panel. This makes a very smooth temperature control possible.

### Cooling battery – Water

A water valve actuator (supply voltage 24V AC, control signal 0-10 V) can be connected to the unit and is controlled in sequence with the heating battery.

### External extract fan

An extract fan can be connected to the unit and be operated in parallel with the TA supply fan. The extract fan must be 1-phase (voltage controllable) up to TA size 1500 and 3-phase (voltage controllable) for TA size 2000 and larger.

### Available current for external extract fan

TA-	450	650	1100	1500	2000	3000	4500
230V 1~	0.7 A	0.95 A	3.5 A	2.6 A	-	-	-
400V 3~	-	-	-	-	2.8 A	2.0 A	4.3 A
230V 3~	-	-	-	-	4.8 A	3.5 A	7.4 A

The extract fan must have an integrated thermal contact to protect the fan from overheating.

### Suitable extract fans

A good range of suitable extract fans are available from Systemair.

TA-450	K 200 M, KVKE 200, KVKE 200, DVS 225EZ
TA-650	K 200 L, KVKE 200, KVKE 200, DVS 225EZ
TA-1100	KD 250 M, KVKE 250L, KVKE 315M, K 315L, DVS 311EV
TA-1500	KD 250 L, RS 40-20 L, DVS 355E4, KVKE 315L
TA-2000	MUB025 355DV-A2, RS 60-35M3, RSI 60-35M3, DVS 355DV
TA-3000	RSI 60-35L3, KT 60-35-6, KD 400M3, DVS 400DV
TA-4500	MUB042 450DV-A2, KD 400XL3, DVS 450DV

### Filter

TA is delivered with bag filter EU5 as standard, bag filter class EU3 and EU7 can be ordered separately. The filter is mounted before the fan and the heating coil. The bag filters are mounted in guide rails that facilitate insertion and removal for inspection and replacement. The Filter is supervised by time. Set 1-15 month, preset 6 month



### Duct connection

TA units sizes 450-1100 have circular duct connections with rubber sealings, TA units sizes 1500-4500 have rectangular duct connections with flange design.



## Controls

TA units are delivered complete with controls, including 10 m cable to the display. The display is menu based and easy to use. It has logical buttons, operation and alarm indications and illuminated display. The enclosure class is IP 44.

### Display

The display is illuminated and has 4 rows of 20 characters, with text available in all European languages. The illumination will normally be off, but is activated by a press of a button. The illumination will be turned off again after a period of inactivity.

### LEDs

- The alarm LED marked with a  symbol
- The "write enable" LED marked with a  symbol.

### Buttons

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

### Access rights

The menu system works with two different user levels in order to show or allow changes in the settings. In

the first level it is only possible to do limited changes and in the second level it is possible to view/change the time and date, week schedules, filter alarms, functions and In/Outputs.

### Timer settings

The controller has a week-based clock function. This means that a week-program can be set. The clock has an automatic summer- winter-time change over. The controller has two individual programs for each week-day.

### Running periods

Each day has individual programs for normal speed and reduced speed, each with up to two running periods.

### Manual control (hand/auto-position)

The unit can be manually controlled. The heater's output signal can be manually set (manual/auto) to any value between 0 and 10V. Coolers and fresh air dampers can also be manually controlled.

### Alarm

If an alarm condition occurs the Alarm LED on the front panel will start flashing. The LED will continue to flash as long as there are unac-

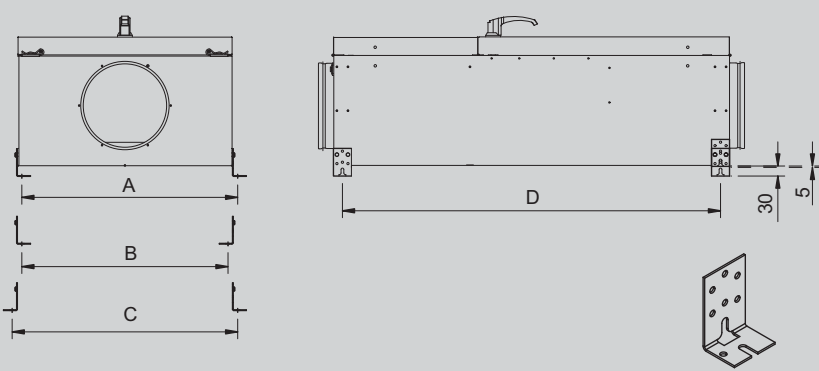
knowledged alarms. Alarms are logged in the alarm list. The list shows type of alarm, date and time for the alarm. The units have a common alarm output 24V AC, 0.5A.

### Communication

EXoline or Modbus via RS 485, EXoline via TCP/IP and LON are quoted separately. N.B! When connecting the unit to a BMS (Building Management System) the Regin EXO design software should be used. For more information contact your nearest Regin dealer. Systemair offers stand alone Air handling units with the possibility to communicate via Exoline, Modbus or LON. Systemair do not offer the external BMS-building manage system or the commissioning of that kind of system.

**Free cooling** (accessory of the type, outdoor duct sensor and extract duct sensor or room wall sensor, necessary). Free cooling is used at summertime to cool down the building at night using cool outdoor air, and thereby reducing the need for cooling at daytime. Free cooling starts at midnight if the unit is switched off and if all temperature criteria's is fulfilled.

## Mountingbrackets, alternative installations of the TA units



TA	A	B	C	D
450EL	503	457	550	990
650EL	560	510	610	1065
1100EL	625	575	675	1095
1500EL/HW	755	705	805	1095
2000EL/HW	855	805	905	1095
3000HW	910	860	960	1200
4500HW	1010	960	1060	1250

## Description of functions, Systemair SCP

### Temperature control

TA has the following control modes:

- Supply air control. The supply air temperature is kept constant at the setpoint value (standard configuration).
- Supply air control with outdoor temperature compensation. The setpoint value of the supply air temp. is automatically compensated depending on the outdoor temperature. The adjustable compensation is linear between two points. (-20 and +15°C). Accessory of the type TG-KH/PT1000 duct sensor is necessary to measure the outdoor temperature.
- Extract/room air control (cascade). The room temperature is kept constant to the setpoint value via cascade control of the supply air. Min

and max supply air temperature setpoints are set on the display. Accessory of the type TG-KH/PT1000 duct sensor or TGR5/PT1000 room sensor is necessary to measure the extract/room air temperature.



Width = 115 mm  
Height = 94 mm  
Depth = 26 mm

### Cooling

A water valve actuator, controlling a cold-water battery, can be connected to the unit and operated in sequence to the heater battery. Accessories of the type AQM (actuator) and CWK (cooling battery, water) can be used. The unit is also prepared for connec-

tion DX cooler and operate it in triple-stage (binary). The accessory SC2/D step controller is used to transform 0...10V signal to digital signal.

### Fire alarm

At an external fire alarm (digital input) the unit can be configured for running on high speed or be switched off.

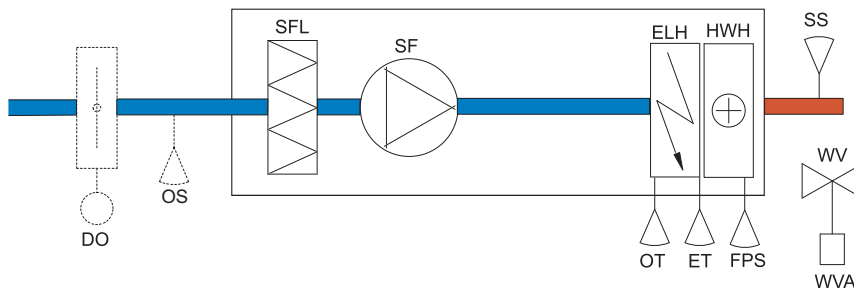
### Extended/forced running

The units have a digital input for extended/forced running using an external signal, e.g. an external timer, movement detector, CO<sub>2</sub>-sensor or similar sensor with voltage free contact.

### Sum alarm

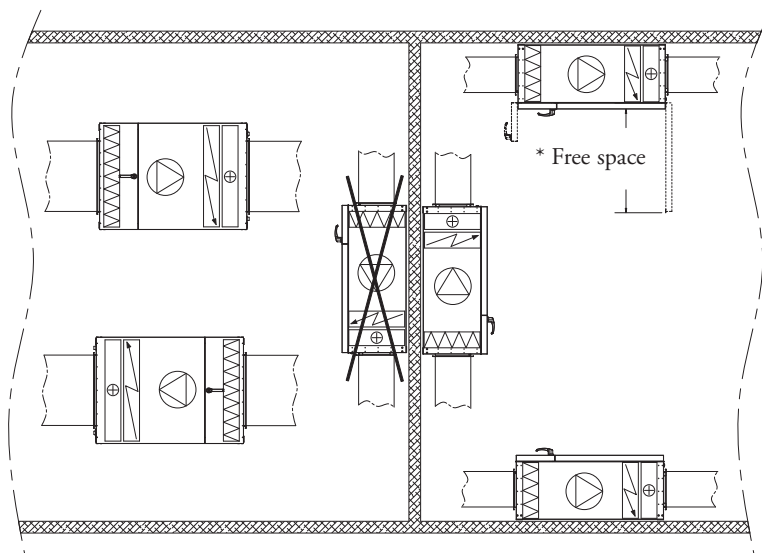
A digital output (24V AC) is activated if there is an alarm.

## Explanatory sketch



SF	Supply air fan
SS	Supply air sensor
ELH	Electric heater
ET	Emergency thermostat
OT	Overheating thermostat
HWH	Hot water heater
FPS	Frost protection temp. sensor
WV	Water valve (accessory)
WVA	Water valve actuator (accessory)
SFL	Supply filter
DO	Damper outdoor air (accessorie)
OS	Outdoor air temp. sensor (accessory)

## Where to install



### \* Free space

TA-450	720 mm
TA-650	620 mm
TA-1100	650 mm
TA-1500	650 mm
TA-2000	650 mm
TA-3000	850 mm
TA-4500	900 mm

If handles and hinges on inspection doors are removed, the free space can be reduced to 50 mm on all sizes. Remember that there must be enough space for free service and maintenance e.g. filter change.

## Accessories

	<b>TA-450</b>	<b>TA-650</b>	<b>TA-1100</b>	<b>TA-1500</b>
Repeater*	E0-R230K	E0-R230K	E0-R230K	E0-R230K
Shut-off damper	EFD 200	EFD 200	EFD 250	EFD 40-20
Valve actuator	AQM	AQM	AQM	AQM
Valve, 2-way	–	–	–	STV15-1,6
Valve, 3-way	–	–	–	STR15-2,1
Intake grid	ITA 200	ITA 200	ITA 250	ITA 40-20
Cooling battery, water**	CWK/PGK	CWK/PGK	CWK/PGK	CWK/PGK
Cooling battery, DX coil***	DXRE	DXRE	DXRE	DXRE
Step controller. DX cooling (24V) <sup>1</sup>	SC2/D	SC2/D	SC2/D	SC2/D
Plastic housing, step controller IP54	U-EK	U-EK	U-EK	U-EK
Transformer 230/24 V	PSS48	PSS48	PSS48	PSS48
Duct sensor <sup>2</sup>	TG-KH/PT1000	TG-KH/PT1000	TG-KH/PT1000	TG-KH/PT1000
Room temperature sensor	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000
Silencer	LDC 200	LDC 200	LDC 250	LDR 40-20
Timer	T 120	T 120	T 120	T 120
Presence detector	IR24-PC	IR24-PC	IR24-PC	IR24-PC
CO <sub>2</sub> Room sensor (digital 1/0)	CO2RT-DR	CO2RT-DR	CO2RT-DR	CO2RT-DR
Filter F3	BFTA 450/3	BFTA 650/3	BFTA 1100/3	BFTA 1500/3
Filter F5	BFTA 450/5	BFTA 650/5	BFTA 1100/5	BFTA 1500/5
Filter F7	BFTA 450/7	BFTA 650/7	BFTA 1100/7	BFTA 1500/7

	<b>TA-2000</b>	<b>TA-3000</b>	<b>TA-4500</b>
Repeater*	E0-R230K	E0-R230K	E0-R230K
Shut-off damper	EFD 50-25	EFD 60-30	EFD 70-40
Valve actuator	AQM	AQM	AQM
Valve, 2-way	STV15-2,1	STV20-4,2	STV20-5,6
Valve, 3-way	STR20-4,2	STR20-5,6	STR25-10,0
Intake grid	ITA 50-25	ITA 60-30	ITA 70-40
Cooling battery, water**	CWK/PGK	CWK/PGK	CWK/PGK
Cooler, DX coil***	DXRE	DXRE	DXRE
Step controller. DX cooling (24V) <sup>1</sup>	SC2/D	SC2/D	SC2/D
Plastic housing, step controller IP54	U-EK	U-EK	U-EK
Transformer 230/24 V	PSS48	PSS48	PSS48
Duct sensor <sup>2</sup>	TG-KH/PT1000	TG-KH/PT1000	TG-KH/PT1000
Room temperature sensor	TG-R5/PT1000	TG-R5/PT1000	TG-R5/PT1000
Silencer	LDR 50-25	LDR 60-30	LDR 70-40
Timer	T 120	T 120	T 120
Presence detector	IR24-PC	IR24-PC	IR24-PC
CO <sub>2</sub> Room sensor (digital 1/0)	CO2RT-DR	CO2RT-DR	CO2RT-DR
Filter F3	BFTA 2000/3	BFTA 3000/3	BFTA 4500/3
Filter F5	BFTA 2000/5	BFTA 3000/5	BFTA 4500/5
Filter F7	BFTA 2000/7	BFTA 3000/7	BFTA 4500/7

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

\*\* See the catalogue "Ventilation products EIII"

\*\*\* See separate leaflet "Rectangular duct coolers DXRE"

<sup>1</sup> Converts 0...10V signal to relay output

<sup>2</sup> Used as Extract or Out door temperature sensor

# Accessories

## Damper for outdoor air



Shutter damper EFD is a shut-off damper suitable for TA. 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 coils 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.

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

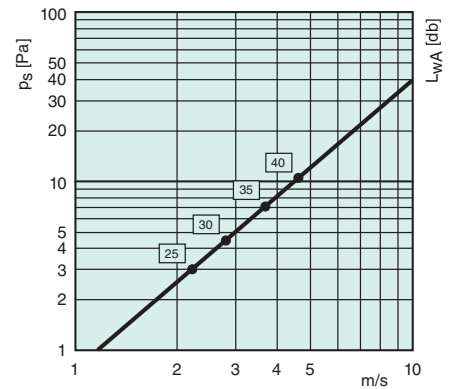
### Rectangular damper

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 galvanized sheet steel. The shut-off damper is prepared for external insulation and has arrows showing the damper blade position.

## 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.

## Pressure drop circular/rectangular damper

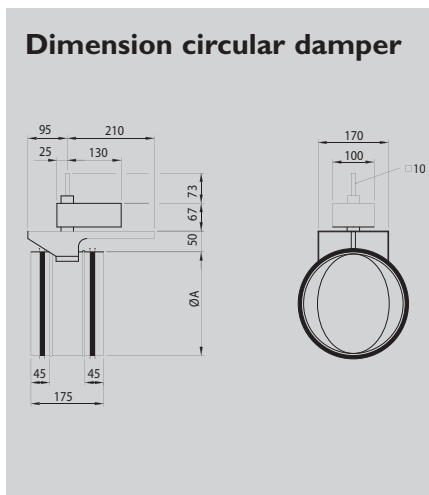


## Sound power level, $L_w$

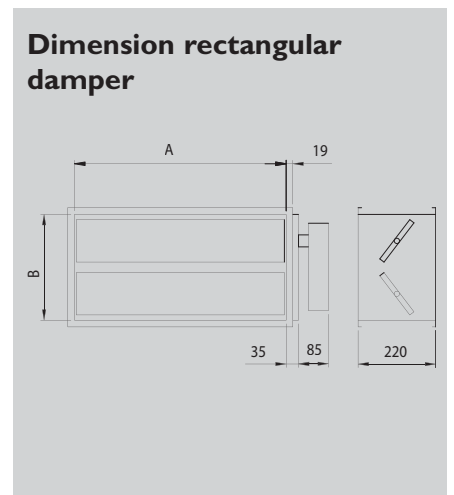
$$L_w(\text{dB}) = L_{pA} + K_{ok} \quad (L_{pA} = \text{diagram } K_{ok} = \text{table}) \text{ correction factor } K_{ok}$$

	Mid-frequency band, Hz						
	125	250	500	1k	2k	4k	8k
EFD 200 (90°)	4	0	-6	-11	-16	-21	-21
EFD 250 (90°)	5	1	-5	-10	-15	-20	-20
EFD 40-20 (90°)	1	-2	0	-7	-14	-20	-24
EFD 50-25 (90°)	2	-1	1	-6	-13	-19	-23
EFD 60-30 (90°)	3	0	2	-5	-12	-18	-22
EFD 70-40 (90°)	5	2	4	-3	-10	-16	-20

Sound power level measured in accordance with ISO 3741 and ISO 5135 by Sveriges Provnings och Forskningsinstitut (the Swedish National Testing and Research Institute).



	$\varnothing A$
TA-450	200
TA-650	200
TA-1100	250



	A	B
TA-1500	400	200
TA-2000	500	250
TA-3000	600	300
TA-4500	700	400

## Cooling battery – water



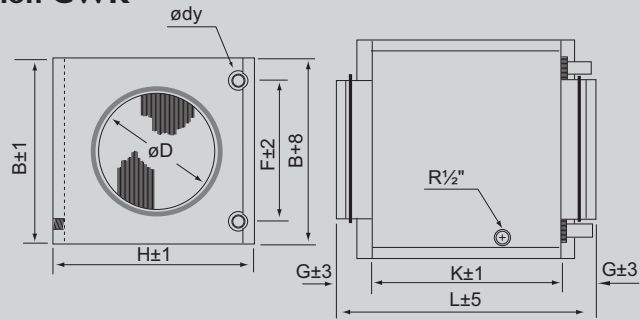
**CWK**, cold water-cooling battery for circular ducts. Casing of galvanised sheet steel with copper tubes and aluminium fins. Inspection covers for easy cleaning and maintenance. Connection sleeves with rubber seal. Max temp. 150°C and max working pressure 1.6 MPa (16 bar).

**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 separator DE as an accessory regardless of air direction. Recommended for air velocities from 3 m/s.

### Suitable cooling battery

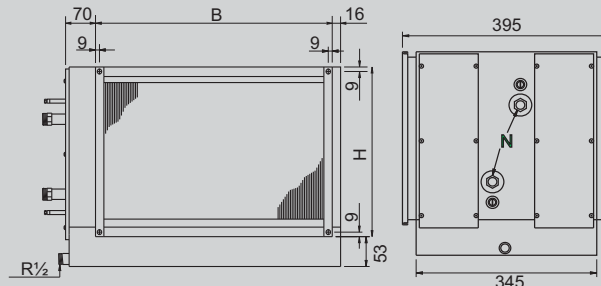
TA-450	CWK 200-3-2.5
TA-650	CWK 200-3-2.5
TA-1100	CWK 250-3-2.5
TA-1500	PGK 400x200-3-2.1
TA-2000	PGK 500x250-3-2.0
TA-3000	PGK 600x300-2-2.0
TA-4500	PGK 700x400-3-2.0

### Dimension CWK



	øD	B	H	ødy	F	G	K	L	kg
CWK 200-3-2.5	200	328	398	22	250	40	300	380	9,7
CWK 250-3-2.5	250	403	473	22	325	40	300	380	13.0

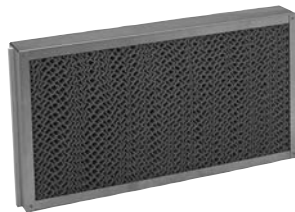
### Dimension PGK



	B	H	N	Droplet separator
PGK 400x200-3-2.1	438	238	R $\frac{3}{4}$	DE 40x20*
PGK 500x250-3-2.0	538	288	R $\frac{3}{4}$	DE 50x25*
PGK 600x300-2-2.0	638	338	R $\frac{3}{4}$	DE 60x30**
PGK 700x400-3-2.0	738	438	R $\frac{3}{4}$	DE 70x40**

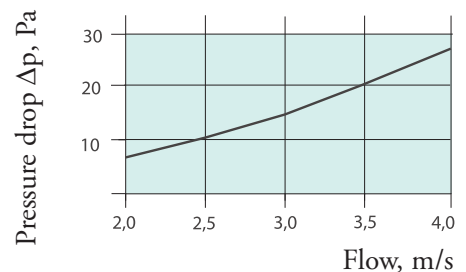
\* use 1 pcs DE

\*\* use 2 pcs DE



NB! Droplet separator DE must be ordered separately.

### Pressure drop DE



## Technical data CWK

CWK	Air flow	Air pressure drop	Water temperature 6/12°C			Capacity	Water flow	Water pressure drop
			Air before	Air before	Air after			
200-3-2.5	225	6	25	50	14.1	1.0	0.05	2
	225	6	30	45	15.3	1.6	0.06	5
	390	17	25	50	15.9	1.4	0.06	4
	390	17	30	45	17.3	2.3	0.09	9
	555	33	25	50	16.9	1.7	0.07	5
	555	33	30	45	18.4	3.1	0.12	15
250-3-2.5	360	6	25	50	14.2	1.6	0.06	2
	360	6	30	45	15.4	2.5	0.10	5
	630	18	25	50	16.0	2.2	0.09	4
	630	18	30	45	17.3	3.8	0.15	10
	900	34	25	50	17.0	2.7	0.11	6
	900	34	30	45	18.2	5.1	0.20	17
	<b>m³/h</b>	<b>Pa</b>	<b>°C</b>	<b>%RH</b>	<b>°C</b>	<b>kW</b>	<b>l/s</b>	<b>kPa</b>

## Technical data PGK

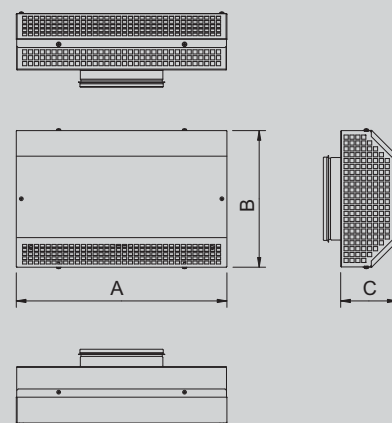
PGK	Air flow	Air Pressure drop	Water temperature 6/12°C			Capacity	Water flow	Water Pressure drop
			Air before	Air before	Air after			
400x200-3-2,0	576	31	25	50	17.0	1.53	0.06	1
	576	49	30	45	19.0	2.50	0.10	3
	864	66	25	50	18.4	1.89	0.08	2
	864	103	30	45	20.2	3.26	0.13	5
	1152	113	25	50	19.2	2.20	0.09	2
	1152	175	30	45	20.8	4.15	0.17	7
500x250-3-2,0	900	31	25	50	17.0	2.38	0.09	2
	900	49	30	45	18.6	4.27	0.17	5
	1350	66	25	50	18.2	3.02	0.12	3
	1350	103	30	45	19.4	6.16	0.25	9
	1800	113	25	50	18.9	3.61	0.14	4
	1800	175	30	45	19.8	8.34	0.33	15
600x300-3-2,0	1296	31	25	50	17.3	3.3	0.13	1
	1296	49	30	45	19.0	5.69	0.23	3
	1944	66	25	50	18.6	4.13	0.16	2
	1944	103	30	45	19.8	8.12	0.32	6
	2592	113	25	50	19.3	4.90	0.20	3
	2592	175	30	45	20.1	11.18	0.45	11
700x400-3-2,0	1920	47	25	50	17.1	5.02	0.20	1
	1920	74	30	45	18.1	8.66	0.35	2
	2880	91	25	50	18.5	6.20	0.25	1
	2880	142	30	45	18.8	12.94	0.52	4
	3840	142	25	50	19.3	7.26	0.29	2
	3840	222	30	45	19.0	18.41	0.73	8
	<b>m³/h</b>	<b>Pa</b>	<b>°C</b>	<b>%RH</b>	<b>°C</b>	<b>kW</b>	<b>l/s</b>	<b>kPa</b>

## Intake grid



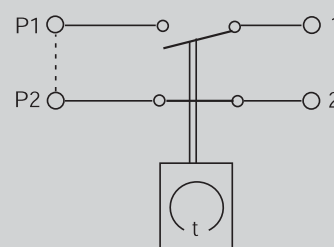
Manufactured from galvanised steel and powder painted in black. 6 screws on the front facilitate mounting and removing for cleaning.

## Dimensions ITA



ITA	A	B	C	Connection
200	502	325	135	ø200
250	602	352	135	ø250
40-20	502	325	135	400x200
50-25	602	352	135	500x250
60-30	702	402	165	600x300
70-40	802	502	165	700x400

## Wiring T 120



## Technical data

Voltage	230 V AC
Frequency	50 Hz
Maximum load	250 V, 10 A res., 2 A induc.
Connecting time	120 min
W x H x D	80 x 80 x 25 mm



## Timer

Timer with 120-minute operating time. Supplied with flange for fitting into equipment housing. Casing for surface mounting is available as an extra. One switch for closing and one for breaking circuits. A link can be used to produce a change-over function.

The timer makes a quiet ticking sound when connected.

### AQM – Valve motor, water valve

A microprocessor based actuator controlled by a 0...10 V signal from Corrigo. Supply voltage 24V AC. The actuator has automatic stroke adjustment.

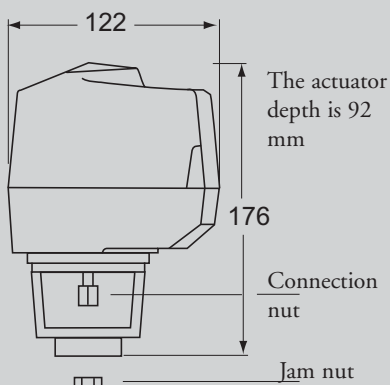


#### Technical data

Supply voltage	24 V AC
Control signal	0...10 V
Transformer size	6 VA
Stroke	20 mm
Stroke time	5 s/mm
Force	450 N
Ambient temp.	0...50°C
Storage temp.	-40...+60°C
Ambient humidity	5...95% RH
Cable connection	Screw terminals
Degree of protec.	IP54

This product conforms to the EMC standard CENELEC EN50081-1 och EN50082-1.

#### Dimensions AQM



NB! The actuator and the valve have an overlap of approx 15 mm when connected.

### STV/STR – Water valve/ heating water, 2/3-way

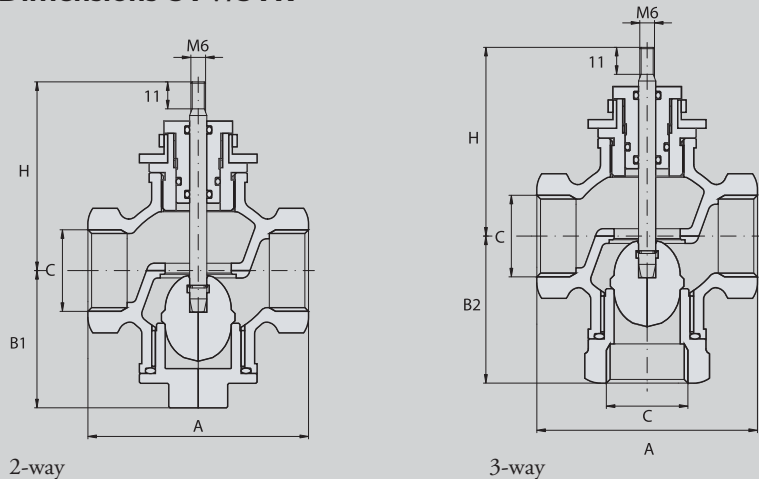
STV/STR is a 2 and 3-way control valve to control the hotwater to the heating battery. They are intended for use together with the AQM actuator.



#### Technical data

Max. difference pressure	1.6 Mpa.
Flow charac.	Square
Media temp.	-5...+185°C
Media	Hot, cold, glycol mixed water or steam
Connection	Metric female threaded
Stroke	15 mm
Max leakage	0.1 % av kv
Pressure rat.	PN16
Rangeability	50:1
Mat: Body	Rg5
Mat: Cone	Rg5
Stem	Stainless steel
Packing box	Self-adjusting teflon
* RG5 = gun metal SS 5204	

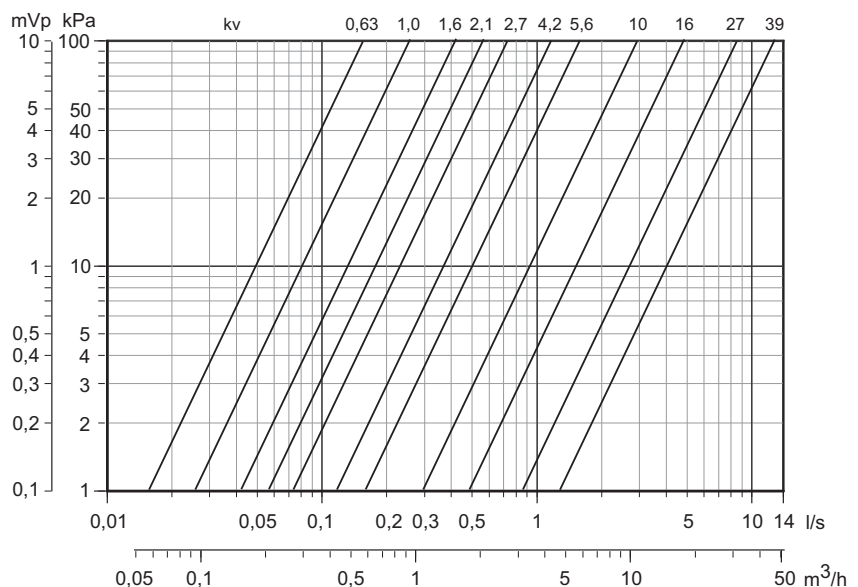
#### Dimensions STV/STR



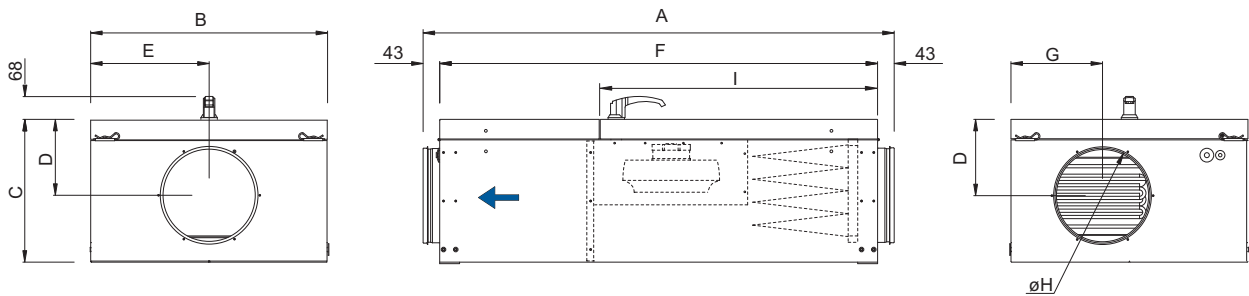
#### STV/STR

A	B1	B2	C	H	Weight
70	52	57	G½"	71	1.3 kg

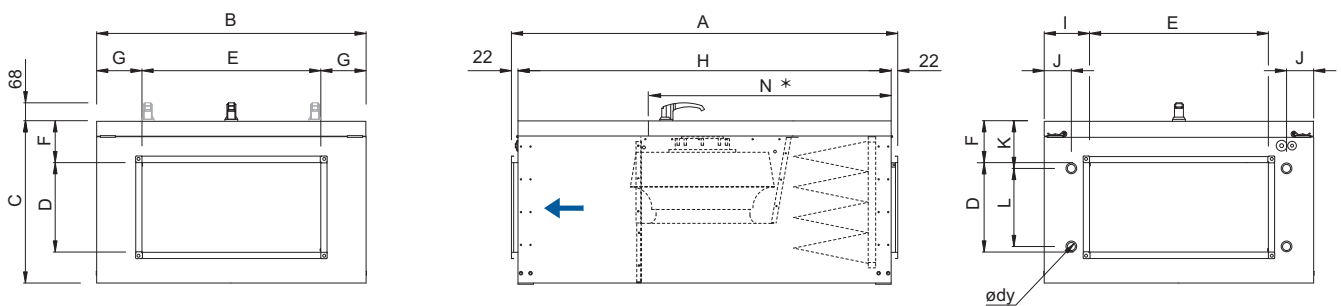
#### Pressure drop STV/STR



## Dimensions



	A	B	C	D	E	F	G	øH	I
TA-450EL	1125	500	354	203	250	1042	189	200	716
TA-650EL	1203	556	307	169	278	1116	182	200	702
TA-1100EL	1233	620	374	200	310	1146	240	250	731



	A	B	C	D	E	F	G	H	I	J	K	L	ødy	N
TA-1500EL	1190	750	374	200	400	105	175	1146	69	-	-	-	-	731
TA-1500HW	1190	750	374	200	400	105	175	1146	175	102	125	162	21mm	731
TA-2000EL	1190	850	374	250	500	73	175	1146	73	-	-	-	-	731
TA-2000HW	1190	850	374	250	500	73	175	1146	175	101	92	212	21mm	731
TA-3000HW	1296	904	545	300	600	141	152	1252	152	92	160	262	27mm	325
TA-4500HW	1346	1006	545	400	700	91	153	1302	153	92	110	362	34mm	320

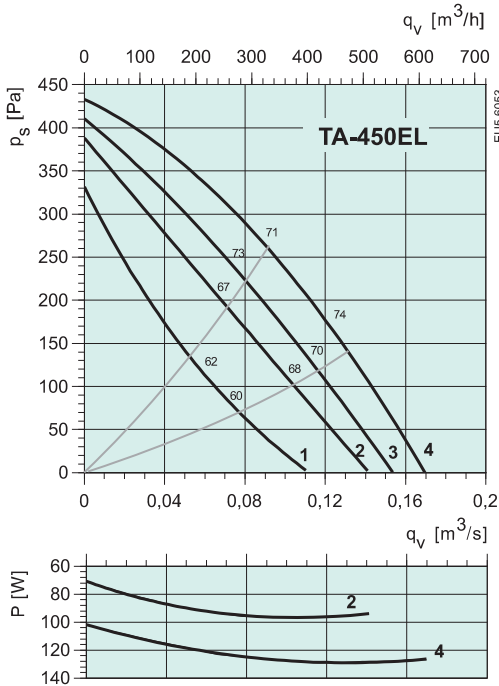
\* TA-3000HW and 4500HW have two handles on the door

## Technical data

TA		450EL	450EL	450EL	650EL	1100EL	1500EL
Voltage/Frequency	V/50 Hz	230	400	400	400	400	400
Phase	-	1	3	3	3	3	3
Input power, motors	W	130	130	130	230	325	544
Input power, heater battery	kW	3	3	6	5/8.3	8/13.3	12/20.3
Fuse	A	16	10	10	10/16	16/25	25/35
Weight	kg	46	46	46	55	67	82
Filter, supply air		EU5	EU5	EU5	EU5	EU5	EU5

TA		1500HW	2000EL	2000HW	3000HW	4500HW
Voltage/Frequency	V/50 Hz	230	400	400	400	400
Phase	-	1	3	3	3	3
Input power, motors	W	570	705	673	1084	1895
Input power, heater battery	kW	-	16/33.3	-	-	-
Fuse	A	10	35/63	10	10	10
Weight	kg	71	99	87	125	149
Filter, supply air		EU5	EU5	EU5	EU5	EU5

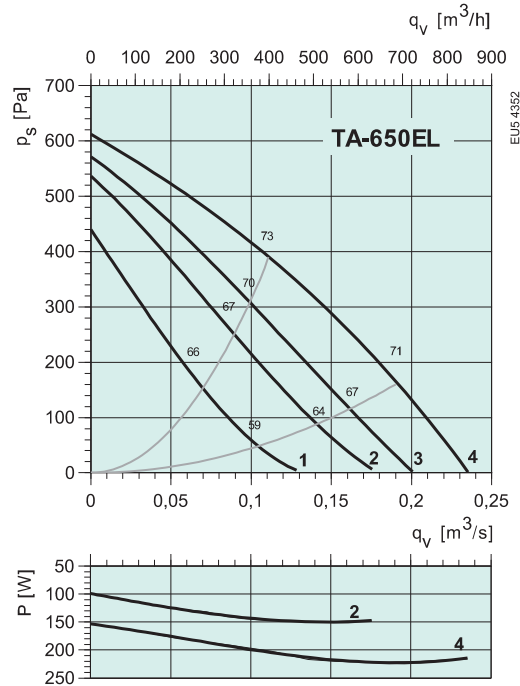
# Performance



TA-450EL

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	59	49	55	52	54	40	35	27	32
$L_{wA}$ Outlet	74	49	58	62	73	63	62	56	40
$L_{wA}$ Surrounding	51	24	37	41	9	44	40	37	23

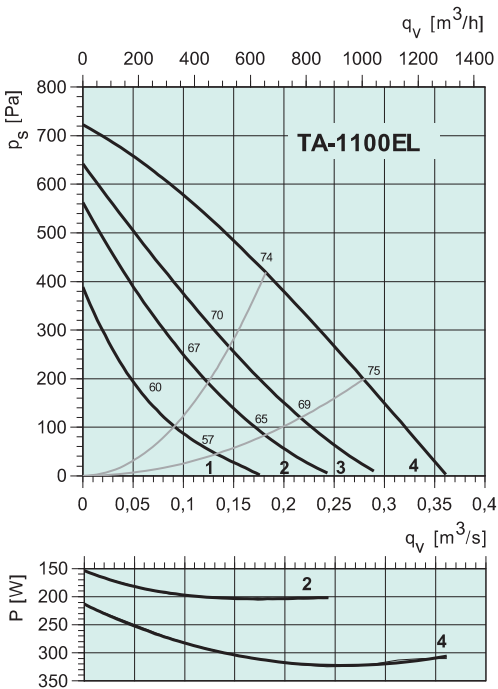
Measuring point:  $q_v = 0.13 \text{ m}^3/s$ ,  $p_s = 154 \text{ Pa}$



TA-650EL

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	63	44	61	58	54	44	47	44	38
$L_{wA}$ Outlet	73	49	60	67	70	58	61	58	53
$L_{wA}$ Surrounding	51	26	42	45	49	32	29	25	17

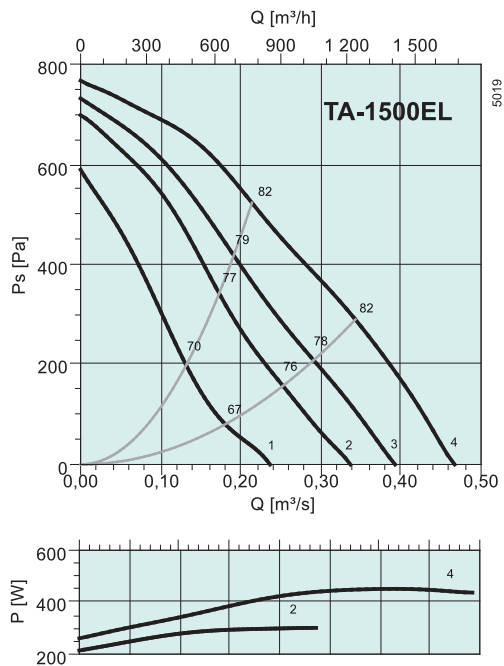
Measuring point:  $q_v = 0.11 \text{ m}^3/s$ ,  $p_s = 383 \text{ Pa}$



TA-1100EL

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	64	45	62	58	53	45	47	45	37
$L_{wA}$ Outlet	74	49	62	68	70	60	63	61	56
$L_{wA}$ Surrounding	49	23	41	45	46	32	34	29	19

Measuring point:  $q_v = 0.18 \text{ m}^3/s$ ,  $p_s = 421 \text{ Pa}$

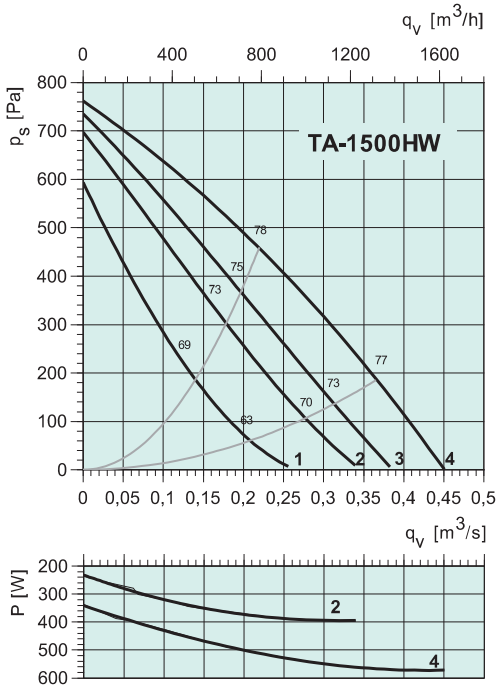


TA-1500EL

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	72	53	70	63	57	53	49	54	53
$L_{wA}$ Outlet	82	57	72	74	78	72	72	71	64
$L_{wA}$ Surrounding	67	39	60	60	60	56	57	57	55

Measuring point:  $q_v = 0.214 \text{ m}^3/s$ ,  $p_s = 523 \text{ Pa}$

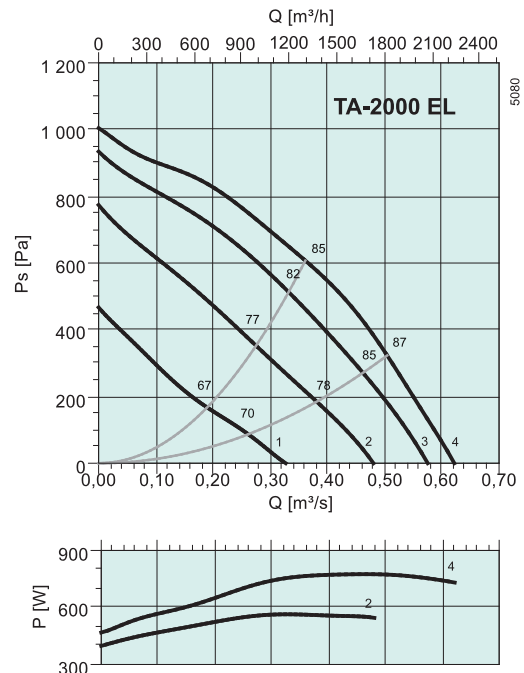
# Performance



TA-1500HW

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	72	55	70	65	59	55	54	60	54
$L_{wA}$ Outlet	78	56	70	71	73	66	67	65	59
$L_{wA}$ Surrounding	58	34	49	51	53	46	48	49	41

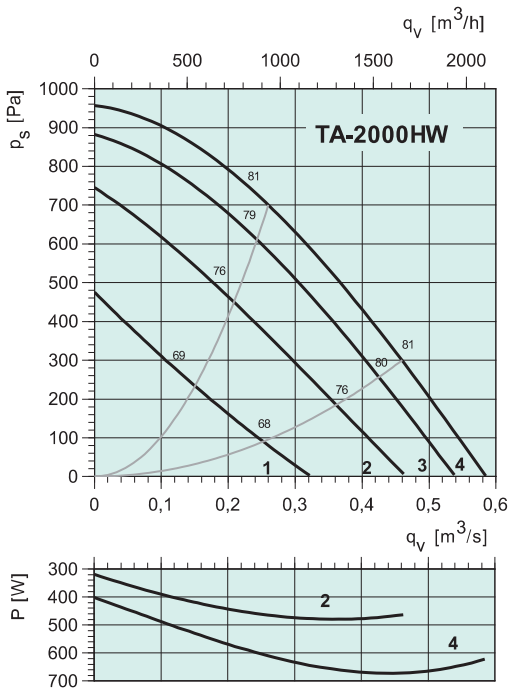
Measuring point:  $q_v = 0.22 m^3/s$ ,  $p_s = 456 Pa$



TA-2000EL

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	70	51	67	67	60	56	50	53	50
$L_{wA}$ Outlet	85	57	70	81	77	75	75	74	70
$L_{wA}$ Surrounding	65	37	57	63	54	49	52	54	51

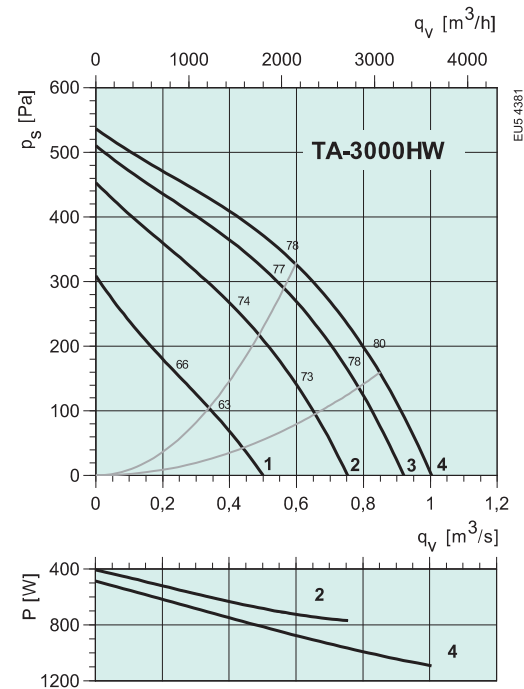
Measuring point:  $q_v = 0.36 m^3/s$ ,  $p_s = 607 Pa$



TA-2000HW

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	74	55	68	71	59	56	57	61	58
$L_{wA}$ Outlet	81	55	70	78	72	70	67	68	62
$L_{wA}$ Surrounding	64	36	51	63	50	38	37	39	32

Measuring point:  $q_v = 0.23 m^3/s$ ,  $p_s = 752 Pa$

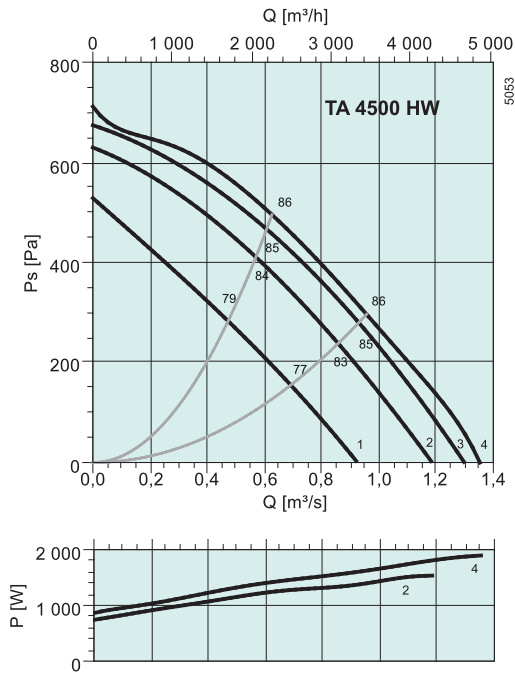


TA-3000HW

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	72	56	71	65	57	51	51	56	54
$L_{wA}$ Outlet	78	56	71	73	73	70	66	64	55
$L_{wA}$ Surrounding	64	41	57	62	53	46	52	50	46

Measuring point:  $q_v = 0.57 m^3/s$ ,  $p_s = 340 Pa$

# Performance



TA-4500HW

	Octave band, Hz								
	Tot	63	125	250	500	1k	2k	4k	8k
$L_{wA}$ Inlet	77	55	73	69	70	68	64	63	53
$L_{wA}$ Outlet	86	60	82	80	79	76	72	71	63
$L_{wA}$ Surrounding	73	45	70	69	58	51	50	53	52

Measuring point:  $q_v = 0.63 \text{ m}^3/\text{s}$ ,  $p_s = 495 \text{ Pa}$

# Electrical heaters

	TA-450EL			TA-450EL									
Capacity, kW	3	3	3	6	6	6							
Air flow, m <sup>3</sup> /h	240	320	500	310	380	500							
Outdoor temp	Supply air temp. °C			Supply air temp. °C									
	0°C	>30	28	18	>30	>30	>30						
	-10°C	28	18		>30	>30	26						
	-20°C	18			>30	27	16						
	-30°C				28	17							
	-40°C				18								
	TA-650EL			TA-650EL			TA-1100EL			TA-1100EL			
Capacity, kW	5	5	5	8,3	8,3	8,3	8	8	8	13,3	13,3	13,3	
Air flow, m <sup>3</sup> /h	400	500	700	430	530	700	650	850	1000	700	850	1080	
Outdoor temp	Supply air temp. °C			Supply air temp. °C			Supply air temp. °C			Supply air temp. °C			
	0°C	>30	30	21	>30	>30	>30	>30	28	24	>30	>30	>30
	-10°C	28	20		>30	>30	26	27	18		>30	>30	27
	-20°C	18			>30	27	16	17			>30	27	17
	-30°C				28	17					27	17	
	-40°C				18						17		
	TA-1500EL			TA-1500EL			TA-2000EL			TA-2000EL			
Capacity, kW	12	12	12	20,3	20,3	20,3	16	16	16	33,3	33,3	33,3	
Air flow, m <sup>3</sup> /h	950	1250	1500	1050	1300	1600	1250	1650	1950	1750	2000	2100	
Outdoor temp	Supply air temp. °C			Supply air temp. °C			Supply air temp. °C			Supply air temp. °C			
	0°C	>30	29	24	>30	>30	>30	>30	29	25	>30	>30	>30
	-10°C	28	19		>30	>30	28	28	19		>30	>30	>30
	-20°C	18			>30	27	18	18			>30	30	28
	-30°C				28	17					27	20	18
	-40°C				18						17		

Max supply air temperature = +30°C

# Water battery

		TA-1500				TA-2000			
Water temp.		60/40	70/50	80/60	90/70	60/40	70/50	80/60	90/70
Air flow	m <sup>3</sup> /h	1368	1368	1368	1368	1872	1872	1872	1872
<b>Out door temp. 0°C</b>									
Supply temp.	°C	19.8	25.1			21.5	27.0		
Water flow	l/s	0.1	0.1			0.2	0.2		
Pressure drop	kPa	2.9	4.3			2.6	3.8		
Capacity	kW	9.2	11.6			13.6	17.1		
<b>Out door temp. -10°C</b>									
Supply temp.	°C	14.7	20.0	25.2		16.6	22.1	27.6	
Water flow	l/s	0.1	0.2	0.2		0.2	0.2	0.3	
Pressure drop	kPa	4.3	5.9	7.7		3.8	5.1	6.6	
Capacity	kW	11.4	13.9	16.3		16.9	20.4	23.8	
<b>Out door temp. -20°C</b>									
Supply temp.	°C		14.8	20.1	25.4		17.2	22.7	28.1
Water flow	l/s		0.2	0.2	0.3		0.3	0.3	0.4
Pressure drop	kPa		7.7	9.7	11.7		6.7	8.3	10.0
Capacity	kW		16.2	18.6	21.1		23.6	27.1	30.6
<b>Out door temp. -30°C</b>									
Supply temp.	°C			15.0	20.3			17.8	23.3
Water flow	l/s			0.2	0.3			0.4	0.4
Pressure drop	kPa			11.9	14.1			10.2	12.0
Capacity	kW			20.9	23.3			30.3	33.8
<b>Out door temp. -40°C</b>									
Supply air temp.	°C				15.2				18.4
Water flow	l/s				0.3				0.4
Pressure drop	kPa				16.6				14.2
Capacity	kW				25.6				37.1

Max operating temperature 100°C at 16 bar

		TA-3000				TA-4500			
Water temp.		60/40	70/50	80/60	90/70	60/40	70/50	80/60	90/70
Air flow	m <sup>3</sup> /h	3060	3060	3060	3060	4788	4788	4788	4788
<b>Out door temp. 0°C</b>									
Supply temp.	°C	20.7	26.0			20.0	25.2		
Water flow	l/s	0.3	0.3			0.4	0.5		
Pressure drop	kPa	2.7	4.0			2.2	3.3		
Capacity	kW	21.4	27.0			32.4	41.0		
<b>Out door temp. -10°C</b>									
Supply temp.	°C	15.6	20.9	26.2		14.8	20.1	25.3	
Water flow	l/s	0.3	0.4	0.4		0,5	0.6	0.7	
Pressure drop	kPa	4.0	5.4	7.0		3.3	4.5	5.9	
Capacity	kW	26.5	32.1	37.6		40.3	48.8	57.4	
<b>Out door temp. -20°C</b>									
Supply temp.	°C		15.9	21.2	26.5		15.0	20.2	25.5
Water flow	l/s		0.4	0.5	0.6		0.7	0.8	0.9
Pressure drop	kPa		7.1	8.8	10.6		5.9	7.4	8.9
Capacity	kW		37.2	42.7	48.2		56.7	65.3	73.8
<b>Out door temp. -30°C</b>									
Supply temp.	°C			16.1	21.4			15.1	20.4
Water flow	l/s			0.6	0.6			0.9	1.0
Pressure drop	kPa			10.8	12.7			9.1	10.7
Capacity	kW			47.9	53.4			73.2	81.8
<b>Out door temp. -40°C</b>									
Supply temp.	°C				16.4				15.3
Water flow	l/s				0.7				1.1
Pressure drop	kPa				15.1				12.7
Capacity	kW				58.5				89.7

Max operating temperature 100°C at 16 bar