

**COMPACT VENTILATION UNITS WITH HEAT RECOVERY**  
**SupraBox COMFORT V**



# RoVent® 10 - Fan Selection Program

With our RoVent10 selection program for fans, a precise operating point selection for more than 2,900 fan models is enabled quickly and easily. Regular updates ensure that the software is always up to date. Please register RoVent10 after installation to be able to use the full range of functions.

## The Most Important Features in Brief:

- **EasyFind:** An easy introduction to the world of Rosenberg fans. Find the right fan for your needs, step by step.
- **DirectFind:** Allows you to search for a fan directly by entering the article number or fan type.
- **Product Documentation:** All required documentations for fans and accessories. For your planning, it is also available in the form of tender texts (DOC or TXT), which can be simply inserted into your planning program as free text without formatting. The character limit per line can be customized for the output.



RoVent10 is available free of charge at the following address:

[www.rovent.de](http://www.rovent.de)

A video tutorial to help with installation and registration can be found here:



<https://www.youtube.com/user/RosenbergGruppe>



# RoVent® 10 light - Online-Online Fan Selection Program

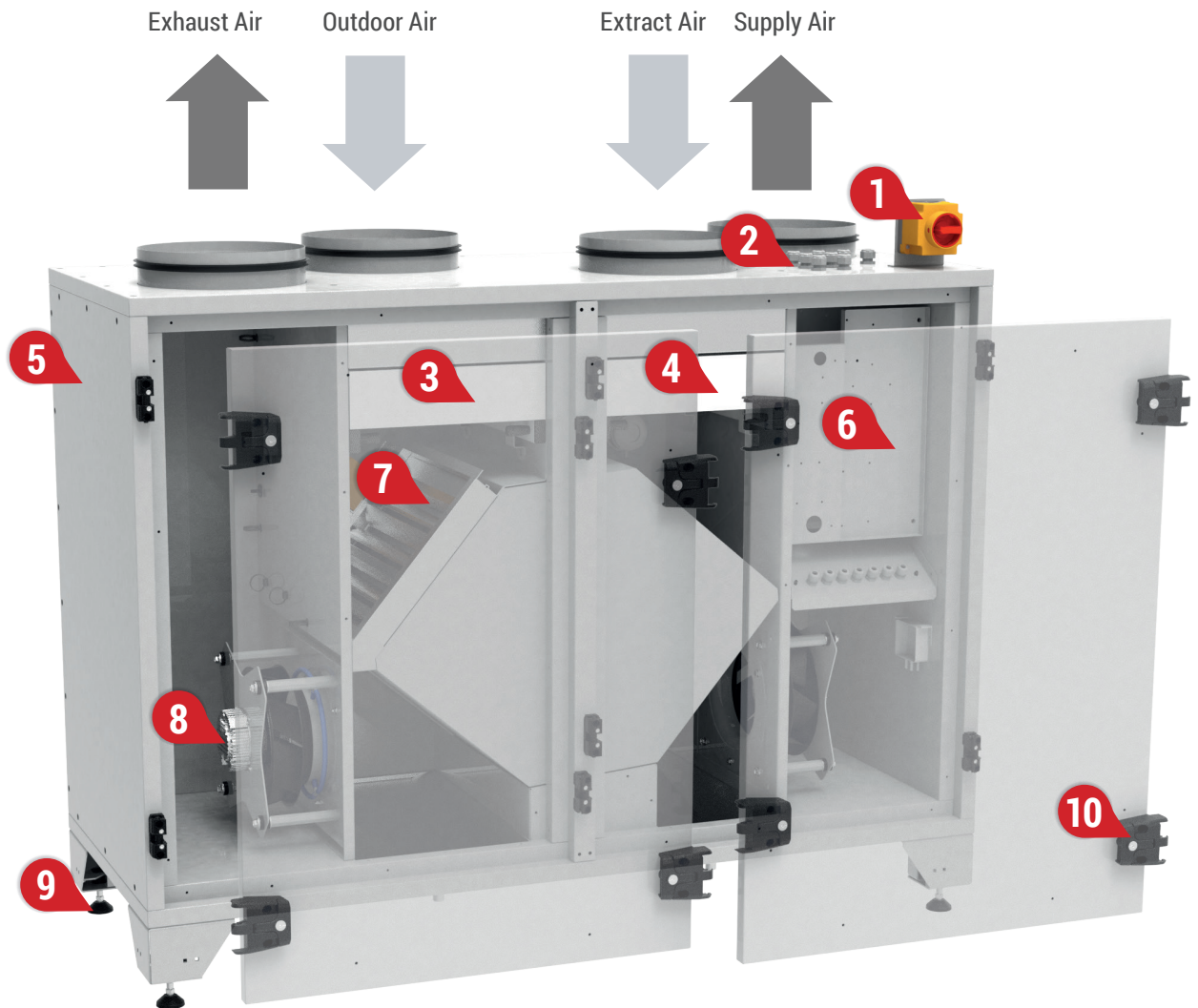
Alternatively, you can also use the online fan selection program to select our fans. The range of functions is somewhat smaller. No registration is required.

Simply give it a try: [www.rovent10.online](http://www.rovent10.online)

# SupraBOX<sup>®</sup>

## COMFORT

VERTICAL

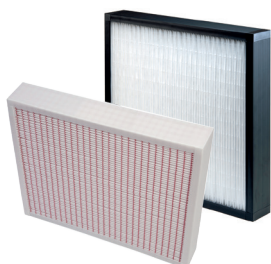


- |  |   |
|--|---|
| <b>1</b> Main device switch                                      | <b>6</b> Integrated control (Plug&Play)   |
| <b>2</b> Cable bushings for easy connection of field devices     | <b>7</b> Counterflow plate heat exchanger with high efficiency and counter-rotating bypass damper |
| <b>3</b> Outdoor air panel filter ISO ePM1 ≥ 50 % (F7)           | <b>8</b> Energy-efficient fans from our own production  |
| <b>4</b> Extract air panel filter ISO ePM10 ≥ 50 % (M5)          | <b>9</b> Adjustable threaded feet for quick compensation of unevenness at the installation site   |
| <b>5</b> Double-shelled, frameless housing with 60 mm insulation | <b>10</b> Maintenance doors with flexible hinges (left / right/ removable)                        |



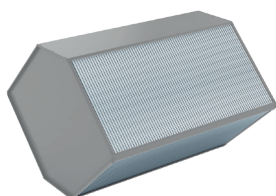
### Housing

The frameless housing with double-shelled side walls made of 1 mm galvanised sheet steel has 60 mm insulation and is coil-coated (RAL 7035) inside and out. The built-in mineral wool used has a density of 33 kg/m<sup>3</sup>, is non-combustible and fulfills fire protection class A1 according to DIN 4102. The mechanical and thermal features comply with DIN EN 1886 [L1; D1; T2/TB2]. The devices are manufactured in accordance with VDI 6022.



### Filter

For the supply air, fine dust filters of filter class ISO ePM1 ≥ 50 % (formerly F7) and for the extract air, filters of filter class ISO ePM10 ≥ 50 % (formerly M5) are used as standard. Quick-release rails allow fast and easy filter change without tools.



### Heat Recovery (Humidity Recovery on Request)

Highly efficient counterflow heat exchangers with over 90% efficiency are used for heat recovery. Complete separation of supply and exhaust air without odor transfer is guaranteed.



### Fans

Fans in compact design with EC motors from our own production enable quiet and energy-efficient operation of the entire series at full and partial load. Protection class IP54.



### Control

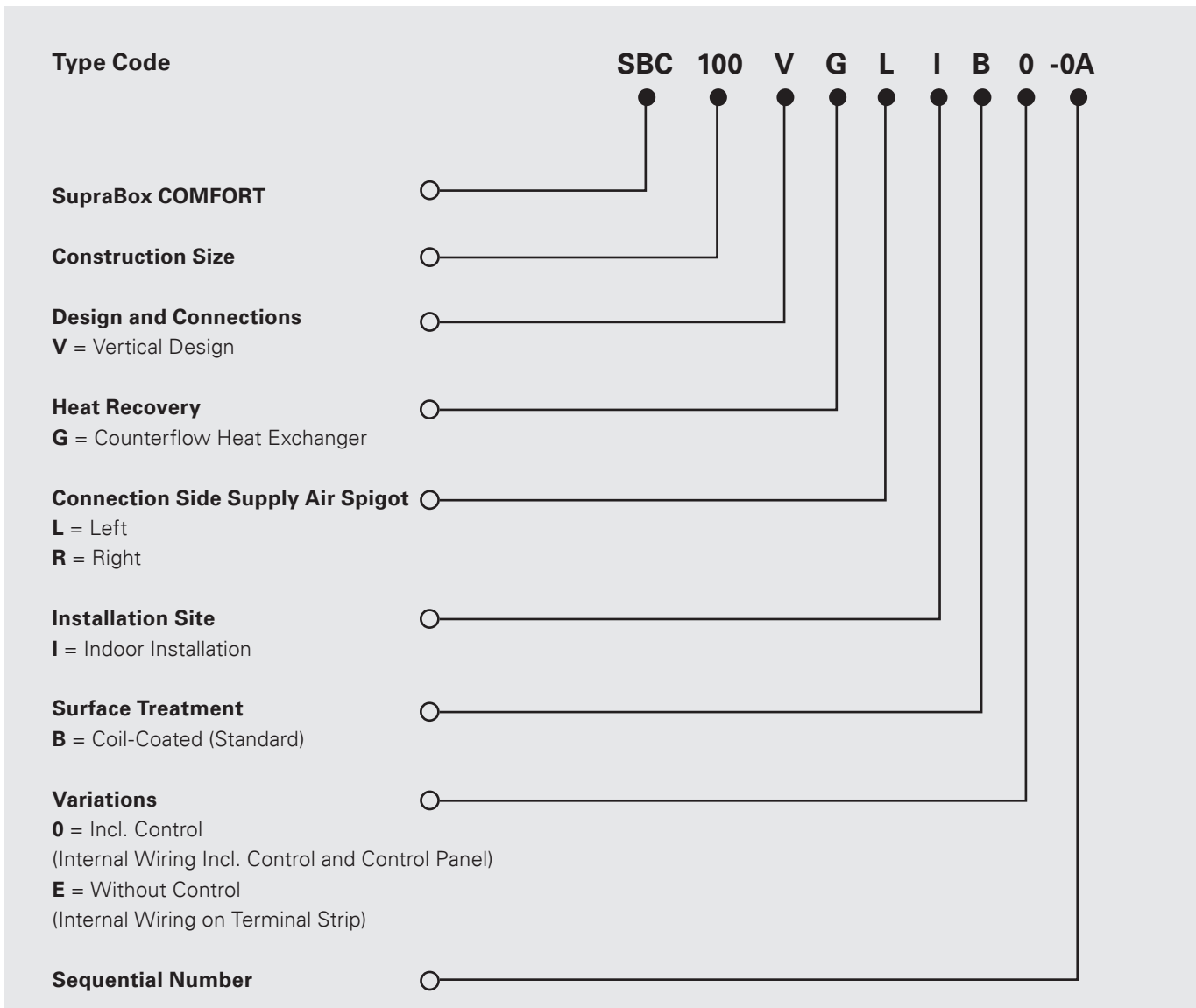
The compact ventilation units have an integrated control system as standard. All internal unit components are already pre-wired. With an optionally available heater or cooler, further temperature control is possible in addition to heat recovery. A large number of control functions are integrated in the software and can be activated subsequently if required. The control panel for adjustment is included as standard. As an option, the units are also available without control.

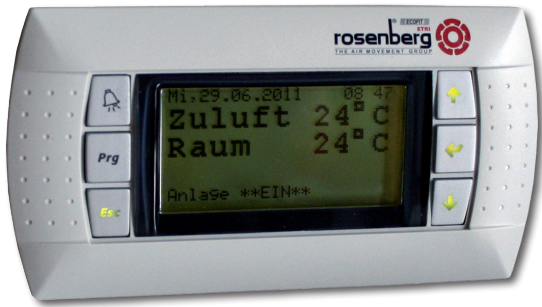


### Accessories

A wide range of mechanical and electrical accessories are available for the SupraBox COMFORT units. The right room climate can therefore be reached in the blink of an eye.

3 Construction Sizes – 12 Variants							
Type	Article Number	Page	Assembly	Connections	Dimensions (L x H x T) mm	Air Volume m <sup>3</sup> /h	Static Pressure Pa
<b>SBC 1000 V</b>	Supply Air RIGHT: SBC100VGRIB0-0A SBC100VGRIBE-0A	8	Floor-Standing Unit	Vertical	1,560 x 1,195 x 640	1,000	100-200
	Supply Air LEFT: SBC100VGLIB0-0A SBC100VGLIBE-0A						
<b>SBC 1600 V</b>	Supply Air RIGHT: SBC160VGRIB0-0A SBC160VGRIBE-0A	10	Floor-Standing unit	Vertical	2,070 x 1,415 x 700	1,600	100-250
	Supply Air LEFT: SBC160VGLIB0-0A SBC160VGLIBE-0A						
<b>SBC 2000 V</b>	Supply Air RIGHT: SBC200VGRIB0-0A SBC200VGRIBE-0A	12	Floor-Standing unit	Vertical	2,310 x 1,540 x 760	2,000	200-500
	Supply Air LEFT: SBC200VGLIB0-0A SBC200VGLIBE-0A						





**Control**

The control units were specially designed for operating the SupraBox COMFORT compact ventilation units and provide optimum convenience and safety in the operation, monitoring and servicing of the system. Protection class IP40.

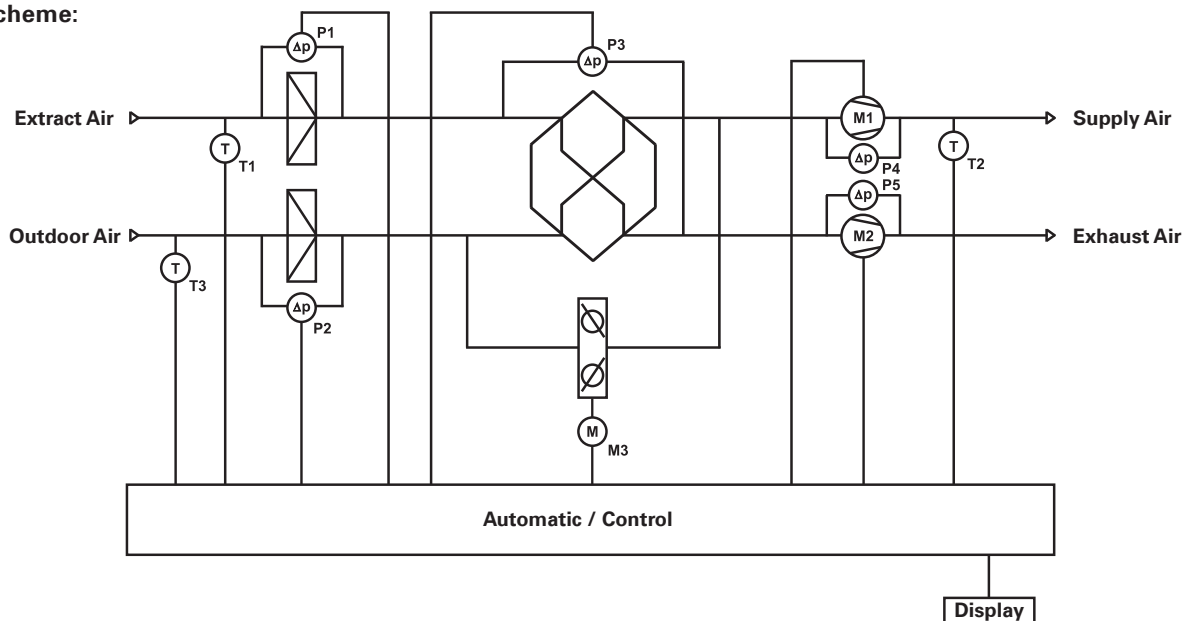
**Functions and Features:**

- Simple commissioning and function setting via the control unit
- Built-in clock with weekly program
- Various control functions can be activated subsequently
- Temperature control selectable according to room temperature (additional sensor), supply air temperature or extract air temperature
- 3 different user levels in the control unit (daily user, service technician and commissioning)
- 10 m connection cable (loose) for control panel included
- Menu navigation in German or English

**Note:** All settings can be adjusted on one of the three user levels. Only the fan level, setpoint temperature, weekly program and menu language can be changed without entering the password. As a result, the everyday operation is clear and user-friendly. When using accessories for thermal air treatment, the control enables the connection of safety sensors:

- Contact thermostat for hot water coil
- Alarm input for electric heater
- Optional contact temperature sensor for hot water coil

**Control Scheme:**



T1 Extract air temperature sensor	M1 Motorized supply air fan	P1 Filter pressure sensor extract air	P4 Supply air fan pressure sensor for air volume calculation
T2 Supply air temperature sensor	M2 Motorized exhaust air fan	P2 Filter pressure sensor outdoor air	P5 Exhaust air fan pressure sensor for air volume calculation
T3 Outdoor air temperature sensor	M3 Bypass damper actuator	P3 HR Pressure sensor for icing	

**Overview of the Control Functions:**

All the control functions listed in the table on the following page are available as standard in the program (column: always available). To use the individual functions, it is necessary to connect the corresponding accessories (column: accessories

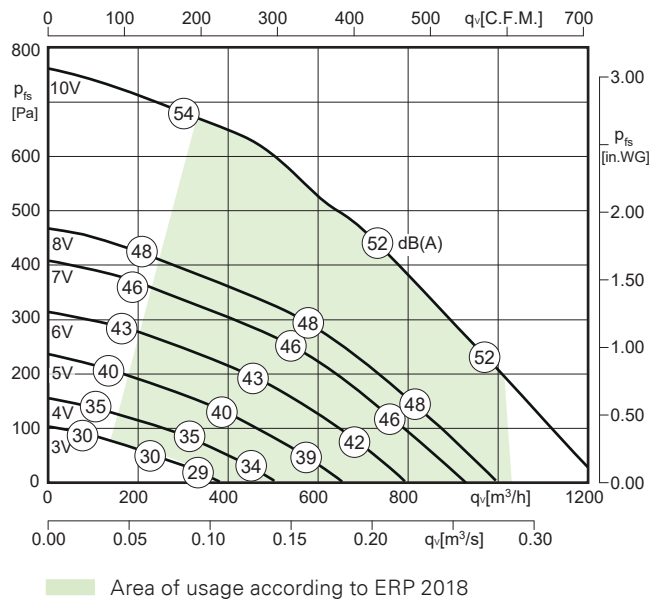
required) and/or to enable or set the function on the control panel (column: setting required).

Control Functions				
Function	Description	Always Available	Setting Required	Accessories Required
<b>Filter Monitor</b>	Continuous pressure sensors for monitoring the pressure drop across the filter. If the pressure drop exceeds the set value, an alarm is displayed.	●		
<b>Bypass</b>	If the supply air is continuously bypassed, the heat recovery is adjusted, so that the supply air temperature is maintained.	●		
<b>Temperature Sensors</b>	In the extract air connection for measuring the extract air temperature	●		
	In the outdoor air connection for measuring the outdoor air temperature	●		
	In the supply air connection for measuring the supply air temperature	●		
	Duct temperature sensor			● (Temperature Sensor)
	Room temperature sensor			● (Temperature Sensor)
	Outdoor temperature sensor			● (Temperature Sensor)
<b>Motor Protection</b>	In the event of overheating, overcurrent and blockage of the motor, an alarm is triggered and the system is switched off	●		
<b>Smoke Detector Input</b>	Smoke detector, fire thermostat or alarm signal from a fire alarm panel is connectable	●		● (Smoke Detector)
<b>Shut-off Damper Outdoor Air</b>	Damper mounted in the outdoor air duct – closes when the system stops – 24V Available with or without return spring	●		● (Damper with Actuator)
<b>Shut-off Damper Exhaust Air</b>	Damper mounted in the exhaust air duct – closes when the system stops – 24V Available with or without return spring	●		● (Damper with Actuator)
<b>Temperature Control</b>	Control of the supply air temperature	●		
	Control of the room temperature		●	● (Room Temperature Sensor)
	Control of the extract air temperature		●	
<b>Fan Control</b>	Air volume control	●		
	Speed control		●	
	Pressure control		●	● (Pressure Sensor)
	Demand-controlled according to temperature		●	
	Demand-controlled according to 0-10V		●	● (External Signal)
<b>Control Unit</b>	Operating unit with user, service and technician level	●		
<b>Timer</b>	Weekly program for setting the desired switching points with specifications for temperature and fan intensity		●	
<b>Cooler Control</b>	Command signal to external cooling unit (230V / 24V, release, 0-10V) or PKW system		●	● (Cooler PKW)
<b>Cooling Recovery</b>	With cool indoor air and warm outdoor air, the bypass remains closed in summer	●		
<b>Anti-Icing Protection</b>	Pressure sensors for monitoring the pressure drop via the heat recovery unit – if the pressure drop exceeds the set value, the defrosting process is stopped	●	●	
<b>Alarm Relay</b>	Collective fault signal for external alarm	●		
<b>Heater Control</b>	Command signal for external PWW Post-heating coil (230V / 24V, release and 0-10V)		●	● (Heater PWW)
	Command signal for external electric heater (0-10V)		●	● (Heater EEH)
<b>External Switch-off</b>	Input for external, potential-free contact for external ON / OFF	●		● (External Switching Contact)
<b>Overdrive</b>	Fan overdrive via external, potential-free contact	●		● (External Switching Contact)
<b>Support Mode</b>	When room temperature control is set, the support mode prevents excessive cooling or overheating of the regulated room		●	● (Room Temperature Sensor)
<b>Night-Ventilation</b>	If the temperature conditions permit in summer, the room is cooled at night by cool outdoor air		●	● (Room Temperature Sensor and Outdoor Temperature Sensor)
<b>Preheating</b>	Release signal for 1-stage electric preheater		●	● (Preheating)
<b>Communication</b>	Integration into a network on Ethernet TCP/IP		●	● (BACnet Card)
	Pressure control	●	●	

## Device Illustration



## Air Performance:



### Technical Data: SupraBox COMFORT 1000 V

#### Nominal Operating Point

Air Volume $V_{nom}$	1,000 m <sup>3</sup> /h
Ext. Pressure Increase	200 Pa

#### Fans

Voltage	230 V / 50 Hz
Max. Current Consumption	2.70 A (2 x 1.35 A)
Speed of Rotation	3,190 1/min
Power Consumption	2 x 300 W
Performance Class	SFP 3
Protection Class	IP54
Max. Conveying Temperature	+ 40 °C

#### Filter

Outdoor Air	ISO ePM1 ≥ 50 % (F7)
Extract Air	ISO ePM10 ≥ 50 % (M5)
Dimensions	348 x 518 x 96 mm

#### Heat Recovery

Heat Exchanger	Cross-counterflow
Bypass	Counter-rotating
Efficiency	Up to 92% (with condensation)
Class	H1
(Further information from p. 22)	

#### Dimensions (L x H x T)

Weight incl. Control	210 kg
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#### Connections

Pipe Connections	Vertical
Diameter	280 mm
Nominal Air Velocity in the Spigot	4.5 m/s

#### Condensate Drain

Plastic pipe included in the scope of delivery
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### Article Number

#### Incl. Control

SBC 1000 V (RIGHT)	SBC100VGRIB0-0A
SBC 1000 V (LEFT)	SBC100VGLIB0-0A

#### Without Control

SBC 1000 V (RIGHT)	SBC100VGRIBE-0A
SBC 1000 V (LEFT)	SBC100VGLIBE-0A

## Sound Power Level:

The sound data specified in the air performance curve are the A-weighted casing sound power level  $L_{wA(cas)}$  in dB(A).

Suction-side sound power level  $L_{wA(in)} = L_{wA(cas)} + 10$  dB

Pressure-side sound power level  $L_{wA(out)} = L_{wA(cas)} + 21$  dB

Calculation:

$L_{wA(in)}$  per octave:  $L_{wA(in,Oct)} = L_{wA(in)} + \text{correction value (table row } L_{wA(in)})$

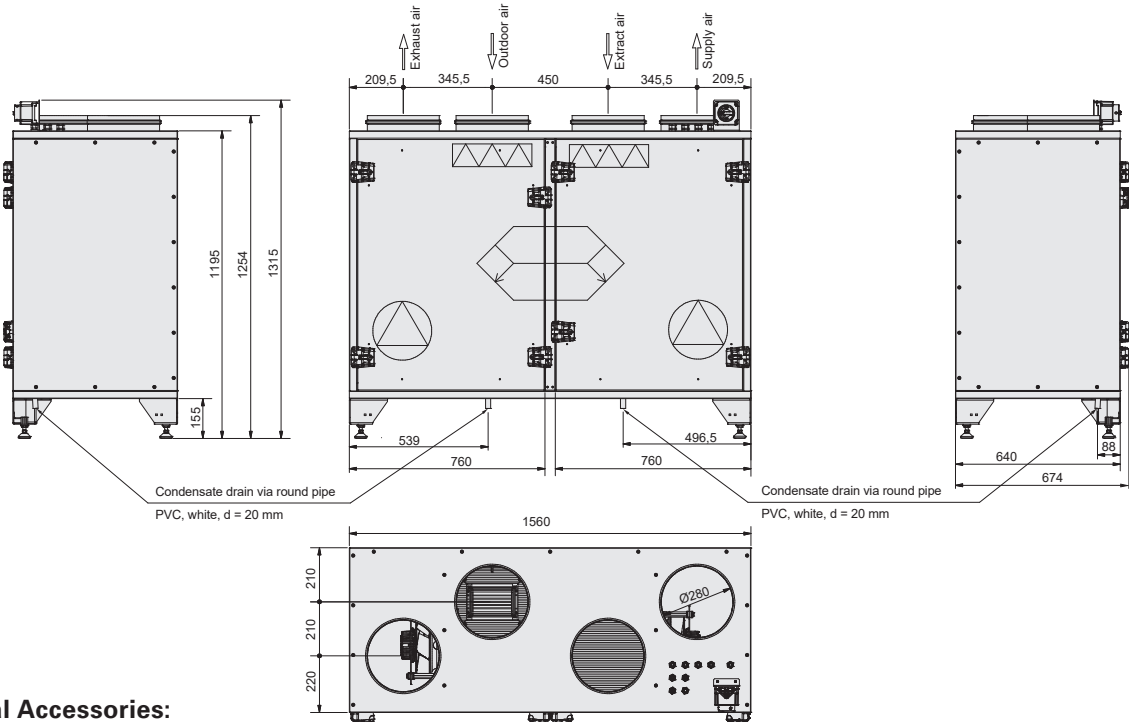
$L_{wA(out)}$  per octave:  $L_{wA(out,Oct)} = L_{wA(out)} + \text{correction value (table row } L_{wA(out)})$

Correction Values: $\Delta L_{woct}$ [dB]	fM [Hz]						
	125	250	500	1K	2K	4K	8K
$L_{wA(in)}$ [dB(A)] Suction-side (Outdoor air / extract air)	-10	-4	-6	-7	-14	-25	-37
$L_{wA(out)}$ [dB(A)] Pressure-side (Supply air / exhaust air)	-23	-7	-6	-6	-6	-13	-21
$L_{wA(cas)}$ [dB(A)] Housing Radiation	-5	-5	-9	-10	-11	-18	-25

**Note:** A detailed calculation example can be found on Page 26



**Dimensions:** All dimensions in mm. The drawing shows the version with the supply air spigot on the RIGHT.



### Mechanical Accessories:

ELS - Flexible Connection (set of 4), Installation Length 260 mm, DN 280	ELSS00-0280S	Page 14
ASK - Shut-off Damper, incl. Actuator, DN 280	ASK001-0280N	Page 14
ASK - Shut-off Damper, incl. Actuator (Spring Return), DN 280	ASK001-0280F	Page 14
RSD - Pipe Silencer, DN 280	F13-28000	Page 14
PTC - Electric Preheater, 2.4 kW, 1~230 V, DN 280	G92-28PTC	Page 15
ENHR - Electric Post-Heater, 2.7 kW, Stepless, 1~230 V, DN 315	G95-31527	Page 16
ENHR - Electric Post-Heater, 5.0 kW, Stepless, 2~400 V, DN 315	G95-31550	Page 16
PWW - Post-Heating Coil 2RR, incl. Anti-Freeze Thermostat, G 3/4", DN 280	G90-4642282L-H	Page 17
PWW - Post-Heating Coil 4RR, incl. Anti-Freeze Thermostat, G 3/4", DN 280	G90-4642284L-H	Page 17
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Left, G 1", DN 280	G91-4642286L-H	Page 18
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Right, G 1", DN 280	G91-4642286R-H	Page 18
EFF7 - Outdoor Air Filter, ISO ePM1 ≥ 50 % (F7), 348 x 518 x 96 mm	FPES100-0150V3	Page 25
EFM5 - Extract Air Filter, ISO ePM10 ≥ 50 % (M5), 348 x 518 x 96 mm	FPES100-1050V3	Page 25

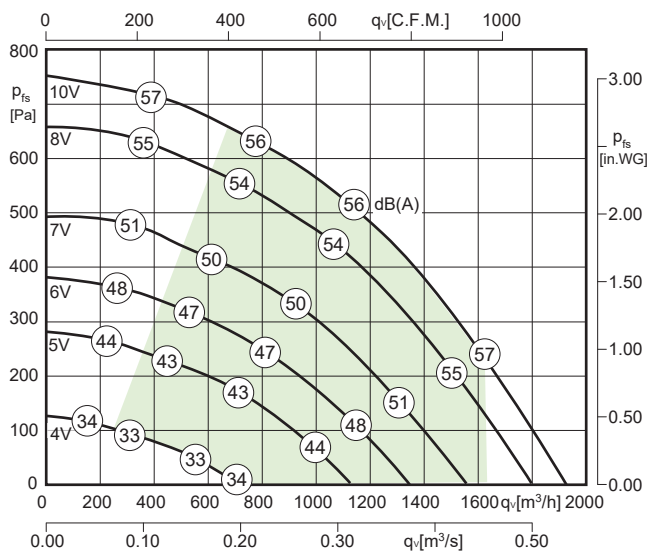
### Control Accessories:

KOM - BACNet-Card Network Integration Ethernet TCP/IP	H42-00014	Page 20
ALF - Contact Temperature Sensor	H42-09917	Page 20
RTF - Room Temperature Sensor	H42-09902	Page 21
ATF - Outdoor Temperature Sensor	H42-09914	Page 21
KTF - Duct Temperature Sensor	H42-09926	Page 21
LQF-CO2 - Air Quality Sensor	H42-09930	Page 21
PUA10 - Differential Pressure Sensor	H40-00103	Page 21
HG120 - Hygrostat	H42-09922	Page 21
KRM-X24 - Duct Smoke Detector – 24 V AC/DC – IP65 – Standard Version	H42-09948	Page 21
KRM-DZ - Duct Smoke Detector – 24 V AC/DC – IP65 – DiBt-Approval	H42-09948-DZ	Page 21
KRM-X230 - Duct Smoke Detector– 230 V AC – IP65	H42-09949	Page 21
KS-KRM - Mounting Bracket for Duct Smoke Detectors on Ducts	H42-09937	Page 21

## Device Illustration



## Air Performance:



Area of usage according to ERP 2018

### Technical Data: SupraBox COMFORT 1600 V

<b>Nominal Operating Point</b>	
Air Volume $V_{nom}$	1,600 m <sup>3</sup> /h
Ext. Pressure Increase	200 Pa
<b>Fans</b>	
Voltage	230 V / 50 Hz
Max. Current Consumption	4.1 A (2 x 2.05 A)
Speed of Rotation	2,760 1/min
Power Consumption	2 x 420 W
Performance Class	SFP 2
Protection Class	IP54
Max. Conveying Temperature	+ 40 °C
<b>Filter</b>	
Outdoor Air	ISO ePM1 ≥ 50 % (F7)
Extract Air	ISO ePM10 ≥ 50 % (M5)
Dimensions	488 x 578 x 96 mm
<b>Heat Recovery</b>	
Heat Exchanger	Cross Counterflow
Bypass	Counter-rotating
Efficiency	Up to 92% (with condensation)
Class	H1
(Further information from p. 22)	
<b>Dimensions (L x H x T)</b>	2,070 x 1,415 x 700 mm
Weight incl. Control	315 kg
<b>Connections</b>	
Pipe Connections	Vertical
Diameter	355 mm
Nominal Air Velocity in the Spigot	4.5 m/s
<b>Condensate Drain</b>	Plastic pipe included in the scope of delivery

### Article Number

<b>Incl. Control</b>	
SBC 1600 V (RIGHT)	SBC160VGRIB0-0A
SBC 1600 V (LEFT)	SBC160VGLIB0-0A
<b>Without Control</b>	
SBC 1600 V (RIGHT)	SBC160VGRIBE-0A
SBC 1600 V (LEFT)	SBC160VGLIBE-0A

## Sound Power Level:

The sound data specified in the air performance curve are the A-weighted casing sound power level  $L_{wA(cas)}$  in dB(A).

Suction-side sound power level  $L_{wA(in)} = L_{wA(cas)} + 3$  dB

Pressure-side sound power level  $L_{wA(out)} = L_{wA(cas)} + 20$  dB

Calculation:

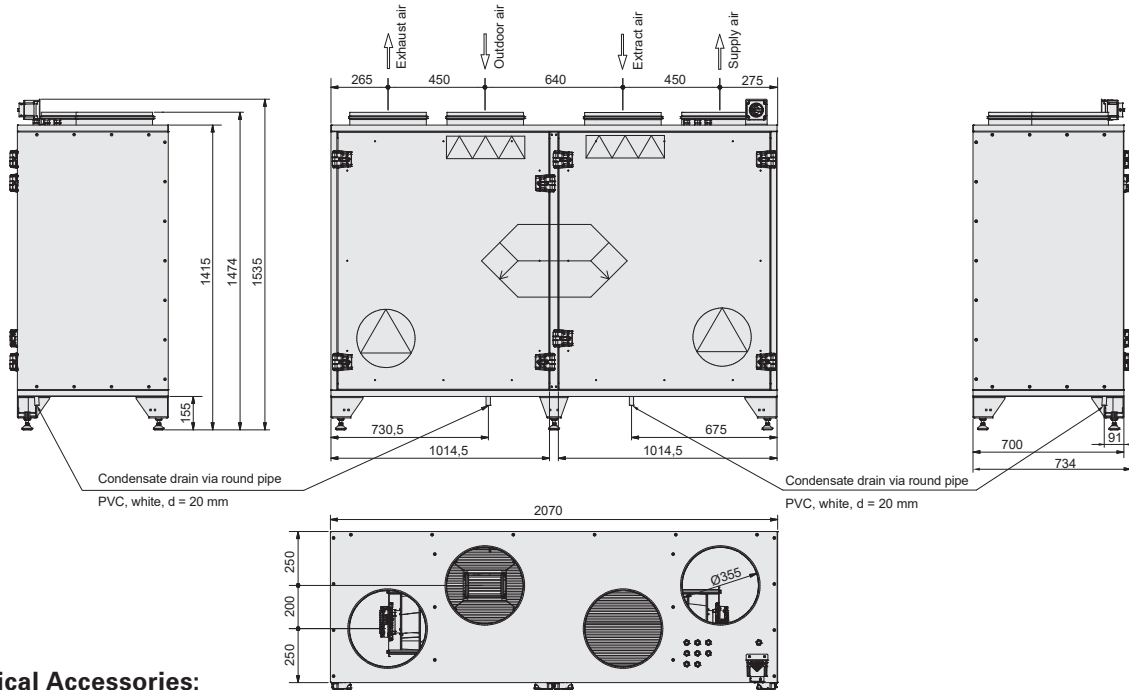
$L_{wA(in)}$  per octave:  $L_{wA(in,oct)} = L_{wA(in)} + \text{correction value (table row } L_{wA(in)})$

$L_{wA(out)}$  per octave:  $L_{wA(out,oct)} = L_{wA(out)} + \text{correction value (table row } L_{wA(out)})$

Correction Values: $\Delta L_{w,oct}$ [dB]	fM [Hz]						
	125	250	500	1K	2K	4K	8K
$L_{wA(in)}$ [dB(A)] Suction-side (Outdoor air / extract air)	-15	-5	-5	-7	-10	-17	-32
$L_{wA(out)}$ [dB(A)] Pressure-side (Supply air / exhaust air)	-27	-4	-7	-7	-8	-15	-23
$L_{wA(cas)}$ [dB(A)] Housing Radiation	-7	-4	-7	-12	-14	-17	-26

**Note:** A detailed calculation example can be found on page 26

**Dimensions:** All dimensions in mm. The drawing shows the version with the supply air spigot on the RIGHT



**Mechanical Accessories:**

ELS - Flexible Connection (set of 4), Installation Length 260 mm, DN 355	ELSS00-0355S	Page 14
ASK - Shut-off Damper, incl. Actuator, DN 355	ASK001-0355N	Page 14
ASK - Shut-off Damper, incl. Actuator (Spring Return), DN 355	ASK001-0355F	
RSD - Pipe Silencer, DN 355	F13-35500	Page 14
EVHR - Electric Preheater, 6.0 kW, 2~400 V, DN 355	G96-35560	Page 15
ENHR - Electric Post-Heater, 3.0 kW, Stepless, 1~230 V, DN 355	G95-35530	Page 16
ENHR - Electric Post-Heater, 5.0 kW, Stepless, 2~400 V, DN 355	G95-35550	
ENHR - Electric Post-Heater, 9.0 kW, Stepless, 3~400 V, DN 355	G95-35590	
PWW - Post-Heating Coil 2RR, incl. Anti-Freeze Thermostat, G 3/4", DN 355	G90-6157352L-H	Page 17
PWW - Post-Heating Coil 4RR, incl. Anti-Freeze Thermostat, G 3/4", DN 355	G90-6157354L-H	
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Left, G 1", DN 355	G91-6157356L-H	Page 18
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Right, G 1", DN 355	G91-6157356R-H	
EFF7 - Outdoor Air Filter, ISO ePM1 ≥ 50 % (F7), 488 x 578 x 96 mm	FPES160-0150V3	Page 25
EFM5 - Extract Air Filter, ISO ePM10 ≥ 50 % (M5), 488 x 578 x 96 mm	FPES160-1050V3	

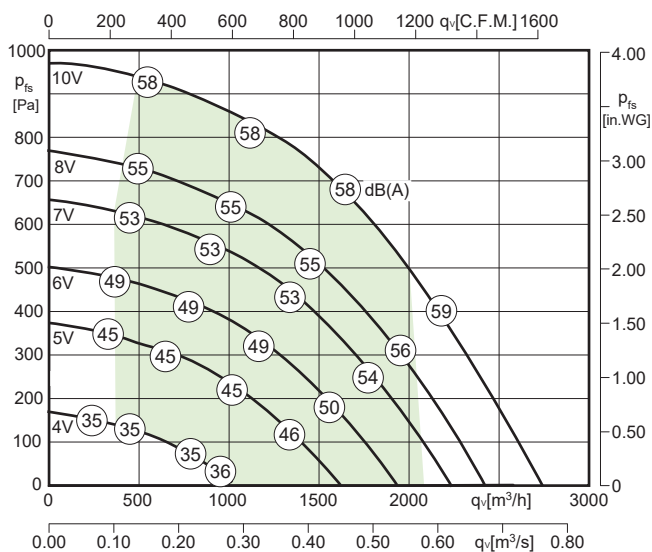
**Control Accessories:**

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ALF - Contact Temperature Sensor	H42-09917	Page 20
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KRM-X24 - Duct Smoke Detector – 24 V AC/DC – IP65 – Standard Version	H42-09948	Page 21
KRM-DZ - Duct Smoke Detector – 24 V AC/DC – IP65 – DiBt-Approval	H42-09948-DZ	Page 21
KRM-X230 - Duct Smoke Detector – 230 V AC – IP65	H42-09949	Page 21
KS-KRM - Mounting Bracket for Duct Smoke Detectors on Ducts	H42-09937	Page 21

## Device Illustration



## Air Performance:



Area of usage according to ERP 2018

### Technical Data: SupraBox COMFORT 2000 V

#### Nominal Operating Point

Air Volume $V_{nom}$	2,000 m <sup>3</sup> /h
Ext. Pressure Increase	200 Pa

#### Fans

Voltage	230 V / 50 Hz
Max. Current Consumption	7.7 A (2 x 3.85 A)
Speed of Rotation	2,520 1/min
Power Consumption	2 x 580 W
Performance Class	SFP 2
Protection Class	IP54
Max. Conveying Temperature	+ 40 °C

#### Filter

Outdoor Air	ISO ePM1 ≥ 50 % (F7)
Extract Air	ISO ePM10 ≥ 50 % (M5)
Dimensions	558 x 638 x 96 mm

#### Heat Recovery

Heat Exchanger	Cross-counterflow
Bypass	Counter-rotating
Efficiency	Up to 92% (with condensation)
Class	H1

(Further information from p. 22)

#### Dimensions (L x H x T)

Weight incl. Control	2,310 x 1,540 x 760 mm
	430 kg

#### Connections

Pipe Connections	Vertical
Diameter	400 mm
Nominal Air Velocity in the Spigot	4.4 m/s

#### Condensate Drain

Plastic pipe included in the scope of delivery

### Article Number

#### Incl. Control

SBC 2000 V (RIGHT)	SBC200VGRIB0-0A
SBC 2000 V (LEFT)	SBC200VGLIB0-0A

#### Without Control

SBC 2000 V (RIGHT)	SBC200VGRIBE-0A
SBC 2000 V (LEFT)	SBC200VGLIBE-0A

## Sound Power Level:

The sound data specified in the air performance curve are the A-weighted casing sound power level  $L_{WA(cas)}$  in dB(A).

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Pressure-side sound power level  $L_{WA(out)} = L_{WA(cas)} + 20$  dB

Calculation:

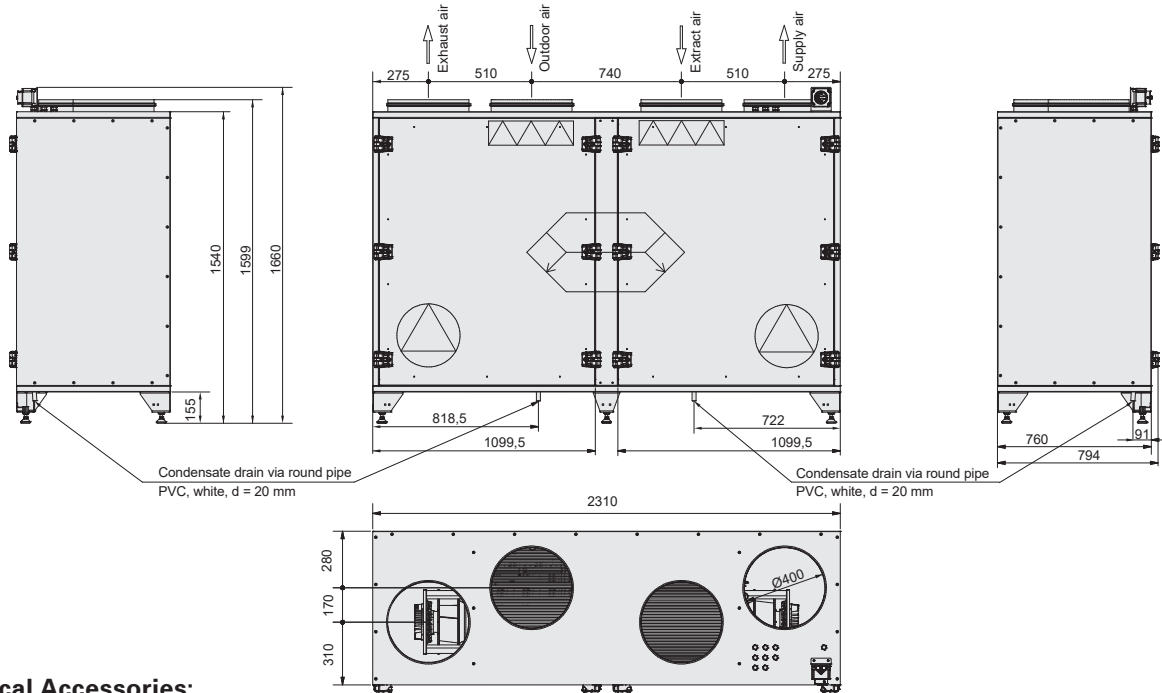
$L_{WA(in)}$  per octave:  $L_{WA(in, oct)} = L_{WA(in)} +$  correction value (table row  $L_{WA(in)}$ )

$L_{WA(out)}$  per octave:  $L_{WA(out, oct)} = L_{WA(out)} +$  correction value (table row  $L_{WA(out)}$ )

Correction Values: $\Delta L_{woct}$ [dB]	fM [Hz]						
	125	250	500	1K	2K	4K	8K
$L_{WA(in)}$ [dB(A)] Suction-side (Outdoor air / extract air)	-15	-5	-5	-7	-10	-17	-32
$L_{WA(out)}$ [dB(A)] Pressure-side (Supply air / exhaust air)	-28	-9	-6	-5	-7	-10	-21
$L_{WA(cas)}$ [dB(A)] Housing Radiation	-7	-4	-7	-12	-14	-17	-26

**Note:** A detailed calculation example can be found on 26

**Dimensions:** All dimensions in mm. The drawing shows the version with the supply air spigot on the RIGHT.



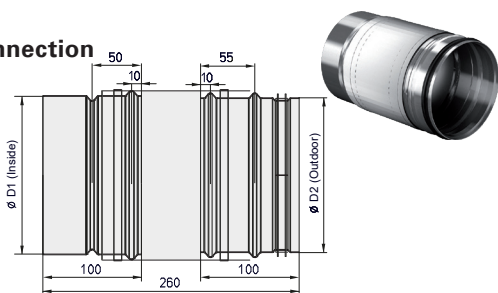
### Mechanical Accessories:

ELS - Flexible Connection (set of 4), Installation Length 260 mm, DN 400	ELSS00-0400S	Page 14
ASK - Shut-off Damper, incl. Actuator, DN 400	ASK001-0400N	Page 14
ASK - Shut-off Damper, incl. Actuator (Spring Return), DN 400	ASK001-0400F	
RSD - Pipe Silencer, DN 400	F13-40000	Page 14
EVHR - Electric Preheater, 6.0 kW, 2~400 V, DN 400	G96-40060	Page 15
ENHR - Electric Post-Heater, 9.0 kW, Stepless, 2~400 V, DN 400	G95-40090	Page 16
PWW - Post-Heating Coil 2RR, incl. Anti-Freeze Thermostat, G 3/4", DN 400	G90-6157402L-H	Page 17
PWW - Post-Heating Coil 4RR, incl. Anti-Freeze Thermostat, G 3/4", DN 400	G90-6157404L-H	
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Left, G 1", DN 400	G91-6157406L-H	Page 18
PKW - Post-Cooling Coil 6RR, Connections in Air Flow Direction Right, G 1", DN 400	G91-6157406R-H	
EFF7 - Outdoor Air Filter, ISO ePM1 ≥ 50 % (F7), 558 x 638 x 96 mm	FPES200-0150V3	Page 25
EFM5 - Extract Air Filter, ISO ePM10 ≥ 50 % (M5), 558 x 638 x 96 mm	FPES200-1050V3	

### Control Accessories:

KOM - BACNet-Card Network Integration Ethernet TCP/IP	H42-00014	Page 20
ALF - Contact Temperature Sensor	H42-09917	Page 20
RTF - Room Temperature Sensor	H42-09902	Page 21
ATF - Outdoor Temperature Sensor	H42-09914	Page 21
KTF - Duct Temperature Sensor	H42-09926	Page 21
LQF-CO2 - Air Quality Sensor	H42-09930	Page 21
PUA10 - Differential Pressure Sensor	H40-00103	Page 21
HG120 - Hygrostat	H42-09922	Page 21
KRM-X24 - Duct Smoke Detector – 24 V AC/DC – IP65 – Standard Version	H42-09948	Page 21
KRM-DZ - Duct Smoke Detector – 24 V AC/DC – IP65 – DiBt-Approval	H42-09948-DZ	Page 21
KRM-X230 - Duct Smoke Detector – 230 V AC – IP65	H42-09949	Page 21
KS-KRM - Mounting Bracket for Duct Smoke Detectors on Ducts	H42-09937	Page 21

## ELS Flexible Connection

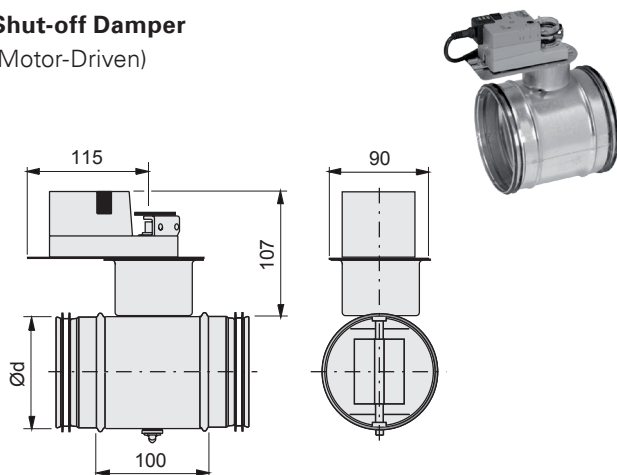


### Features and Design:

- Complete design consisting of 4 pieces
- Made of galvanised steel and silicone-free PVC fabric for decoupling the SupraBox COMFORT from the duct network
- Suitable connection for commercially available spiral ducts
- T-lip seal for quick and tight connection
- Includes 2 tension straps (galvanised steel) per connection piece

Type	Art. No.	Connection Diameter $\varnothing$	Installation Length
1000 V	ELSS00-0280S	DN 280	260 mm
1600 V	ELSS00-0355S	DN 355	260 mm
2000 V	ELSS00-0400S	DN 400	260 mm

## ASK Shut-off Damper (Motor-Driven)



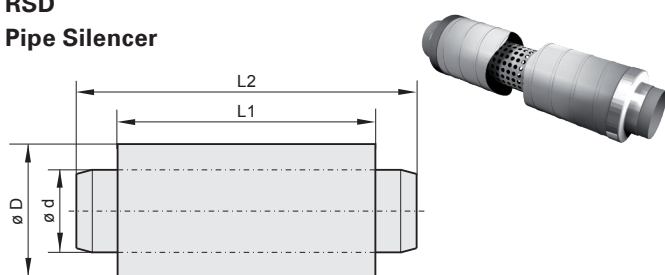
### Features and Design:

- Tight-closing behind closed flap
- Damper blade made of double sheet metal with an intermediate EPDM rubber sealing ring, which lies in closed position against the inside of the damper sleeve
- Damper version with console for actuator drive, including suitable actuator
- Actuator AC/DC 24 V, open-close, IP54 (splash-proof on all sides without increased pressure), manual adjustment, rotation angle limiter, connection cable PVC 1 m
- With or without integrated spring return (running time spring < 20 s)

Type	Connection Diameter $\varnothing$	Art. No. of Motor-Driven without Spring Return	Art. No. of Motor-Driven with Spring Return	Tightness Class According to DIN EN 13053
1000 V	DN 280	ASK001-0280N	ASK001-0280F	4
1600 V	DN 355	ASK001-0355N	ASK001-0355F	4
2000 V	DN 400	ASK001-0400N	ASK001-0400F	4

**Note:** The shut-off damper can be easily attached to the housing by using M8 screws.

## RSD Pipe Silencer



### Features and Design:

The outer casing and the perforated inner pipe are made of galvanized sheet steel. The sound insulation package is 50 mm thick. The connecting pieces with lip seals can be integrated directly into the pipe system.

Type	Art. No.	$\varnothing d$	$\varnothing D$	L1	L2	Attenuation Values in dB						
						125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
1000 V	F13-28000	DN 280	380	1,070	1,170	4	10	17	22	25	20	18
1600 V	F13-35500	DN 355	460	1,060	1,160	4	8	15	21	20	17	16
2000 V	F13-40000	DN 400	510	1,060	1,160	3	8	14	19	21	15	14

**PTC**  
**Electric Preheater**



**Features and Design:**

- Mounting kit for installation in the outdoor air spigot
- The preheater is only intended for installation inside buildings!
- Only possible in conjunction with integrated control

Type	Art. No.	Nominal Heating Capacity	Voltage Supply	Connection Diameter Ø
1000 V	G92-28PTC	2.4 kW	1~230 V	DN 280

**EVHR**  
**Electric Preheater**  
(Weatherproof Version)

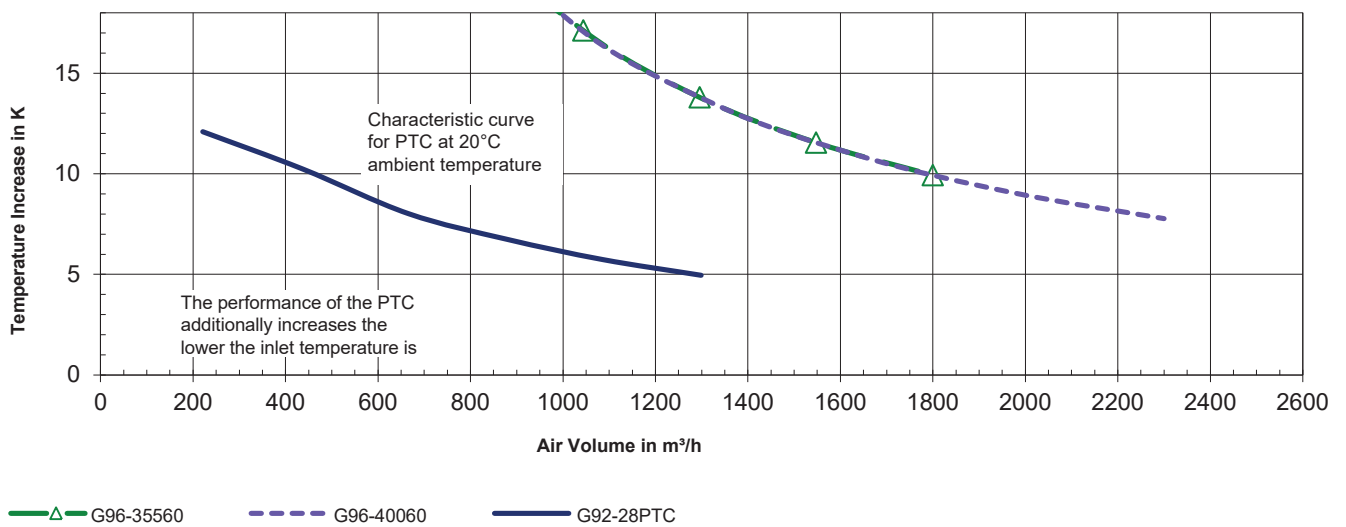


**Features and Design:**

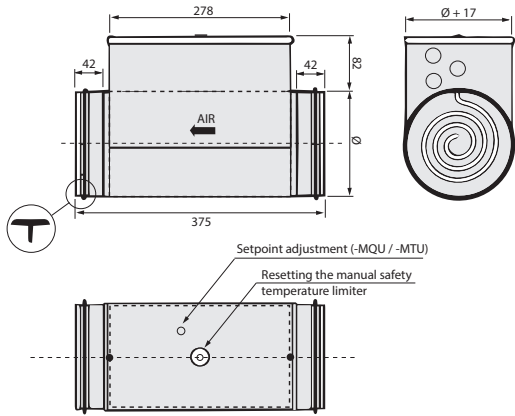
Assembly kit consisting of electric heater and electronic flow monitor. Coil similar to the electric reheaters, but without power control via a thyristor. The register is switched on and off by the SupraBox COMFORT via an integrated contactor.

Type	Art. No.	Nominal Heating Capacity	Connection Diameter Ø	Voltage Supply	Construction Length	Min. Air Volume (1.5 m/s)
1600 V	G96-35560	6.0 kW	DN 355	2~400 V	355 mm	540 m³/h
2000 V	G96-40060	6.0 kW	DN 400	2~400 V	400 mm	680 m³/h

**Temperature Increase Preheater:**



## ENHR Electric Post-Heater (Weatherproof Version)



### Features and Design:

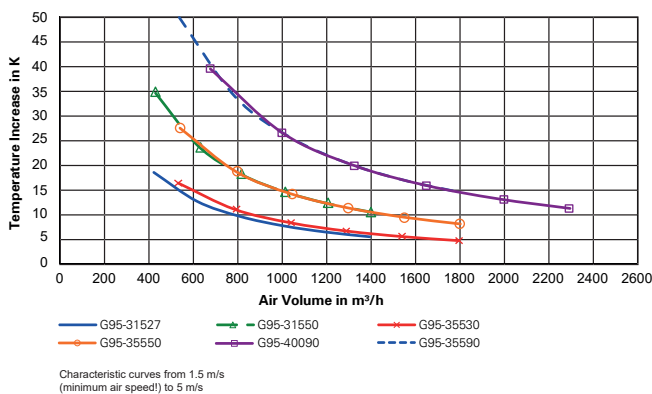
- Assembly kit consisting of electric heater and duct temperature sensor
- Electric heater a round pipe made of galvanized sheet steel with rubber lip seal on both sides / rectangular housing
- Heating elements made of stainless steel EN 1.4541
- Min. air velocity in the connection cross-section 1.5 m/s!
- Maximum air outlet temperature 40 °C
- Ambient temperature max. 30 °C
- Integrated infinitely variable control electronics with thyristor, therefore power control from 0-100 %
- Control of the control electronics via the SupraBox (0-10V)
- Power supply connected directly to the heater, fuse protection on site 16 A
- Double overheating protection with a self-resetting temperature monitor and a safety temperature limiter with manual reset
- Integrated electronic volume flow monitor
- Pressure loss on the air side is very low (only a few pascals!)

Type	Art. No.	Max. Heating Capacity	Power Supply (External)	Connection Diameter Ø	Construction Length	Min. Air Volume (1.5 m/s)
1000 V *	G95-31527	2.7 kW	1~230 V	DN 315	375 mm	430 m³/h
	G95-31550	5.0 kW	2~400 V **			
1600 V	G95-35530	3.0 kW	1~230 V	DN 355	375 mm	540 m³/h
	G95-35550	5.0 kW	2~400 V **			
	G95-35590	9.0 kW	3~400 V			
2000 V	G95-40090	9.0 kW	3~400 V	DN 400	375 mm	680 m³/h

\* Note: a transition piece to DN 315 is required to connect the register.

\*\* Note: Two different phases from the 400 V three-phase mains are required.

### Possible Temperature Increase at Rated Output for Electric Post-Heater:



### Important Installation Instructions:

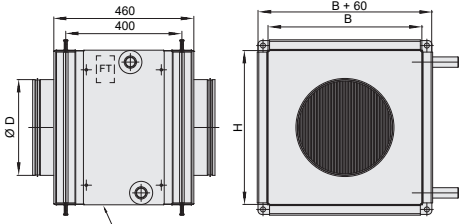
For as long as the minimum air volume is maintained, a Supra-Box COMFORT – size can also be assigned the post-heater of another construction size. Suitable reducers must then be used on site for installation into the duct system.

### Installation Instructions for the Duct Temperature Sensors:

To prevent the duct temperature sensor from being influenced by radiant heat from the heating coil, it must be installed after the electric past-heater with a minimum distance of 2-3 m in the supply air duct.



**PWW  
Post-Heating Coil**



Door sealing with 8 mm sealing tape

PWW-Register suitable for LEFT and RIGHT connection side.

Anti-freeze thermostat is already mounted on the coil frame!

**Features and Design:**

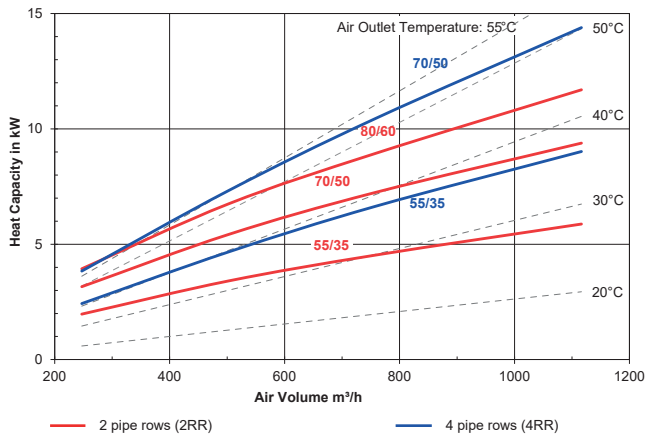
- Complete assembly kit including 3-way valve with fittings, actuator and duct temperature sensor
- Coil with 12 mm copper pipes and copper collector, Aluminium fins with 0.15 mm thickness
- With 30 mm circumferential flange and screwed-on transition pieces (galvanised steel) from square to round with lip seal
- Coil frame galvanised steel
- Blade spacing 2.1 mm, complies with DIN EN 13053
- Anti-freeze thermostat is already mounted on the coil frame

Type	Art. No.	Number of Pipe Rows	Dimensions		Pipe Connection Ø	Connecting Dimension Ø
			B [mm]	H [mm]		
1000 V	G90-4642282L-H	2	460	416	G 3/4"	DN 280
	G90-4642284L-H	4				
1600 V	G90-6157352L-H	2	610	566	G 3/4"	DN 355
	G90-6157354L-H	4				
2000 V	G90-6157402L-H	2	610	566	G 3/4"	DN 400
	G90-6157404L-H	4				

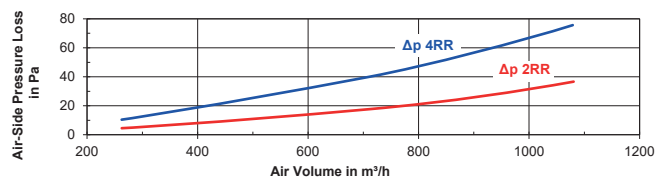
**PWW-Post-Heating Coil SupraBox COMFORT 1000 V**

Boundary conditions of the selection diagrams: Air inlet temperature register 12 °C, air density 1.2 kg/m<sup>3</sup>, medium water, spread 20K

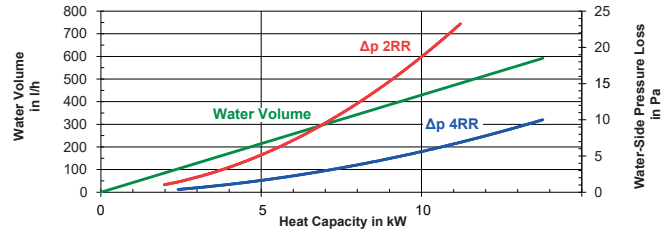
**Maximum Heat Capacity**



**Air-Side Pressure Loss**



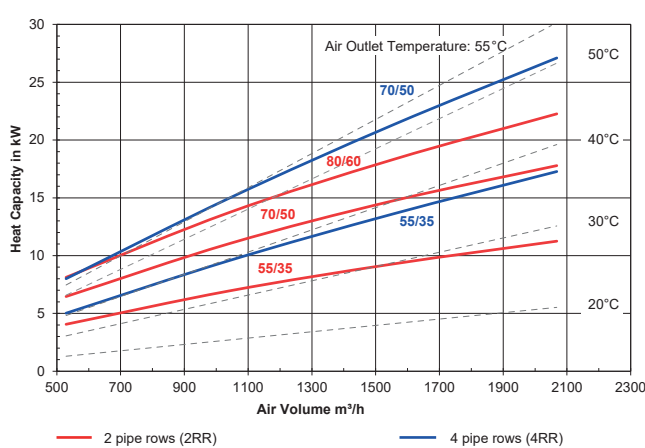
**Water Volume and Water-Side Pressure Loss**



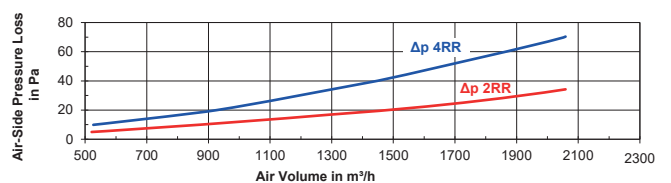
**PWW-Post-Heating Coil SupraBox COMFORT 1600 V / 2000 V**

Boundary conditions of the selection diagrams: Air inlet temperature register 12 °C, air density 1.2 kg/m<sup>3</sup>, medium water, spread 20K

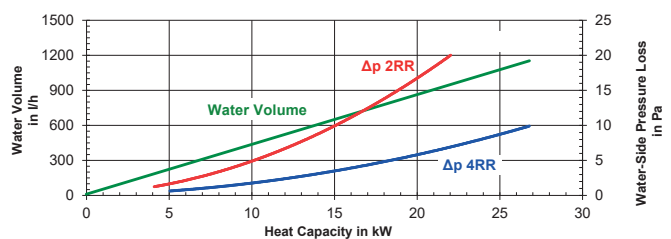
**Maximum Heat Capacity**



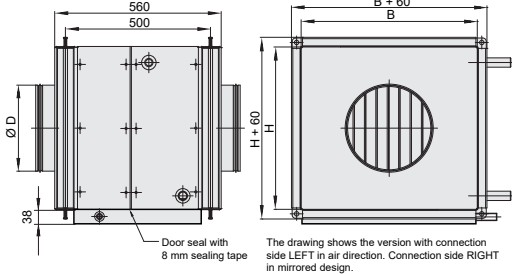
**Air-Side Pressure Loss**



**Water Volume and Water-Side Pressure Loss**



PKW - Post-Cooling Coil



Features and Design:

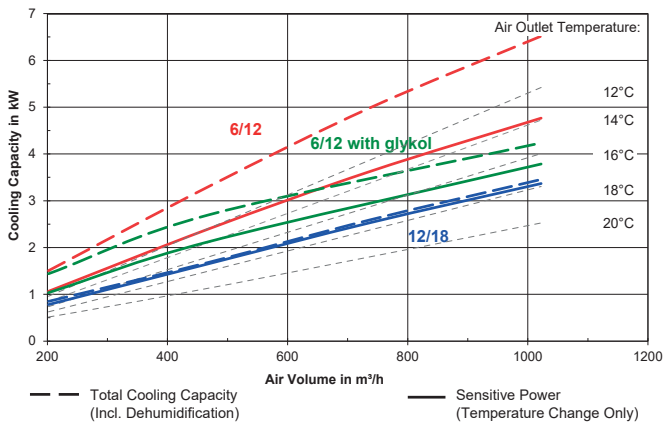
- Complete assembly kit including 3-way valve with fittings, actuator and duct temperature sensor
- Coil with 12 mm copper pipes and copper collector, Aluminium fins with 0.15 mm thickness
- With 30 mm circumferential flange and screwed-on transition pieces (galvanised steel) from square to round with lip seal
- Coil frame V2A (Aluminium fins)
- Aluminium condensate tray AlMg3, condensate drain 1/2" horizontal in the connection direction of the coil
- Fins spacing 2.5 mm, complies with DIN EN 13053
- Droplet separator optionally available

Type	Art. No. Connection Side LEFT	Art. No. Connection Side RIGHT	Number of Pipe Rows	B [mm]	H [mm]	ø Pipe Connection	Connecting Dimension ø
1000 V	G91-4642286L-H	G91-4642286R-H	6	510	466	G 3/4"	DN 280
1600 V	G91-6157356L-H	G91-6157356R-H	6	610	566	G 3/4"	DN 355
2000 V	G91-6157406L-H	G91-6157406R-H	6	610	566	G 3/4"	DN 400

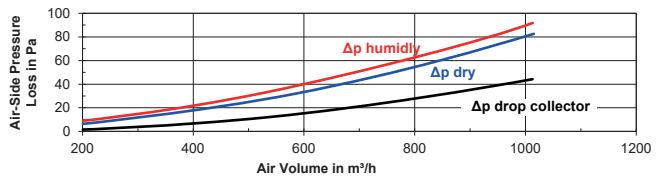
PKW - Post-Cooling Coil SupraBox COMFORT 1000 V

Boundary conditions of the selection diagrams: Air inlet register 27 °C, 50 % relative humidity, air density 1.2 kg/m<sup>3</sup>, air pressure 1,013.25 hPa, medium water or, where specified, water with 34% ethylene glycol (down to -20 °C), spread 6 K.

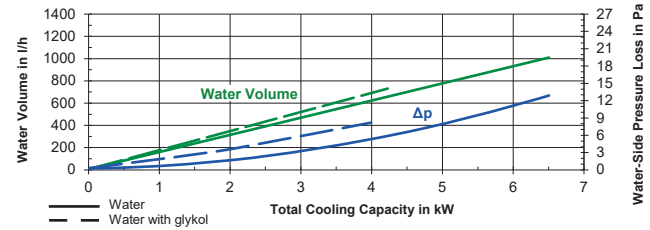
Maximum Cooling Capacity



Air-Side Pressure Loss



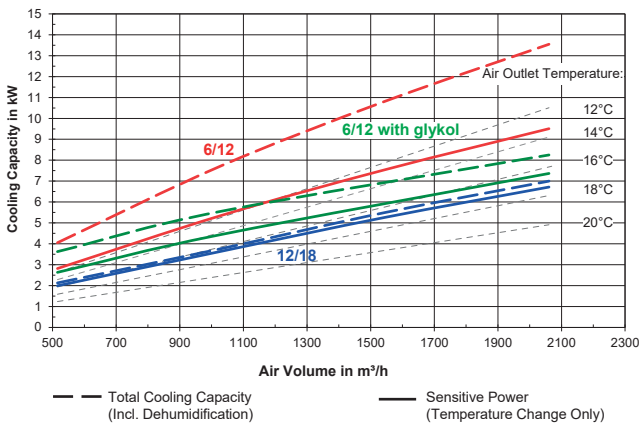
Water Volume and Water-Side Pressure Loss



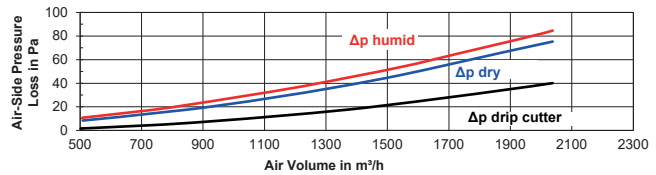
PKW-Cooling Coil SupraBox COMFORT 1600 V / 2000 V

Boundary conditions of the selection diagrams: Air inlet register 27 °C, 50 % relative humidity, air density 1.2 kg/m<sup>3</sup>, air pressure 1,013.25 hPa, medium water or, where specified, water with 34% ethylene glycol (down to -20 °C), spread 6 K.

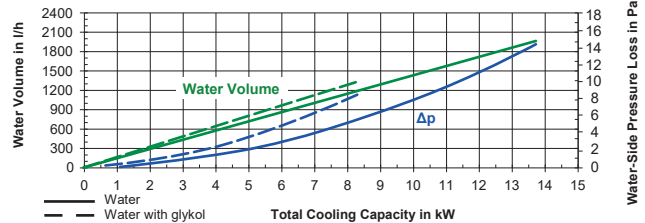
Maximum Cooling Capacity



Air-Side Pressure Loss



Water Volume and Water-Side Pressure Loss



Scope of Delivery of the PWW / PWK Coils

**VRG3**  
**3-Way Valve**

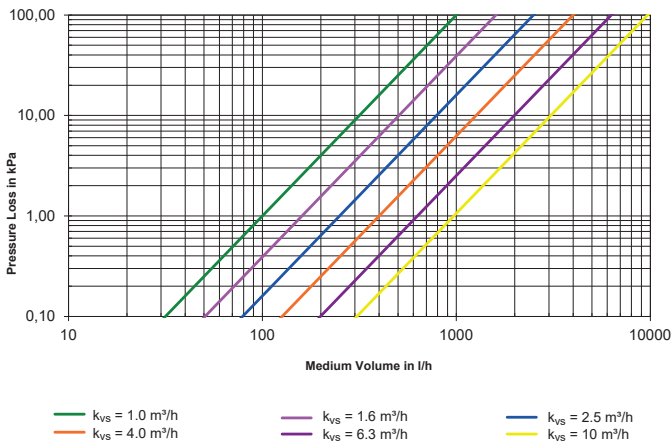


Features and Design:

- 3-way valve type VRG3 for use as a mixing valve
- Complies with the Pressure Equipment Directive 97/23/EC
- Valve housing cast iron EN-GJL-250 with cylindrical external thread according to ISO 228/1
- Stainless steel valve stem, brass valve cone, valve stem seal EPDM
- Suitable for water and water-glycol mixtures, 2-120 °C, pH 7-10, max. 50 % glycol
- Valve characteristic curve logarithmic / linear
- Internal leakage with closed valve max. 0.05 % of  $k_{VS}$  in flow direction A-AB and max. 1 % of  $k_{VS}$  in flow direction

Assignments and Valve Characteristics $k_{VS}$				
Type	Variant	$k_{VS}$ [m <sup>3</sup> /h]	Valve Connection: Nominal Diameter	Valve Connection: External Thread
1000 V	PWW-Heater	1	DN 15	G 1/2"
		1.6	DN 15	G 1/2"
	PKW-Cooler	1.6	DN 15	G 1/2"
1600 V / 2000 V	PWW-Heater	2.5	DN 15	G 1/2"
	PKW-Cooler	4	DN 15	G 1/2"

Valve Pressure Loss:



**Note:** The assembly kit contains suitable screw connections with seals for all 3 connections of the valve as well as the actuator. The nominal diameter of the screw connections corresponds to the nominal diameter of the valve.

## Scope of Delivery of the PWW / PKW Coils:

### AME 435 Actuator Valve



#### Features and Design:

- Type AME 435
- Protection class IP54
- Ambient temperature 0 to 55°C
- 24V AC, max. 4,5 A
- Continuous adjustment
- Maximum actuating force 400 N
- Adjustment speed 7,5 mm/s
- Simple installation by attaching to 3-way valve

### KTF Duct Temperature Sensor



#### Features and Design:

- Temperature sensor for measuring the supply air temperature after the register
- Type EKFC 10/150
- Sensor type NTC 10K, resistance 10 kΩ at 25 °C
- Protection class IP65
- Measuring range -30 to 150°C, ambient temperature max. 70°C
- Sensor tube Ø 6 mm, V2A (1.4301), installation length 165 mm
- Sensor is inserted into the duct through a Ø 6 mm hole and fastened in the plastic housing to the duct with 2 sheet metal screws
- Dimensions of plastic housing (L x W x H): 64 x 58 x 34 mm

### FST Anti-Freeze Thermostat



#### Features and Design:

(only for PWW post-heating coils)

- Thermostat for activating the frost protection circuit of the SupraBox COMFORT control unit
- Protection of the register against freezing
- Capillary tube clamped directly onto register
- Type FST-5D
- Protection class IP65
- 1 microswitch as potential-free contact
- Control range -10 to +15 °C
- Switching differential 2 K
- Ambient temperature -30 to + 70 °C (register with control housing must be mounted in such a way that it is not exposed to any temperature lower than the set scale value)
- Sensor: gas-filled (R507) copper coil
- Dimensions (L x W x H): 126 x 90 x 50 mm

## FURTHER ACCESSORIES (OPTIONAL):

### KOM BACNet-Card



For integrating the SupraBox COMFORT or the control electronics into a network based on Ethernet TCP/IP Basis.

Description	Art. No.	Annotation
KOM	H42-00014	Network integration

### ALF Contact Temperature Sensor



A contact temperature sensor is required to measure the return temperature. It is attached to the return of the hot water heating coil. Protection class IP65.

Description	Art. No.	Annotation
ALF	H42-09917	Measuring range 0 to +100 °C

**HG120**  
**Hygrostat**



The hygrostat can be used to override the fans. If the set target value is exceeded the ventilation is automatically switched to an adjustable speed and consequently the humidity level is regulated. Protection class IP20.

Description	Art. No.	Annotation
HG120	H42-09922	Control range 30 bis 90 %r.H

**PUA10**  
**Differential Pressure Sensor**



For use with constant pressure control of the fans. With 0-10 V output signal and voltage supply by the controller. Protection class IP65.

Description	Art. No.	Annotation
PUA10	H40-00103	Measuring range 0-1,000 Pa

**KTF**  
**Duct Temperature Sensor**



As the SupraBox COMFORT is already equipped with temperature sensors in the spigots, additional duct sensors especially when using heat exchangers (e.g. heating/cooling coils) are necessary. If a heating/cooling coil is purchased from Rosenberg a corresponding duct temperature sensor is already included with the coil. Protection class IP65.

Description	Art. No.	Annotation
KTF	H42-09926	Measuring range -30 to +150 °C

**RTF**  
**Room Temperature Sensor**



The use of a room temperature sensor is a prerequisite for room temperature control and the functions support mode and night ventilation. Protection class IP30.

Description	Art. No.	Annotation
RTF	H42-09902	Measuring range -30 to +70 °C

**ATF**  
**Outdoor Temperature Sensor**



The outdoor temperature sensor is suitable for wall mounting. The use of an outdoor temperature sensor is a prerequisite for the night ventilation function. Protection class IP65.

Description	Art. No.	Annotation
ATF	H42-09914	Measuring range -30 bis +90 °C

**LQF-CO2**  
**Air Quality Sensor**



The CO<sub>2</sub> sensor can be used to control the fans in automatic mode as required and therefore consequently keep the CO<sub>2</sub> content of the room low. Protection class IP30.

Description	Art. No.	Annotation
LQF-CO2	H42-09930	Measuring range 0 - 2,000 ppm

**KRM**  
**Duct Smoke Detector**



For smoke detection in ventilation ducts. With electronic air flow monitoring. Can be connected directly as a switching contact to the control system.

Description	Art. No.	Annotation
KRM-X24	H42-09948	24 V / IP65
KRM-X230	H42-09949	230 V / IP65
KRM-DZ	H42-09948-DZ	24 V / IP65 / DiBt
KS-KRM	H42-09937	Mounting bracket for round pipe

## Efficiency of Heat Recovery

The SupraBox COMFORT units are equipped with highly efficient cross-counterflow plate heat exchangers made from corrosion-resistant aluminium. Which efficiency can be achieved in absolute terms, depends largely on the operating conditions.

### Outdoor Air Temperature and Extract Air Humidity

For the majority of the year, the humidity of the extract air is irrelevant. If the extract air and supply air volumes are identical, the SupraBox COMFORT achieves efficiencies of over 80 %. As the outdoor temperature falls the surface temperature of the plate heat exchanger decreases.

If this temperature falls below the dew point of the extract air, which depends on the absolute moisture content of the extract air, condensate forms on the plates of the plate heat exchanger. The condensation energy of the water increases the efficiency of the plate heat exchanger in relation to the supply air. With balanced air volumes, very high efficiencies of over 90 % can be achieved.

### Air Volume of the SupraBox COMFORT

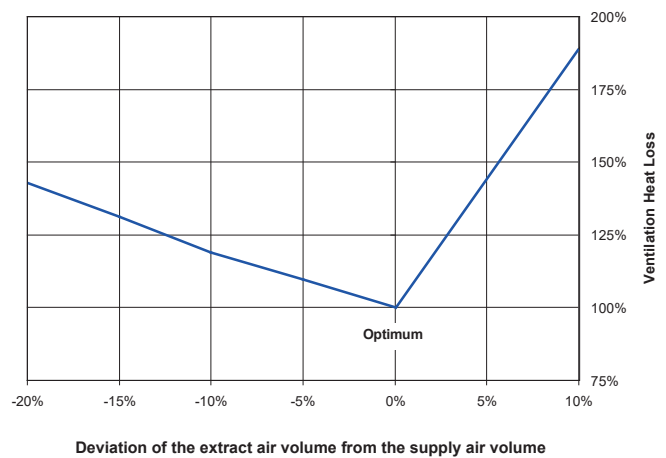
The lower the air velocities in the plate heat exchanger, the higher the heat recovery coefficient.

This means that a generous selection of the size of the SupraBox COMFORT not only reduces the power consumption of the unit due to lower pressure losses, but also increases the efficiency of heat recovery by up to 6%!

### Amount of the Extract Air Volume in Relation to the Supply Air Volume

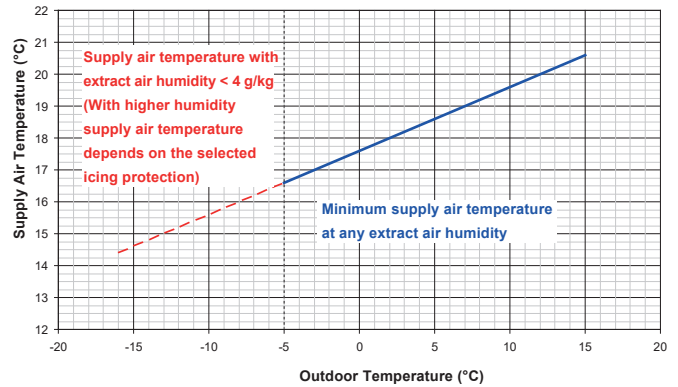
The efficiency of the heat recovery system is as strongly influenced as well by the amount of the extract air volume in relation to the supply air volume. If the extract air volume is reduced compared to the supply air volume, the efficiency of heat recovery in relation to the supply air decreases. The consideration of the resulting ventilation heat loss also enables the evaluation of a higher extract air volume compared to the supply air. Since the total volume of air conveyed through the ventilated room increases, a higher extract air volume rate leads to even greater efficiency losses than a lower extract air volume (see adjacent graphic). Consequently, balanced air volumes for the supply air and extract air should be aimed at normal operation (not during defrosting of the heat recovery unit), as far as the application permits.

Due to the extremely high efficiency of the heat recovery unit anti-icing measures are necessary at low temperatures. The options offered by the SupraBox COMFORT for the anti-icing measures can be found in the description of the icing concept (see next page). When it comes to applications with low moisture input into the extract air, the undiminished operation of the heat recovery unit far below -10 °C is possible. If, on the other hand, the exhaust air comes from humid rooms, anti-icing measures in the example must already be taken below -5 °C. Accordingly, the efficiency of the heat recovery system drops when taking the icing protection into account. As the average outdoor temperature in Central Europe is usually well above 0 °C during the heating period, the icing protection is only necessary few days a year. Therefore, efficiency reductions in this area have minor influence on the efficiency of the unit over the whole year.



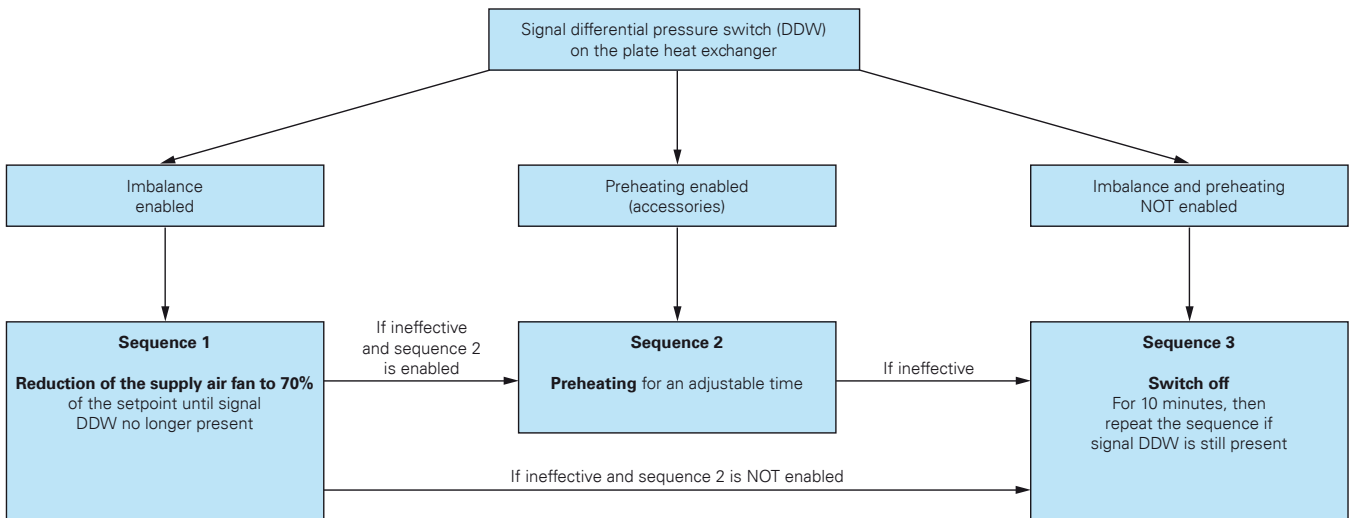
### Estimation of the Supply Air Temperature at the Outlet of the SupraBox COMFORT

The following diagram provides a rough estimate of the achievable supply air temperature of the SupraBox COMFORT. It applies to balanced air volume and an extract air temperature of 22 °C. The underlying dry efficiency of the heat recovery is 80 % and represents the minimum of the series under these conditions. If the absolute humidity of the extract air is below 4 g/kg in the winter design case, this diagram can be used to select any necessary additional reheating. With low air changes and favorable air routing, it may also be possible to renounce the reheating if the heat recovery coefficients of the SupraBox COMFORT are high. A more precise calculation with your basic conditions can be created with our air handling unit selection program. Please request if necessary.



### De-Icing Concept / Icing Protection

The function is divided into several sequences:



The counterflow heat exchanger is monitored for icing with the aid of a differential pressure switch. During commissioning you can define which defrosting strategy is to be used.

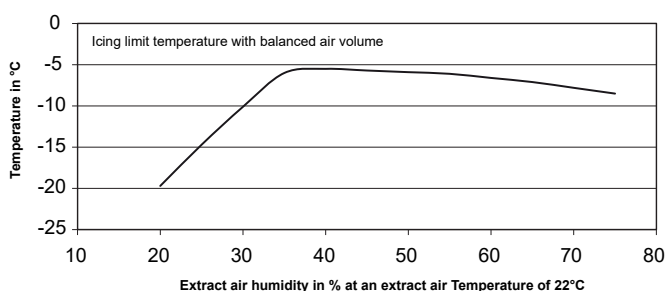
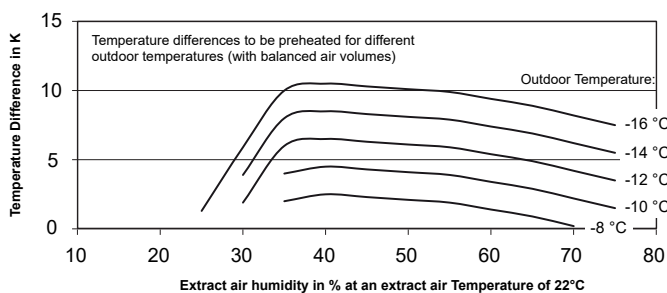
- 1) If an imbalance of the fans is permitted, the supply air fan speed is, in the event of icing, reduced by 30% for 5 minutes, in order to defrost through warmer extract air.
- 2) If an electric preheater is connected and enabled, the preheater is activated for 5 minutes to preheat the outdoor air and defrost the heat exchanger.
- 3) If both options are enabled, the supply air is reduced first. If this is not sufficient, preheating is switched on after 5 minutes.
- 4) If no measure was effective or both variants are not possible, the SupraBox COMFORT is deactivated and an alarm is displayed. The alarm does not have to be acknowledged. After 10 minutes, the device starts the fans automatically.

## Preheating for Icing Protection / for Defrosting the Heat Recovery System

Whether pre-heating is necessary for icing protection, depends on:

- The winter design outdoor temperature
- The extract air humidity
- The extract air temperature
- The icing protection strategy selected on the control of the SupraBox COMFORT

**Note:** If significant humidification of the extract air by humans or other loads is NOT to be expected and restrictions of the functions such as reduction of the outdoor air volume or even temporary shutdown during the few coldest hours of the year can be accepted, preheating can be dispensed with!



If preheating is required, the adjacent diagram shows the temperature differences to be preheated depending on the outdoor temperature and the extract air humidity. For preheating, we offer various electric preheaters which enable the SupraBox COMFORT to be operated safer in winter in the majority of Central Europe. The diagram on the left shows the temperature increases achievable with the preheaters. All preheating coils are 1-stage unregulated and are switched on/off by the SupraBox COMFORT control unit as required, see chapter control. The air-side pressure loss of the preheaters is very low when installed (only a few pascals!).

### Information on PTC Electric Pre-Heater for SupraBox COMFORT 1000 V

For the SupraBox COMFORT 1000 V we offer a pre-heating assembly kit with PTC preheater (IP00) for installation in the outdoor air spigot of the SupraBox COMFORT and an additional duct temperature sensor for installation in the outdoor air duct. In contrast to the other electric heaters, the wiring of the PTC is completely wired to the SupraBox. The PTC is a thermistor component that automatically reduces its power consumption when heated. Via an additional integrated temperature monitor, the PTC element is switched off when the air temperature reaches 80°C directly at the outlet and switched on again when it falls below this temperature. As the PTC only covers part of the spigot and therefore a large proportion of the air flows past the PTC without increasing the temperature, a mixed temperature is created after the PTC.



At the same time operation with bypass at the PTC also ensures the lowest pressure losses. Due to the properties of the PTC, its heat output cannot be specified precisely. When switching on, the current can amount up to 16 A for a short time and then drops sharply. In the outdoor air spigot of the SupraBox COMFORT the heating output varies primarily depending on the air velocity in the spigot and additionally the inlet temperature.

The PTC pre-heater is only intended for installation inside buildings! An on-site inspection option for cleaning the PTC preheater or pre-filtering is recommended.



**EFF7 / EFM5**  
**Outdoor Air Filter /**  
**Extract Air Filter**



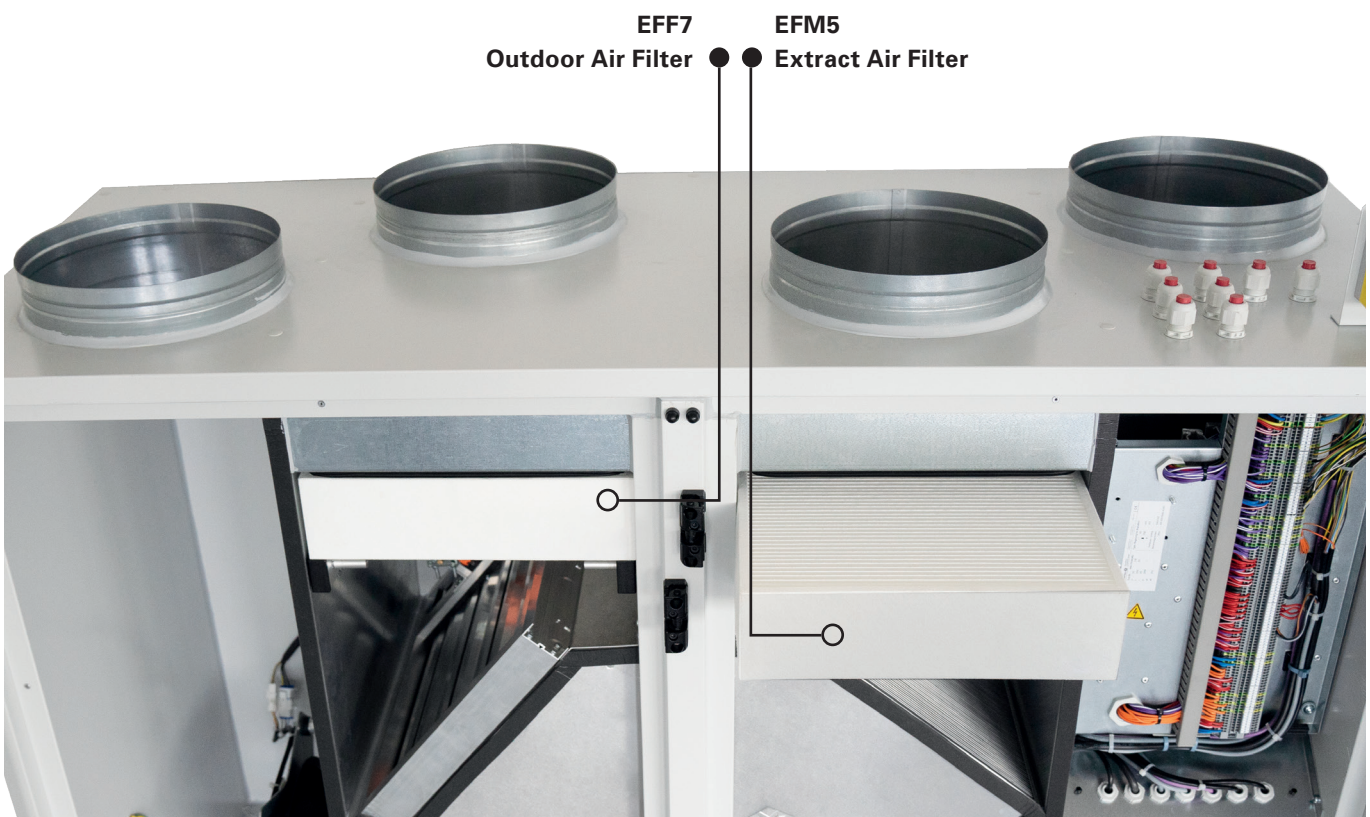
- Air filter made of pleated, glass fiber-free filter material
- Filter material and frame made of polypropylene
- With progressive depth filtration
- Abrasion-resistant, anti-bacterial, heat-resistant up to 80 °C and water-repellent
- The stability of the filters remains unaffected by moisture, the filters dry in a short time
- Polypropylene effectively prevents the ingress and growth of bacteria
- Filter classes ePM10 - ePM1 in accordance with DIN EN ISO 16890:2016.
- Meets the hygiene requirements of VDI 6022

**EFF7 – Outdoor Air Filter ISO ePM1 ≥ 50 % (formerly F7)**

Typ	Art. No.	Width	Height	Depth	Weight
<b>1000 V</b>	FPES100-0150V3	348 mm	518 mm	96 mm	0.95 kg
<b>1600 V</b>	FPES160-0150V3	488 mm	578 mm	96 mm	1.43 kg
<b>2000 V</b>	FPES200-0150V3	558 mm	638 mm	96 mm	1.72 kg

**EFM5 – Extract Air Filter ISO ePM10 ≥ 50 % (formerly: M5)**

Type	Art. No.	Width	Height	Depth	Weight
<b>1000 V</b>	FPES100-1050V3	348 mm	518 mm	96 mm	0.93 kg
<b>1600 V</b>	FPES160-1050V3	488 mm	578 mm	96 mm	1.34 kg
<b>2000 V</b>	FPES200-1050V3	558 mm	638 mm	96 mm	1.69 kg

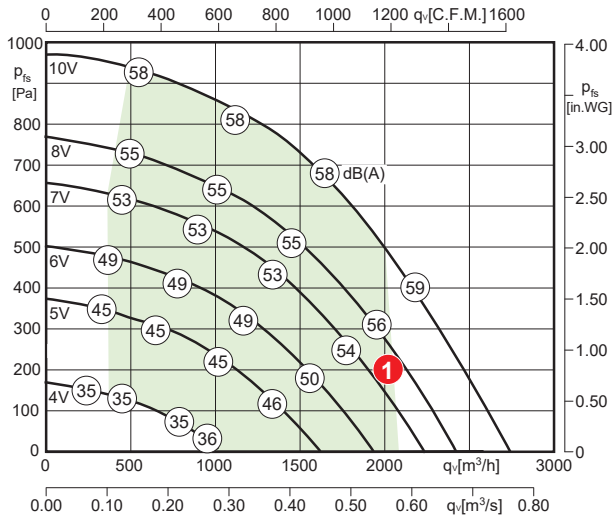


## Relative sound spectrum $L_{wA(out)}$ (oct)

### Using the Example of a SupraBox COMFORT 2000 V

Nominal operating point: 2,000 m<sup>3</sup>/h  
 ext. pressure increase 200 Pa

#### Air Performance:



#### Sound Power Level:

The sound data specified in the air performance curve are the A-weighted casing sound power level  $L_{wA(cas)}$  in dB(A).

Suction-side sound power level  $L_{wA(in)} = L_{wA(cas)} + 3$  dB 2

Pressure-side sound power level  $L_{wA(out)} = L_{wA(cas)} + 20$  dB

Calculation:

$L_{wA(in)}$  per octave:  $L_{wA(in,Oct)} = L_{wA(in)} + \text{correction value (table } L_{wA(in)})$

$L_{wA(out)}$  per octave:  $L_{wA(out,Oct)} = L_{wA(out)} + \text{correction value (table row } L_{wA(out)})$

Correction Values: $\Delta L_{wOct}$ [dB]	fM [Hz]						
	125	250	500	1K	2K	4K	8K
$L_{wA(in)}$ [dB(A)] Suction-side (outdoor air / extract air)	-15	-5	-5	-7	-10	-17	-32
$L_{wA(out)}$ [dB(A)] Pressure-side (Supply air / exhaust air) <span style="color: red; font-weight: bold;">3</span>	28	-9	-6	-5	-7	-10	-21
$L_{wA(cas)}$ [dB(A)] Housing radiation	-7	-4	-7	-12	-14	-17	-26

#### 1. Step

Read off  $L_{wA(out+cas)}$  from the air volume diagram 1  
 = 54 dB(A)

#### 2. Step

Calculate the pressure-side sound power level  $L_{wA(out)}$  using the formula: 2

$$L_{wA(out)} = L_{wA(out+cas)} + 20 \text{ dB} \rightarrow 54 \text{ dB(A)} + 20 \text{ dB}$$

$$\rightarrow L_{wA(out)} = 74 \text{ dB(A)}$$

#### 3. Step

Read off the correction values for  $L_{wA(out)}$  from the "Correction values" table

#### 4. Step 3

Calculate  $L_{wA(out)}$  (oct)

Calculation $L_{wA(out)}$	fM [Hz]							$\Sigma$
	125	250	500	1K	2K	4K	8K	
$L_{wA(out)}$ [dB(A)]	74	74	74	74	74	74	74	
+ Correction Value [dB]	-28	-9	-6	-5	-7	-10	-21	
Result $L_{wA(out)}$ (oct) [dB(A)]	46	65	68	69	67	64	53	74

The sum level must then, calculated by logarithmic addition, result in 74 dB(A) again.



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