

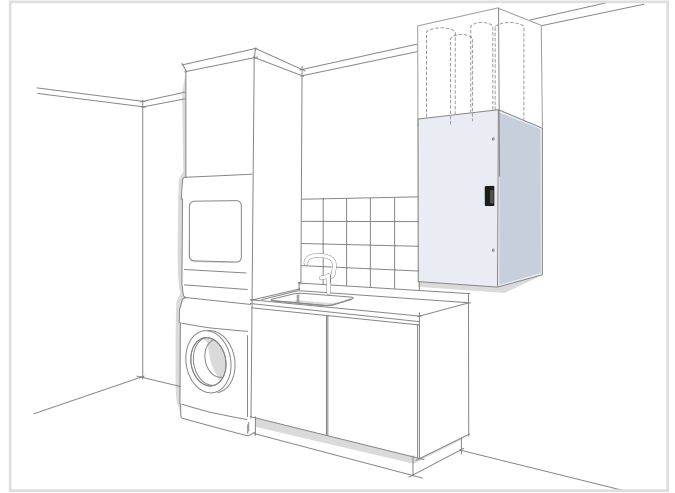
FLÅKTEN

HEAT RECOVERY UNIT HOUSEMASTER RDAS

TECHNICAL CATALOGUE



HEAT RECOVERY UNIT RDAS



The RDAS unit has a rotary heat exchanger with stepless speed control. This results in very precise temperature control, in turn allowing the supply air temperature to be controlled more accurately. The unit can be supplemented with an optional function that automatically limits the rotary heat exchanger's moisture recovery at high indoor humidity levels.

The RDAS unit is fitted with Fläkten ISYteq Mini control system, which can be supplemented with a ISYteq Touch 3.5 graphic control panel for full control.

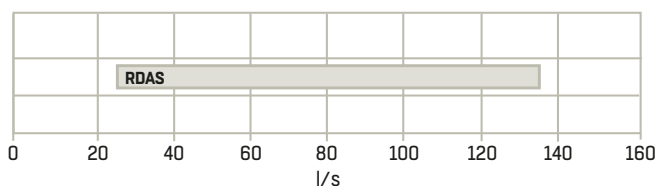
The unit is primarily intended for domestic use and small premises, and can be installed in a warm or cool space. It has all the connections pointing upwards and can be installed on a wall, vertical on the floor or horizontal on the floor with the hatch at the top.

The RDAS is supplied with a 2 metre cable for connection to the control panel.

ENERGY SAVINGS

The RDAS is a heat recovery unit with low energy consumption. The energy savings are achieved by using high-efficiency EC motors. Tests show that these motors have only 50–60% of the energy consumption of equivalent AC motors. The RDAS is equipped with a rotary heat exchanger with thermal efficiency up to 85% (conditions according to EN 308).

FLOW DIAGRAM



ENERGY CLASS

B

Compliant with energy class A+ in cold climate conditions (Scandinavia). If configured for on-demand control, the unit is compliant with energy class B in average climate conditions (Central Europe). Ecodesign Directive 1254/2014.

PRODUCT DATA

- Thermal efficiency, up to 85%
- Speed-controlled rotary heat exchanger
- High-efficiency EC motors
- Individually adjustable fans
- Recommended for homes with maximum areas of 280 m²
- Supply and extract air flow 105 l/s
- Filter, class ISO Coarse 85% (M5) / ISO Coarse 80% (G4)
- No drainage required
- Service-friendly and easy to install
- Automatic limitation of moisture recovery (optional)
- ISYteq Touch 3.5 graphic control panel (optional)
- Modbus communication

VVS AMA CODE

QAB

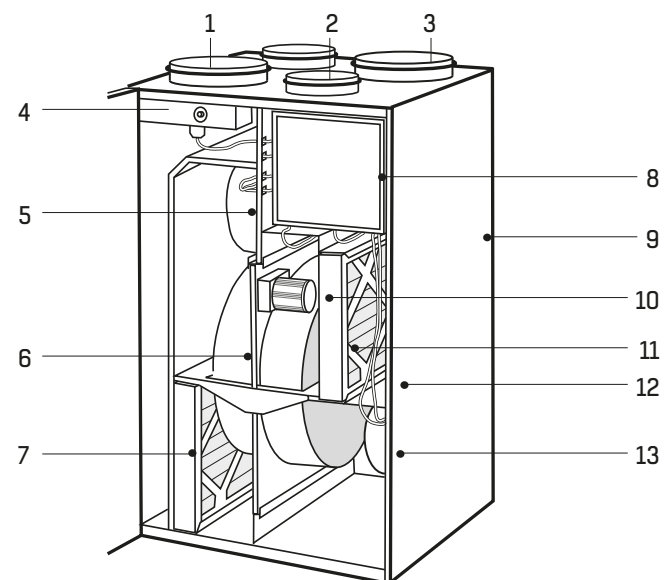
PRODUCT CODE EXAMPLE:

RDAS-1-1-1-2-0-5-1

RDAS heat recovery unit with post-heating, moisture control standard filters and Ethernet connection.

DESCRIPTION, CONTROL EQUIPMENT

THE UNIT'S MAIN COMPONENTS



- | | | |
|-----------------------|----------------------|--------------------------|
| 1. Outdoor air sensor | 6. Heat exchanger | 10. Heat exchanger motor |
| 2. Extract air sensor | 7. Supply air filter | 11. Extract air filter |
| 3. Supply air sensor | 8. Control unit | 12. Postheater |
| 4. Preheater | 9. Casing | 13. Supply air fan |
| 5. Extract air fan | | |

CASING

The outer casing is made of white painted sheet metal and the inner casing is made of galvanised sheet metal with a 25 mm intermediate layer of insulating mineral wool. The unit door is secured with screws.

FANS

The fans are powered by energy-efficient EC motors. They are easy to remove for service and maintenance. The speed of the fans can be adjusted steplessly independently of each other.

HEAT EXCHANGER

The unit is equipped with a rotary heat exchanger made of aluminium, which has a temperature efficiency of up to 85%. The heat exchanger has stepless speed control and is automatically controlled via an integrated control unit.

The unit is also equipped with an automatic defrosting function. The heat exchanger can be removed for cleaning.

Airflow l/s	50	75	100	125
Thermal efficiency, %	85	83	82	80

The table above shows the unit's temperature efficiency in % at a given flow, with conditions according to EN 308.

PREHEATER AND POSTHEATER

The unit has space for an integrated electric preheater and postheater. In regions where the dimensioned outdoor temperature (DUT 5) is lower than -25 °C, the unit should be supplemented with a preheater. Heaters can easily be retrofitted to the unit.

FILTER

The unit is fitted with class ISO Coarse 85% (M5) filters for the supply air and class ISO Coarse 80% (G4) filters for the extract air.

CONTROL EQUIPMENT

The unit is equipped with an electronic ISYteq Mini control unit. The control unit is integrated into the unit and controls the operation of the fans, the rotary heat exchanger and (if applicable) the preheater and postheater.

FAN CONTROL

Three operating modes can be selected via the control panel (accessory):

- "AWAY" is used when there is reduced need for ventilation, e.g. when occupants are on holiday
- "HOME" is used for normal ventilation flow
- "FORCED" is used when there is a greater need for ventilation (automatically reverts to normal after 120 minutes)

The unit can also be operated without a control panel, but only in one operating mode. The speed of the fans can be adjusted independently of each other.

The ISYteq Touch 3.5 control panel can be used for simple adjustment in plain text.

TEMPERATURE CONTROL

The control unit regulates the rotary heat exchanger and (if applicable) also regulates the postheater to maintain the set temperature.

The supply air temperature is adjusted towards the desired setpoint value in two steps. First this is done by means of energy recovery from the rotary heat exchanger and then, if this is not enough, by using the postheater.

If there is a preheater, it is controlled by the outdoor temperature. The heaters are only activated when the rotary heat exchanger is operating.

During cold periods, when frost may form in the rotor, the control unit activates a defrosting function. Defrosting takes place for 15 minutes every 6 hours when the outdoor temperature is below -10 °C.

COOLING RECOVERY

In the summer, if the extract air is cooler than the outdoor air, the rotary heat exchanger starts to recover cooling from the cooler extract air. This primarily applies if there is some type of cooling appliance in the house.

ALARMS

The system gives alarms for filter change, temperature, rotor error and sensor error. In ISYteq Touch 3.5 Touch (accessory), the alarms can only be acknowledged and read in plain text.

PACKAGING

The unit is delivered on a pallet with a corrugated cardboard cover for protection.

The unit comes complete with an iron suspension bracket for wall mounting, a rubber damper for floor installation and operating, maintenance and assembly instructions.

AIRFLOW, PRESSURE DROP, SFPv, SOUND AND ELECTRICAL DATA

SUPPLY AIR FAN

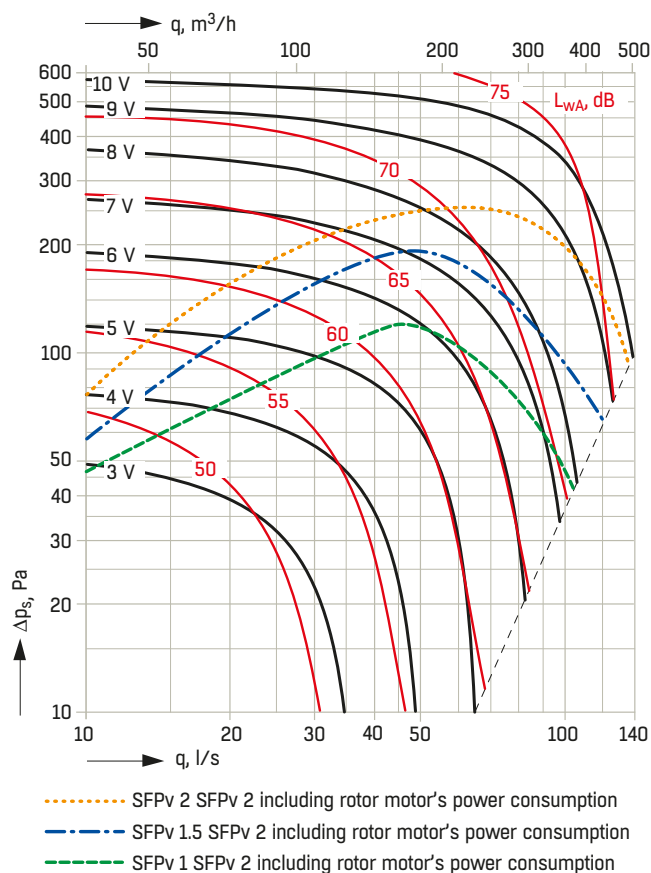


Diagram 5. a) Supply air fan, setting control voltage (V)
b) Sound to duct, L_{wA} (dB) for supply air fan

SOUND POWER LEVEL IN OCTAVE BANDS TO DUCT

The sound power level L_w (dB) in octave bands to the supply air and exhaust air ducts is obtained by adding the correction factor as per the table below (including sign) to the sound power level L_{wA} reading in the fan diagram above.

Sound path - correction, dB	Octave band, mid-frequency Hz							
	63	125	250	500	1000	2000	4000	8000
Supply air / Exhaust air	+8	+6	-1	-2	-5	-11	-15	-20

ELECTRICAL DATA

Voltage: 230 V, single phase 50 Hz.

Code	Fan motors Rated output, W	Preheater electrical, W	Postheater Electrical W	Rated output ¹⁾ Electrical W
RDAS	2 x 170	1000	1000	2360

¹⁾ Rated output applies when both the preheating and the postheating devices are installed.

EXTRACT AIR FAN

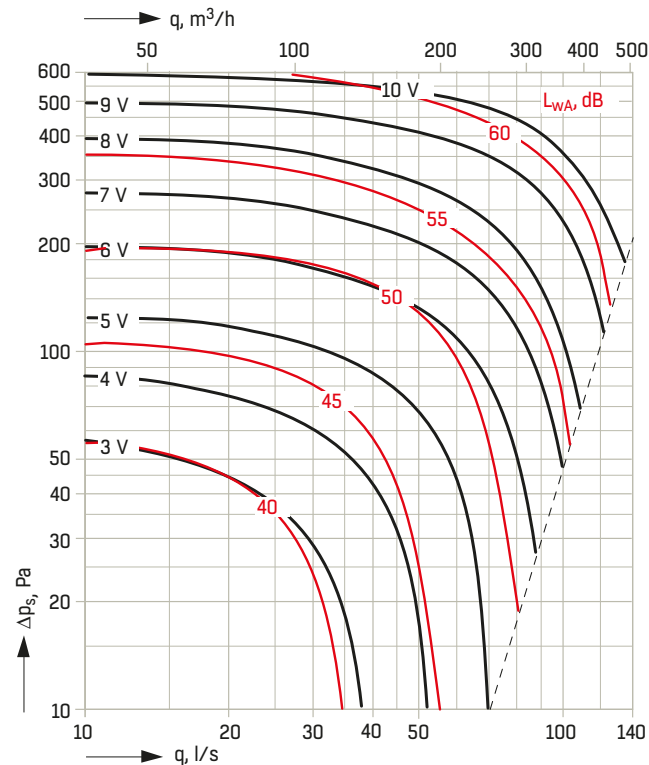


Diagram 6. a) Extract air fan, setting control voltage (V)
b) Sound to duct L_{wA} (dB) for extract air fan

SOUND POWER LEVEL IN OCTAVE BANDS TO DUCT AND ROOM

The sound power level L_w (dB) in octave bands to the extract air and outdoor air ducts and to the room is obtained by adding the correction factor as per the table below (including sign) to the sound power level L_{wA} reading in the fan diagram above.

Sound path - correction, dB	Octave band, mid-frequency Hz							
	63	125	250	500	1000	2000	4000	8000
Extract air / Outdoor air	+13	+7	+4	-2	-9	-14	-28	-36
To room	+1	+3	-4	-16	-24	-33	-38	-36

Sound to room = L_{wA} from the extract air fan diagram minus 13 dB gives the sound pressure level, L_{p10A} dB(A) at 10 m² room absorption.

SOUND LEVEL

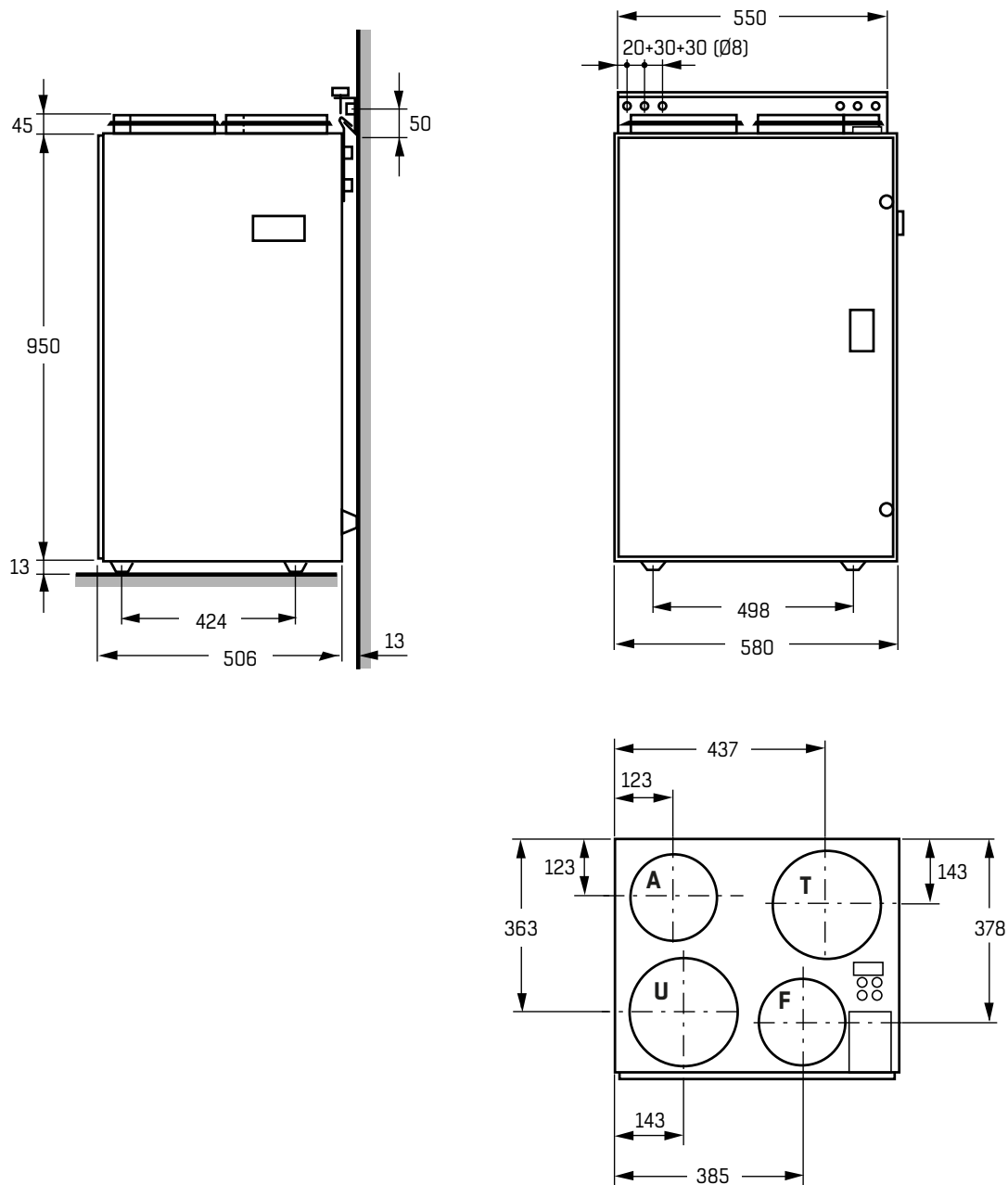
The sound level L_{p10A} (dB) is shown for a room with a 10 m² sound absorption area. To obtain the actual sound level, add the dB(A) values below (including sign):

Room area m ²	Normally furnished room	Heavily furnished room, e.g. kitchen
5	+2 dB(A)	+7 dB(A)
10	0 dB(A)	+4 dB(A)
15	-1 dB(A)	+1 dB(A)

INSTALLATION (FOR INSTALLER AND SERVICE PERSONNEL)

DIMENSIONS AND WEIGHT

Weight: 68 kg



Connection (female)	T	F	U	A
Diameter	200	160	200	160
Connection	Supply air	Extract air ¹⁾	Outdoor air	Exhaust air ¹⁾

¹⁾ To be increased to Ø200 as soon as space allows.

PRODUCT CODE, OPTIONS IN PRODUCT CODE, ACCESSORIES

PRODUCT CODE

Heat recovery unit

RDAS-a-b-c-d-e-f-1

Size (a) _____

1

Heater (b) _____

0 = without

1 = postheater electr. (1,000 W)

2 = postheater electr. and preheater electr. (1,000 W)

Moisture control (c) _____

0 = without

1 = with

Filter (d) _____

2 = supply air ISO Coarse 85% (M5)

extract air ISO Coarse 80% (G4)

Air quality control (e) _____

0 = without

6 = CO₂

Ethernet connection (f) _____

0 = without

5 = with

ACCESSORIES

Control panel

RDKZ-41-b

(required for fan adjustment)

Variant (b) _____

3 = ISYteq Touch 3.5 (touch panel)

Extension cable for the control panel

RDKZ-43-b-cc-1

Variant (b) _____

1 = 6-pin flat cable

Length (cc) _____

02 = 2 metres

10 = 10 metres

25 = 25 metres

Filter kit ISO Coarse 85% (M5) / ISO Coarse 80% (G4) (2+2) RDAZ-10

Combi hood ABRZ-01-1

Silencer BDER-30-020-090

OPTIONS IN PRODUCT CODE

MOISTURE CONTROL

This function automatically limits the rotary heat exchanger's moisture recovery at high indoor humidity levels.

This function can also be ordered retrospectively to supplement the unit, using the following product code: RDKZ-51-1.

CO₂ CONTROL

This function regulates towards a preset setpoint. The fan speed is automatically adjusted to achieve the desired CO₂ level.

NOTE! CO₂ control requires a ISYteq Touch 3.5 control panel (accessory) and is primarily used if the unit is installed in non-residential premises.

The CO₂ control function can also be ordered retrospectively to supplement the unit, using the following product code: RDKZ-52-6.

ETHERNET CONNECTION

This function can be used to connect the unit to an existing network.

The RDAS has an integrated web server, which makes it possible to read and change certain parameters via a web browser.

The connection can also be used for connection to a superior system via Modbus TCP/IP.

This function can also be ordered retrospectively to supplement the unit, using the following product code: RDKZ-53-5.

ACCESSORIES

CONTROL PANEL ISYteq Touch 3.5 - RDKZ-41-3

A user-friendly touch panel for wall mounting. All parameters are shown in plain text. Very easy adjustment and complete alarm management with reading and reset.

NOTE! A control panel is required for fan adjustment.

COMBI HOOD ABRZ-01-1

Wall-mounted outside wall cowl for outdoor air and exhaust air. The cowl, which is made of black, plastic-coated sheet metal, prevents air leakage between outdoor air and exhaust air.

SILENCER BDER-30

Silencer for ducts with diameter of 200 mm. L x D_y = 900 x Ø300 mm.

Mid-frequency, Hz								
Sound attenuation at BDER-30-020-090	63	125	250	500	1000	2000	4000	8000
	2	7	13	24	31	44	31	20



LYCKSELE

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MADE IN SWEDEN

FLAKTEN SYSTEMS AB

www.flakten.se