BROCHURE

SWEGON CASA GENIUS R

Intelligent residential ventilation unit with rotary heat exchanger

Swegon

Swegon CASA

Good indoor air is the key to a healthy home

Intelligent ventilation system monitors air quality in the living space and ventilation automatically according to tenants' needs. It saves energy and guarantees healthy indoor air automatically under all conditions.

Healthy indoor air
The ventilation removes the stale air and replaces it with fresh, cleaned and filtered air, so that the indoor air at home is always pleasant and healthy to breathe.

Prevents moisture problems
The ventilation removes excess humidity to prevent moisture problems and mold. Uncontrolled pressure differences can transfer moisture into structures. A well-balanced ventilation system can handle pressure balance, even in cold conditions, and when a wood burning stove or cooker hood is used!

The lowest noise level on the market
Swegon CASA units have been tested to have the lowest noise level on the market.

Saves energy
An energy-efficient ventilation system does not waste heat energy, but instead transforms it into free heating. The heat is recovered from dirty return air and transferred into incoming fresh supply air.

Energy labelling
Swegon CASA ventilation units have at least energy class A or A+. The energy class according to the Ecodesign directive can be checked via the official EU energy label.

UL and PHI certified
The certification guarantees that units have been tested and verified for North America and Passive House.

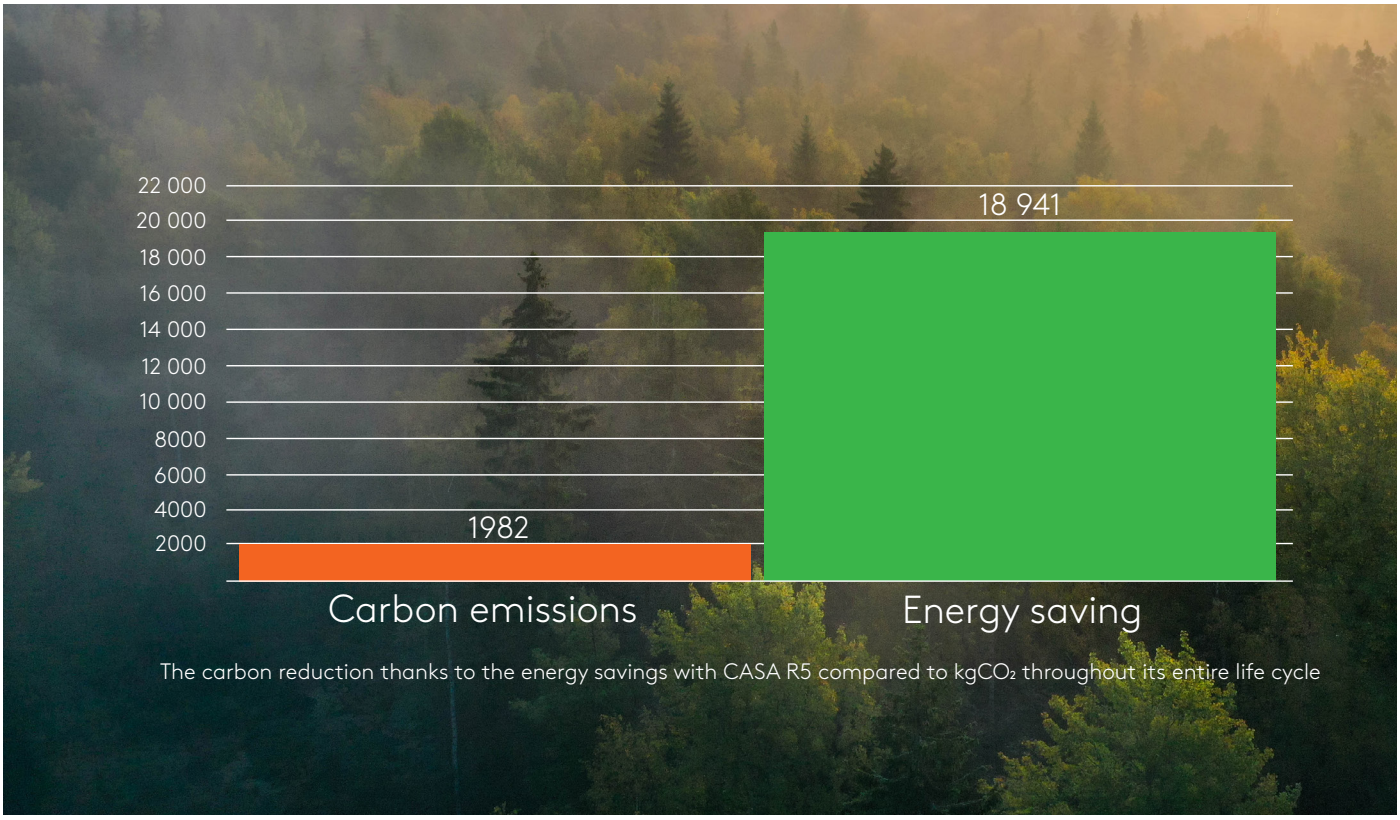
Swegon CASA R5 installed in
a closet behind a sliding door

Swegon CASA R4-C installed in a suspended ceiling

Carbon footprint

Ventilation is an environmental act

An intelligent ventilation system helps to reduce your home's environmental load. CASA ventilation units save energy and the environment many times over in relation to their carbon load. For an environmentally aware builder, an intelligent ventilation unit guarantees the green targets that have been laid down for a housing project.



The carbon reduction thanks to the energy savings with CASA R5 compared to kgCO_2 throughout its entire life cycle

The ventilation's impact on the environment

Swegon CASA is the first ventilation unit to have been awarded a certified environmental product declaration (EPD) and life cycle assessments (LCA).

This means that the carbon footprint throughout the ventilation unit's life cycle has been calculated by official bodies. These calculations include the raw materials that have been used in the production process, manufacturing, transport, energy consumption over 25 years of operation, as well as the environmental load during the recycling phase.

In practice, the ventilation unit's carbon footprint is in the same class as normal household appliances. Unlike other household appliances, however, the ventilation unit does not only cause carbon emissions. Thanks to its energy savings, the environmental benefits achieved by the ventilation unit are many times greater than its negative effects.

The reduction in carbon emissions resulting from the energy savings exceed the carbon emissions caused by the manufacturing process in well under a year, after which the ventilation unit reduces the entire building's carbon emissions for the next 25 years.

Swegon CASA Genius

Intelligent control of the ventilation

Using the Swegon CASA Genius control system, residents can monitor the quality of the indoor air (RH, CO2, VOC, °C), control the ventilation according to need or allow the intelligent control to regulate the ventilation automatically.

Swegon CASA control panel

Wall-mounted touch screen for external or flush mounting. From the touch screen, it is possible to monitor ventilation, change the ventilation's operating mode, change the equipment's settings and commission the ventilation unit. The screen can be connected to the home's WLAN network, enabling the ventilation to be controlled remotely from a mobile app.

The Swegon CASA app

Using this app, the home owner can use all the functions in the control panel remotely from their own smartphone. With the aid of the app, the user has access to more information about their home's air quality as well as valuable instructions and advice about the ventilation (needs Swegon Genius control panel).

The CASA Service app

App for installation engineers/service engineers, which provides assistance when commissioning the ventilation unit. The app works locally together with the ventilation unit and does not require connection to a network. For example, the app defines the I/O connections, presets the percentage values for the fan speeds that correspond to specified air volumes, as well as automatically setting air volumes for home and boost mode. Finished settings can be saved in the app and copied to the next home (needs Swegon Genius control panel).

Home automation

Can be connected to the home automation for centralised monitoring and control, either directly via configurable I/O or with the aid of a separate Modbus connection module (SEM).

BACnet router

Can be connected to BAC building automation network with a separate BACnet router.

Basic modes

You can switch as required to an appropriate operating mode or let the pre-programmed weekly clock switch operating mode according to the diurnal rhythm you want.

Home
Normal air flow. Sufficient amount of fresh indoor air to ensure the wellbeing of the residents and the structural building elements when there are people in the home.

Home+
Higher air flow. Can be used when more ventilation is required. The home owner can change the efficiency of the operating mode from the settings.

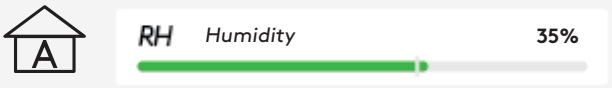
Boost
High air flow. Used if the ventilation requirement increases, for example, when cooking, taking a bath or drying laundry, or when an unusually large number of people are in the home.

Away
Low air flow. Reduces the energy consumption when nobody is present in the home.

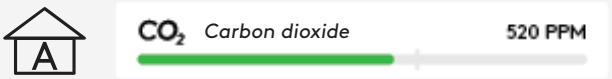
Travelling
Very low air flow and lower supply air temperature. Used when nobody is present in the home.

Automatic functions

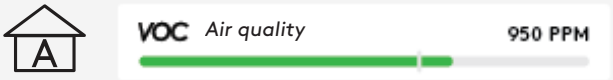
The intelligent ventilation monitors the quality of the indoor air and adjusts the ventilation automatically.



Automatic RH system included as standard
The intelligent control analyses the indoor air continuously and regulates the ventilation steplessly so that the set point humidity is maintained.



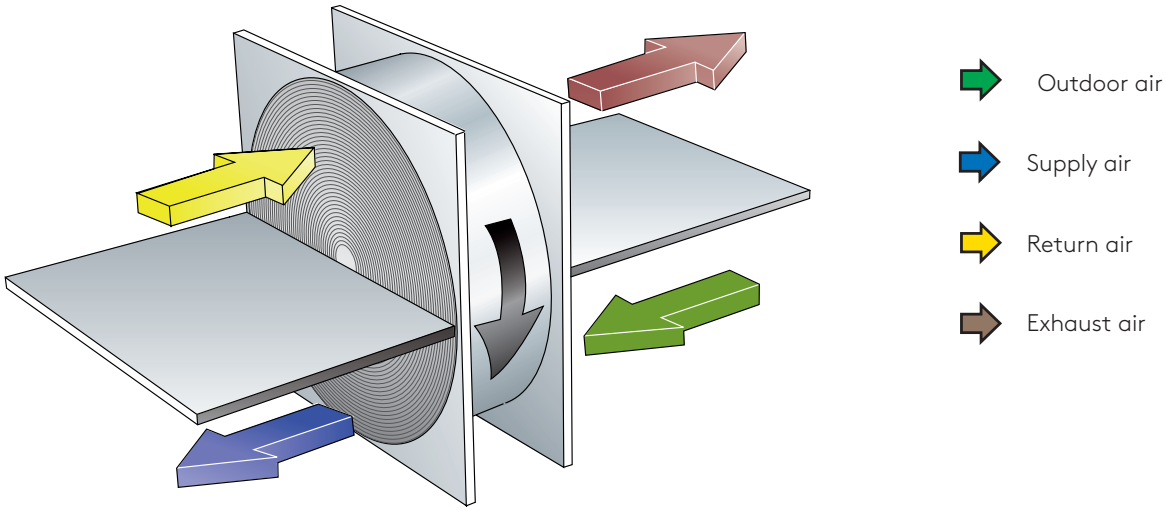
Automatic CO2 system as optional equipment
Automatically lowers the ventilation and saves energy when nobody is in the home. When the residents are at home, the ventilation is automatically boosted to bring exactly the right amount of fresh air into the home.



Automatic VOC system as optional equipment
The automatic air quality system boosts the ventilation if pollution, odours or vapours (evaporating organic compounds) are detected in the indoor air.

R-Series

Air handling units with rotary heat exchanger



Energy saving

Swegon CASA ventilation units with rotary heat exchangers boast a very high level of efficiency (up to 86%). When the stale indoor air is removed from the home, the thermal and latent energy is utilised and the fresh outdoor air that flows in is heated up by the residual heat energy. During the heating season, the ventilation unit creates "free" heating energy equivalent to up to 36°C (97F), by heating -20°C (-4F) outdoor air to +16°C (61F) supply air without using any auxiliary pre or post heating energy sources. A rotary enthlpy exchanger also recovers some of the moisture to the supply air. This is an advantage, particularly in the winter, when excessively dry indoor air can cause problems for the home and the residents. During the cooling season, the ventilation unit works as the first stage of cooling and dehumidification using the rotary enthalpy exchanger.

Balanced ventilation

Modern homes are built to be energy-efficient and simultaneously airtight. However, large pressure differences can cause a risk of moisture in the building's structures and give rise to everyday problems, such as difficulty lighting a fire or poor function in the cooker hood. Intelligent compensating features strive to balance the house's ventilation to prevent harmful pressure differences. They also help in the lighting and combustion of fires, and with the efficiency of the cooker hood or central vacuum cleaner function.

Frost protection

The defrost function ensures continuous ventilation, even in cold conditions. If there is a risk of the heat exchanger in the unit freezing, the speed of the rotor is changed and the heated extract air prevents freezing inside the heat exchanger. With the aid of preheating (optional equipment), balanced ventilation can be maintained and the occurrence of excessive negative pressure can be prevented, even in the case of extreme cold.

Reheating (optional equipment)

The return air's heating energy is usually sufficient to heat up the supply air. In extreme cold conditions, it is possible to use an electric or hydronic coil for reheating.The air heater for reheating must be placed external in the ventilation duct (see technical brochure).

Preheating (optional equipment)

Using a preheater, hydronic or electric coil, is recommended at ambient temperature lower than -25 C (-13 F) to prevent frost formation on heat exchanger. The air heater for preheating must be placed external in the ventilation duct (see technical brochure).

Summer functions

An intelligent summer function automatically regulates the ventilation to keep the temperature in the home at a pleasant level. At night, the air passes the heat exchanger and the home is cooled with fresh outdoor air. On warm and humid days, the heat exchanger utilises the cool and drier indoor air to cool down the warmer incoming air. This is all managed by an advanced automatic system that can be set according to the resident's requirements. By making smart use of the temperature and absolute humidity differences and the enthalpy exchanger, increases in the indoor temperature and humidity can be prevented or delayed economically.

Cooling

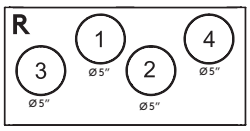
If there is a chilled water circuit (e.g. ground cooling) in the building, a separate coil can be supplied as optional equipment and be installed in the supply/return air duct to produce efficient cooling in the home. The ventilation unit's control system controls the supply air temperature automatically.

R-Series

1. Supply air
2. Return air
3. Outdoor air
4. Exhaust air

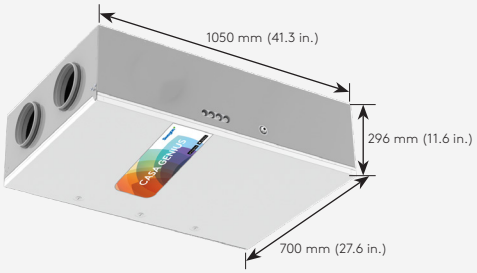
CASA R3

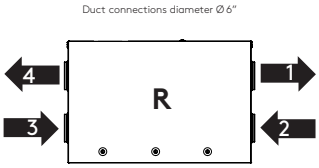
- 25-80 l/s | 53 - 169 cfm
- ERV/HRV
- Energy class A*/Sound level 39 dB
- Temperature efficiency 86 % (EN 13141-7)
- Automatic rotor speed control for demand-controlled humidity function
- Wall or ceiling mounting



CASA R4-C

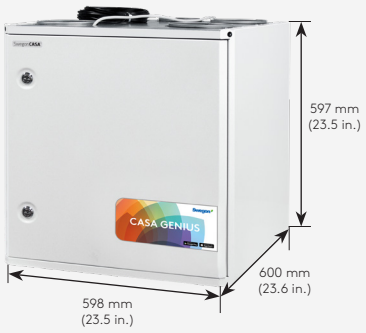
- 20-92 l/s | 42 - 194 cfm
- ERV/HRV
- Energy class A*/Sound level 39 dB
- Temperature efficiency 82 % (EN 13141-7)
- Automatic rotor speed control for demand-controlled humidity function
- Low installation height (296 mm - 11.6 in.) allows ceiling installation flush in suspended ceilings
- Can also be mounted on a wall or the floor
- Vertical mounting only with R4-C Enthalpy (ERV) unit

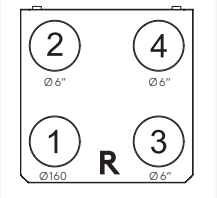




CASA R5

- 35-120 l/s | 75 - 254 cfm
- ERV/HRV
- Energy class A*/Sound level 37 dB
- Temperature efficiency 86 % (EN 13141-7)
  Automatic rotor speed control for demand-controlled humidity function
- Wall or ceiling mounting
- PHI sensible and humidity efficiency +80%





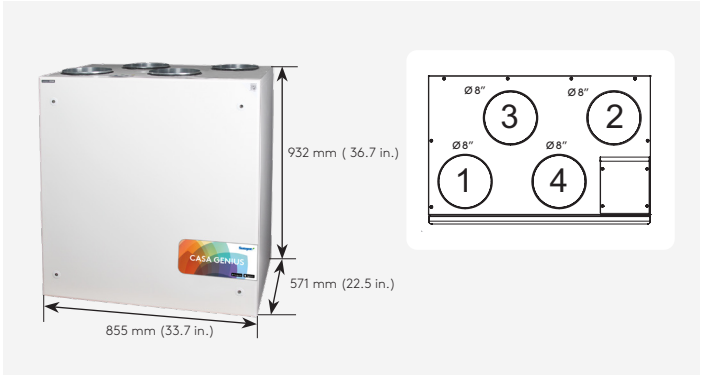
*Energy classification according to EcoDesign directive Lot 6. Energy class may vary depending on the selected accessories.

R-Series

1. Supply air
2. Return air
3. Outdoor air
4. Exhaust air

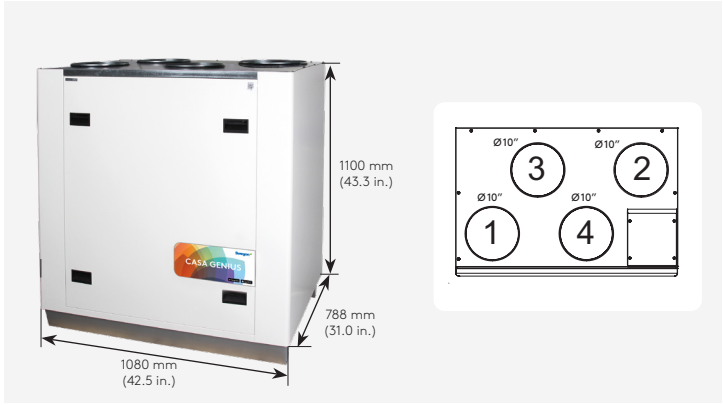
CASA R7

- 60-188 l/s | 127 - 398 cfm
- ERV/HRV
- Energy class A*/Sound level 46 dB
- Temperature efficiency 86 % (EN 13141-7)
- Automatic rotor speed control for demand-controlled humidity function
- Passive House -certified
- Mounted on floor firm surface
- PHI sensible and humidity efficiency +80%



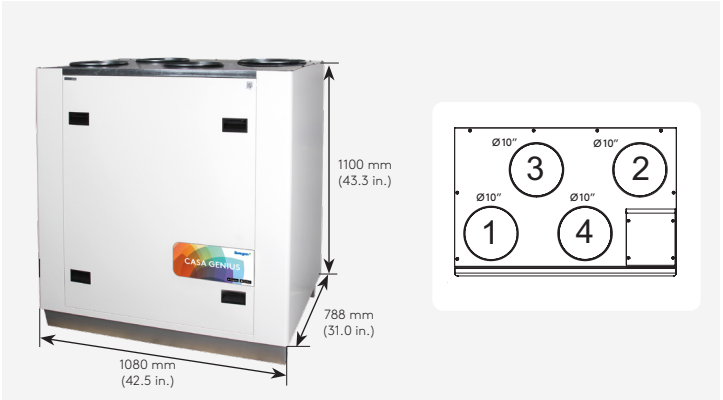
CASA R9

- 75-242 l/s | 159 - 512 cfm
- ERV/HRV
- Energy class A* +/Sound level 43 dB
- Temperature efficiency 86 % (EN 13141-7)
  Automatic rotor speed control for demand-controlled humidity function
- Passive House -certified
- Mounted on floor
- PHI sensible and humidity efficiency +80%



CASA R15

- 100-475 l/s | 211–1006 cfm
- ERV/HRV
- Energy class A* +/Sound level 43 dB
- Temperature efficiency 86 % (EN 13141-7)
- Automatic rotor speed control for demand-controlled humidity function
- Mounted on floor
- PHI sensible and humidity efficiency +80%



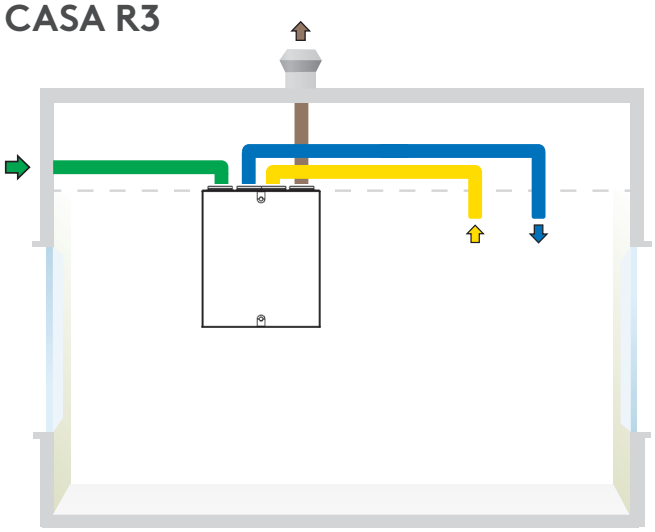
*Energy classification according to EcoDesign directive Lot 6. Energy class may vary depending on the selected accessories.

Installation examples

Outdoor air
Supply air
Return air
Exhaust air

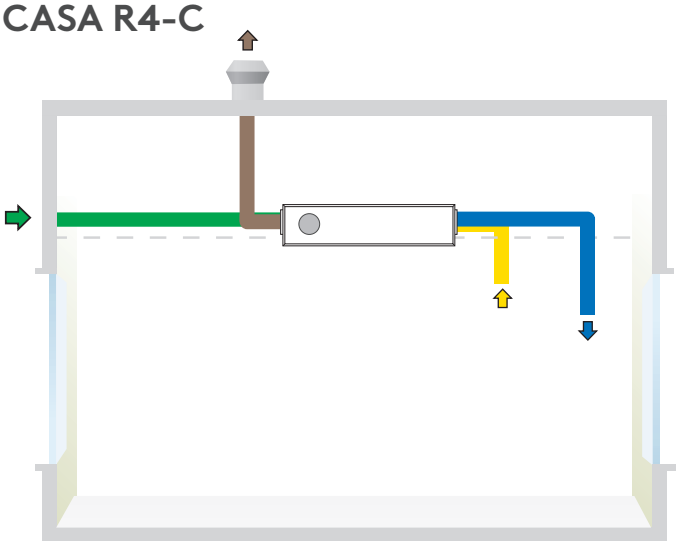
Note! Always check the unit design (L/R) and correct duct sequence in the installation instructions.

CASA R3



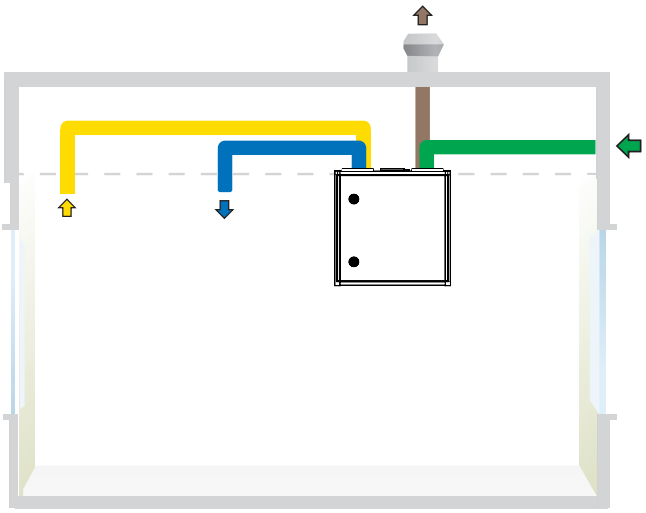
CASA R3 R duct connections

CASA R4-C



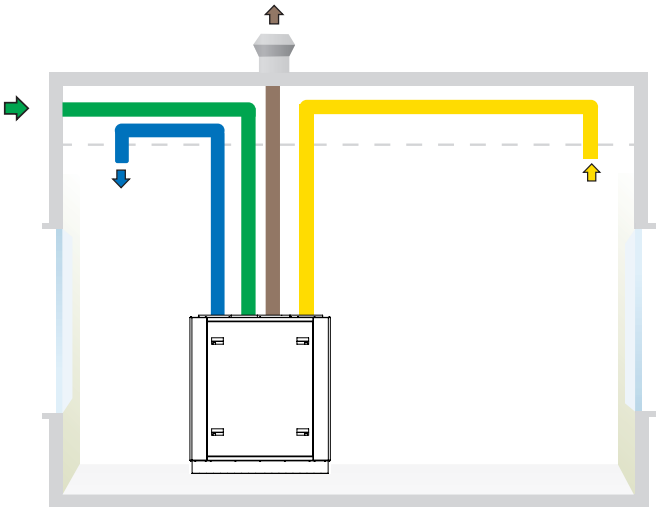
CASA R4-C duct connections

CASA R5



CASA R5, duct connections

CASA R7 / R9 / R15



CASA R7/R9/R15 duct connections

MagiCAD

3D models and CAD dimension sketches for all Swegon CASA products are available from MagiCloud. You can download DXF files directly from MagiCloud or use a MagiCAD plugin to transfer dimension sketches to the Revit and AutoCAD software packages.

www.magicloud.com

CASA R - Ventilation units

CASA R3	Part no.
CASA R3V right (HRV)	R03VR00G0NHF
CASA R3V right Sorption (ERV)	R03VR00G0NHFS

CASA R4-C	Part no.
CASA R4-C Genius R (HRV)	**********
CASA R4-C Genius R Sorption (ERV)	**********

CASA R5	Part no.
CASA R5V right (HRV)	R05VR00G0NH
CASA R5V right Sorption (ERV)	R05VR00G0NHAS

CASA R7	Part no.
CASA R7V left Sorption (ERV)	R07VL00G0NHAS

CASA R9	Part no.
CASA R9V left (HRV)	R09VL00G0NH
CASA R9V left Sorption (ERV)	R09VL00G0NHAS

CASA R15	Part no.
CASA R15V left (HRV)	R15VL00G0NH
CASA R15V left Sorption (ERV)	R15VL00G0NHAS

CASA R - Accessories

Control accessories	Part no.
GC50 CASA Genius control panel and WiFi	GC50
Frame for control panel GC50	102SAK
CASA Genius boost/home/away control button	GC04

Building automation	Part no.
Modbus connection module	SEM
Connection cable (configurable I/O) for Genius ventilation units	SEC
Room temperature sensor, total package with connection unit for ventilation units. The sensor is installed on the wall or in a recessed junction box (60 mm between holes).	WSTC

Automatic functions	Part no.
RH + CO2 automation	SRHCO2
RH + VOC automation	SRHVOC

Other accessories	Part no.
Connection module for control of the duct mounted air heater/cooler / control of shut-off dampers	SET
PTH Regulation for constant duct pressure	PTH

Duct mounted shut-off dampers	Part no.
Damper Ø125 mm (5 in) (R3)	SDD125
Damper Ø160 mm (6 in) (R3/R4-C/R5)	SDD160
Damper Ø200 mm (8 in) (R7)	SDD200
Damper Ø250 mm (10 in) (R7/R9)	SDD250
Damper Ø315 mm (12 in) (R9)	SDD315

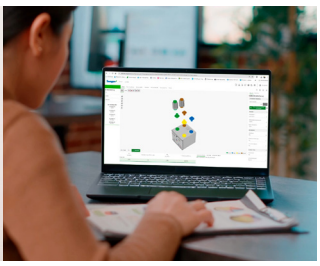
Part No.	Heater Capacity (W)	Collar size (in.)	Voltage (V) - single phase	Amps (A)	Part No.
Zon - 5-1.2-240	1200	5″	240	5	CA101558
Zon - 6-1.2-240	1200	6″	240	5	CA101559
Zon - 8-1.2-240	1200	8″	240	5	CA101560
Zon - 10-1.2-240	1200	10″	240	5	CA101561
Zon - 5-1.2-208	1200	5″	208	5.8	CA101562
Zon - 6-1.2-208	1200	6″	208	5.8	CA101563
Zon - 8-1.2-208	1200	8″	208	5.8	CA101564
Zon - 10-1.2-208	1200	10″	208	5.8	CA101569
Zon - 8-2-240	2000	8″	240	8.3	CA101566
Zon - 10-2-240	2000	10″	240	8.3	CA101567
Zon - 8-2-208	2000	8″	208	9.6	CA101568
Zon - 10-2-208	2000	10″	208	9.6	CA101565

R-Series
Overview

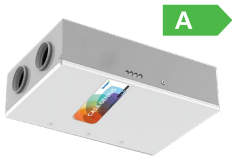
AHU DESIGN

Web based selection software for Swegon AHU's.

swegon.com/na



● Standard equipment
○ Available
— Not available



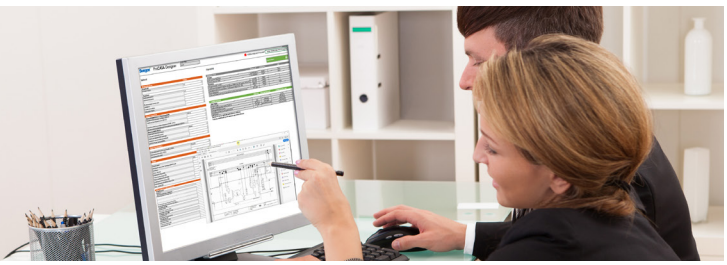
		R3	R4-C	R5
	Airflow range	53 - 169 CFM	194 CFM	75 - 254 CFM
	Apartment size	< 150 m² (1500 sq. ft.)	< 170 m² (1700 sq. ft.)	< 240 m² (2400 sq. ft.)
Ecodesign Lot 6	Sound power level (L_{WA}) in dB(A)	39	39	37
	Filter class	MERV 13 (Optional MERV 15)	MERV 13 (Optional MERV 15)	MERV 13 (Optional MERV 15)
	Heat exchanger efficiency (EN 13141-7)	86 %	82 %	86 %
	Control system	Genius	Genius	Genius
	Humidity function (RH)	●	●	●
	Auto home / away / boost (CO_2)	○	○	○
	Air quality function (VOC)	○	○	○
	Compensatiorfunctions	●	●	●
	Control panel	○	○	○
	Remote control system	Configurable I/O or Modbus	Configurable I/O or Modbus	Configurable I/O or Modbus
	Fans	230 W	170 W	230 W
	Connection power	250 W / 750 W	690 W	250/1050 W
	Power connection	230 V, 60 Hz, 10 A	230 V, 60 Hz, 10 A	230 V, 6 0 Hz, 10 A
	Internal Electric preheater	—	—	—
	External electric preheater (duct mounted)	○	○	○
	External electric reheater (duct mounted)	○	○	○
	External electric reheater/ cooling (duct mounted)	○	○	○
	Passive cooling with automatic summe bypass	●	●	●
	Wall installation	●	●	●
	Ceiling installation	○	○	○
	Floor installation	●	—	●
	Inspection side	R(L)	R(L)	R(L)

Energy class according to Ecodesign Directive Lot 6 (average). Energy class can vary depending on equipment level of the unit.

ProCASA®

Energy calculation and functional diagram

procasa.swegon.com



● Standard equipment

○ Available

— Not available

		R7	R9	R15
	Airflow range	127 - 398 CFM	159 - 512 CFM	211 – 1006 CFM
	Apartment size	< 450 m²	< 500 m²	< 850 m²
Ecodesign Lot 6	Sound power level (L_{WA}) in dB(A)	46	43	43
	Filter class	MERV 13 (Optional MERV 15)	MERV 13 (Optional MERV 15)	MERV 13 (Optional MERV 15)
	Heat exchanger efficiency (EN 13141-7)	86 %	86 %	86 %
	Control system	Genius	Genius	Genius
	Humidity function (RH)	●	●	●
	Auto home / away / boost (CO_2)	○	○	○
	Air quality function (VOC)	○	○	○
	Compensation functions	●	●	●
	Control panel	○	○	○
	Remote control system	Configurable I/O or Modbus	Configurable I/O or Modbus	Configurable I/O or Modbus
	Fans	340 W	340 W	1000 W
	Connection power	365 W	366 W	1026 W
	Power connection	230 V, 60 Hz, 10 A	230 V, 60 Hz, 10 A	230 V, 60 Hz, 10 A
	Internal Electric preheater	—	—	
	External electric preheater (duct mounted)	○	○	○
	Internal Electric reheater	—	—	—
	External electric reheater (duct mounted)	○	○	○
	External water coil for reheating/ cooling available (duct mounted)	○	○	○
	Passive cooling with automatic summer bypass	●	●	●
	Wall installation	—	—	—
	Ceiling installation	—	—	—
	Floor installation	●	●	●
	Inspection side	L	L	L

* Defined as non-residential ventilation unit according to Ecodesign Lot 6.

Feel good **inside**

Swegon