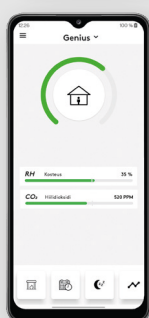


# CASA R5-H Genius

Technical catalogue



## QUICK FACTS

- Can be mounted on the wall or floor
- Wall mounting bracket and the floor mounting base available as accessories
- Control from the control panel and mobile app
- Can be connected to building automation systems (Modbus)
- Demand-based control of air flows (RH, CO<sub>2</sub>, VOC\*)
- Stepless supply air temperature control
- Automatic summer and winter function

## UNIT TECHNICAL CONTENT

|                                       |                                                             |
|---------------------------------------|-------------------------------------------------------------|
| Air flow range                        | 30-130 l/s   108-468 m <sup>3</sup> /h                      |
| Dimensions, w x l x h                 | 702 x 479 x 613 mm                                          |
| Duct outlets                          | 4 x Ø 160 mm                                                |
| Energy calculations and acoustic data | procasa.swegon.com                                          |
| Connection power                      | 250 W   950 W                                               |
| Power connection                      | 230 V, 50 Hz, 10 A                                          |
| Fans                                  | 230 W, EC                                                   |
| Enclosure class                       | IP21                                                        |
| Filters                               | ISO ePM1 50% (F7) filters for supply air and extract air    |
| Colour                                | Exterior White, RAL 9016<br>(corresponds to NCS S0502-G50Y) |

# Content

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# Technical description

## Swegon CASA R5-H Genius

The R5-H is a horizontal ventilation unit that is suitable for ventilation in large apartments, offices or conference rooms.

The ventilation unit is controlled from the control panel and via a mobile app (iOS/Android) and can be connected to building automation systems using Modbus.

The unit is Eurovent certified and has a third-party certified EPD environmental declaration and LCA life cycle assessment.

## Indoor environmental quality

### Ventilation control

The unit is controlled steplessly with automation functions to guarantee the best indoor environmental quality. The user can select five operating modes home, away, boost, travelling and home+ by using control panel, cooker hood or Swegon CASA app. Operation modes can be automated with unit's weekly programs.

### Temperature control

The supply air temperature is controlled with heat exchanger and if needed with optional heating or cooling element.

The unit has automatic summer time detection. The function sets lower supply air temperature setpoint and boost ventilation in order to bring more fresh outdoor air to the apartment during summer nights.

## Available variants

Standard units are available in following variants:

- Unit with out postheater
- Unit with 700 W postheater

## Components

### Fans

CASA R5-H is equipped with energy efficient EC fans.

### Filter

The ventilation unit is equipped with ISO ePM1 50% (F7) filters for supply air and extract air. The need of filter replacement is indicated on the control panel and on the CASA cooker hood.

### Heat exchanger

The ventilation unit is equipped with a **speed controlled rotary heat exchanger**. Heat exchanger is controlled either to maintain constant supply air temperature or to achieve maximum energy efficiency (winter mode).

### External connections

All connections can be made without opening the electrical box. Plug-in modules are available for external connections. Wide variety of IO functions are available.

The ventilation unit is equipped with In-build Modbus. Modbus cabling can be made easily with external cable (SEC) or module (SEM). Unit can be fully controlled with Modbus and all external IO's can be configured to Modbus usage.

## Protective functions

### The heat exchanger freeze protection

The defrosting function guarantees continuous ventilation and maintains units performance even during extreme conditions. If reheat can't maintain sufficient supply air temperature, the air flows are reduced.

### The fan overheating protection

The fan overheat protection stops the fan if the temperature rises too high and is reseted automatically. If protection stops the fans an alarm is generated.

### Rotor guard

Rotor guard detects that the rotor is working. Malfunction generates an alarm.

### Cold supply air

The ventilation unit has built-in condensation protection. If the supply air is too cold, the ventilation unit stops and an alarm is generated

### High temperature

If supply air or units internal temperature is detected dangerously high the unit is stopped and an alarm is generated.

### Temperature sensors

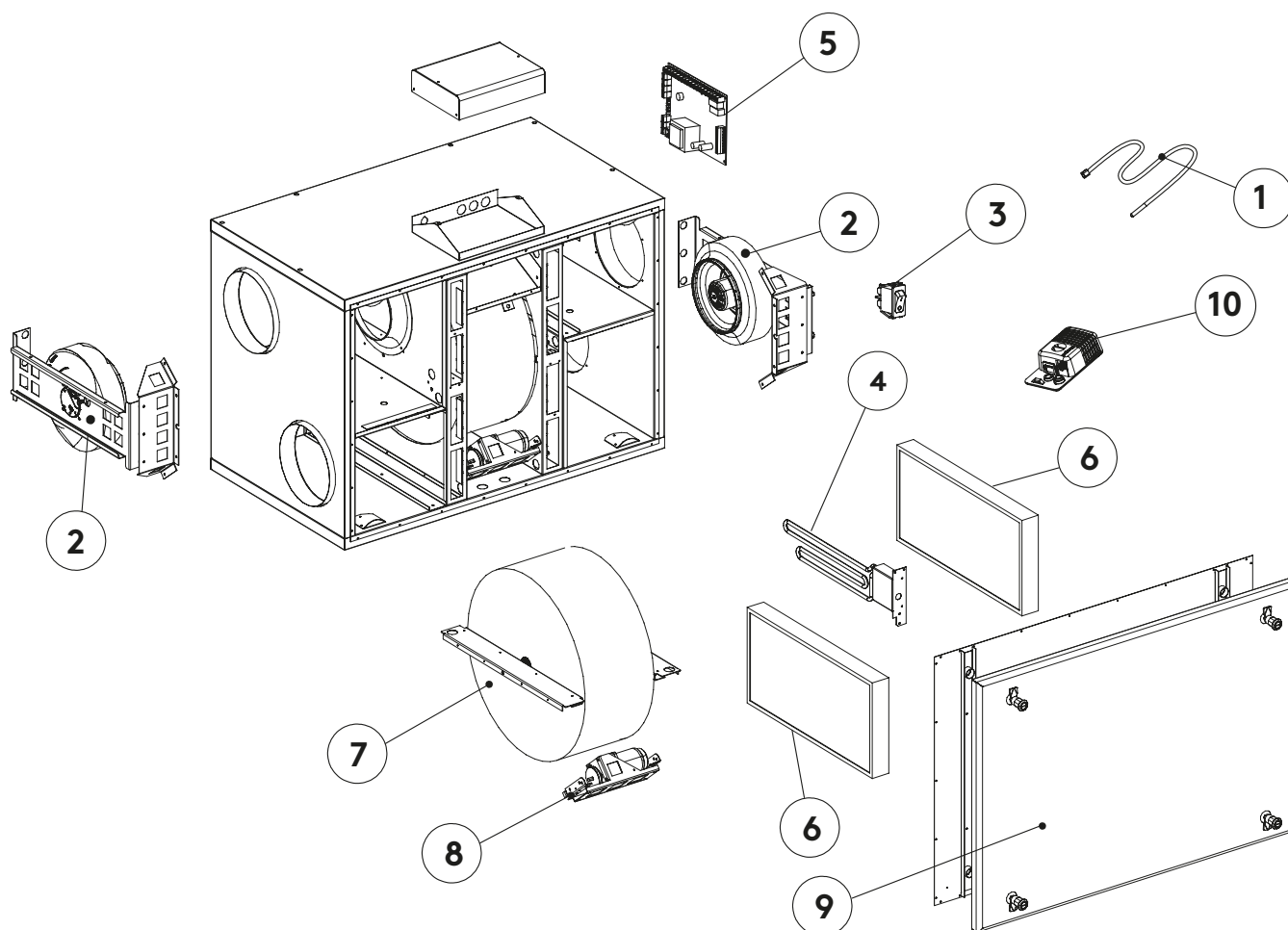
If a sensor fault is detected, an alarm is generated. If the faulted sensor is critical the ventilation unit is stopped. The ventilation unit returns to normal mode once the fault has been corrected.

## The delivery includes

- Ventilation unit
- Quick Guide
- Installation and commissioning instruction
- Product fiche

## Standard connections

- Power cord with earthed plug (2 m)
- Modular cable with RJ9 connector (1.5 m)
- Freely configurable I/O contacts for connection of accessories (2 pcs.)



1. Temperature sensor
2. Fan
3. Operating switch
4. Reheating module 700 W (optional)
5. Genius control board
6. ISO ePM1 50% (F7) filters
7. Rotor
8. Rotor motor
9. Door
10. Sensor package, RH + CO<sub>2</sub>

## Swegon CASA Genius

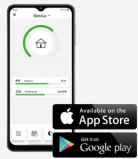
# Intelligent control of the ventilation

With Swegon CASA Genius residents can monitor the indoor air quality (RH, CO<sub>2</sub>, VOC, °C), adjust ventilation to their wishes or let the intelligent control to adjust ventilation automatically while saving energy and providing fresh and healthy indoor air.



### The Swegon CASA control panel (GC10)

Wall-mounted touch screen for external or flush mounting. From the touch screen user can monitor ventilation, change ventilation mode, change the settings and commission the ventilation unit. The screen can be connected to the home WLAN, enabling the ventilation to be controlled remotely from a Swegon CASA mobile app



### The Swegon CASA app

With Swegon CASA app residents can use all the control functions remotely from their own smartphone. Users get more information about their home's air quality as well as valuable instructions and advice about the ventilation (requires Swegon Genius control panel).



### The CASA Service app

for quick and easy commissioning. The app works locally together with the ventilation unit and doesn't require connection to network. The app defines the I/O connections, presets the fan speeds that correspond to specified air volumes, as well as automatically sets air volumes for home and boost mode. Finished settings can be saved in the app and copied to the next apartment (requires Swegon Genius control panel).



### Swegon CASA cooker hood

With cooker hoods, it is possible to control the ventilation unit's operating mode (home, away, boost), the cooker hood's shut-off damper and the lighting in the hood. The system balances the ventilation automatically when using the cooker hood.



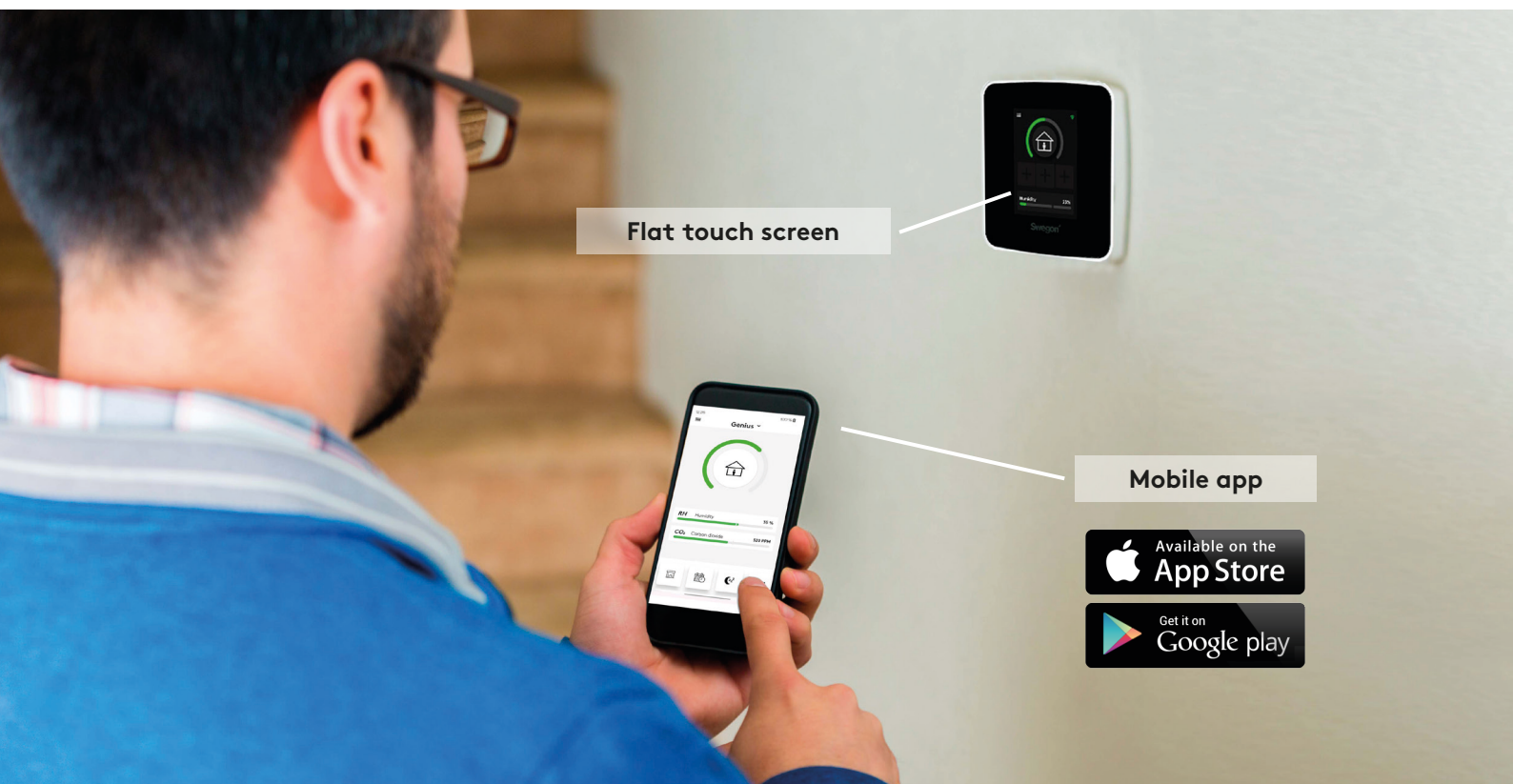
### The Swegon CASA HOME/AWAY/BOOST control switch (GC04)

Wall-mounted control switch for selecting boost, home and away modes.



### 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).



Flat touch screen

Mobile app

Available on the  
App Store

Get it on  
Google play

## 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.



**RH** Humidity 35%



### Automatic RH system included as standard

Humidity automation removes damaging moisture. The intelligent control analyses the indoor air continuously and regulates the ventilation steplessly so that excess moisture is removed, for example when you are washing.



**CO<sub>2</sub>** Carbon dioxide 520 PPM



### Automatic CO<sub>2</sub> 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.



**VOC** Air quality 950 PPM



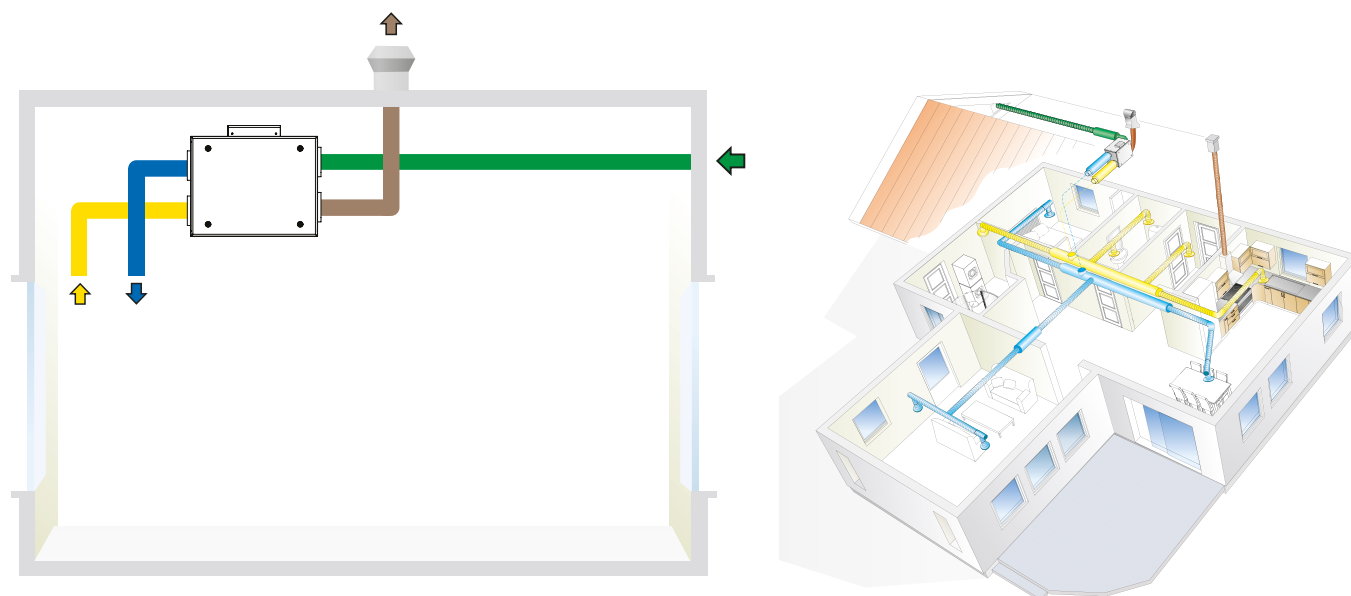
### Automatic VOC system as optional equipment

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



Swegon CASA -liesikuvulta  
voi ohjata ilmanvaihtoa

## Design data



Outdoor air



Supply air



Extract air



Exhaust air

*The ventilation unit has been supplied in the left-hand version (L) and it can be changed to right-hand version (R) on site.  
Note! Always check the correct duct sequence in the installation instructions.*

# ProCASA®

Energy calculation, functional diagram and acoustic data on ProCASA.

[procasa.swegon.com](http://procasa.swegon.com)



**Energy calculator**

Select area  
FIN - Vantaa

24.0°C ... 26.0°C  
Data from RT 2020

☐ Make calculation for commercial building (BHV3)  
☐ Include Finnish regulation

Select and print pages  
☒ Energy calculation and dimensions

Project  
Customer  
Designed by  
Location

Default values  
Air flow: Supply air 50 l/s, Extract air 50 l/s  
Duct pressure: 80 Pa, 80 Pa  
Cooker hood airflow: 0 l/s  
usage time per day: 0 h/d

Indoor temperature 21°C  
Minimum supply air temperature (+10°C...-12°C)  
+10 +11 +12 +13 +14 +15 +16 +17 +18 +19 +20 +21

\*) Additional accessories may be needed

Eco-Design requirements  
SEC class: A  
SEC cold / average / warm climates: A  
Max airflow rate: 33 m³/h  
Sound power level: 32 dB(A)

This unit can be equipped with:  
☒ Clock control\*  
☒ Central demand control\*  
☐ Local demand control\*

**Fan power and energy use EN13141-7**

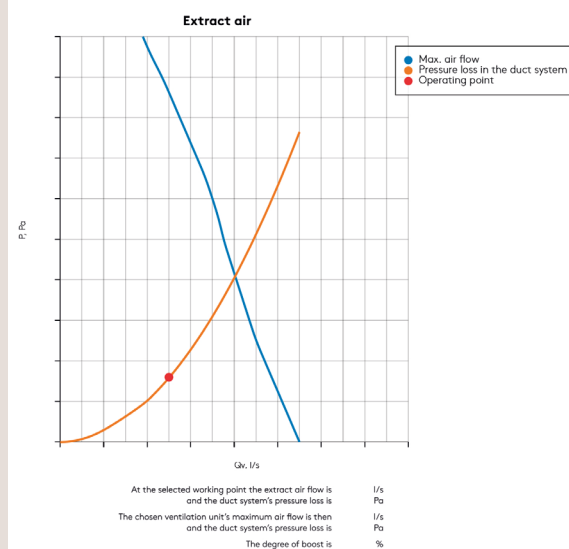
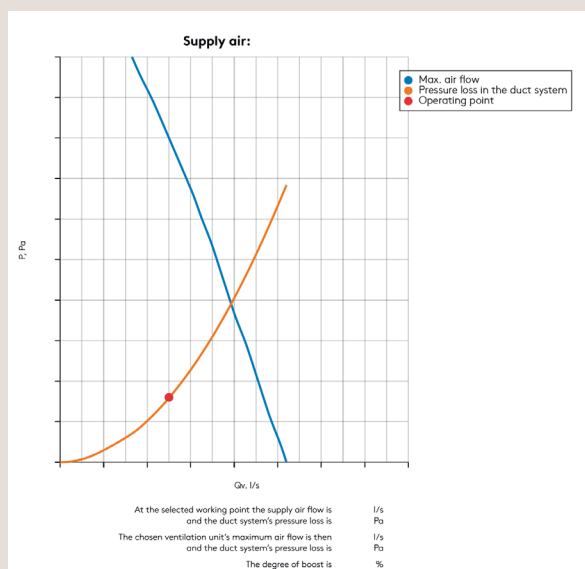
|                           |                  |
|---------------------------|------------------|
| Supply air                | 31 W             |
| Extract air               | 27 W             |
| SFP                       | 0.34 W / (m³/s)  |
| SFP                       | 1.16 kW / (m³/s) |
| Annual energy use of fans | 508 kWh          |

**Energy used to heat the air EN13141-7**

|                                                |          |
|------------------------------------------------|----------|
| Preheating                                     | 0 kWh    |
| Reheating to 17 °C                             | 237 kWh  |
| Heating the supply air to 21 °C                | 1243 kWh |
| Heating the infiltrated air to 21 °C           | 0 kWh    |
| Energy used to heat up ventilated air to 21°C  | 1481 kWh |
| Energy used without heat recovery              | 2114 kWh |
| Annual energy efficiency for room (21°C)       | 79 %     |
| Heating the infiltrated air to 17 °C           | 0 kWh    |
| Energy used to heat up ventilated air to 17 °C | 237 kWh  |
| Annual energy efficiency for AHU (17 °C)       | 97 %     |
| Temperature efficiency of heat exchanger       | 82 %     |
| Temperature efficiency of air handling unit    | 80 %     |

**Acoustic data**

| Octave band (Hz)                       | 63                       | 125            | 250            | 500            | 1k             | 2k             | 4k             | 8k             | L <sub>max</sub> |
|----------------------------------------|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
|                                        | L <sub>w</sub>           | L <sub>w</sub> | L <sub>w</sub> | L <sub>w</sub> | L <sub>w</sub> | L <sub>w</sub> | L <sub>w</sub> | L <sub>w</sub> |                  |
| Sound emitted to:                      | dB                       | dB             | dB             | dB             | dB             | dB             | dB             | dB             | dB(A)            |
| supply air duct                        | 48                       | 49             | 48             | 57             | 52             | 49             | 44             | 37             | 62               |
| extract air duct                       | 40                       | 43             | 41             | 45             | 34             | 33             | 21             | 19             | 54               |
| exhaust air duct                       | 60                       | 63             | 62             | 47             | 35             | 31             | 21             | 18             | 55               |
| kitchen bypass duct                    | 67                       | 68             | 68             | 56             | 52             | 48             | 43             | 36             | 62               |
| surroundings                           | 50                       | 44             | 45             | 37             | 28             | 19             | 12             | 11             | 39               |
| surroundings at -4dB sound attenuation | L <sub>pa</sub> dB(A) 35 |                |                |                |                |                |                |                |                  |



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.

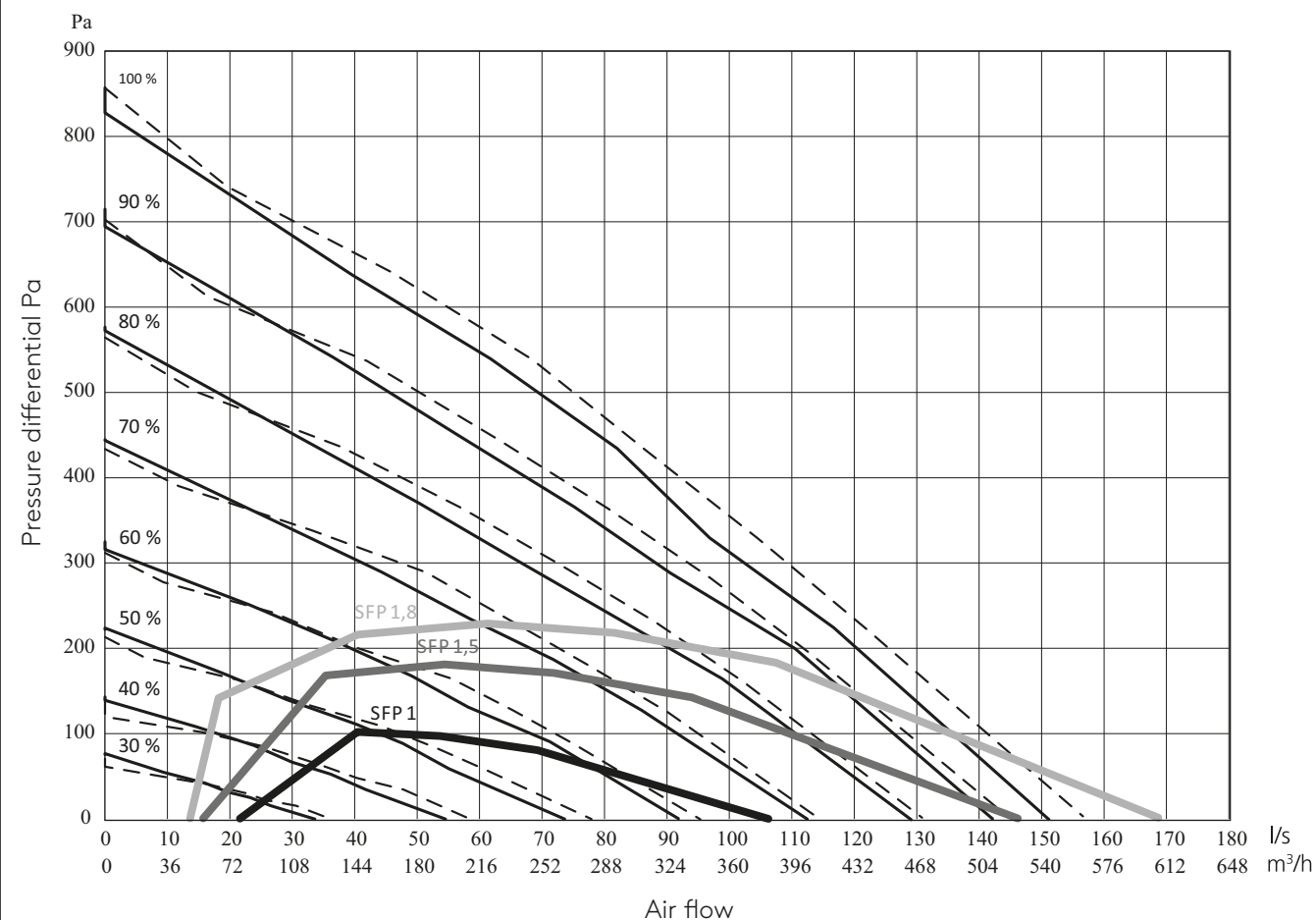
[www.magicloud.com](http://www.magicloud.com)

# Air flows

Air flows EN 13141-4

R5-H

— Supply airflow  
 - - - Extract airflow



## Acoustic data

See acoustic data on ProCASA.

[procasa.swegon.com](http://procasa.swegon.com)

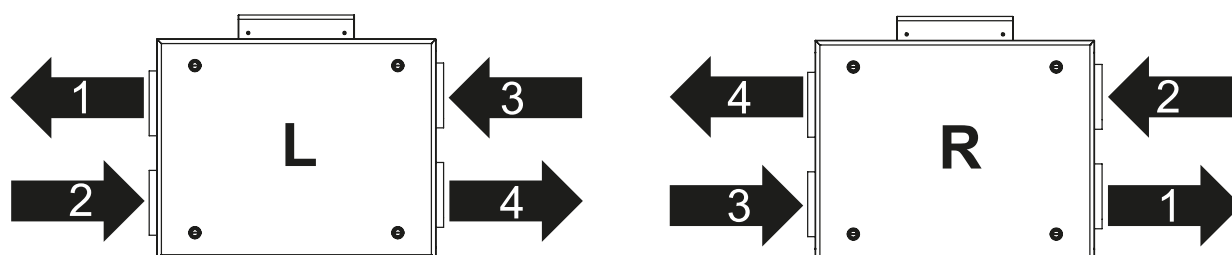
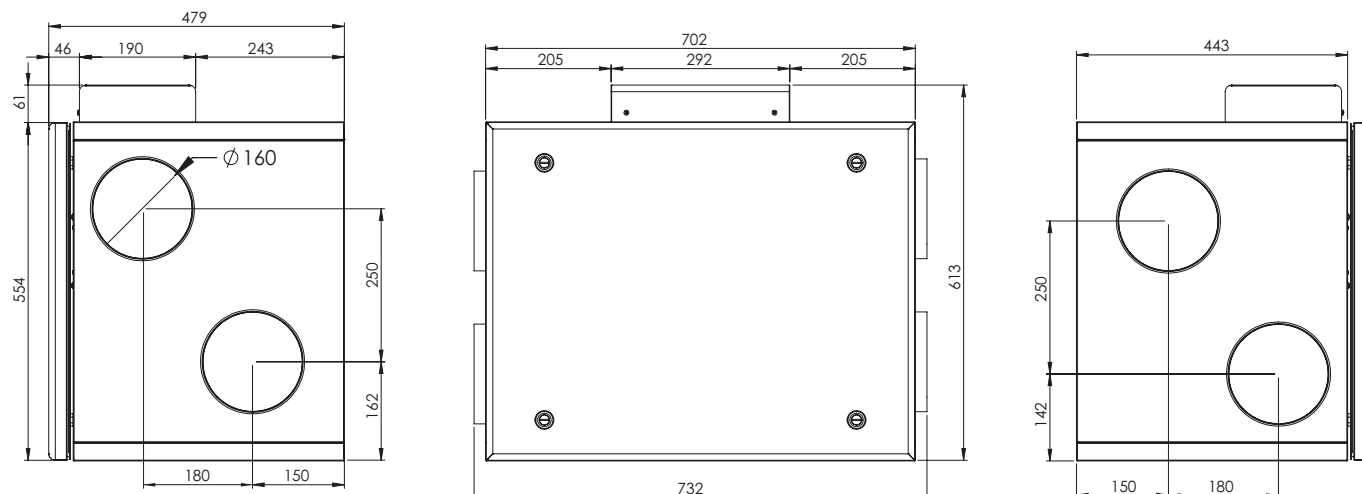


# Dimensions and weight

## Dimensions

### R5-H

Weight of the unit: **53 kg**

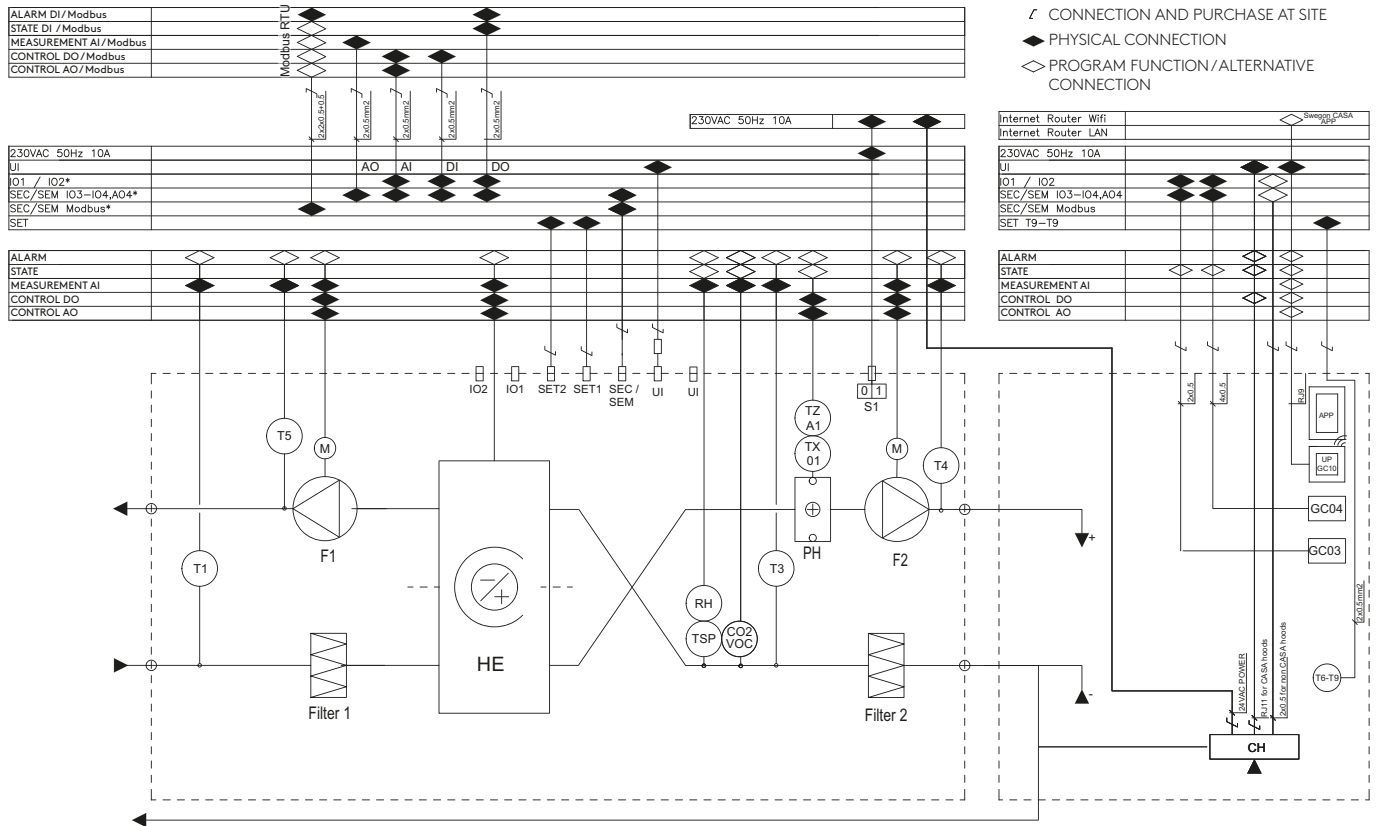


1. Supply air
2. Extract air
3. Outdoor air
4. Exhaust air

# Functional diagram

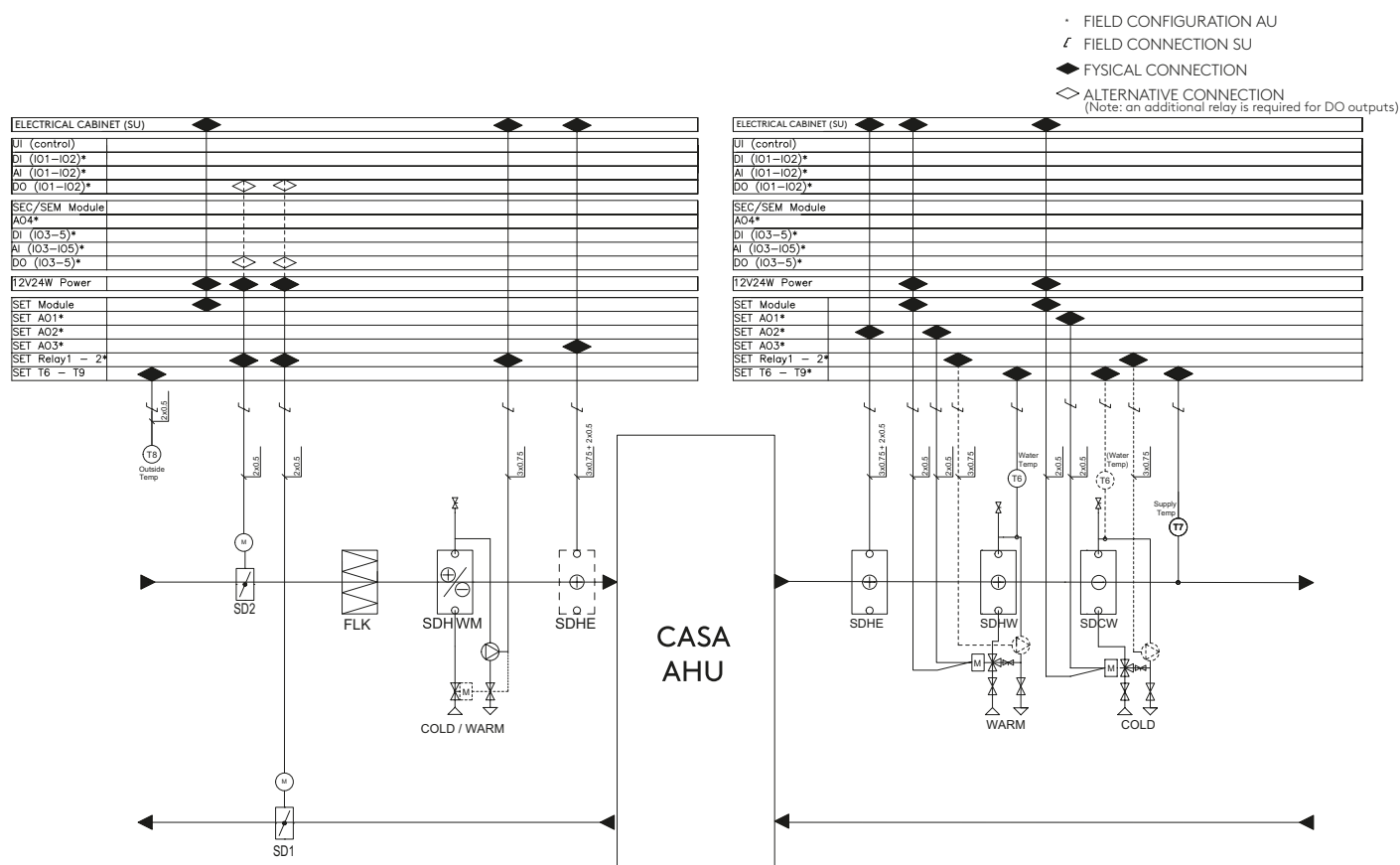
## Functional diagram

### R5-H



## Functional diagram

## Duct actuators

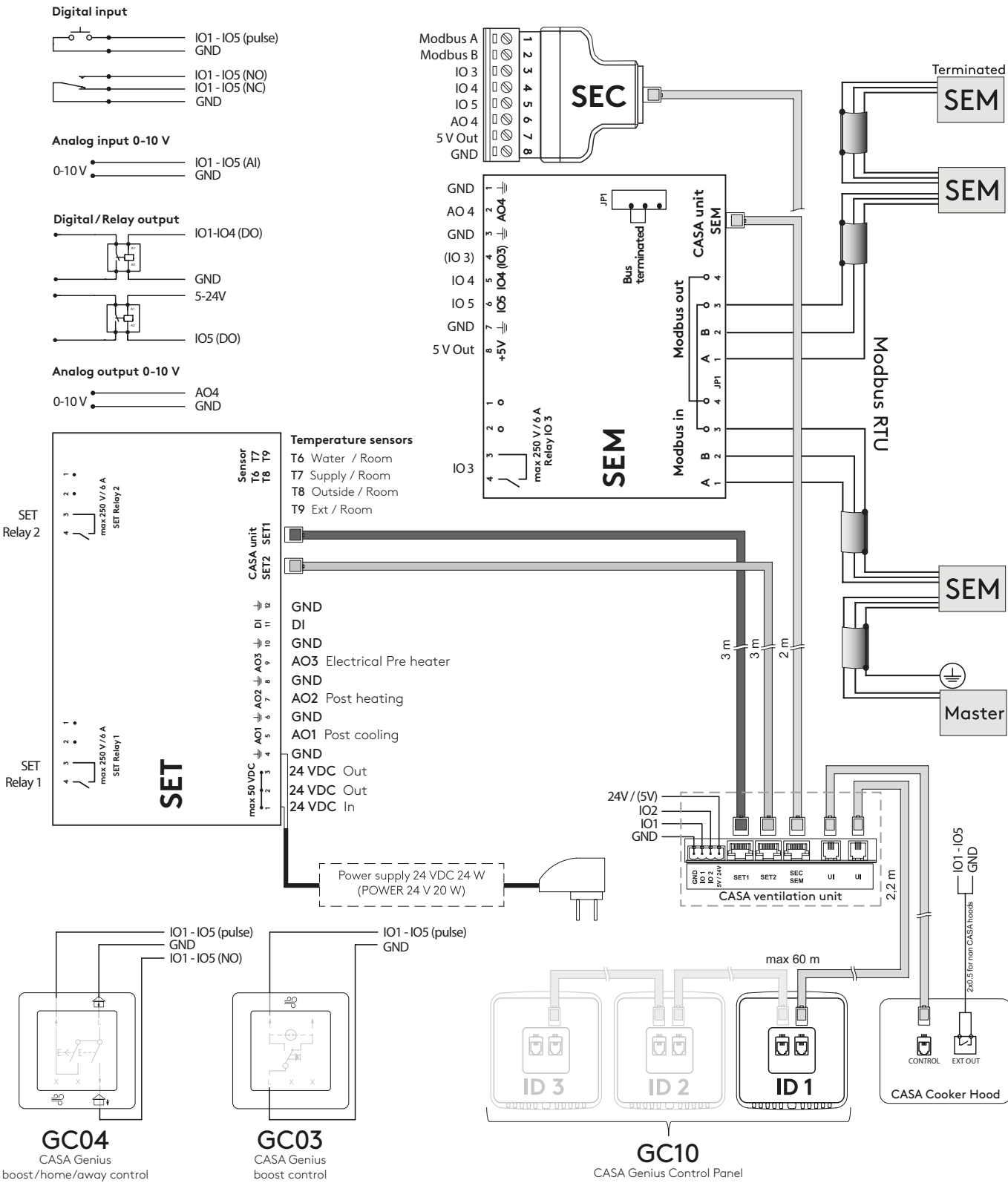


| Device   | Description                                                                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T6-T9    | Temperature sensor. Connection to the SET module. The sensor must be defined on the control panel.                                                                                                    |
| SD1, SD2 | Duct Plate for Outdoor/ Exhaust duct.                                                                                                                                                                 |
| FLK      | Duct filter in combination with an electric pre heater (SDHE)                                                                                                                                         |
| SDHWM    | Ground Liquid preheating/cooling coil for outdoor air duct. (Inc SET, heating/cooling coil, sensor)                                                                                                   |
| SDHE     | Electrical duct heater for Supply/Outdoor air duct (Inc. SET, duct heater and sensors) Note! A duct filter (FLK) is required for the preheater.                                                       |
| SDHW     | Heating coil for supply air duct (Inc. SET, three-way valve + actuator, heating coil, sensors).                                                                                                       |
| SDCW     | Cooling coil for supply air duct (Inc. SET, three-way valve + actuator, cooling coil, sensors).                                                                                                       |
| CO2      | CO2 sensor for CO2 automation                                                                                                                                                                         |
| VOC      | VOC sensor for VOC automation                                                                                                                                                                         |
| SEM      | Modbus module (Inc. 2m RJ-45 cable)                                                                                                                                                                   |
| SEC      | IO extension module (Inc. 2m RJ-45 cable)                                                                                                                                                             |
| SET      | Connection module for duct batteries and temperature sensors. (Inc. 2 x 3m RJ-45 cable)                                                                                                               |
| APP      | Swegon CASA mobile application for ventilation control and monitoring. Requires a Genius control panel (GC10) to operate.                                                                             |
| UP GC10  | Genius control panel that can be connected to Swegon CASA application via WiFi.                                                                                                                       |
| GC04     | Control switch to select boost, home and away mode.                                                                                                                                                   |
| GC03     | Control switch to select boost mode.                                                                                                                                                                  |
| CH       | Cooker hood. The CASA hood is connected to the ventilation unit with a modular cable. With other hoods, you can control the cooking function with a switch input that is determined for the function. |



# External connections

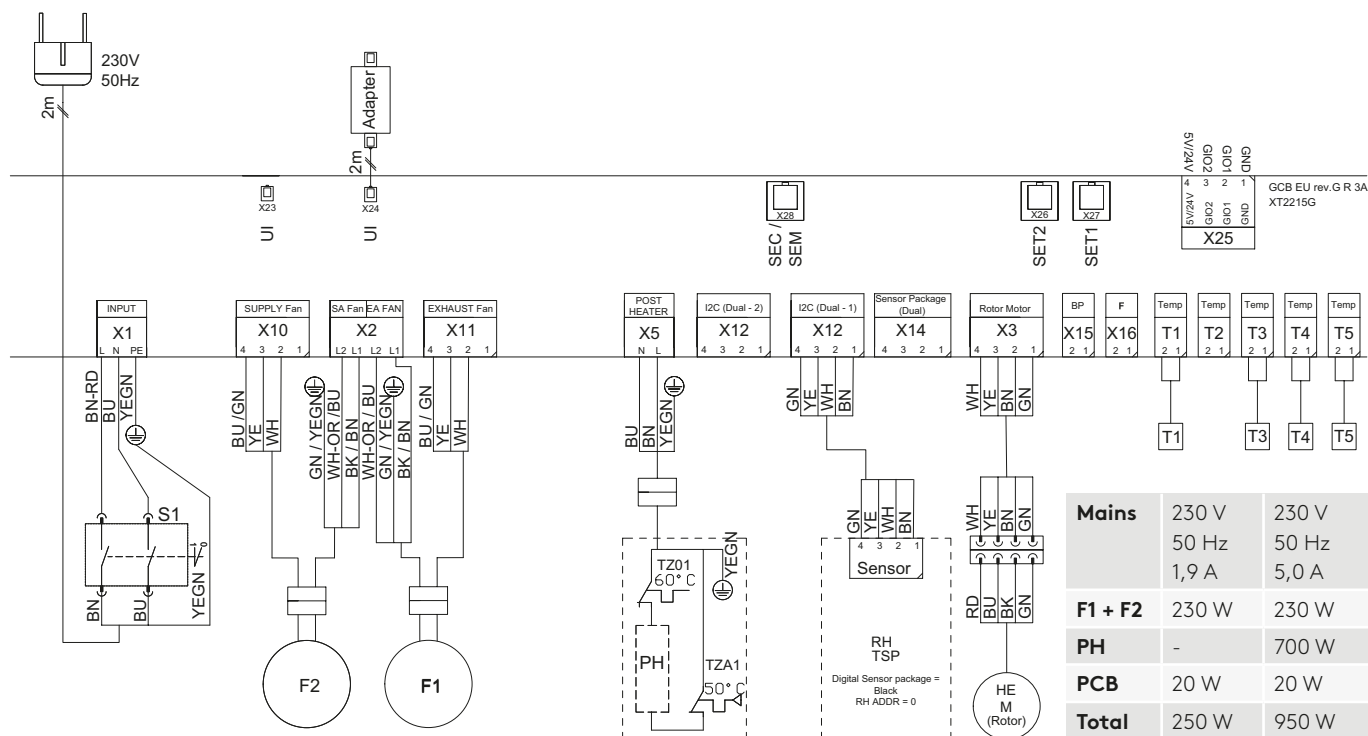
## External connections CASA Genius



- SEC** IO extension cable with Modbus RTU
- SEM** IO extension module with relay and Modbus RTU (input and output connections)
- SET** IO extension module for control of external accessories

## Internal connections

## R5-H



| Device    | Description                                                                            |
|-----------|----------------------------------------------------------------------------------------|
| T1        | <b>L:</b> Temperature sensor, outdoor air<br><b>R:</b> Temperature sensor, extract air |
| T3<br>TSP | <b>L:</b> Temperature sensor, extract air<br><b>R:</b> Temperature sensor, outdoor air |
| T4        | <b>L:</b> Temperature sensor, supply air<br><b>R:</b> Temperature sensor, exhaust air  |
| T5        | <b>L:</b> Temperature sensor, exhaust air<br><b>R:</b> Temperature sensor, supply air  |
| PH        | Air heater, post heating                                                               |
| TZ01      | Manual overheat protection                                                             |
| TZA1      | Automatic overheat protection                                                          |
| F1        | <b>L:</b> Extract fan<br><b>R:</b> Supply fan                                          |
| F2        | <b>L:</b> Supply fan<br><b>R:</b> Extract fan                                          |
| M         | Rotor's motor                                                                          |
| S1        | Use Switch                                                                             |
| RH        | Humidity sensor                                                                        |
| UI        | Connectors for control panel/cooker hood                                               |
| SEC/SEM   | Connector for connecting the SEC or SEM module                                         |
| SET 1&2   | Connectors for connecting the SET module                                               |
| 5V/24V    | 24V voltage output (IO max 125 mA/3W)                                                  |
| IO 1&2    | Two general-purpose IO connectors                                                      |

# Installation options

## Ventilation unit installation site

The ambient temperature where the ventilation unit will be installed must be between 0 - (+50) °C.

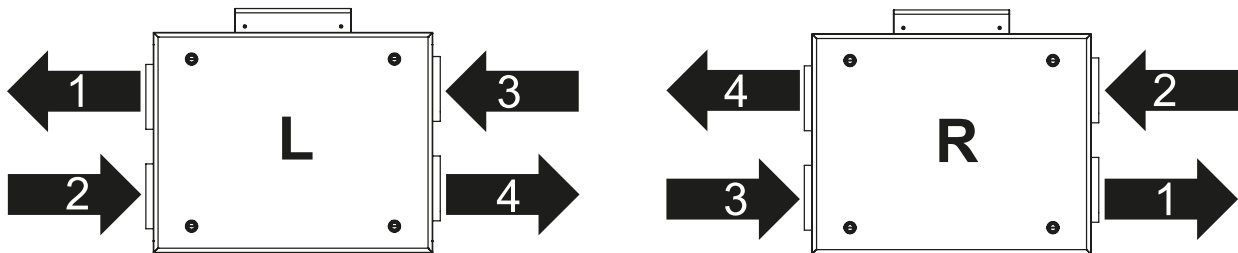
**Note!** Unit has no condensation drain. Therefore it's not suitable in houses where unit's extract air humidity may be high. (i.e. sauna, spa, etc.)

## Ventilation unit enclosure class

The enclosure class of the ventilation unit, when installed and with the panel closed, is IP21.

## Changing flow direction

The ventilation unit has been supplied in the left-hand version (L) and it can be changed to right-hand version (R) on site.



- 1. Supply air
- 2. Extract air
- 3. Outdoor air
- 4. Exhaust air

## Mounting on the floor

The unit should be installed on the floor. The device is heavy. Make sure that the mounting base will withstand its weight.

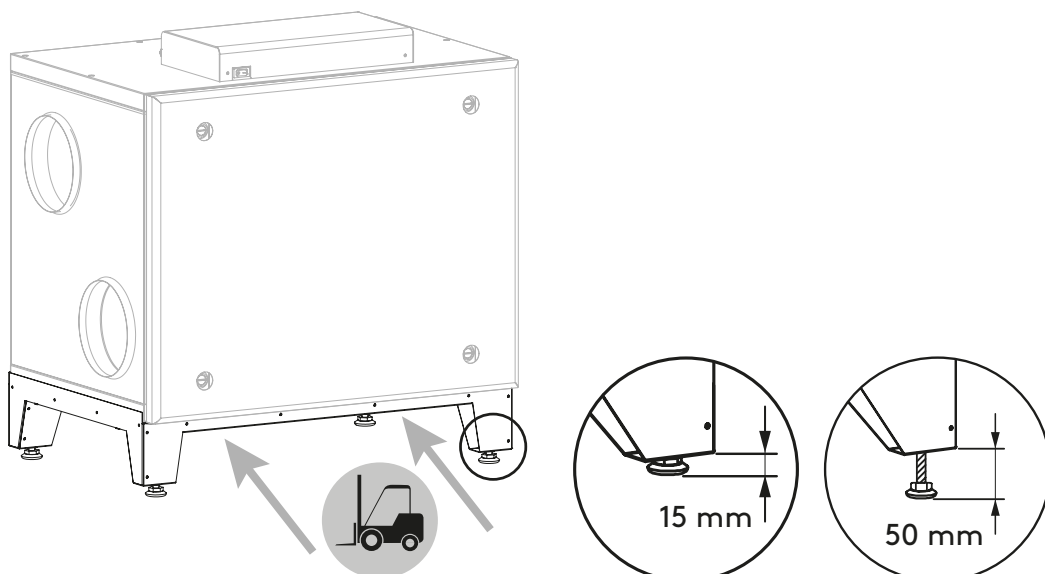
The rear edge of the unit must be at least 50 mm off the wall.

Free space in front of the maintenance door of the unit must be at least 1200 mm and above the electrical box at least 250 mm.

## Mounting on a base

The CASA R5-H ventilation unit can also be mounted on the floor using a base (R05HFMB) which is available as an accessory.

The ventilation unit's base is mounted horizontally by using the adjuster feet. Einstellbereich 35 mm (15-50 mm).



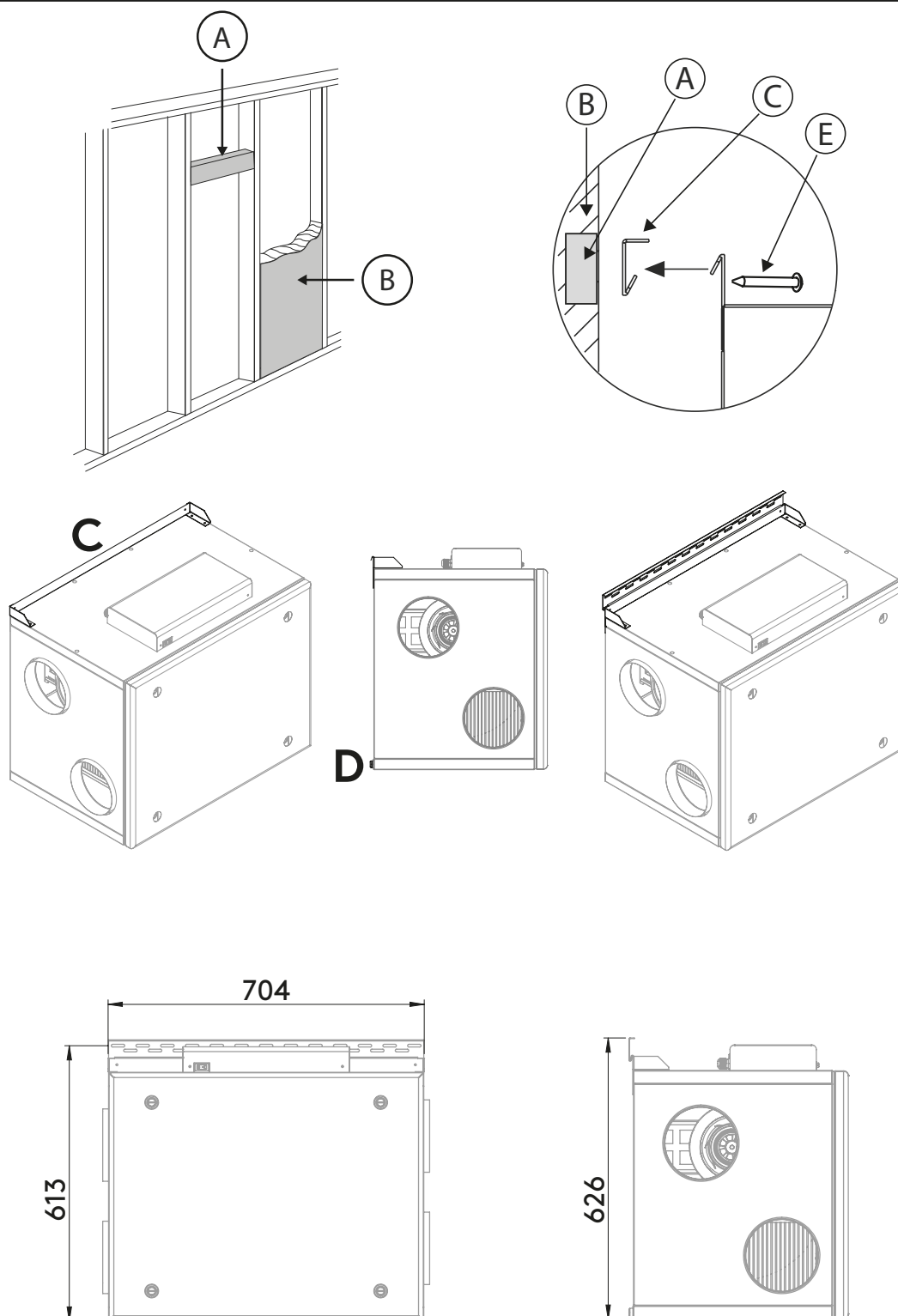
### Wall mounting

The CASA R5-H ventilation unit can also be wall-mounted using the mounting bracket (TB00023) which is available as an accessory.

If the wall is composed of vertical studs and wallboards, the wall must be reinforced with horizontal studs **(A)** that will support the weight of the unit. Swegon also recommends that the wall be insulated with mineral wool or similar insulation **(B)** for preventing sound from propagating to other rooms.

Attach the mounting bracket **(C)** to the top of the unit using the included screws, and adhere the vibration-damping rubber pads **(D)** to the bottom corners of the unit.

Screw the wall mounting bracket firmly in a horizontal position onto the wall where a wall stud will support the weight of the unit. Lift up the ventilation unit onto the wall mounting bracket. Secure installation with locking screw. Secure installation with locking screws **(E)**.





## Product codes

### R5-H

| Product                         | Product code | LVI no. | GTIN          |
|---------------------------------|--------------|---------|---------------|
| CASA R5-H Genius L/R RHCO2      | R05HL00G00C  | 7907332 | 6430080090204 |
| CASA R5-H Genius L/R 700W RHCO2 | R05HL07G00C  | 7907333 | 6430080090211 |

### Accessories

| Product                          | Part no. | LVI no. | GTIN          |
|----------------------------------|----------|---------|---------------|
| Set of filters ISO ePM1 50% (F7) | R05HFS   | 7907195 | 6415879071954 |
| Base                             | R05HFMB  | 7907495 | 6430080091843 |
| Wall mounting bracket            | TB00023  | *****   | 6430080091034 |

# CASA - Accessories

| Control accessories                             | Part no. | LVI no. | GTIN          |
|-------------------------------------------------|----------|---------|---------------|
| GC10 CASA Genius control panel and WiFi         | GC10     | 7907376 | 6430080090846 |
| GC10 CASA Genius control panel (black) and WiFi | GC10BL   | 7907505 | 6430080092024 |
| GC10 control panel + 10 m long cable            | GC14     | 7907377 | 6430080090853 |
| GC10 control panel (black) + 10 m long cable    | GC14BL   | 7907509 | 6430080092031 |
| GC10 control panel + 10 m long cable + frame    | GC15     | 7907378 | 6430080090860 |
| GC10 control panel + frame                      | GC16     | 7907379 | 6430080090877 |
| Frame for control panel GC10                    | 102SAK   | 7906675 | 6415879066752 |
| Dock station for GC10 Control Panel             | CCDW     | 7907496 | 6430080091935 |
| CASA Genius boost/home/away control button      | GC04     | 7907057 | 6430080090013 |
| CASA Genius boost control button                | GC03     | 7907399 | 6430080091119 |

| Building automation                                              | Part no. | LVI no. | GTIN          |
|------------------------------------------------------------------|----------|---------|---------------|
| Modbus connection module with electrical box                     | SEMIO    | 7907455 | 6430080091348 |
| Modbus connection module for DIN rail                            | SEM      | 7907376 | 6415879067346 |
| Connection cable (configurable I/O) for Genius ventilation units | SEC      | 7907377 | 6415879067353 |
| Room temperature sensor (temperature data to Modbus)             | WSTC     | 7907378 | 6415879069395 |

| Automatic functions       | Part no. | LVI no. | GTIN          |
|---------------------------|----------|---------|---------------|
| RH + CO2 + VOC automation | GRHCV    | 7907476 | 6430080091461 |

| Waterborne air coolers     | Part no. | LVI no. | GTIN          |
|----------------------------|----------|---------|---------------|
| Cooling coil package Ø 160 | SDCW160  | 7906805 | 6415879068053 |

| Waterborne air heaters     | Part no. | LVI no. | GTIN          |
|----------------------------|----------|---------|---------------|
| Heating coil package Ø 160 | SDHW160  | 7906804 | 6415879068046 |

| Brine air heater/cooler for ground source heat pump | Part no. | LVI no. | GTIN          |
|-----------------------------------------------------|----------|---------|---------------|
| Heating/cooling coil Ø 250, G4                      | SDHW250F | 7906808 | 6415879068084 |

| Electric air heater           | Tuotekoodi | LVI nro | GTIN          |
|-------------------------------|------------|---------|---------------|
| Electric heater Ø 160, 1,2 kW | SDHE160-1T | 7906724 | 6415879067247 |
| Prefilter box Ø 160 mm, G4    | FLK16      | 7906748 | 6415879067483 |

| Duct mounted shut-off dampers | Part no. | LVI no. | GTIN          |
|-------------------------------|----------|---------|---------------|
| Damper Ø 160 mm               | SDD160   | 7906993 | 6415879069937 |

| Other accessories                             | Part no.    | LVI no. | GTIN          |
|-----------------------------------------------|-------------|---------|---------------|
| Connection module for Genius ventilation unit | SET         | 7906733 | 6415879067339 |
| SET / power source for actuators              | POWER24V20W | 7906840 | 6415879068404 |
| PTH Regulation for constant duct pressure     | PTH         | 7906728 | 6415879067285 |

Feel good **inside**

