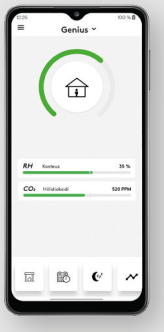
# CASA R15 Genius

## Technical catalogue


Available on the App Store

Get it on Google play


## QUICK FACTS

- Can be installed on the floor without a separate base
- Control from the control panel and mobile app
- Can be connected to building automation systems (Modbus)
- Accessory available for duct pressure control
- Demand-based control of air flows (RH, CO2, VOC*)
- Stepless supply air temperature control
- Automatic summer and winter function
- Designed and tested to work in northern conditions
- A wide range of products available for post/preheating and cooling

| UNIT TECHNICAL CONTENT | |
|---|---|
| **Air flow range** | 100-475 l/s \| 360-1710 m³/h |
| **Dimensions, w x l x h** | 1080 x 788 x 1213 mm |
| **Duct outlets** | 4 x Ø 250 mm |
| **Energy calculations and acoustic data** | procasa.swegon.com |
| **Connection power** | 1020 W |
| **Power connection** | 230 V, 50 Hz, 10 A |
| **Fans** | 1000 W, EC |
| **Filters** | ISO ePM1 50% (F7) filters for supply air and extract air |
| **Colour** | Exterior White, RAL 9016 (corresponds to NCS S0502-G50Y) |



Swegon

# Content

# Technical description

## Swegon CASA R15 Genius

The R15 is a 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 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 automatic RH system

## Components

### Fans

CASA R15 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**. Heath 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

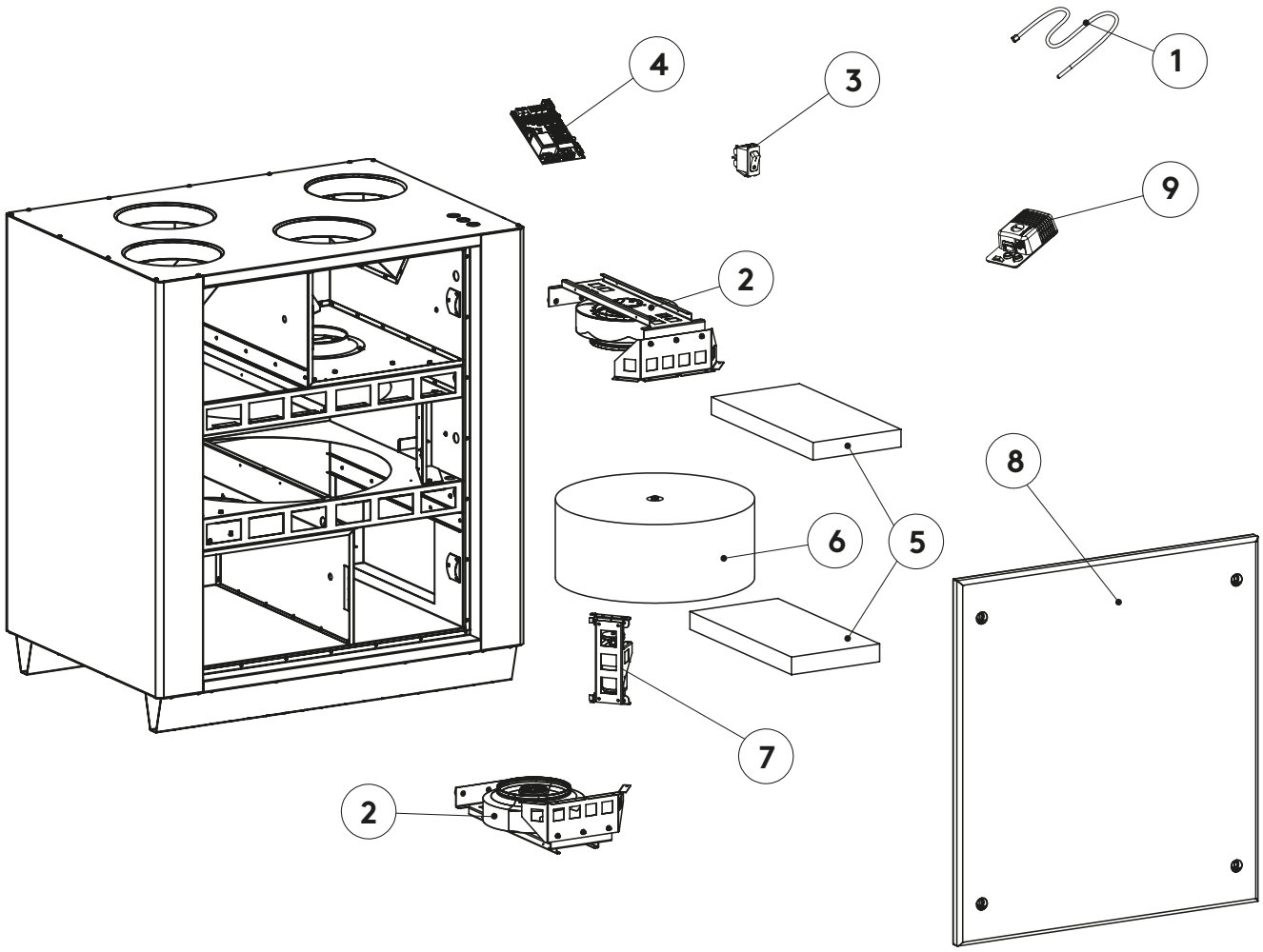
If a sensor fault is detected, an alarm is generated. If the faulted sensor is critical the ventilation unit is stopped. The ventilation unit returns to normal mode once the fault has been corrected.

## 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. **Genius control board**
5. **ISO ePM1 50% (F7) filters**
6. **Rotor**
7. **Rotor motor**
8. **Door**
9. **Sensor package, RH**

# Swegon CASA Genius

# Intelligent control of the ventilation

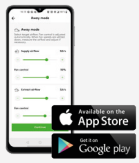
With Swegon CASA Genius residents can monitor the indoor air quality (RH, CO2, VOC, °C), adjust ventilation to their wishes or let the intelligent control to adjust ventilation automatically while saving energy and providing fresh and healthy indoor air.

### 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).

## 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.

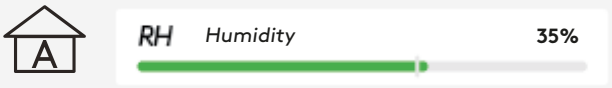
### Boost
High air flow. Used if the ventilation requirement increases, for example, when cooking, taking a bath or drying laundry, or when an unusually large number of people are in the home.

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

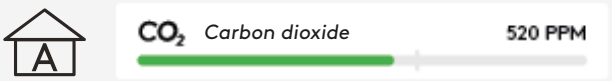
### Travelling
Very low air flow and lower supply air temperature. Used when nobody is present in the home.

## Automatic functions

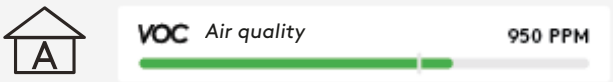
The intelligent ventilation monitors the quality of the indoor air and adjusts the ventilation automatically.




**Automatic RH system included as standard**
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.

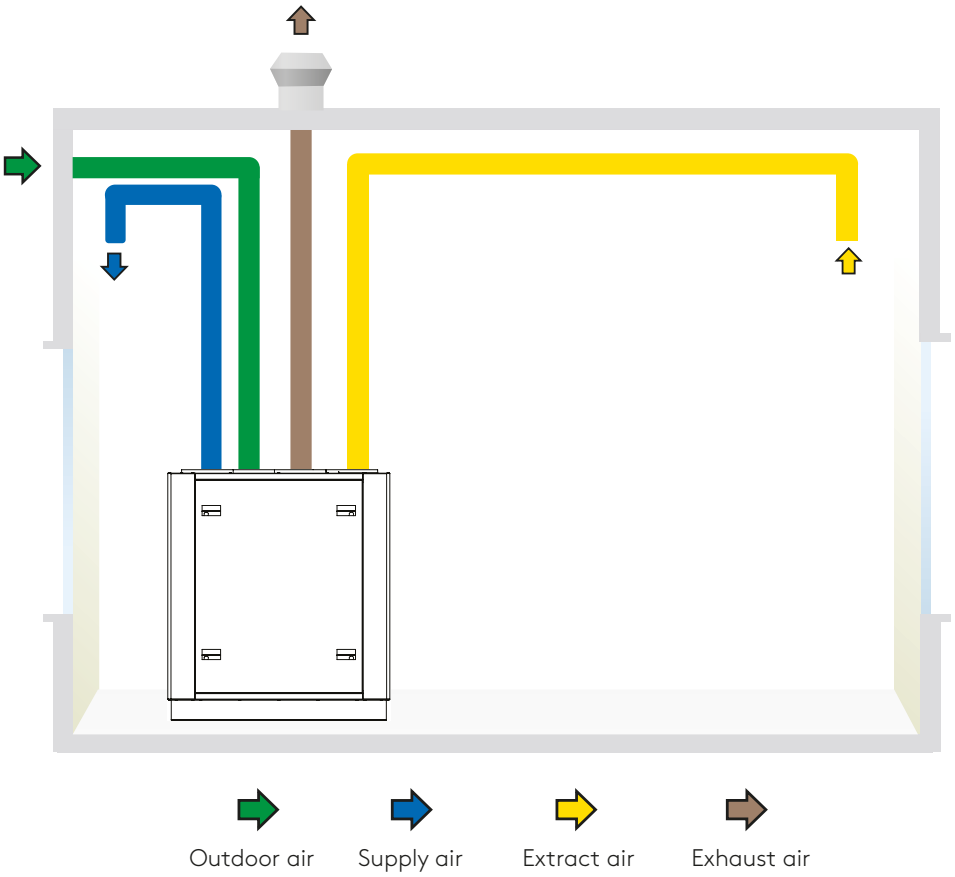



**Automatic CO2 system as optional equipment**
Automatically lowers the ventilation and saves energy when nobody is in the home. When the residents are at home, the ventilation is automatically boosted to bring exactly the right amount of fresh air into the home.




**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.

# Design data

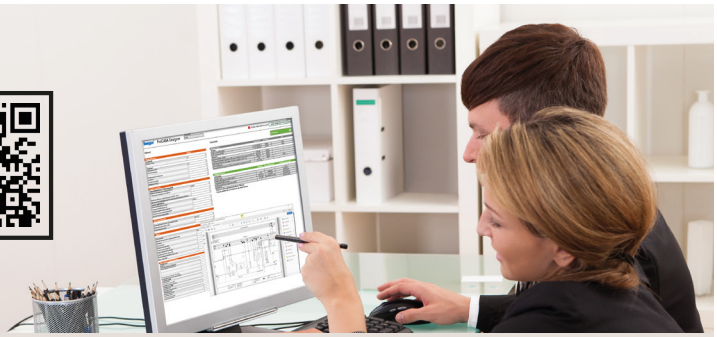


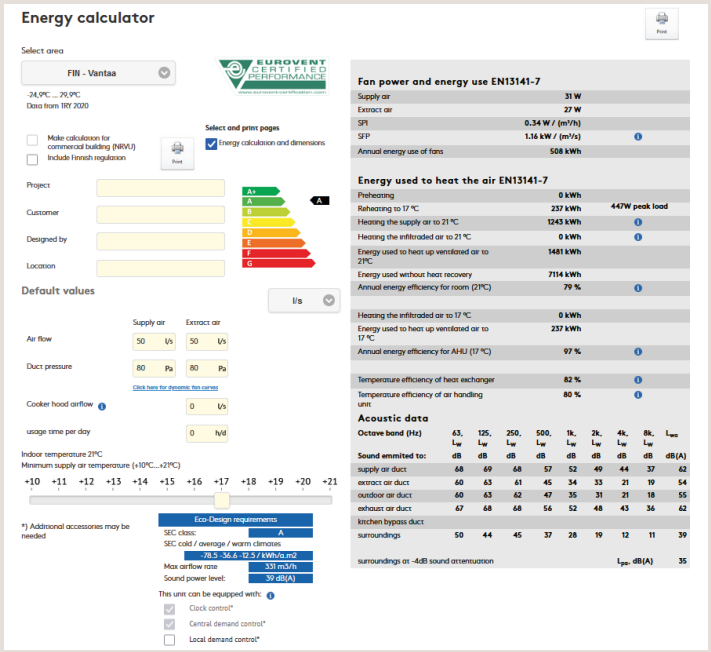

*Note! Always check the correct duct sequence in the installation instructions.*

# ProCASA®

Energy calculation, functional diagram and acoustic data on ProCASA.

procasa.swegon.com





**Energy calculator**

Select area

FIN - Vantaa

-24,9°C ... 29,9°C
Data from TRY 2020

Select and print pages

Energy calculation and dimensions

Project

Customer

Designed by

Location

Default values

l/s

| | Supply air | Extract air |
|---|---|---|
| Air flow | 50 l/s | 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...+21°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
-78.5 -56.6 -12.5 / kWh/a.m2
Max airflow rate 331 m3/h
Sound power level: 39 dB(A)

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

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

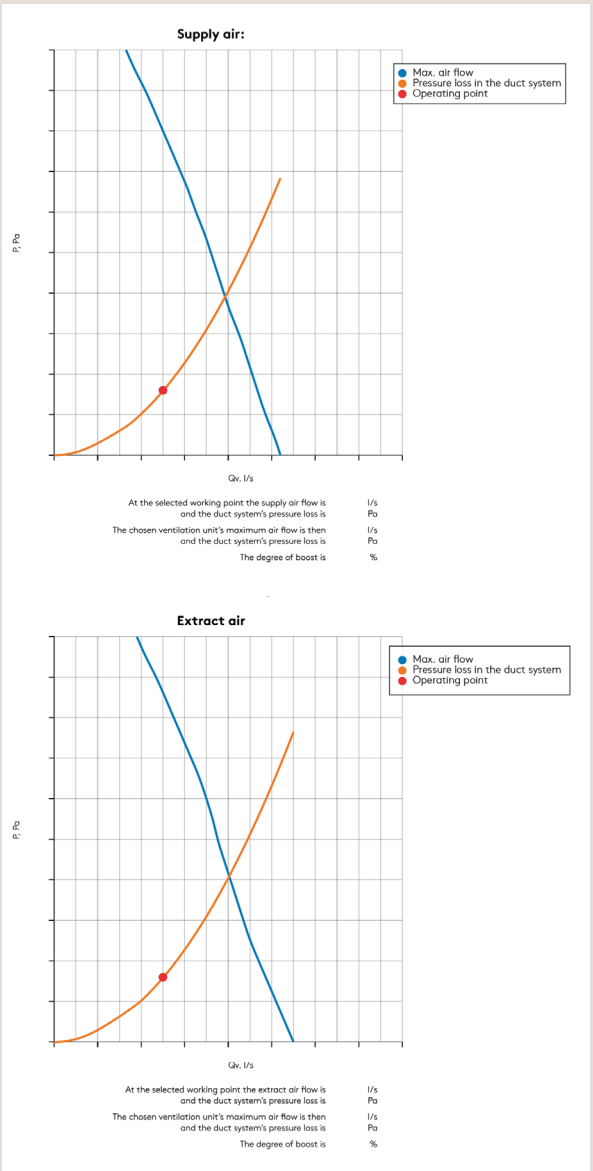
| | | |
|---|---|---|
| Supply air | 31 W | |
| Extract air | 27 W | |
| SPI | 0.34 W / (m³/h) | |
| SFP | 1.16 kW / (m³/s) | |
| Annual energy use of fans | 508 kWh | |

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

| | | |
|---|---|---|
| Preheating | 0 kWh | |
| Reheating to 17 °C | 237 kWh | 447W peak load |
| Heating the supply air to 21 °C | 1243 kWh | |
| Heating the infiltraded air to 21 °C | 0 kWh | |
| Energy used to heat up ventilated air to 21°C | 1481 kWh | |
| Energy used without heat recovery | 7114 kWh | |
| Annual energy efficiency for room (21°C) | 79 % | |
| Heating the infiltraded 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, $L_W$ | 125, $L_W$ | 250, $L_W$ | 500, $L_W$ | 1k, $L_W$ | 2k, $L_W$ | 4k, $L_W$ | 8k, $L_W$ | $L_{WA}$ |
|---|---|---|---|---|---|---|---|---|---|
| Sound emmited to: | dB | dB | dB | dB | dB | dB | dB | dB | dB(A) |
| supply air duct | 68 | 69 | 68 | 57 | 52 | 49 | 44 | 37 | 62 |
| extract air duct | 60 | 63 | 61 | 45 | 34 | 33 | 21 | 19 | 54 |
| outdoor air duct | 60 | 63 | 62 | 47 | 35 | 31 | 21 | 18 | 55 |
| exhaust air duct | 67 | 68 | 68 | 56 | 52 | 48 | 43 | 36 | 62 |
| kitchen bypass duct | | | | | | | | | |
| surroundings | 50 | 44 | 45 | 37 | 28 | 19 | 12 | 11 | 39 |
| surroundings at -4dB sound attenuation | | | | | | | | | $L_{pA}$, dB(A) 35 |




## 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

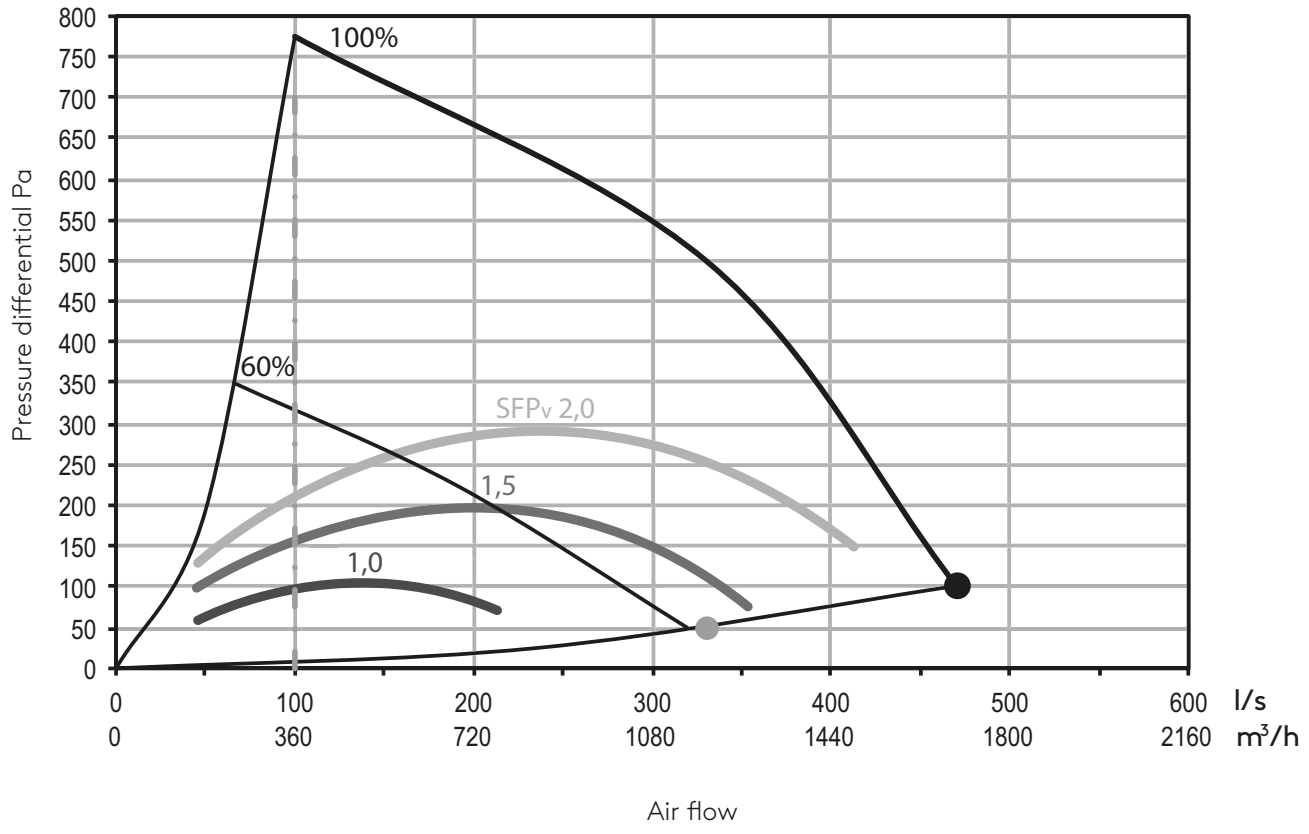
# Air flows

**Air flows EN 13141-4**

## R15

Supply airflow

Extract airflow




# Acoustic data

See acoustic data on ProCASA.

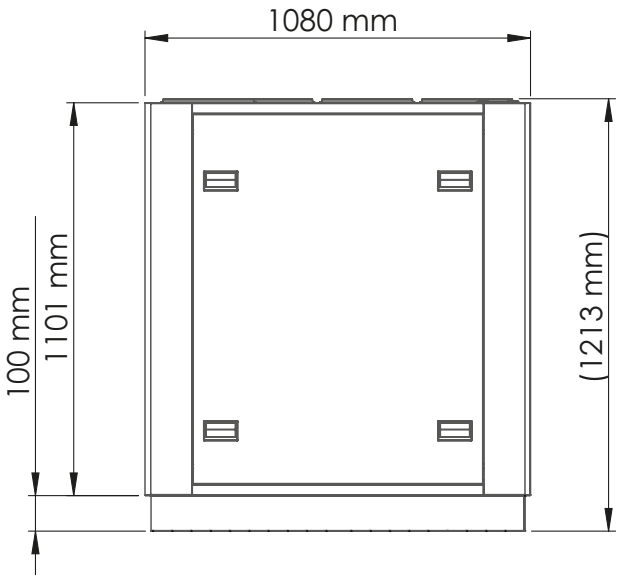
procasa.swegon.com

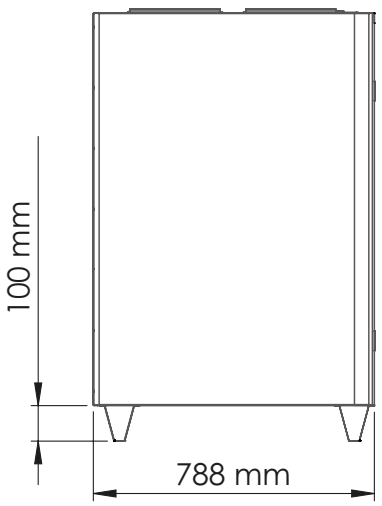
# Dimensions and weight

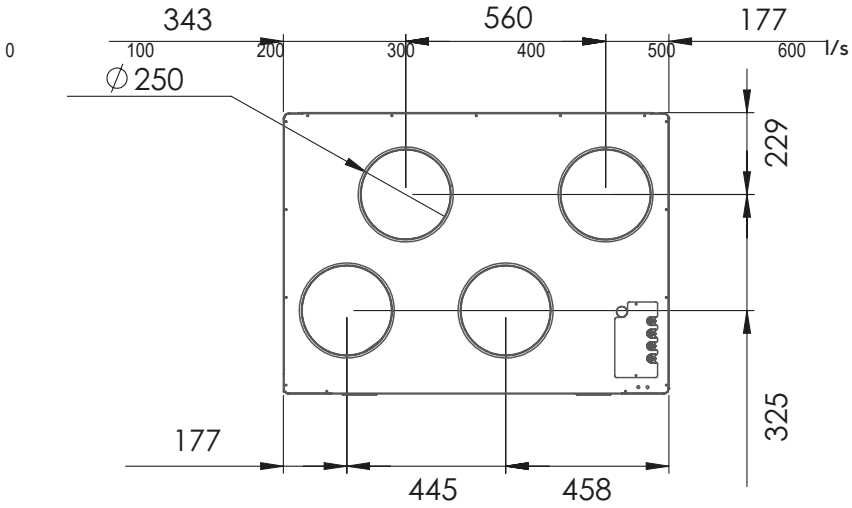
**Dimensions**

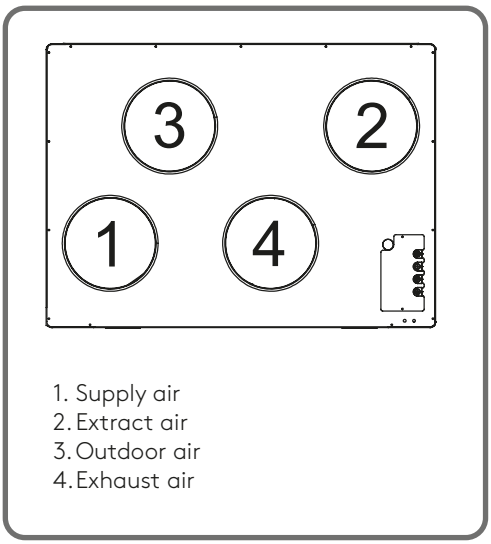
## R15

Weight of the unit: **170 kg**



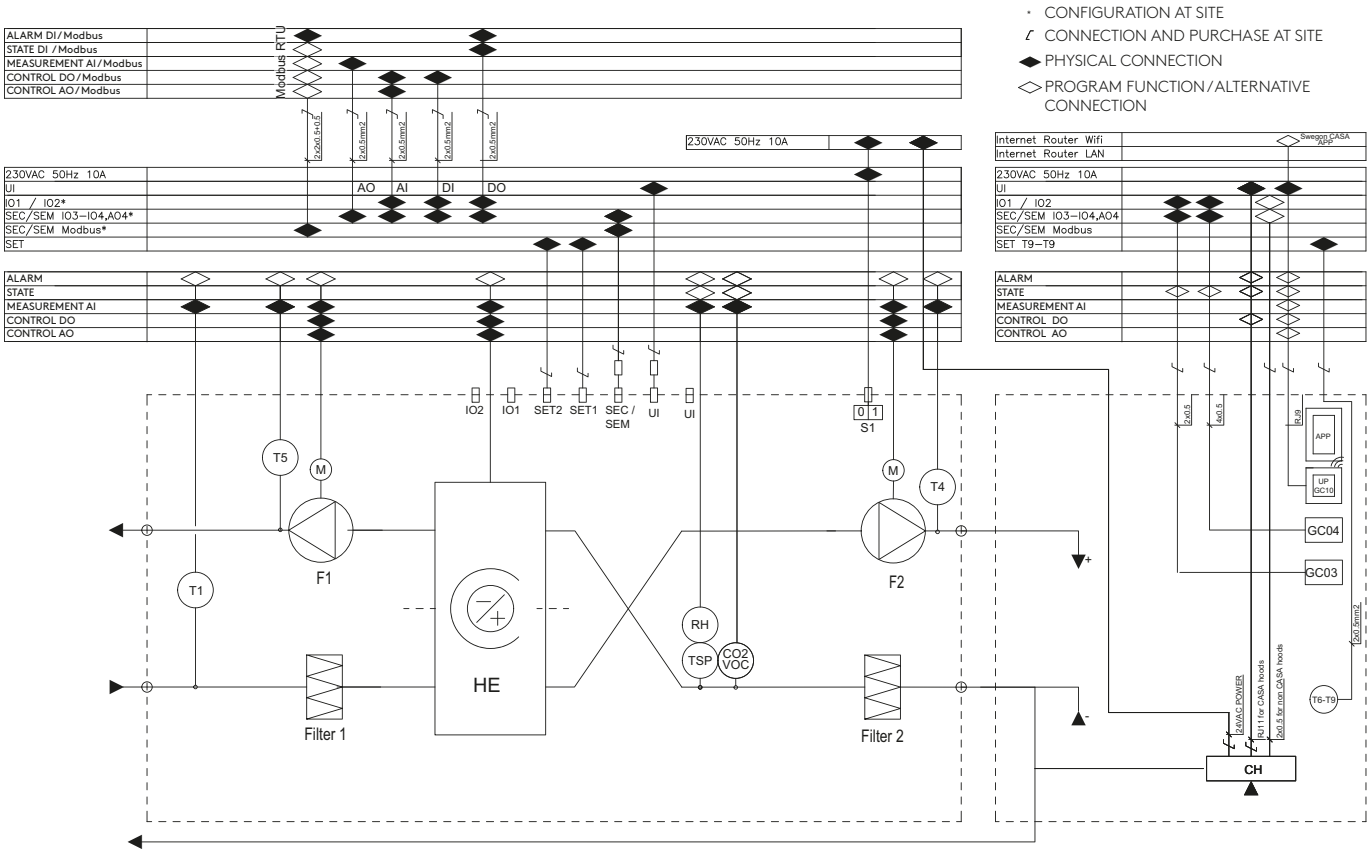




1. Supply air
2. Extract air
3. Outdoor air
4. Exhaust air

# Functional diagram

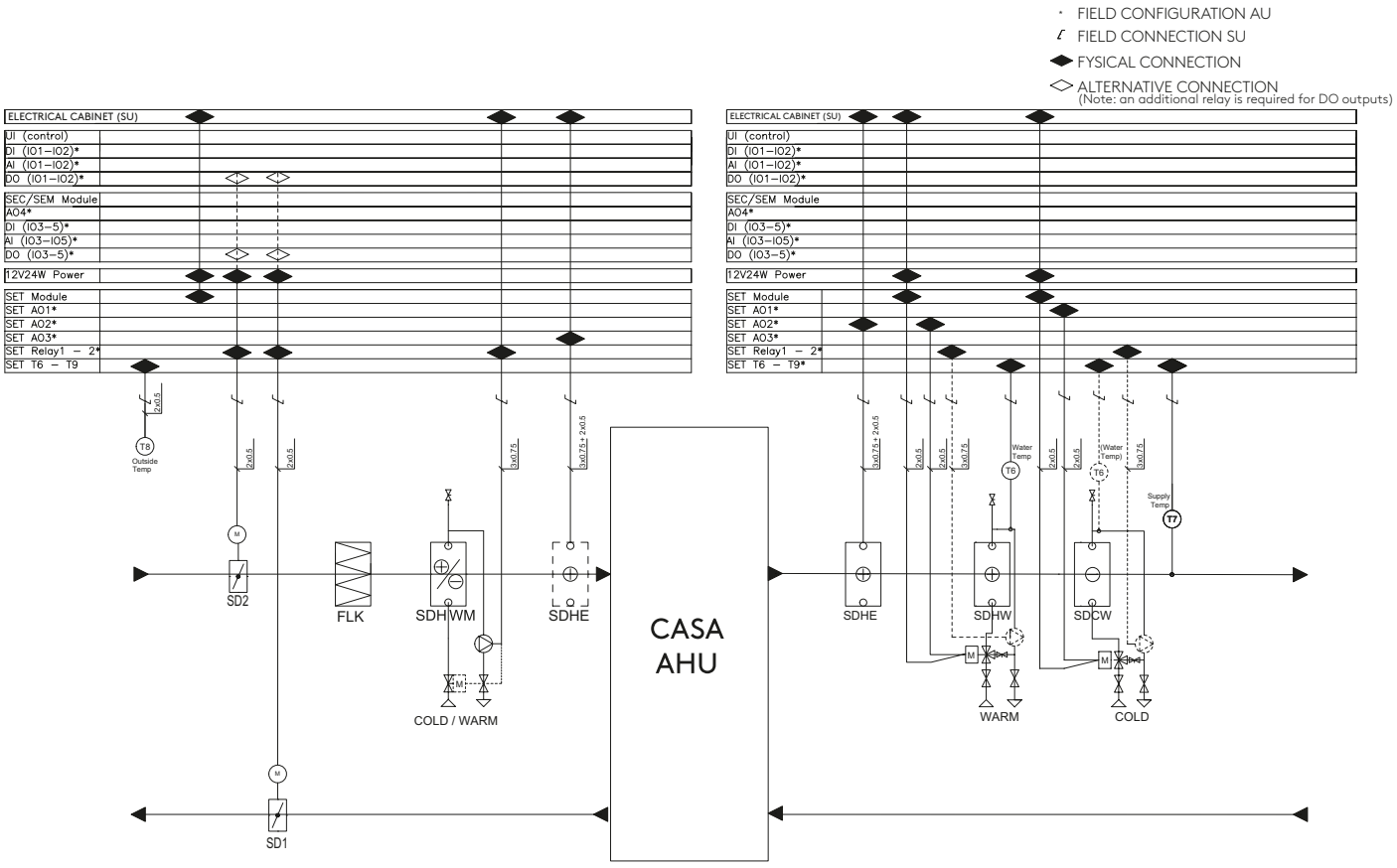
## Functional diagram
## R15




| Device | Description | Modbus register |
|---|---|---|
| T1 | Temperature sensor, outdoor air | 3x6201 (0,1°C) |
| TSP | Temperature sensor, extract air | 3x6204 (0,1°C) |
| T4 | Temperature sensor, supply air | 3x6203 (0,1°C) |
| T5 | Temperature sensor, exhaust air | 3x6205 (0,1°C) |
| Filter 1 | Fresh air filters ISO ePM1 50% (F7) | Service reminder info 3x6129 |
| Filter 2 | Extract air filter ISO ePM1 50% (F7) | Service reminder info 3x6129 |
| F1 | Extract fan including internal overheat protection. | Control 3x6304(%), RPM 3x6306 |
| F2 | Supply fan including internal overheat protection. | Control 3x6303(%), RPM 3x6305 |
| HE | Rotating heat exchanger (Rotor) | |
| HE M | A heat exchanger motor which speed is steplessly controlled based on the temperature and humidity of the supply air | Control 3x6332 (0.1xRPM) |
| S1 | Use Switch. Note! power off the unit by removing the socket from the Mains when Service | |
| RH | Humidity sensor for RH automation | RH 3x6214 |

## Functional diagram

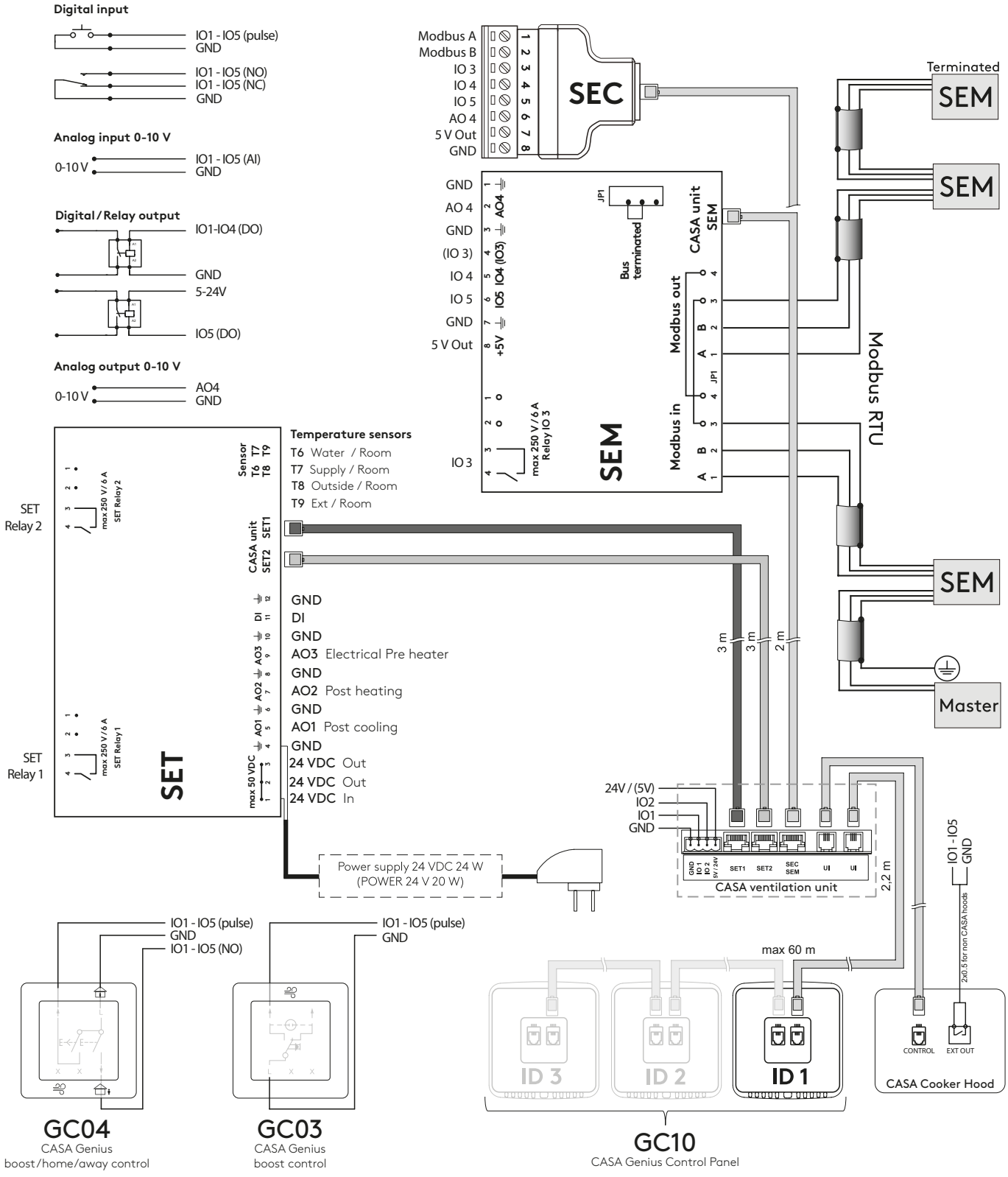
# Duct actuators




| 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

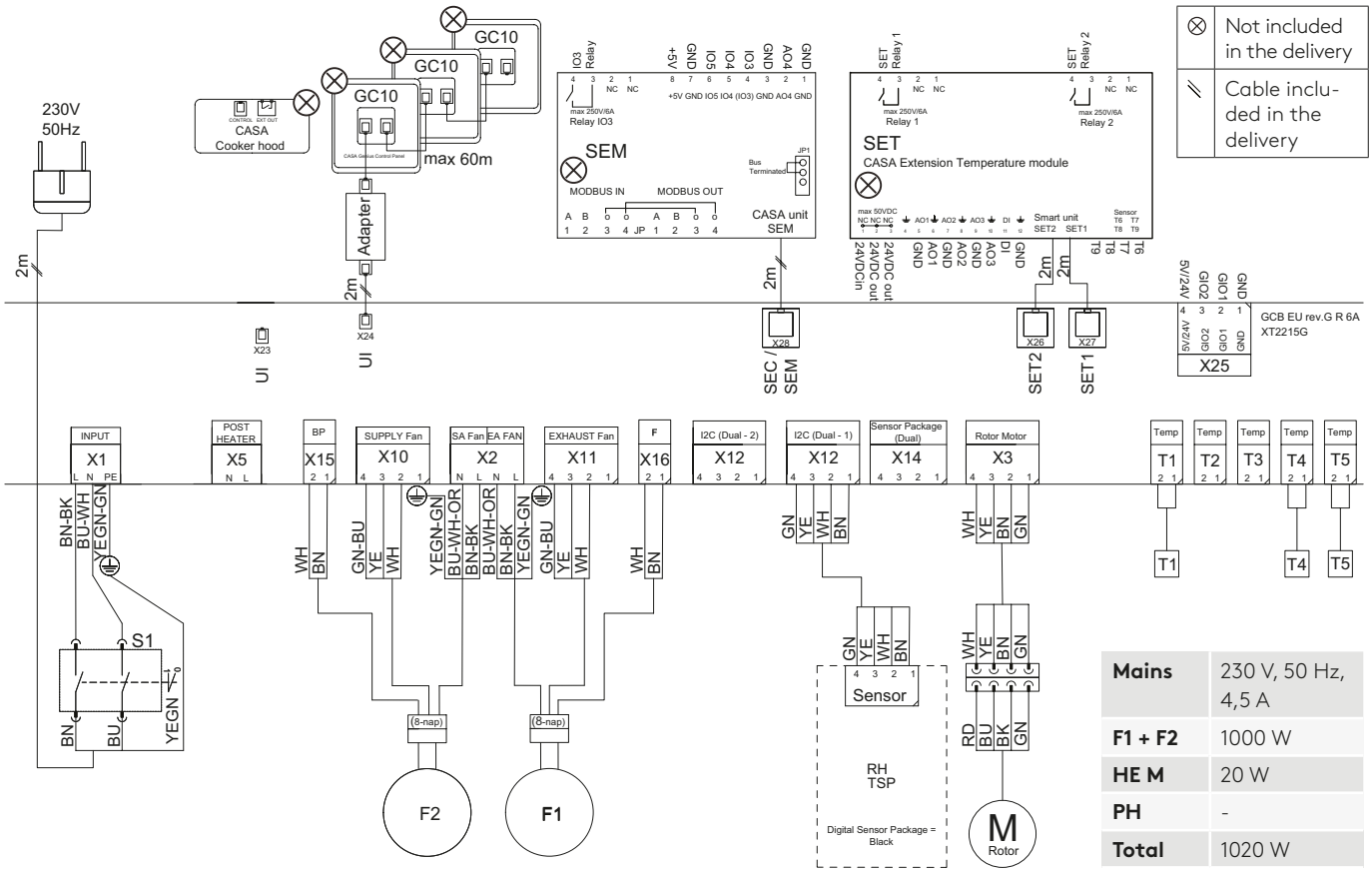
## External connections
## CASA Genius




**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

# R15




| | |
|---|---|
| **Mains** | 230 V, 50 Hz, 4,5 A |
| **F1 + F2** | 1000 W |
| **HE M** | 20 W |
| **PH** | - |
| **Total** | 1020 W |

| Device | Description |
|---|---|
| T1 | Temperature sensor, outdoor air |
| TSP | Temperature sensor, extract air |
| T4 | Temperature sensor, supply air |
| T5 | Temperature sensor, exhaust air |
| F1 | Extract fan including internal overheat protection. |
| F2 | Supply fan including internal overheat protection. |
| HE M | A heat exchanger motor which speed is steplessly controlled based on the temperature and humidity of the supply air |
| S1 | Use Switch. Note! power off the unit by removing the socket from the Mains when Service |
| RH | Humidity sensor for RH automation |
| CO2 | CO2 sensor for CO2 automation (accessory) |
| VOC | VOC sensor for VOC automation (accessory) |
| UI | Connectors for connecting the control panel and/or CASA cooker hood. One connection point is wired outside the unit. |
| SEC/SEM | Connector for connecting the SEC or SEM module. |
| SET 1&2 | Connectors for connecting the SET module |
| 5V/24V | 24V voltage output, which can be changed to 5V output with a jumper on the circuit board. |
| IO 1&2 | Two general-purpose IO connectors. Connectors must be configured for the desired functions. |
| GND | Ground for IO connections. |

# Installation options

**Ventilation unit installation site**

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

**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 300 mm.

# Product codes

## R15

| Product | Product code | GTIN |
|---|---|---|
| CASA R15 Genius L RH | R15VL00G00H | 6430080090341 |

# CASA Genius – Accessories

| Control accessories | Part no. | GTIN |
|---|---|---|
| GC10 CASA Genius control panel and WiFi | GC10 | 6430080090846 |
| GC10 control panel + 10 m long cable | GC14 | 6430080090853 |
| GC10 control panel + 10 m long cable + frame | GC15 | 6430080090860 |
| GC10 control panel + frame | GC16 | 6430080090877 |
| Frame for control panel GC10 | 102SAK | 6415879066752 |
| CASA Genius boost/home/away control button | GC04 | 6430080090013 |
| CASA Genius boost control button | GC03 | 6430080091119 |

| Building automation | Part no. | GTIN |
|---|---|---|
| Modbus connection module with electrical box | SEMIO | 6430080091348 |
| Modbus connection module for DIN rail | SEM | 6415879067346 |
| Connection cable (configurable I/O) for Genius ventilation units | SEC | 6415879067353 |
| 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 | 6415879069395 |

| Automatic functions | Part no. | GTIN |
|---|---|---|
| RH + CO2 automation | GRHCO2 | 6430080091454 |
| RH + CO2 + VOC automation | GRHCV | 6430080091461 |

| Waterborne air coolers | Part no. | GTIN |
|---|---|---|
| Cooling coil package Ø 250 | SDCW250 | 6415879070025 |

| Waterborne air heaters | Part no. | GTIN |
|---|---|---|
| Heating coil package Ø 250 | SDHW250 | 6415879070032 |

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

| Electric air heater | Part no. | GTIN |
|---|---|---|
| Electric heater Ø 250, 1,2 kW | SDHE250-1T | 6415879068954 |
| Electric heater Ø 250, 2,0 kW | SDHE250-2T | 6415879068961 |
| Electric heater Ø 250, 3,0 kW | SDHE250-3T | 6430080091096 |
| Prefilter box Ø 250 mm, G4 | FLK25 | 6415879068992 |

| Duct mounted shut-off dampers | Part no. | GTIN |
|---|---|---|
| Damper Ø 250 mm | SDD250 | 6415879070056 |

| Other accessories | Part no. | GTIN |
|---|---|---|
| Connection module for control of the duct mounted air heater/cooler / control of shut-off dampers | SET | 6415879067339 |
| SET / power source for actuators | POWER24V20W | 6415879068404 |
| PTH Regulation for constant duct pressure | PTH | 6415879067285 |

Feel good **inside**

Swegon