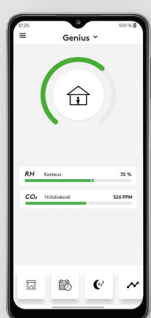


ILTO 270-290 Genius

Technical catalogue



QUICK FACTS

- Designed for restoration, to replace ILTO 270-290 ventilation units
- CASA Genius control system
- Demand-controlled humidity function as standard
- Automatic summer function and passive cooling
- Anti-frost protection ensures continuous ventilation
- Can be connected to the automated building management system (I/O/Modbus, connection box as standard)
- The delivery includes the necessary components for installation and use
- External coils for heating and cooling as an option
- Mounted on the wall or ceiling

UNIT TECHNICAL CONTENT

Air flow range	18-92 l/s 65-331 m ³ /h
Dimensions, w x l x h	585 x 593 x 465 mm
Duct outlets	4 x Ø 125 mm
Energy calculations and acoustic data	procasa.swegon.com
Connection power	1750 W
Power connection	230 V, 50 Hz, 10 A
Fans	230 W, EC
Filters	ISO ePM1 50% (F7) filter for supply air and ISO coarse (G3) for extract air
Colour	Exterior White, RAL 9016 (corresponds to NCS S0502-G50Y)

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Technical description

ILTO 270-290 Genius

Air handling unit with counterflow heat exchanger (585 x 593 x 465 mm, Ø 125 mm) suitable installation in homes (180 m²). The unit's sound level is low. The intelligent demand-controlled humidity function is standard.

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

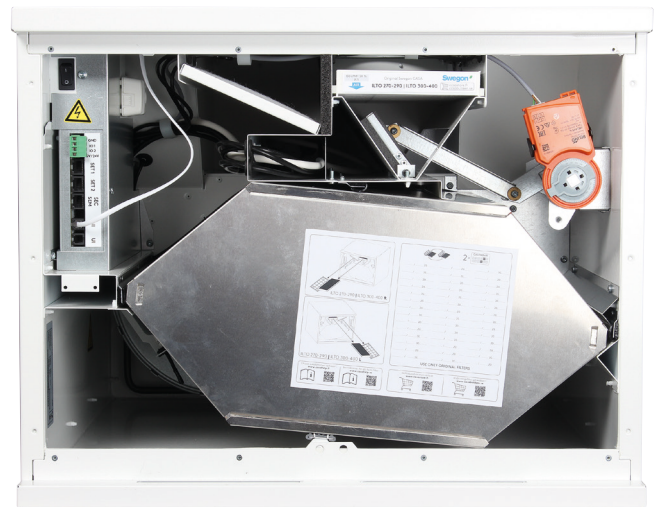
The supply air temperature is controlled with heat exchanger and if needed with optional heating or cooling element.

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 RH- and CO₂-sensor
L (exhaust air left) / R (exhaust air right)





Components

Fans

ILTO 270-290 Genius is equipped with energy efficient EC fans.

Filter

The ventilation unit is equipped with ISO ePM1 50% (F7) filter for supply air and ISO coarse (G3) for 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 plate heat exchanger which is based on the counterflow technology**. The incoming and outgoing air flows in a counterflow plate heat exchanger use separate channels, and thanks to this the heat exchanger does not return any odours back into the room air. It also does not return moisture and is therefore very well suited to dwellings with high humidity (eg abundant sauna and laundry).

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 and connection box.

Modbus cabling can also 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.

Electric air heaters

The electric heater is equipped with automatic and manual overtemperature protection. Overheat cuts the heating circuit and 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.

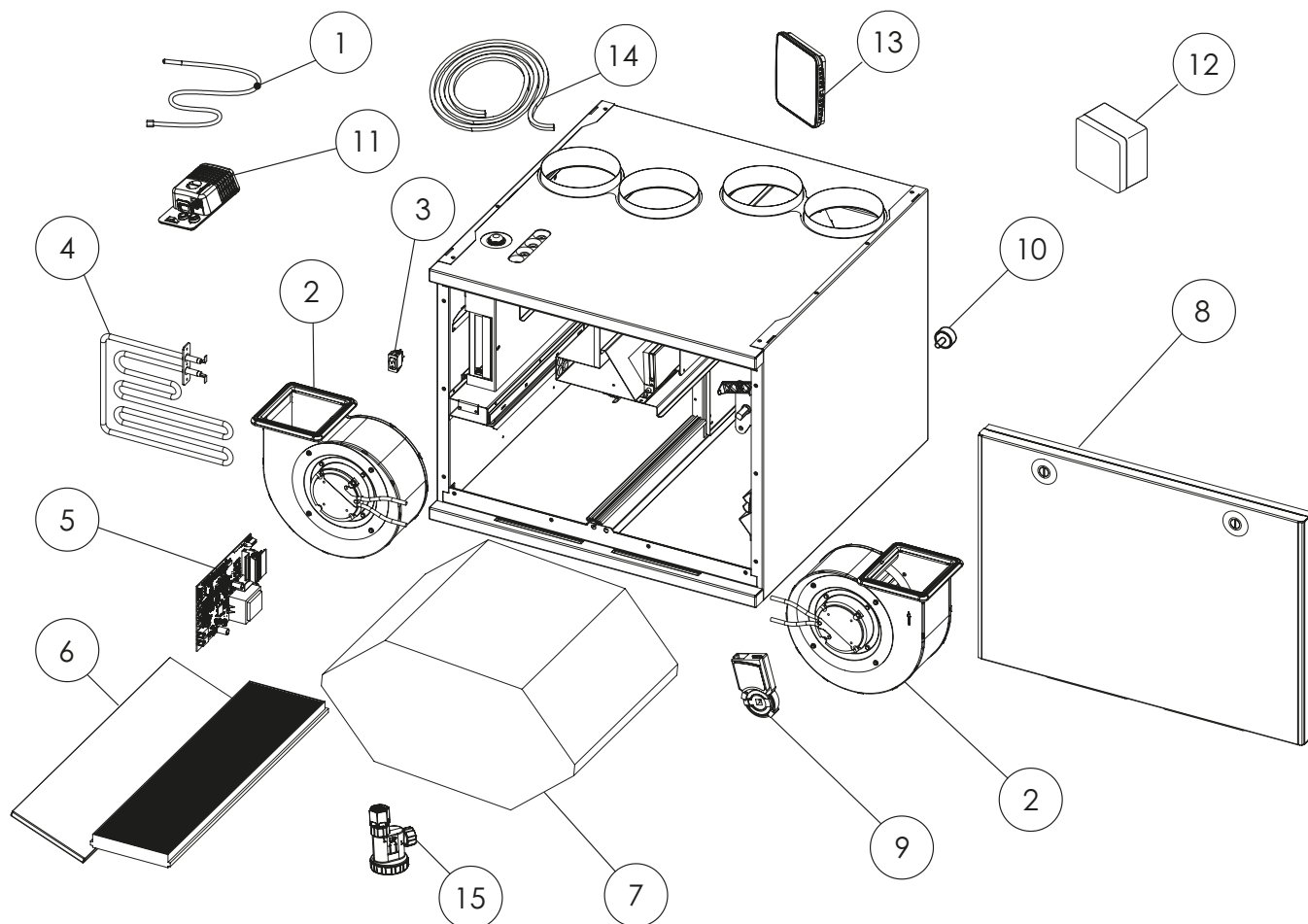
The delivery includes

- Ventilation unit
- Anti-vibration mountings (2 pcs.)
- Wall mounting bracket*
- Genius control panel*
- Modular cable (20 m) + RJ9 adapter*
- Water trap*
- Quick Guide
- Installation and commissioning instruction
- Product fiche

Standard connections

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

*) **Not included in W27VL15G00CA, W27VR15G00CA delivery.**



1. Temperature sensor
2. Fan (left + right)
3. Operating switch
4. Reheating module
5. Genius control board
6. Set of filters: ISO ePM1 50% (F7) for supply air, ISO coarse (G3) for extract air
7. Heat exchanger
8. Door
9. Damper motor
10. Anti-vibration mountings (2 pcs.)
11. Sensor package, RH
12. Connection box
13. Genius control panel
14. Modular cable (20 m) + RJ9 adapter
15. Water trap



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.



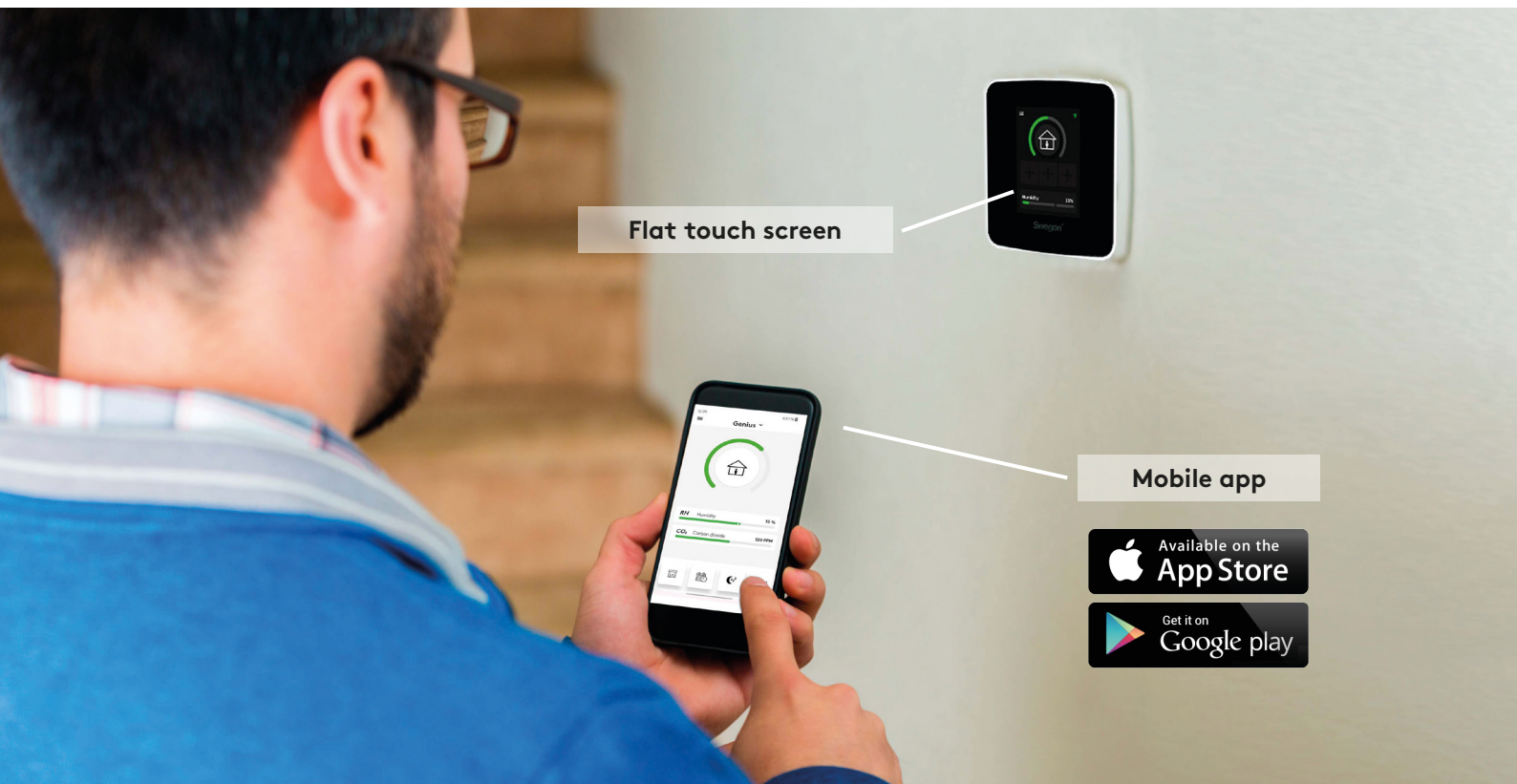
The Swegon CASA HOME/AWAY/BOOST control switch (GC04)

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).



Flat touch screen

Mobile app





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.



CO₂ Carbon dioxide 520 PPM



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.



VOC Air quality 950 PPM



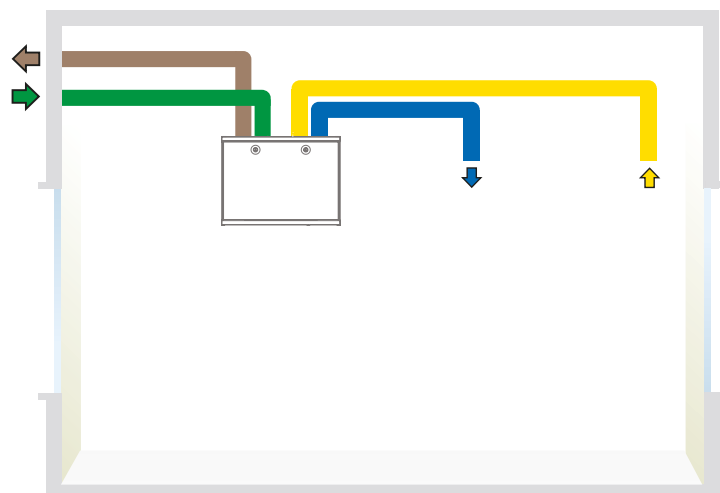
Automatic VOC system as optional equipment

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



ILTO 270-290 Genius L, duct connections.



Outdoor air



Supply air



Extract air



Exhaust air

Note! Always check the unit design (L/R) and 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

24.0°C - 20.0°C
Data from TRV 2020

Fan power and energy use EN13141-7

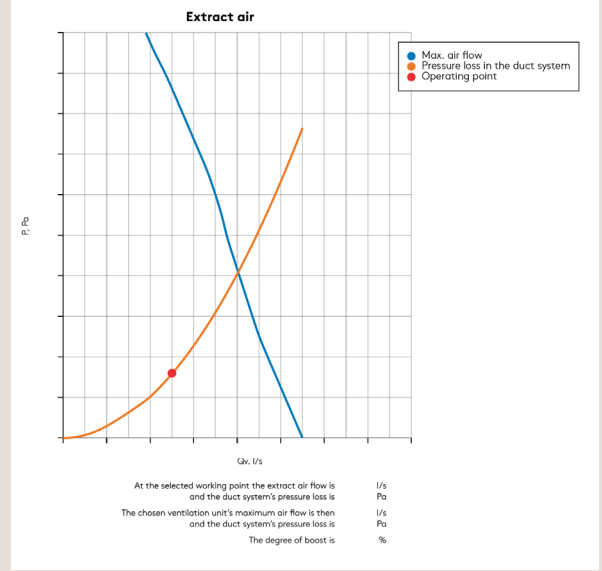
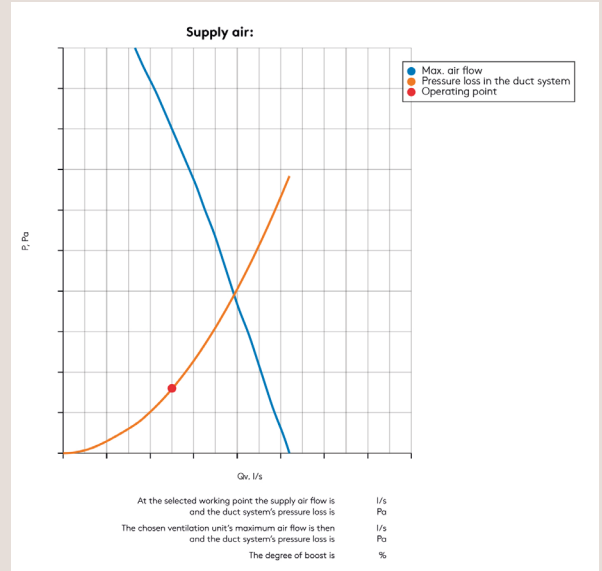
Supply air	31 W
Extract air	27 W
SFP	0.34 W / (m³/s)
SFP	1.16 kW / (m³/s)
Annual energy use of fans	508 kWh

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	714 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 _{max}
supply air duct	68	69	68	57	52	49	44	37	62
return 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



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



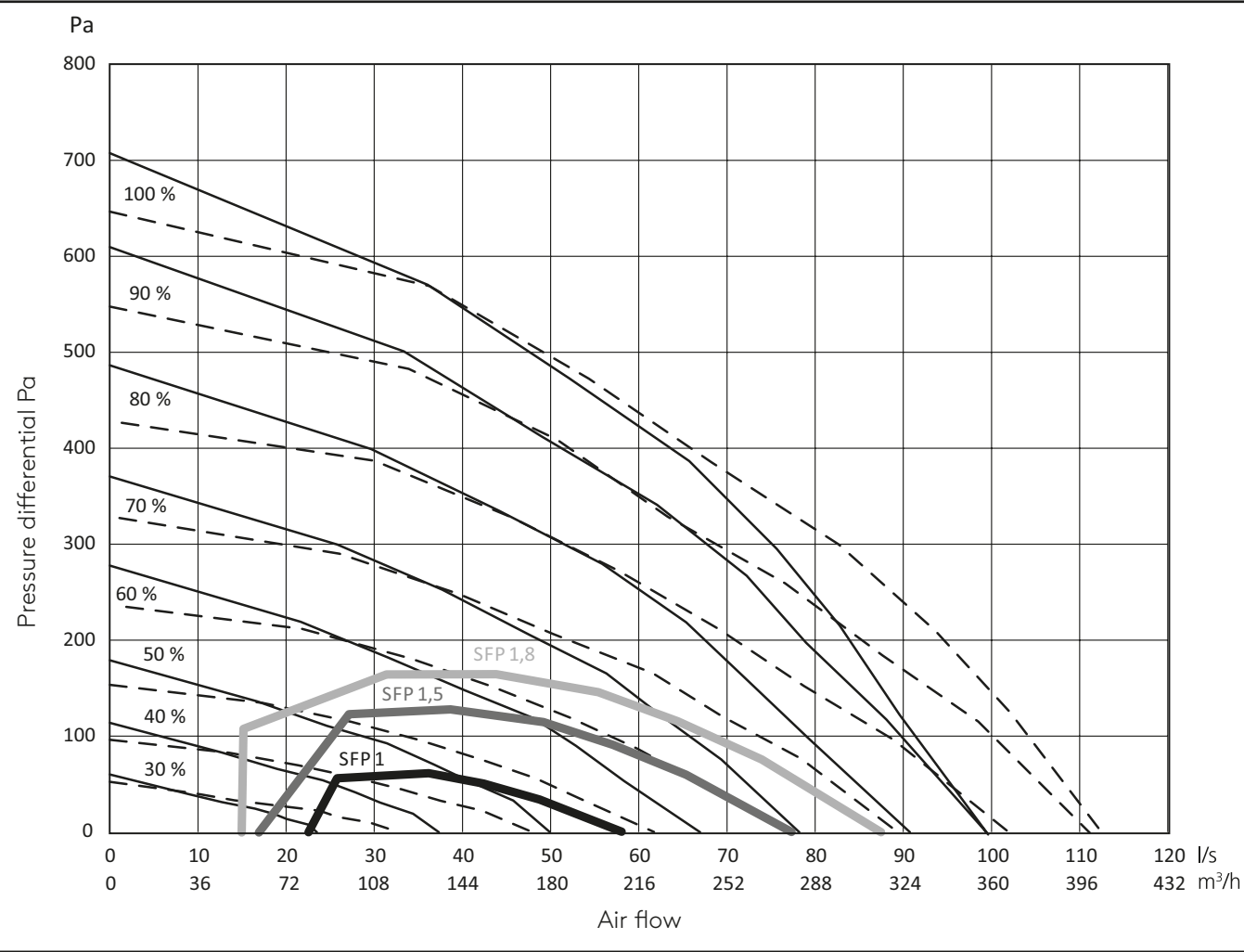
Air flows

Air flows

EN 13141-4

ILTO 270-290

- Supply airflow
- Extract airflow



Acoustic data

See acoustic data on ProCASA.

procasa.swegon.com



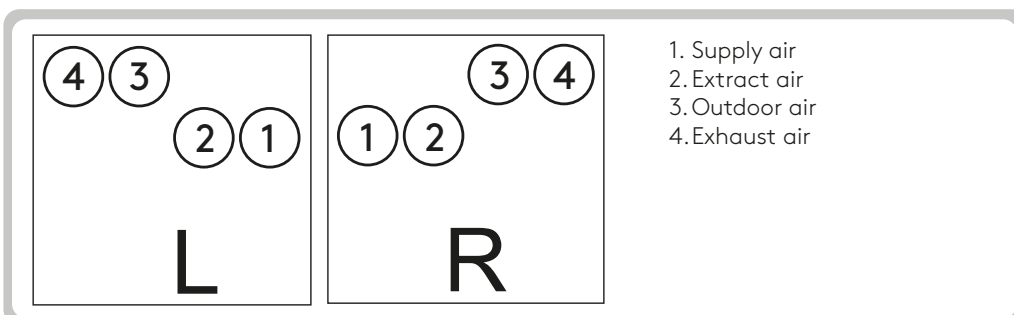
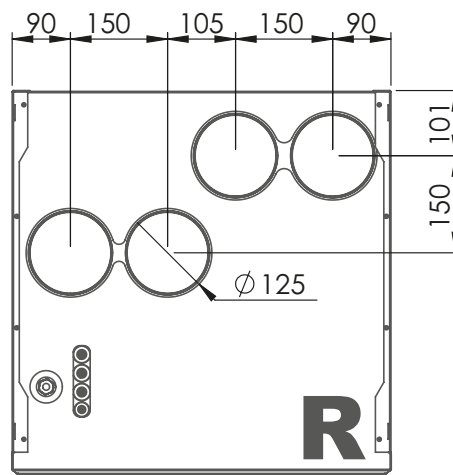
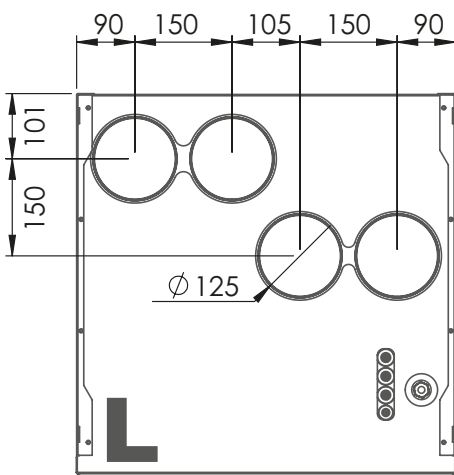
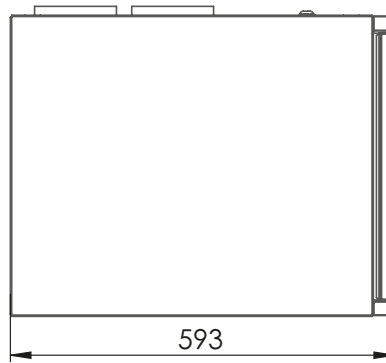
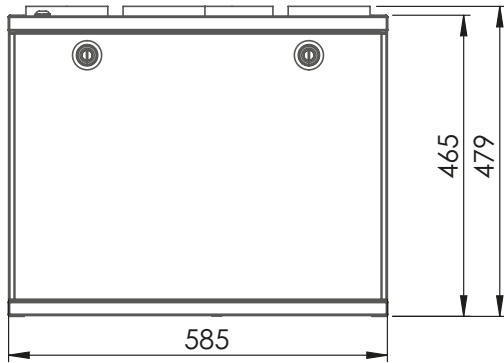
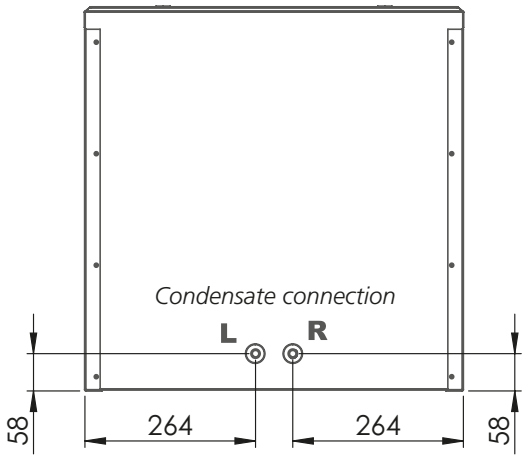


Dimensions and weight

Dimensions

ILTO 270-290 Genius

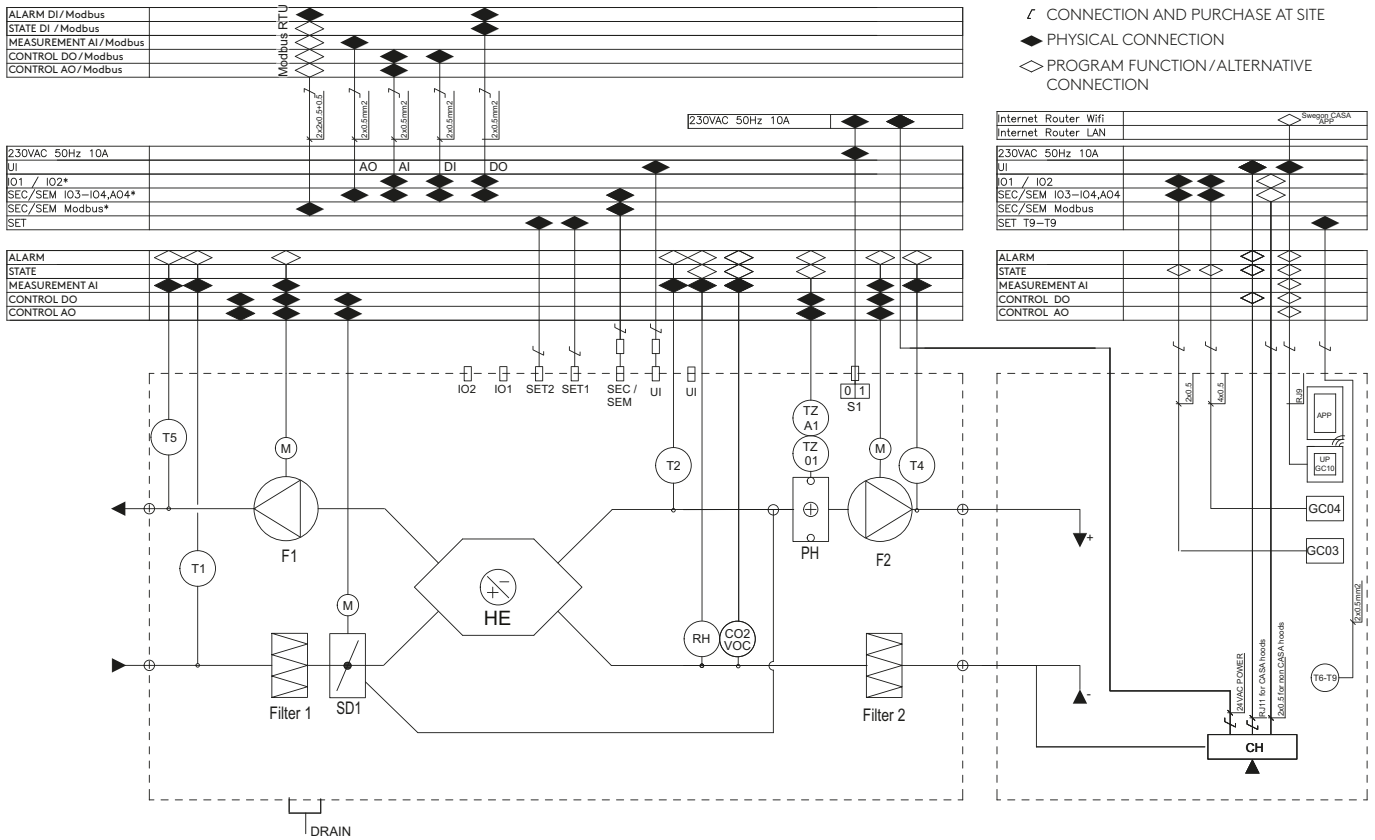
Weight of the unit: **53 kg**





Functional diagram

Functional diagram ILTO 270-290 Genius

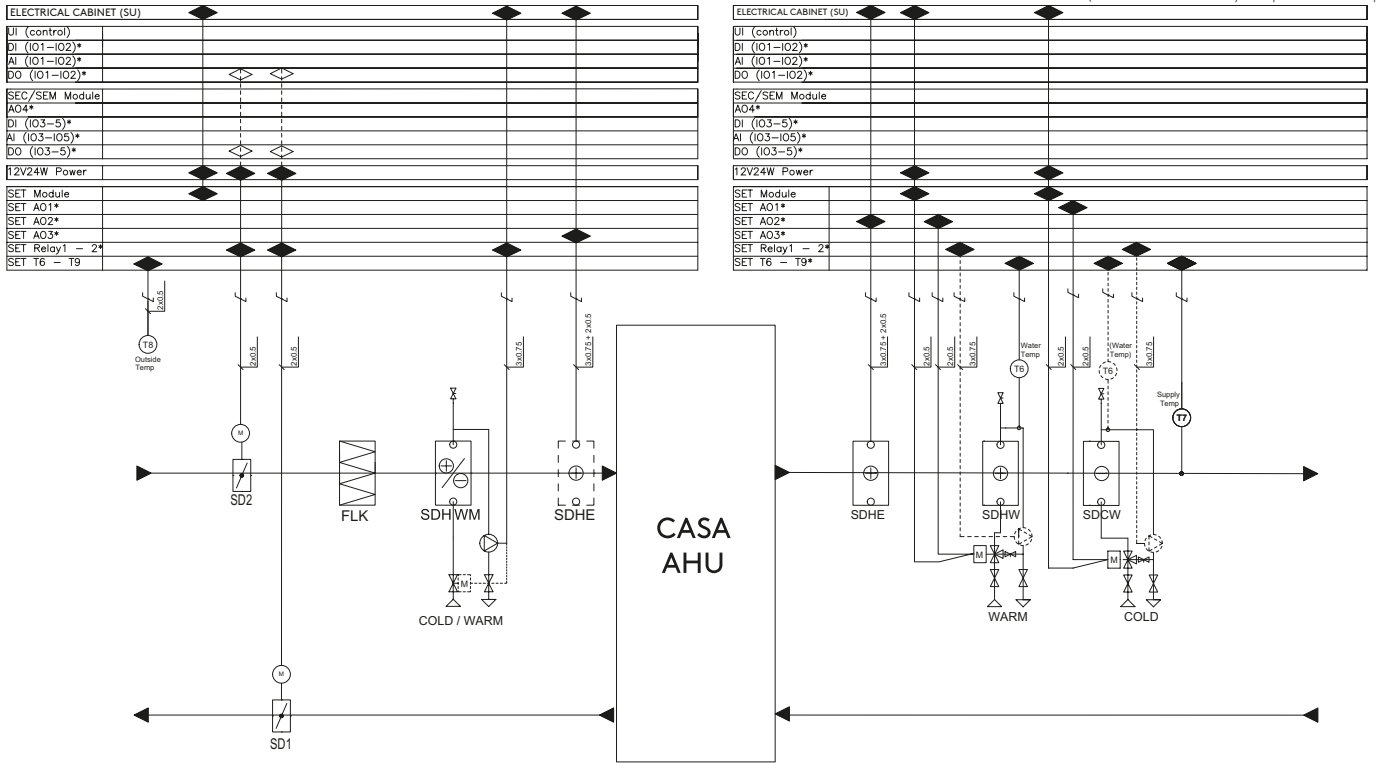


- CONFIGURATION AT SITE
- ◊ CONNECTION AND PURCHASE AT SITE
- ◆ PHYSICAL CONNECTION
- ◇ PROGRAM FUNCTION/ALTERNATIVE CONNECTION

Device	Description	Modbus register
T1	Temperature sensor, outdoor air	3x6201 (0,1°C)
T2	Temperature sensor, HR	3x6202 (0,1°C)
T4	Temperature sensor, supply air	3x6203 (0,1°C)
T5	Temperature sensor, exhaust air	3x6205 (0,1°C)
TZ01	Manual overheat protection 70°C	Alarm 3x6117
TZA1	Automatic overheat protection 55°C	Alarm 3x6117
Filter 1	Fresh air filters ISO ePM1 50% (F7)	Service reminder info 3x6129
Filter 2	Extract air filter ISO coarse (G3)	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
PH	Post heater, controlled steplessly according to demand. Ignored if the preheater is on.	Control 3x6317 (%)
HE	Heat exchanger	
SD1	Heat exchanger bypass damper and damper motor. Note, the wiring according to the handiness of the unit.	Control 3x6348 (%)
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
DRAIN	Condensate discharge drain. Connect the water trap and drain hose to the condensate connection. Check the operation of the water trap.	

Functional diagram Duct actuators

- FIELD CONFIGURATION AU
- FIELD CONNECTION SU
- ◆ PHYSICAL CONNECTION
- ◇ ALTERNATIVE CONNECTION (Note: an additional relay is required for DO outputs)

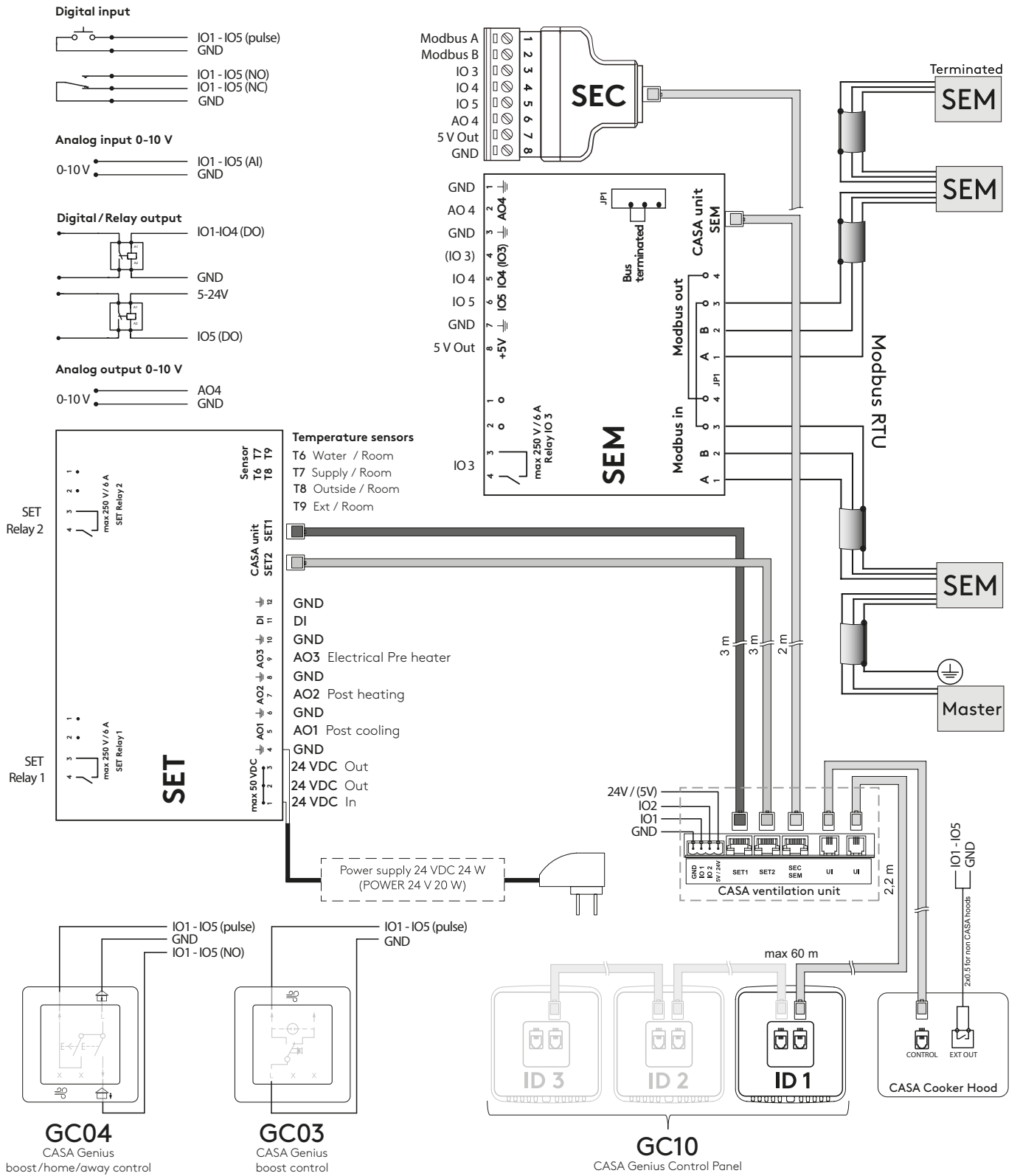


Device	Description
T6-T9	Temperature sensor. Connection to the SET module. The sensor must be defined on the control panel.
SD1, SD2	Duct Plate for Outdoor/Exhaust duct.
FLK	Duct filter in combination with an electric pre heater (SDHE)
SDHWM	Ground Liquid preheating/cooling coil for outdoor air duct. (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.



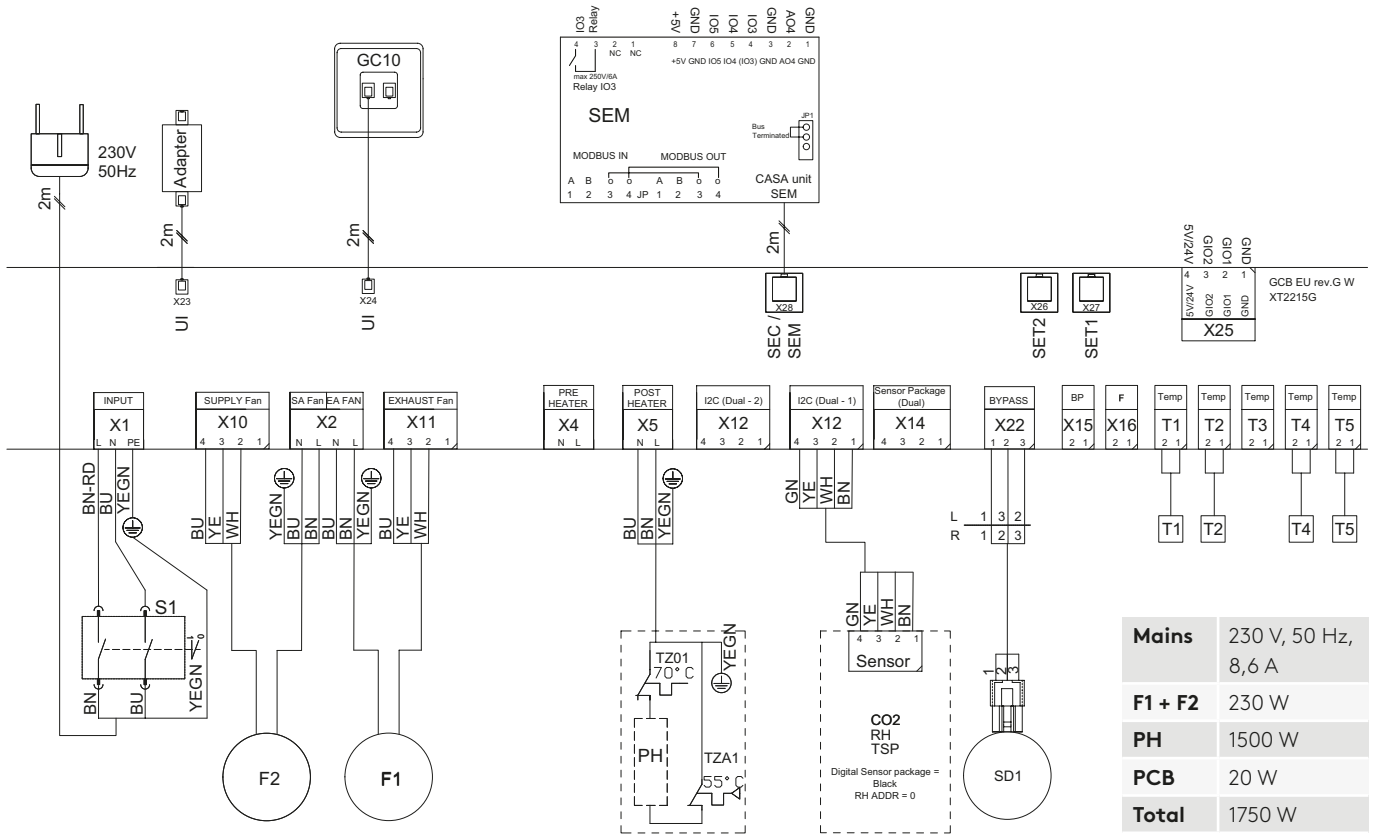
External connections

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 ILTO 270-290 Genius



Mains	230 V, 50 Hz, 8,6 A
F1 + F2	230 W
PH	1500 W
PCB	20 W
Total	1750 W

Device	Description
T1	Temperature sensor, outdoor air
T2	Temperature sensor, HR
TSP	Temperature sensor, extract air
T4	Temperature sensor, supply air
T5	Temperature sensor, exhaust air
PH	Air heater, post heating
TZ01	Manual overhear protection
TZA1	Automatic overhear protection
F1	Extract fan
F2	Supply fan
SD1	Damper 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
GC10	Genius control panel
SEM	Connection module

Installation options

Ventilation unit installation site

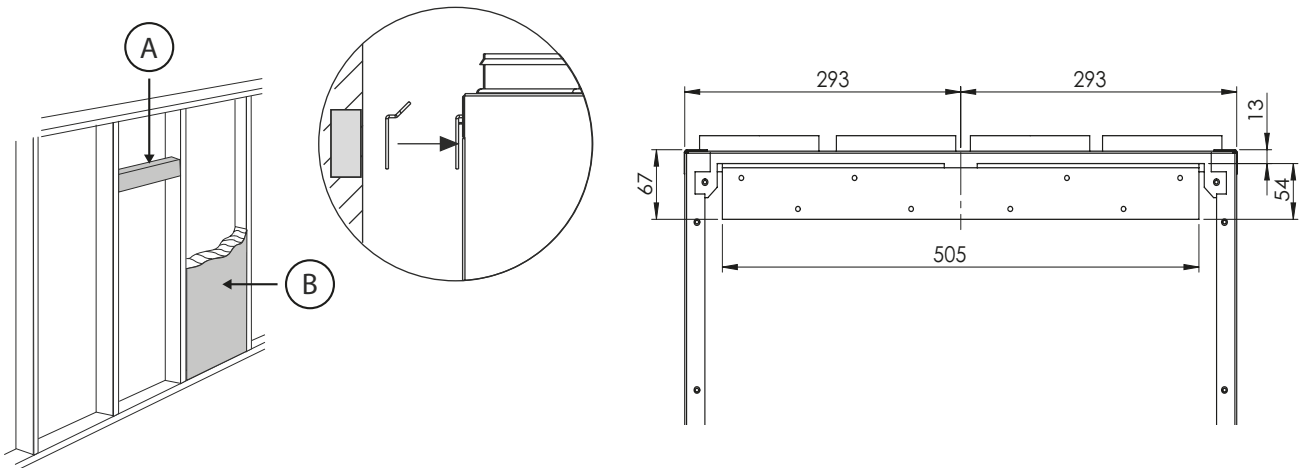
The temperature in the space where the unit will be installed must be more than +10 °C. Due to the risk of disruptive noise, the ventilation unit should not be installed on the wall towards the living room or bedroom.

Wall mounting

A wall mountin bracket is included in delivery.

If it is a question of a light partition wall, the wall must be reinforced with horizontal studs (A) that support the weight of the ventilation unit. In addition, Swegon also recommends that the wall be insulated with mineral wool or similar insulation (B) for preventing sound from propagating to other rooms.

Screw the wall mount firmly in 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 so that the ears on the bracket engage in the corresponding notches at the top on the backside of the unit. Set the final position of the ventilation unit with the help of the adjustable anti-vibration mountings so that the ventilation unit tilts slightly backward.



Ceiling mounting

The ventilation unit can also be mounted in a ceiling mounting frame (available as an accessory) on the ceiling.

The ceiling mounting frame must not be used as part of a support structure for the ducts, the duct support must be sufficient even without the support effect provided by the ceiling mounting frame.





Product codes

ILTO 270-290 Genius

Product	Part no.	LVI no.	GTIN
ILTO 270-290 Genius L RH+CO2	W27VL15G0ICA	7907468	6430080091423
ILTO 270-290 Genius R RH+CO2	W27VR15G0ICA	7907469	6430080091430
ILTO 270-290 Genius L RH+CO2 STD (no accessory kit)	W27VL15G00CA	7907485	6430080091805
ILTO 270-290 Genius R RH+CO2 STD (no accessory kit)	W27VR15G00CA	7907486	6430080091812

Accessories

Product	Part no.	LVI no.	GTIN
Ceiling mounting frame, L	W27CMBL	7907457	6430080091355
Ceiling mounting frame, R	W27CMBR	7907458	6430080091362
Water trap, metal	UVLL	7906930	6415879069302
Water trap, plastic	UVLM	7907493	6430080091911
Condensate discharge tube	CDH3	7906677	6415879066776
Connector kit	ILTOLP	7907481	6430080091720



CASA - 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 (included in ILTO 270-290 delivery)	SEMIO	6415879067346
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 + VOC automation	GRHCV	6430080091461

Waterborne air coolers	Part no.	GTIN
Cooling coil package Ø 160	SDCW160	6415879068053

Waterborne air heaters	Part no.	GTIN
Heating coil package Ø 125	SDHW125	6415879068039

Brine air heater/cooler for ground source heat pump	Part no.	GTIN
Heating/cooling coil Ø250, G4	SDHW250F	6415879068084

Electric air heater	Part no.	GTIN
Electric heater Ø 125	SDHE125-1T	6415879067230
Prefilter box Ø 125 mm, G4	FLK12	6415879067452

Duct mounted shut-off dampers	Part no.	GTIN
Damper Ø 125 mm	SDD125	6415879069890

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**



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