

Installation instructions for the product range

ESENSA PX TOP/RX TOP



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www.swegon.com



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Symbols and abbreviations



RX ROTARY EXCHANGER



PF PLEATED FILTER



PX PLATE HEAT EXCHANGER



BW BACKWARD CURVED FAN



WARNING !



OUTDOOR AIR (1)



EXTRACT AIR (2)



Must be connected by a qualified electrician.

Warning! Hazardous voltage.



EXHAUST AIR (3)



SUPPLY AIR (4)

1. General

1.1 General information

All staff must consult the instructions before starting any work on the unit. Any damages to the unit (or parts of it) due to a misuse cannot be considered subject to guarantee.

All electrical work must be carried out by a qualified electrician. Make sure that the unit is disconnected from any power supply before performing any electrical work.

Check the condition of the unit on delivery. The air handling unit is supplied in packaged condition. Please unpack it carefully (sharp tools could damage the surfaces). The surfaces are covered with a transparent protective film. Please remove it carefully.

If the unit is not installed immediately, it should be stored in a clean and dry area. If stored externally, it should be adequately protected from the weather conditions.

Duct connections/duct ends should be covered during storage and installation, in order to avoid dust or dirt entering the unit.

The product identification can be found on the silver label that is always stuck to the bottom of a front panel on the unit. Refer to this label when you contact the supplier.

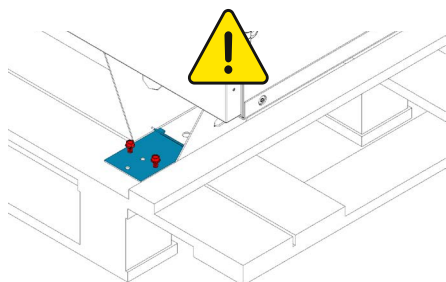
Ordered optional accessories are not factory installed and must be ordered in advance (for example internal and external coils, motorised dampers, defrost kit and flexible sleeve). They are supplied separately from the unit so the installer is responsible for installing and connecting these.

Standard components can be individually packaged and placed inside the unit for the transportation.

1.2 Transport within the site

Before removing the transport pallet, determine whether a forklift truck or a pallet transporter will be used for further transporting the unit within the site to the spot where it will be installed.

CAUTION : The unit is attached to the pallet at the feet by metal parts. Unscrew the fasteners before removing the device from the pallet.



1.3 Location

The air handling unit must be installed inside the building (some specific models are designed to be also placed outside) and mounted horizontally on a flat and firm supporting surface (perfectly level floor) and this surface must be constructed in a way enabling it to support the weight of the unit. If this conditions are not respected, that could cause an issue for the drain-pan.

1.4 Lifting

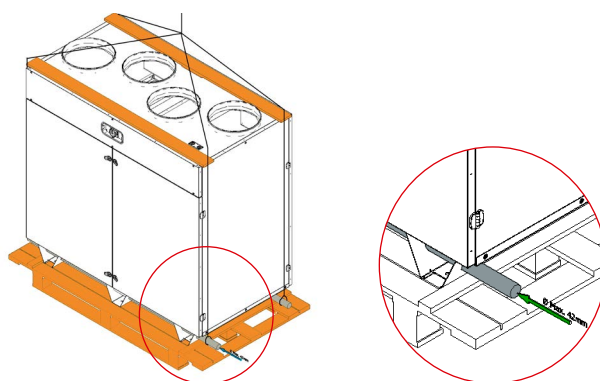
The ESENSA unit is equipped with perforated feet for easy handling.

CAUTION : The unit is attached to the pallet at the feet by metal parts. Unscrew the fasteners before removing the device from the pallet.

To lift the device, use proper lifting ropes (not provided):

1- Insert 2 lifting bars (not provided) through the perforations in the feet of the unit. **Maximum diameter of 42 mm.** Make sure that the lifting bars are strong enough.

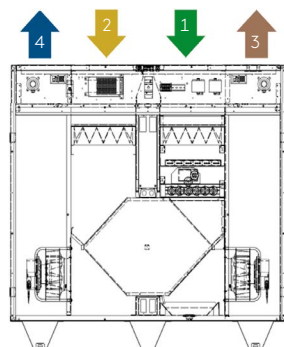
2- The tense lifting ropes could apply a pressure on the edge of the unit and could deform it. For this reason, we advice to use (wooden) lifting beams (on the top of the unit) to release the pressure between the ropes.



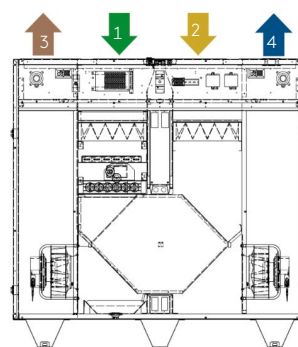
2. Product overview

2.1 General information

ESENSA PX TOP



Left connection version

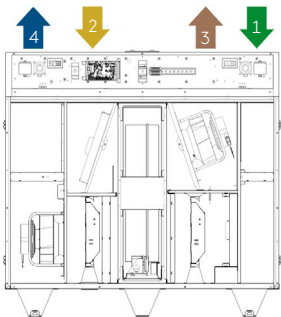


Right connection version

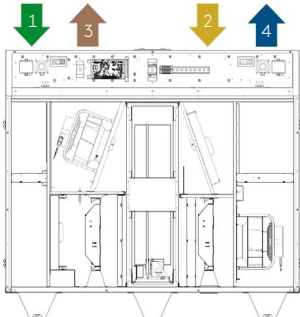
1. Outdoor air 2. Extract air 3. Exhaust air 4. Supply air

Unit	Model size	Weight [kg]	Aeraulics connections [mm]	Height with base frame [mm]	Width [mm]	Depth [mm]	
	ESENSA PX TOP	05	245	Ø 315	1.500	1.400	760
		09	320	Ø 355	1.550	1.640	885
		12	340	600 x 300	1.550	1.640	1.105
		13	395	800 x 300	1.550	1.640	1.330

ESENSA RX TOP



Left connection version

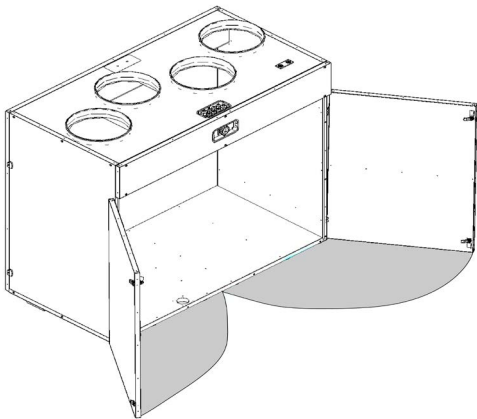


Right connection version

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

Unit	Model size	Weight [kg]	Aeraulics connections [mm]	Height with base frame [mm]	Width [mm]	Depth [mm]
ESENSA RX TOP	04	190	Ø 250	1.290	1.285	725
	05	225	Ø 315	1.290	1.585	725
	12	320	500 x 300	1.490	1.685	925
	16	365	700 x 300	1.590	1.685	1.145

2.2 Maintenance area

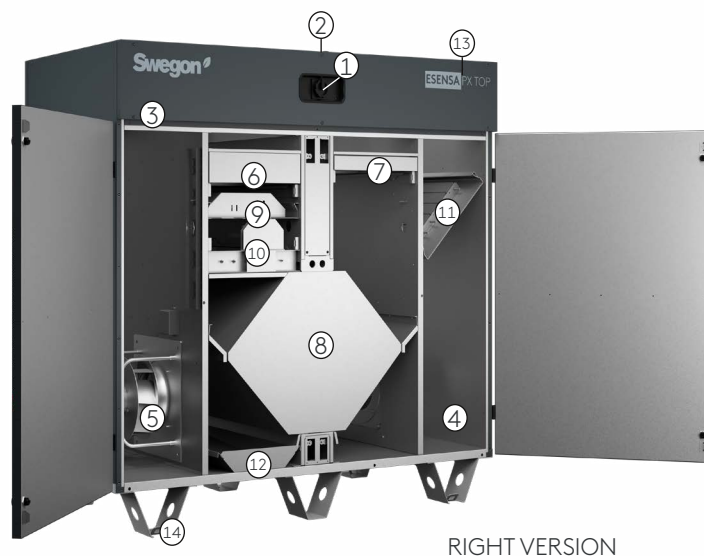


Unit	Model size	Front unit (without coil) [mm]	Front unit (with coil) [mm]
ESENSA PX TOP	05	700	700
	09	820	820
	12	820	1040
	13	820	1260
ESENSA RX TOP	04	620	630
	05	770	770
	12	820	1040
	16	820	1260

It is also recommended to have 600mm either side of the unit.

2.3 Components

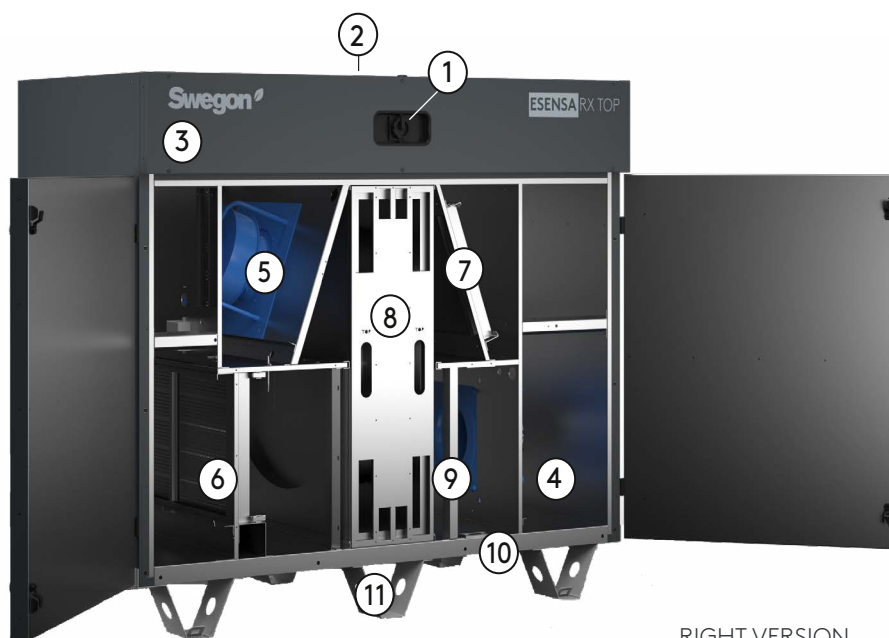
ESENSA PX TOP



1. Main switch
2. Cable inlet
- ⚠ 3. Integrated electrical cabinet
4. Supply air fan
5. Extract air fan
6. Supply air filter (mini-pleated)
7. Extract air filter (mini-pleated)
8. High efficiency plate heat exchanger
- ⚠ 9. Integrated preheating | electrical (option)
10. Bypass
- ⚠ 11. Integrated postheating electrical/water (option)
12. Drain pan
13. Hydraulic connection for postheating (option)
14. Base frame

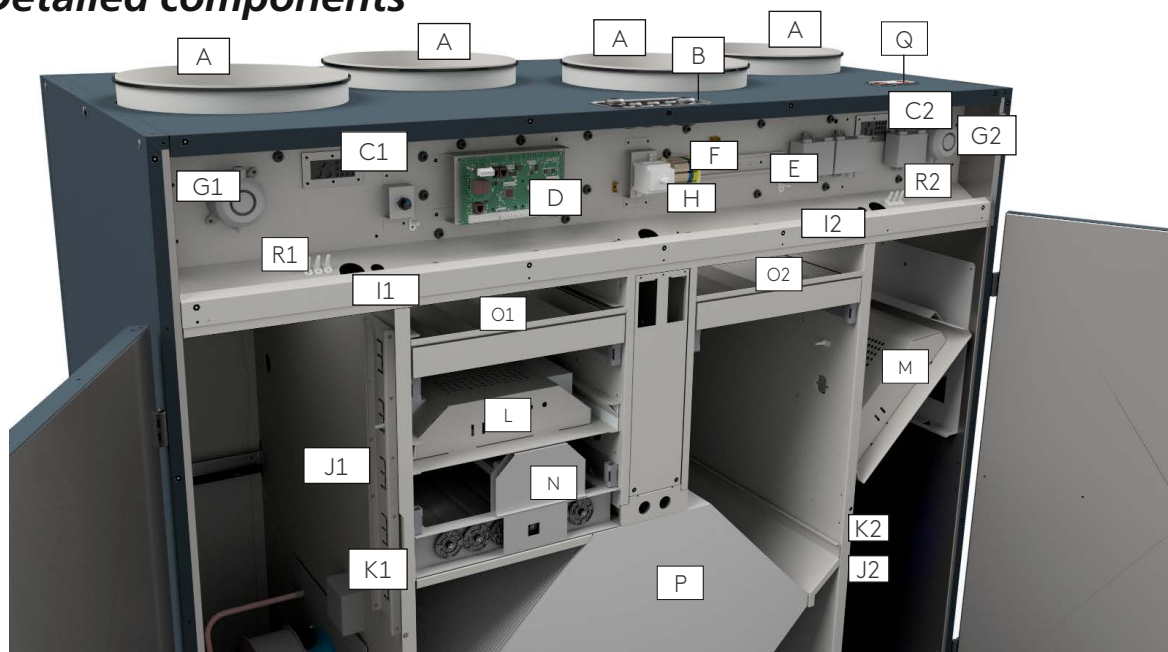
ESENSA RX TOP

1. Main switch
2. Cable inlet
- ⚠ 3. Integrated Electrical cabinet
4. Supply air fan
5. Extract air fan
6. Supply air filter (mini-pleated)
7. Extract air filter (mini-pleated)
8. High efficiency rotary heat exchanger
- ⚠ 9. Integrated postheating | water/electrical (option)
10. Hydraulic connection for postheating (option)
11. Base frame

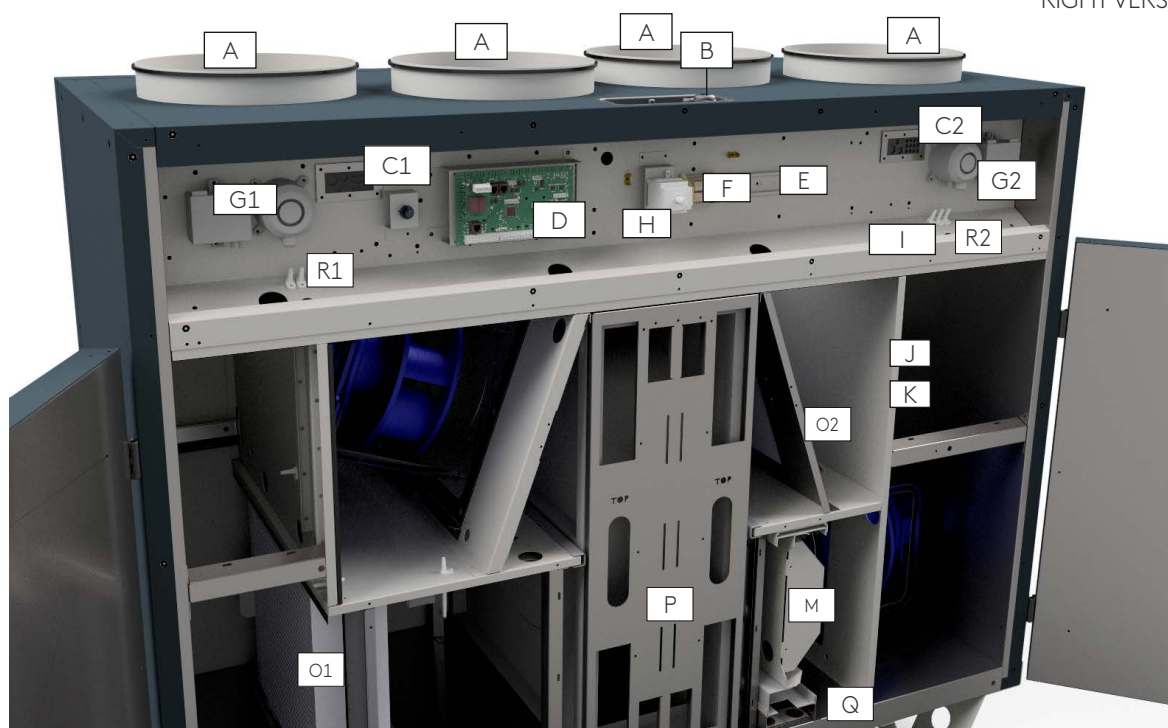


RIGHT VERSION

2.4 Detailed components



RIGHT VERSION



RIGHT VERSION

- A. Duct connection (circular or rectangular)
- B. Cable gland
- C1/C2. Membrane entry grommet (control cable)
- D. Main board
- E. Slotted DIN rail (free space for other components)
- F. Electric terminal block + Earth wire connector
- G1/G2. Pressostat
- H. Power supply/switch
- I1/I2. Membrane entry grommet (supply cable)

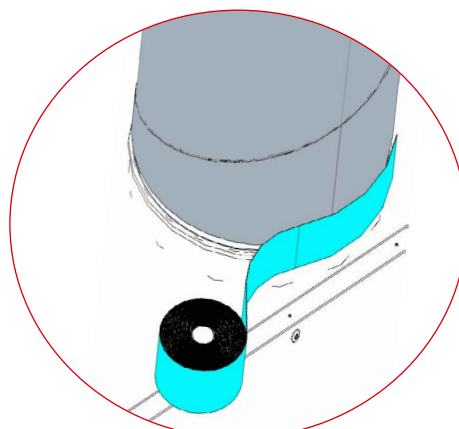
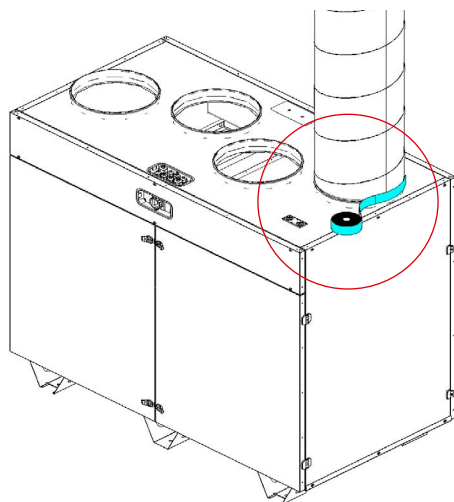
- J1/J2. Holding rail (control cable)
- K1/K2. Holding rail (supply cable)
- L. Preheating coil location (electrical)
- M. Postheating coil location (electrical/water)
- N. Bypass
- O1/O2. Mini-pleated filter
- P. Counter air flow heat exchanger/Rotary heat exchanger
- Q. Hydraulics connection membrane
- R1/R2. Pressure tapings

3. General installation

3.1 Duct connection

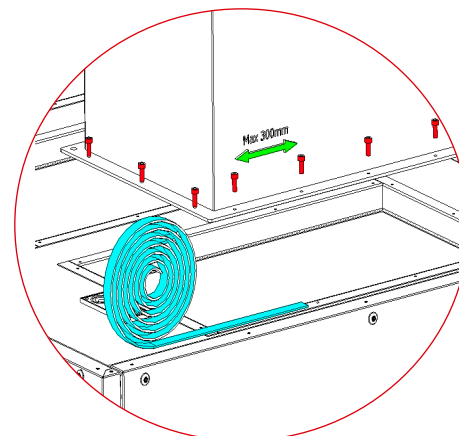
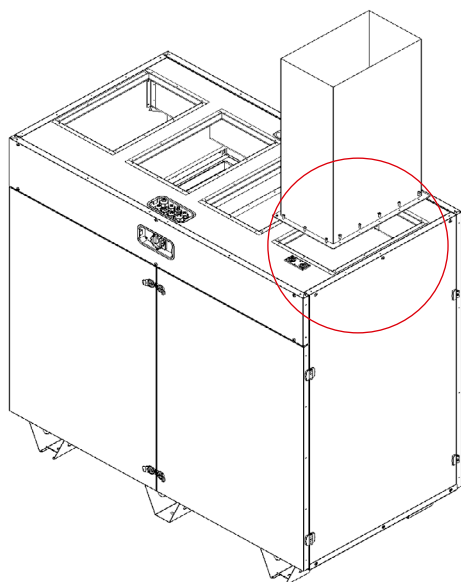
The ducts should be insulated according to local regulations and customary trade standards.

CIRCULAR CONNECTION :

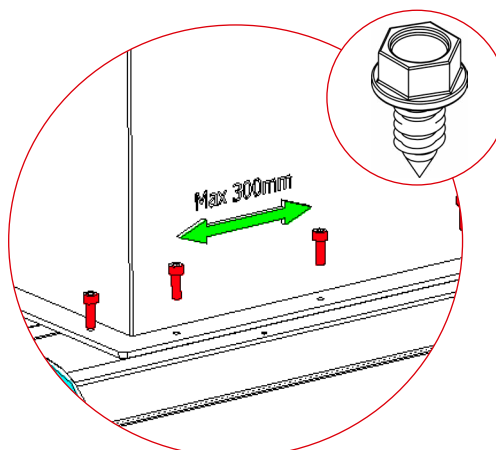


Tape and seal not included

RECTANGULAR CONNECTION :



Seal not included



Max 300 mm between each self-drilling screw
(not provided)

3.2 Drain-pan (ESENSA PX TOP)

Condensation water drainage for indoor installation.

Screw the siphon pipe to the drain pan tank from below the ventilation unit and make sure that the seal is present.

The air handling unit needs to be mounted horizontally on a flat and firm supporting surface (perfectly level floor) and this surface must be constructed in a way enabling it to support the weight of the unit. If this conditions are not respected, that could cause an issue for the drain-pan.



3.3 Temperature sensor T5

Remark : The standard accessories are inside the delivered device with dedicated instructions.

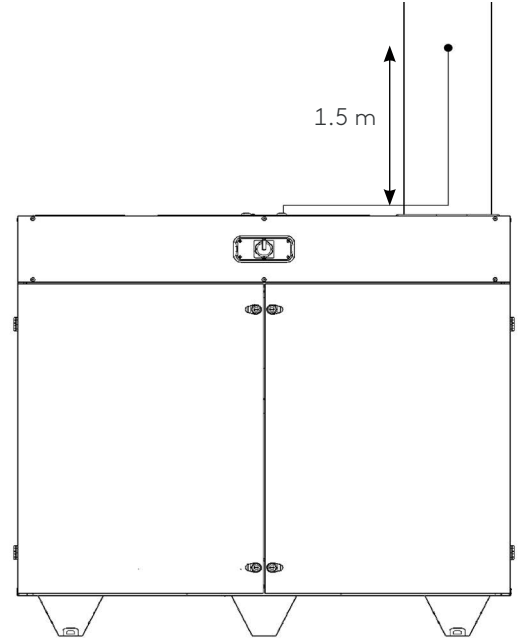
The temperature sensor is not factory installed and it is mandatory to install it inside the supply air duct.

The sensor must be positioned at a spot that is at least 1.5 metres far from the air handling unit.

If an air cooler is mounted in the duct, then the temperature sensor must be installed after the cooler (following the air flow direction). Always positioned 1.5 meters far from the unit or last coil.

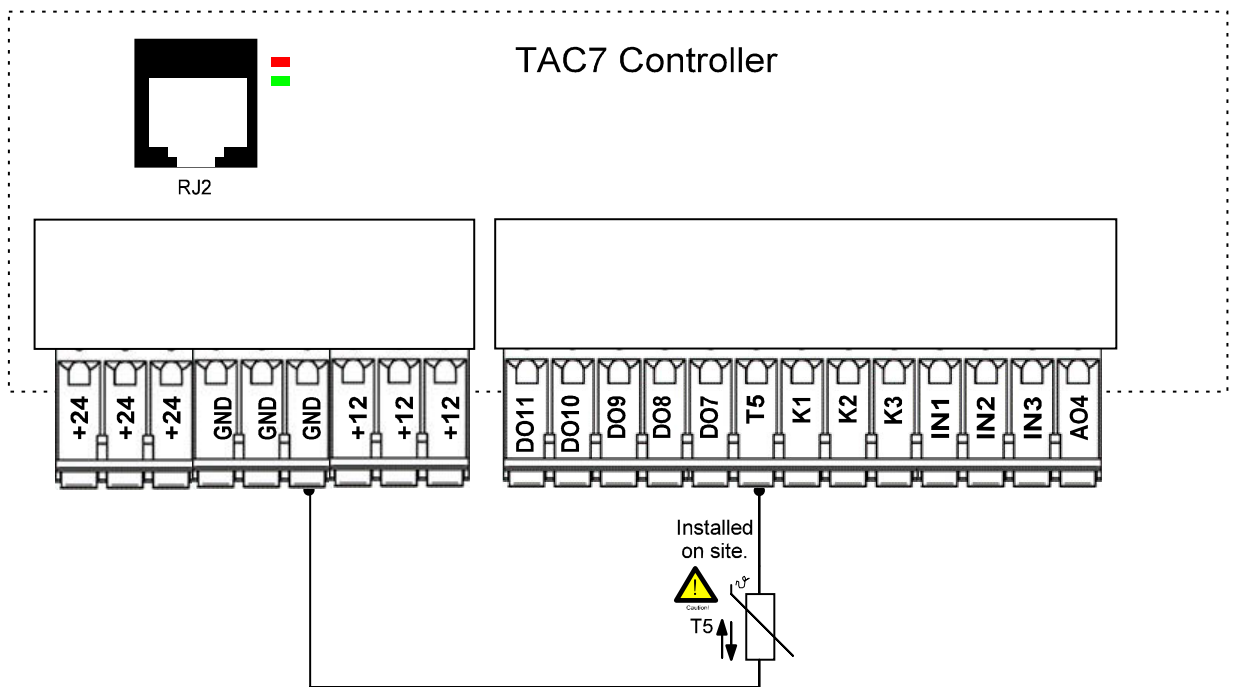


1. Measure and mark where the sensor has to be placed.
2. Drill an 11 mm diameter hole in the supply air duct.
3. Using the sensor kit : insert the sensor in the sealing bracket.
4. Apply the sealing bracket on the external side of the duct. The sensor must be insert in the drilled hole.
5. Secure the bracket to the duct (2 screws not provided)
6. Connect the sensor's quick-fit connector to the specific sockets on the control circuit board of the air handling unit.



RIGHT VERSION

Sensor electrical connection



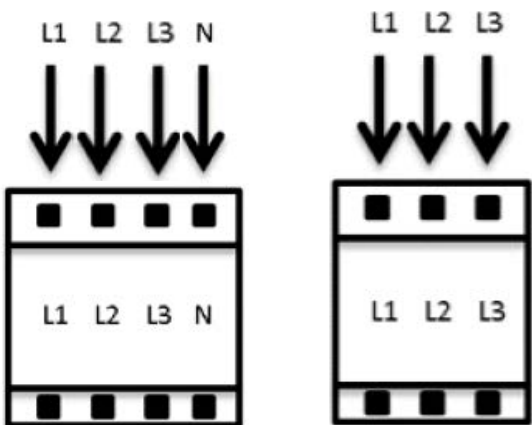
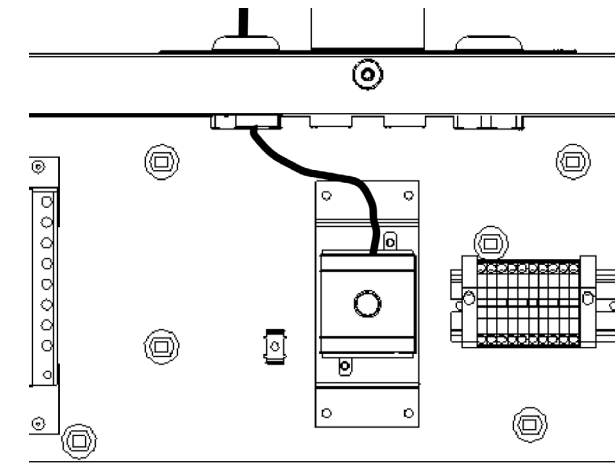
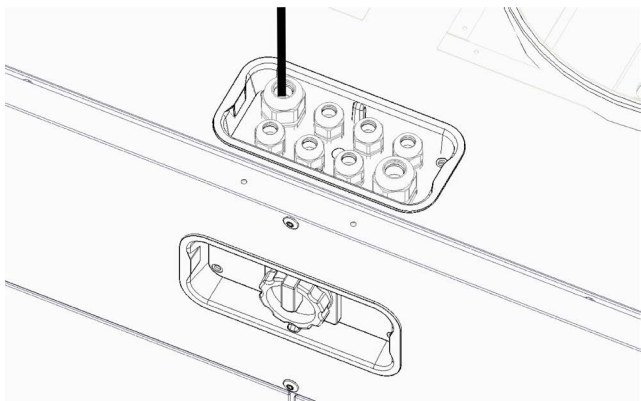
T5: Supply Air temp. sensor

ca. 1,5m
after last coil
CID883006

4. Unit power supply and start-up

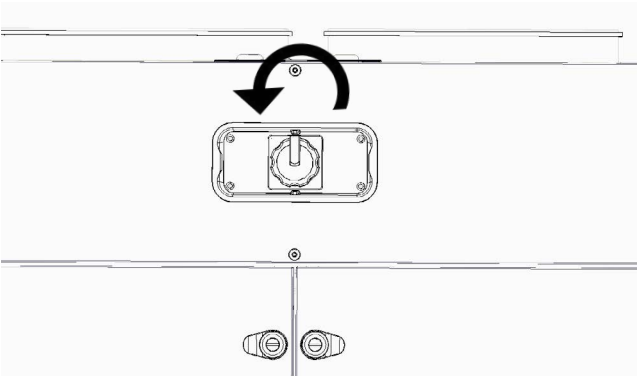
ESENSA units are plug-and-play units.
The general power supply to the unit is located in the electrical cabinet at the main switch.

Open the electrical cabinet panel, pass the cable through a cable gland and connect the wires according to the wiring diagrams below (single-phase and three-phase).



5. Main switch

To start the machine, use the rotary switch to switch between ON and OFF modes.















6. Operation and commissioning manuals

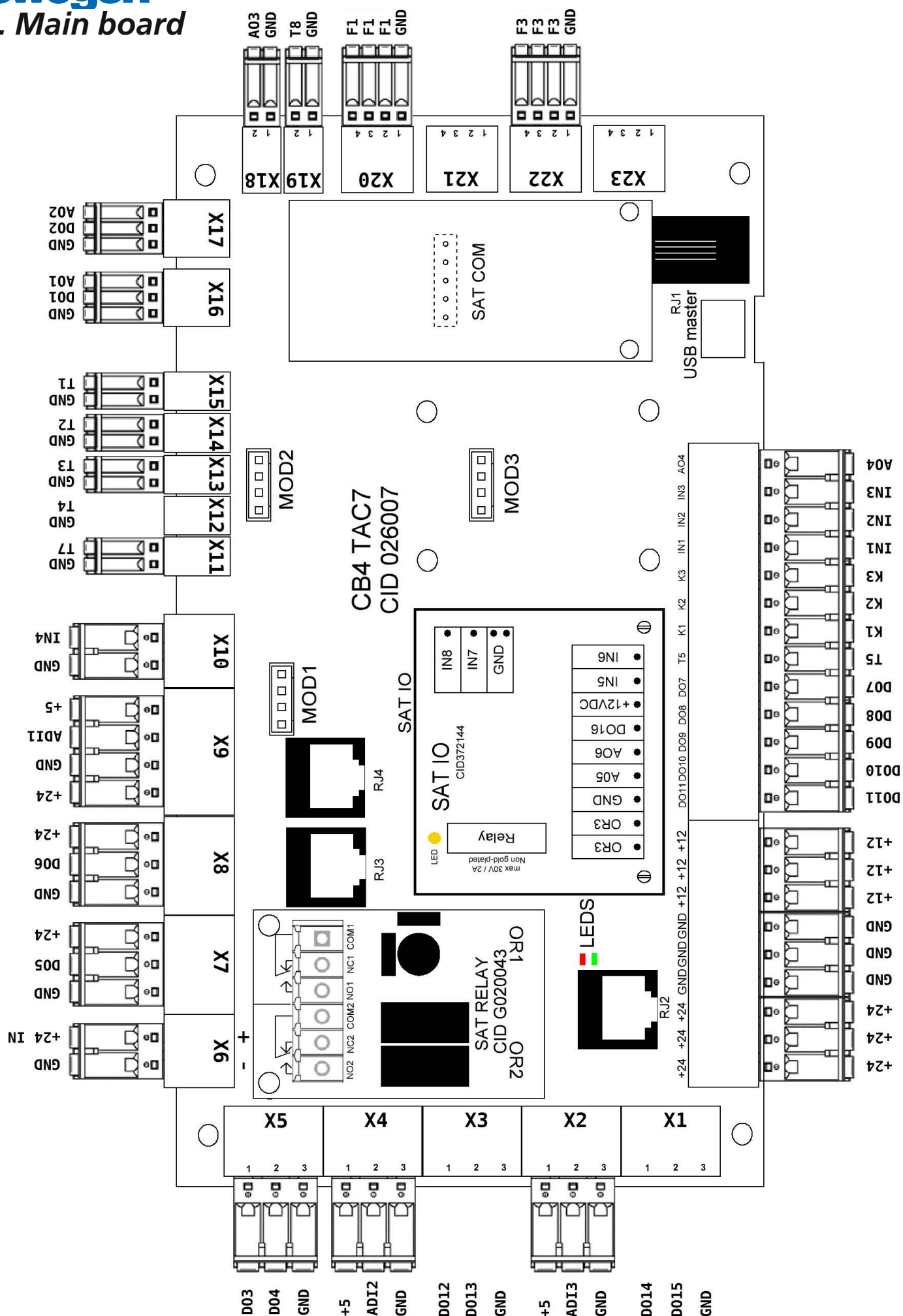
Description	QR code	Link
Function manual		Click here to open the link
Operation and maintenance manual		Click here to open the link
Alarms manual		Click here to open the link

7. Options and accesories installation manuals

QR code	Link	Description
	Click here	Integrated preheating coil (electrical) ESENSA PX TOP
	Click here	Integrated postheating coil (electrical)
	Click here	Internal postheating coil (water)
	Click here	Circular damper
	Click here	Rectangular damper
	Click here	Defrost kit
	Click here	Flexible sleeve/IRS adaptor
	Click here	BACnet gateway Modbus/BACnet
	Click here	COM4 external switch 4 positions
	Click here	HMI TACtouch touchscreen
	Click here	Kit 5 Output relays

QR code	Link	Description
	Click here	Kit Non-isolated external watercoil Control
	Click here	SAT I/O TACSatellite Input/Output
	Click here	SAT TAC KNX Communication Satellite
	Click here	SAT TAC MODBUS Communication Satellite Modbus RTU
	Click here	SAT WIFI/ETHERNET Communication Satellite Modbus (TCP/IP)
	Click here	Wall-mounting air quality sensor
	Click here	Duct air quality sensor
	Click here	Duct humidity sensor
	Click here	Pressure switch
	Click here	Modbus Duct pressure sensor
	Click here	Room temperature sensor
	Click here	0-10V Duct pressure sensor

8. Main board



AO1 = output 0-10V for external waterborne reheater (Prewired or option)	T1 = from outdoor T° sensor (prewired)	
DO1 = KWout = output PWM for electric reheater power control (Prewired or option)	T2 = from indoor T° sensor (prewired)	
DO2 = KWIn- PX: output PWM for electric pre-heater power control (Prewired or option) RX SPEED PWM - RX	T3 = to outdoor T° sensor (prewired)	
	T4 = Waterborne pre-heater (EBAin) T° sensor (option)	
AO2 = RX SPEED 0-10V - RX (option)	T5 = supply T° sensor for waterborne reheater (IBA)/electric reheater coil (KWout) (option)	
AO3 = 0-10V output to control cooling capacity or reversible heat/cool	T7 = Waterborne reheater (IBA)/waterborne pre-heater (EBA) anti freeze protection T° sensor (option)	
AO4 = output 0-10V for internal waterborne reheater (option)	T8 = Cooling coil frost protection sensor	
DO3 = BYPASS OPEN- PX (with rotary actuator) (prewired)	IN1 + 12/24V = FIRE ALARM	
DO4 = BYPASS CLOSE - PX (with rotary actuator) (prewired)	IN2 + 12/24V = BOOST	
DO5 = DAMPER 1 (with or without spring return, I _{max} = 0.5A DC) (Prewired or option)	IN3 + 12/24V = BYPASS ACTIVATION OVERRIDE	
DO6 = DAMPER 2 (with or without spring return, I _{max} = 0.5A DC) (Prewired or option)	IN4 + GND = Drain pan full contact (only for LP Unit - prewired)	
DO7 = HEAT OUTPUT (open collector; V _{max} =24 VDC; I _{max} =0,1 A)	K1 + 12/24V: Airflow MODE	= m³/h or l/s K1
DO8 = COOL OUTPUT (open collector; V _{max} =24 VDC; I _{max} =0,1 A)	Demand/Pressure control	= START/STOP
DO9 = ALARM OUTPUT (open collector; V _{max} =24 VDC; I _{max} =0,1 A)	K2 + 12/24V: Airflow control	= m³/h or l/s K2
DO10 = AL dPA OUTPUT (open collector; V _{max} =24 VDC; I _{max} =0,1 A)	Demand/Pressure control	= 0-10V INPUT
DO11 = FAN ON OUTPUT (open collector; V _{max} =24 VDC; I _{max} =0,1 A)	K3 + 12/24V: Airflow control	= m³/h or l/s K3
ADI1 = BYPASS POS - PX RX SPEED FEEDBACK - RX (prewired)	Demand/Pressure control	= % ON K3 or 0-10V INPUT
ADI2 = SUPPLY FILTER dPa	RJ1 = RJ12 connector for TACtouch (option)	
ADI3 = EXTRACT FILTER dPa	RJ2 = RJ12 connector for Modbus Pressure CP mode (option); Modbus Air quality sensors for demand control mode (option); Modbus Air quality sensors for BOOST in all modes (option)	
F1 = FAN 1 (SUPPLY)	RJ3 = RJ12 connector for ESENSA or GLOBAL PX LP: free; for GLOBAL PX/RX: Modbus Pressure sensors kit CA (prewired) and/or filters monitoring (option - prewired), on supply flow	
F3 = FAN 3 (EXHAUST)	RJ4 = RJ12 connector for Modbus Pressure sensors kit CA (prewired) and/or defrost detecting (option - prewired) and/or filters monitoring (option - prewired); NB: for GLOBAL PX/RX: sensor used for extract flow only	
SAT COM = SAT MODBUS or SAT KNX or SAT WIFI-ETHERNET - (option)		
GREEN LED ON = POWERED ON RED LED ON = ALARM		



Electronic boards contains ESD sensitive components. Wear antistatic wrist strap connected to protective earth before to manipulate them.
In alternative, discharge by touching the unit, handle boards at corners only and use antistatic gloves.

