OPERATION AND MAINTENANCE MANUAL

# **SERENITY** 10

Swegon

# Table of contents

# 1. General

## 1.1 Symbols

WARNING !

Must be connected by a qualified electrician.

Warning! Hazardous voltage.

OUTDOOR AIR (1)

EXTRACT AIR (3)

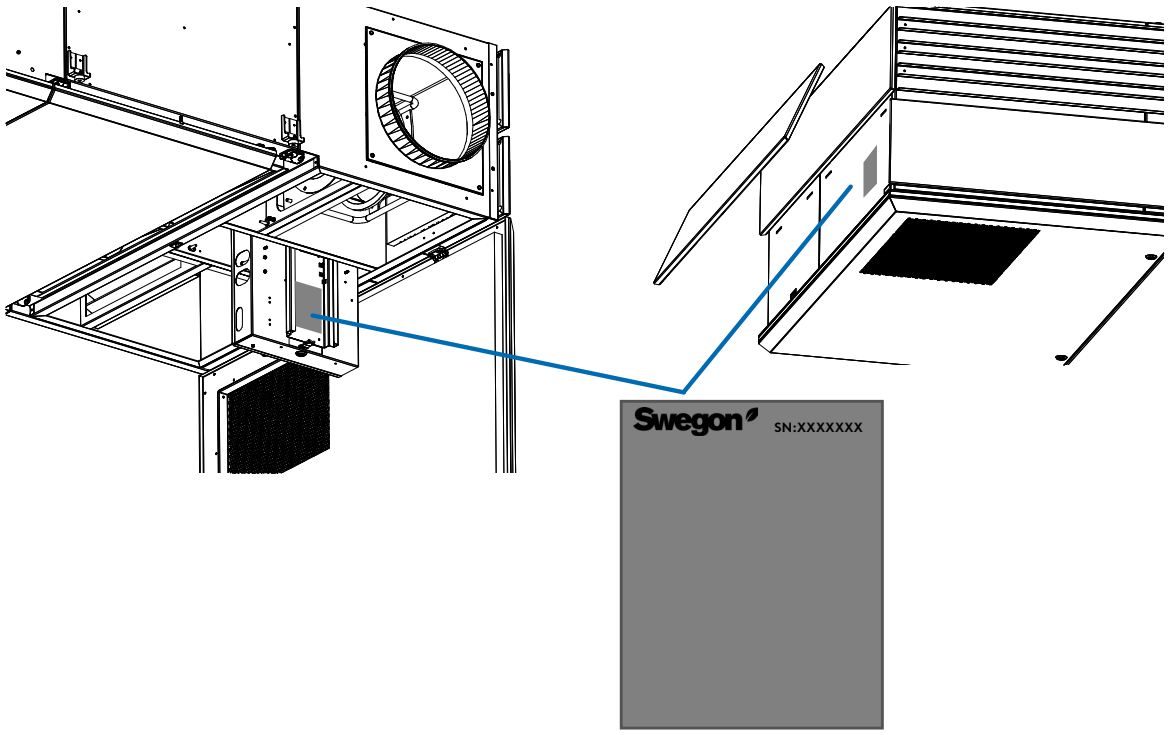
SUPPLY AIR (2)

EXHAUST AIR (4)

## 1.2 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.

The product identification can be found on the silver labels. One can be found on the unit and the other is sticked on the back the regulation box. Refer to this label and the serial number (SN) when you contact the supplier.



All electrical connections must be carried out by an authorized installer and in accordance with local rules and controls. Adequate security measures should be applied throughout the maintenance of the unit.

Before switching off the unit, it is recommended to first turn off the fan function via the control system. This allows the post-ventilation process to cool the electrical coils and helps prevent overheating of internal components.

The unit must always be operated with all doors and panels closed. Ensure that no foreign objects are present inside the unit, the ducting system, or any functional sections.

The interface should be installed in a physically secure location, typically within a restricted-access or maintenance area.

Before performing any maintenance or electrical work, make sure the unit is completely disconnected from the power supply. Even if the unit is open and the fans have stopped, some internal components may remain energized if the equipment has not been fully isolated from the electrical mains using an appropriate external isolating device (to be provided and installed by the installer). There is therefore a risk of electric shock during any intervention.

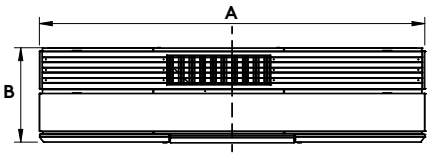
**Disclaimer**:

For security reasons, floor standing units are equipped with door contactors.

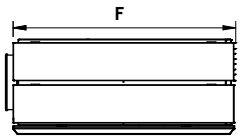
It is strictly forbidden to bypass, disable, or interfere with the mechanical safety interlock systems that automatically stop the fans when the doors are opened, as tampering with these devices may result in serious injury or damage to the equipment.

# 2. Product overview

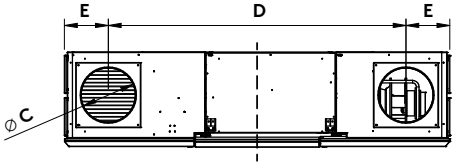
## 2.1 General



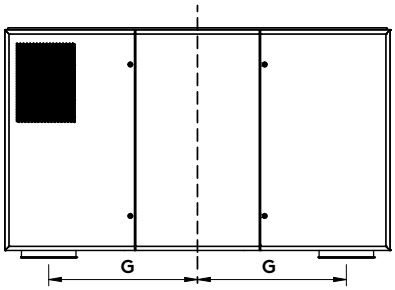

Front view




Left view



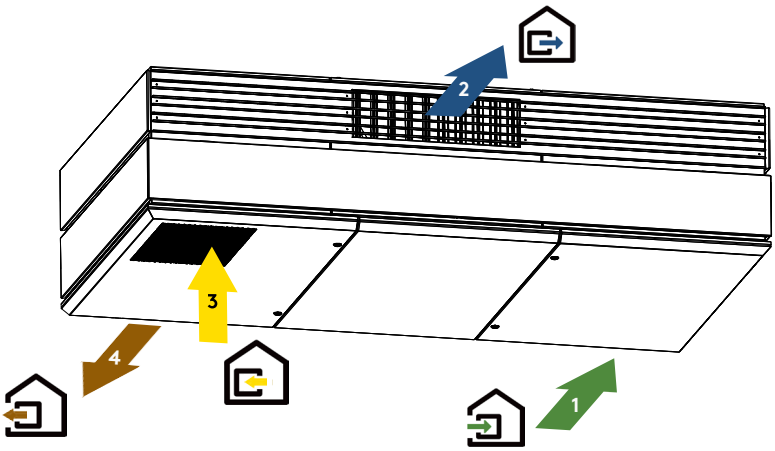

Rear view



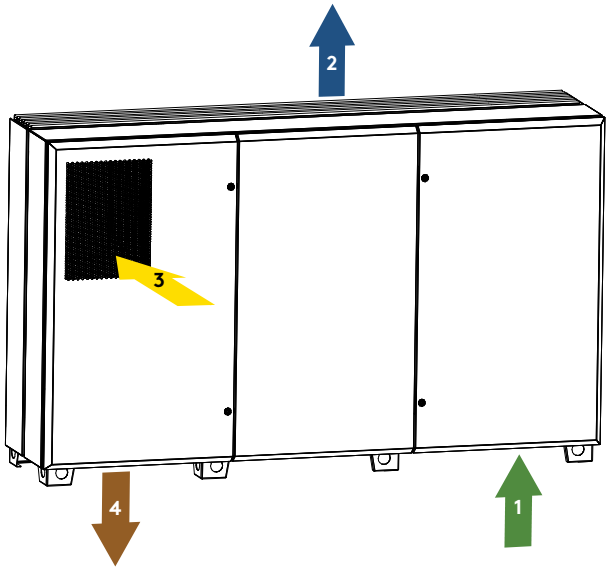

Bottom view

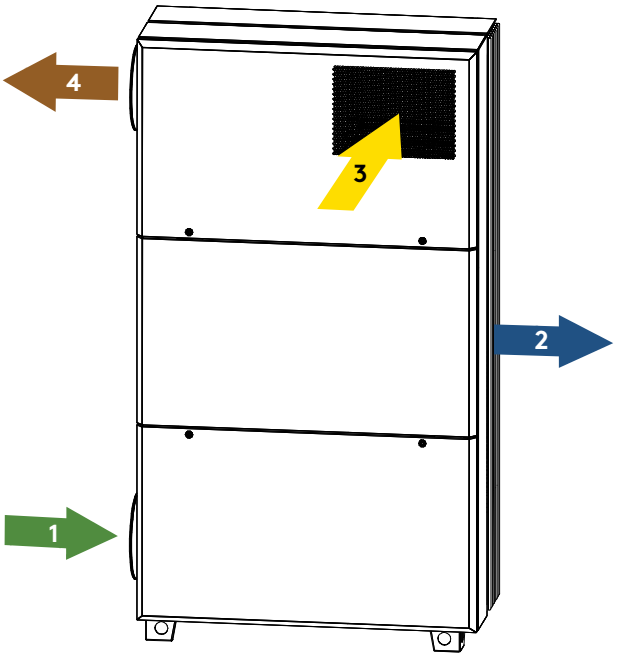
| | Weight | Airflow | | Dimensions (mm) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | kg | m³/h | l/s | A | B | C | D | E | F | G |
| SERENITY 10 | 300 | 200-1200 | 59-333 | 2230 | 545 | 315 | 1720 | 255 | 1285 | 860 |

## 2.2 Airflows

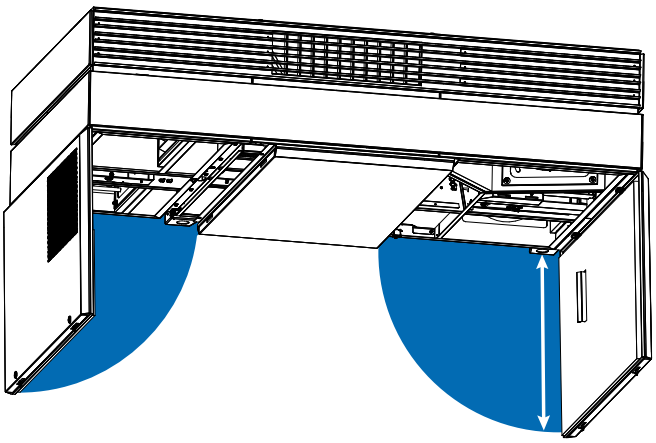



1. Outdoor air
2. Supply air
3. Exhaut air
4. Extract air

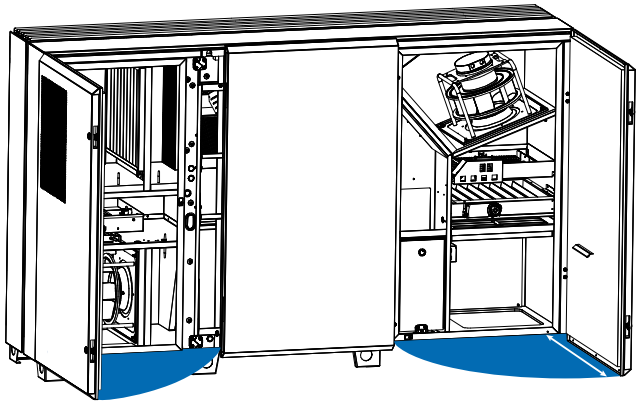


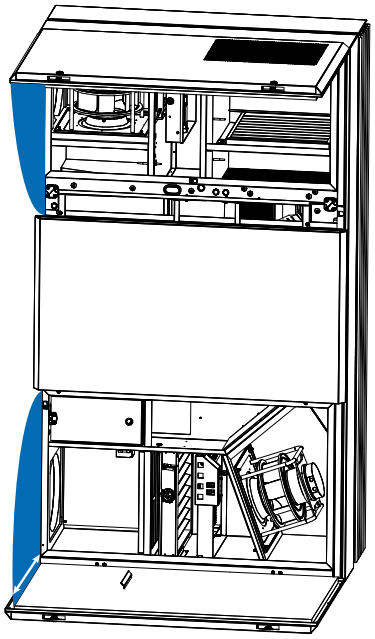



## 2.3 Maintenance area



| | |
|---|---|
| **SERENITY** 10 | 700mm |





## 2.4 Footprint

| | Vertical | Horizontal |
|---|---|---|
| **SERENITY** 10 | 0.71 | 1.22 |

## 2.5 Components


1. Outdoor air filter
2. Outdoor air damper
3. ⚠ Electric preheating*
4. Supply fan
5. Bypass
6. ⚠ Electrical cabinet (power)
7. Plate heat exchanger
8. ⚠ Electrical postheating* or reversible*/heating*/cooling* waterborne coil
9. Double deflection air diffuser grille
10. Extract grillle
11. Extract air filter
12. Sensors: CO2*/humidity*
13. Condensate pan
14. Condensate pump
15. Condensate evacuation
16. Extract fan
17. ⚠ Electrical cabinet (PCB) - Regulation box
18. Door contacts (only on floor standing units)
19. Central door

* available as an option

# 3. Declaration of conformity

## UK DECLARATION OF CONFORMITY

**Manufacturer (and where appropriate his authorized representative):**

Company: Swegon Operations Belgium

Address: Parc-industriel de Sauvenière 102 Chaussée de Tirlemont B5030 Gembloux

**Hereby declares that:**

Following product range(s): SERENITY PX

**Conform with Supply of Machinery (Safety) Regulations 2008 including Electrical Equipment (Safety) Regulations 2016**

**Also conform to the following directives:**

Electromagnetic Compatibility Regulations 2016

The Ecodesign for Energy-Related Products Regulations 2010 (Commission regulation (EU) No. 1253/2014)

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

**Authorized to compile the technical file:**

Name: Nicolas Pary

Address: Parc-industriel de Sauvenière 102 Chaussée de Tirlemont B5030 Gembloux

**Signature:**

Place and date: Gembloux 2026-03-25

Signature: Name: Jean-Yves Renard

Position: R&D Director

## EC DECLARATION OF CONFORMITY

**Manufacturer (and where appropriate his authorized representative):**

Company: Swegon Operations Belgium

Address: Parc-industriel de Sauvenière 102 Chaussée de Tirlemont B5030 Gembloux

**Hereby declares that:**

Following product range: SERENITY PX

**Complies with the requirements of Machinery Directive 2006/42/EC.**

**Complies also with applicable requirements of the following EC directives:**

2014/30/EU EMC

2009/125/EC Ecodesign (Regulation nr 1253/2014 – LOT 6)

2011/65/EU RoHS 2 (including amendment 2015/863/EU – RoHS 3)

**Authorized to compile the technical file:**

Name: Nicolas Pary

Address: Parc-industriel de Sauvenière 102 Chaussée de Tirlemont B5030 Gembloux

**Signature:**

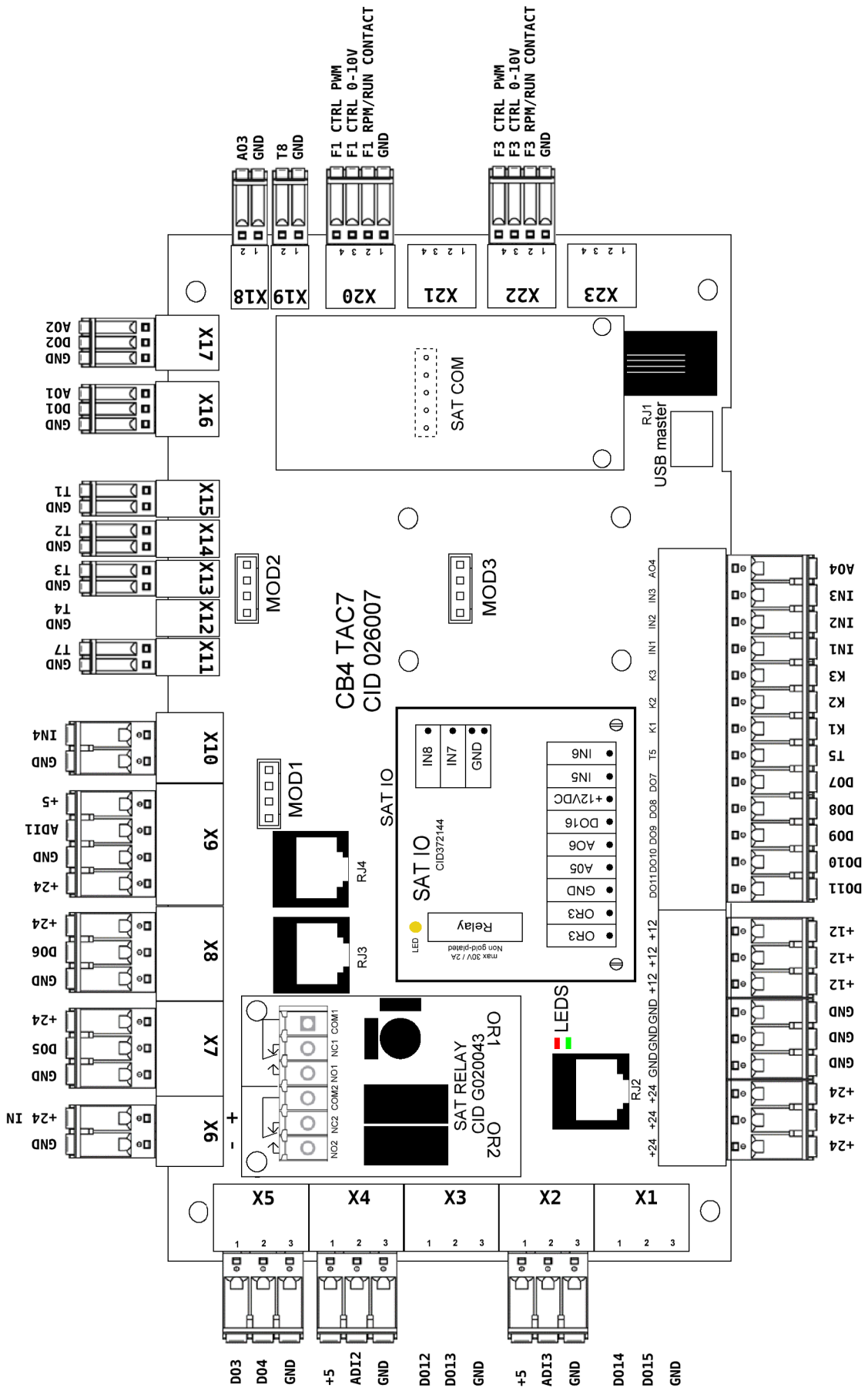
Place and date: Gembloux 2026-03-25

Signature: Name: Jean-Yves Renard

Position: R&D Director

# 4. Main board

| | | |
|---|---|---|
| AO1 = output 0-10V for external waterborne reheater (Option) | T1 = from outdoor T° sensor (prewired) | |
| DO1 = KWout = output PWM for electric reheater power control (Prewired option) | T2 = from indoor T° sensor (prewired) | |
| DO2 = KWin- PX: output PWM for electric pre-heater power control (Prewired option) | T3 = to outdoor T° sensor (prewired) | |
| | T4 = Waterborne pre-heater (EBAin) T° sensor (option) | |
| AO3 = 0-10V output to control cooling capacity or reversible heat/cool | T5 = supply T° sensor (prewired) | |
| AO4 = output 0-10V for internal waterborne reheater or reversible heat/cool (option) | T7 = Waterborne reheater (IBA)/waterborne pre-heater (EBA) anti freeze protection T° sensor (option) /internal reversible (IBA+-) | |
| DO3 = BYPASS OPEN- PX (with rotary actuator) (prewired) | T8 = Cooling coil frost protection sensor | |
| DO4 = BYPASS CLOSE - PX (with rotary actuator) (prewired) | IN1 + 12/24V = FIRE ALARM | |
| DO5 = DAMPER 1 (Prewired) | IN2 + 12/24V = BOOST | |
| DO6 = DAMPER 2 (with or without spring return, Imax = 0.5A DC) (Option) | IN3 + 12/24V = BYPASS ACTIVATION OVERRIDE | |
| DO7 = HEAT OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A) | IN4 + GND = Drain pan full contact (prewired) | |
| DO8 = COOL OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A) | K1 + 12/24V: Airflow MODE | = m³/h or l/s K1 |
| DO9 = ALARM OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A) | Demand/Pressure control | = START/STOP |
| DO10 = AL dPA OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A) | K2 + 12/24V: Airflow control | = m³/h or l/s K2 |
| DO11 = FAN ON OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A) | Demand/Pressure control | = 0-10V INPUT |
| ADI1 = BYPASS POS - PX | K3 + 12/24V: Airflow control | = m³/h or l/s K3 |
| ADI2 = SUPPLY FILTER dPa (not used) | Demand/Pressure control | = % ON K3 or 0-10V INPUT |
| ADI3 = EXTRACT FILTER dPa (not used) | RJ1 = RJ12 connector for TACtouch (opion) | |
| F1 = FAN 1 (SUPPLY) | 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) | |
| F3 = FAN 3 (EXHAUST) | RJ3 = RJ12 connector for Modbus Pressure sensor kit CA on supply (prewired) and outdoor filters monitoring (prewired) | |
| SAT COM = SAT MODBUS or SAT WIFI-ETHERNET - (option) | RJ4 = RJ12 connector for Modbus Pressure sensors kit CA on extract(prewired) and extract air filters monitoring (prewired) and defrost detecting (option - prewired) | |
| GREEN LED ON = POWERED ON<br>RED LED ON = ALARM | | |


A03
GND
T8
GND
F1 CTRL PWM
F1 CTRL 0-10V
F1 RPM/RUN CONTACT
GND
F3 CTRL PWM
F3 CTRL 0-10V
F3 RPM/RUN CONTACT
GND
X18
X19
X20
X21
X22
X23
X17
X16
X15
X14
X13
X12
X11
X10
X9
X8
X7
X6
SAT COM
RJ1
USB master
MOD2
MOD3
MOD1
CB4 TAC7
CID 026007
SAT IO
CID372144
IN8
IN7
GND
IN6
IN5
+12VDC
DO16
AO6
AO5
GND
OR3
OR3
LED
Relay
max 30V / 2A
Non gold-plated
RJ4
RJ3
RJ2
LEDS
SAT RELAY
CID G020043
OR1
OR2
X5
X4
X3
X2
X1
D03
D04
GND
+5
ADI2
GND
D012
D013
GND
+5
ADI3
GND
D014
D015
GND

# 5. Preventive maintenance

## 5.1 General

**Caution**: Before handling and/or opening the access panels it is compulsory to shut dow the unit.

Do not isolate the power supply whilst the unit is running. If pre and\or post-heater are installed, then isolate the corresponding power supplies.

Regular maintenance is essential to guarantee good operation of the air handling unit and a long service life. The maintenance frequency will depend on the application and on the actual environment conditions but the following are general guidelines.

## 5.2 Every 3 months

Check for any alarms indicated on the control device. In case of an alarm refer to the alarm manual to identify the issue.

Check the state of filter clogging. To locate the filter, refer to schemas on page 8. The control device allows a pre-defined 'filter alarm' threshold to be set. Replace filters if necessary.

Filters that are too clogged can generate the following problems:

- Insufficient ventilation
- Excessive increase of fan rotation speed
- Excessive sound levels
- Excessive power consumption (for a constant airflow, power consumption increases significantly with pressure drop)
- Unfiltered air passing through the heat exchanger (risk of clogging) and into ventilated rooms

Inspection and cleaning of the inside of the unit:

- Vacuum clean any accumulations of dust in the unit
- Inspect and gently vacuum clean the heat exchanger if necessary. Use a brush to protect the fins
- Clean any condensation stains
- Clean any accumulations in the drain pan

## 5.3 Every 12 months

**Check the condition of all power-circuit terminal blocks and tighten them if needed.**

Maintenance of the plate heat exchanger:

- Clean the drain pan
- Clean the inside of the bypass. To access the interior of the bypass it is necessary to force it open, it is possible to de-clutch the servo-motor of the bypass to allow for its opening.
- Always clean the heat exchanger against the direction of the airflow
- Cleaning must only be done by blowing with compressed air, vacuum cleaning with a soft nozzle or through wet cleaning with water and/or solvent. Before you begin cleaning, cover adjacent functional sections to protect them. If cleaning solvent is used, do not use solvent that will corrode aluminium or copper.

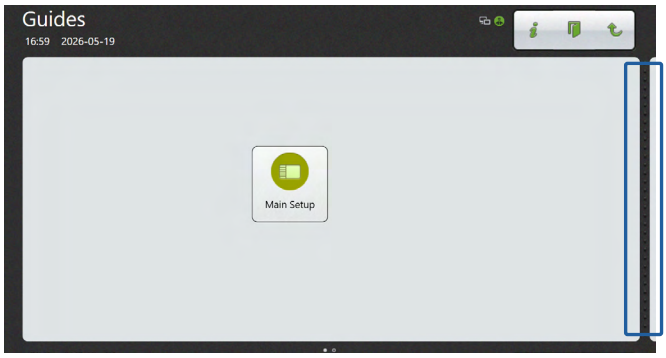
Maintenance of the fan:

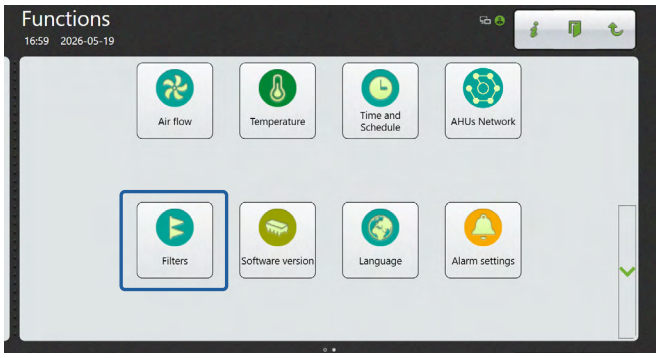
- Check again whether the power supply is shut down and fans are not running.
- Check and, if necessary, clean the fan blades to remove any deposits, taking care not to unbalance the blades (do not remove the balancing clips).

# 6. Filter monitoring setup

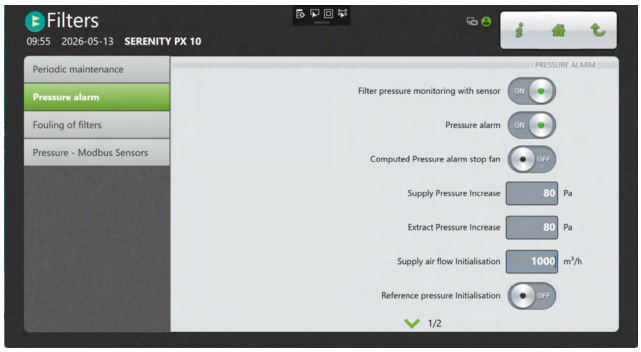
In the event that a filter type different from the originally installed filter is used, the filter monitoring parameters must be adjusted accordingly:

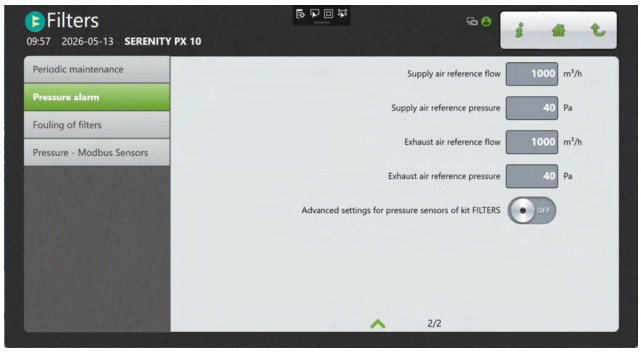
| **1000 m³/h** | **Pa ref** | **Pa increase** (default value: 2* Pa Ref) |
|---|---|---|
| ePM10 50% | 40 Pa | 80 Pa |
| ePM1 60% | 80 Pa | 160 Pa |



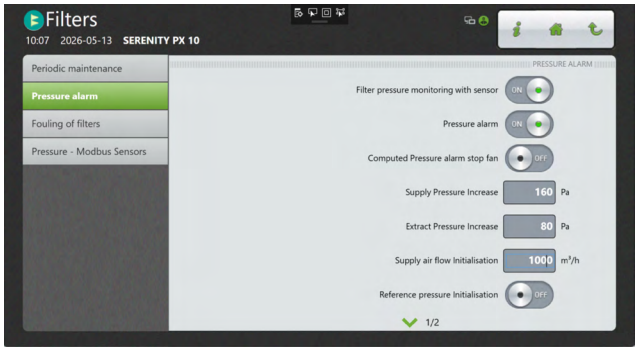



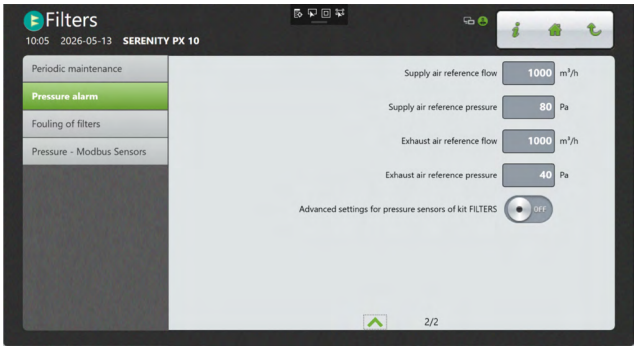

Setup with filter ePM1 60% on supply and filter ePM10 50% on extraction:

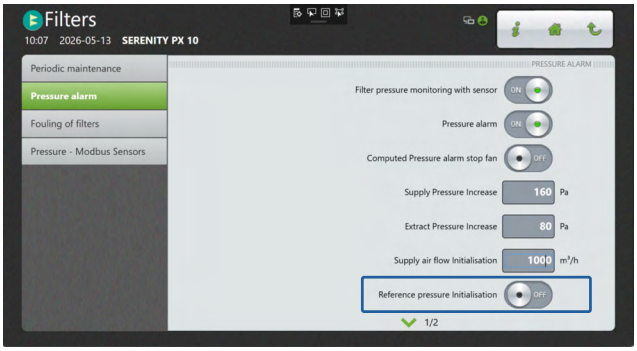



Setup with filter ePM1 60% on supply and filter ePM10 50% on extraction:






If a different filter type is used, press the reference pressure initialisation button to measure the reference pressure of clean filters. Then, define the desired pressure increase values. It is recommended to set the pressure increase to twice the reference pressure.

# 7. Other resources

Check out the SERENITY webpage on the website.

| | |
|---|---|
| Installation manual | LINK |
| Function manual | LINK |
| Alarm manual | LINK |
| Commissioning manual | LINK |