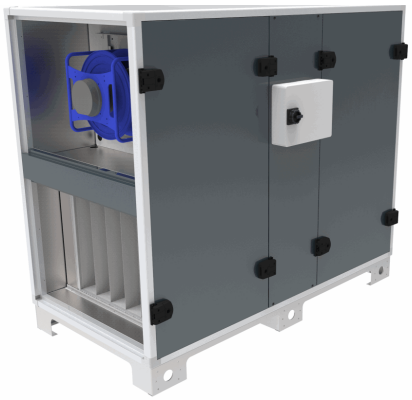
GLOBAL PX/RX/PX LP

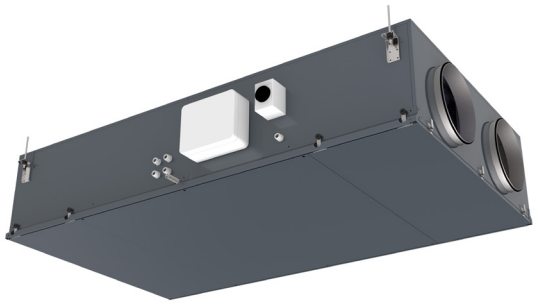
Operation and maintenance instructions

Applicable to program versions TAC7

GLOBAL PX



GLOBAL RX



GLOBAL PX LP

Follow the various changes to this manual on our website: www.swegon.com

GLOBAL PX/RX/LP

Table of content

1.0 Installation manual

Applicable for the following units

EXCHANGER	SIZES	INTEGRATED PRE-HEATING	INTEGRATED POST-HEATING	HANDING
GLOBAL PX Counterflow	04/05/08/12/ 13/16/18/20/24/26	Yes, electrical	Yes, electrical or water	Left / Right
GLOBAL PX Top Counterflow	05/08/10/12/14/18	Yes, electrical	Yes, electrical or water	Left / Right
GLOBAL RX Rotary	08/13/ 16/18/20/26	No	Yes, electrical or water	Left / Right
GLOBAL RX Top Rotary	05/08/13/16	No	Yes, electrical or water	Left / Right
GLOBAL PX LP Counterflow	02/04/06/08 10/12/13/14/16/18	Yes, electrical	Yes, electrical or water	Left / Right

Disclaimer
Danger/Warning/Caution

- All staff concerned shall acquaint themselves with these instructions before beginning any work on the unit. Any damages to the unit or its components caused by improper handling or misuse by the purchaser or the installer cannot be considered subject to guarantee if these instructions have not been followed correctly.
- Make sure that the power supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and controls.
- Although the mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Beware of sharp edges during mounting and maintenance. Make sure that a proper lifting device is used. Use protective clothing.
- Unit should always be operated with closed doors and panels.
- If the unit is installed in a cold place make sure that all joints are covered with insulation and are well taped.
- Duct connections/duct ends should be covered during storage and installation, in order to avoid condensation inside of the unit.
- Check that there are no foreign objects in unit, ducting system or functional sections.
- The unit is packed to prevent damage of the external and internal parts of the unit, dust and moisture penetration. If the unit is not to be installed immediately, it should be stored in a clean, dry area. If stored externally, it should be adequately protected from the weather influence.
- Please make sure that you have read and understood the safety precautions below.

RANGE OF APPLICATION

The GLOBAL units are designed for use in comfort ventilation applications.

Depending on the variant selected, GLOBAL units can be utilised in buildings such as office buildings, schools, day nurseries, public buildings, shops, residential buildings, etc.

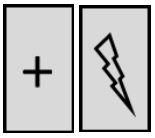
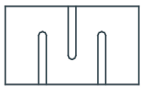
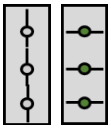
GLOBAL units equipped with plate heat exchangers can also be used for the ventilation of moderately humid buildings; however not where the humidity is continuously high, such as in indoor swimming baths, saunas, spas or wellness centres.

Please do contact us if you have a need for a unit that is suited for such an application.

HOW TO READ THIS DOCUMENT

Please make sure that you have read and understood the safety precautions below. For new users, please read the chapter where the Symbols and Abbreviations used for GLOBAL are listed.

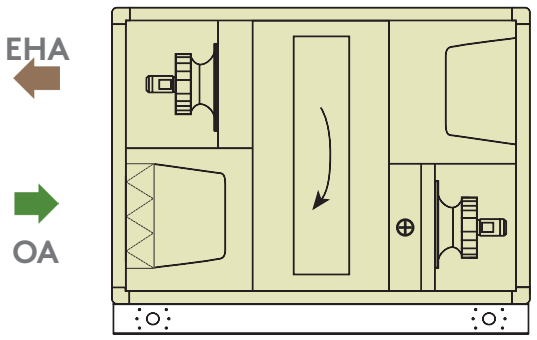
2.0 Symbols and abbreviations

	BW	BACKWARD CURVED FAN			
	BF	BAG FILTER		PF	PLEATED FILTER
	RX	ROTARY HEAT EXCHANGER		PX	PLATE HEAT EXCHANGER
	WARNING			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.	
	Must be connected by a qualified Electrician. Warning! Hazardous voltage.				
	OUTDOOR AIR		Air from outdoor to the AHU (OA)		
	SUPPLY AIR		Air from the AHU to the building (SA)		
	EXTRACT AIR		Air from the building to the AHU (ETA)		
	EXHAUST AIR		Air from the AHU to outdoor (EHA)		
	COOLING COIL	BA-		IBA/KW	HEATING COIL (WATER/ELECTRICAL)
	SILENCER	GD		CTm	MOTORIZED DAMPER
	PRESSURE SENSOR	P		Tx	TEMPERATURE SENSOR Nr = x (1,2,3...)
	SLIP CLAMP Sliding bar and screws are not included	SC		MS	FLEXIBLE CONNECTION
CIRCULAR DUCT CONNECTION		ER	For inlet	SR	For outlet

3.0 Product Overview

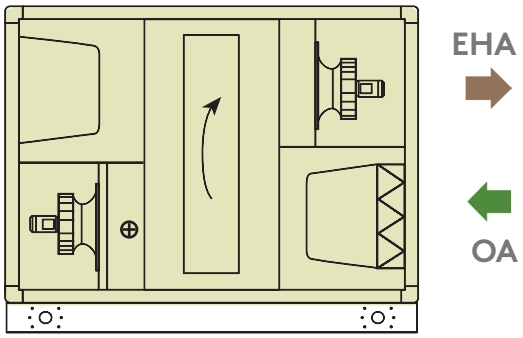
GENERAL OVERVIEW

RIGHT HAND UNIT (SUPPLY AIR TO THE RIGHT)

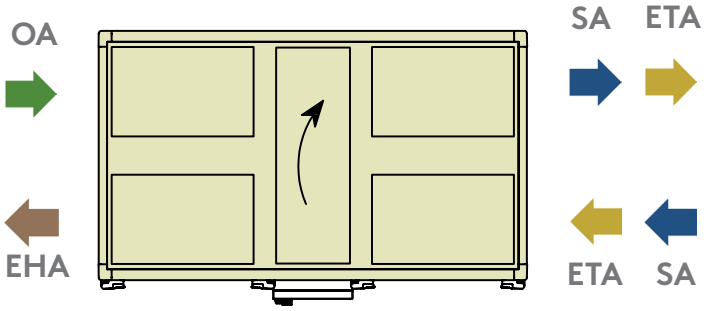


GLOBAL RX

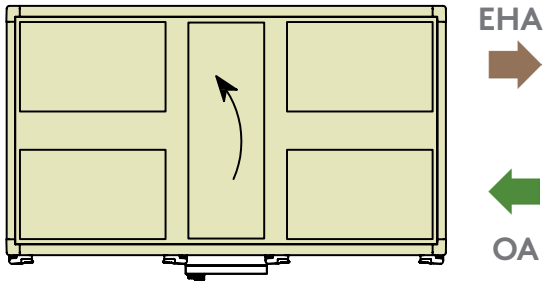
LEFT HAND UNIT (SUPPLY AIR TO THE LEFT)



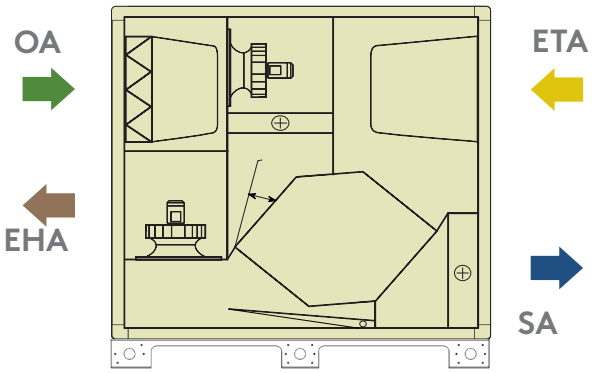
GLOBAL RX



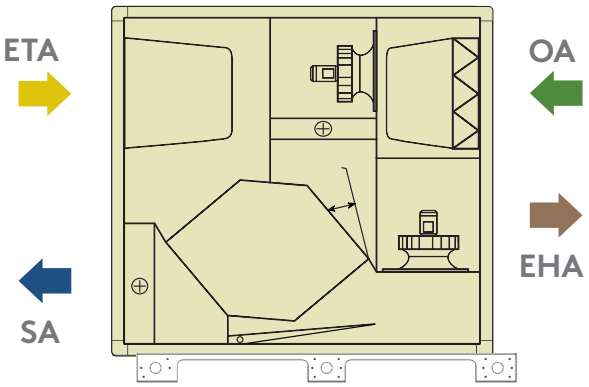
GLOBAL RX Top



GLOBAL RX Top

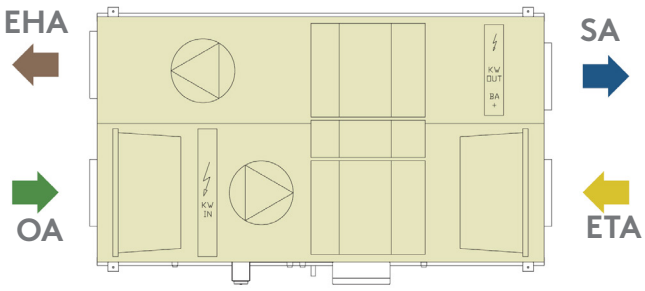


GLOBAL PX



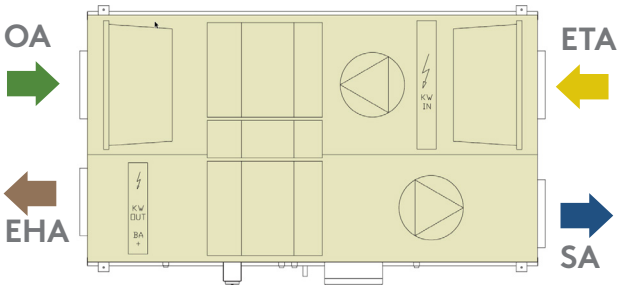
GLOBAL PX

RIGHT HAND UNIT (SUPPLY AIR TO THE RIGHT)

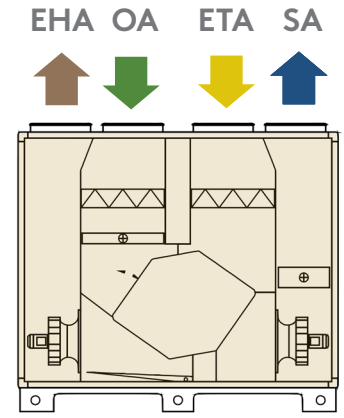


GLOBAL PX LP (Top view)

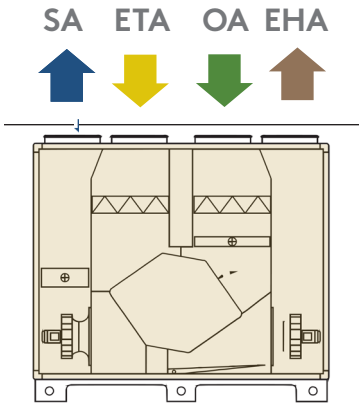
LEFT HAND UNIT (SUPPLY AIR TO THE LEFT)



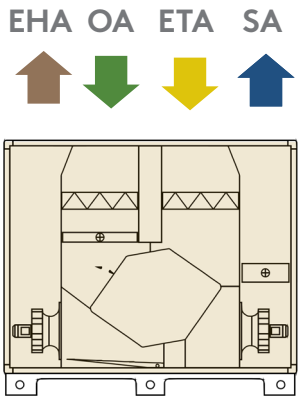
GLOBAL PX LP 02 - 10/14 - 18 (Top view)



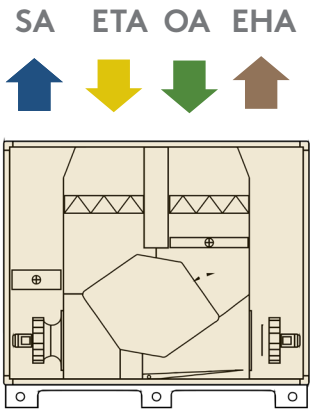
GLOBAL PX Top 05 - 10



GLOBAL PX Top 05 - 10



GLOBAL PX Top 12 - 18



GLOBAL PX Top 12 - 18

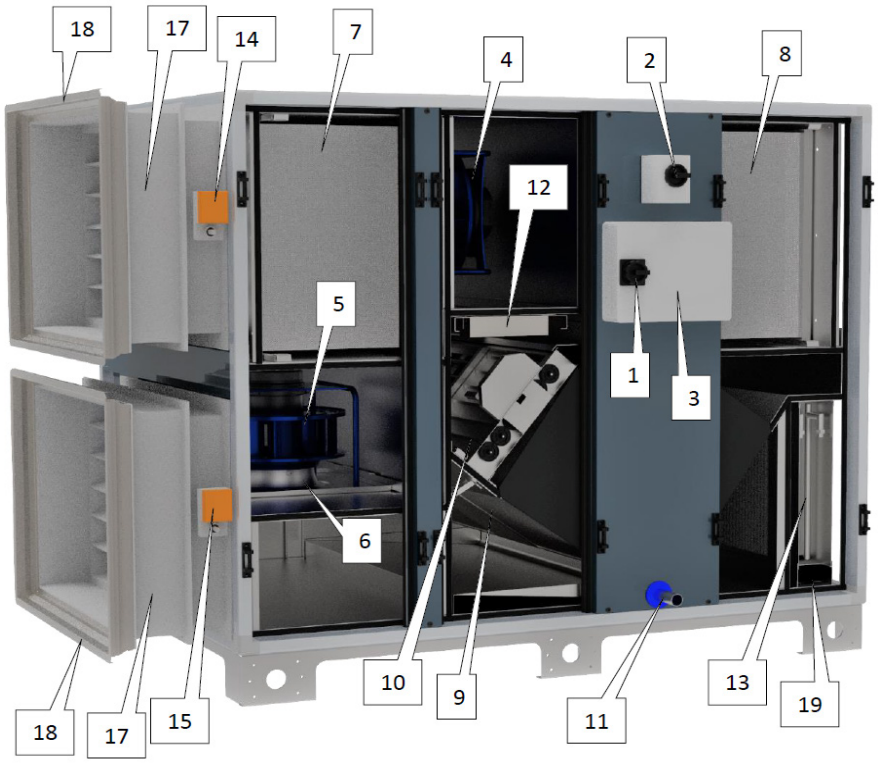
ATTENTION

Right and left hand units have different article numbers and should be ordered accordingly.
Main version described in the manuals is always the hand right version.

The difference between left and right LP units is the factory placement of the controls box on opposite sides.

COMPONENTS GLOBAL PX

GLOBAL PX



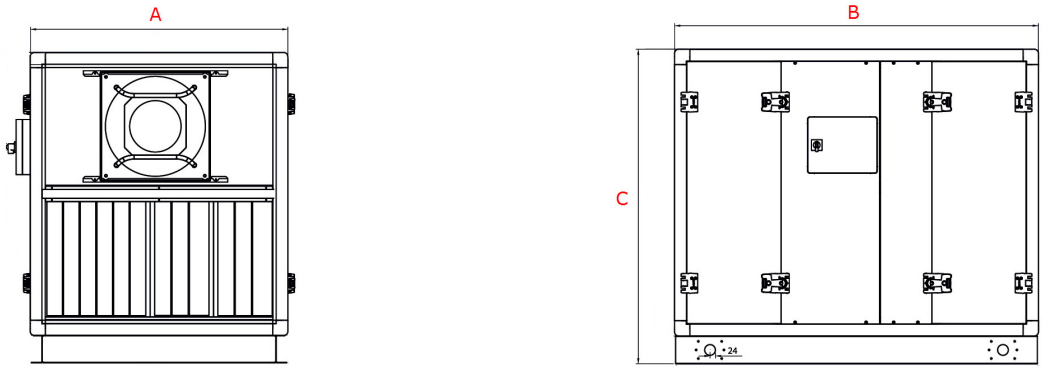
1. Main power switch
2. Main power switch for electrical coils (both internal pre-hating and post-heating)
3. Wiring box TAC controller
4. Supply fan
5. Extract fan
6. Kit CA -airflow measurement (option)
7. Outdoor air filter (bag or pleated)
8. Extract air filter (bag or pleated)
9. Heat exchanger (Plate)
10. Modulating 100% by-pass
11. Drain pan and drain pipe
12. Pre-heating electrical antifrost coil
13. Internal post-heating water or electrical coil (accessory)
14. Motorized damper (at outdoor air side - accessory)
15. Motorized damper (at exhaust air side - accessory)
17. Flexible connection(accessory)
18. Slip Clamps (accessory)
19. Water connection for postheating (accessory)

1, 2 and 3 must be installed by an accredited electrician

Note: internal electrical coils, motorized dampers, internal fan-pressure sensors, flexible connections and slip-clamps have to be ordered initially and are all pre-mounted and factory wired. Internal heating water-coil accessory is pre-mounted but has to be hydraulically and electrically connected by the installer.

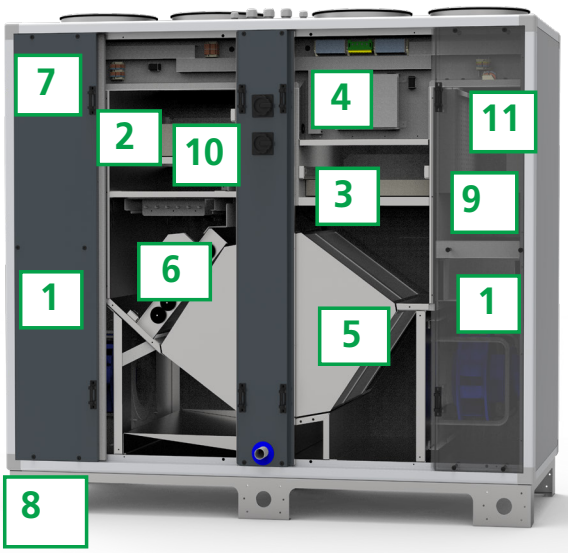
AIR VOLUMES AND DIMENSIONS - GLOBAL PX

GLOBAL PX



EXCHANGER	SIZE	A [mm]	B [mm]	C [mm]	Weight [kg]
GLOBAL PX Counterflow	04	610	1680	1465	330
	05	610	1680	1465	330
	06	815	1680	1465	330
	08	815	1680	1465	330
	12	1182	1680	1465	380
	13	1182	1680	1465	380
	16	1640	1680	1465	490
	18	2015	1880	1465	720
	20	1640	2557	1825	930
	24	2015	2557	1825	1120
	26	2396	2557	1825	1260

COMPONENTS GLOBAL PX TOP

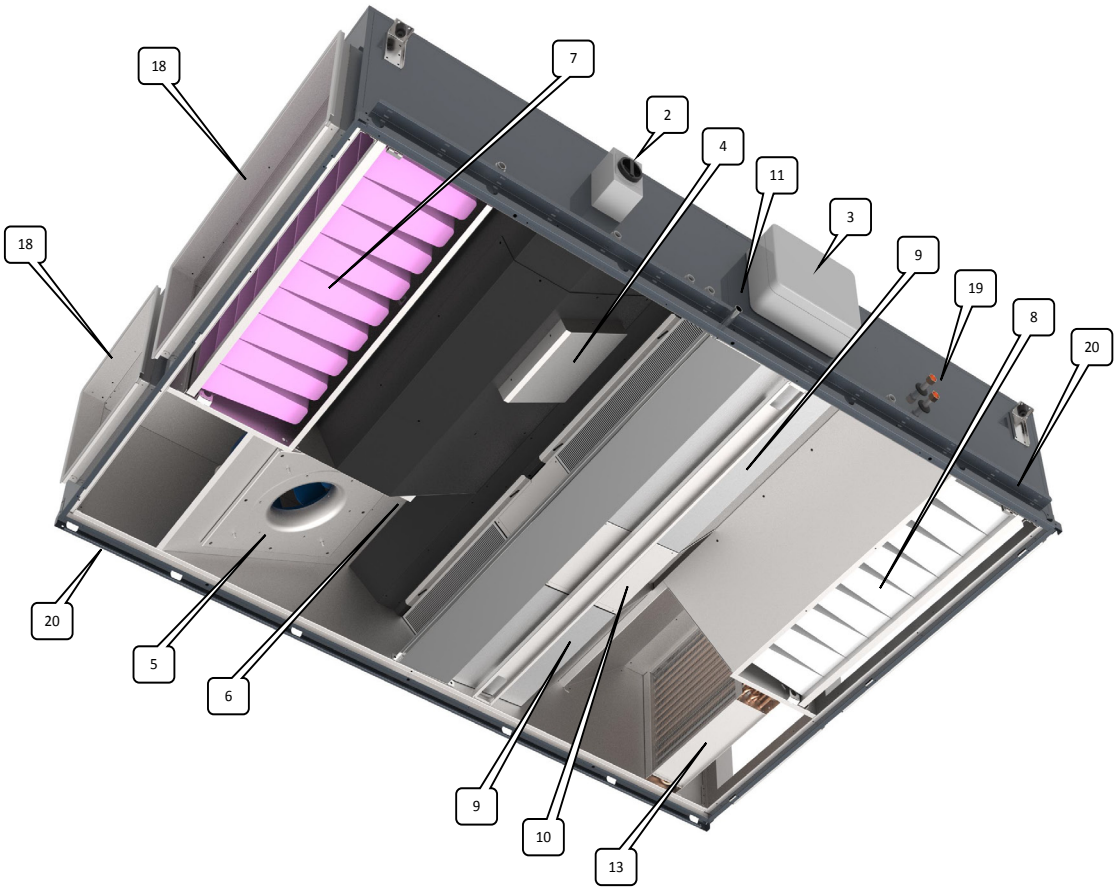


1. EC Plug fan w/ composite fan blades (aluminium blades optional)
2. Fresh air filter ePM1≥60% filter class
3. Extract air filter ePM1≥50% filter class
4. Integrated TAC controller
5. High efficiency counterflow plate heat exchanger
6. Modulating 100% BYPASS
7. Stainless steel drain pan
8. Base frame for easy on site transport
9. Integrated post-heating (water / electrical)
10. Integrated pre-heating (electrical)
11. Silencer

AIR VOLUMES AND DIMENSIONS GLOBAL PX TOP

EXCHANGER	SIZE	A [mm]	B [mm]	C [mm]	Weight [kg]
GLOBAL PX Top Counterflow	05	610	1680	1465	330
	08	815	1680	1465	380
	10	815	1960	1725	470
	12	995	1960	1725	530
	14	1182	1960	1725	590
	18	1382	1960	1725	670

COMPONENTS GLOBAL PX LP

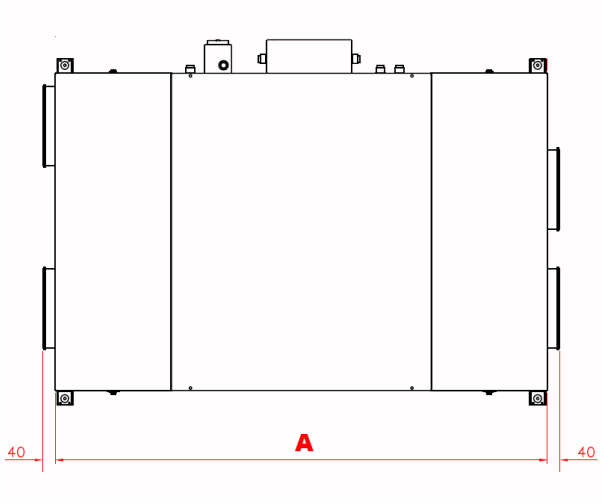


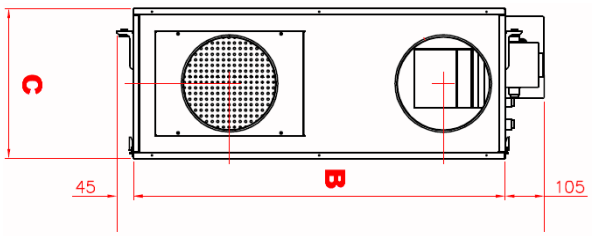
1. Main power switch
2. Main power switch for electrical coils (both internal pre-hating and post-heating)
3. Wiring box TAC controller
4. Supply fan
5. Extract fan
6. Kit CA -airflow measurement (option)
7. Outdoor air filter (bag or pleated)
8. Extract air filter (bag or pleated)
9. Heat exchanger (Plate)
10. Modulating 100% by-pass
11. Drain pan and drain pipe
12. Pre-heating electrical antifrost coil
13. Internal post-heating water or electrical coil (accessory)
14. Motorized damper (at outdoor air side - accessory)
15. Motorized damper (at exhaust air side - accessory)
16. Access panel
17. Flexible connection(accessory)
18. Slip Clamps (accessory)
19. Water connection for postheating (accessory)

1, 2 and 3 must be installed by an accredited electrician

Note: internal electrical coils, motorized dampers, internal fan-pressure sensors, flexible connections and slip-clamps have to be ordered initially and are all pre-mounted and factory wired. Internal heating water-coil accessory is pre-mounted but has to be hydraulically and electrically connected by the installer.

AIR VOLUMES AND DIMENSIONS - GLOBAL PX LP

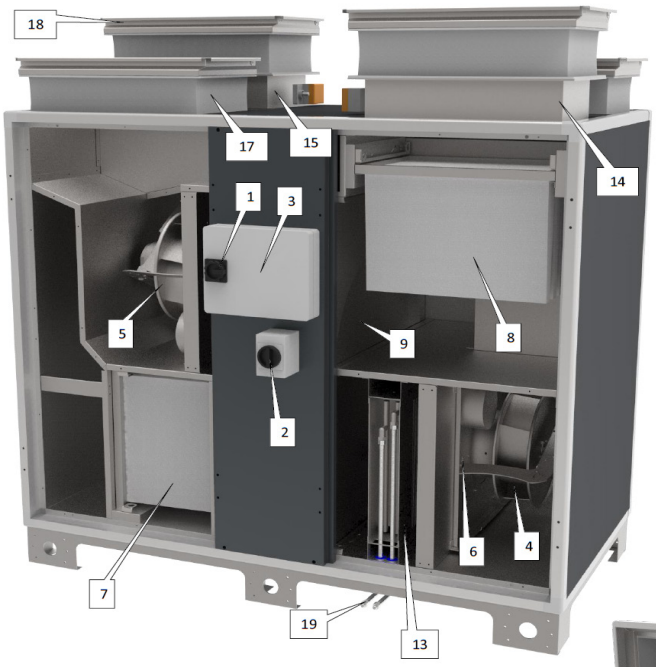




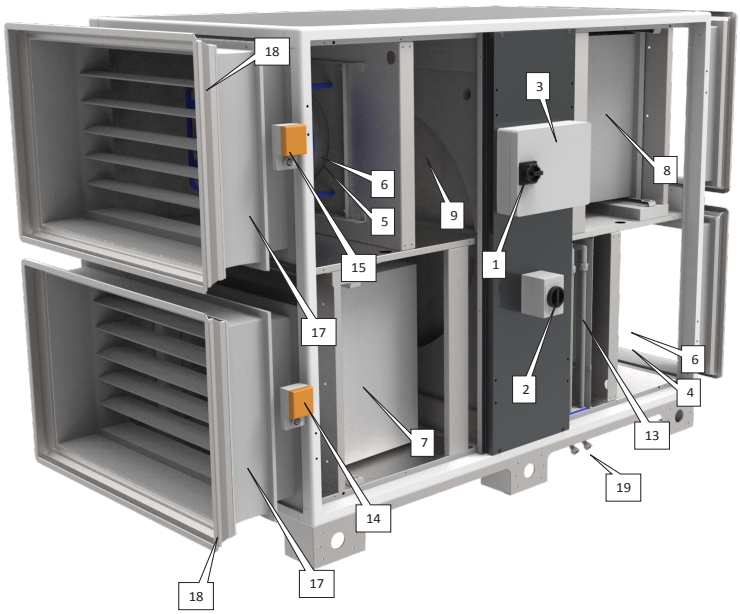
EXCHANGER	SIZE	A [mm]	B [mm]	C [mm]	Weight [kg]
GLOBAL PX LP Counterflow	02	1300	890	350	100
	04	1300	1100	350	125
	06	2100	1050	435	180
	08	2100	1300	435	210
	10	2180	1600	435	250
	12	2350	1700	510	300
	13	2350	1700	510	300
	14	2350	1940	510	350
	16	2900	1935	660	500
	18	2900	1935	660	500

COMPONENTS GLOBAL RX

GLOBAL RX TOP



GLOBAL RX

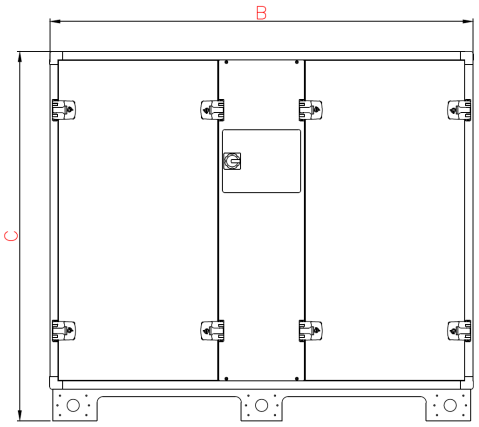


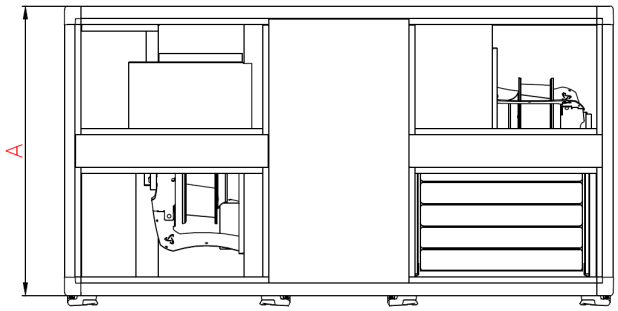
1. Main power switch
2. Main power switch for electrical coils (both internal pre-hating and post-heating)
3. Wiring box TAC controller
4. Supply fan
5. Extract fan
6. Kit CA -airflow measurement (option)
7. Outdoor air filter (bag)
8. Extract air filter (bag)
9. Heat exchanger (Rotary)
13. Internal post-heating water or electrical coil (accessory)
14. Motorized damper (at outdoor air side - accessory)
15. Motorized damper (at exhaust air side - accessory)
17. Flexible connection(accessory)
18. Slip Clamps (accessory)
19. Water connection for postheating (accessory)

1, 2 and 3 must be installed by an accredited electrician

Note: internal electrical coils, motorized dampers, internal fan-pressure sensors, flexible connections and slip-clamps have to be ordered initially and are all pre-mounted and factory wired. Internal heating water-coil accessory is pre-mounted but has to be hydraulically and electrically connected by the installer.

AIR VOLUMES AND DIMENSIONS - GLOBAL RX (TOP)



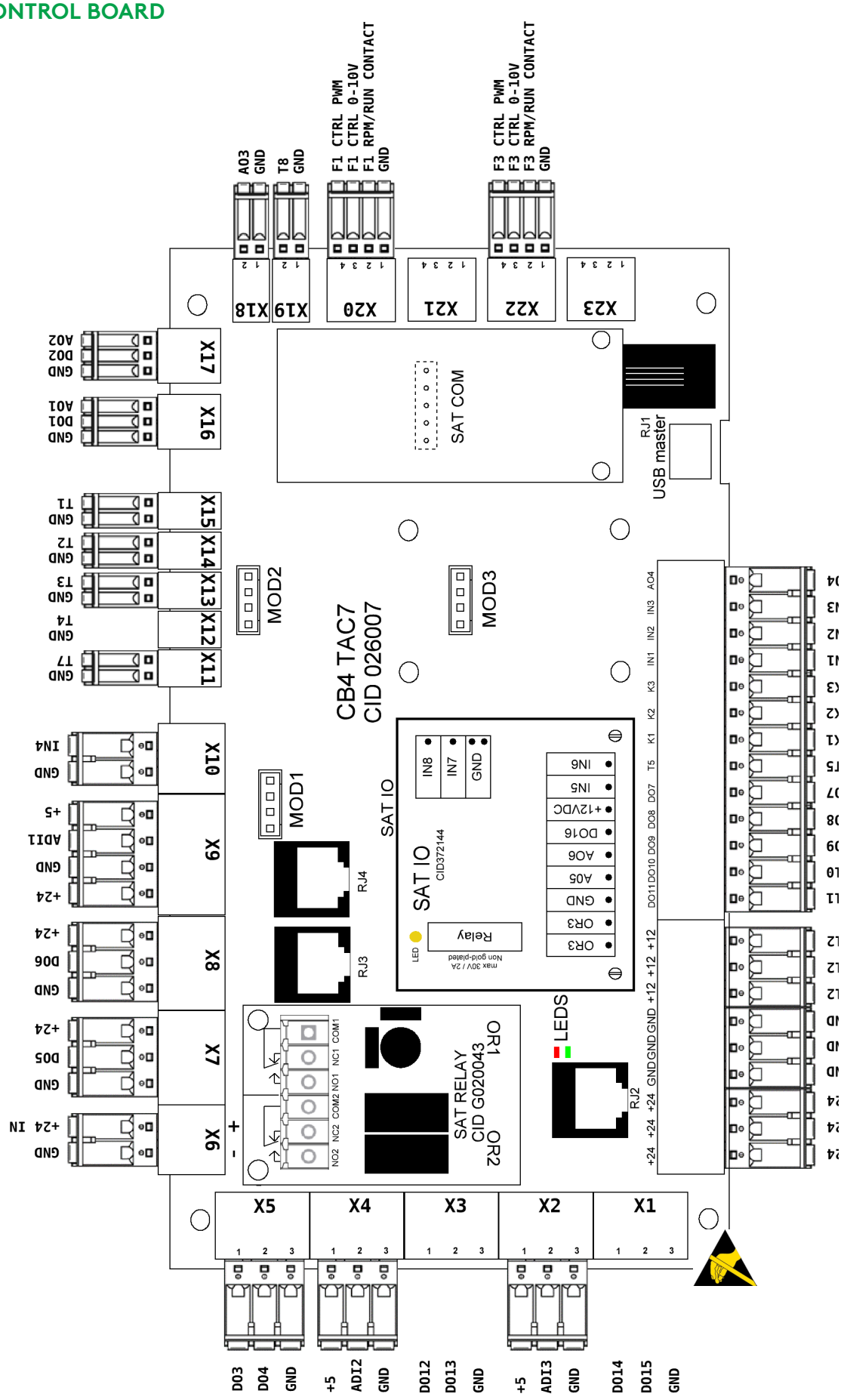


EXCHANGER	SIZE	A [mm]	B [mm]	C [mm]	Weight [kg]
GLOBAL RX Top Rotary	05	815	1530	1315	310
	08	815	1530	1315	315
	13	995	1680	1465	390
	16	1182	1680	1465	430
GLOBAL RX Rotary	08	815	1530	1315	310
	13	995	1680	1465	365
	16	1382	1880	1725	535
	18	1382	1880	1725	535
	20	1382	1880	1725	535
	26	1640	1880	1725	590

Duct connections: see drawings downloadable on our website.

4.0 Wiring Overview

4.1 MAIN CONTROL 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 = outpout 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, Imax = 0.5A DC) (Prewired or option)	IN3 + 12/24V = BYPASS ACTIVATION OVERRIDE	
DO6 = DAMPER 2 (with or without spring return, Imax = 0.5A DC) (Prewired or option)	IN4 + GND = Drain pan full contact (only for PX LP Unit - prewired)	
DO7 = HEAT OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)	K1 + 12/24V: Airflow MODE	= m³/h or l/s K1
DO8 = COOL OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)	Demand/Pressure control	= START/STOP
DO9 = ALARM OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)	K2 + 12/24V: Airflow control	= m³/h or l/s K2
DO10 = AL dPA OUTPUT (open collector; Vmax=24 VDC; Imax=0,1 A)	Demand/Pressure control	= 0-10V INPUT
DO11 = FAN ON OUTPUT (open collector; Vmax=24 VDC; Imax=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 (opion)	
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		

4.1 DIGITAL OUTPUTS

The digital outputs DO7 to DO11 may be used to activate a relay (1 N/O contact. Input voltage: 24 V DC). See figure 1 for example with DO7.: output for heat circulator pump, figure 2 for DO9: output for alarm indication, figure 3 for DO10pressure alarm indication. Same principle for DO8 and DO11.

The following items are available as Relays accessories:

- 005494 Relay NO, 6A Switching current 250V AC/DC switching voltage, 24V DC input voltage for DIN rail mounting

- 522346 Kit 5 Output relays: electrical box inside which are pre-assembled and pre-wired 5 relays (item 005494) with a cable. It will then just need to mount the box near the TAC6 electrical box and connect the free end of the cable to connectors DO7 to DO11 on the TAC6 board as well as to the 24V.

Abb. 2

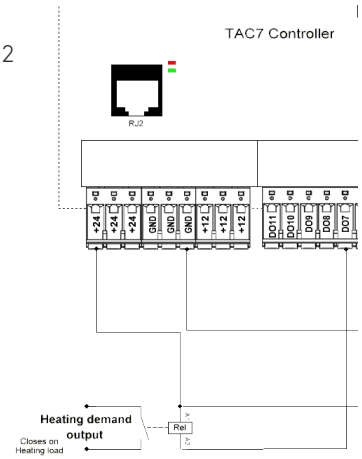


Abb. 1

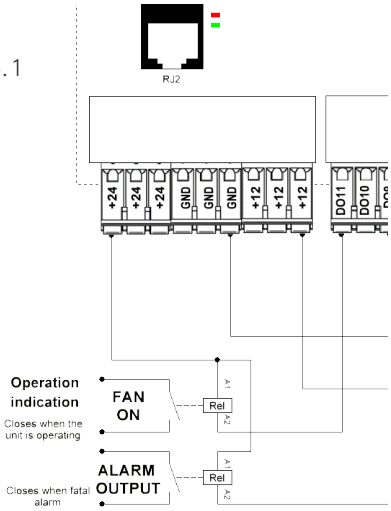
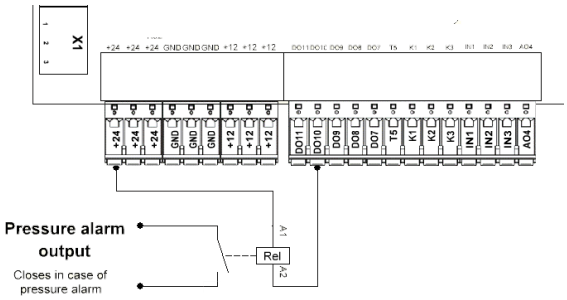


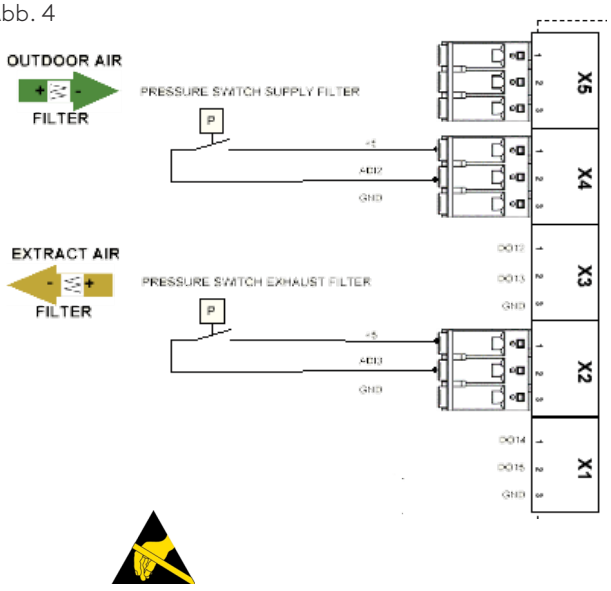
Abb. 3



4.2 PRESSURE SWITCHES

In application where pressure switches are used, follow figure 4 wiring, with pressure switch for supply filter connected on X4 and the exhaust one on X2.

Abb. 4



4.3 CIRCUIT BOARD SAT IO - CID372144

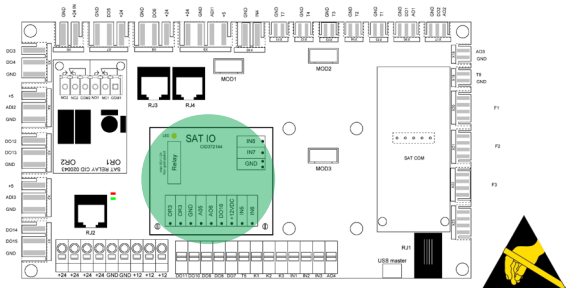
SAT IO is a satellite circuit designed to be fitted on the main control board. It permits to extend the number of inputs and outputs.

Installation

The SAT IO must be plugged onto the control board circuit (see Fig.5).

Attention: The SAT IO must be plugged in before the circuit is powered. SAT must be plugged in correctly, wrong positioning can damage both circuits permanently.

Fig. 5



Wiring

The terminals of the SAT IO are displayed in fig.6

OR3 OR3 = BYPASS STATUS. Output relay: 30VDC/42VAC max, 2A DC/2.8A AC max

AO5 = 0-10V OUTPUT (airflow/pressure).

AO6 = 0-10V OUTPUT (airflow/pressure)

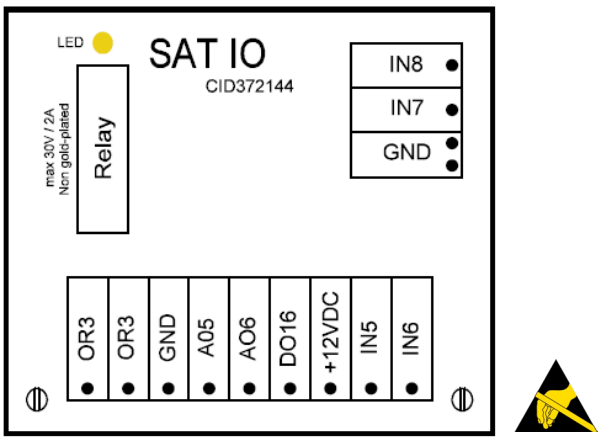
IN5 = MASTER SELECTION

IN6 = HEAT (open)/COOL (closed)

IN7 = SUPPLY RUN IN FIRE ALARM (open)

IN8 = EXHAUST RUN IN FIRE ALARM (open)

Fig. 6



5.0 Preventive maintenance & safety

Attention : before handling and/or opening the access panels it is compulsory to shut down the unit and disconnect the power supply using the general switch located on the front panel.
Do not isolate the power supply whilst the unit is running. If KWin and\or KWout 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:

5.1 ONCE THE UNIT OPERATES IN NORMAL CONDITION

Replace the filters with a kit of replacement filters.

5.2 EVERY 3 MONTHS

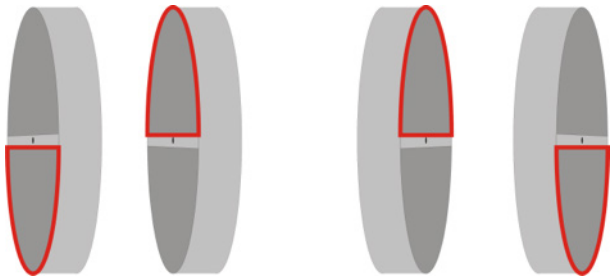
- Check for any alarms indicated on the control device. In case of an alarm refer to troubleshooting section.
- Check the state of filter clogging. The control device allows a pre-defined 'filter alarm' threshold to be set. Replace filters if necessary. Filters that are too clogged can generate the following problems:
  - Insufficient ventilation.
  - Excessive increase of fan rotation speed.
  - Excessive sound levels.
  - Excessive power consumption (power consumption will increase exponentially to an increase in pressure drop, for a constant airflow).
  - Unfiltered air passing through the heat exchanger (risk of clogging) and into ventilated rooms.

The list of replacement filter kits for each unit can be downloaded from our website.

- To locate the filter, refer to schemas on page below.
- 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.
  - For PX units, clean any accumulations in the drain pan.

5.3 EVERY 12 MONTHS

1. For rotary heat exchanger (RX) units, check the brush seals on the rotary heat exchanger along the perimeter in contact with the frame:



If necessary, bring the brush seals closer to the exchanger to ensure good sealing.

2. For RX units, check the tension of the driving belt on the rotating heat exchanger. If there is no tension or if the belt is damaged, please, contact the service department for a belt replacement.

Ideally the heat exchanger should be cleaned using vacuum cleaner with a soft nozzle to prevent damaging the air passages in the rotor. Turn the rotor by hand to enable you to vacuum clean its entire surface. If the heat exchanger is substantially fouled, it can be blown clean with compressed air.

3. For plate heat exchanger (PX) units:

- Clean the drain pan
- Clean the inside of the bypass. To access the interior of the bypass it is necessary to force it open, proceed as follows: place a jumper between terminals IN3 and +12V on the TAC circuit board. The bypass is now open, regardless of the temperature conditions.
- Remember to remove the jumper between terminals IN3 and +12V once cleaning of bypass is done.
- Always clean 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.

4. Fan maintenance:

Check again whether the power supply is shut down and fans are not running.

Inspect and clean the fan impellers to remove any dirt deposits, be careful not to alter the impeller balance (do not remove balancing clips). Check the impeller to make sure that it is not out of balance. Clean or brush off the fan motor. It can also be cleaned by carefully wiping it with a damp cloth that has been dipped in a solution of water and detergent. Clean the fan space, if needed. Remove the fans if necessary.

5. Check seals on the unit:

Ensure that the side access panels are fully closed and that the seals are intact. Replace if necessary.

5.4 SAFETY - ELECTRIC COILS

The air handling unit should normally be started and stopped from the hand-held terminal (TACtouch); not by switching the safety isolating switch on and off. Always switch off the safety isolating switch before servicing the unit if not otherwise specified in the pertinent instructions.

In case of electrical heater(s) to overcome any overheating and internal damage :

1) Turn off the heater switch (one per heater),
2) Stop unit from the hand-held terminal (TACtouch),
3) When fans come to a complete stop, turn of the fans switch.

6.0 QR codes

Manuals	QR codes
QUICK COMMISSIONING MANUAL	
FUNCTIONS MANUAL	
ALARMS MANUAL	

7.0 Certificate

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(s):	GLOBAL PX (TOP) / GLOBAL RX (TOP) / GLOBAL LP (OUT)/ CLASS UNIT / MURAL

Complies with the requirements of Machinery Directive 2006/42/EC (LVD included)

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 2021-05-17
Signature:	Name:	Jean-Yves Renard
	Position:	R&D Director

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): GLOBAL PX (TOP) / GLOBAL RX (TOP) / GLOBAL LP (OUT)/ CLASS UNIT / MURAL

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

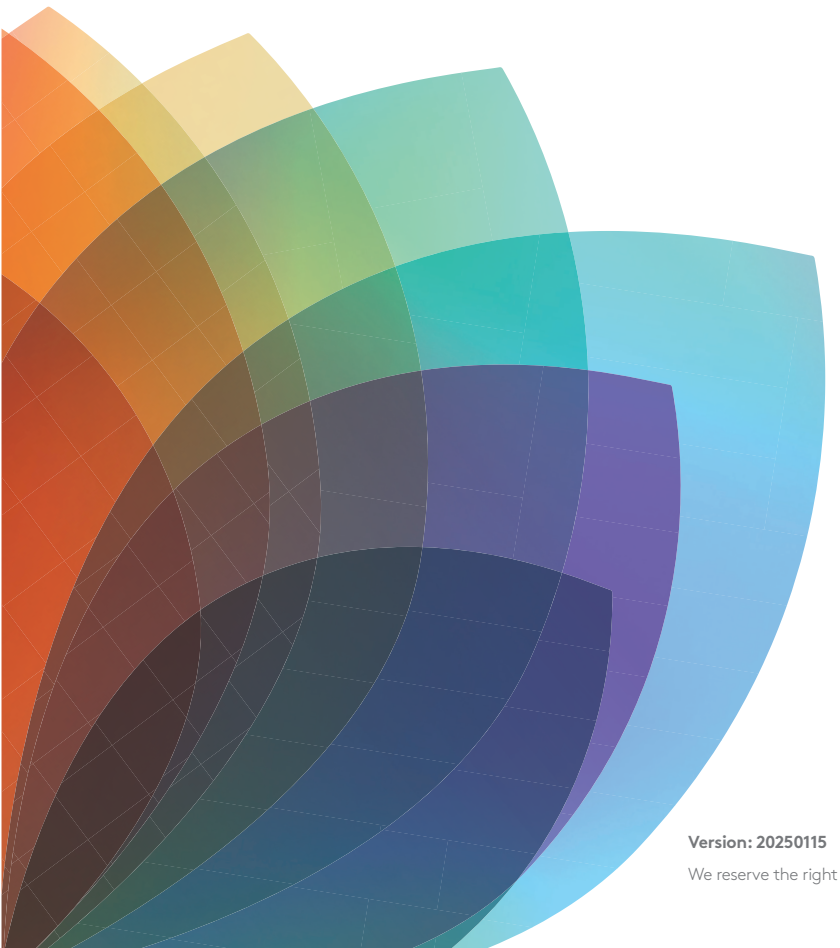
Address: Parc-industriel de Sauvenière 102 Chaussée de Tirlemont B5030 Gembloux

Signature:

Place and date: Gembloux 2022-05-19

Signature: Name: Jean-Yves Renard

Position: R&D Director



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