Other languages in digital format can be downloaded at www.ostberg.com

The manufacturer cannot be held liable for injury and damage to people or property that are caused by incorrect installation, start up and/or incorrect use of the unit and/or failure to follow the processes and instructions that are set out in the user manual "Operation & maintenance". For safety reasons it is essential to follow the instructions in the user manual.

The warranty will be immediately invalidated in the event of injury that is caused by failure to follow the instructions. Installation and commissioning must be performed by a professional in order for the warranty to apply.

Short cuts:

- **Log in Settings menu:** Enter code 1991.
- **Log in Service menu:** Enter code 1199.
- **Download the latest firmware version:** Firmware.
- Download complete Modbus register: Modbus.

FIRMWARE

MODBUS

- Download the app: HERU IQ App

APPLE

GOOGLE

Table of Content

1 Introduction

1.1 Product description

The energy recovery units HERU Select are designed for supply air and exhaust air ventilation with cooling and heat recovery.

HERU Select is modular based, with one middle rotor module and two side modules standing on a frame. The side modules can be either top- or side connected.

Features

- Inbuilt after-heater.
- ePM1 filters.
- Display for operation and monitoring of the unit and a active dock holder for charging.
- USB to RJ-45 cable for connecting the display to the unit and a standard USB-cable.
- Modbus communication via RS485 and TCP/IP.
- High temperature efficiency
- Energy saving
- Low sound levels
- Safe operation
- High reliability

2 Safety

2.1 Warnings

WARNING! A warning states a risk of personal injury.

CAUTION! A caution states a risk of damage to equipment.

2.2 General safety

WARNING! In accordance with IEC 60335-2-40, this unit is not intended to be used by people (including children) who have physical, sensory or psychological impairment, or lack of experience and knowledge, unless they have received guidance and instruction on how to use the unit by a person who is responsible for their safety. Children must be supervised to ensure that they do not play with the unit.

WARNING! Watch out for sharp edges and corners on the unit. Use protective gloves.

WARNING! Pay attention to the weight of the unit and its parts during mounting and maintenance.

WARNING! Rotating, hot and electrical components can cause serious injuries.

WARNING! The electric after-heater may remain hot even after the power has been disconnected for service and maintenance.

WARNING! Ducts must be connected and doors/cover must be closed and fastened before connecting the unit to the electrical supply. Risk of personal injury from rotating parts, hot and electrical components.

WARNING! All electrical installations must be performed by a qualified electrician.

WARNING! All changes or additions of electrical components must be performed by a qualified electrician.

WARNING! Ensure that the power cable is not damaged during mounting and installation.

WARNING! The unit may **not** be started until the installation is completely finished and the ducts have been connected.

WARNING! The safety switch must **not** be used for normal starting and stopping of the unit. Use the accompanying display.

WARNING! Deviations regarding EN 60335-1 section 30.2.1 occur. The ventilation unit contains limited amounts of flame-resistant or inflammable materials in line with EN 1886. Fire and smoke dampers should be in-stalled in the ventilation system at penetrations of fire barriers. Local fire safety regulation must be followed. Air temperatures exceeding 85 C or excessive deposition of inflammable substances should be avoided.

WARNING! The "all pole disconnect safety switches" for all circuits must be switched off before the cover of the electrical distribution box or the doors/cover of the unit are opened/removed from the unit.

WARNING! The unit must always be equipped with a type A or B, 30 mA residual current device (RCD) and a safety switch, which must be mounted close by.

CAUTION! Always turn off the unit with the wireless IQC Display before cutting the power.

WARNING! All operations on the unit and its peripheral equipment must be performed in accordance with local laws and regulations.

WARNING! Before servicing the unit, power must be disconnected for two minutes for the fans to stop.

WARNING! Condensation may appear in units containing cooling battery or in units installed in cold climate. Installation must allow for proper drainage through water traps to avoid dangerous microbial growth.

CAUTION! Do not walk, tread or stand on top of the unit.

CAUTION! We recommend always installing a spring-return damper in the ducts for fresh air and exhaust air.

CAUTION! Do not connect an exhaust air type tumble dryer or drying cabinet to the system due to the high air humidity.

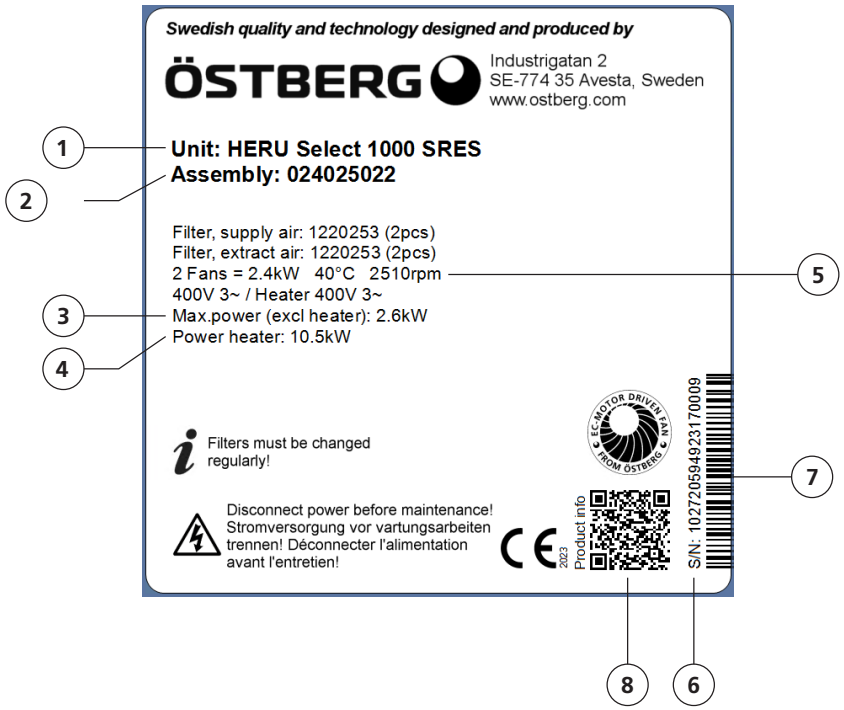
CAUTION! If the unit is installed when it is cold outside / in the winter and it will not immediately be put into use, the ducts must be plugged again otherwise there is a risk of condensation and the unit freezing.

CAUTION! The unit must not be turned off for longer periods unless the duct connections for outdoor air and extract air are re-plugged due to the risk of condensation and freezing.

WARNING! Breathing protection and protective clothing must be used due to the risk of breathing in and spreading dust when handling used air filters.

CAUTION! In the event of any interruption in power, the settings will be saved. Date and Time are saved for 24 hours. In longer interruptions, Date and Time must be reset.

2.3 Product label (example)



1. Product name
2. Item number
3. Maximum power – fans
4. Maximum power – heater
5. RPM at maximum power
6. Serial number
7. Serial number as bar code
8. QR-code for product web page

2.4 Declaration of conformity.

ÖSTBERG

EU DECLARATION OF CONFORMITY

We hereby confirm that our products comply with the requirements in the following EU-directives and harmonised standards and regulations.

Manufacturer: H. ÖSTBERG AB
Industrigatan 2
SE-774 35 Avesta, Sweden
Tel No +46 226 860 00
Fax No +46 226 860 05
http://www.ostberg.com
info@ostberg.com
VAT No SE556301220101

CE

Products: Bidirectional ventilation unit RVU: HERU® 95 T EC, HERU® 100 T EC, HERU® 160 T EC, HERU® 200 T EC, HERU® 300 T EC, HERU® 100 S EC, HERU® 160 S EC, HERU® 200 S EC HERU® 300 S EC, HERU® 70 K EC, HERU® 50 LP EC, HERU® 90 LP EC, HERU® 180 S EC 2, HERU® 250 T EC, HERU® 130 S EC, HERU® 250 S EC
Bidirectional ventilation unit NRVU: HERU® 400 T EC, HERU® 600 T EC, HERU® 800 T EC, HERU®, 1200 T EC, HERU® 400 S EC, HERU® 600 S EC, HERU® 800 S EC, HERU® 1200 S EC, HERU® Select

This EU declaration is applicable for products including our accessories for mounting and installation only if the installation is made in accordance with the enclosed installation instructions and that the product has not been modified.

Radio Equipment Directive (RED) 2014/53/EU
Harmonised standards:
- EN 300 220-2:2018 V3.1.1
- EN 303 446-1:2019 (EN 55014-1:2017, A11, EN 55014-2:2015, EN IEC 61000-3-2:2019, EN 61000-3-3:2013, A1)
- EN 301 489-3:2019

Machinery Directive (MD) 2006/42/EC
Harmonised standards:
- EN ISO 12100:2010
- EN ISO 13857:2019
- EN 60204-1:2018
- EN 60335-1:2012, AC 1, A 13 R1, A 11, A 12, A 13, A 1, A 14, A2, A15
- EN 60335-2-40:2003, A13, A2, A12, A1, A11, C1, C2
- EN 60335-2-30:2010, A11, A1, A12

Ecodesign Directive 2009/125/EC
Harmonised regulation:
- 1253/2014 Ecodesign requirements for ventilation units
- 1254/2014 Energy labeling of residential ventilation units

Standards:
- RVU: SS-EN 13141-7:2021 or NRVU: SS-EN 13053:2019

RoHS Directive 2011/65/EU
Harmonised standards:
- EN IEC 63000:2018

Avesta 2022-04-25

Mikael Östberg
Product Manager

This document is digitally signed.

ÖSTBERG

GB DECLARATION OF CONFORMITY

We hereby confirm that our products comply with the requirements in the following UK legislations and designated standards.

Manufacturer: H. ÖSTBERG AB
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VAT No SE556301220101

UK CA

Products: Bidirectional ventilation unit RVU: HERU® 95 T EC, HERU® 100 T EC, HERU® 160 T EC, HERU® 200 T EC, HERU® 300 T EC, HERU® 100 S EC, HERU® 160 S EC, HERU® 200 S EC HERU® 300 S EC, HERU® 70 K EC, HERU® 50 LP EC, HERU® 90 LP EC, HERU® 180 S EC 2, HERU® 250 T EC, HERU® 130 S EC, HERU® 250 S EC
Bidirectional ventilation unit NRVU: HERU® 400 T EC, HERU® 600 T EC, HERU® 800 T EC, HERU®, 1200 T EC, HERU® 400 S EC, HERU® 600 S EC, HERU® 800 S EC, HERU® 1200 S EC, HERU® Select

This GB declaration is applicable for products including our accessories for mounting and installation only if the installation is made in accordance with the enclosed installation instructions and that the product has not been modified.

Radio Equipment Regulations 2017, S.I. 2017 No. 1206
Designated standards:
- EN 300 220-2:2018 V3.1.1
- EN 303 446-1:2019 (EN 55014-1:2017, A11, EN 55014-2:2015, EN IEC 61000-3-2:2019, EN 61000-3-3:2013, A1)
- EN 301 489-3:2019

The Supply of Machinery (Safety) Regulations 2008, S.I. 2008 No. 1597
Designated standards:
- EN ISO 12100:2010
- EN ISO 13857:2019
- EN 60204-1:2018
- EN 60335-1:2012, AC 1, A 13 R1, A 11, A 12, A 13, A 1, A 14, A2, A15
- EN 60335-2-40:2003, A13/AC, A2, A12, A1, A11, AC1, AC2

Standard:
- EN 60335-2-30:2010, A11, A1, A12

The Ecodesign for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2019, S.I. 2019 No. 539
Retained regulation:
- 1253/2014 Ecodesign requirements for ventilation units
- 1254/2014 Energy labeling of residential ventilation units

Standards:
- RVU: SS-EN 13141-7:2010 or NRVU: SS-EN 13053:2019

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, S.I. 2012 No. 3032
Designated standards:
- EN IEC 63000:2018

Avesta 2024-05-21

Mikael Östberg
Product Manager

This document is digitally signed.

3 Warranty

The warranty's validity according to the purchase agreement is calculated from the day of purchase.

3.1 Extent of the warranty

The warranty covers faults that occur during the warranty period that have been notified to the dealer or which have been verified by H.Östberg AB (underwriter) or the warranty provider's representative. Faults are defects in manufacture and materials as well secondary failures that occur due to these.

The above faults must be remedied so that the product is operational.

3.2 General limitations in the warranty

The warranty provider's liability is limited according to these warranty conditions and the warranty does not cover injury or damage to people or property. Verbal promises that are made in addition to the warranty agreement are not binding on the warranty provider.

3.3 Limitations in the warranty

The warranty applies on condition that the product is used in the normal manner or under equivalent circumstances and that the user instructions are followed.

The warranty does not cover faults that are caused by:

- Transport of the product.
- Unintended use or overloading of the product.
- Failure on the part of the user to follow the instructions regarding installation, use, maintenance and care.
- Incorrect installation or incorrect positioning of the product.
- Conditions that are not the responsibility of the warranty provider, e.g. excessive variations in voltage, lightning strike, fire and other accidents.
- Repairs, maintenance and changes that are performed by unauthorised parties.

The warranty does not cover:

- Faults that do not affect operation, for example scratches to the surfaces.
- Parts that are exposed to greater risk of fault than normal due to handling or normal wear and tear, for example lamps, glass, ceramics, paper or plastic parts, filters and fuses.
- Settings, information on use, care, service or cleaning that are typically described in the user instructions, or damage that is caused by the user failing to observe warnings or installation instructions, or inspection of such.

The warranty provider is only responsible for the operation if approved accessories are used. The warranty does not cover product faults that are caused by other manufacturers' accessories or equipment.

The unit's current settings must be recorded in the installation and assembly instructions at installation in order to avoid costs in the event of fault. The warranty provider is not responsible for costs such as adjustment costs when changing fans and main boards in the unit.

3.4 Service conditions during the warranty period

The conditions apply according to the agreement with the local dealer.

3.5 Corrective measures in the event of detected faults

If a fault is detected, the customer must notify this to the dealer.

Shipping damage must be notified to the shipping agent upon delivery. State which product applies (part and serial number as per the name plate) and describe the fault and how this has occurred as accurately as possible.

In order for warranty repair to be performed, the customer must demonstrate that the warranty is valid by presenting a purchase receipt. Once the warranty period has expired, claims that were not made in writing before expiry of the warranty period will not be valid. In other regards, this shall occur in accordance with the sales conditions.

4 Transport and storage

WARNING! Power must be cut to the unit for two minutes before work can be started.

WARNING! Make sure that the electricity is switched off during the entire assembly process.

WARNING! The unit may not be started until the installation is completely finished and the ducts have been connected.

WARNING! All electrical installations must be performed by a qualified electrician.

WARNING! The safety switch must be switched off when the cover of the electrical distribution box or the doors/cover of the unit are opened/removed from the unit.

WARNING! All operations on the unit and its peripheral equipment must be performed in accordance with local laws and regulations.

WARNING! Rotating, hot and electrical components can cause serious injuries.

WARNING! Ensure that the installation fulfils local and national fire safety requirements.

CAUTION! Do not connect an exhaust air type tumble dryer or drying cabinet to the ductsystem due to the high air humidity.

CAUTION! If the unit is installed when it is cold outside / in the winter and it will not immediately be put into use, the ducts must be plugged again otherwise there is a risk of condensation and the unit freezing.

CAUTION! Installation and commissioning must be performed by a professional in order for the warranty to apply.

WARNING! Ensure that the ducts are coupled in the correct position on the HERU unit.

WARNING! The antenna must NOT be attached against any metal surface or object, as this will block the signal

4.1 General

The HERU unit must be stored in a protected and dry space before installation.

4.2 Checking the delivery

1. Inspect the unit carefully upon delivery to check for any damage that may have occurred during transport. Immediately inform the manufacturer in the event of severe damage.
2. **Note! The manufacturer cannot be held liable for damage to the unit during transport, even if the manufacturer has appointed the shipping agent.**
3. Check that the delivery contains all ordered parts.

The following parts will be included in the delivery:

- HERU Select units, three modules. One rotor module and two side modules.
- One frame for mounting the modules on, requires assembly, includes necessary screws.
- This manual "1270475 HERU Select" and manual "1270521 – IQC Display-kit".
- Antenna and antenna bracket.
- Antenna cable.
- GT7 sensor with cable.
- Heru Select 500 – 2 filters
- Heru Select 1000 and HERU Select 1500 – 4 filters.
- IQC-Display.
- Active dock holder for the Display.
- Bracket for dock holder with magnets.
- Charger for dock holder.
- Labels:
  - Air direction labels.

Contact your dealer if anything is missing.

5 Installation

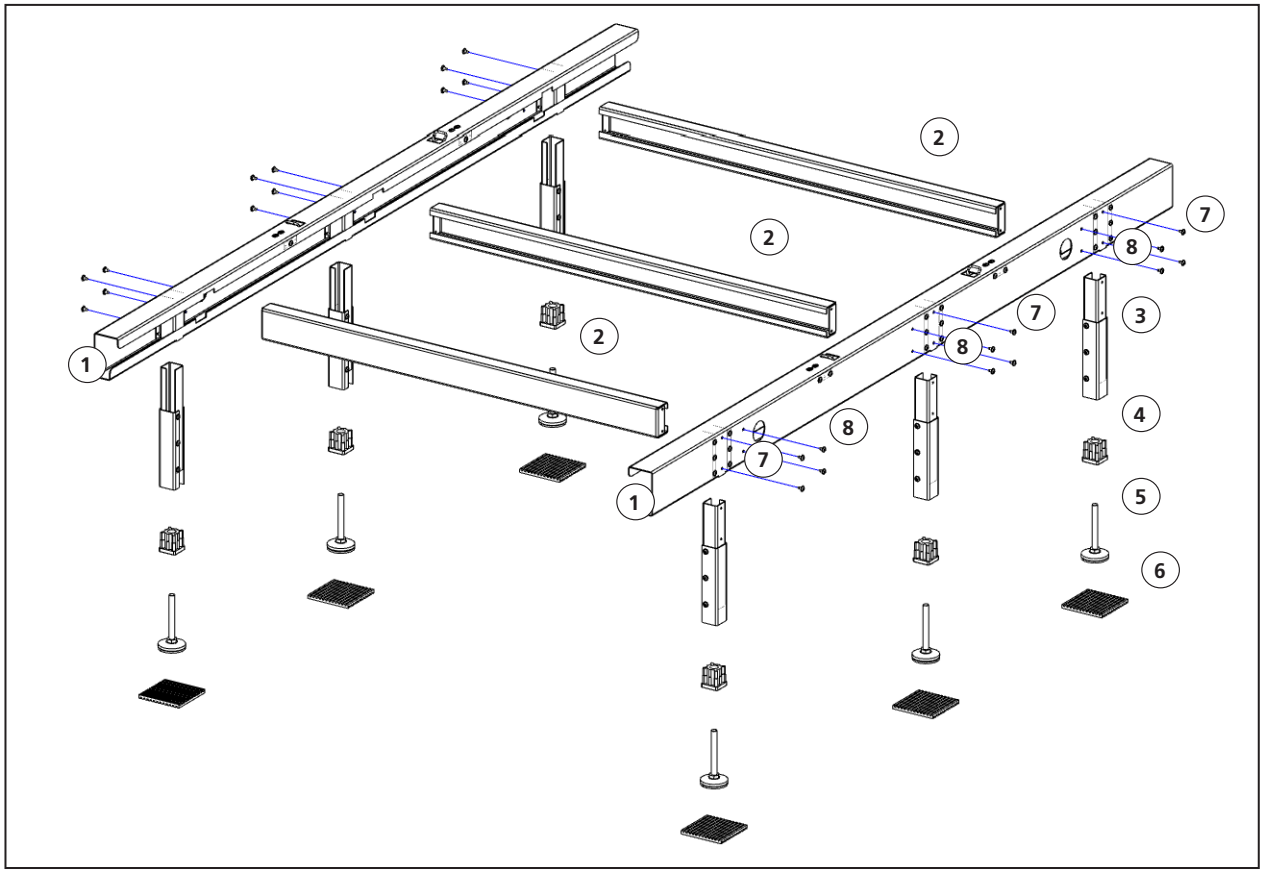
5.1 Assembly the frame – with or without legs

ATTENTION! Read the assembly instructions before beginning the assembly of the frame and the modules.

ATTENTION! Små delar för montering av ramen finns i rotormodulen (mittmodulen).

ATTENTION! Use protective gloves during assembly - sharp edges..

The frame is delivered unmounted and need to be assembled.
Some parts for mounting the frame are located inside the compartment of the rotor module.

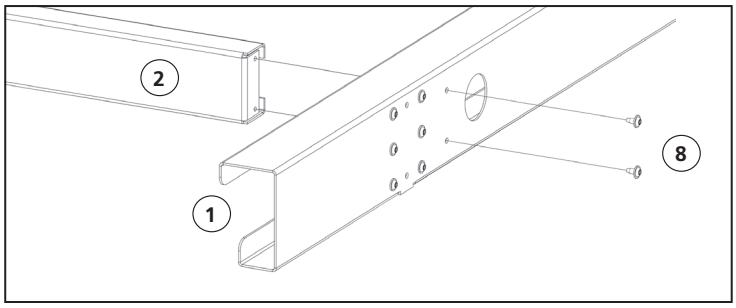


View AA – Complete frame, exploded view.

Following shows frame for HERU Select 1000, HERU Select 1500 has the same type off frame as HERU Select 1000. There are differences for HERU Select 500 is that the frame has four legs and two cross beams.

Parts of the frame

1. Main beam.
2. Cross beam.
3. Legs.
4. Plastic plug for adjustable foot
5. Adjustable foot
6. Anti-vibration pads (Novibra)
7. Screws for legs, two per leg.
8. Screws for crossbeam – four per beam.



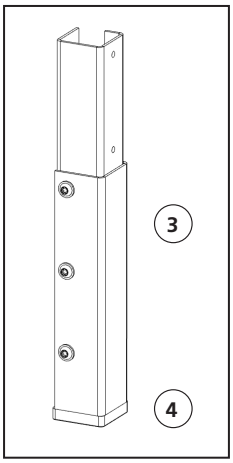
View BB – Assembling of the frame.

5.1.1 Assemble the frame

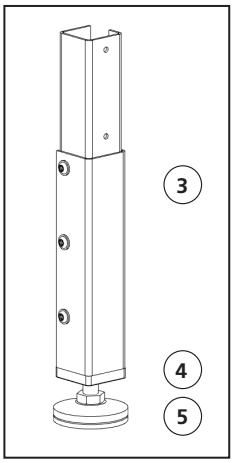
1. Assemble the main beams (1) with the cross beams (2) for a complete frame. Four screws (8) per cross beam. View AA and BB.

With legs

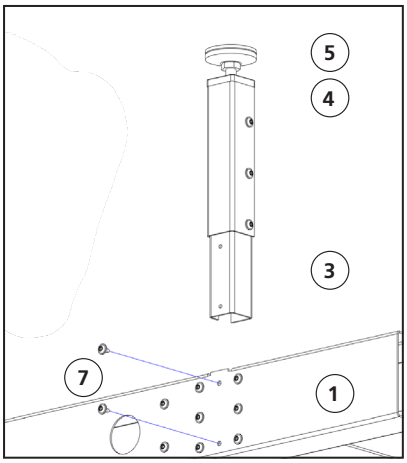
1. Assemble the plastic plug (4) in the leg (3) before the foot (5) is screwed in. View AA and CC.
2. Screw in the adjustable foot (5) in the plastic plug (4). View DD.
3. For easy attachment of the legs, turn the frame upside down with the leg holes up. View EE.
4. Assemble the legs, two screws per leg (7). View EE and FF.
5. Put the complete frame on the anti-vibration pads (6).



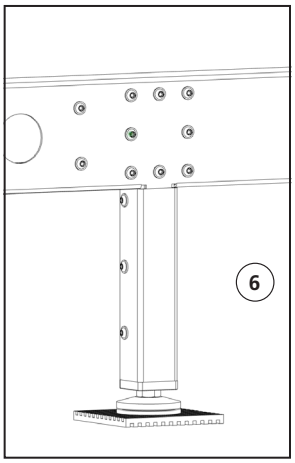
View CC –
Leg with plastic plug.



View DD –
Assembling of the legs.



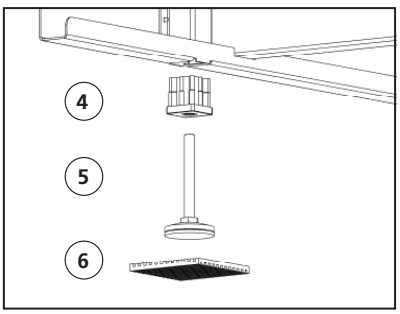
View EE – Assembling of the legs to the frame.



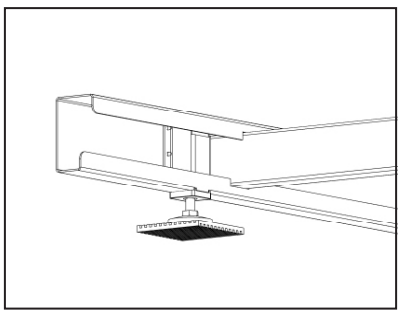
View FF– Mounted leg .

Without legs

1. Put the plastic plug (4) directly in the beam. View GG and HH.
2. Screw in the adjustable foot (5) in the plastic plug (4). View HH.
3. Put the complete frame on the anti-vibration pads (6).



View GG– Parts of feet (without leg).

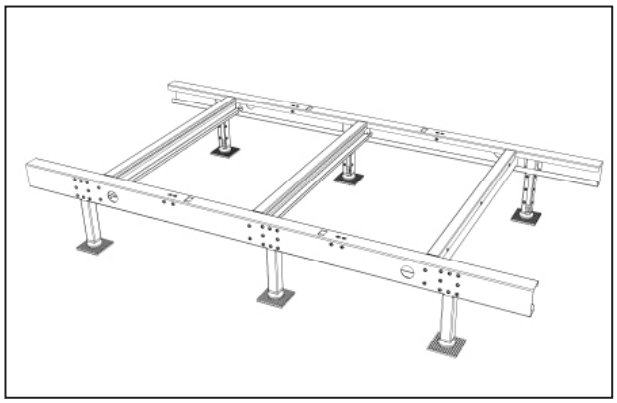


View HH – Mounted feet.

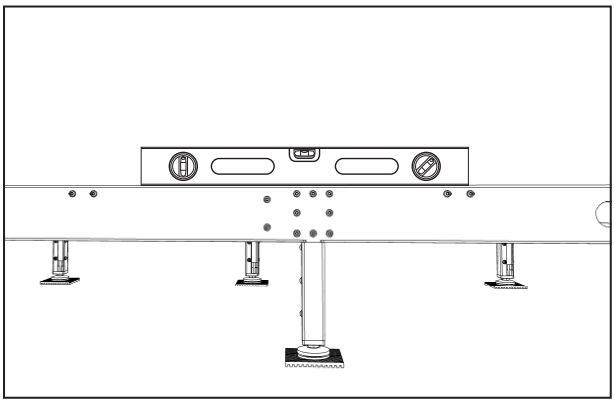
5.2 Assembly and installation of the Unit on the frame

Assemble

1. Put the frame on a flat and stable surface with anti-vibration pads under the feet, beware of the minimum distance to adjacent walls or other obstacles. View A.
2. Adjust the frame in level to secure the units full function with help of the frames adjustable feet, use a spirit-level to ascertain the levelling. View B.
3. Loose the excenter locks on the inside the main beams of the frame before the rotor module is placed on the frame (x 4). View C.

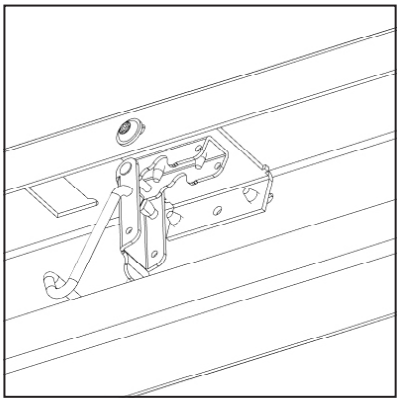


View A – Frame.

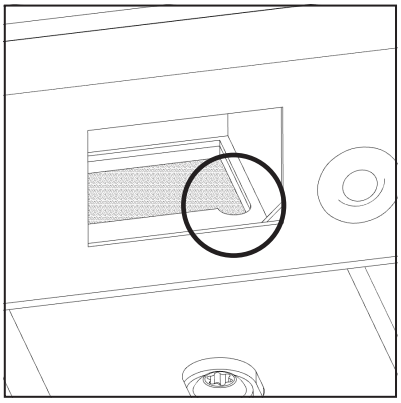


View B – Level the Frame.

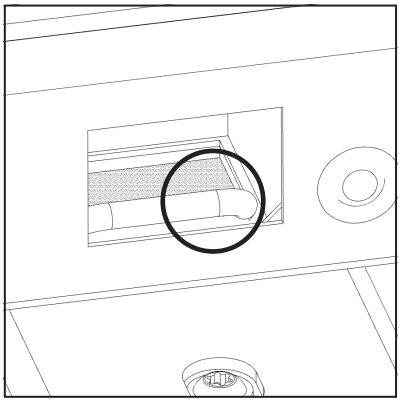
4. Put the rotor module on the frame and align the square holes in the rotor modules bottom against the holes in the frame. View D.
5. Bring up the hook of the excenter locks thru the holes in the frame and rotor module and fasten the four locks. Ensure that all "hooks" are secured. View E.



View C – Eccentric lock inside the bar (x4). From below

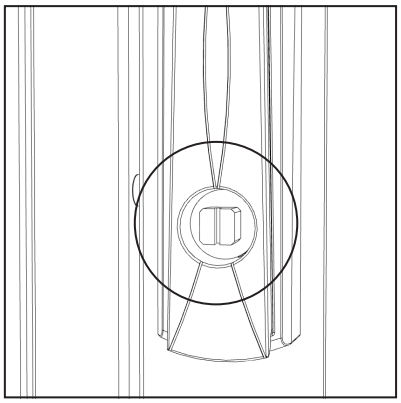


View D – Fitting the rotor module against the stand.

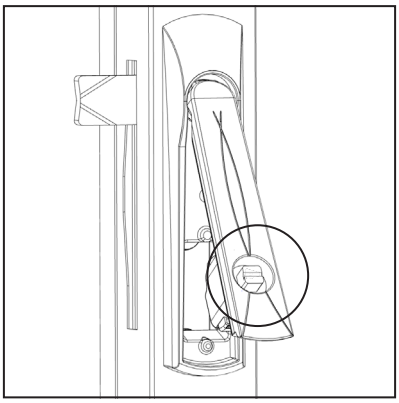


View E – The hook of the eccentric locks attached.

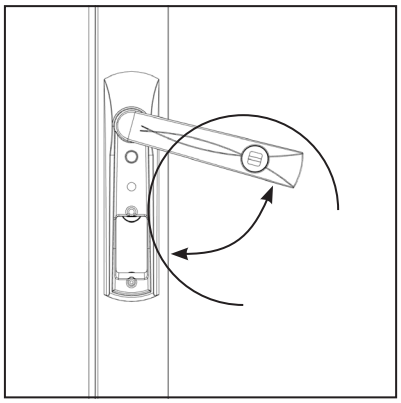
6. Open the door of the rotor module. Turn the lock 90 degrees clockwise (F) and lift the handle outwards simultaneously (G). Then turn the handle upwards in the direction "against the middle of the doors." View F, G and H. Place the side modules on the frame, preferably one at a time.



View F – Turn the lock 90 degrees clockwise.

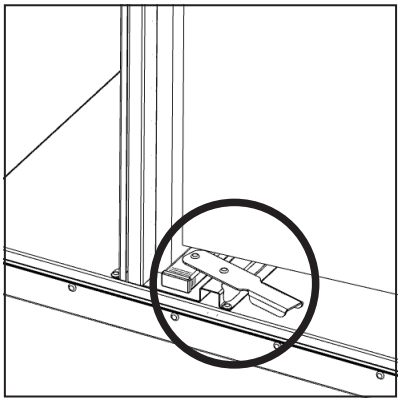


View G – Lift the handle.

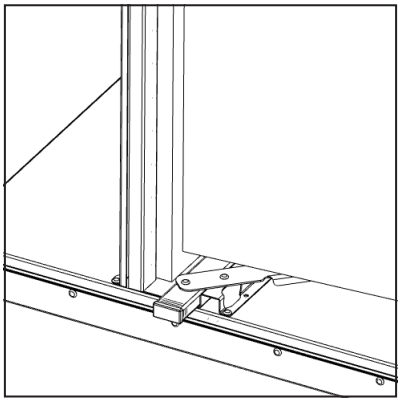


View H – Turn the handle.

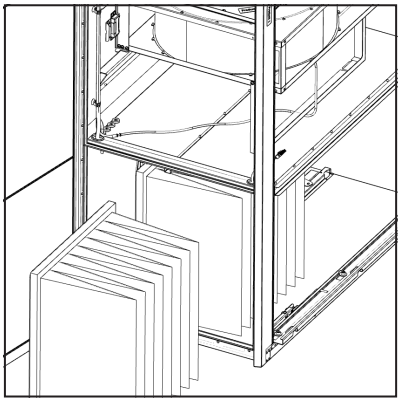
7. Open the door of the side module. Remove the filters (two per module) before you assemble the side modules to the center rotor module. **There are levers both at the bottom and at the top of the filter compartment.** View I, J and K



View I – Closed filter lock



View J – Opened filter lock.

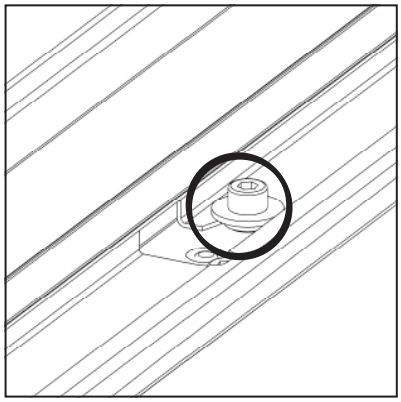


View K – Remove the filters.

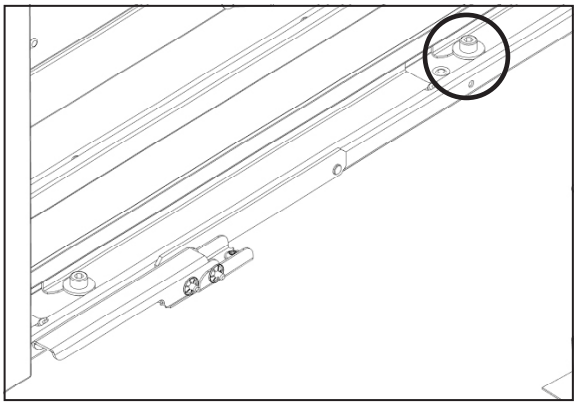
5.2.1 Connect the modules

8. Open the levers in both the bottom and top of the side module. View L.
9. Ensure that the bolts of the rotor module is fitted in the sockets of the side module. View M.
10. Control that the guidance pins in top and bottom edge of the side module are fitted in the holes in the rotor module. View N.

11. Make sure that the cables don't get pinched and then join the side module with the rotor module.
12. Push the modules tight together before using the locking lever. To reduce stress of the locking mechanism.
13. Secure the locks in the bottom and top of the side module, ensure that the bolts of the rotor module is fitted in the sockets of the side module. View O and P.

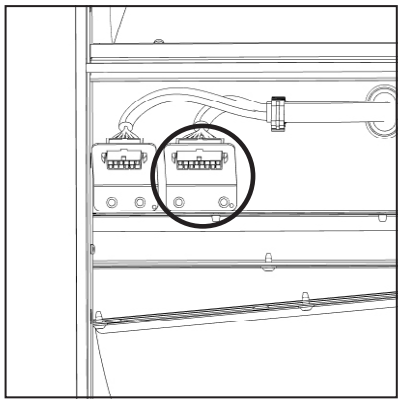


View O – Modules secured, bolt and rail.

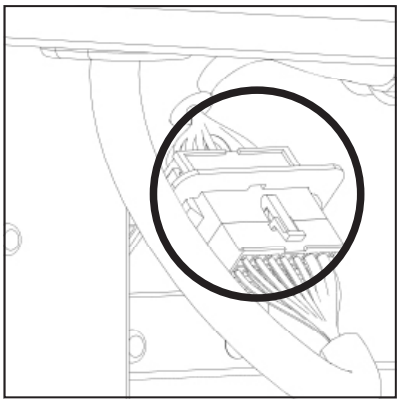


View P – Lever in locked position.

14. Connect the cable from the side module to the socket of the rotor module"16 terminals". Access for connection is thru the door opening of the side module. View Q and R.



View Q – Socket for electrical connection.



View R – Connected module.

15. Do the same with the other side module.

5.3 Lifting

ATTENTION! Beware of the top edges when lifting separate units, if they are squeezed they can be deformed. Use a line spreader or similar.

5.3.1 Separate units

1. Use a truck or pallet lift for moving or lift the single units.
2. Keep the units as long as possible on the pallet. The units is delivered on pallets, separately.
3. Use a line spreader or similar when lifting the units (mounted on the pallet), so the straps doesn't have any contact to the upper edge of the unit. The lifting weight may deform the unit.

5.3.2 Mounted units on frame – lift with lifting yoke – straps – pipes

1. The frame is equipped with four holes Ø 45 mm. If all modules is mounted on the frame and connected to each other, the frame can be used to lift the whole unit.
2. Use a lifting yoke, two pipes and four straps.
3. Place the pipes in the holes of the frame with enough pipe length for strap clearance from the unit.

5.4 Mounting principles

The environment for the HERU Select must be weatherproofed It is designed for Nordic and continental environments with focus on heat recovery and cold seasons.

5.5 Mounting distance

Recommended distance for access to easy handling of electrical distribution box (A). Enough space to open the side modules doors 180 degrees (B) ensures easier maintenance, as removing filters and fans.

Ensure that there are enough service area in front of the unit (C). Minimal distance is the depth of the unit (for extracting the rotor unit). The rotor unit is heavy and a pallet lift or forklift can be necessary for removing, the rotor package.

Mounting distance for HERU Select – picture shows HERU Select 1000

(mm)	**A**	**B**	**C** (approx).	**CC**
HERU Select 500 EC	700	3007	1380	1481
HERU Select 1000 EC	700	3407	1670	1871
HERU Select 1500 EC	700	4004	2000	2350

5.6 Technical data

Dimension for HERU Select – picture shows HERU Select 1000

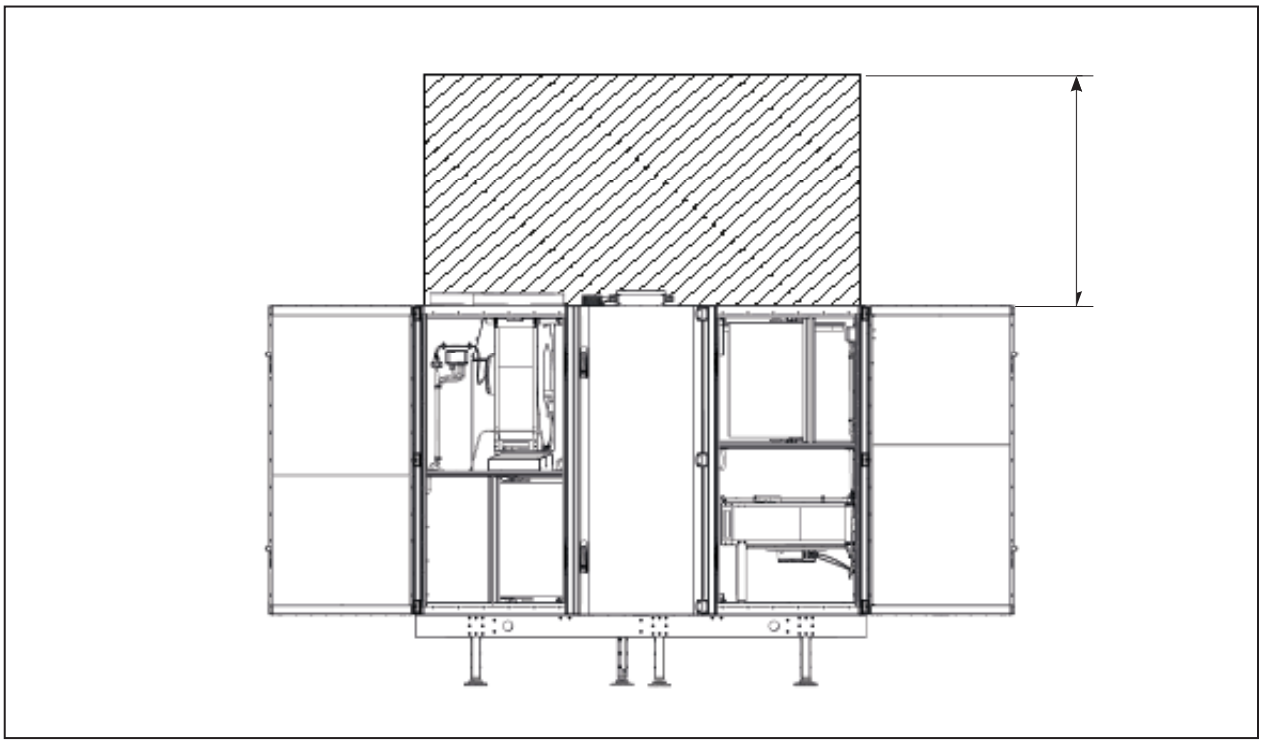
	HERU SELECT 500 EC	**HERU SELECT 1000 EC**	**HERU SELECT 1500 EC**
Unit power Max (kW)	1.2	2.6	3.7
Power Electrical heater (kW)	6.0	10.5	19.2

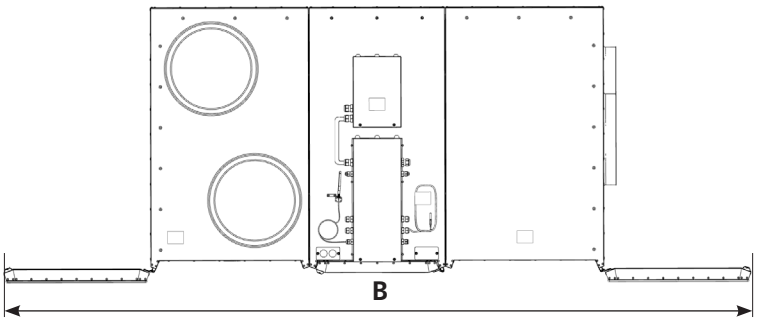
Weight (kg)			
Side module	85	131	216
Top module	111.5	137	226
Rotor module – heating coil	119	174	250
Rotor module – water battery	118	172	243
Frame	23	32	38

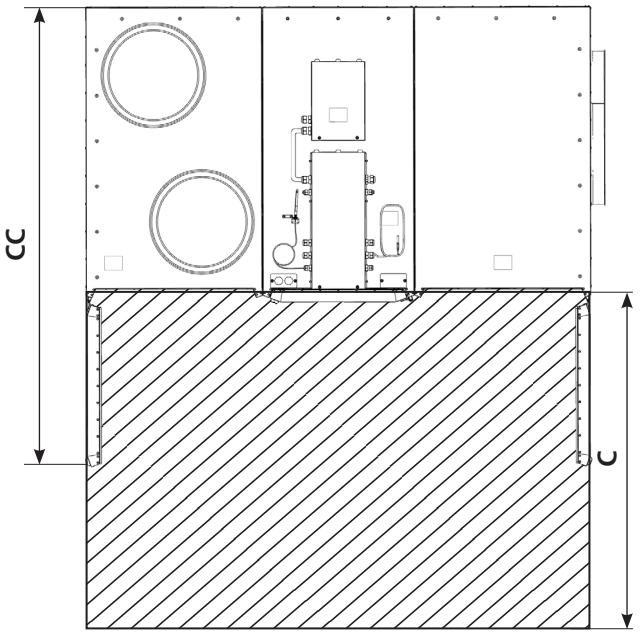
Dimensions (mm)			
D – applies to top modules*	602	702	851

D + M – applies to side modules*	655	755	905
E	600	600	600
F – applies to 2 top modules*	1803	2003	2303
F – applies to 2 side modules*	1909	2109	2409
F – applies to 1 side module and 1 top module*	1856	2056	2356
G	879	1169	1499
H	1079	1369	1699
I	67	103	103
J	313	313	313
K	Ø 315	Ø 400	Ø 500
L	1458	1784	2114
M	53	53	53

For further technical data, visit https://www.ostberg.com.




B


CC
C

5.7 Mechanical connections

5.7.1 Connect the ducts to the unit

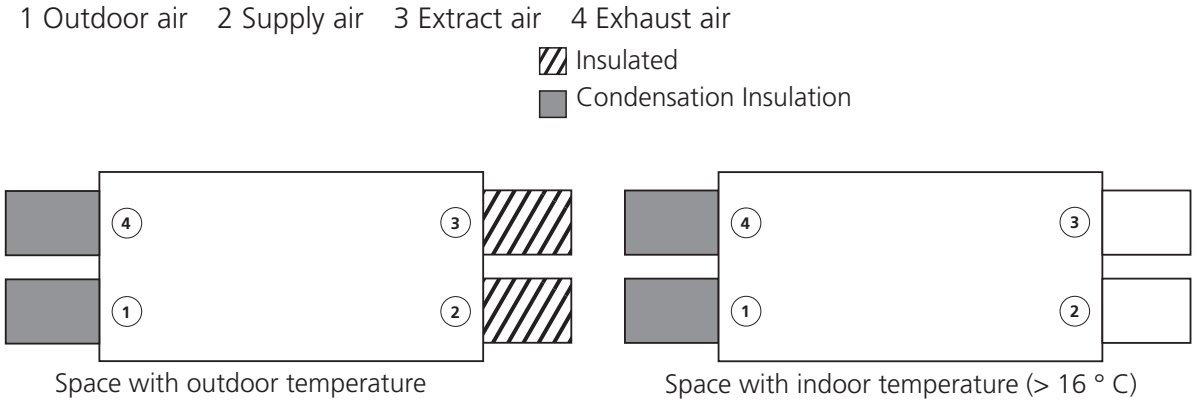
- The dimensioned airflow should not exceed 75% of the unit's maximum capacity.
- When installing in warm and moist places, condensation may occur on the outside of the unit at low outdoor temperatures.
- If the unit is installed in cold weather and cannot immediately be put into use, the ducts must be plugged again otherwise there is a risk of condensation.
- We recommend always installing a spring-return damper in ducts for fresh air and exhaust air.
- If there are major differences between ambient temperature and the temperature in the ducts for the supply and extract air, these must be insulated to prevent condensation.
- The ducts for fresh air and exhaust air must always be insulated against condensation.
- The ducts must be insulated all the way up to the unit.
- Use a pipe clip or flange with surrounding insulation.
- If a water battery is connected, a spring-return damper must be mounted in the ducts for fresh air and exhaust air. This reduces the risk of freezing when the unit is not in use.
- Connect the ducts to the external ground point on the unit.

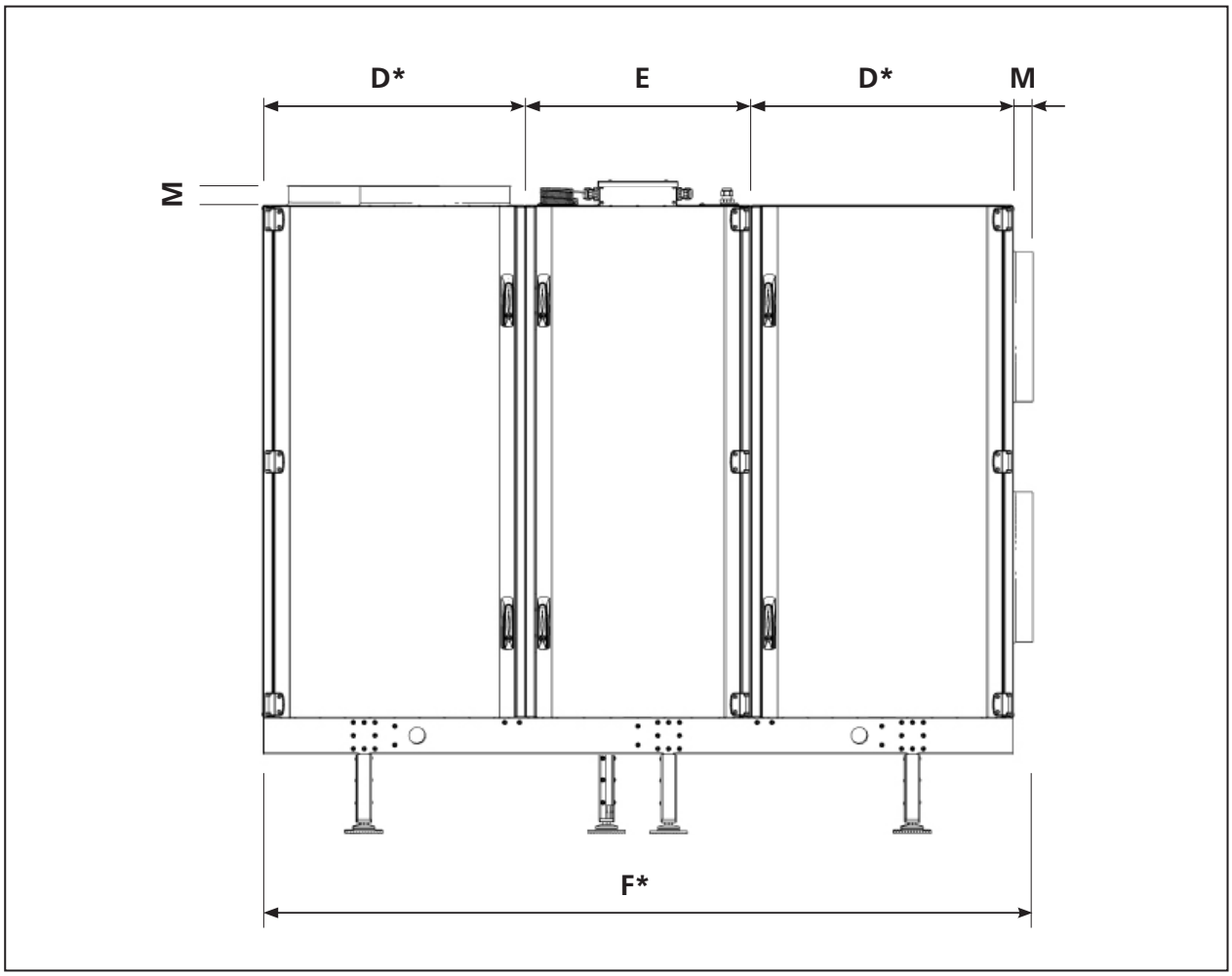
Ground points for ducts

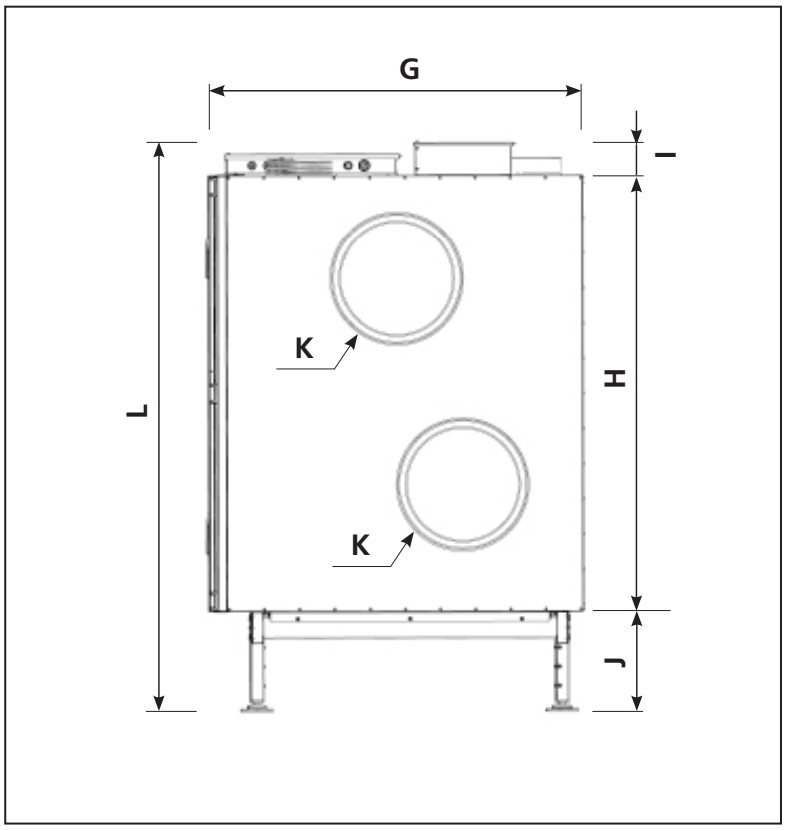
- Connect the ducts to one of the external ground points (1) on the unit.

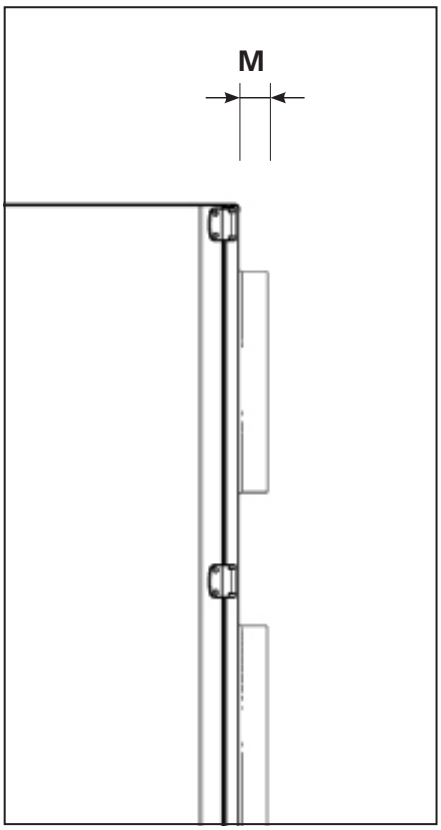
Duct insulation

- All ducts should be insulated according to industry standards. The pictures show a minimum to ensure full operation of the unit.




D*
E
D*
M
M
F*

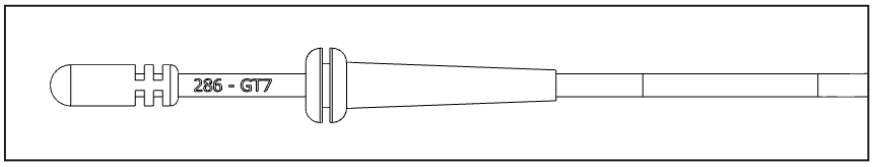

G
I
K
H
L
K
J

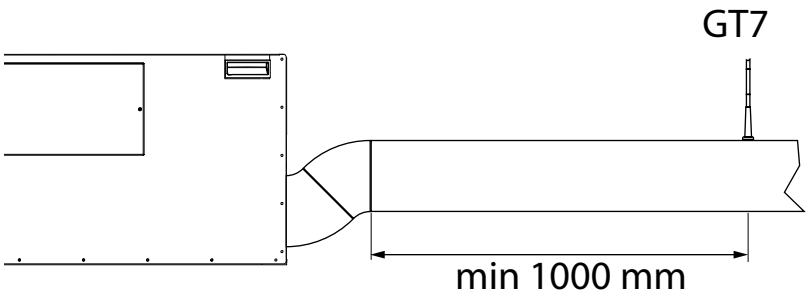

M

5.7.2 Mount the duct sensor GT7

Mount the duct sensor GT7 in the supply air duct. See **"12 Control diagram" page 61**.

1. Prepare the duct. Drill a Ø9 mm hole; site it at least 1000 mm after the unit or any mounted pipe elbows. Mount the duct sensor in the drilled hole.
2. The duct sensor must be placed centrally in the duct.
3. Attach the duct sensor. Secure with a cable tie around the cable bushing.





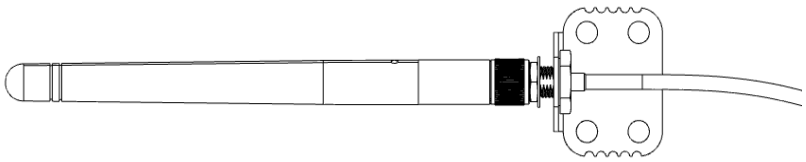
5.7.3 Mount the antenna for IQC

CAUTION! The antenna must not be left loose on or next to the unit.

CAUTION! The antenna must not be attached against any metal surface or object, as this will block the signal.

Place the antenna as centrally as possible to maximise the signal in the building. An extension cord is available as an accessory, if required.

See web; Extension Cord – Antenna IQC



5.8 Connecting the unit to the power source

WARNING! All electrical installations must be performed by a qualified electrician.

WARNING! The safety switch must not be used for normal starting and stopping of the unit. Use the accompanying wireless display.

WARNING! All operations on the unit and its peripheral equipment must be performed in accordance with local laws and regulations.

WARNING! Ensure that there are no loose parts inside the unit and that the doors are closed and locked before turning on the power.

1. Install an "All-pole disconnect safety switch" for each Mains Supply circuit, close to the unit. If the unit is equipped with an electrical heater, an additional switch is required.
2. Fuses and rotor motor control is found in the rotor module. View E.
3. For power connection, unmount the lid (1) of the electrical distribution box at the top of the rotor module. View A (HERU Select 1000/1500) and view C (HERU Select 500). Cable input (2).
4. Connect Mains
   - HERU Select 1000 & 1500 – 3-Phase (L1 L2 L3), neutral conductor (N) and earthing terminal (PE) (3). View B – shows HERU Select 1000.
   - HERU Select 500 – 1-Phase (L), neutral conductor (N) and earthing terminal (PE) (3). View C.
5. Close and fasten the junction box lid.

5.9 Connections – main board and expansion board

The main board and expansion board are located in the electrical distribution box (1), the boards is mounted back to back in a frame (2). The frame is locked with a spring lock (3) in the bottom of the junction box. Remove the frame and boards by unlock the lock (3) and pull the frame upwards (4). The boards are connected with a 1.5 meter cable (5) for easy access of the boards and their connection connectors. The connection plugs (6) are also detachable from the boards for easy handling.

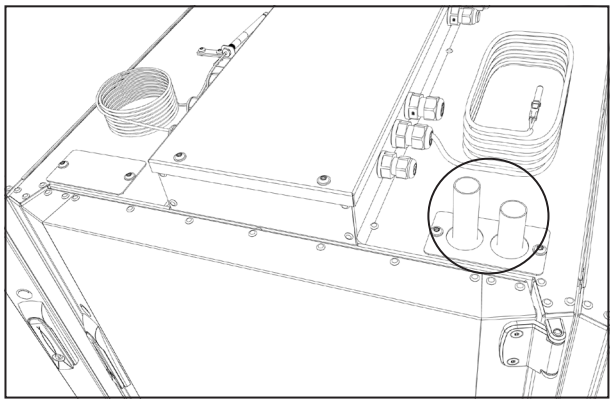
5.10 Connections – Heating coil

5.10.1 Heating coil – right

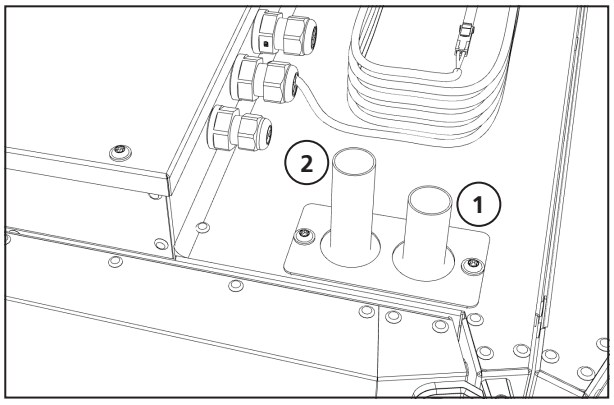
1. Connect incoming and outgoing water on the right side of the rotor module. Incoming water (1) and outgoing water (2) View A and B.

CAUTION! Fans are equipped with non self resetting thermal cutouts. In order to avoid a hazzard due to inadverent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

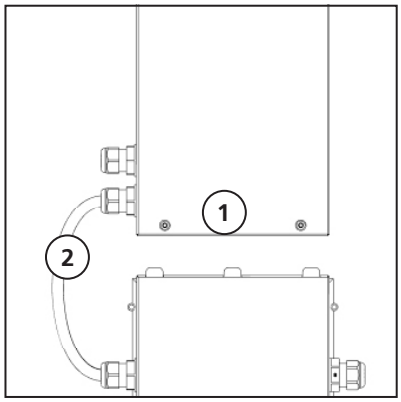
2. Use suitable connections, outer pipe diameter Ø 22 mm.



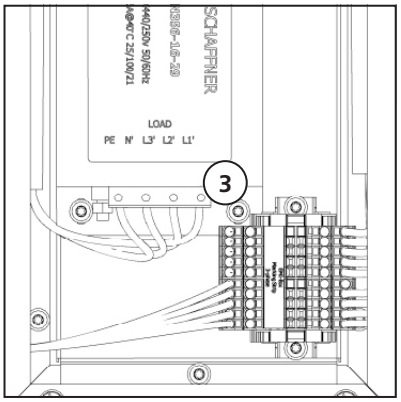
View A – Water connection.



View B – Water flow direction.



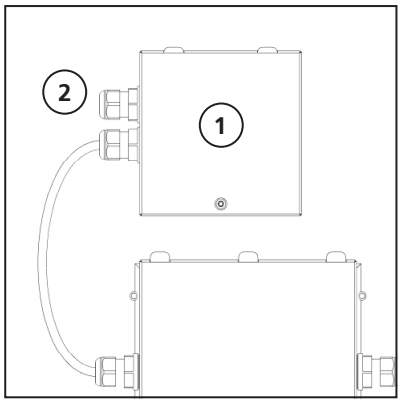
View A – Top View with junction box.



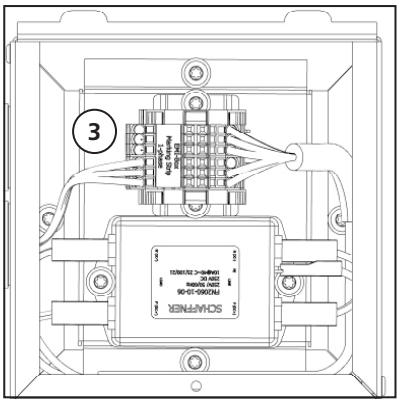
View B – Terminal block 3-Phase, Select 1000/1500.

5.10.2 Heating coil – left

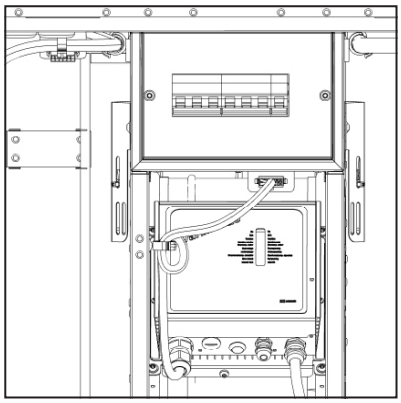
1. Connect incoming and outgoing water on the right side of the rotor module. Incoming water



View C – Power Connection of Unit, Select 500.



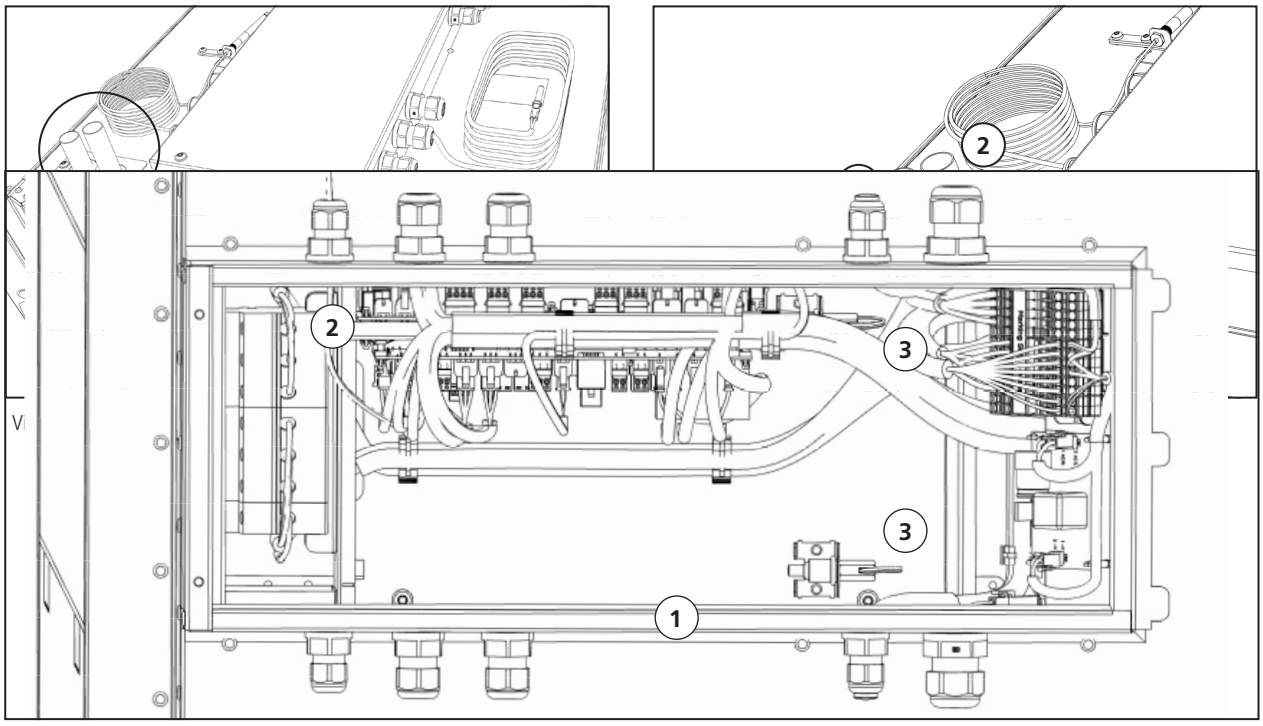
View D – Terminal block 1-Phase, Select 500.



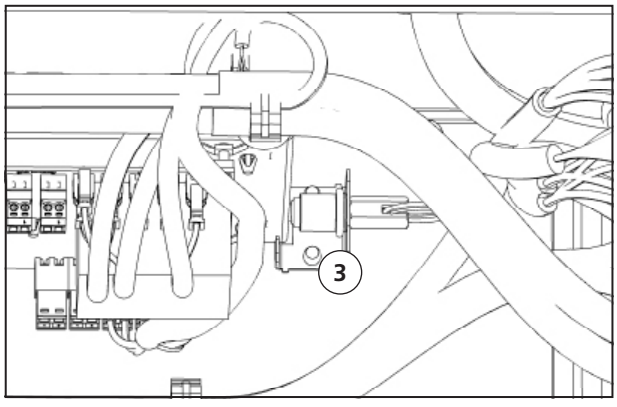
View E – Fuses and Rotor Motor Control.

(1) and outgoing water (2) View C and D.

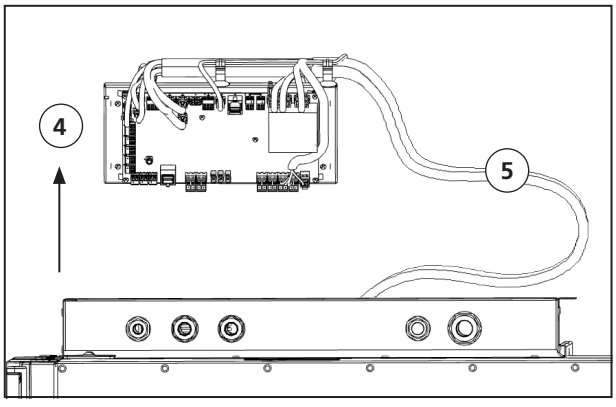
2. Use suitable connections, outer pipe diameter Ø 22 mm.



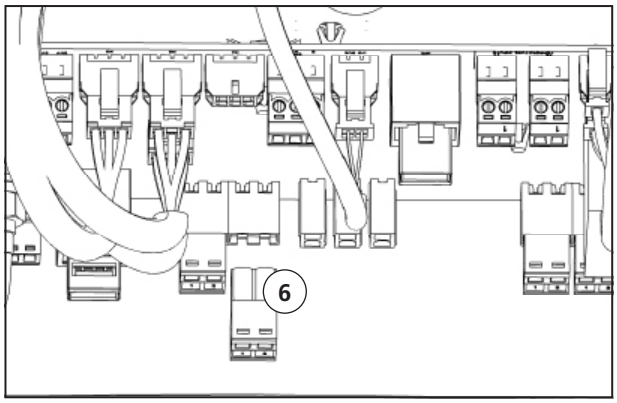
View A – Electrical distribution box without lid.



View B– Spring-lock for frame.



View C – Board frame with cable



View D – Board connection plugs, loose.

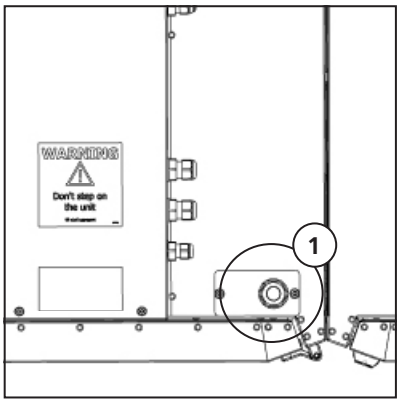
5.11 Connections – Electric battery

WARNING! The "all pole disconnect safety switches" for all circuits must be switched off before the cover of the electrical distribution box or the doors/cover of the unit are opened/removed from the unit.

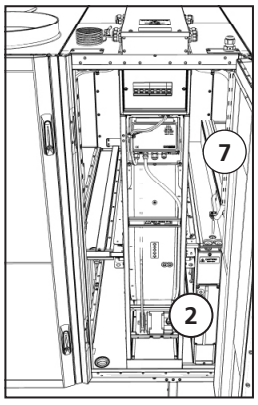
WARNING! Ensure that there are no loose parts inside the unit and that the doors are closed and locked before turning on the power.

5.11.1 Electric battery – right

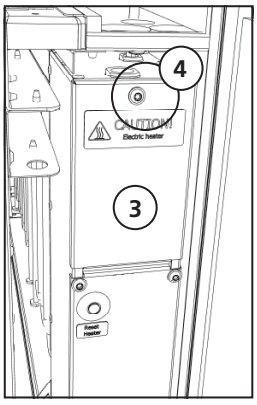
1. Thread the Electric cable through the external cable bushing (1). View G.
2. Remove the lid (3) on the heater (2), one screw (4). View H and I.
3. Thread through the Electric cable through the internal cable bushing (5). View J.
4. Connect the cable to the terminal block (6), view J and. Stripe the cable to holed rail (7), view H.



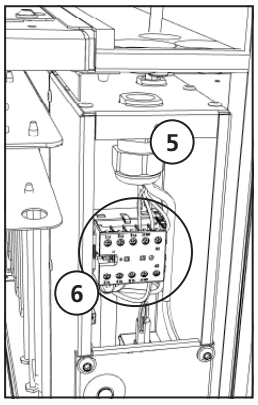
View G – Cable bushing.



View H – Electric battery..



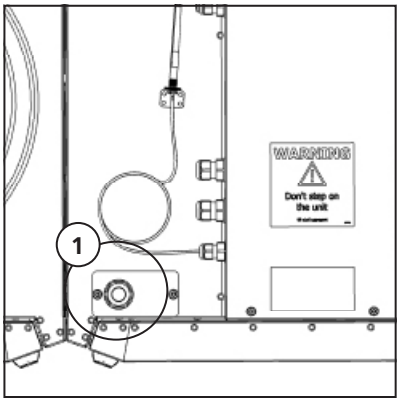
View I – Connection box.



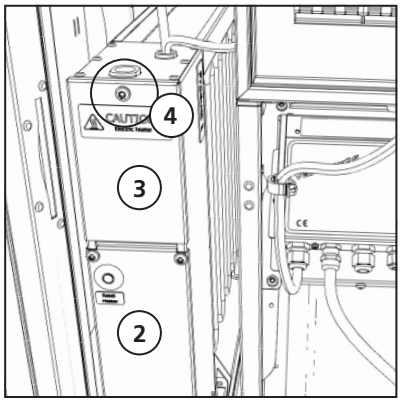
View J – Connection box.

5.11.2 Electric battery – left

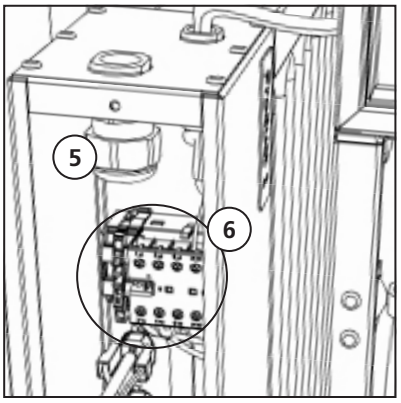
1. Thread the Electric cable through the external cable bushing (1). View K.
2. Remove the lid (3) on the heater (2), one screw (4). View L.
3. Thread through the Electric cable through the internal cable bushing (5). View M.
4. Connect the cable to the terminal block (6). View M.



View K – Cable bushing.



View L – Electric battery.



View M – Connection box.

5.12 Connecting Modbus to external control equipment

5.12.1 RS485

The external control equipment must support Modbus RTU data protocol, which is used for RS485 in order to communicate with the unit.

1. Before connecting the signal zero – it must be ensured that the potential difference = 0, between the systems.
2. Connect > **GND** to **0**.
3. Connect > One conductor to **A** and one to **B**

CAUTION! If conductor is connected to terminal 0 and voltage potential is present, it will damage the equipment.

4. Connect > **Rx+/Tx+** to **A**.

5.12.2 TCP/IP

The external control equipment must support Modbus TCP/IP data protocol, which is used when communicating Modbus over ethernet with the unit.

NOTE! For more information on how to configure Modbus via the wireless display, see **"8.5 Configuring the unit for Modbus with TCP/IP" page 37**.

6 Controlling the unit

6.1 Different ways to control the HERU Select unit

- IQC Display (wireless or cable connected)
- App
- Modbus

6.2 IQC Display

Use the IQC Display to control the units parameters and the display can be used wireless or wire connected to the unit. The IQC Display need to be charged.

For more detailed information see manual: **1270478 – IQC Manual.**

NOTE! For more information on how to configure Modbus via the wireless display, see **"8.4 Configuring the unit for Modbus via RS485" page 37**.

6.2.1 Charge with USB-cable

1. Connect the charger's mini USB connector to the wireless IQC display.
2. Connect the charger to the wall socket.

6.2.2 Charge with the Active dock holder.

3. With the charger cable (only charging).
4. With network cable (RJ-45) both communication and charging.

6.3 Modbus

See chapter **"8.4 Configuring the unit for Modbus via RS485" page 37** and **"8.5 Configuring the unit for Modbus with TCP/IP" page 37**

7 Final routines

WARNING! The unit's ducts must be connected, covers/doors closed and fastened before the unit is started to avoid the risk of personal injury from rotating parts.

WARNING! Filters must be installed before the unit is used.

7.1 Preparations:

1. Ensure that there are no loose parts inside the unit.
2. Electrical distribution box lid and doors of the unit are closed and locked.
3. Ventilation ducts are properly connected to the unit.
4. Pair the unit with IQC Display according to separate manual.
5. Ensure that the product is operating and no alarm is active.
6. If possible, save a back-up of the settings.
7. If possible, connect the software applications and disconnect the terminal.
8. Pick up all the tools.
9. Notify relevant persons that the work is complete.
10. Follow the routines for returning and disposing of replaced parts and packaging material.
11. Connect the unit by closing the safety circuit breaker.

8 Commissioning

WARNING! The unit's ducts must be connected, covers/doors closed and fastened before the unit is started to avoid the risk of personal injury from rotating parts.

WARNING! Filters must be installed before the unit is used.

8.1 Adapting the unit for airflow in the opposite direction

Contact Östberg for information and guidance.

8.2 Starting the HERU unit

1. Power the HERU unit, with the All-pole disconnect safety switch.
2. Wake up the display by connecting the accompanying charging cable to the display. Connect the charging cable via a 110-240V 50/60Hz adapter to the wall socket.

NOTE! The wireless display is paired upon delivery. If an extra display is desired, this must be paired. See manual: "1270490 – Instruction IQC-display Pairing".

3. The display synchronises. Once this is ready, press the display.
4. If the message "No Communication" apperars, pair the unit according to **"10.1 Pairing units" page 41.**
5. Press **[Start unit]**. Then the unit starts a "start sequence" that takes approximately 15 min.

NOTE! The unit does not react to any command until the start sequence is finished.

6. Once the start sequence is finished, the unit operates according to the preset values.
7. Check that the latest version of the firmware is installed.
   - Enter **[Settings/About/Version]** in the wireless display.
   - Compare the version against the most recently published version of firmware at https://www.ostberg.com.
   - If a new version of firmware is available, see the chapter **"10.9 Update firmware in the ventilation unit" page 53**.

8.3 Setup WIZARD

8.3.1 Setup Wizard menu overview

For full menu system of the wizard see chapter **"Appendix 2 Setup Wizard" page 74**

8.3.2 Open the Setup Wizard

1. Open the main menu, select **[Service]**.
2. Log in. Enter code **[1991]**.
3. Select **[Setup Wizard]**.
4. Click **[OK]** in the dialogue box that is displayed.
5. Follow the guide to set all settings.
6. Click on the button **[Finished]**.
7. Return to the main menu. Click on the arrow in the bottom left corner or on the main menu button in the upper left corner.
8. Return to the start screen. Click on **[X]** in the upper left corner.

8.4 Configuring the unit for Modbus via RS485

ID and baud rate must be configured to comply with the Modbus Network.

1. Download the complete Modbus register here: **https://www.ostberg.com.**
2. Open the main menu, select **[Service]**.
3. Log in Enter code **[1991]**.
4. Select **[Communication]**.
5. For the **[Modbus]** type select **[RS485]** and enter the following values:
   - Address:
   - Baud:
   - Stop bit:
   - Parity:
6. Return to the main menu. Click on the arrow in the bottom left corner or on the main menu button in the upper left corner.
7. Return to the start screen. Click on **[X]** in the upper left corner.

8.5 Configuring the unit for Modbus with TCP/IP

For Modbus over TCP/IP to work, the unit's network settings must be configured first.

1. Download the complete Modbus register here: https://www.ostberg.com**.**
2. Open the main menu, select **[Service]**.
3. Log in Enter code **[1991]**.
4. Select **[Communication]**.
5. For the **[Modbus]** type select **[TCP/IP]** and enter desired value.
   - Port: 502 (default)
6. Return to the main menu. Click on the arrow in the bottom left corner or on the main menu button in the upper left corner.
7. Return to the start screen. Click on **[X]** in the upper left corner.

8.6 Configuring the unit

After configuring the unit, by either the installation wizard or manually, fill in the right values in the Configuration protocol, see **"Appendix 1 Configuration protocol" page 70.**

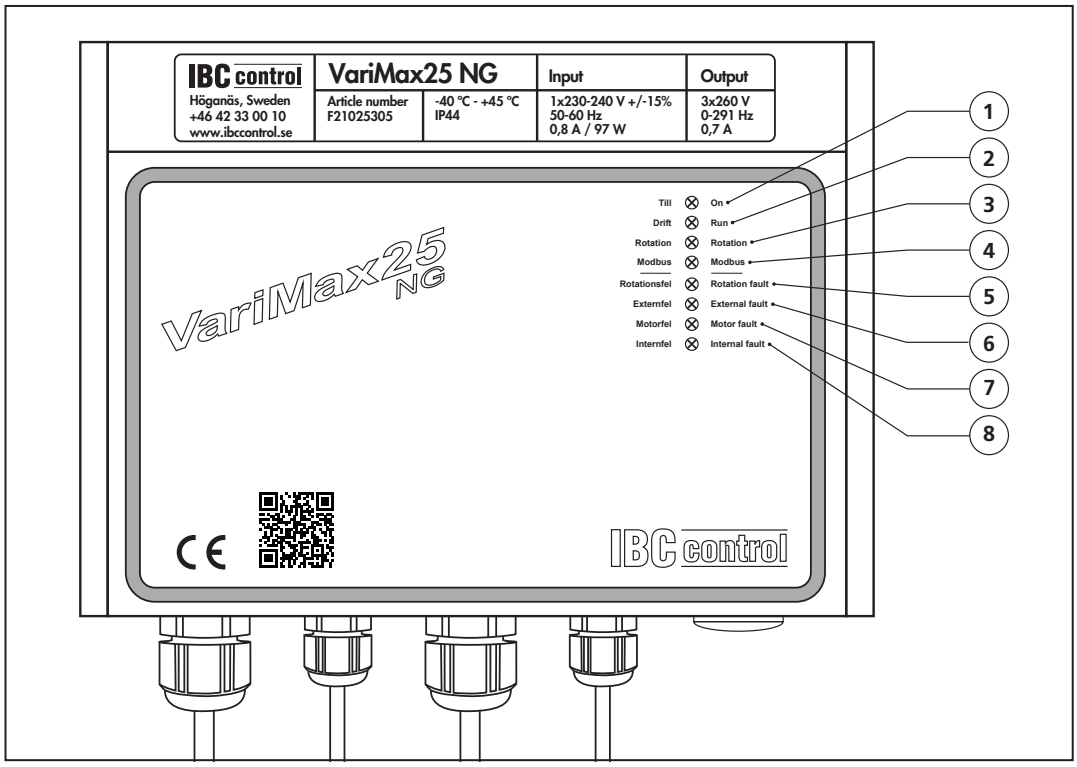
9 Varimax 25 NG

NOTE! Control unit function should be checked regularly. Troubleshooting and repairs may only be done by trained personnel.

WARNING Electrical current to electrical components!. Switch off main power before removing the cover.

VariMax25 NG is a control unit for rotary heat exchangers. The unit displays alarms and status for the rotor motor and is located in the rotor cabinet under the unit's main fuses.

For more information, see the manual at www.ibccontrol.se



Operation

1. On = steady light. Flashes when the control unit has tripped.
2. Comes on when the motor is to rotate, i.e. when the input signal exceeds the threshold value. Flashes during the cleaning function sequence.
3. Rotation
   - Internal rotation monitor
     Flashes after each approved measurement, although only when the "External rotation monitor" DIP switch is in the OFF position.
   - External rotation monitor
     Flashes when the magnet passes the rotation monitor, regardless of the setting of the "External rotation monitor" DIP switch. Flashes even if the input signal is lower than the threshold value.

4. Modbus
   - No light = No communication.
   - Flashing = Established communication but no speed set point. However, Writes to COILS may have taken place.
   - Steady light = Established communication with speed set point.

Alarms

5. Rotation fault
   - Internal rotation monitor – Generates an alarm and trips if two consecutive measurements indicate that the rotor is not rotating.
   - External rotation monitor = Generates an alarm and trips if a pulse is not received every 30 minutes at minimum speed (motor 1 rpm), and every 20 seconds at maximum speed (motor 350 rpm).
6. External fault
   - Over voltage – Alarms and trips if the connection voltage exceeds 276 V.
   - Under voltage – Alarms and trips if the connection voltage drops below 195 V.
   - Over/under temperature – Alarms and trips if the temperature inside the control unit exceeds/ drops below safe limits.
7. Motor temperature – The control unit regulates power and makes sure the motor will not overheat. Short circuit – Alarms and trips in the event of short circuit phase-phase or phase-earth.
8. Internal fault – Alarms and trips if an internal fault occurs in the control unit.

10 Operation

CAUTION! In the event of interruption in power, the settings will be stored. Date and Time are saved for 24 hours. After that, Date and Time must be reset. Make sure the unit is started up.

WARNING! The unit's duct connections must be duct connected, and doors/cover closed and locked before the unit is started in order to avoid the risk of personal injury from rotating parts.

CAUTION! The unit must be run constantly and only be stopped for maintenance.

CAUTION! The safety switch must not be used for normal starting and stopping of the unit.
Use the IQC Display.

For information on active view in the wireless IQC Display, press the i-button in the displays status bar.

The airflow is regulated by the different modes, set in the wireless display. Standard mode is default.

Accessible modes

Standard	Adjusted at installation, must not be changed.
Boost	A higher airflow than standard (Max fan speed). This alternative should be used when there is need for a higher airflow, for example when cooking food or drying laundry.
Extended Operation	Pressure compensation in the event of supplementary heating, for example, when using an open cooker or stove.
Away	Reduced air flow, can be used when no one is home.

For a more detailed information see the manual: **1270478 – IQC Manual**

NOTE! If a mode is activated manually, the programmed settings are temporarily inactive.

Certain settings are protected by a code so they cannot be changed unintentionally.

10.1 Pairing units

The IQC Display is paired upon delivery.

The first display can be wired or wirelessly connected to the unit and is also the main display with **[Display ID 1]**. If an additional display is desired, it must be paired as a slave display with **[Display ID 2]**. Only one display can be wired to the unit. See manual: **1270478 – IQC Manual.**

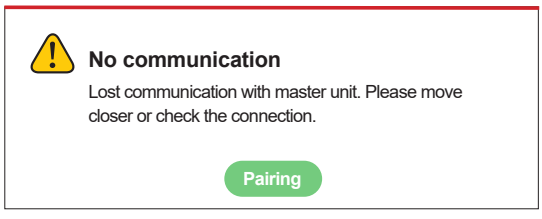
If the pairing is reset, the main display must be paired again.

10.1.1 Main Display

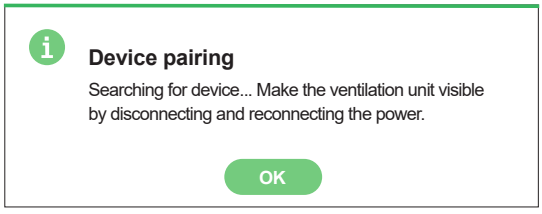
1. Connect the IQC Display to the HMI port in the unit or power the display via a wall outlet. The display shows **[No communication]**. View A.
2. Press **[Pairing].** View A.
3. Activate the toggle **[Search for Device (40s.)]**. The wireless IQC-display will then be in search mode for 40 seconds. Make the unit visible for pairing by turning power to the unit off and on. View B and C.
4. The IQC-Display restarts, if it is fixed connected to the unit.
5. If the IQC Display can't be found, the following is shown in the display **[Pairing units failed. No unit found]** in the display. The wireless display returns to the menu **[Device pairing].** Repeat step 3.
6. If the unit is found, the following is displayed **[Unit found. Pairing key:]** (unique number).
7. Press **[OK]** to confirm.
8. The wireless display now starts to synchronise data from the unit.
9. Pairing of the IQC Display is complete.

10.1.2 Slave Display

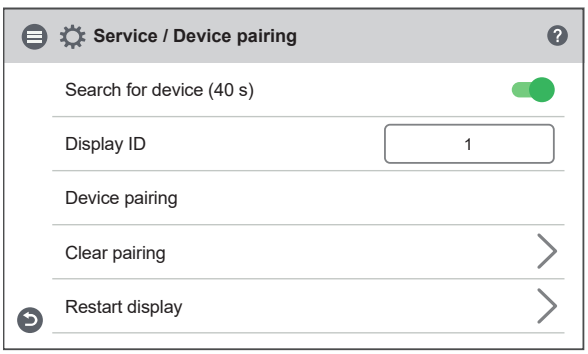
1. Connect the IQC Display to the HMI port in the unit or power the display via a wall outlet. The display shows **[No communication]**. View A.
2. Press **[Pairing]**. View A.
3. To add a additional display, enter **[Display ID 2]**.
4. Activate the toggle **[Search for Device (40s.)]**. The wireless IQC-display will then be in search mode for 40 seconds. Make the unit visible for pairing by turning power to the unit off and on. View B and C.
5. The IQC-Display restarts, if it is fixed connected to the unit.
6. If the IQC Display cannot be found, the following is displayed **[Pairing units failed]**. No unit found] in the display. The wireless display returns to the menu **[Device pairing]**. Repeat step 4.
7. If the unit is found, the following is displayed **[Unit found. Pairing key:]** (unique number).
8. Press **[OK]** to confirm.
9. The wireless display now starts to synchronise data from the unit.
10. Pairing of the IQC Display is complete.



View A



View C



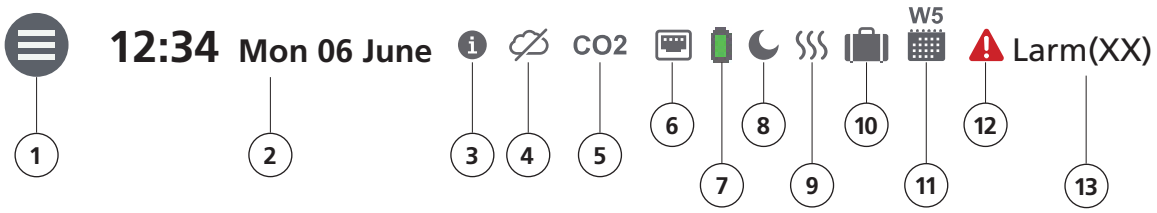
View B

10.2 The Display mode – Home screen simple and advanced

There are two home screens – **Home screen simple** and **Home screen advanced**.

10.2.1 Status bar icons of the Home screen – both simple and advanced screen

Figure between paragraphs is how many different stages there are of each place holder in the status bar. The empty frame marks there's no icon is showing in the status bar. The following variable symbols can be displayed in the status bar:



1. **Main menu**
2. **Date and time**
3. **Information about the active view**
4. **Status cloud connection (3)**
   - Not activated
   - Connection off
   - Connection on
5. **Air quality compensation for high level of a sensor (4)**
   - The limit value has not been reached
   - CO2 — Demand-controlled flow increase to set limit value (air quality).
   - VOC — Demand-controlled flow increase to set limit value (air quality).
   - RH — Demand-controlled flow increase to set limit value (air quality).
6. **Radio or cable connected communication (5)**
   - Radio connected
   - Cable connected (connected to dock)
7. **Battery level flashing when charging (5)**
8. **Night cooling active (2)**
   - Not active
   - Night cooling active
9. **Heater/Cooler active (3)**
   - Non active
   - Heating active
   - Cooling active
10. **Away mode (2)**
    - Not active
    - Active
11. **Active program, program no. 5 (3)**
    - No program
    - W5 — Week program
    - H5 — Holiday program
12. **Alarm active (4)**
    - No Alarm
    - Visible temporary at upstart
    - B-Alarm
    - A-Alarm
13. **Only active if there is a alarm in nr. 12**

10.2.2 Entering the basic settings for IQC Display

1. Open the main menu, select **[Settings]**.
2. Select [**General]**.
3. Select [**Language]** from the list.
4. Enter [**Date].**
5. Enter [**Time]**.
6. Select **[Measurement system]** from the list.
7. Select **[Time forma]t** from the list.
8. Select **[Time zone]** from the list.

10.2.3 Use the main menu

1. Open the main menu: Press on the **[main menu]** button in the upper left corner. Scroll through the menus using your finger.
2. Close the main menu to return to the home screen: Press button **[X]** in the upper left corner.

10.2.4 Select preset home screen

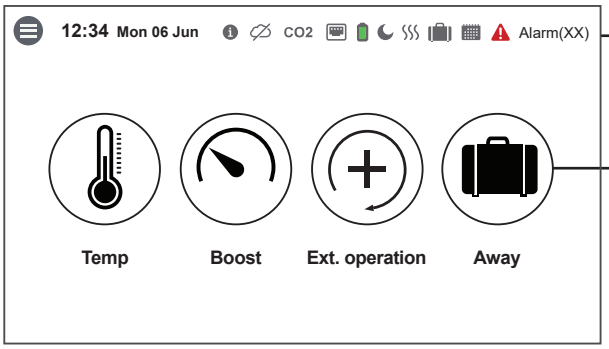
The preset choice is **Home screen** simple.

To select **Home screen advanced** as standard view, perform the following steps:

1. Open the main menu, select **[Settings]**.
2. Select **[General]**.
3. Scroll right down the menu and activate the toggle for **Home screen advanced**.
4. Return to the main menu. Press on the **[main menu]** button in the upper left corner.
5. Return to the home screen. Press button **[X]** in the upper left corner.

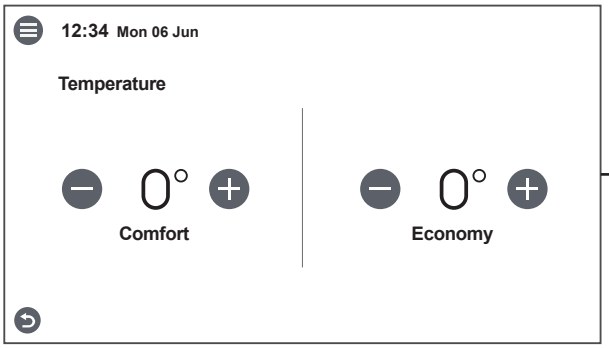
10.3 Home screens

10.3.1 Home screen simple



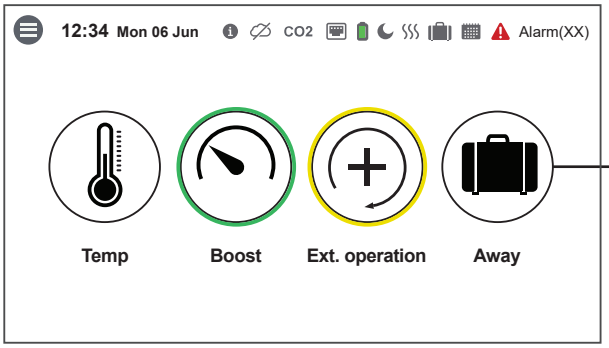
Status bar, all symbols have a explaining text. Just press the symbol.

Hotkeys to activate or deactivate functions for the modes:
Boost,
Extended Operation
Away mode
Boost are also animated. For access to all Hotkeys, just press the screen.



Press the Hotkey "Temp" for the settings menu to set the desired indoor temperature

If eco setpoint is activated, you can also set an eco temperature that can be used for scheduling. This gives the opportunity to choose which temperature setting the schedule should use, either comfort or economy.



If a Hotkey is active there is a colored ring around the symbol. Green if it´s active, yellow if it active but an another Hotkey has priority.

In this example, Boost is active and Ext. Operation is active, but Ext. Operation is inactivated by Boost.

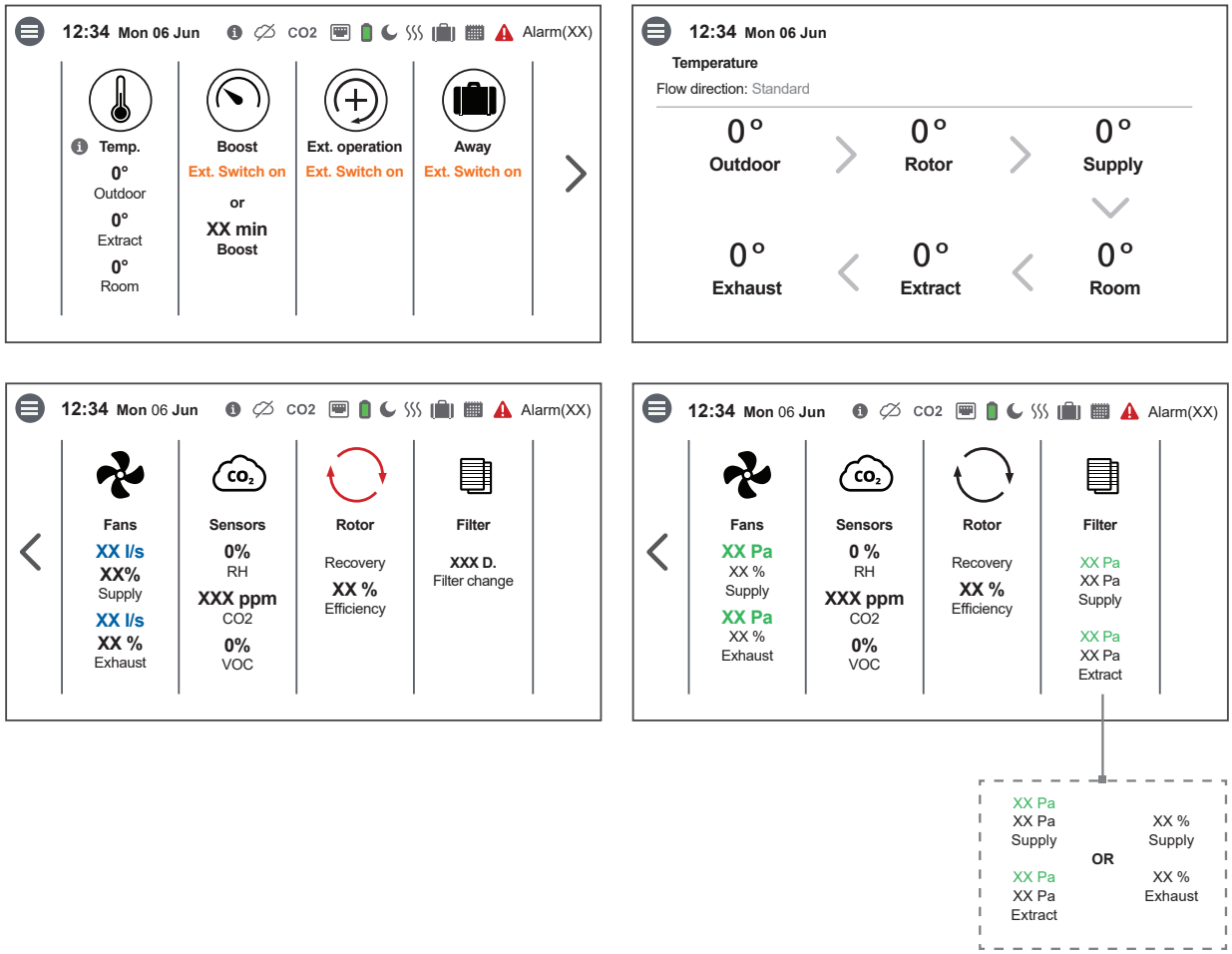
Boost has the highest priority. Ext. Operation has priority over away.

10.3.2 Home screen advanced

Home screen advanced shows the same status and hotkeys as Home screen simple, Home screen advanced shows more information on hotkey status, not just on/off. An extra page of information on operation of the HERU units is also available.

If a Hotkey is active there is a colored ring around the symbol. Green if it´s active, yellow if it's activated but inactive because an another Hotkey has priority.

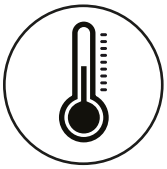
See Home screen simple for color example. Boost, Fans, and Rotor are animated.In this example, Boost is active and Ext. Operation is active but inactivated by Boost**.** Boost has the highest priority. If there is an external switch activated it can be shown under Boost, Ext. Operation and Away.



- **Temperature** – shows three different temperature sensors value
- **Boost** – has the possibility to show either if an external switch is activated or the timer.
- **Overpressure** – the flame is animated when active, colored ring shows that the function is active. Extended Operation and Overpressure share the same position**.**
- **Extended Operation** – has the possibility to show either if an external switch is activated or the timer.
- **Away** – has the possibility to show either if an external switch is activated or the timer.
- **Fans** – the symbol rotates when fans are active. Under the symbol there are two different informations depending on which one are chosen, flow or pressure.
- **Sensor symbol** – shows which different types of sensors that are connected.
- **Rotor** – the symbol can be grey, blue or red – it also rotate when the rotor is operating. Color depends on if the unit is performing cool recovery (blue symbol) or heat recovery (red symbol). It also shows the temperature efficiency in %.
- **Filter** – has three different possibilitys, timer, pressure mode or speed increase.

10.4 Hotkey function

10.4.1 Temperature



1. Press on the icon for temperature.
2. Set desired temperature. Use the buttons **-** and **+**.
3. Return to the home screen. Press on the arrow in the bottom left corner or on the main menu button in the upper left corner.

10.4.2 Boost

NOTE! The preset time for boost operation is 30 minutes. Longer boost-time may lead to higher energy consumption.

Boosting the unit

1. Press on the icon **Boost**. Operation in boost mode is shown with a green circle around the icon. Deactivate by clicking on the icon again.
2. Increases fan speeds to Max fan speed for specified period.

Change operating time for boost

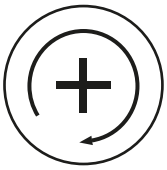
1. Open the main menu, select **Service**.
2. Log in. Enter code **1199**.
3. Select **Setup**.
4. Scroll down to **Boost** and change the operating time.
5. Return to the main menu. Press on the **main menu button** in the upper left corner.
6. Return to the home screen. Press button **[X]** in the upper left corner.

Function

- Boost is activated or deactivated in display direct on home screen or by external pulse or switch signal connected on external input on main board.
- When activated Max fan speed will be applied until period expires or deactivated from display or ext. pulse signal / switch.
- Boost settings is made under service menu in display. Duration: 10-240 Min.

- External pulse or switch can be used to turn function on and off (even if period has not expired).
- Which signal type that is used on boost input, can be selected in peripherals menu. Two signal types can be selected: Pulse or Switch.
  - Pulse: One momentary pulse on external input will apply boost until period expires or function is deactivated via home screen or receiving another pulse on external input.
  - Switch: As long as there is a connection active on the external input, the function will remain active. Function can still be activated via display and run for set period, but external input will be prioritized.
- Input state is configured through peripherals menu in display. It can either be Normally Open (NO) or Normally Closed (NC).
- Boost can be applied over demand control function.
- Boost is automatically turned off by any of the following:
  - User Boost duration expires.
  - If it is deactivated via home screen or by external pulse or switch signal connected on external input
  - If user overpressure is turned on.

10.4.3 Extended operation



Activate Extended operation

1. Press on the icon **Extended operation**. Operation in Extended operation mode is stated with a green circle around the icon. Deactivate by clicking on the icon again.
2. Wakes unit from scheduled standby or increases fan speeds from Min fan speed to Standard fan speed for specified period.

Change operating time for Extended operation function

1. Open the main menu, select **Service**.
2. Log in. Enter code **1199**.
3. Select **Setup**.
4. Scroll down to **Extended operation** and change the operating time.
5. Return to the main menu. Press on the **main menu button** in the upper left corner.
6. Return to the home screen. Press button **[X]** in the upper left corner.

Function

- Extended operation is activated or deactivated in display direct on home screen or by external pulse or switch signal connected on external input on main board.
- Extended operation has priority over scheduler. When activated, a unit in scheduled standby will be started up and standard fan speed will be applied until period expires or deactivated from display or ext. pulse signal / switch.
- If unit is running in away mode, standard fan speed will be applied until period expires or deactivated from display or ext. pulse signal / switch.
- External pulse or switch can be used to turn function on and off (even if period has not expired).
- Which signal type that is used on extended operation input, can be selected in peripherals menu. Two signal types can be selected: Pulse or Switch.
  - Pulse: One momentary pulse on external input will apply boost until period expires or function is deactivated via home screen or receiving another pulse on external input.
  - Switch: As long as there is a connection active on the external input, the function will remain active. Function can still be activated via display and run for set period, but external input will be prioritized.
- Input state is configured through peripherals menu in display. It can either be Normally Open (NO) or Normally Closed (NC).
- **Boost, Overpressure** and **Demand contro**l function can be applied over extended operation.
- Extended operation is automatically turned off by any of the following:
  - Extended operation duration expires.
  - If it is deactivated via home screen or by external pulse or switch signal connected on external input.

10.4.4 Away

NOTE! The away mode is prioritised and overrides the program planner if both are active simultaneously.

1. Press on the icon **Away**. Operation in away mode is stated with a green circle around the icon. The away mode is active until it is manually deactivated by pressing on the icon again.
2. Decreases fan speeds to Min fan speed for specified period.

Function

- Away function is activated or deactivated in display direct on home screen or by external pulse signal or switch connected on external input on main board.
- When activated Min fan speed will be applied and stays activated until deactivated via display or ext. pulse signal / switch.
- The Boost, Overpressure and demand control functions can be applied over the Away mode.

- External pulse signal or switch can be used to turn function on and off.
- Which signal type that is used on away input, can be selected in peripherals menu. Two signal types can be selected: Pulse or Switch.
  - Pulse: One momentary pulse on external input will activate will apply away mode and stay active until deactivated via home screen or receiving another pulse on external input.
  - Switch: As long as there is a connection active on the external input, the function will remain active. Function can still be activated via display, but external input will be prioritized.
- Input state is configured through peripherals menu in display. It can either be Normally Open (NO) or Normally Closed (NC).

10.5 Activate screen lock

The screen can be locked in order to avoid involuntary changes to the screen.

1. Open the main menu, select **Lock screen**. The screen locks and a padlock is displayed.
2. To unlock the screen, press on the screen and hold for three seconds.

10.6 Scheduling

The Scheduler can be used in both **comfort** and **economy mode**, if the economy temperature is activated.

1. Open the main menu, select **Scheduler**.
2. Select type of schedule – Scheduler or Holiday scheduler.
   The upper icon automatically activates when one or more program is activated.
   When you deactivate this icon, all programs are deactivated.
3. The Holiday scheduler has priority over the scheduler. If there is an inactive Schedule and Holiday Scheduler is made inactive, the Scheduler will be active again.

10.6.1 Scheduler

Both the master toggle and the program toggle must be active (green) for the schedule to work.

1. Select **Program 1** by clicking on it.
2. Enter the selected value.
3. Select **Fan speed**. Select **Min**, **Std**, **Max** or **Standby** (dampers must be installed!) from the drop down list.
4. If economy temperature is activated, select **Temp. Mode**. Select **Comfort** or **Economy** from the drop down list.
5. Click on the button **Save**. The program has activated. In order to deactivate a program, deactivate the toggle to its right.
6. To set several different programs, repeat steps 1 – 5 as required.
7. Return to the main menu. Press on the main **menu button** in the upper left corner.
8. Return to the home screen. Press button **X** in the upper left corner.

Function

- Scheduler allows up to 5 programs.
- Program with lower index is prioritized if programs overlap.
- Each program has equal settings described below.
  - Weekdays: Program is started on selected weekdays only.
  - Start time: Time when program starts.
  - End time: Time when program ends.
  - Fan speed: Ther is four fan speeds to be used, select prefered.
    - Min: Uses the set Min fan speed
    - Standard: Uses the set Standard fan speed
    - Max: Uses the set Max fan speed
    - Standby (dampers must be installed!): Fans are inactive
- Temp. mode: Temperature set point to be used. If Economy set point in activated you can select between comfort or economy set point, else comfort temperature set point will be used.
- The temperature set points are found under temperature set point menu.
- If supply regulation is used, set point temperature will be the desired supply air temperature when program is in use. In other regulation modes, the temperature will be the targeted room or extract air temperature.

Weekdays are the days when program starts. If the end time is less than start time, the end time will be on next day. It is not possible to have single program that starts on Friday 22:00 and ends on Monday 06:00.

E.g: Weekdays = Mon, Tue, and Thu, start time 22:00 and end time 06:00, the program will be used three times a week. 1) from Monday 22:00 to Tuesday 06:00, 2) from Tuesday 22:00 to Wednesday 06:00, and 3) from Thursday 22:00 to Friday 06:00.

10.6.2 Holiday scheduler

Both the master toggle and the program toggle must be active (green) for the schedule to work.

1. Select **Program 1** by clicking on it.
2. Enter the selected value.
3. Select **Fan speed**. Select **Min**, **Std**, **Max** or **Standby** (dampers must be installed!) from the drop down list.
4. If economy temperature is activated, select **Temp. Mode**. Select **Comfort** or **Economy** from the drop down list.
5. Click on the button **Save**. The program has activated. In order to deactivate a program, deactivate the toggle to its right.
6. To set several different programs, repeat steps 1 – 5 as required.
7. Return to the main menu. Press on the main **menu button** in the upper left corner.
8. Return to the home screen. Press button **X** in the upper left corner.

Function

- Holiday scheduler allows up to 10 programs.
- Program with lower index is prioritized if programs overlap.
- Each program has equal settings described below.
  - Start date: Date when the program starts.
  - Start time: Time when program starts.
  - End date: Date when program ends.
  - End time: Time when program end.
  - Fan speed: Ther is four fan speeds to be used, select prefered.
    - Min: Uses the set Min fan speed
    - Standard: Uses the set Standard fan speed
    - Max: Uses the set Max fan speed
    - Standby (dampers must be installed!): Fans are inactive

The program starts at set date and time and then stops att set date and time. When the program is finished, the unit returns to Standard operation mode unless there is a weekly program inactivated by the Holiday program.

10.7 Turn the unit off and on

1. Starting the unit. Power on the All-pole disconnect safety switch.
2. Press on the display and click on **OK** to the question **Start unit**?.
3. Turning off the unit. Open the main menu, scroll down and select **Turn off the unit**.

10.8 Use of the Alarm menu

1. Open the main menu, select **Alarm**.
2. Select **Active alarms** to see all active alarms.
3. After managing an active alarm, the active message for the alarm is cleared.
   - Click on the alarm to reset it. In the dialogue box displayed, select **Reset**.
   - In order to reset all active alarms, click on **Reset all** in the upper right corner in **Active alarms**.
4. Select **Alarm history** to see all previous alarms.
5. Return to the main menu. Press on the **main menu button** in the upper left corner.
6. Return to the home screen. Press button **X** in the upper left corner.

10.9 Update firmware in the ventilation unit

- Please read the procedure below before starting the update procedure.
- Download the latest version of software (in the form of a .zip), see "Downloads" below.
- Save and open the zip folder in a convenient location on your computer's disk drive.
- Unzip the downloaded file (usually by double-clicking).
- Then right-click on the file that has the .m3f extension and select copy.

Update procedure

1. Make sure the unit has power. The unit does not have to be switched on.
2. Connect the display unit to the computer with a Micro USB type USB cable for data transfer.
3. The display unit appears as a storage device in the computer. You may need to select what action to take when the display unit is found. Select the option that opens the device in the file manager. The display should show "Installation Menu" when connected correctly.
4. In file manager, right-click on the display storage device and select paste the file with the extension .m3f (previously copied).
5. The display starts the update immediately. First, the display is updated. The update process can be seen in the display (0-100%). A short verification (0-100%) is then performed before the display restarts.
6. After the display has restarted, it can be disconnected from the computer.
7. Ensure that the display get connection to the unit via the docking station or wireless connection. The display synchronizes with the unit and evaluates the existing version in the main board.
8. If two displays are used, see also point 11.
9. If the main board in the unit has a lower version than the updated display, the display will also start updating the main board. The update process for "main board update" is shown in the display (0-100%). Then the unit will start up for normal operation.
10. In some cases, when using wireless connection, the display may need to be paired again after an update. If so, continue in the section Device Pairing.
11. If two displays are used and are paired with the unit, the main board is only updated from the master display. (has ID number 1, see under Menu/Service (1199)/Device pairing). If two displays are used, then repeat steps 2-6 for the second display.
12. Verify that the downloaded version has been correctly installed on both the display and the main board by going to Menu/Settings/About.
13. Update of display and unit is now ready.

11 Service and maintenance

WARNING! In accordance with IEC 60335-2-40, this apparatus is not intended to be used by people (including children) who have physical, sensory or psychological impairment, or lack of experience and knowledge, unless they have received guidance and instruction on how to use the apparatus by a person who is responsible for their safety. Children must be supervised to ensure that they do not play with the apparatus.

CAUTION! Always turn off the unit with the wireless display before disconnecting the power.

WARNING! The power supply to the unit must turned off before service or maintenance is started.

WARNING! The electric after heater may still be hot after the power has been disconnected for maintenance.

WARNING! Watch out for sharp edges and corners on the unit.

WARNING! Beware of the weight of the rotor and fans.

WARNING! Breathing protection and protective clothing must be used due to the risk of breathing in and spreading dust when handling a used filter.

WARNING! Protective gloves must be worn due to the risk of cuts or injury.

The user may perform maintenance in accordance with EN 60335–2–40. Follow the routines for returning and disposing of replaced parts and packaging material.

Disposable items

- Protective gloves
- Breathing protection (minimum class FFP2 as per standard EN149+A1:2009 or equivalent)
- Protective clothing.

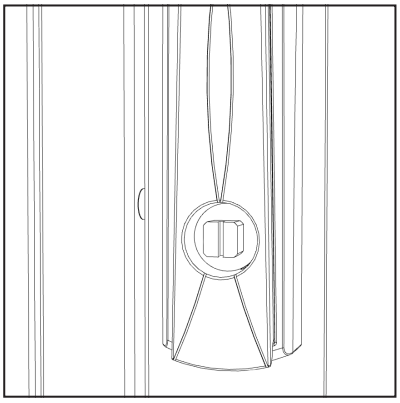
11.1 Guide for – open doors – remove filter, Guide för – öppna dörrar – ta bort filterfläktar och rotor fans and rotor

Turn off the unit.

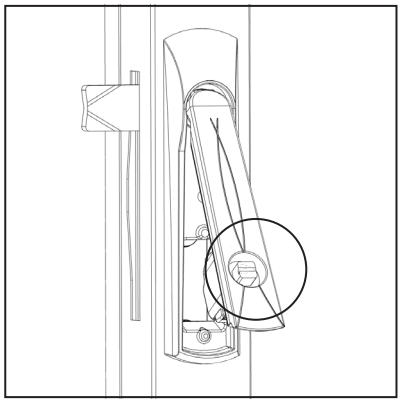
Turn off the power supply and ensure that it cannot be turned on by mistake.

11.1.1 Open doors

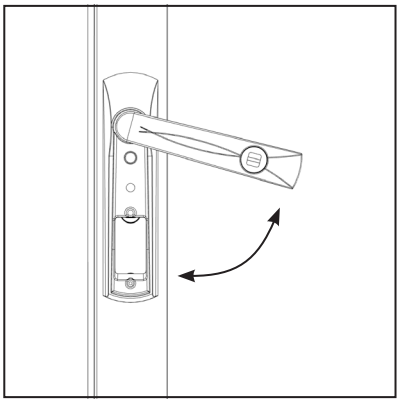
WARNING! The power supply to the unit must turned off before service or maintenance is started.



View A – Door lock



View B – Door handle released.



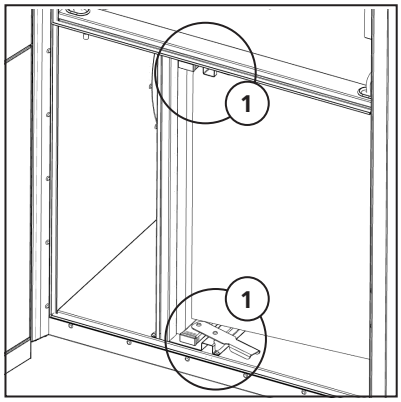
View C – Door handle open.

HERU Select 500 have one handles on each door, HERU Select 1000 and HERU Select 1500 have two handles per door.

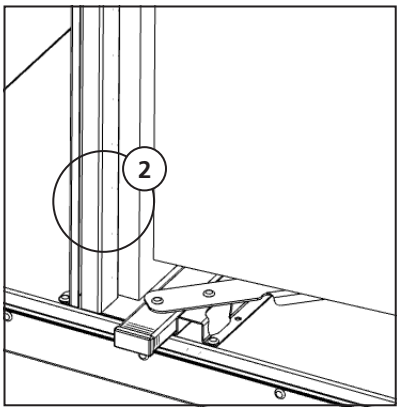
1. Open the doors by turning the lock with a screwdriver or similar, 90 degrees clockwise and lift the handle outwards simultaneously. Then turn the handle upwards in the direction inwards – ”against the middle of the door.” View A, B and C.

11.1.2 Removing the filters

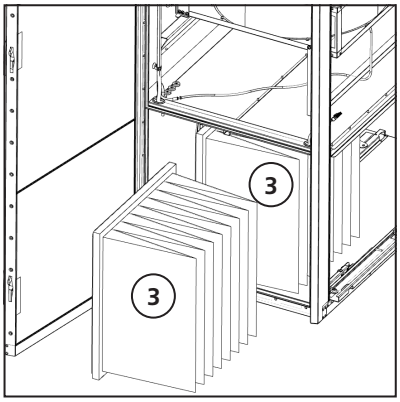
WARNING! Protective gloves must be worn due to the risk of cuts or injury.



View D – Filter lock levers



View E – Lever unlocked position



View F – Filter removed.

1. Remove the filters by pushing the levers (1) inwards, both at the bottom and top of the filter compartment. Pull out the filters (3), HERU Select 500 have one filter per cabinet. HERU Select 1000 and HERU Select 1500 have two filters per cabinet. View D, E and F.
2. Slide in the new filters, ensure that the filters are behind the edge (2).
3. Pull the levers (1) outwards to lock the filters in place. Both at the bottom and top of the filters.
4. Close and lock the doors, conversely opening the doors. No need to use the locks. View B and C.

WARNING! Check that no persons, animals or foreign objects are in the unit when the doors are closed.

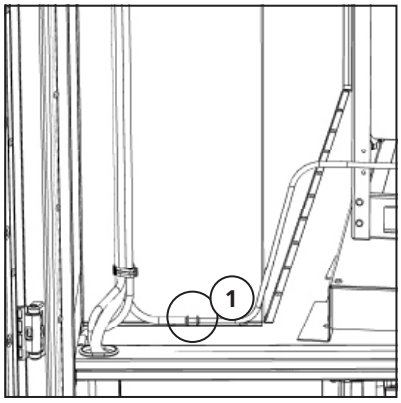
5. If a filter timer is used, this must be reset.
   1. Open the main menu, select **[Service]**.
   2. Log in. Enter code **[1199]**.
   3. Press **[OK]**.
   4. Select [Setup].
   5. Under Filter measurement, click Reset.
   6. In the dialogue box displayed, select Reset.
   7. Return to the main menu. Press on the main menu button in the upper left corner.
   8. Return to the home screen. Press on the X in the upper left corner. (If the unit is on)

11.1.3 Removing the fans – HERU Select top connected

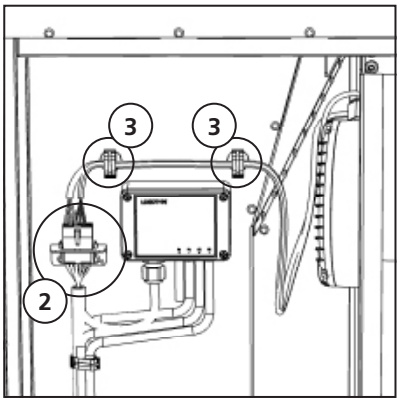
WARNING! Beware of the weight of the fans.

WARNING! Protective gloves must be worn due to the risk of cuts or injury.

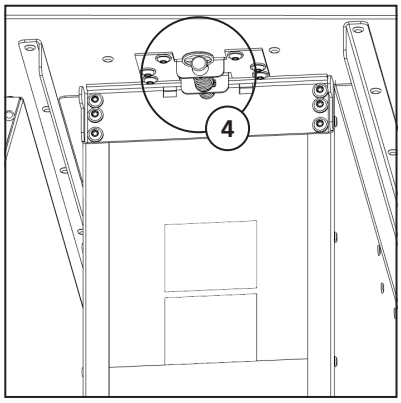
WARNING! Beware of pinching cables and tubes when both disassemble and assemble the fans.



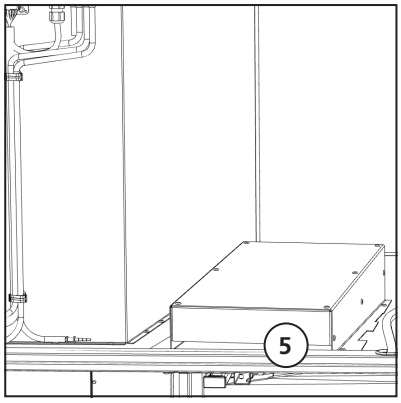
View G:1 – Tube connector.



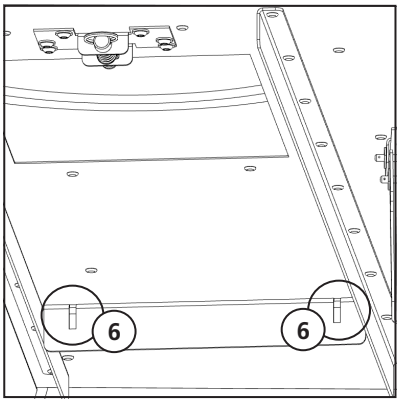
View G:2 – Electric connector.



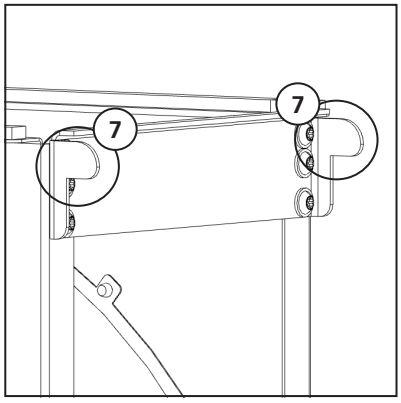
View H – Fan lock.



View I – Fan removed – with fan ramp.



View J – Slit for fan suspension.



View K – Hooks and slits for fan suspension.

There are small differences between right and left cabinets, but the handling is the same.

1. Disassemble the tube connector (1), the electric connector (2) and loosen the two clips (3). View G.
2. Hold the fan and pull the handle on the fan lock (4), Let the fan drop down on the ramp (5). Pull the fan straight out. View H and I.
3. Clean the fans with a dry cloth.
4. When remounting the fans beware of the slits (6) in the trailing edge. View J.
5. Push the fan in, on the ramp (5), ensure that the hooks (7) on the fan is fitted to the slits (6). View J and K.
6. Pull out the handle (4), lift the fan in place and release the handle. View H.
7. Ensure that the fan is locked and secured.
8. Reconnect the electric connector (2), the cable clamps (3) and the tube to the tube connector (1). View G.

WARNING! Check that no persons, animals or foreign objects are in the unit when the doors are closed.

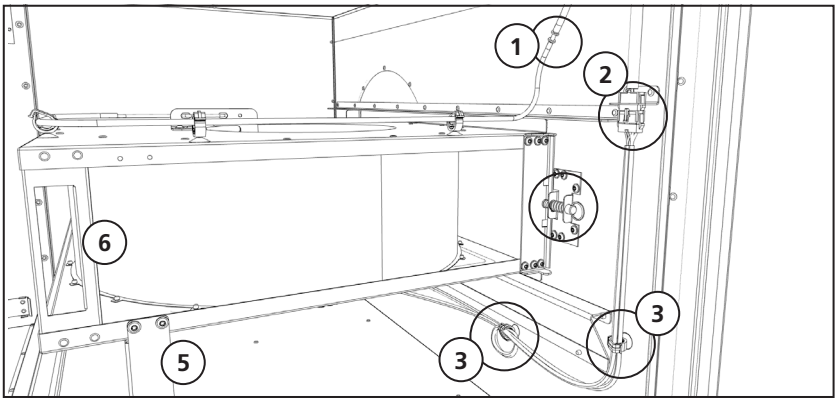
9. Close and lock the doors, conversely opening the doors. View B and C.

11.1.4 Removing the fans – HERU Select side connected

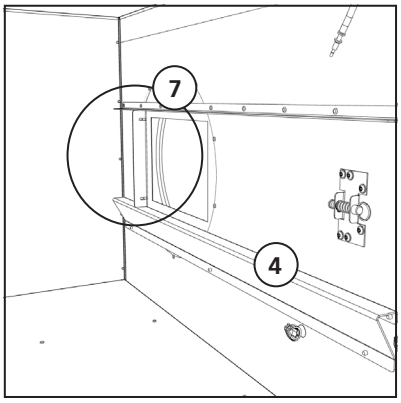
WARNING! Beware of the weight of the fans.

WARNING! Protective gloves must be worn due to the risk of cuts or injury.

WARNING! Beware of pinching cables and tubes when both disassemble and assemble the fans.



View L – Electric and tube connector. Fan lock and wire clips.



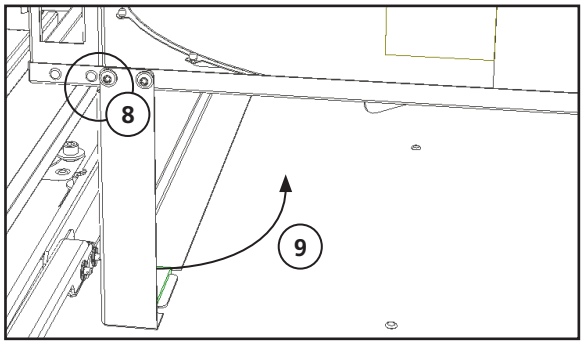
View M – Fan removed - slits for suspension..

There are small differences between right and left cabinets, but the handling is the same.

1. Disconnect the tube connector (1), the electric connector (2) and loosen the two clips (3). View L
2. The fan is supported by the ledge (4) and the other side is supported by the fan leg (5). View M.
3. Release the lock by pulling the ring Pull the handle (6). For HERU 500; unscrew the screw (8) that locks the fan leg in a straight position (the screw closest to the end of the fan unit) and fold the leg (9). !!WATCH YOUR FINGERS!! View N. Pull the fan out. View M.
4. Clean the fans with a dry cloth.
5. When remounting the fans beware of the slits (7) in the trailing edge. View M.
6. Push the fan in on the ledge (4), ensure that the hooks on the fan is fitted to the slits (7). View M.
7. Pull out the handle (6), lift the fan in place and release the handle. View M.
8. Ensure that the fan is locked and secured.
9. Reconnect the electric connector (2), the cable clamps (3) and the tube to the tube connector. (1). View L.

WARNING! Check that no persons, animals or foreign objects are in the unit when the doors are closed.

10. Close and lock the doors, conversely opening the doors. No need to use the locks. View B and C.



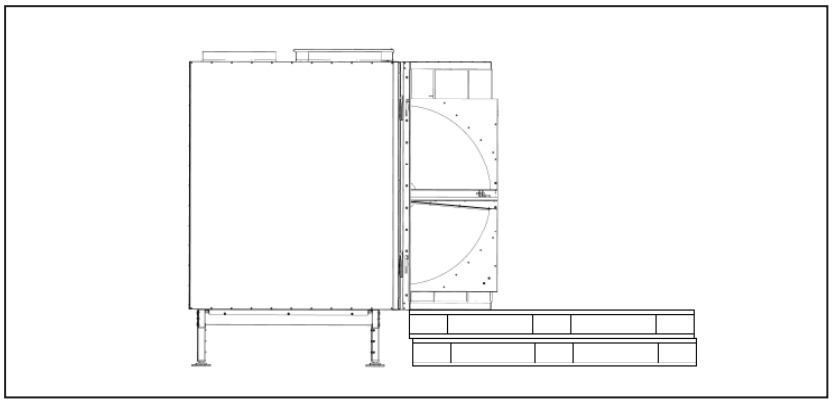
View N – HERU Select 500

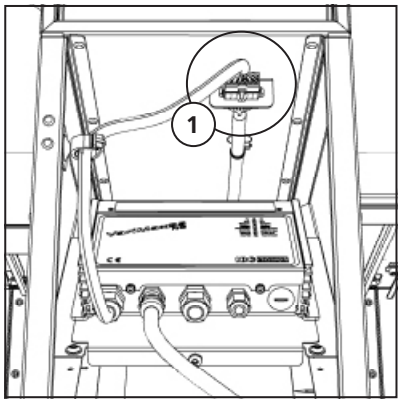
11.1.5 Removing the rotor package

WARNING! Beware of the weight of the rotor.

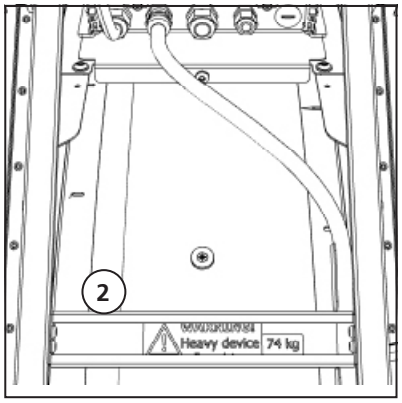
WARNING! Protective gloves must be worn due to the risk of cuts or injury.

CAUTION! The walls of the rotor is fragile, avoid mechanical contact and high air pressure.

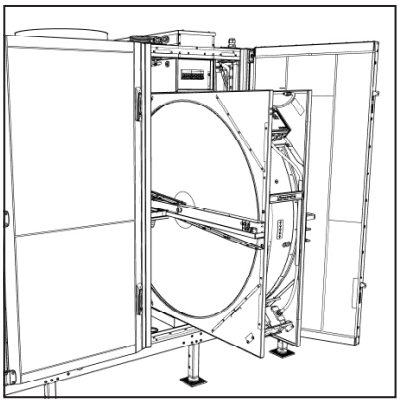




View O – Rotor connection.



View P – Rotor handle.



View Q – Rotor pulled out.

Because the weight off the rotor package, use a pallets or similar to support the rotor package, A pallets is preferably when it enables the use of a pallet lift.

1. Disconnect the rotor package electric connector (1). View O.
2. Use the handle (2) pull out the rotor package. Pull it out half it's depth. View P and Q
3. Inspect the rotor channels, preferably with a flashlight. Turn the rotor by hand for full inspection.
4. If the channels of the rotor is soiled – Use with precaution compressed air or a vacuum cleaner. Make sure that there is no mechanical contact between the cleaning tool and the rotor, as the foil inside the rotor is very fragile. The force of compressed air with too high a pressure can bend the end of the foil, thereby obstructing the path of the air through the rotor.

WARNING! Check that no persons, animals or foreign objects are in the unit when the doors are closed.

5. Close and lock the doors, conversely opening the doors. View B and C.

11.2 Maintenance schedule

Maintenance inspections must be performed according to the schedule below.

The unit must not be repaired directly by the user. Contact the dealer in the event of any fault and if interruptions to operation are noticed.

Operation	Every six months	At least once a year	Regularly
Inspect and visually check supply fan and exhaust fan.	X		
Clean fans and change filter		X	
Rotor inspection and if required cleaning		X	
Check rotor control unit – Variomax 25 NG			X

11.2.1 Maintenance every six months

Turn off the unit. Turn off the power supply and ensure that it cannot be turned on by mistake.

1. Inspect and visually check supply fan and exhaust fan.

11.2.2 Maintenance every year

Turn off the unit. Turn off power supply and ensure that it cannot be turned on by mistake.

1. Clean fans and change filter.
2. Rotor inspection and if required cleaning.
3. Inspect rotor strips and change if needed.

11.2.3 Regularly

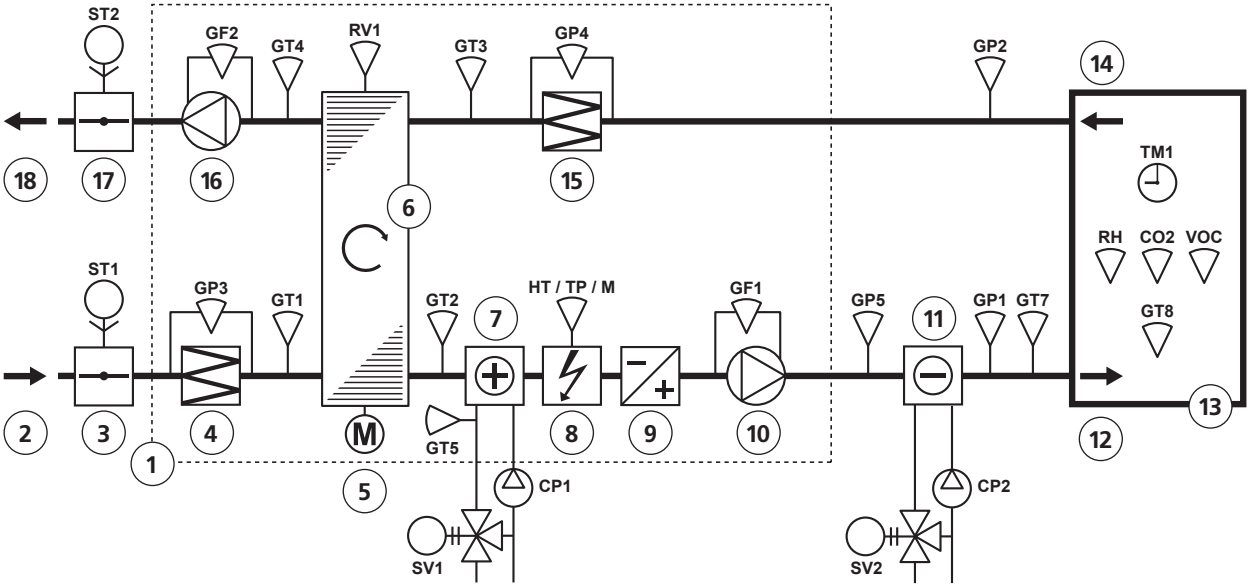
1. Control the functions of the control unit Variomax 25 NG

11.3 Accessories and spare parts

Function is only guaranteed with accessories from H. Östberg's range.

For a complete list of accessories and spare parts for each model, visit www.ostberg.com or contact your nearest HERU dealer.

12 Control diagram



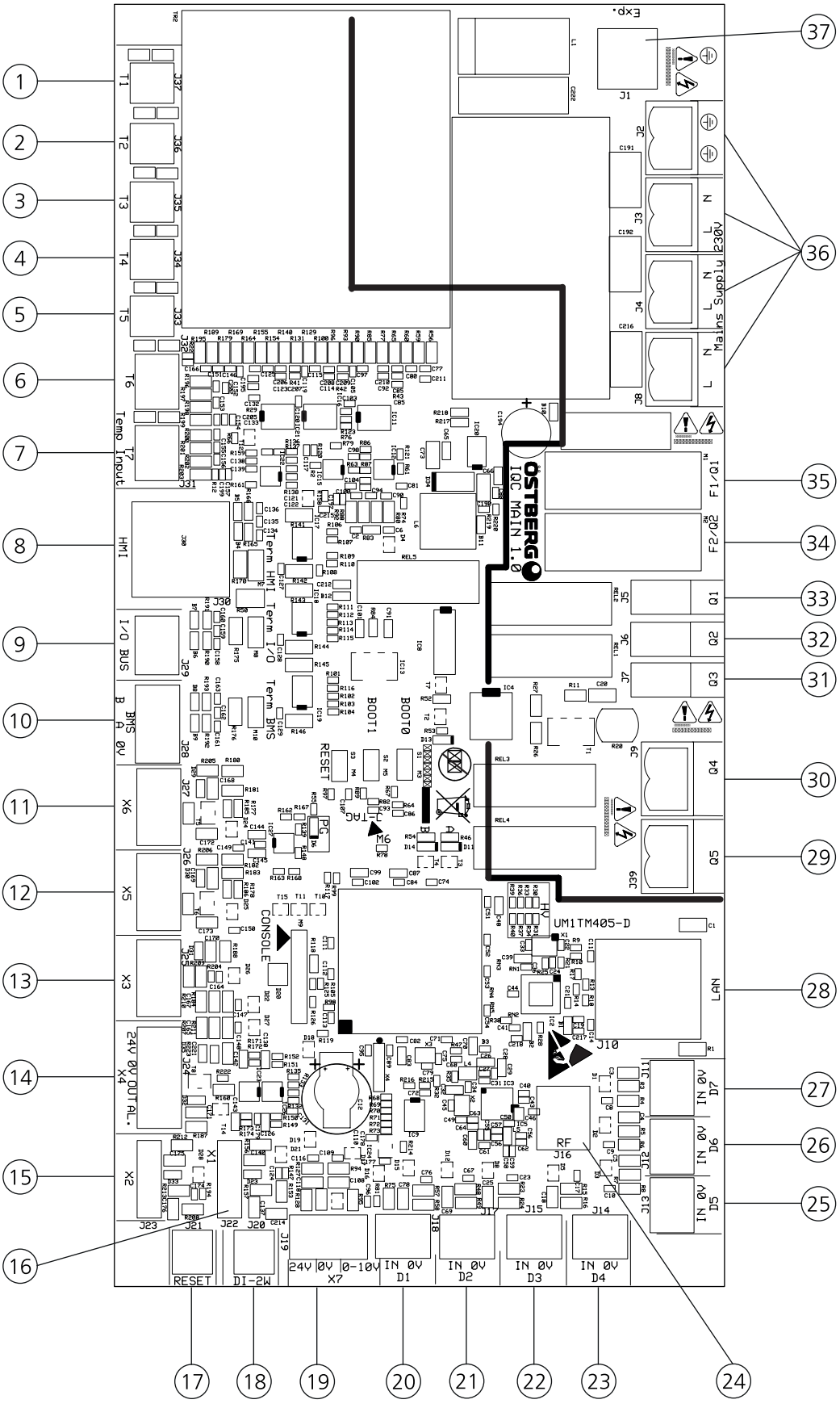
1. HERU Select
2. Outdoor air
3. ST1 Damper actuator 1 (spring return)
4. Supply Filter
5. Rotor control
6. Heat exchanger
7. Water battery
8. Electrical battery
9. CHP Reversible heat pump
10. SF Supply fan
11. Cooling coil
12. Supply air
13. Room
14. Extract air
15. Exhaust filter
16. EF Exhaust fan
17. ST2 Damper actuator 2 (spring return)
18. Exhaust air

CP1	Circulation pump heat
CP2	Circulation pump cooling
GF1	Flow sensor supply fan
GF2	Flow sensor exhaust fan

RH	Humidity sensor
GT1	Temperature sensor 1 – Outdoor air Opposite flow direction – Extract air
GT2	Temperature sensor 2 – Supply air Opposite flow direction – Exhaust air
GT3	Temperature sensor 3 Extract air Opposite flow direction – Outdoor air
GT4	Temperature sensor 4 Exhaust air Opposite flow direction – Supply air
GT5	Freeze protection sensor
GT7	Duct sensor supply air
GT8	Room sensor temperature
GP1	Duct pressure supply air
GP2	Duct pressure Extract air
GP3	Filter pressure sensor Outdoor air
GP4	Filter pressure sensor Extract air
GP5	Flow monitor ELB
CO2	Air quality sensor CO_2
HT-TP-M	Manual overheating protection
RV1	Rotation monitor
SV1	Motor actuator heat
SV2	Motor actuator cooling
TM1	Timer
VOC	Air quality sensor VOC

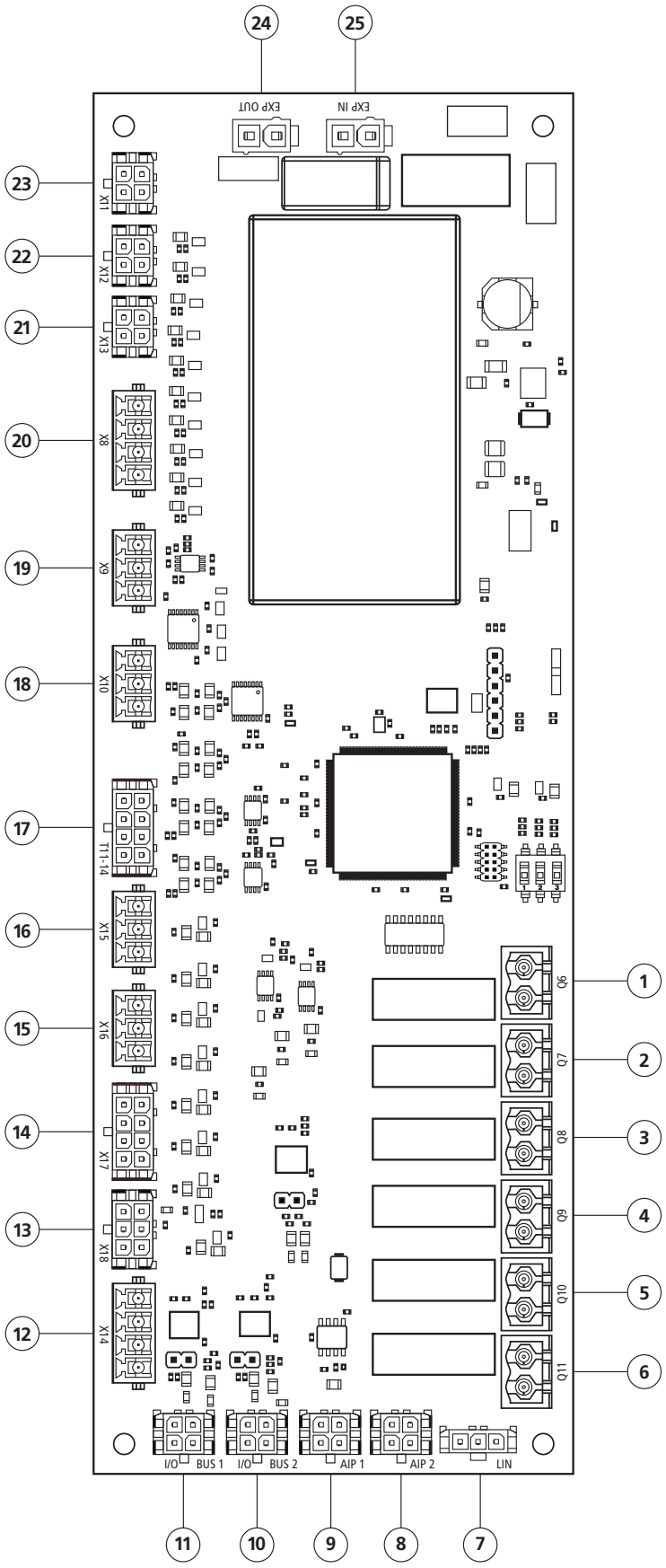
13 Connections – main and expansion board

13.1 Main Board



Pos.	PCB label	Description
1	T1	Internal temperature sensor
2	T2	Internal temperature sensor
3	T3	Internal temperature sensor
4	T4	Internal temperature sensor
5	T5	Freeze protection sensor
6	T6	Supply duct sensor (GT7)
7	T7	Room sensor (GT8)
8	HMI	Display port RJ45 (black)
9	I/O Bus	I/O Bus
10	BMS	RS 485 Modbus (slave)
11	X6	Pre heater control output
12	X5	After-heater control output
13	X3	Recovery control output
14	X4	Heating coil control Output (Analogue out 0-10V / 24VAC 1,5VA)
15	X2	Fan 2 control output
16	X1	Fan 1 control output
17	Reset	External Reset
18	DI-2W	Rotor sensor (HALL)
19	X7	RH/CO2/VOC (Analogue input 0-10V / 24VAC 1,3VA)
20	D1	Fire alarm (Digital input (floating))
21	D2	Boost (Digital input (floating))
22	D3	Overpressure (Digital input (floating))
23	D4	Extended Operation (Digital input (floating))
24	RF	SMA antenna output
25	D5	Away (Digital input (floating))
26	D6	Filter alarm (Digital input (floating))
27	D7	Electric heater Interlock (Digital input (floating))
28	LAN	10/100 Mbit Ethernet RJ-45
29	Q5	Floating output for pump – heat
30	Q4	Damper (Digital relay output (NO))
31	Q3	Triac (Digital relay output (NO))
32	Q2	Fan 2 Power (Digital relay output (NO))
33	Q1	Fan 1 Power (Digital relay output (NO))
34	F2/Q2	Glass fuse T2.5A 5x20 L250V Fan 2
35	F1/Q1	Glass fuse T2.5A 5x20 L250V Fan 1
36	L/N L/N L/N PE	Main supply 230V Main supply 230V Main supply 230V Ground
37	Exp.	Power to Expansion board

13.2 Expansion Board



Pos.	PCB label	Description
1.	Q6	Pump cooling
2.	Q7	DX-Pump prohibit
3.	Q8	Gas alarm
4.	Q9	A-Alarm relay
5.	Q10	B-Alarm relay
6.	Q11	Operating relay
7.	LIN	Not in use
8.	AIP B	Data bus for external and internal accessories
9.	AIP A	Data bus for external and internal accessories
10.	I/O Bus 2	Internal bus
11.	I/O Bus 1	Internal bus
12.	X14	Cooling
13.	X18	Not in use
14.	X17	PAC-IF013 Pre-Defrost / Defrost /Error
15.	X16	Gas detector
16.	X15	Summer / Winter Adjustment – Emergency / Service stop
17.	T11-T14	Not in use
18.	X10	Set value adjustment comfort temperature
19.	X9	S3 (CO2/RH/VOC)
20.	X8	S2 (CO2/RH/VOC + Temp)
21.	X13	Filter / Flow
22.	X12	Filter / Flow
23.	X11	Duct
24.	Exp out	Connection voltage
25.	Exp in	Connection voltage

14 Troubleshooting

14.1 Alarm

There are two types of alarms: Alarm A and Alarm B. Alarm A is a critical alarm that turns off the unit. Alarm B is an alarm that can affect operation but that does not cause damage to the unit.

When an alarm is activated, a dialogue box opens and a notification of an active alarm is shown in the upper right corner of the IQC Display. Click on the alarm symbol to see all active alarms.

Alarm	Cause	Action
Filter	The filters are dirty.	Change the filters.
Filter timer	The set time for filter measurement has been reached.	
Sensor open	The connection to the main board has been broken. The sensor is broken.	Check which sensor is activated. Check the connection to the main board. If the fault remains, change the broken sensor.
	The settings for heater and control mode are incorrect.	Adjust the settings for heater and control mode.
Sensor shorted	The connection to the main board has been broken. The sensor is broken.	Check which sensor is activated. Check the connection to the main board. If the fault remains, change the broken sensor.
Rotor stop	Rotor, rotor motor, rotor sensor or rotor belt are broken.	Check that the rotor, rotor motor, rotor sensor and rotor belt are intact. Change the broken part if needed.
Overheating	The overheating protection in the electric after heater has triggered.	**WARNING!** Power to the unit must be cut. Check if the manual overheating protection in the electric after heater has triggered. Reset the manual overheating protection and reset the alarm.
Supply air low	The filters are dirty.	Change the filters.
	Rotor belt slips.	Replace the rotor belt.
	The electric after heater does not work.	Ensure that the electric after heater is working before start-up. If not, check that the connections are faultless. If the connections are faultless, change the electric after heater.
	The flow direction is not correctly set.	Adjust the settings for flow direction.
Rotor temperature low	The filters are dirty.	Change the filters.
	Rotor belt slips.	Replace the rotor belt.
	The rotor is stuck.	Ensure that the rotor can rotate freely.
Fire alarm	The access to the fire alarm has been activated. Alarm signal from external alarm units.	Check that the correct input function has been selected. Ensure that the external alarm units working as they should before start-up.
Freeze protection	There is not enough heat capacity in the heating coil.	Ensure that the heating coil is working before start-up.
	The valve actuator does not open as it should.	Ensure that the valve actuator is working before start-up.
Motor failure	No power or signal to the fans and the quick connectors.	Check that the fan is working, otherwise change the broken fan before start-up. Check that the fan has been connected in the right way.
	The fan wheel is blocked.	Ensure that the fan wheel turns freely before start-up.

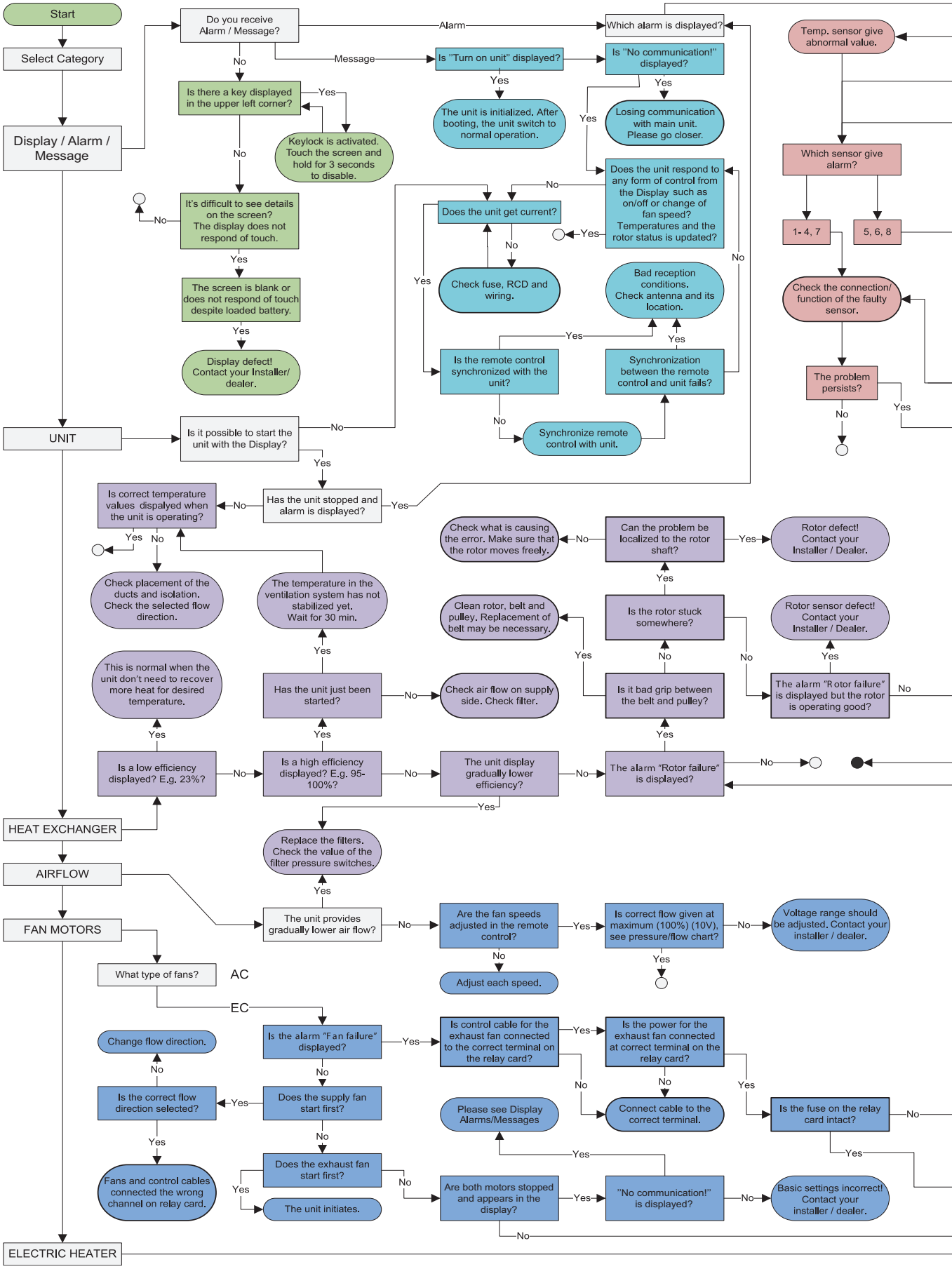
14.2 Other malfunctions

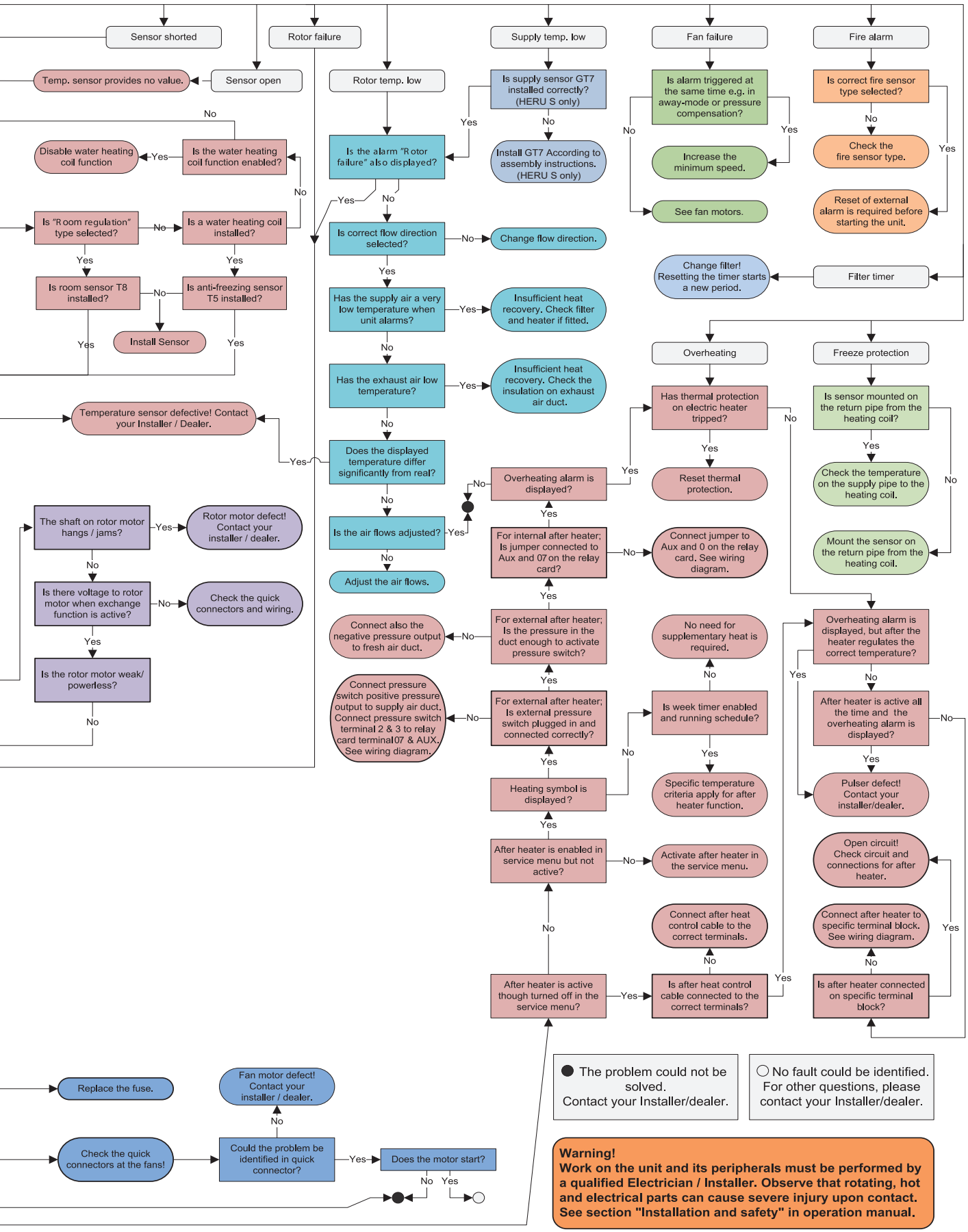
Hardware failure	Cause	Action
Nothing appears on the display in wireless mode	The batteries are discharged.	Connect the charger.
The display does not react to contact.	The screen lock is activated.	Press on the screen and hold for 3 seconds.
The unit does not start.	The unit receives no power.	Check the fuse, residual current device and connections.
	The activate mode is "Off".	Change the mode to "On".
	The unit is not correctly connected.	Connect the unit correctly.
	Other active alarm.	See 14.1 Alarm.
The unit has stopped.	The unit receives no power.	Check the fuse and the safety switch.
	There is an active alarm.	Check the cause of the alarm. Once the fault has been resolved, reset the alarm. See 8.1 Alarm.
	The flow direction is not correctly set.	Adjust the settings for flow direction.
When the unit starts, the display shows the wrong temperature or the alarm for low temperature.	The unit is not correctly installed.	All electrical installations must be performed by a qualified electrician. Order reinstallation if needed.
The supply air or exhaust air flow is low and or the output is too high.	Grille at air intake is obstructed.	Clean the grille.
	The filters for supply air and exhaust air are dirty.	Change the filters.
The unit's output appears too low.	The filters are dirty.	Change the filters.
	The exhaust air temperature is low.	Find the cause of the low temperature. Check the duct insulation. Check the flow speed in the ducts.
The electric after heater is not hot.	The after heater is not activated. Operation is not permitted.	Activate the after heater in the service menu. Check the installation.

If there are malfunctions that cannot be solved with the aid of this information, contact your electrician or dealer.

For a complete list of accessories and spare parts for each model, see www.ostberg.com or contact your nearest HERU dealer.

14.3 Troubleshooting chart




Sensor shorted
Rotor failure
Supply temp. low
Fan failure
Fire alarm
Temp. sensor provides no value.
Sensor open
Rotor temp. low
Is supply sensor GT7 installed correctly? (HERU S only)
Is alarm triggered at the same time e.g. in away-mode or pressure compensation?
Is correct fire sensor type selected?
No
Yes
Disable water heating coil function
Is the water heating coil function enabled?
Is the alarm "Rotor failure" also displayed?
Install GT7 According to assembly instructions. (HERU S only)
Increase the minimum speed.
Check the fire sensor type.
See fan motors.
Reset of external alarm is required before starting the unit.
Is "Room regulation" type selected?
Is a water heating coil installed?
Is correct flow direction selected?
Change flow direction.
Change filter! Resetting the timer starts a new period.
Filter timer
Is room sensor T8 installed?
Is anti-freezing sensor T5 installed?
Install Sensor
Has the supply air a very low temperature when unit alarms?
Insufficient heat recovery. Check filter and heater if fitted.
Overheating
Freeze protection
Has the exhaust air low temperature?
Insufficient heat recovery. Check the insulation on exhaust air duct.
Has thermal protection on electric heater tripped?
Is sensor mounted on the return pipe from the heating coil?
Temperature sensor defective! Contact your Installer / Dealer.
Does the displayed temperature differ significantly from real?
Reset thermal protection.
Check the temperature on the supply pipe to the heating coil.
Overheating alarm is displayed?
Is the air flows adjusted?
Adjust the air flows.
For internal after heater; Is jumper connected to Aux and 07 on the relay card?
Connect jumper to Aux and 0 on the relay card. See wiring diagram.
Mount the sensor on the return pipe from the heating coil.
The shaft on rotor motor hangs / jams?
Rotor motor defect! Contact your installer / dealer.
Is there voltage to rotor motor when exchange function is active?
Check the quick connectors and wiring.
Is the rotor motor weak/ powerless?
Connect also the negative pressure output to fresh air duct.
For external after heater; Is the pressure in the duct enough to activate pressure switch?
No need for supplementary heat is required.
Overheating alarm is displayed, but after the heater regulates the correct temperature?
Connect pressure switch positive pressure output to supply air duct. Connect pressure switch terminal 2 & 3 to relay card terminal 07 & AUX. See wiring diagram.
For external after heater; Is external pressure switch plugged in and connected correctly?
Is week timer enabled and running schedule?
After heater is active all the time and the overheating alarm is displayed?
Heating symbol is displayed?
Specific temperature criteria apply for after heater function.
Pulser defect! Contact your installer/dealer.
After heater is enabled in service menu but not active?
Activate after heater in the service menu.
Open circuit! Check circuit and connections for after heater.
Connect after heat control cable to the correct terminals.
Connect after heater to specific terminal block. See wiring diagram.
After heater is active though turned off in the service menu?
Is after heat control cable connected to the correct terminals?
Is after heater connected on specific terminal block?
Replace the fuse.
Fan motor defect! Contact your installer / dealer.
Check the quick connectors at the fans!
Could the problem be identified in quick connector?
Does the motor start?
● The problem could not be solved. Contact your Installer/dealer.
○ No fault could be identified. For other questions, please contact your Installer/dealer.
Warning!
Work on the unit and its peripherals must be performed by a qualified Electrician / Installer. Observe that rotating, hot and electrical parts can cause severe injury upon contact. See section "Installation and safety" in operation manual.

Appendix 1 Configuration protocol

Setup

Boost ..... min

Overpressure ..... min

Offset ..... %

Ext. Operation ..... min

Night cooling:

☐ Enable ☐ Standby Temp. Evaluation

In/out diff. ..... K

Extract high ..... °C

Extract low ..... °C

Interval ..... h

Evaluation time ..... min

Min Operating time ..... min

Dampers

Opening time: ..... sec

Heater

☐ None ☐ Water ☐ PAC-IF013

Standby temp. ..... °C

Limit B: ..... °C

Limit A: ..... °C

☐ Electric ☐ Aftercooling

Preheater

☐ None ☐ Electric

Limit: ..... °C

Cooling coil

☐ None ☐ Water ☐ PAC-IF013

Switch input

Signal type:

Boost	☐ Pulse	☐ Switch
Away	☐ Pulse	☐ Switch
Extended operation	☐ Pulse	☐ Switch

Switch input contact func:

Fire alarm	☐ None	☐ NO	☐ NC
Boost		☐ NO	☐ NC
Overpressure		☐ NO	☐ NC
Extended operation		☐ NO	☐ NC
Away		☐ NO	☐ NC
Filter		☐ NO	☐ NC
Emergency / Service switch		☐ NO	☐ NC
Summer / Winter switch		☐ NO	☐ NC
Heather pump alarm		☐ NO	☐ NC
Cooler alarm		☐ NO	☐ NC

Emergency / Service Switch

Function switch ☐ None ☐ Em stop ☐ Serv

Emergency / Service Switch

☐ Enable

Limit: ± ..... K

Communication

☐ RS485

Address .....

Baud .....

Stop bit .....

Parity .....

☐ TCP/IP

Port .....

Network

☐ Enable ☐ DHCP

Static:

IP .....

Netmask .....

Gateway .....

DNS .....

Cloud

☐ Enable

Wired communication

☐ Enable

Fan regulation

Flow direction:

☐ Standard ☐ Opposite

Flow display:

☐ None ☐ l/s ☐ m³/h

Regulation mode:

☐ % ☐ CPC ☐ CAV
☐ VAV-SA slave ☐ VAV-EA slave

Standard fan speed:

Exhaust: ..... %

Reference: ..... Pa

Supply: ..... %

Reference: ..... Pa

Min fan speed:

Exhaust: ..... %

Reference: ..... Pa

Supply: ..... %

Reference: ..... Pa

Max fan speed:

Exhaust: ..... %

Reference: ..... Pa

Supply: ..... %

Reference: ..... Pa

Temperature regulation

☐ Supply ☐ Extract ☐ Room

Supply limit min: ..... °C

Supply limit max: ..... °C

☐ Extract S/W ☐ Room S/W

Changeover:

☐ Temp.

Winter start: ..... °C

Summer start: ..... °C

Time constant ..... h

Supply temp. offset: ..... K

☐ Date

Winter start: ..... (MM-DD)

Summer start: ..... (MM-DD)

Supply temp. offset: ..... K

Temperature setpoint

☐ Supply ☐ Extract ☐ Room

Setpoint max limit: ..... °C

Enable eco. setpoint ☐ Yes ☐ No

Alarm parameters

Supply cold:

Limit B: ..... °C

Limit A: ..... °C

Fan reduction: ..... %

Freeze protection Water

Temperature: ..... °C

Limit B: ..... °C

Limit A: ..... °C

Fire parameters

Sensor type:

☐ Not installed ☐ No ☐ NC

Fire mode:

☐ Fans off
☐ Exhaust fan only
☐ Supply fan only
☐ Both fans

Forced fan speed supply: ..... %

Forced fan speed exhaust: ..... %

Automatic reset ☐ Yes ☐ No

Alarm class priority

Sensor open	☐ A	☐ B
Sensor shorted	☐ A	☐ B
Overheat protection	☐ A	☐ B
Supply temp. low	☐ A	☐ B
Rotor temp. low	☐ A	☐ B
Fan failure	☐ A	☐ B
Heat exchanger	☐ A	☐ B
Duct pressure deviation	☐ A	☐ B
Insufficient air flow	☐ A	☐ B
Heather pump alarm	☐ A	☐ B
Cooler alarm	☐ A	☐ B
Filter	☐ A	☐ B
Filter timer	☐ A	☐ B

Alarm output

A-relay state	☐ NO	☐ NC
B-relay state	☐ NO	☐ NC
Run-relay state	☐ NO	☐ NC

Alarm relay alerts

Fire alarm	☐
Sensor open	☐
Sensor shorted	☐
Overheat protection	☐
Freeze protection	☐
Supply temp. low	☐
Rotor temp. low	☐
Fan failure	☐
Heat Exchanger	☐
Duct pressure deviation	☐
Insufficient air flow	☐
Heather pump alarm	☐
Cooler alarm	☐
Filter	☐
Filter timer	☐

Filter measuring

☐ Period:..... months

☐ Diff. switch:

Day:.....

Time:. .....

☐ Diff. sensor:

Day:.....

Time:. .....

Exhaust limit ..... Pa

Supply limit:..... Pa

☐ Speed increase: + ... %

RH/CO2/VOC Boost

☐ Yes ☐ No

Sensor 1:

☐ None ☐ RH ☐ CO2 ☐ VOC

Limit: . ..... %

Name/Loc: .....

Sensor 2:

☐ None ☐ RH ☐ CO2 ☐ VOC

Limit: . ..... %

Name/Loc: .....

Sensor 3:

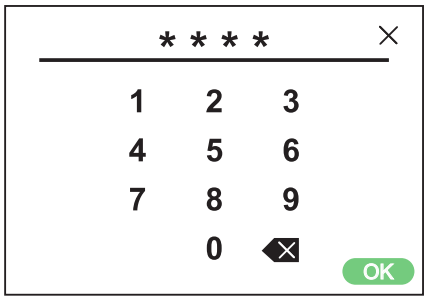
☐ None ☐ RH ☐ CO2 ☐ VOC

Limit: . ..... %

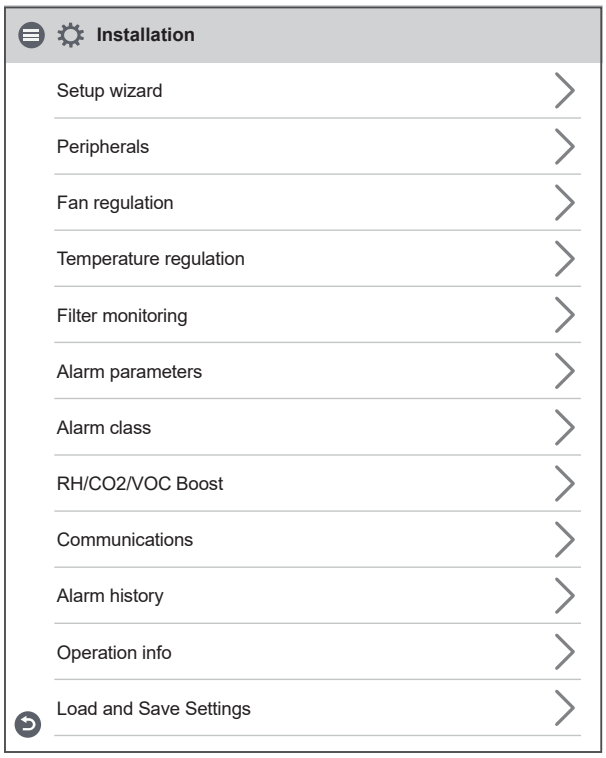
Name/Loc: .....

Fill in all settings for future use.

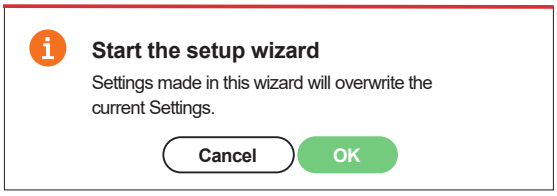
Appendix 2 Setup Wizard



Service 1991

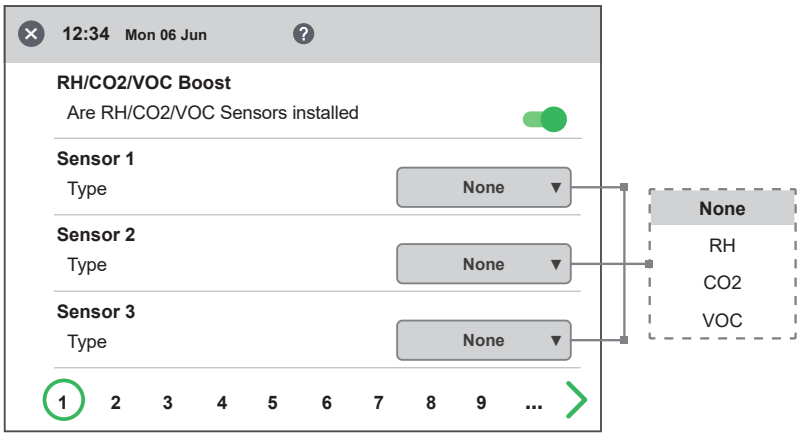


Installation – wizard.

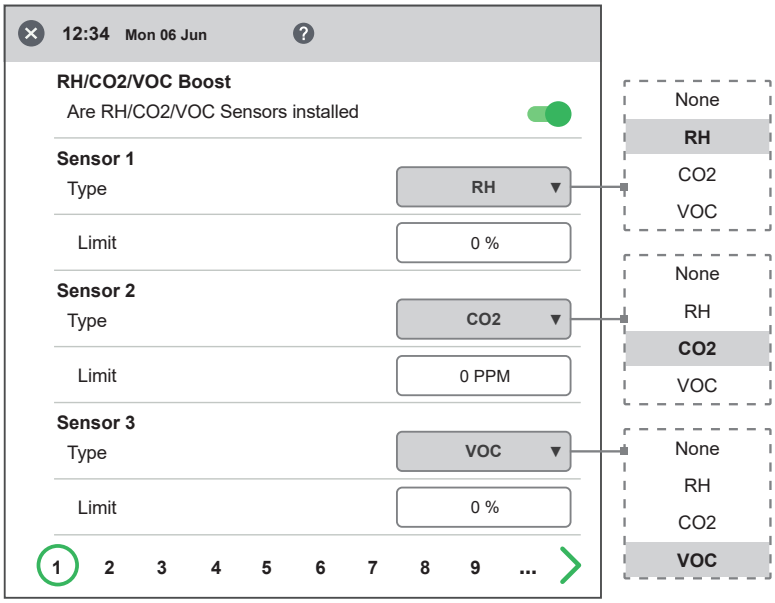


Setup Wizard

2.1 Step 1 – RH/CO2/VOC Boost



Setup Wizard – 1



Setup Wizard – 1 – with sensors active

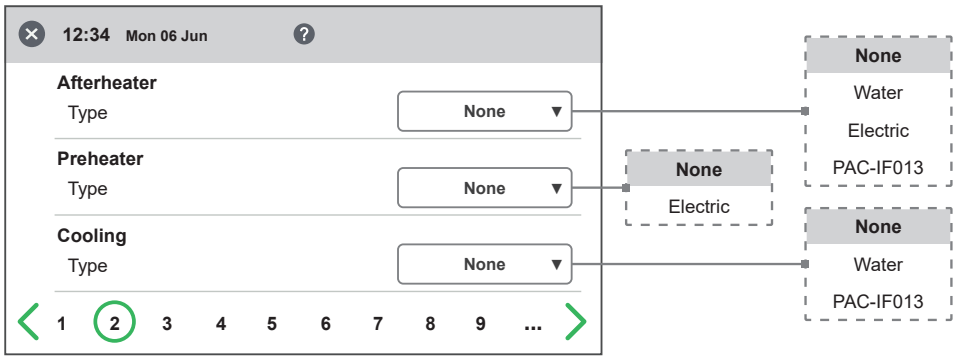
Sensor type

Select the type of sensor and set the limit value for when fan compensation will activate.

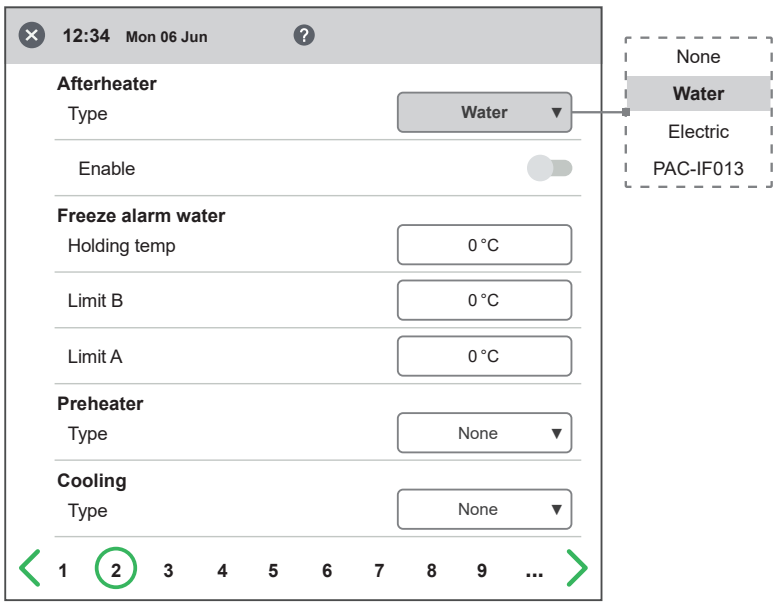
If the limit value is exceeded, the supply and exhaust air flow will be increased steplessly.

When using more than one sensor, the value that is greatest is prioritized.

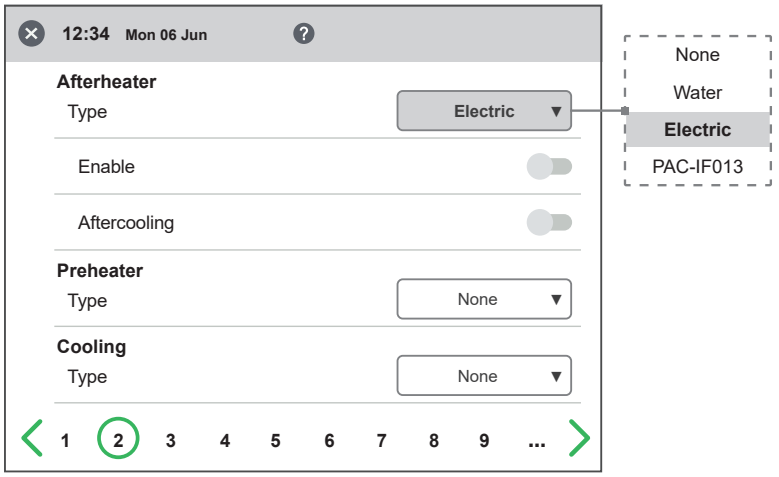
2.2 Step 2 – Heating and cooling



Setup Wizard – 2 – After heater



Setup Wizard – 2 – After heater / Water



Setup Wizard – 2 – After heater / Electric

After Heater

Selection of which type of after heater that is installed. For electric heater, after-cooling function can also be set. For water, freeze protection parameters can be set:

- Hold temperature: When the plant is switched off, the water coil is kept warm so that the return water temperature is the same as the holding temperature set point.
- Limit B: Temperature limit value where heat valve is forced to full open.
- Limit A: Temperature limit where also the plant is stopped if it is in operation.

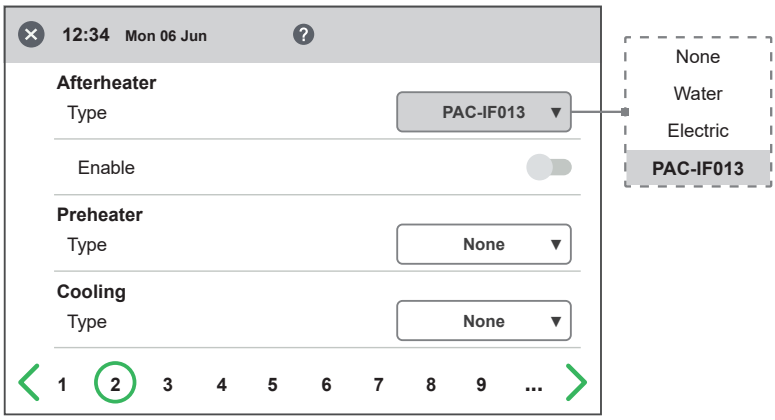
Pre-heater (accessory)

Selection of which type of pre heater that is installed. **[Temperature set point]** is set to when pre heater is to start support heat the cold fresh air.

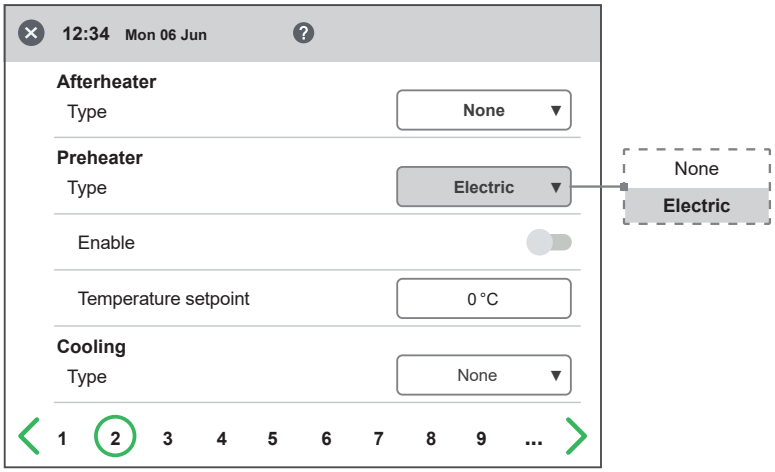
The pre-heater is controlled against the temperature at the outdoor air filter and is activated when the temperature in the outdoor air falls below the set point.

Cooling

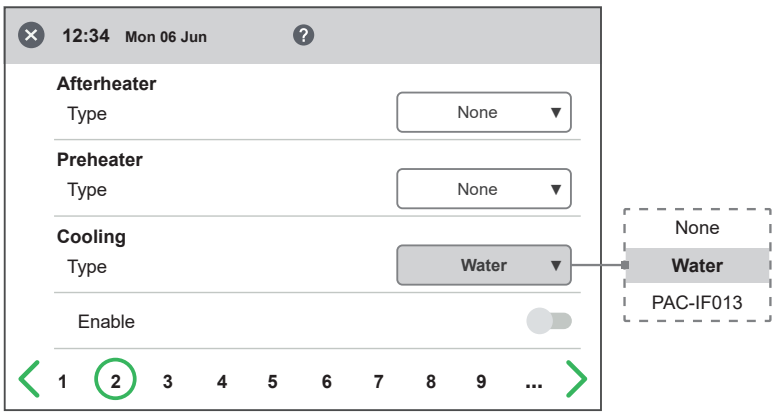
Selection of which type of cooling device that is installed.



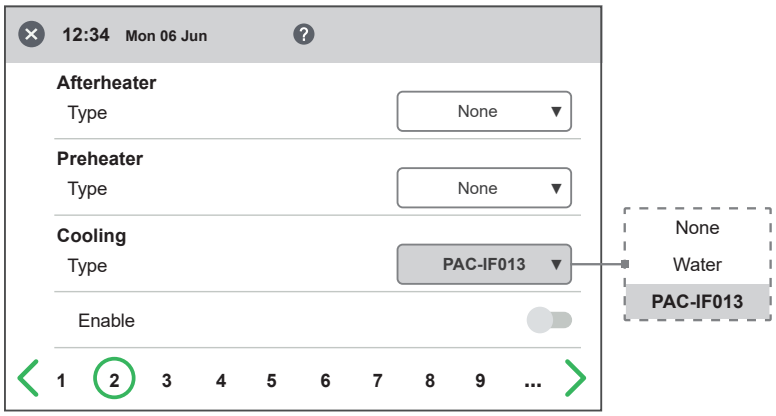
Setup Wizard – 2 – After heater / PAC-IF013 is only visible with expansion cards.



Setup Wizard – 2 – Pre heater / Electric

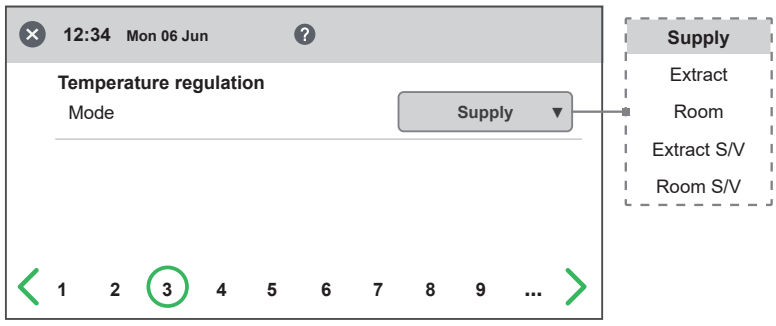


Setup Wizard – 2 – Cooling / Water

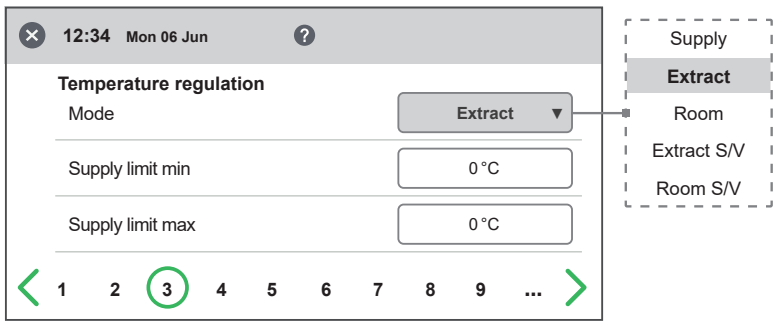


Setup Wizard – 2 – Cooling / PAC-IF013

2.3 Step 3 – Temperature regulation



Setup Wizard – 3 Temp regulation / Supply



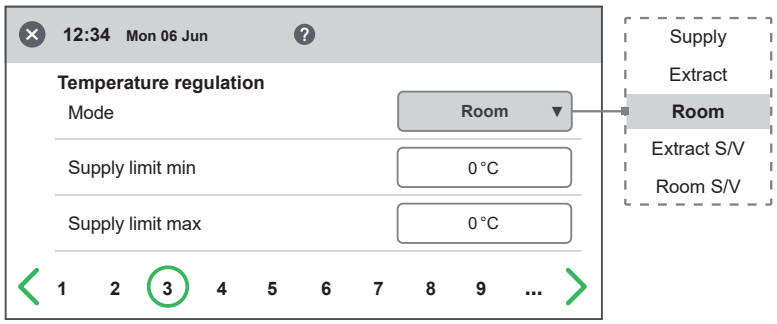
Setup Wizard – 3 – Temp regulation / Extract

Regulation Type

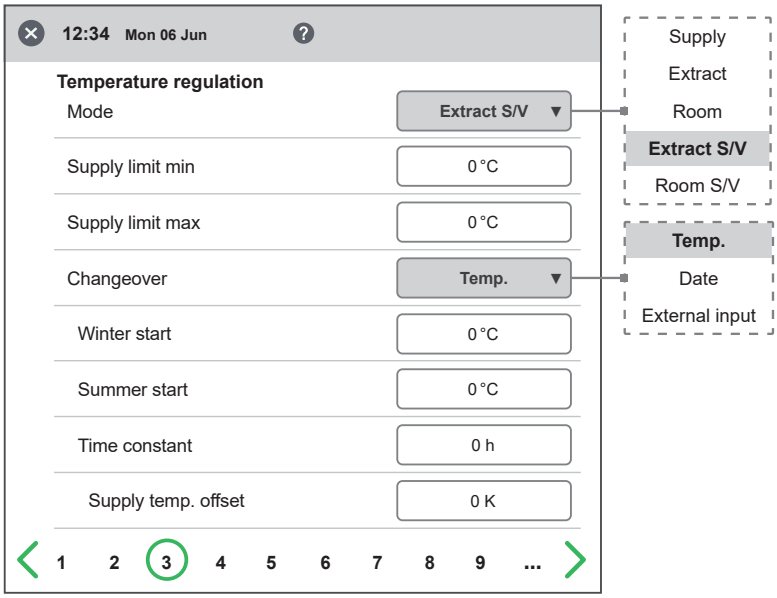
- Supply compare the temperature set point against the temperature in the supply air.
- Exhaust air compare the set point against the temperature in the extract air and regulates the temperature in the supply air between the set Min/Max limits.
- Room compare the set point against temperature from the room sensor and regulates the temperature in the supply air between set Min/Max limits.
- Exhaust S/W and Room S/W enable automatic changeover of control type to supply air regulation in wintertime.

Changeover can be made on temperature criterion, date or via external input.

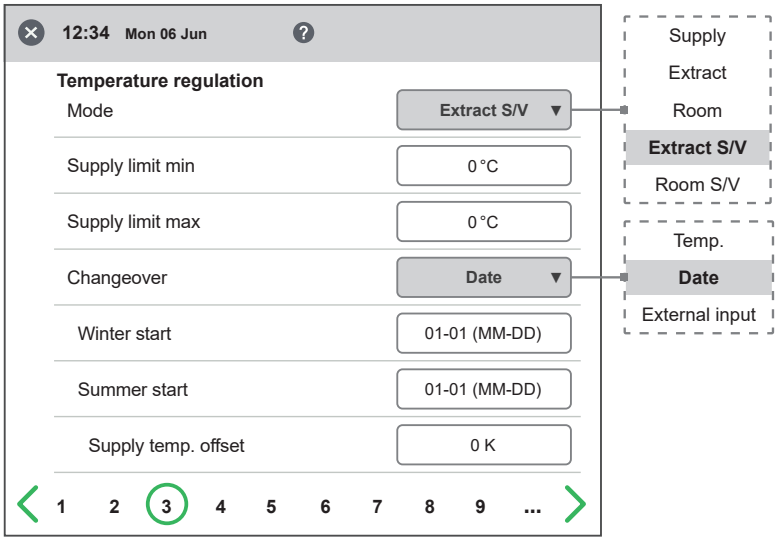
When Exhaust S/W or Room S/W is selected, a temperature offset factor can be set. This factor only affects supply air regulation in winter.



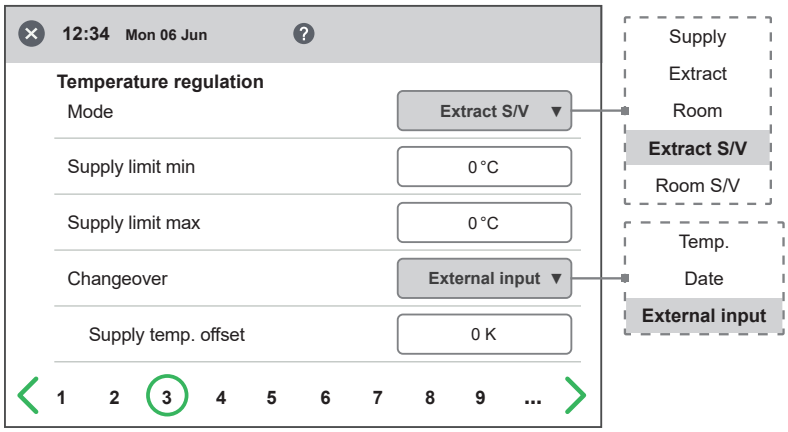
Setup Wizard – 3 – Temp regulation / Room



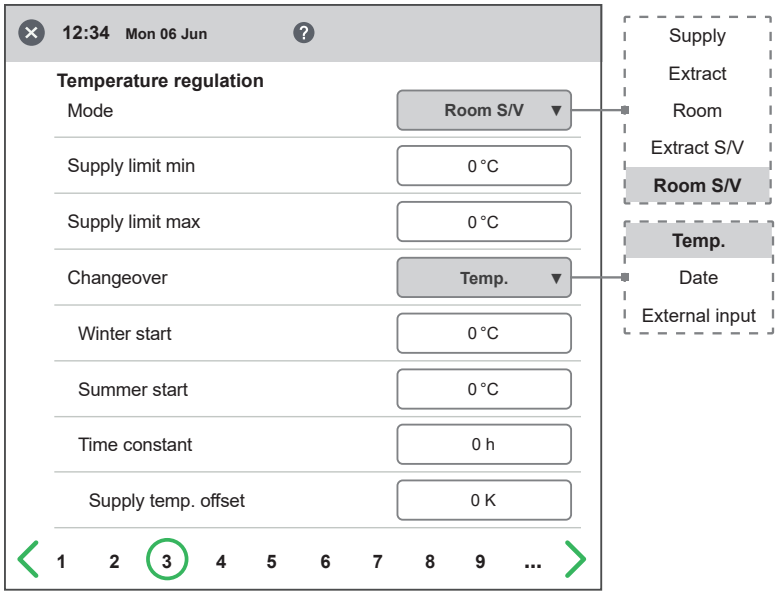
Setup Wizard – 3 – Temp regulation / Extract S/V / Temp



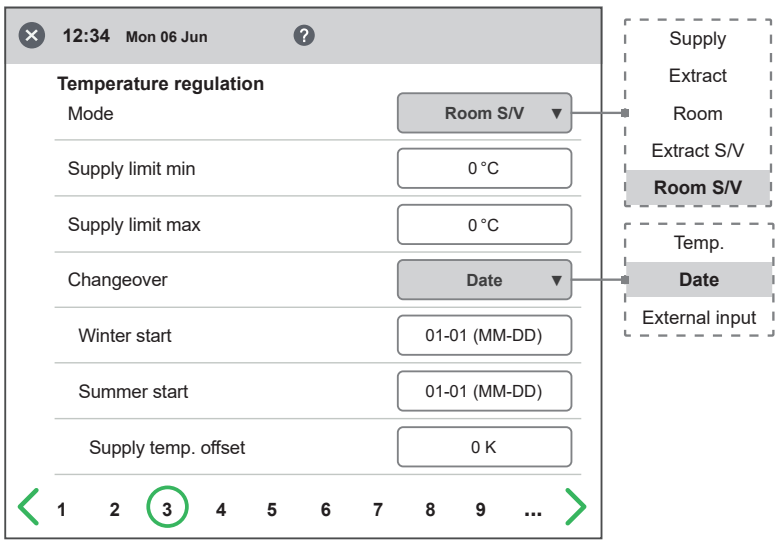
Setup Wizard – 3 – Temp regulation / Extract S/V / Date



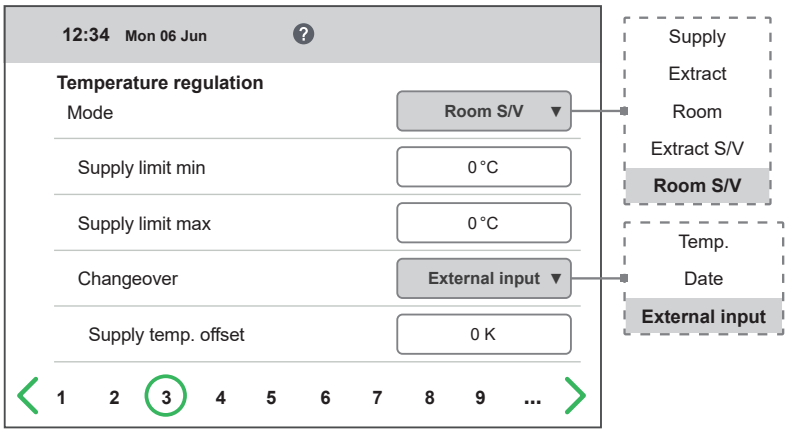
Setup Wizard – 3 – Temp regulation / Extract S/V / External input



Setup Wizard – 3 – Temp regulation / Room S/V / Temp



Setup Wizard – 3 – Temp regulation / Room S/V / Date



Setup Wizard – 3 – Temp regulation / Room S/V / External input

2.4 Step 4 – Temp set point & Supply temp low

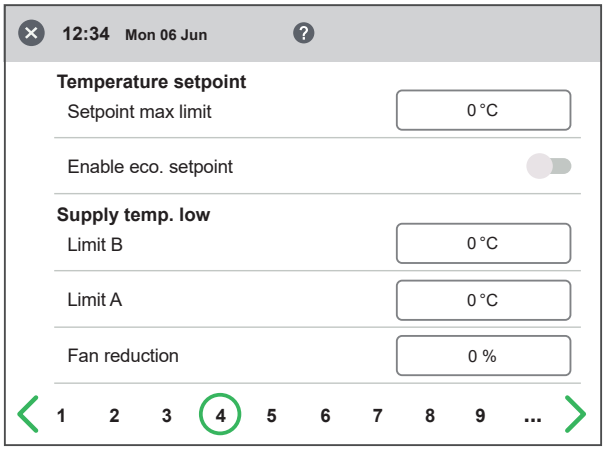
Set point Max limit

Set a maximum limit on the temperature set point setting.

Extra economy temperature set point can be activated, which allows for two temperature set points in the scheduler.

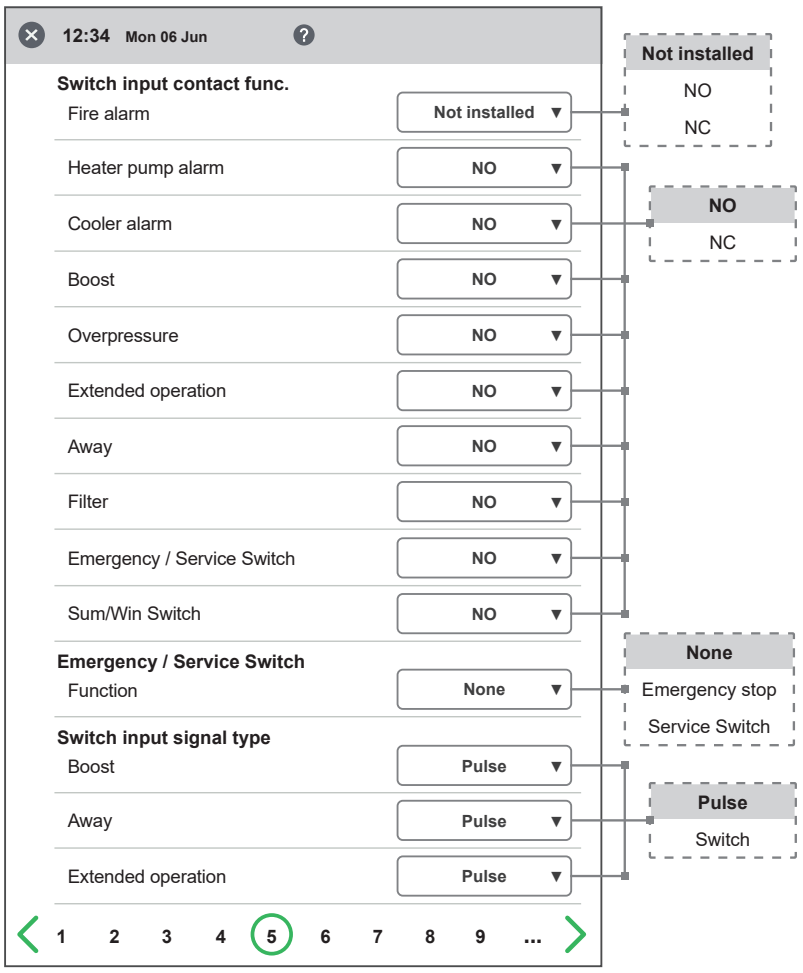
Supply air temperature Low:

- Limit A: Temperature limit when alarms for low supply air temperature will be given.
- Limit B: At which temperature limit the fan reduction will be activated.
- Fan reduction: Reduction of supply air fan. Min 10%, Max % diff. between Max and Min speed.

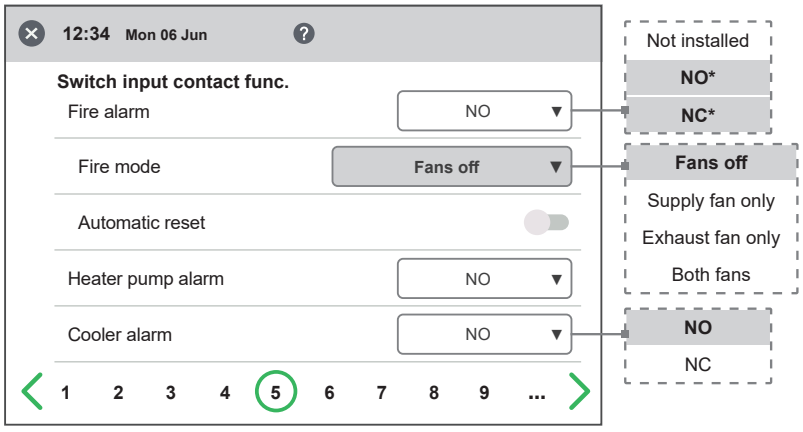


Setup Wizard – 4 – Temp set point

2.5 Step 5 – Switches



Setup Wizard – 5 – Switches



Setup Wizard – 5 – Switches / Reduced menu – Fire alarm / Fans off

External inputs – Contact function

Choice of contact function from external equipment.

NO: Normally open,
NC: Normally closed.

- Fire alarm:
- Fire mode: Function of fans in case of fire alarm.
- Forced speed: If fan is forced into operation, the % output signal will be used.

Automatic reset allows the unit to return to normal operation automatically when the external fire alarm is reset.

Emergency Stop / Service switch (only with mini-expansion or expansion card installed and enabled).

Possibility to use Emergency Stop / Service switch via input D6. If Expansion card is activated, the function is activated via input DI9.

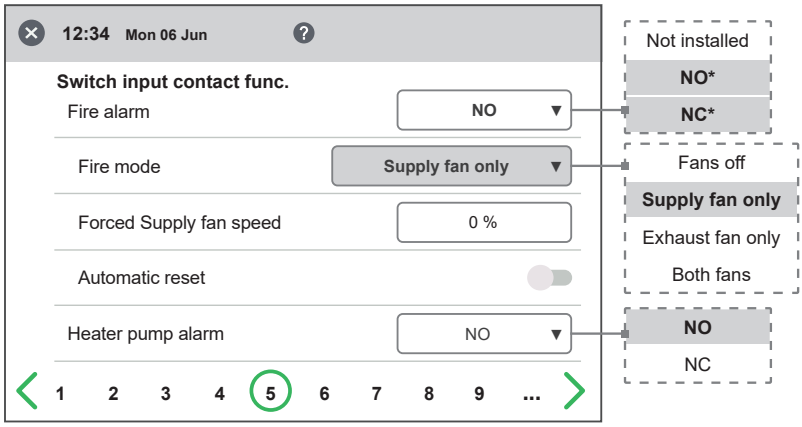
External inputs – Signal type

Choice of signal type from external equipment.

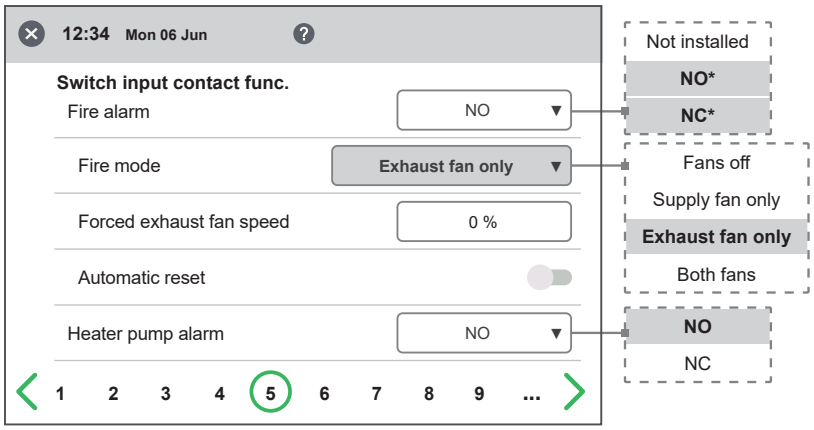
- "Pulse" is used for instant contact function.
- "Switch" is used for sustained contact function.

Sum/Win switch (only with expansion card installed and enabled).

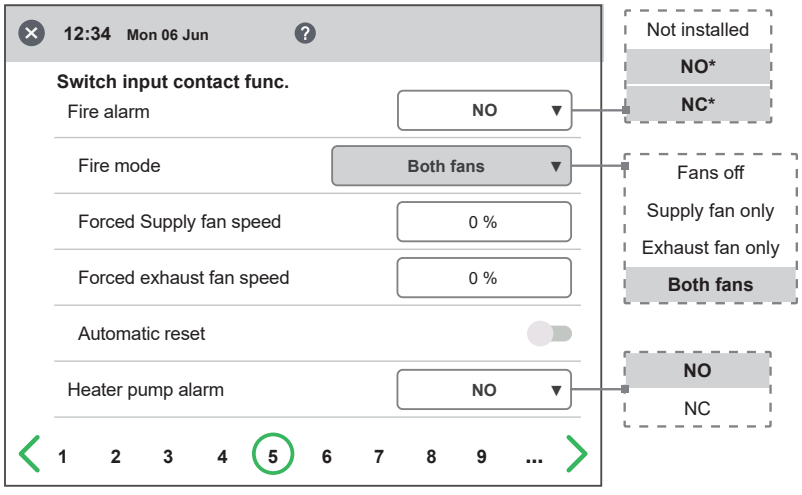
* The dynamic menus are the same for both NO and NC.



Setup Wizard – 5 – Switches / Reduced menu – Fire alarm / Supply fan only



Setup Wizard – 5 – Switches / Reduced menu – Fire alarm / Exhaust fan only



Setup Wizard – 5 – Switches / Reduced menu – Fire alarm / Both fans

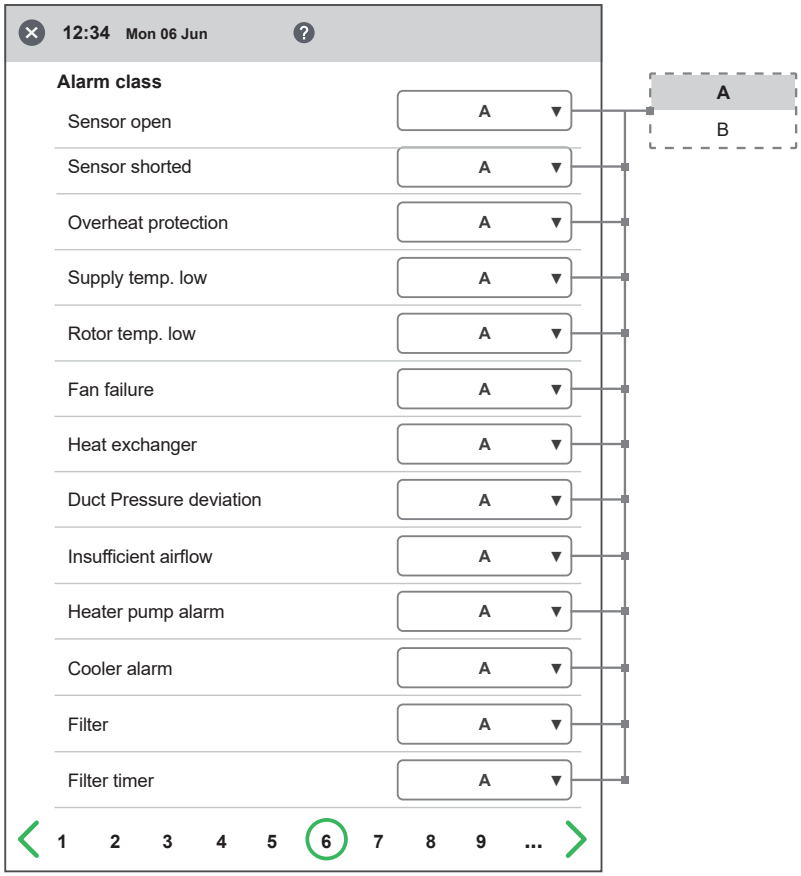
2.6 Step 6 – Alarm class

Set point Max limit

Settings of which alarm class that respective alarm should have.

Two levels can be selected

- A-alarm: A critical alarm that will stop the ventilation unit.
- B-alarm: A non-critical alarm that keeps the ventilation unit in operation.



Setup Wizard – 6 – Alarm class

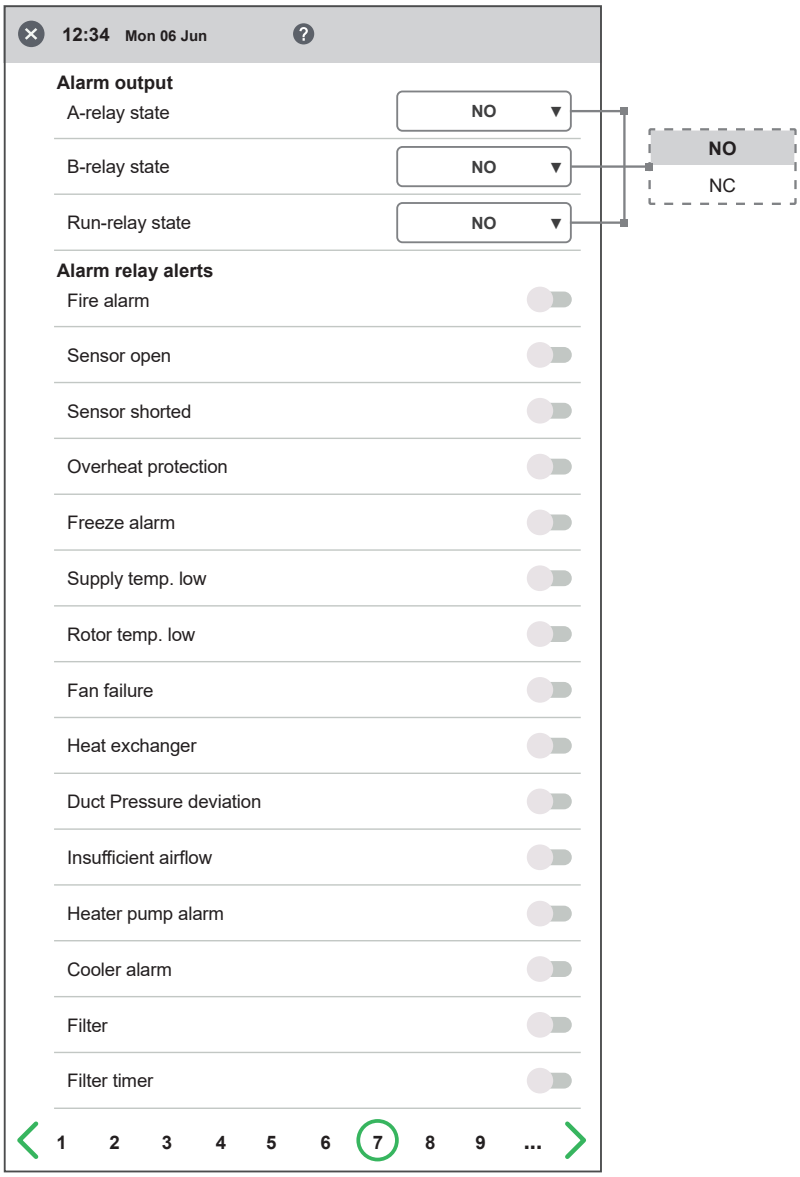
2.7 Step 7 – Alarm output & alarm relay

Alarm outputs

- A-relay state: Contact function during normal operation.
- B-relay state: Contact function during normal operation.
- Run-relay state: Contact function during normal operation.

Alarm relay alerts

Which alarms that will affect alarm output. Depending on the alarm class, the A-relay or the B-relay is affected.



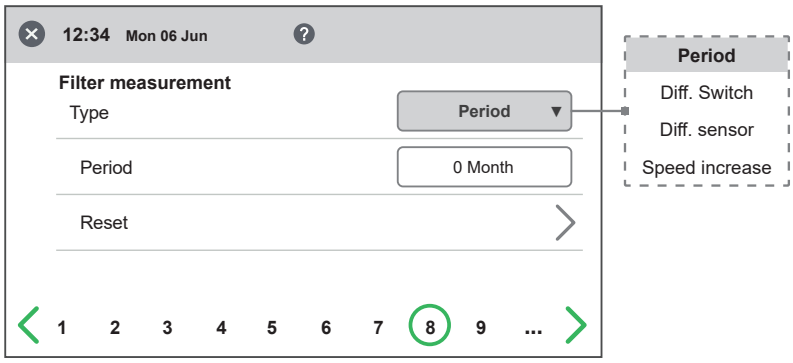
Setup Wizard – 7 – Alarm output & alarm relay

2.8 Step 8 – Filter measurement

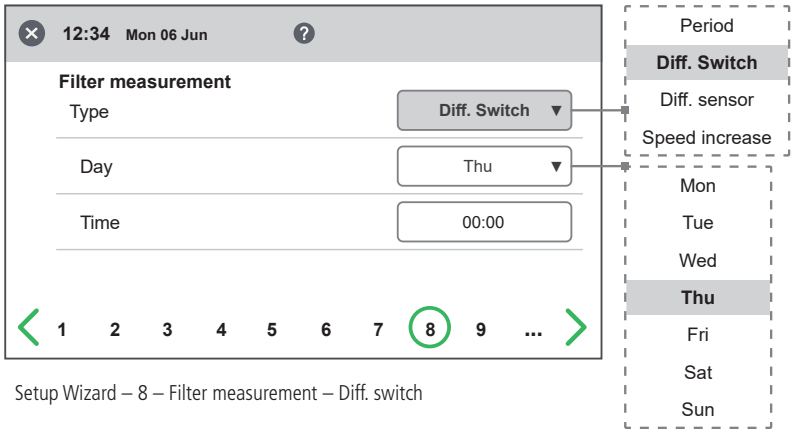
Filter Measurement

Type of filter control.

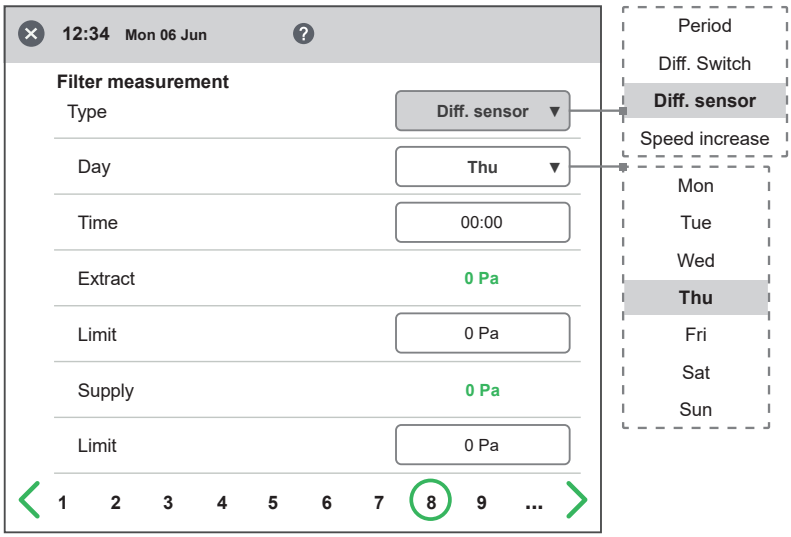
- Period: Selected by default. Gives an alarm when the service period has expired. Reset starts new service period.
- Diff. switch: Scheduled filter measurement at selected day & time (requires accessories).
- Diff. sensor: Scheduled filter measurement at selected day & time. Compare measured value against set final pressure drop.
- Speed increase: In CPC control of fans, the output signal of the fans can be used as a reference when measuring filter clogging. The limit value for filter alarms is the saved reference value of the fans increased by the set value for speed increase. Speed increase means keeping a constant pressure in the duct by increasing the fans' output signal to compensate for clogged filters.



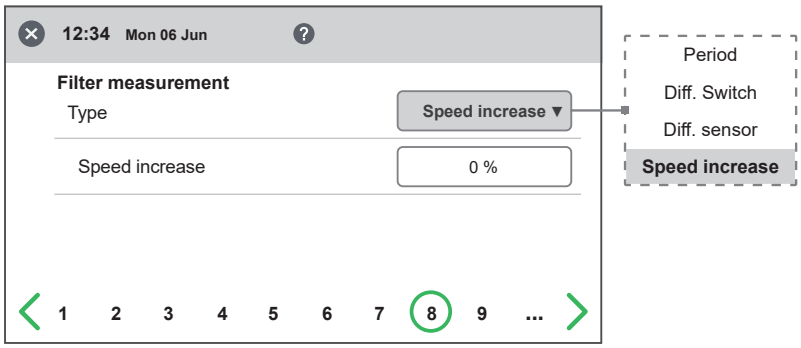
Setup Wizard – 8 – Filter measurement – Period



Setup Wizard – 8 – Filter measurement – Diff. switch



Setup Wizard – 8 – Filter measurement – Diff. sensor



Setup Wizard – 8 – Filter measurement – Speed increase

2.9 Step 9 – Pressure input duct

Pressure sensor

Settings for duct pressure measurement with pressure sensor.

Type: Selection of signal type from sensor. Can be set to 0-10V or Modbus depending on peripherals.

If the sensor type is set to 0-10V, the pressure range must be selected according to what is set in the pressure sensor.

If the sensor type is set to Modbus, the pressure range is set automatically.

Model: Choice of supported model.

Function: Selection of the pressure sensor operating function. For duct pressure sensor, individual is always selected.

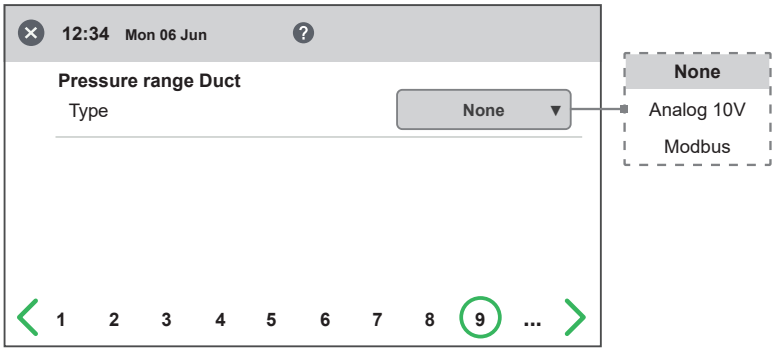
Info

Real-time information and status from pressure sensor.

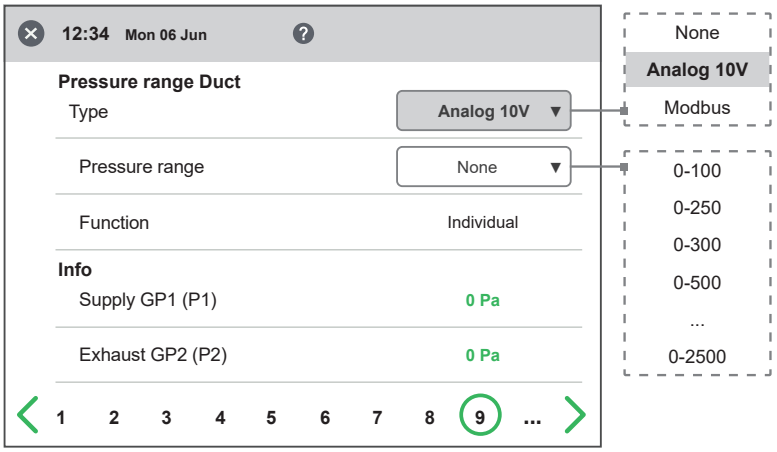
The pressure values GP3 and GP4 are direct actual values from the pressure sensor.

Zero-point calibration:

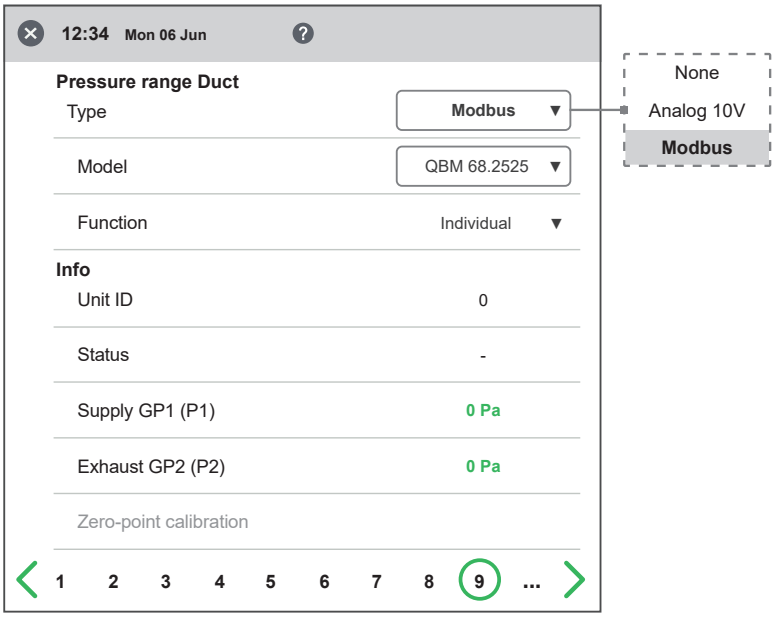
When the sensor type is selected to Modbus, you can do Zero-point calibration of the pressure sensor via display. All connected hoses must be disconnected when performing calibration.



Setup Wizard – 9 – Pressure input duct



Setup Wizard – 9 – Pressure input duct – Analog 10V

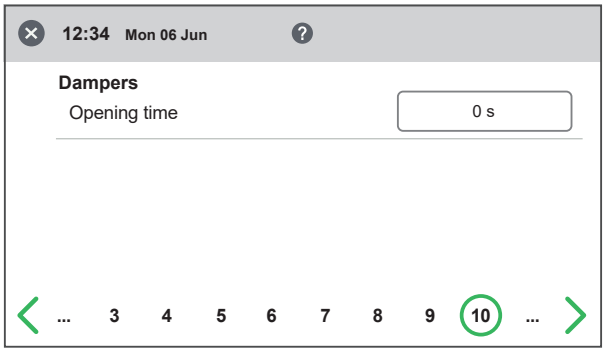


Setup Wizard – 9 – Pressure input duct – Modbus

2.10 Step 10 – Dampers

Damper
Opening time setting for dampers. Acts as start-up delay of the extract air fan to allow time for dampers to open.

For opening times, see separate data sheet for damper motor.



Setup Wizard – 10 – Dampers

2.11 Step 11 – Flow and regulation

Flow direction
Can be set Standard or Opposite.

The "Opposite" setting is only used on ventilation units that have a design that allows the flow direction to be changed. See manual for more details.

Flow display
Selection of flow unit when presenting flow on advanced home screen. If set to None, the unit for the selected control type (%, Pa) is displayed instead.

Regulation mode:
Selection of fan control mode.

- %: Setting of fixed output signal to fans.
- CPC: Used to keep constant pressure in duct. Regulates fan output signal to compensate for clogged filters. Setting of pressure setpoints is done under setting page "CPC setup" for standard fan speed.

It is important that new filters are installed before saving reference setpoints!

- CAV: Used for flow regulation of the fans.
- VAV (SA Slave): The supply air fan is slave-controlled against the exhaust fan, where the supply air fan flow is regulated in relation to the exhaust fan flow + offset.
- VAV (EA Slave): The exhaust air fan is slave-controlled against the supply fan, where the exhaust air fan flow is regulated in relation to the supply fan flow + offset.

Setpoint mode:

In the case of control mode VAV, the setpoint mode used when adjusting flows can be selected.

- %: Output signal for fan is set in % and is then saved as a reference pressure setpoint.
- Pa: The pressure setpoint is set directly to the desired value.

Offset mode

With control type VAV, offset type can be selected.

- Static: Offset for slave-controlled fan can be set individually for all three fan speeds.
- Relative: Offset for slave-controlled fan is automatically calculated for min and max speed based on ratio in Standard fan speed

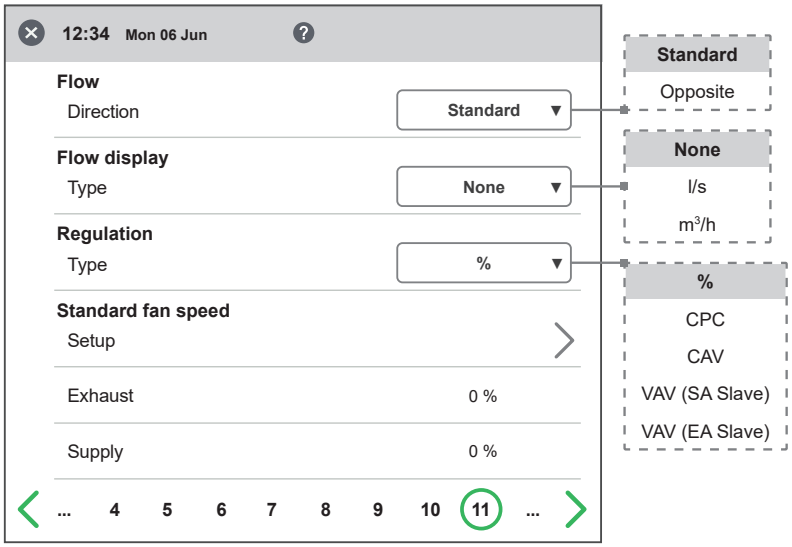
Standard fan speed

When entering the setup page, all program parameters that affect the flow of the fans are temporarily deactivated and the program is entering adjustment mode.

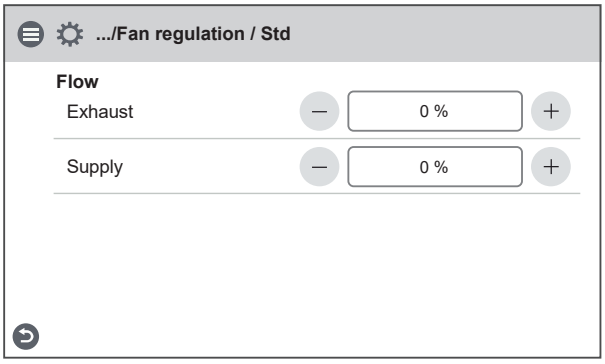
When leaving the setup page, the unit returns to normal operation.

The standard fan speed is the position where adjustment of the ventilation system shall be made. The supply and exhaust air flow can be adjusted individually.

2.11.1 Regulation type "%"

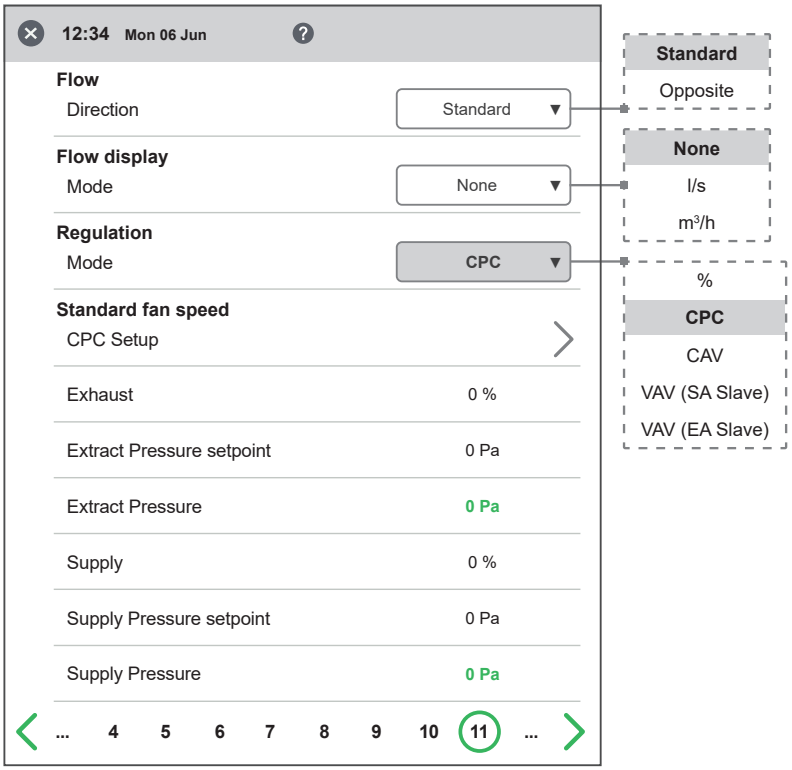


Setup Wizard – 11.1 – Regulation / %

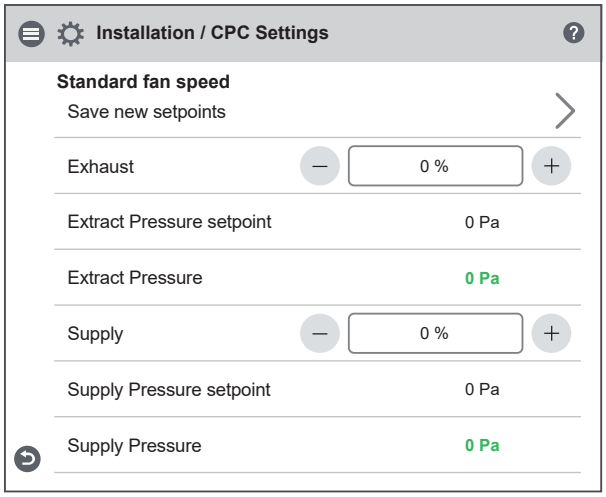


Setup Wizard – 11.1 – Fan regulation "%" / Standard fan speed

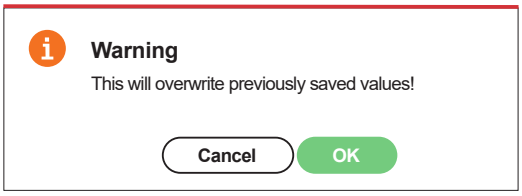
2.11.2 Regulation type "CPC"



Setup Wizard – 11.2 – Regulation / CPC

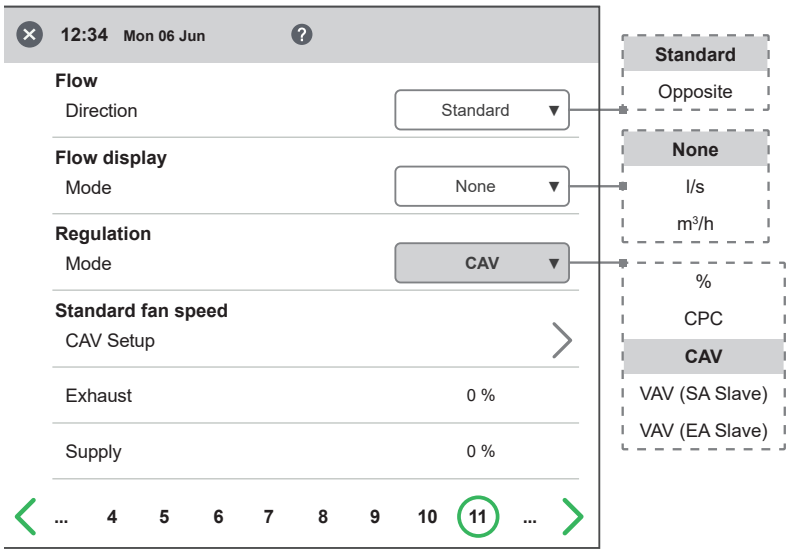


Setup Wizard – 11.2 – Fan regulation "CPC"/ Standard fan speed

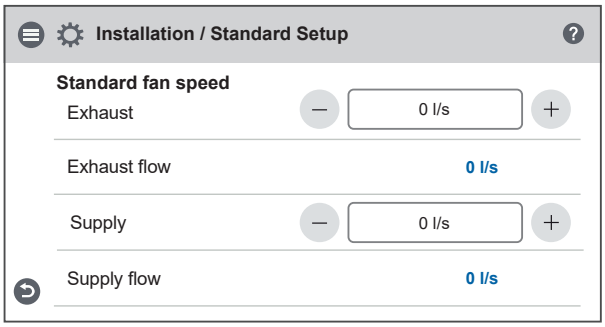


Setup Wizard – 11.2 – Fan regulation "CPC" / Save Pop-up

2.11.3 Regulation type "CAV"

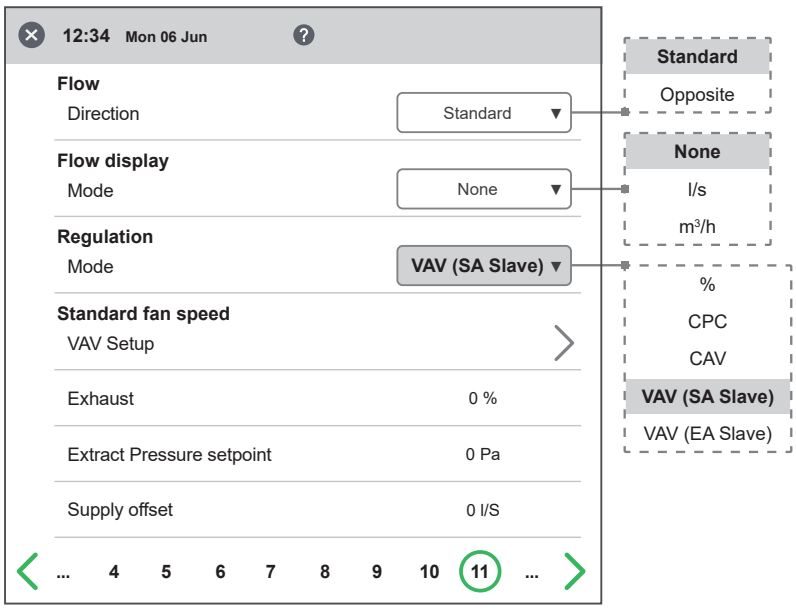


Setup Wizard – 11.3 – Fan regulation "CAV"

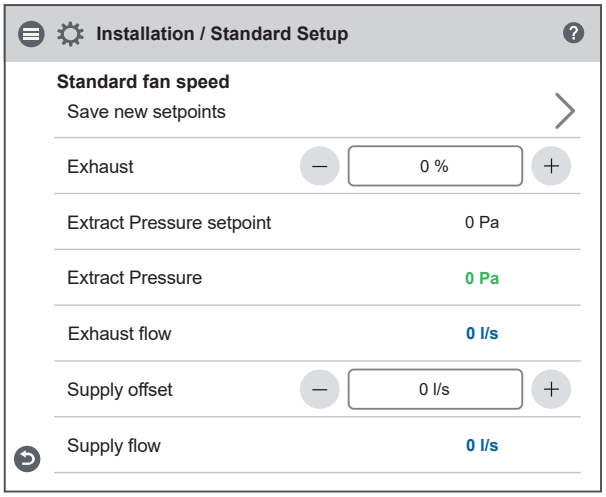


Setup Wizard – 11.3 – Fan regulation "CAV"/ Standard fan speed

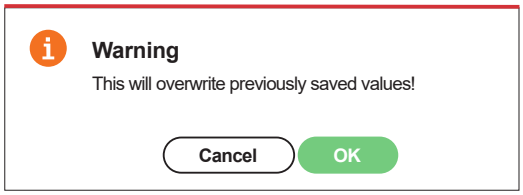
2.11.4 Regulation type "VAV (SA Slave)"



Setup Wizard – 11.4 – Fan regulation "VAV (SA Slave)"

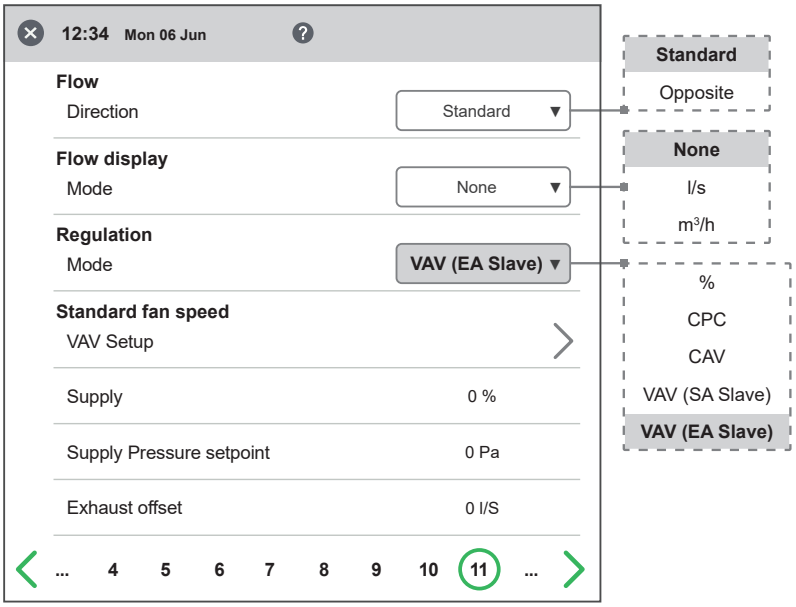


Setup Wizard – 11.4 – Fan regulation "VAV (SA Slave)" / Standard fan speed

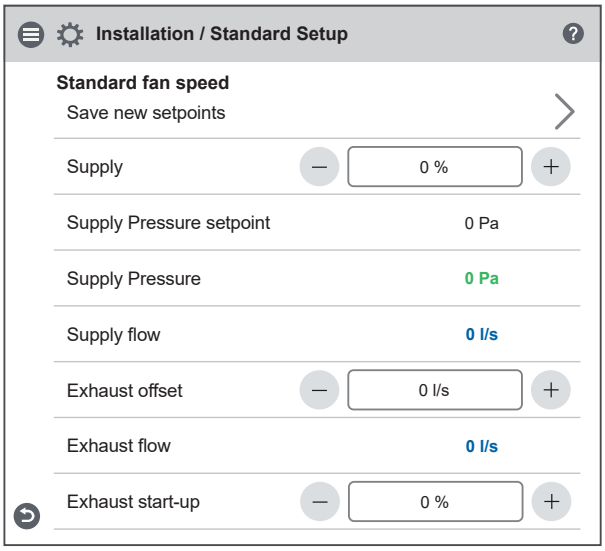


Setup Wizard – 11.4 – Fan regulation "VAV (SA Slave)" / Save Pop-up

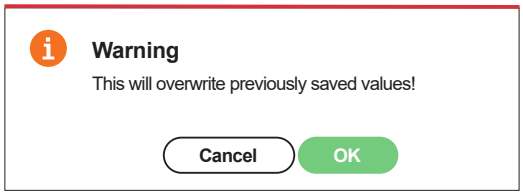
2.11.5 Regulation type "VAV (EA Slave)"



Setup Wizard – 11.5 – Fan regulation "VAV (EA Slave)"



Setup Wizard – 11.5 – Fan regulation "VAV (EA Slave)" / Standard fan speed



Setup Wizard – 11.5 – Fan regulation "VAV EA Slave)" / Save Pop-up

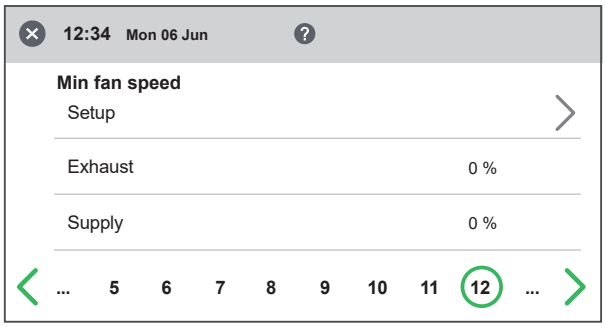
2.12 Step 12 – Flow and regulation

Min Speed:

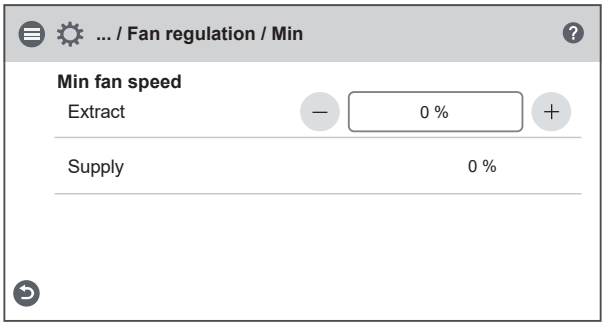
When entering the setup page, all program parameters that affect the flow of the fans are temporarily deactivated and the program is entering adjustment mode. When leaving the set-up page, the unit returns to normal operation.

The exhaust air flow can be adjusted. The supply air flow is calculated automatically based on the ratio in Standard fan speed. In the case of VAV regulation with static offset, the supply and exhaust air flow can be set individually.

2.12.1 Regulation type "%" – Min speed

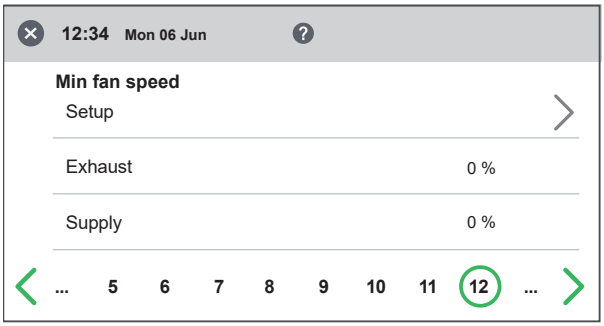


Setup Wizard – 12.1 – Fan regulation "%"/ Min fan speed

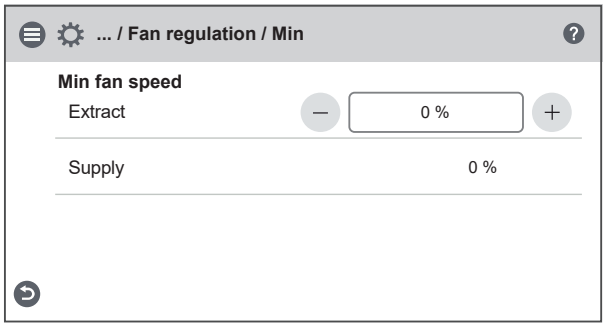


Setup Wizard – 12.1 – Fan regulation "%"/ Min fan speed

2.12.2 Regulation type "CPC" – Min speed

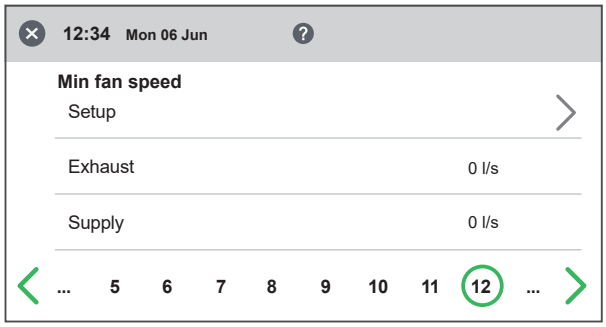


Setup Wizard – 12.2 – Fan regulation "CPC"/ Min fan speed

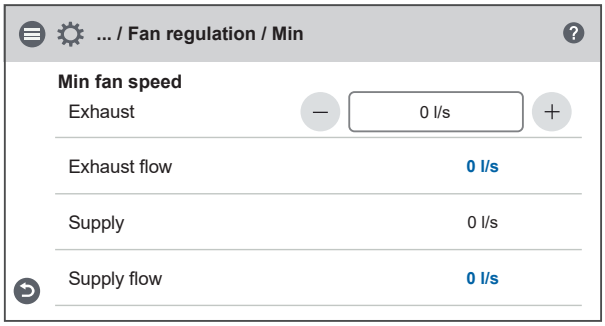


Setup Wizard – 12.2 – Fan regulation "CPC"/ Min fan speed

2.12.3 Regulation type "CAV" – Min speed

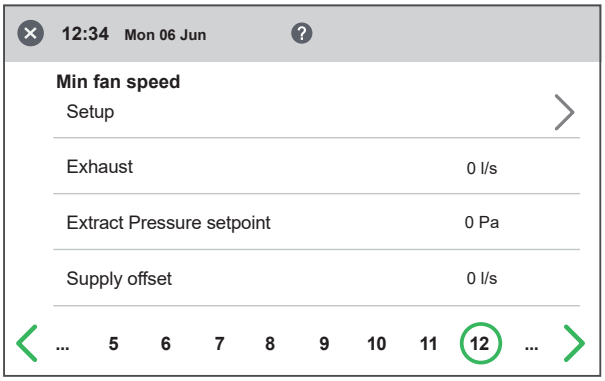


Setup Wizard – 12.3 – Fan regulation "CAV"/ Min fan speed

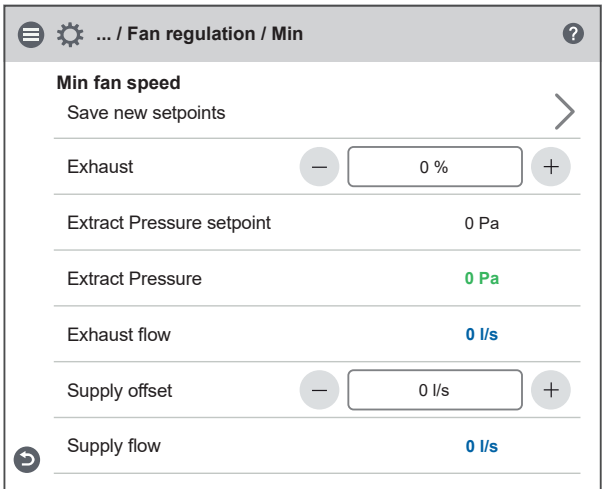


Setup Wizard – 12.3 – Fan regulation "CAV"/ Min fan speed

2.12.4 Regulation type "VAV (SA Slave)" – Min speed

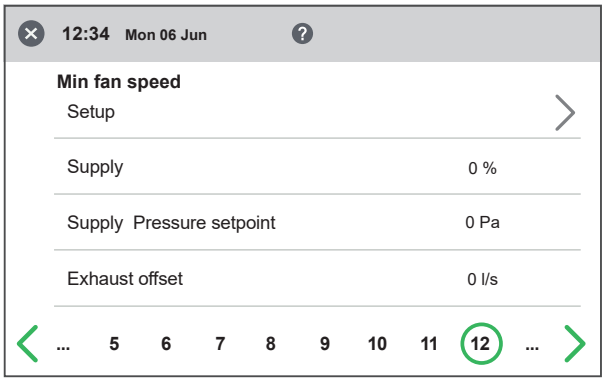


Setup Wizard – 12.4 – Fan regulation "VAV (SA Slave)"/ Min fan speed

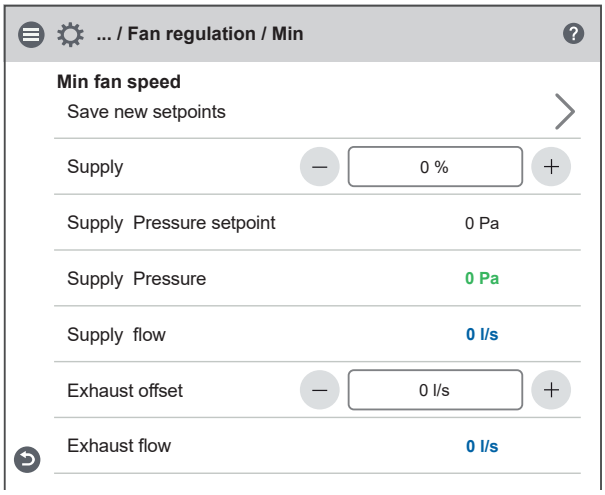


Setup Wizard – 12.4 – Fan regulation "VAV (SA Slave)"/ Min fan speed

2.12.5 Regulation type "VAV (EA Slave)" – Min speed



Setup Wizard – 12.5 – Fan regulation "VAV (EA Slave)"/ Min fan speed



Setup Wizard – 12.5 – Fan regulation "VAV (EA Slave)"/ Min fan speed

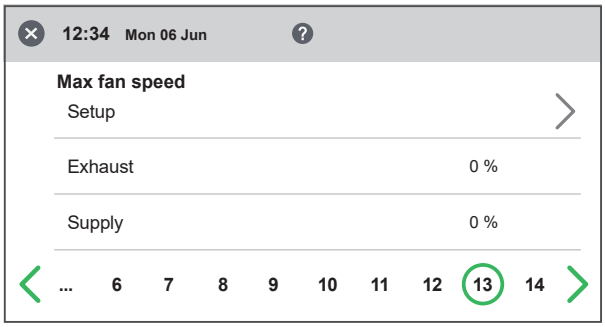
2.13 Step 13 – Flow and regulation

Max Speed

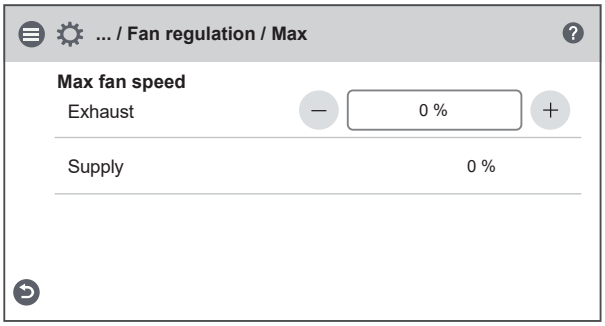
When entering the setup page, all program parameters that affect the flow of the fans are temporarily deactivated and the program is entering adjustment mode. When leaving the set-up page, the unit returns to normal operation.

The exhaust air flow can be adjusted. The supply air flow is calculated automatically based on the ratio in Standard fan speed. In the case of VAV regulation with static offset, the supply and exhaust air flow can be set individually.

2.13.1 Regulation type "%" – Max speed

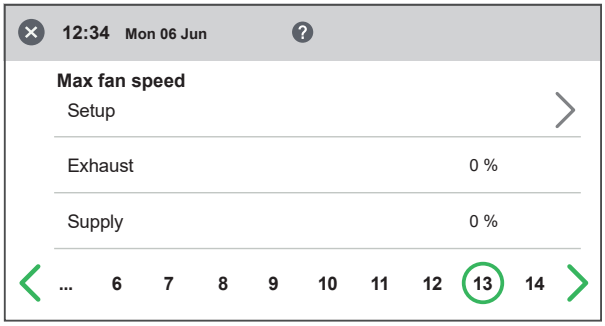


Setup Wizard – 13.1 – Fan regulation "%"/ Max fan speed

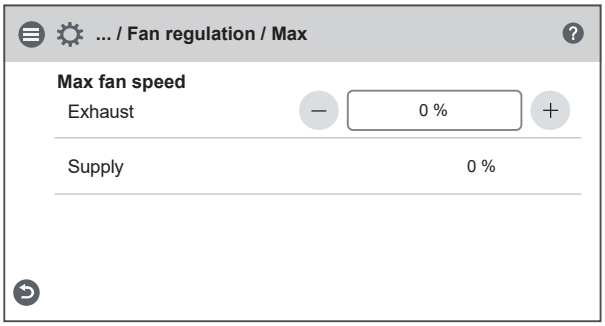


Setup Wizard – 13.1 – Fan regulation "%"/ Max fan speed

2.13.2 Regulation type "CPC" – Max speed

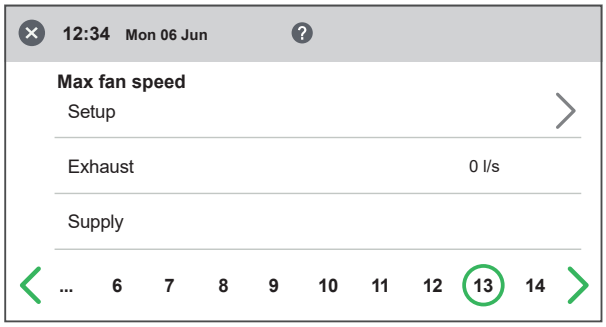


Setup Wizard – 13.2 – Fan regulation "CPC"/ Max fan speed

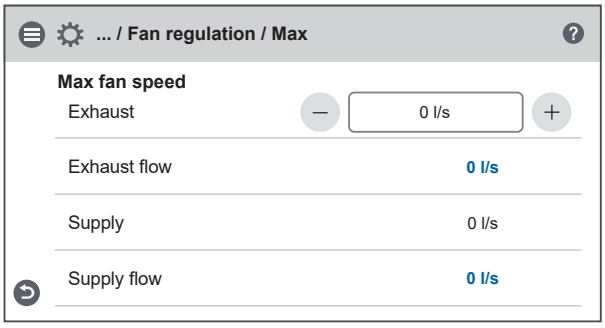


Setup Wizard – 13.2 – Fan regulation "CPC"/ Max fan speed

2.13.3 Regulation type "CAV" – Max speed

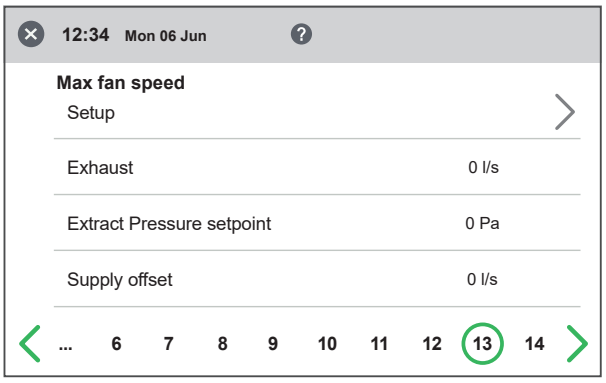


Setup Wizard – 13.3 – Fan regulation "CAV"/ Max fan speed

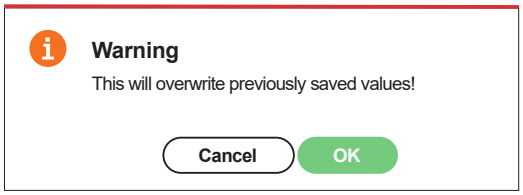


Setup Wizard – 13.3 – Fan regulation "CAV"/ Max fan speed

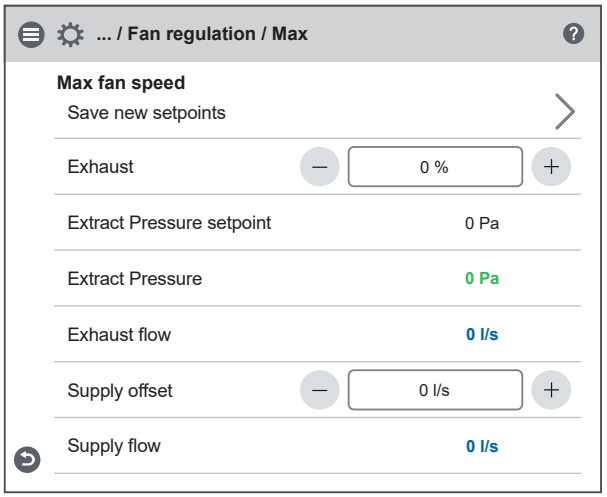
2.13.4 Regulation type "VAV (SA Slave)" – Max speed



Setup Wizard – 13.4 – Fan regulation "VAV (SA Slave)"/ Max fan speed

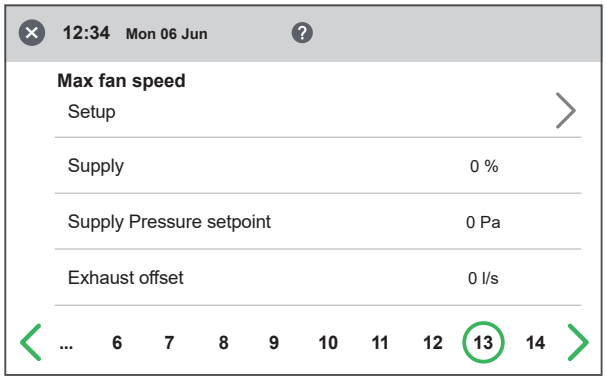


Setup Wizard – 13.4 – Fan regulation "VAV (SA Slave)"/ Save Pop-up

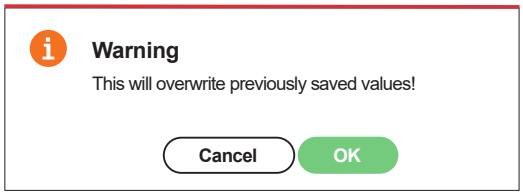


Setup Wizard – 13.4 – Fan regulation "VAV (SA Slave)"/ Max fan speed

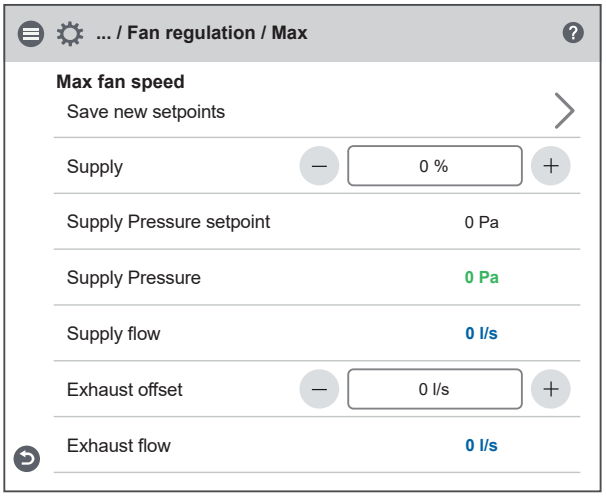
2.13.5 Regulation type "VAV (EA Slave)" – Max speed



Setup Wizard – 13.5 – Fan regulation "VAV (EA Slave)"/ Max fan speed



Setup Wizard – 13.5 – Fan regulation "VAV (EA Slave)"/ Save Pop-up

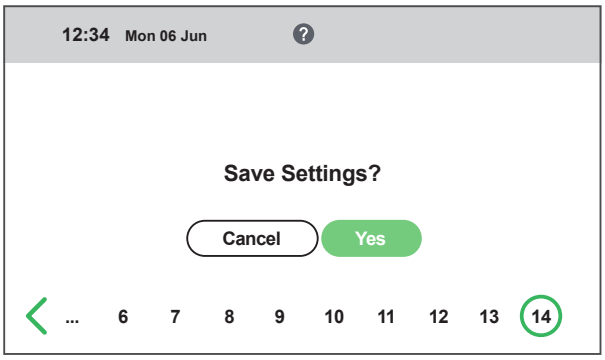


Setup Wizard – 13.5 – Fan regulation "VAV (EA Slave)"/ Max fan speed

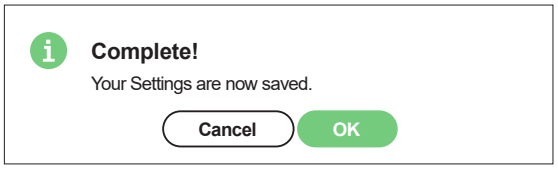
2.14 Save settings

Press Yes to save all settings made in the wizard. Previously set values will be overwritten.

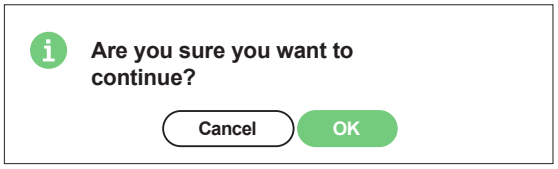
Press Cancel to discard all settings made in the wizard and return to the previous menu.



Setup Wizard – 2.14 – Save settings



Setup Wizard – 2.14 – Save settings / OK



Setup Wizard – 2.14 – Save settings / Are you sure

Setup Wizard – 13.5 – Save settings / Cancel

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