Sentinel Econiq S MVHR

Installation and User Guide Instructions

Original instruction

Stock Ref. N°

499883 - Sentinel Econiq S

417810 - Sentinel Econiq S (Export)

412465 - Sentinel Econiq Se

411077 - Sentinel Econiq SC

Passivhaus models

499890 - Sentinel Econiq SCP RH

499891 - Sentinel Econiq SCP LH

413664 - Sentinel Econiq SCP RH with In-Duct Heater Passivhaus Kit*

413665 - Sentinel Econiq SCP LH with In-Duct Heater Passivhaus Kit*

*These models consist of an Econiq unit and an In-Duct Heater

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE COMMENCING INSTALLATION OR OPERATION.

PLEASE REFER TO ACCOMPANYING DOCUMENTATION FOR INFORMATION SPECIFIC TO YOUR UNIT.
PLEASE RETAIN THESE INSTRUCTIONS WITH THE PRODUCT.

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- Do not install this product in areas where the following may be present or occur:
    - Excessive oil or a grease laden atmosphere.
    - Corrosive or flammable gases, liquids or vapours.
    - Subject to direct water spray from hoses.
    - Ambient temperatures higher than 40°C and lower than -20°C.
    - Possible obstructions that may hinder access to or removal of the unit.
- All wiring must be in accordance with the current IET wiring regulations BS7671, or appropriate standards of your country. Installation should be inspected and tested by a suitably qualified person after completion.
- Ensure the mains supply (voltage, frequency and phase) complies with the rating label.
- The unit should be provided with a local double pole fused spur fitted with a 3A fuse having a contact separation of at least 3mm. If a unit fitted with a preheater is being installed, a 13A fuse should be used.
- This appliance must be earthed.
- Precautions must be taken to avoid the backflow of gases into the building from the open flue of gas or other fuel-burning appliances.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Young children should be supervised to ensure that they do not play with the appliance.
- The installer is responsible for the installation and electrical connection of the MVHR system on site. It is the responsibility of the installer to ensure that the equipment is safely and securely installed and left only when mechanically and electrically safe.
- All regulations and requirements must be strictly followed to prevent hazards to life and property, both during and after installation, and during any subsequent servicing and maintenance.
- The unit's condensate drain must be connected to the building's wastewater drainage system.
- Certain applications may require the installation of sound attenuation to achieve the sound levels required.
- The unit must not be connected directly to a tumble drier.
- The supply and exhaust valves must be fully opened prior to commissioning.
- The intake air must be drawn from the exterior of the property.
- The unit should be allowed to stabilise during commissioning for a minimum period of 5 minutes when changing between boost and normal speeds.
- External grilles should be positioned in accordance with your local building regulations, however as a minimum we recommend that the inlet grille is kept 2m from any discharge grille or flue outlet.
- This product and associated duct installation should be carried out in accordance with the Domestic Ventilation Compliance Guide.

UK Building Regulations (Part F) Declaration of Conformance

The unit conforms to the 2010 Building Regulation (Part F - Means of Ventilation, F1(1), F(2)) requirements for fixed systems for mechanical extract fans when installed in accordance with the instructions in this document and the Domestic Ventilation Compliance Guide.

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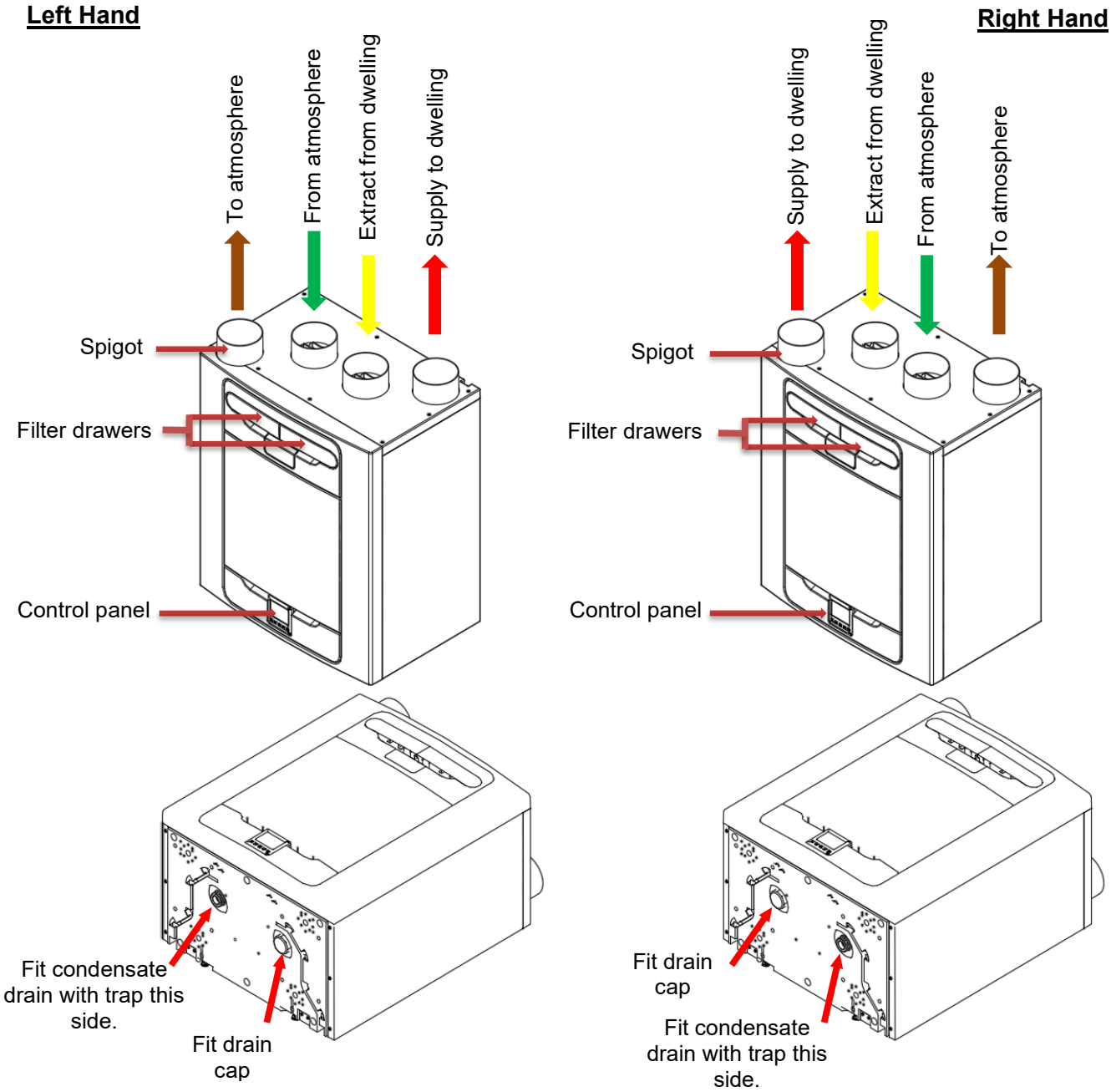
Product Description

Mechanical Ventilation/Heat Recovery (MVHR). This heat recovery unit is designed for the energy efficient ventilation of residential applications.

The unit is designed for continuous 24-hour extract ventilation of stale moist air from bathrooms, toilets, utility rooms and kitchens. As the stale air is extracted, a heat exchanger within the unit transfers up to 93% of the extract air's heat, into the supply air entering the habitable rooms such as bedrooms and lounge. This provides significant energy recovery, reducing household heating costs, and providing the optimum comfort conditions.

In addition, some models feature Constant Volume which will maintain a constant airflow and overcome additional pressure constraints within its performance capabilities.



MVHR with Left-Hand and Right-Hand spigot configuration.
Units with a preheater are preconfigured from the factory and the handing cannot be changed.

Installation

Overview

Before installation of the unit

We advise installers to fix all mains and sensor wiring along with any internal accessories prior to fixing the MVHR unit in position, leaving approximately 500mm tails to allow for internal routing.

Inspect the Unit

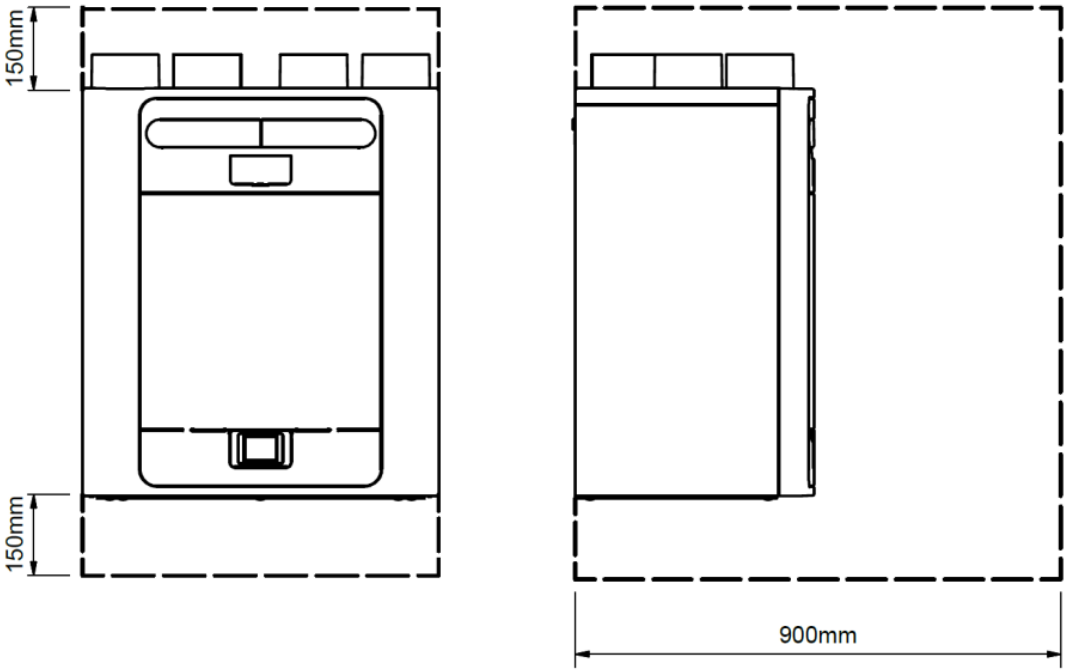
When taking delivery of the unit, check the items delivered against the enclosed delivery note. Inspect the unit for damage in transit. If in doubt, contact Customer Services. Each box contains a heat recovery unit, a wall bracket and accessory pack containing miscellaneous fixings and product documentation.

Unit Installation

Installation should be carried out by a suitably qualified and competent person.
If the unit is wall mounted, the wall should have sufficient strength to support the unit.
The unit may also be floor mounted, either directly to the floor or using standard kitchen cabinet feet (not supplied). Ensure that the unit is mounted upright.
Do not use this unit as a support for any other equipment.

Service Void

Clearance must be left around the unit to allow for cleaning and servicing, the dimensions below are the minimum requirements. The condensate drain trap used will dictate the necessary clearance below the unit which may be larger than the minimums.

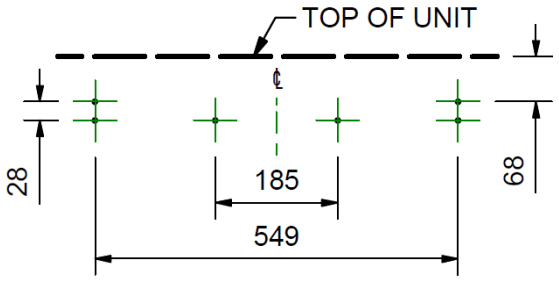


Select Unit Configuration

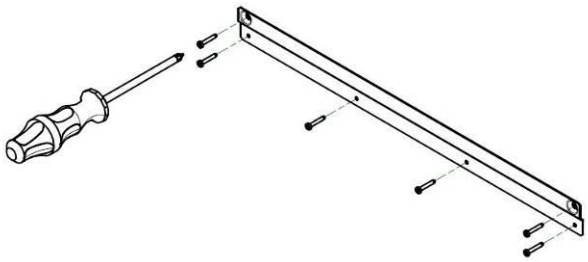
The unit is configurable as either Left or Right-Handed (Default), see page 4 for the spigot configuration. Use the Left-hand condensate drain for the Left-Hand configuration, the Right-hand drain for the Right-Hand configuration. If the unit is fitted with a preheater, the configuration is factory set.

Wall Mounting the Unit

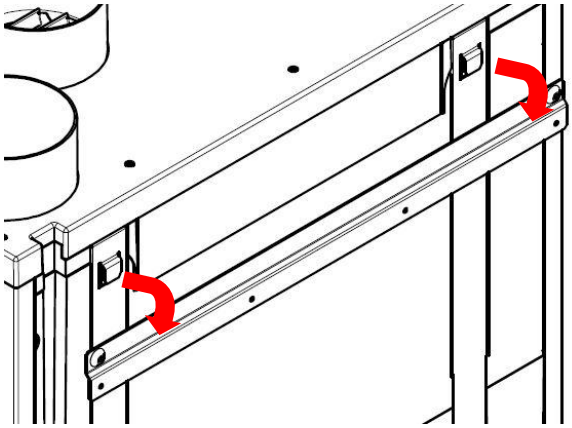
Step 1: Mark the wall bracket position using the dimensions shown. Note the position of the top of the unit in relation to the wall bracket. Ensure the bracket position is horizontal.



Step 2: Attach the wall bracket, using appropriate fixings.



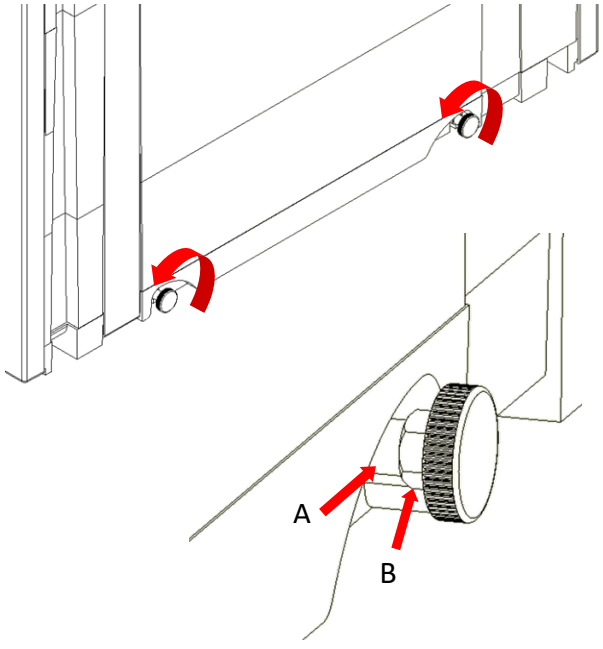
Step 3: Lift the unit and locate the two hooks on the rear onto the wall bracket.



Step 4: Make sure the unit is level or leaning slightly backwards; this is to ensure the condensate drain functions correctly.

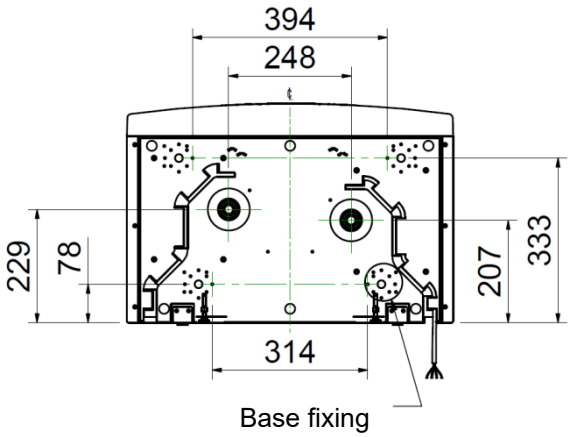
The mounting feet at the base of the unit are adjustable. From the factory, the mounting feet are set to compensate for the standoff caused by the mounting bracket. Adjust the feet in or out to level the unit as necessary.

If mounting on uneven walls, the spacers (A) may need to be removed before the feet can be screwed further into the unit. Lock the mounting feet into their final position using the M6 nuts (B).



Floor Mounting the Unit

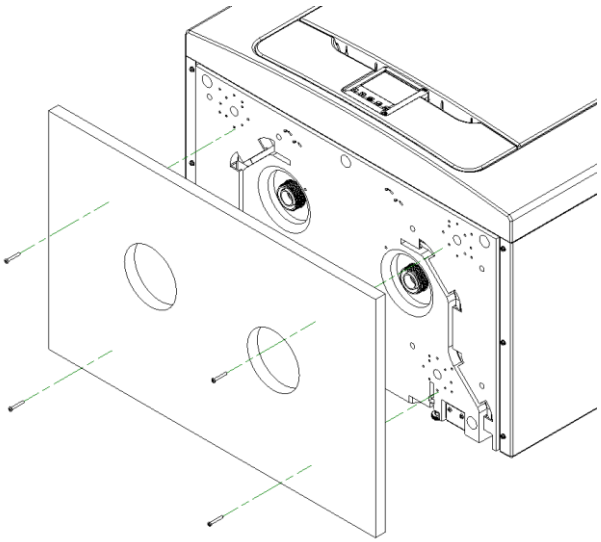
Step 1: The unit has 44 x 12mm deep fixing holes on the underside. Predrill a board using the dimensions shown and cut 2 x 105mm minimum diameter holes for the condensate drain access.



Step 2: Mount the board to the underside of the unit using appropriate fixings.

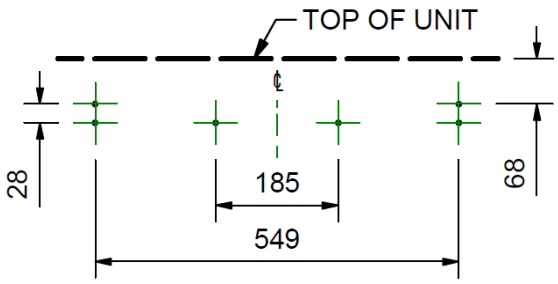
Note: Ensure any other cabling requirements (e.g., sensor, control cables etc) are routed through the back box on rear of the unit. prior to mounting the board.

The board may then be attached to joists, flooring, or equivalent.



Vent-Axia recommends that where possible, the wall bracket is used in conjunction with any floor mount solution to prevent the unit from tipping.

Step 3: Mark the wall bracket position using the Dimensions shown. Note the position of the top of the unit in relation to the wall bracket. Ensure the bracket position is parallel to the floor.

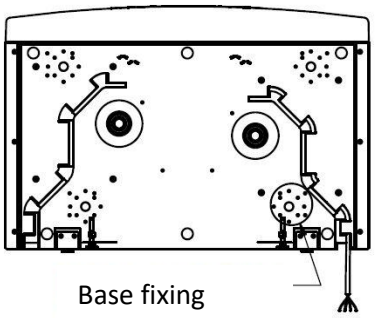


Step 4: Attach the wall bracket to the wall or batten using appropriate fixings. (As shown on page 6)

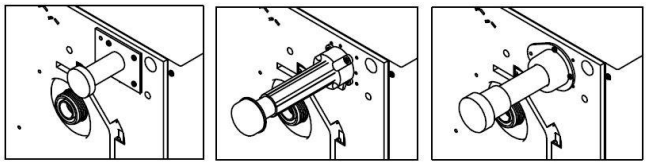
Step 5: Lift the unit and locate the two hooks on the rear onto the wall bracket prior to fixing the unit to the floor. (As shown on page 6).

Floor Mounting the Unit (Alternate Method)

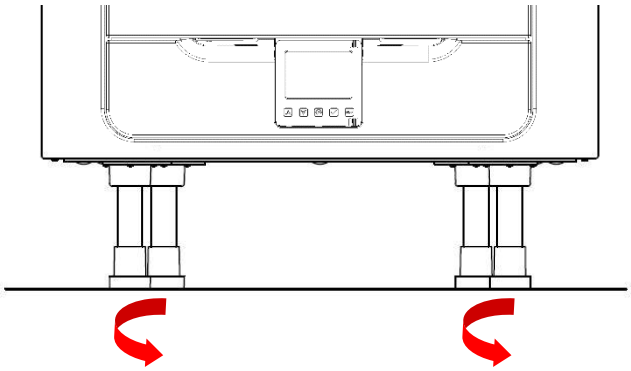
Step 1: The unit has 44 x 12mm deep fixing holes on the underside. The holes are configured to allow fitment of most standard kitchen foot types (not supplied).



Step 2: Mount your chosen foot type to the underside of the unit using appropriate fixings.

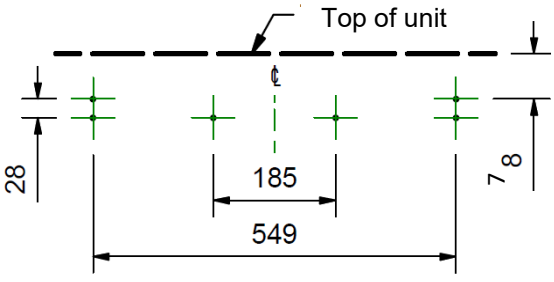


Step 3: Adjust your chosen foot type to ensure the base of the unit is horizontal in both axis.



It is recommended that where possible, the wall bracket is used in conjunction with any floor mount solution to prevent the unit from tipping.

Step 4: Mark the wall bracket position using the dimensions shown. Note the position of the top of the unit in relation to the wall bracket. Ensure the bracket position is parallel to the floor.



Step 5: Attach the wall bracket to the wall or batten using appropriate fixings. (As shown on page 6)

Step 6: Lift the unit and locate the two hooks on the rear onto the wall bracket prior to fixing the unit to the floor. (As shown on page 6).

Vertical Discharge Condensate Installation

Note:

A trap must be fitted between the condensate drain of the unit and the rest of the waste system.

A waterless trap is recommended, as they are not susceptible to drying out during warmer periods when no condensate is formed.

If a conventional trap is used, a trap with a minimum water seal of 60mm must be selected.

The condensate outlet is compatible with standard 22 mm plastic solvent weld fittings and 32mm threaded waste pipe fittings. Wastepipes must have a 3-degree minimum angle to allow the water to drain away from the unit naturally.

In areas where freezing weather conditions occur, outlet pipes must be insulated to avoid blockage by ice, which may cause damage to the unit and surroundings.

This guide shows a Right-Hand configuration for illustration.

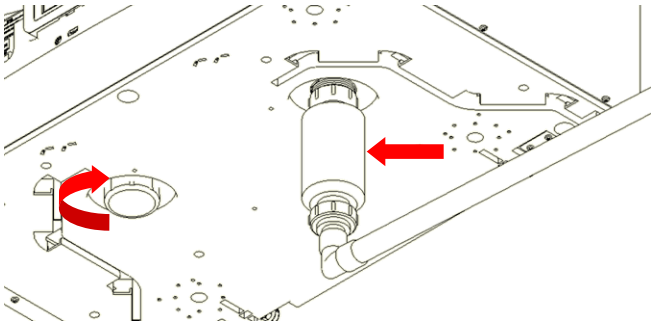
If the unit is configured as Left Hand, then the condensate drain should be installed on the left with the blanking cap on the right.

22mm waste pipe

Fit a waterless trap, or a conventional trap with a water seal of at least 60mm, close to the unit.

An adaptor can be used to adapt from 32mm to 22mm connections.

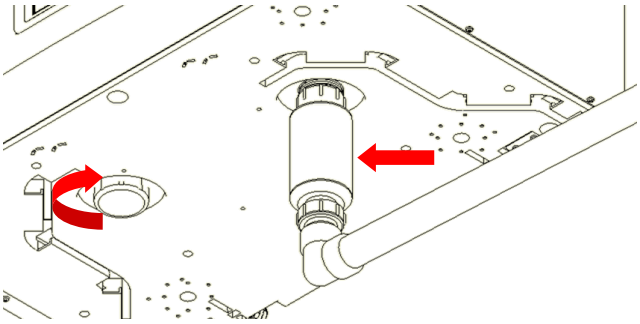
Fit the blanking cap supplied with the unit to the appropriate side, depending on the handing, see page 4. Ensure the sealing gasket is fitted inside the blanking cap.



32mm waste pipe (recommended)

Fit a waterless trap, or a conventional trap with a water seal of at least 60mm, close to the unit.

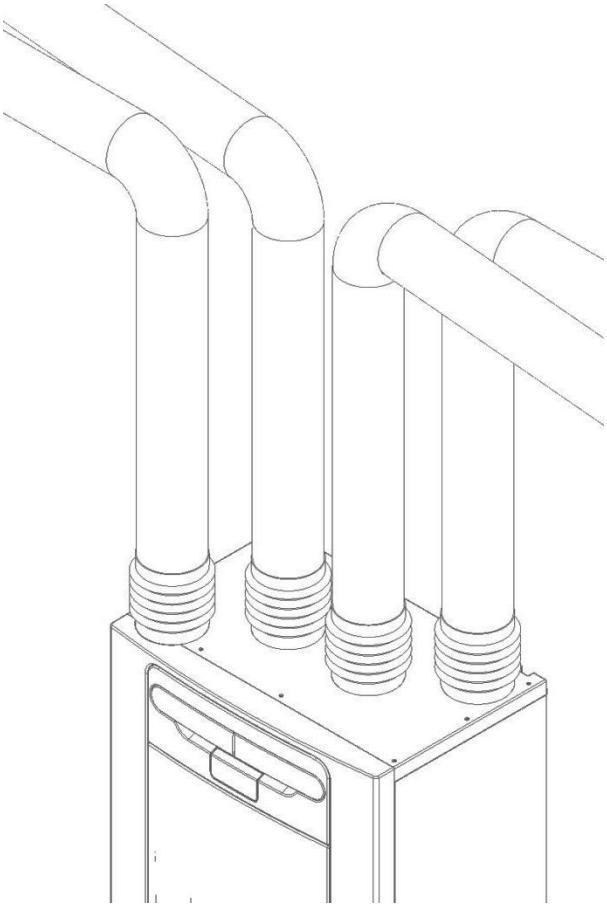
Fit the blanking cap supplied with the unit to the appropriate side of the unit, depending on the handing of the unit, see page 4. Ensure the sealing gasket is fitted inside the blanking cap.



Attaching the Ducting

1. If using Insulated flexible duct this should not exceed 500mm in length, please refer to your local building regulations.
2. Securely connect the ducting to the spigots using worm-drive clips or suitable plastic ties.
3. Insulate any ducting passing through an unheated space to prevent any heat losses or surface condensation.
4. Insulate all ducting to and from outside vents.

All ducting should be installed in accordance with your local building regulations and best practice.



Connecting the Power Supply

WARNING

1. **MAINS SUPPLY VOLTAGES (220-240V AC) ARE PRESENT IN THIS EQUIPMENT, WHICH MAY CAUSE DEATH OR SERIOUS INJURY BY ELECTRIC SHOCK. ONLY A SUITABLE QUALIFIED PERSON SHOULD CONNECT THE POWER SUPPLY TO THIS UNIT.**
2. **THIS UNIT MUST BE CORRECTLY EARTHED.**
3. **ALL EXTERNAL WIRING MUST BE FIXED WIRING.**

This unit is designed for operation from a single-phase alternating current source (220-240V AC).

A 1.5m cable is connected internally to the unit for connection to an isolator switch.

If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

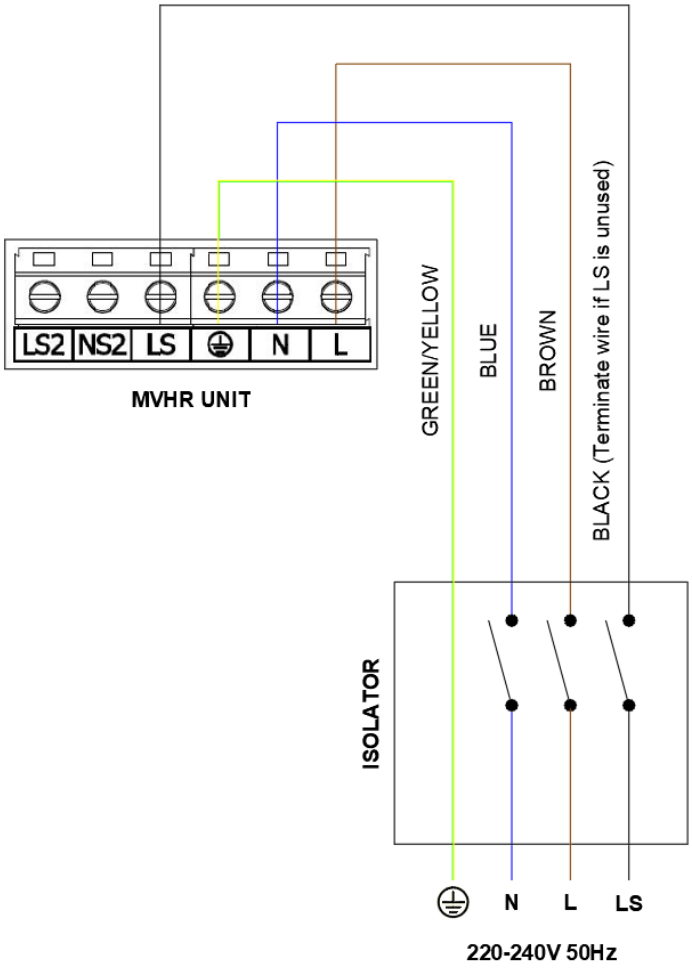
To connect the power supply:

Ensure the local AC power supply is switched off.

One end of the power cable has already been terminated within the unit.

Connect the other end of the cable to a switched fused spur as shown.

The switch fused spur needs to be 3Amp for non-Pre-heater models and 13Amp for Pre-heater models.



Connecting a Boost (Light) Switch
A Switched Live LS may be used to boost the airflow when a light is turned on, for instance in a bathroom or kitchen. (The unit can be switched to boost by applying 220-240V to the LS input).

If the LS core of the mains cable is not used it should be terminated in an appropriate manner.

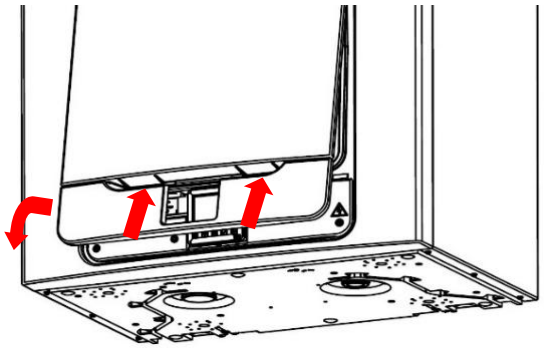
The LS connection should only be used if the switch live is on the same circuit as the unit.

Accessing the Main PCBA

WARNING

ENSURE THE ELECTRICAL SUPPLY AND CONTROLS ARE ISOLATED FROM THE MAINS POWER SUPPLY BEFORE REMOVING ACCESS COVERS

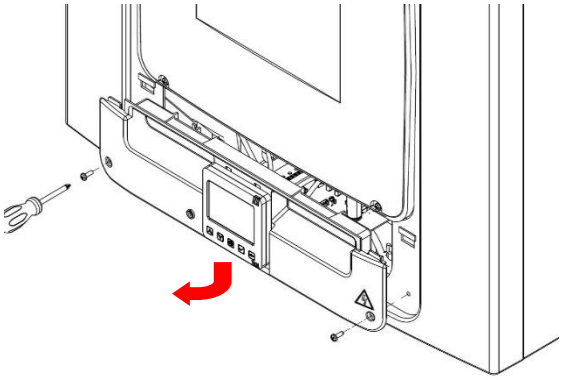
Step 1: Remove the front cover by pressing the tabs either side of the control module and lifting the cover outwards from the bottom edge.



Step 2: Remove the two screws on either side of the access panel. Lift the panel outwards from the bottom edge to remove.

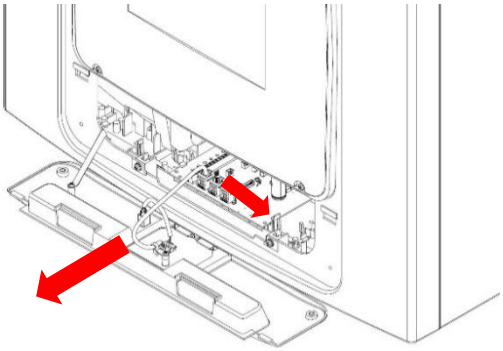
Note: The access panel is tethered on the left-hand side.

Note: All printed circuit boards are ESD sensitive. Always ensure the correct ESD protection is used.



Step 3: Push the locking tab away from the printed circuit board and slide it outwards to access the terminals.

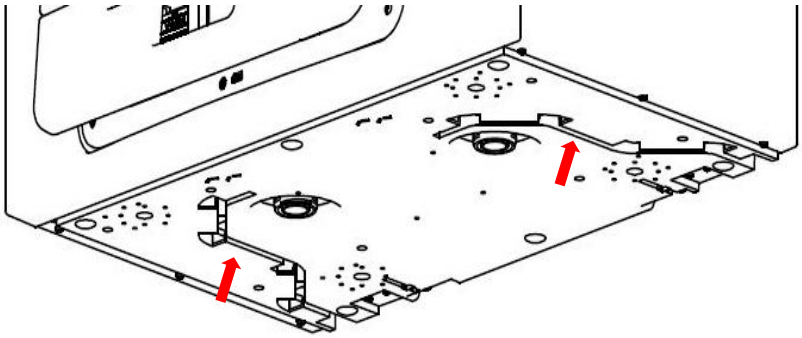
Note: The printed circuit board will relock after 60mm.



Connecting a Boost (Light) Switch from a different circuit, Controllers and Sensors

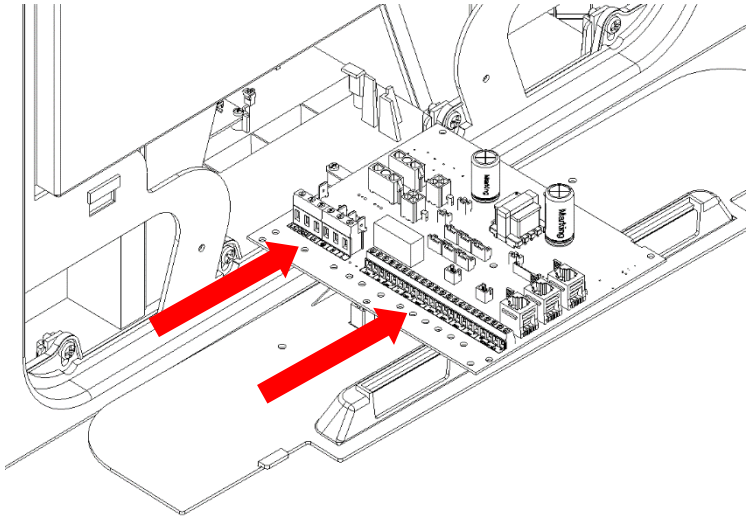
For good EMC engineering practice, any sensor, switched live or Volt free cables should not be installed within 50mm of other cable or on the same metal cable tray as other cables.

When fitting external controls, all cables should be routed through the back of the unit shown below.

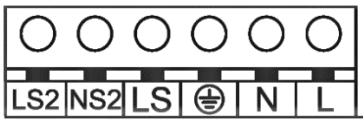


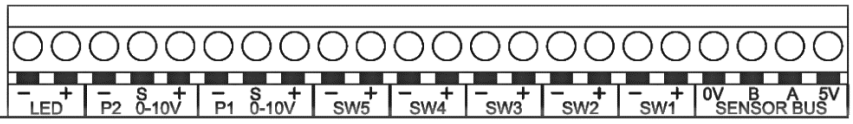
Cable Channels

Connect any switches or sensors required to the unit via the terminal connections along the side of the main PCB, as shown below.
If necessary, contact your distributor regarding the wiring and fixing of accessories and sensors.



Terminal Connections



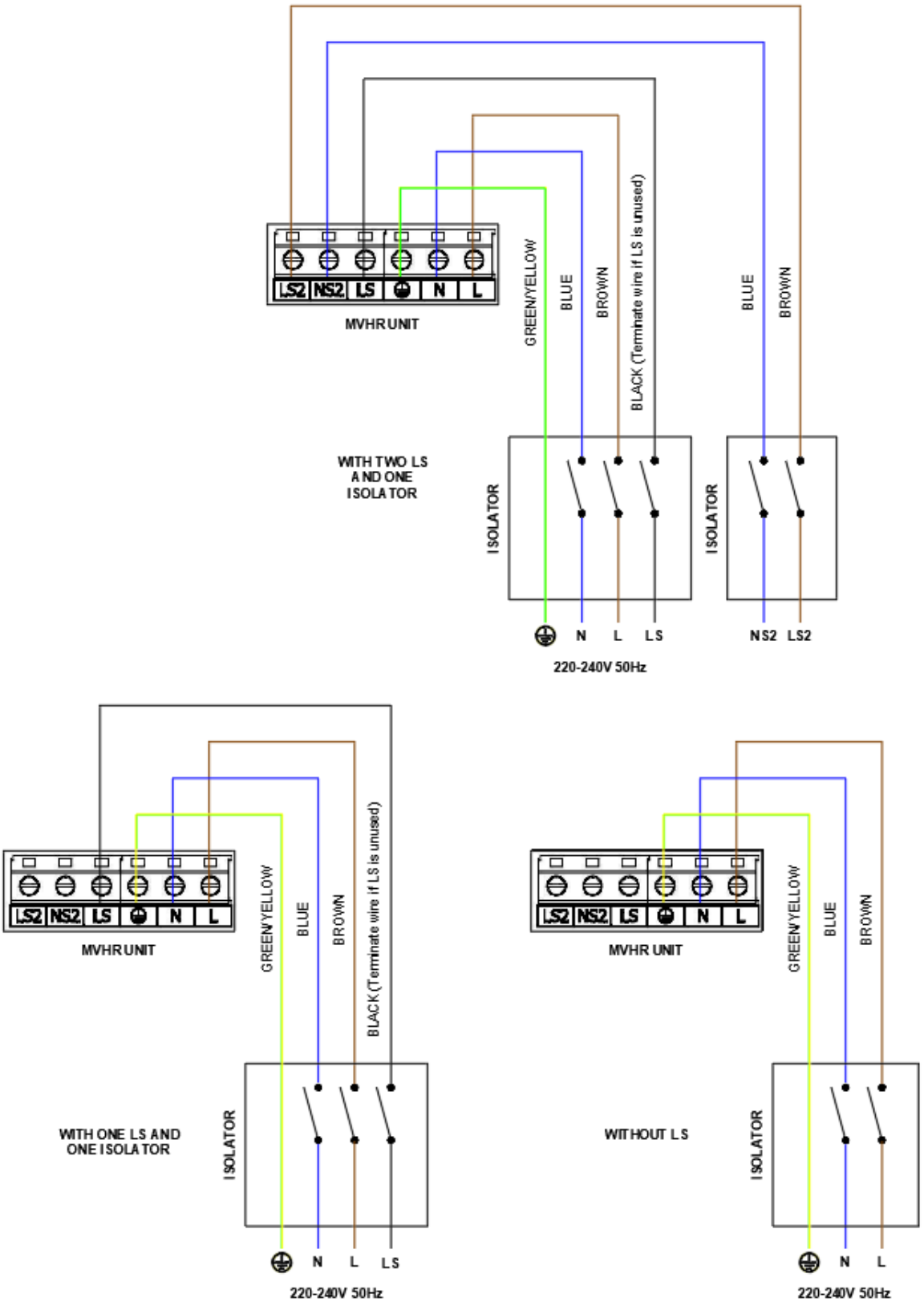


Terminal No.	Name	Description
LS2	Switched Live 2	220-240 V AC, 50 Hz input
NS2	Switched Neutral 2	220-240 V AC, 50 Hz input
LS	Switch Live	Switch Live (Common neutral with Mains Supply)
⏚ EARTH	Mains Earth	Earth connector
N	Mains Neutral	220-240 V AC, 50 Hz input
L	Mains Live	220-240 V AC, 50 Hz input
LED	Red Light Emitting Diode Output	A LED driving signal output between the - and + terminals that enables remote indication of a unit fault. See the Control Panel for fault code (see on page 36). May also be used for a connection to a BMS or similar.
P2 -s+ P1 -s+	0-10V	0-10V sensor input with 24V supply terminal
SW 1-5	Switch 1 to 5	Volt-free contact for sensor input between - and + terminals
0V, B, A, 5V	Sensor Bus	RS485 Termination for remote wired sensors/Controller

Connecting a Boost (Light) Switch from a different circuit

If the supply used for the Switched Live is on a different circuit to the power connections, the connections LS2 and NS2 should be used, via a separate isolator.

Please follow circuit diagram as shown.



Operating and Monitoring

Powering up the Unit

Switching On

To switch the unit on:
1. Switch on the power at the mains supply isolator feeding the unit.
2. Following switch-on, after initialisation (up to 2 minutes) the fan motors will start and the Control Unit will display the home screen.

N.B. If you are intending to carry out work or maintenance inside the unit, isolate the supply to the unit before removing any covers.

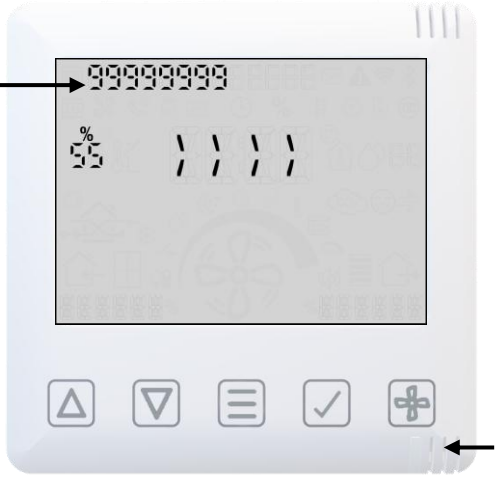
Switching Off

To switch the unit off:
1. Turn the power off at the mains supply isolator.

Initialisation/Loading Screen

Firmware version
1 – HMI
2 – Bluetooth & WiFi
3 – PCB Main Board

The Initialisation can take 2 minutes to complete.

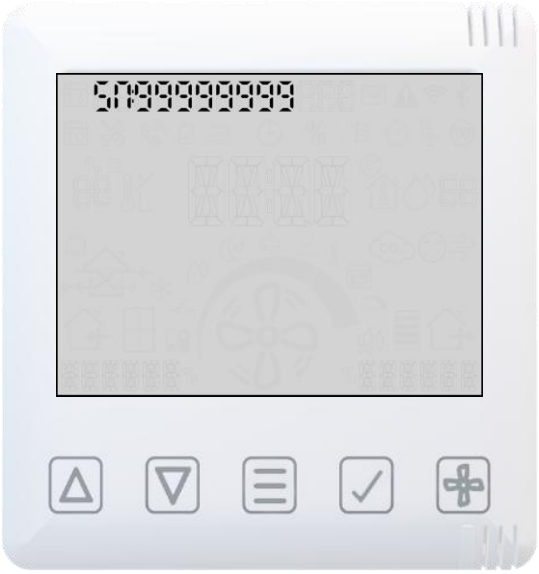


Primary Devices
Idle White LED indicates primary HMI, this device supports Bluetooth/Wifi connection (see Smart Device Pairing)

Additional Devices (If purchased)
Idle Green LED indicates secondary HMI device, no Bluetooth/WiFi support. (Refer to Pairing Sensors)

Serial number on initialisation

Serial number displayed after initialisation is complete.



Overview

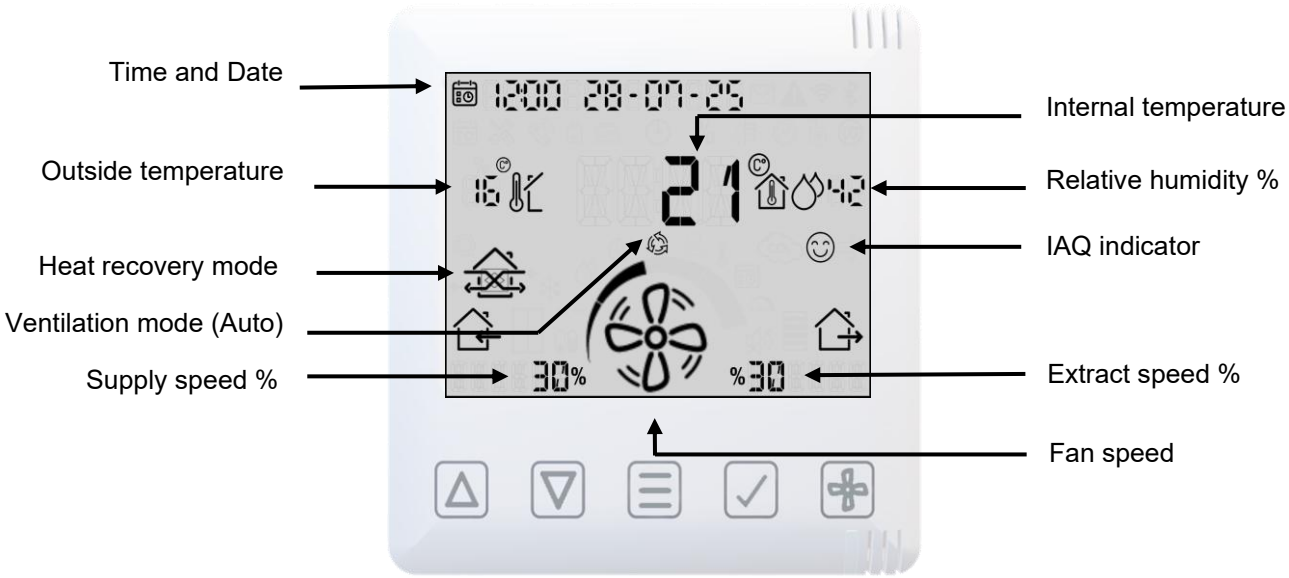
The instructions in this section are intended to provide configuration and operation information for setting up the equipment. In the event of problems, see Diagnosing a Problem on page 36.

Follow good practice when commissioning the unit. Ensure that the system is installed according to the system designer's intent incorporating any acoustic ducting, that all joints are airtight, ducting is well supported, bends are avoided close to vents, and that the vent valves are fully open at the start of the commissioning process.

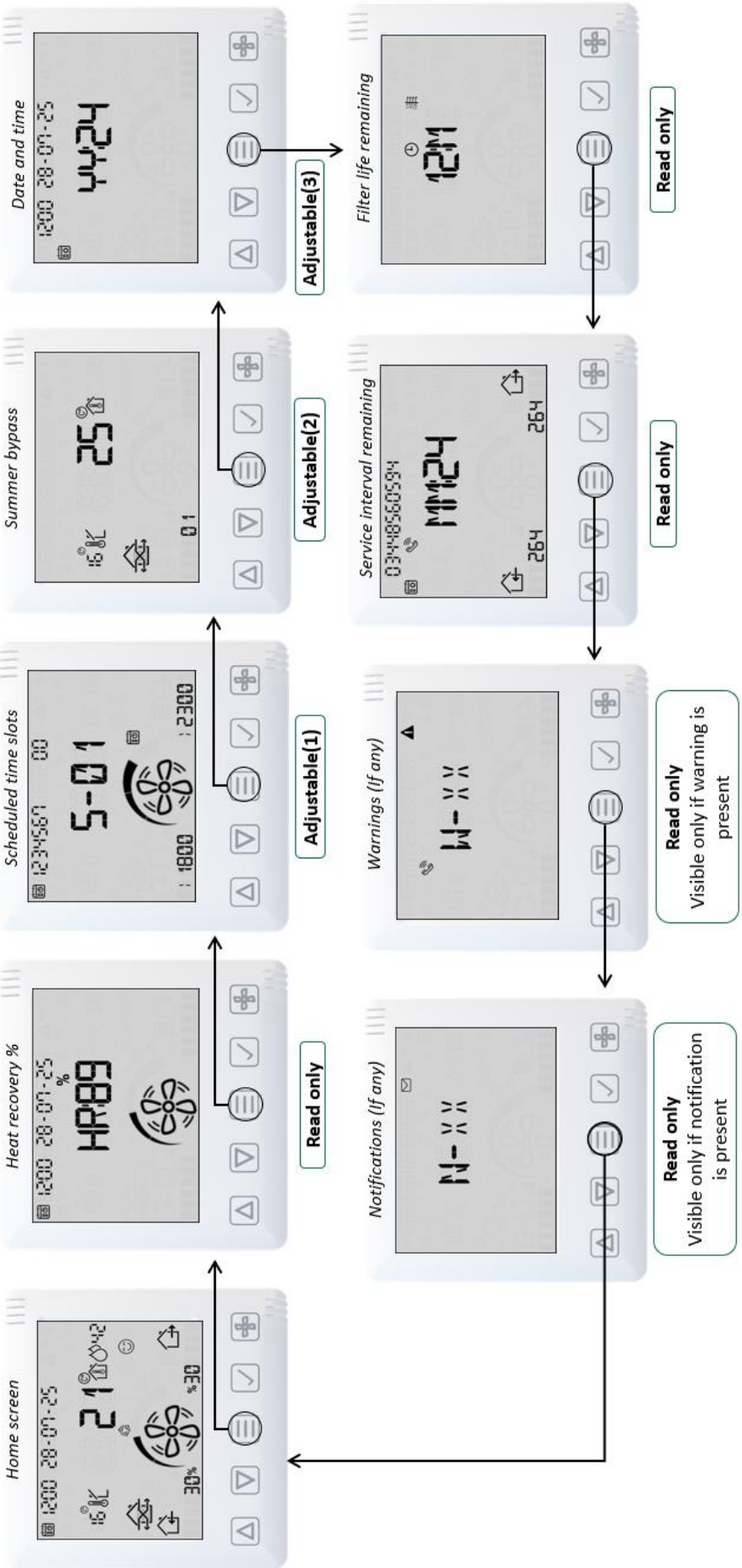
Commissioning of the unit should be done via the App. See page 20 for Smart Device Pairing.

Note: We would recommend the latest firmware is installed via the firmware manager in the app (under menu "advanced settings"), on first connection.

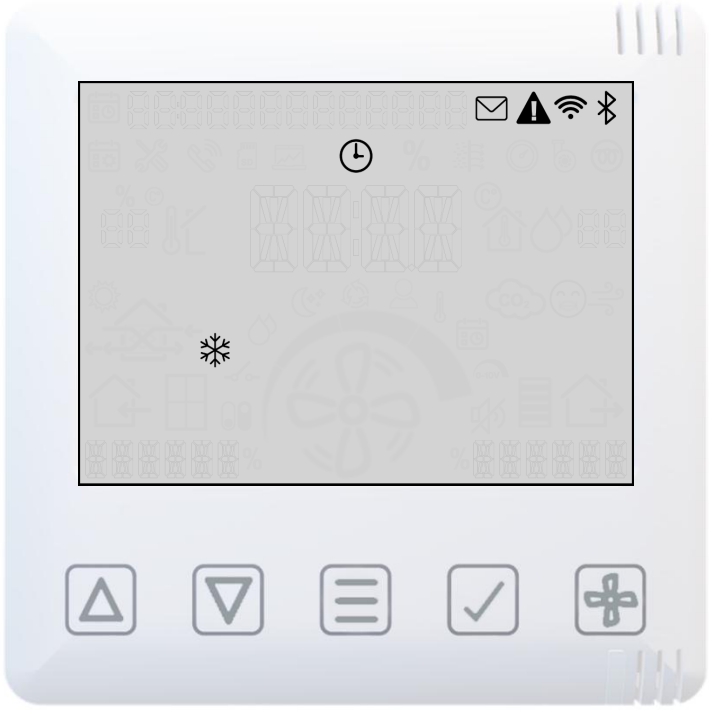
Display overview – Home screen



Home User Menu



Display overview – Additional icons

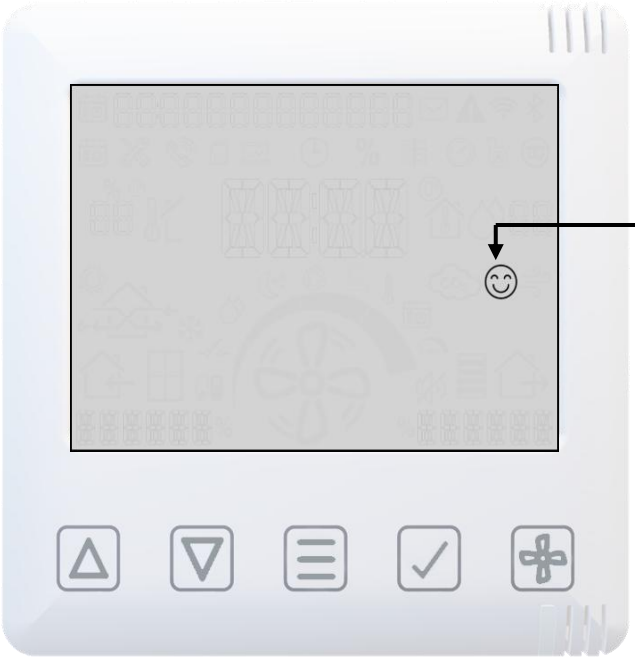


Display overview – Mode indicators

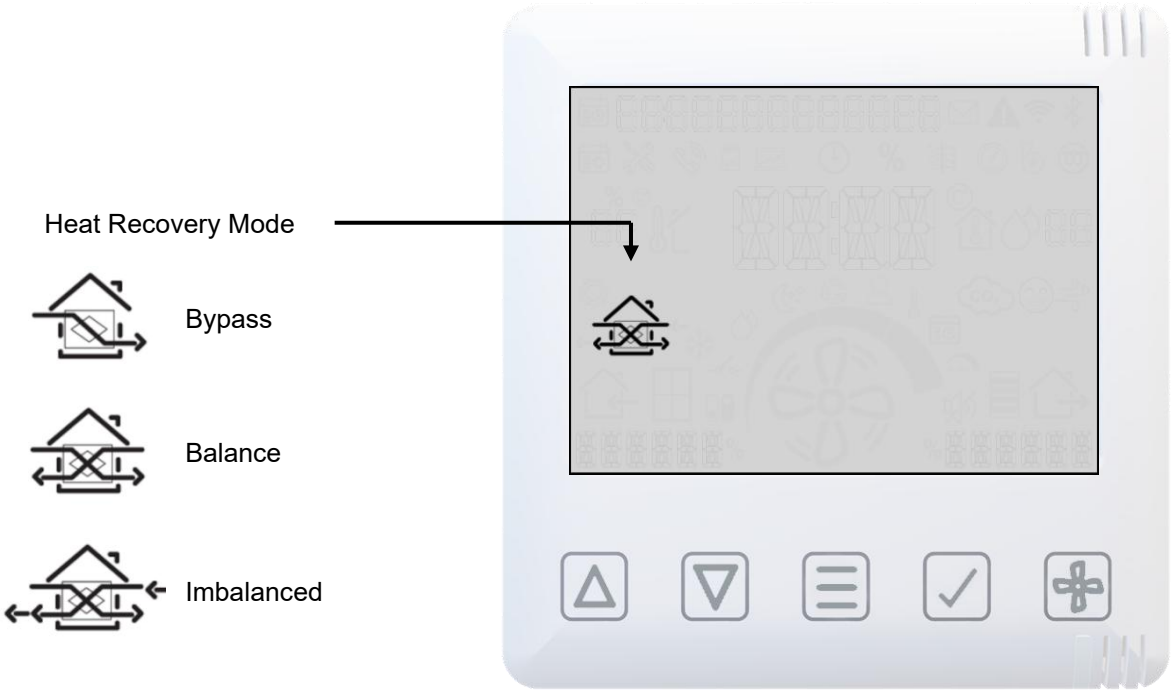
Display overview – Indoor air quality monitor

Air quality indicator uses sensor values that the unit supports:

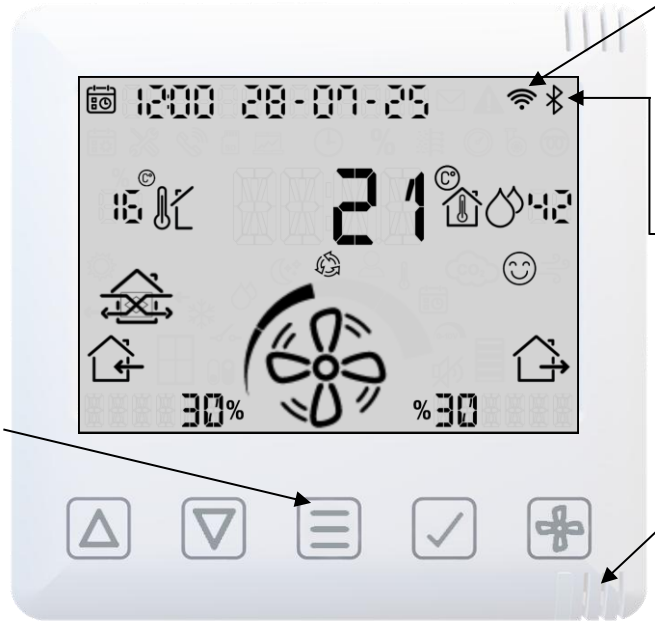
- Relative humidity
- CO2 (if fitted)
- TVOC (if fitted)



Display overview – Heat Recovery mode



Smartphone Device Pairing and App download



WiFi icon will appear

Solid WiFi = Connected
Flashing WiFi = Network connection is linked but not connected to device.

To be utilized in conjunction with App Instructions

Bluetooth icon will appear

Solid Bluetooth = Connected
Flashing Bluetooth = Pairing

Press and hold for 8 seconds, until Blue LED is illuminated.

Flashing Blue LED = Pairing/Enabled.

Solid Blue LED = User Connected/Authenticated.

The App allows the user instant access to commissioning, configuration, direct monitoring and control of the MVHR unit, using a smart phone or tablet with the **Vent-Axia Connect App**, available from the iTunes Store or on Google Play.

Note: Bluetooth must be enabled on the device before commencing the pairing process.

Download on the App Store

GET IT ON Google Play

Pairing sensors

To pair the unit with a wired or wireless sensor:

- Press and hold the **MENU** button until the LED illuminates solid White.
- Release the **MENU** button, the LED will flash White to indicate that it is in pairing mode. The unit will remain in pairing mode for 5 minutes, or until the **MENU** button is pressed again.
- Activate the pairing function on the sensor to be paired (see the instructions that came with the sensor).
- When a sensor is paired the total number of paired devices is displayed on the unit.

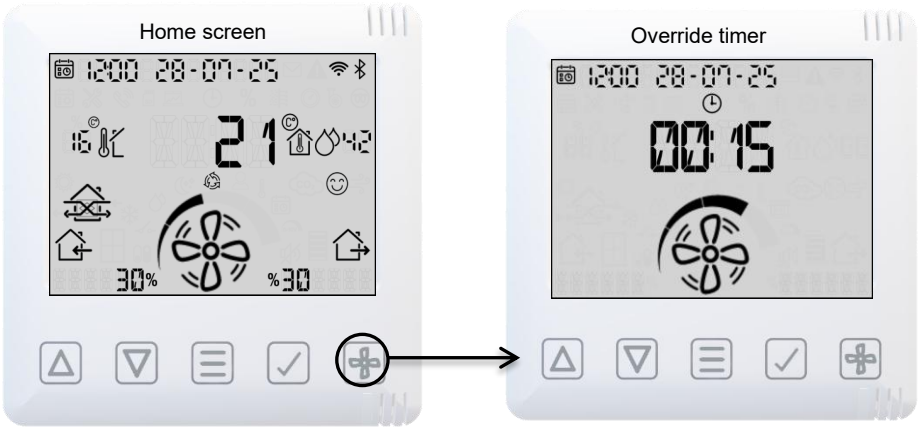
Note: Wired controls and sensors must be connected in a RS485 bus configuration. At the start and end of the bus system, the jumper (termination resistor) on the control board and sensor must be in the correct position. Refer to Sensor Manual.

Removing sensors

To remove paired sensors, the unit must be reset. Caution, this will reset all values back to factory default.

- Press the **MENU** button to turn on the display.
- Press and hold the **MENU** button until the LED illuminates solid Red.
- Release the **MENU** button, the LED will stay Red.
- Pressing the **MENU** button again will confirm the reset command. If a reset is not wanted, leave the unit until the command times out and the LED turns off.

Speed override



To Cancel the Override timer, set the time to 00:00

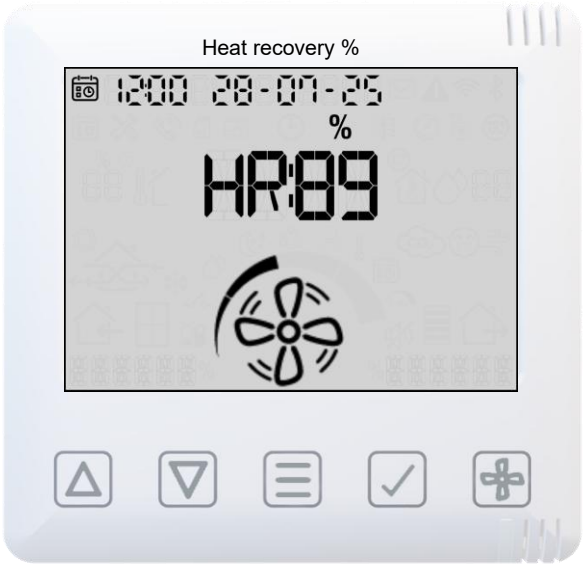
Increase Timer

Decrease Timer

Change Fan Speed – Low, Normal, Boost, Purge

Confirm Timer

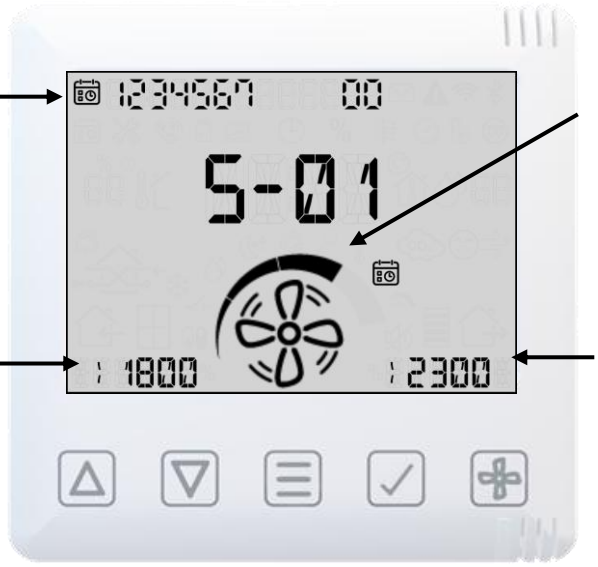
Heat recovery



Heat Recovered information

(in Percentage Approximate)

Schedule



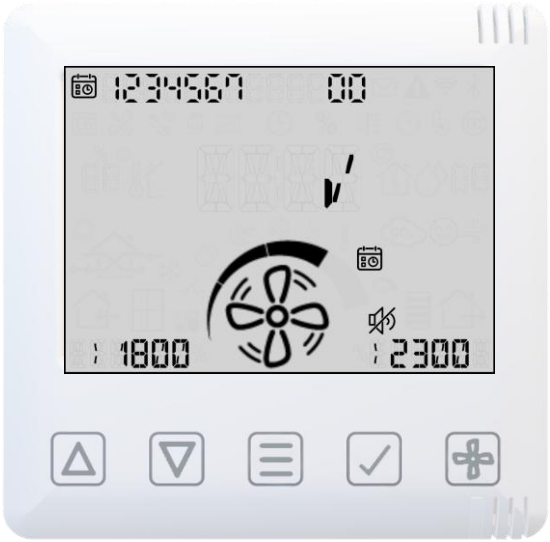
Press 2 x from Home Screen to enter scheduling.

Enter edit mode/Confirm Selection.

Move between existing schedules and adjust schedule times/days in edit mode.

Change Fan Speed – Low, Normal, Boost, Purge when flashing.

Silent hours Mode



Silent Mode Enabled

(Don't allow Boost and Purge Speed Preset)

Silent Mode Disabled

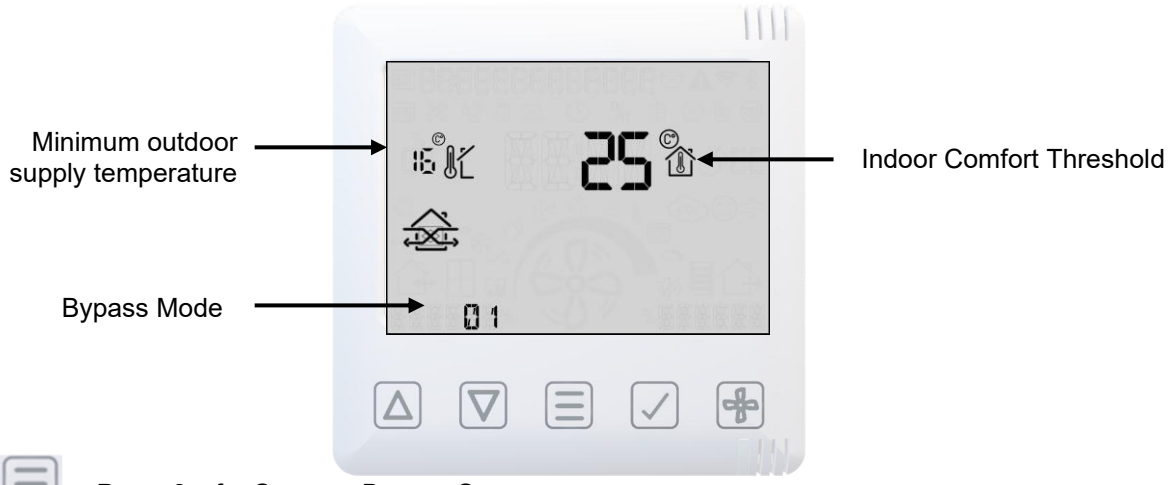
(Allow all Speed Presets)

Silent hours Enabled

Note:

- **Silent Hours mode is useful to impose a speed/flow restriction on the unit to minimize unwanted noise during the night.**
- **If Silent hours are enabled, the unit will not speed up above the set fan speed.**
- **Silent Hours can be set to reoccur on specific days and times.**

Summer Bypass



Press 3 x for Summer Bypass Screen

Press 1 x for Bypass Mode

00 = Disabled (not recommended)
01 = Normal Bypass
02 = Evening Fresh
03 = Night Time Fresh
04 = Modulated Normal Bypass
05 = Modulated Evening Fresh
06 = Modulated Night Time Fresh
See page 41 for details.

Change field up/down

Change Fan Speed - Low, Normal, Boost, Purge
(Fan speed can be editable for Modes 02 & 03 only, for Mode 01 fan speed is not adjustable.)

Press 2 x for Indoor Comfort Threshold

Press 3 x for Minimum outdoor supply temp

Press TICK to Save

Note: The fan speed is only not shown if there is no cooling override; it remains visible during Evening or Night Time Fresh modes and when a cooling unit is installed.

Date / Time

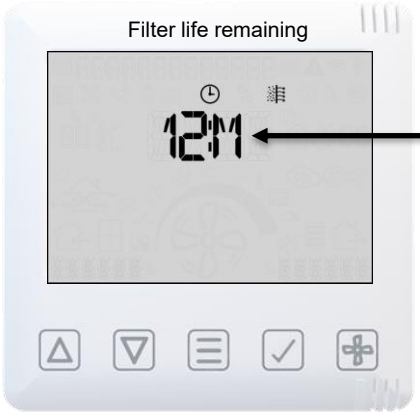
Press 4 x from Home Screen to enter Date/Time screen.

Enter/Confirm Selection

Change entry within below field.

YY = Year
MM = Month
DD = Day
HH = Hour
MM = Minutes

Filter reset



Press 5 x from Home Screen to enter filter screen.

Change service duration for filters: 3, 6, 12 or 18 months.

Press TICK to Save.

Months remaining, will indicate when filters need replacing/cleaning.

Press 5 x from Home Screen to enter Filter screen.

Press UP button to 'RSET' service duration for filters.

Press TICK to Save.

00:M displays i.e. resetting the filters to current time from last replaced time.

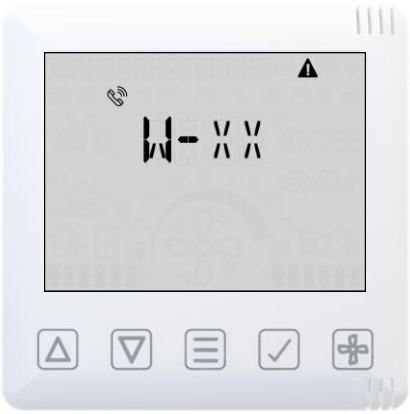
After 1 minute, filter life remaining months gets displayed in the filter interval screen

Note: Reset option will allows the unit to reset the last filter replaced time to current time. Once the reset is done, it then displays the actual period left for next Filter replacement.

Warning Screen

Please see Page 36 for warning codes

Important: This screen is only visible if a warning is active.

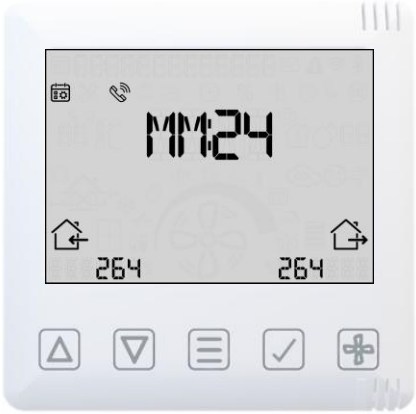


Service Interval Remaining

Month remaining before service is due.

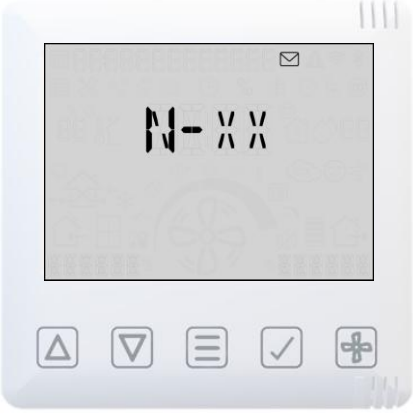
Press 6 x from Home Screen to enter Service Interval Screen.

Note: The Service phone number will be set via app.



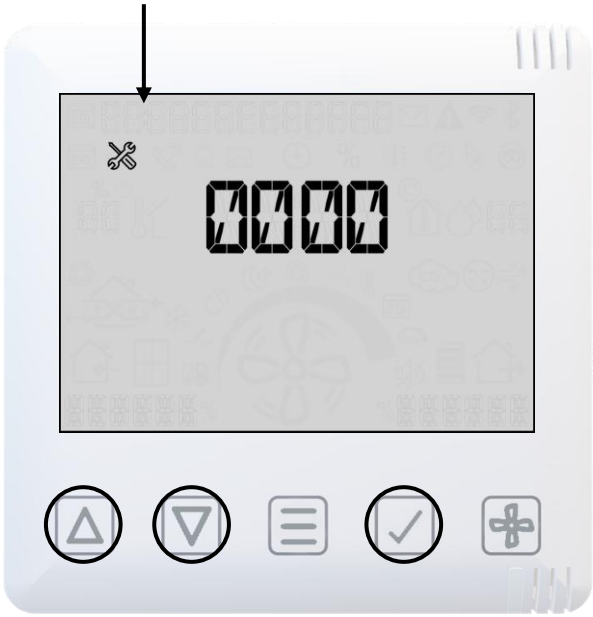
Notifications if any

Please see 36 for notification codes



Advanced menu

Engineering mode

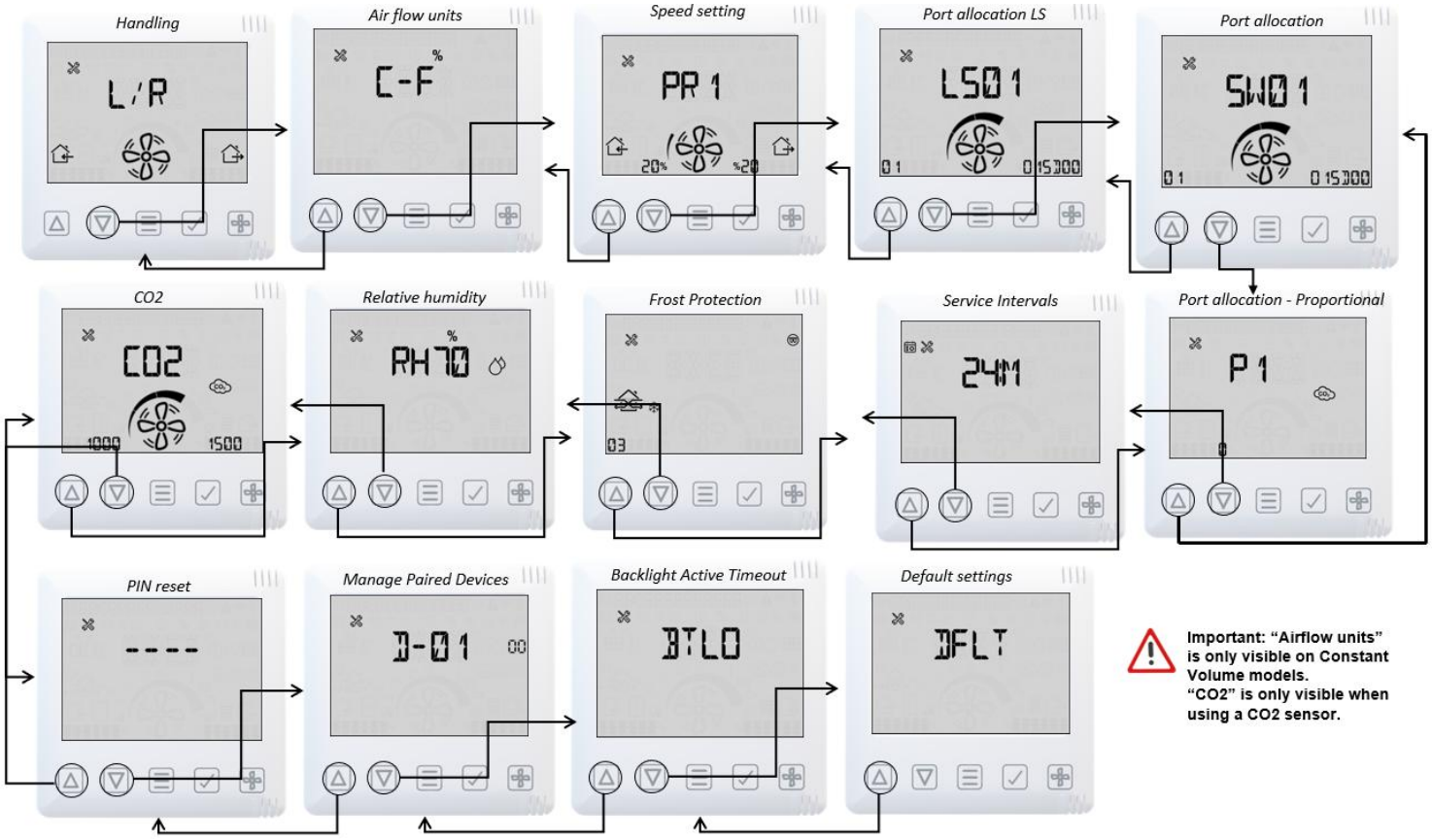


Important: Be on the Home Screen, before pressing and holding the UP button to enter into Engineer menu.

Press and hold for 3 seconds to exit or enter the Engineer Menu.

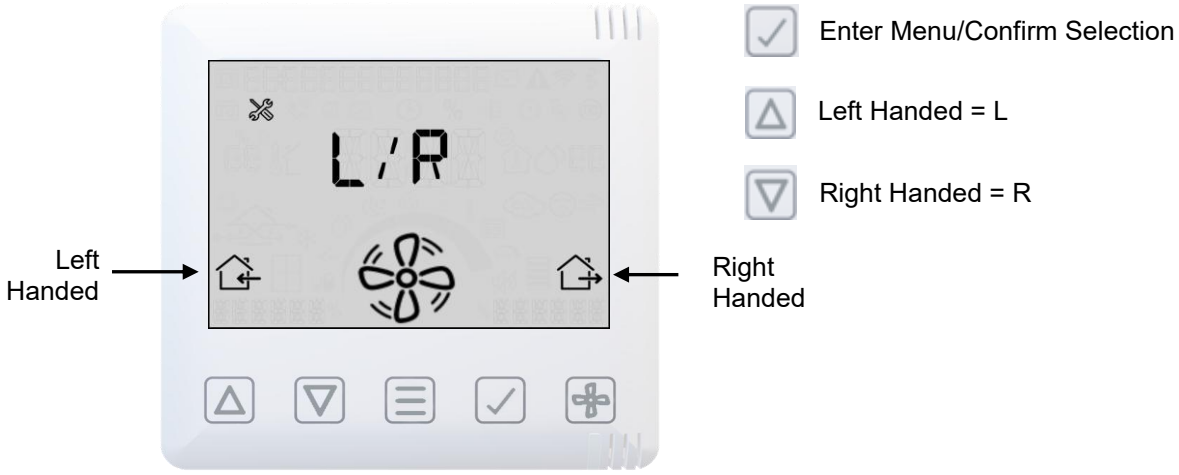
Use up and down to adjust each pin number and press ✓ to confirm each number and enter Engineer settings.

Advance Menu Overview



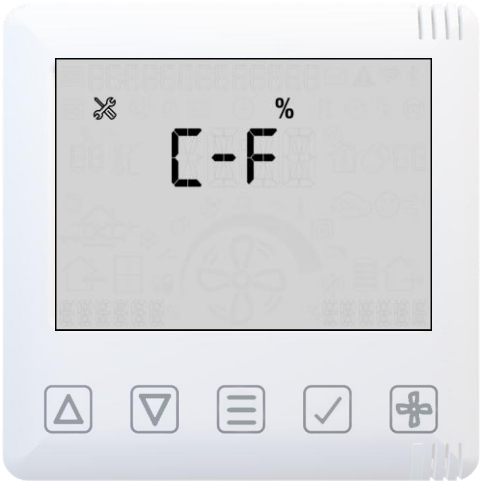
Advanced menu– Unit handing

Please see page 4 for details of handing.



Note: MVHR with Left-Hand and Right-Hand spigot configuration. Units with a preheater are preconfigured from the factory and the handing cannot be changed.

Advanced menu– Airflow units



User can select preferred Airflow units.

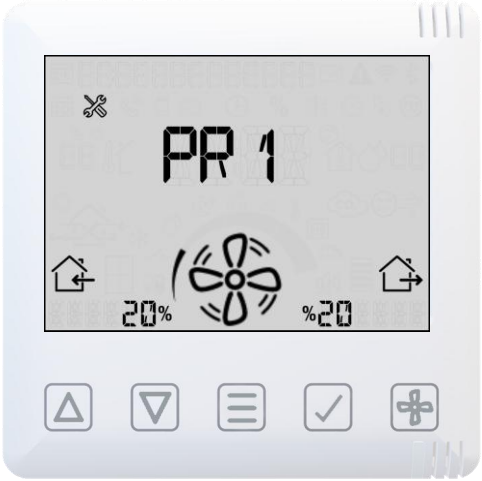
Enter/Confirm Selection

Alternate measures
L/S M³/H C-F M³/S

This alternative measures are only visible and used on Constant Volume models.

Refer default settings (page 46) for more details.

Advanced menu– Airflow speed setting



Select PR1-4

Enter/Confirm Selection

Adjust flow rate as %

PR1 = Low Speed 20% Default

PR2 = Normal Speed 30% Default

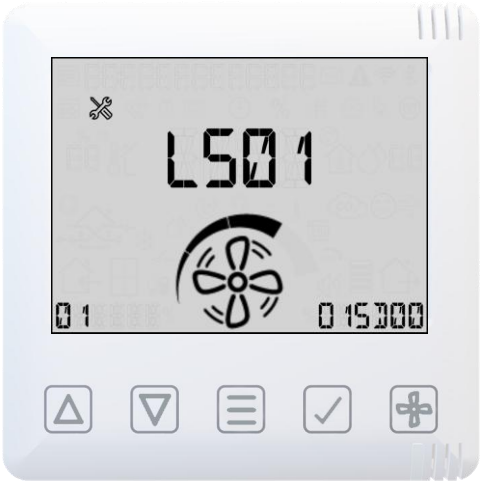
PR3 = Boost Speed 50% Default

PR4 = Purge Speed 100% Default

Refer default settings (page 46) for more details.

MVHR unit will run at speed indicated on this screen to aid commissioning.

Advanced menu– Port allocation LS



Change Fan Speed – Low, Normal, Boost, Purge

Enter/Confirm Selection

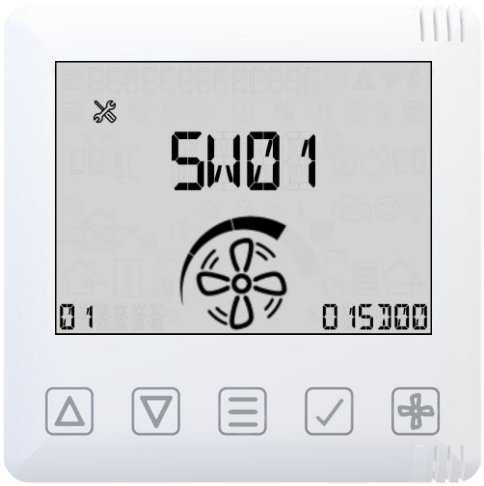
Change Port for Live Switch LS01 or LS02

Port modes are:
00 - Disabled
01 - Continuous
02 - PIR
03 - Momentary Switch
04 - Central Heating Active /Cooling Disabled
05 - Fire Alarm
06 - System Enable (not recommended)
(07 not applicable to MVHR)
08 - Cooling Override

Overrun and Delay can set from 0 to 99 minutes.

Refer default settings (page 46) for more details.

Advanced menu– Port allocation



Change Fan Speed – Low, Normal, Boost, Purge

Enter/Confirm Selection

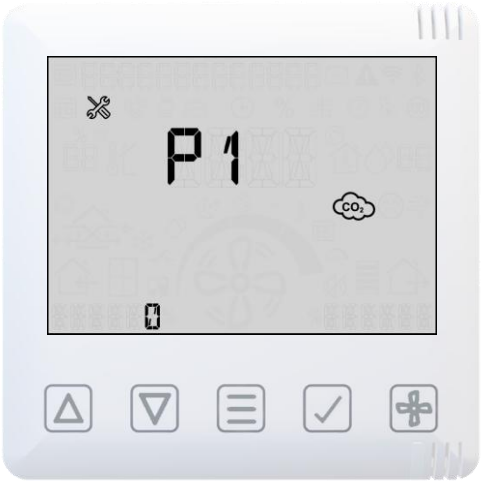
Change Port Switch SW01 to SW05

Port modes are:
00 - Disabled
01 - Continuous
02 - PIR
03 - Momentary Switch
04 - Central Heating Active /Cooling Disabled
05 - Fire Alarm
06 - System Enable (not recommended)
(07 not applicable to MVHR)
08 - Cooling Override

Overrun and Delay can set from 0 to 99 minutes.
Refer default settings (page 46) for more details.

Advanced menu– Proportional Inputs

Note: More configuration options available in the App at advanced settings menu, see on page 20.



Press Once for Zonal Selection

Press twice for Control method Selection

Change Proportional Control P1 or P2

Change Zonal Control 0-15

Or

Control Method Temperature, Humidity, 0-10V, CO2

Refer default settings (page 46) for more details.

Advanced menu– Service Intervals

Service Icon →

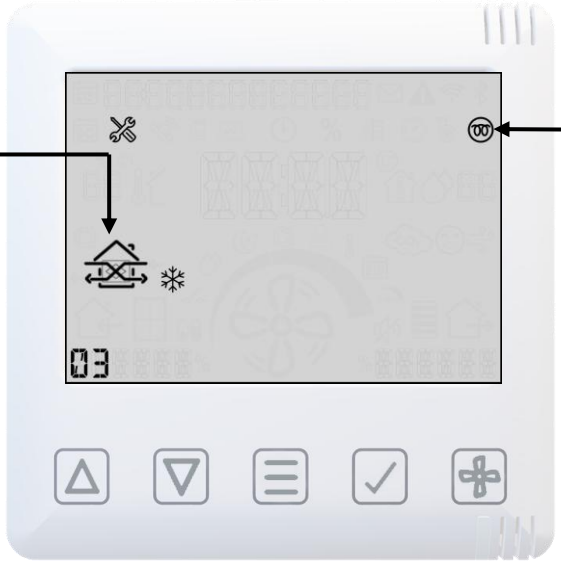
Enter/Confirm Selection

Reset Service Interval

Change service interval 1-60 months.

Refer default settings (page 46) for more details.

Advanced menu– Frost Protection mode



Frost Protection Mode

01 Imbalanced Airflow

02 Bypass

03 Balanced Pre-heater

04 Imbalanced Pre-Heater

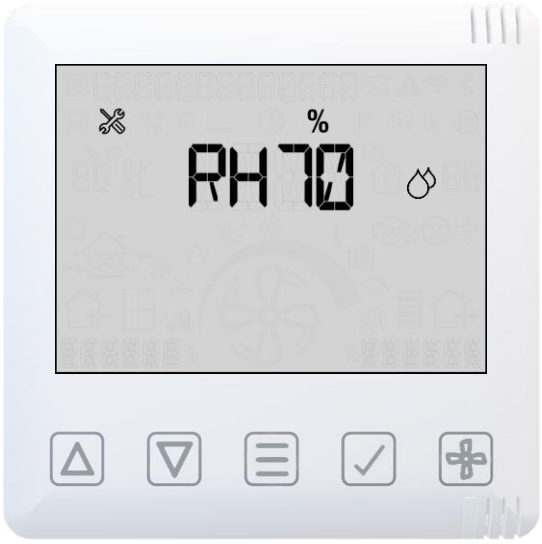
Heater Activated

Enter/Confirm Selection

Alternative Modes

Refer default settings (page 46) for more details.

Advanced menu– Humidity



Enter/Confirm Selection

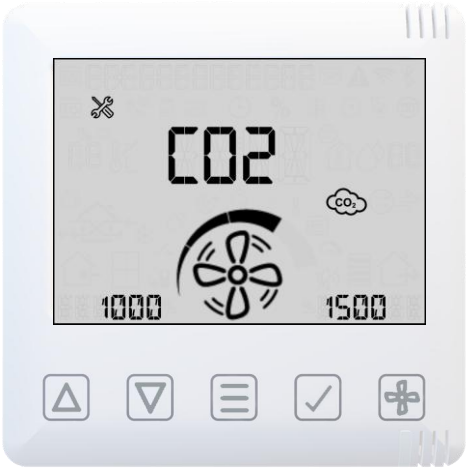
Change Relative Humidity between 50-90%

70% Default

Refer default settings (page 46) for more details.

Rapid rise can be Enabled/Disabled via the App. Along with Ambient response/overrun times.

Advanced menu– CO2 threshold



This is only visible when the CO2 sensor is installed.

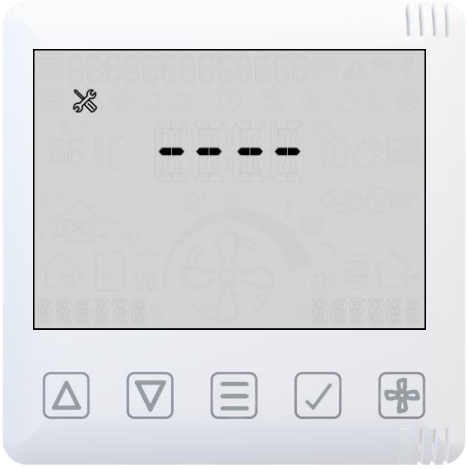
Enter/Confirm Selection

Change Fan Speed - low, normal, boost, purge

Change CO2 PPM Threshold 1000-2000 Default

Refer default settings (page 46) for more details.

Advanced menu– PIN Change

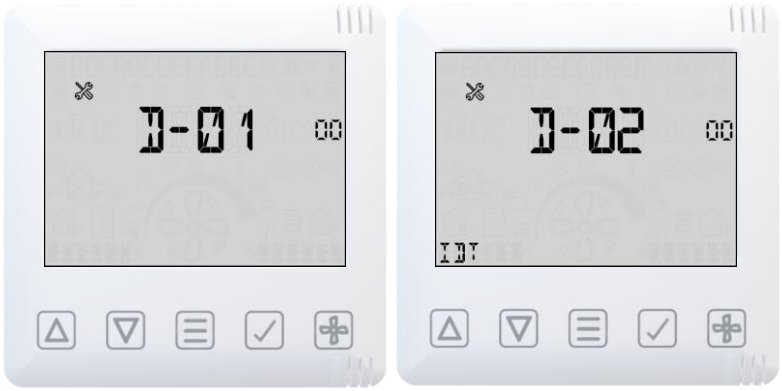


Enter/Confirm Selection

Change Pin Number 0-9

Refer default settings (page 46) for more details.

Advanced menu– Manage Paired Devices



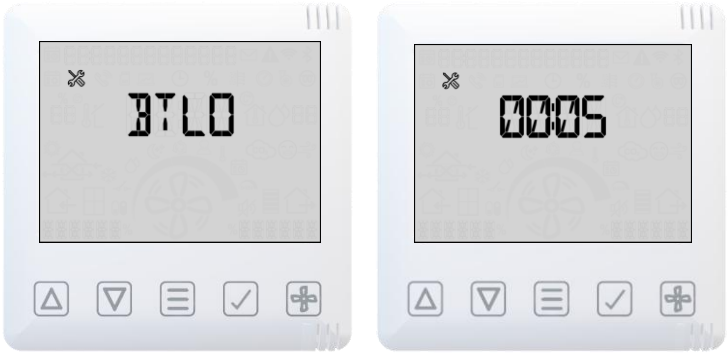
Press Menu to view paired devices list

Press TICK to edit

Press up/down to identify/ delete/ rezone the devices.
(zones can be selected from 0-15)

Press TICK to Save the changes

Advanced menu– Backlight Active Timeout screen

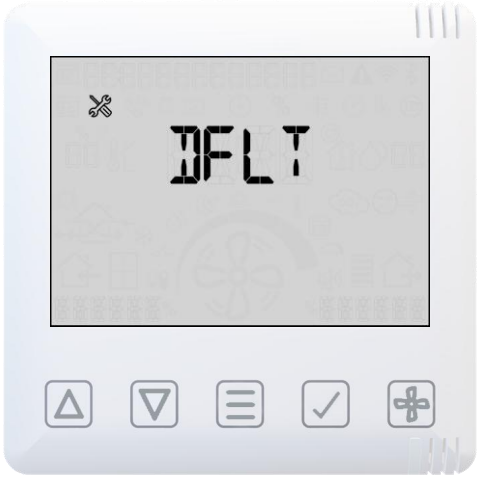


Press TICK to edit

Press up/down to change backlight active timeout value from 1 to 30 minutes
(by default it is 5 mins)

Press TICK to Save the changes

Advanced menu– Resets unit to factory defaults (including Handing & Commissioning values) , Retains pairing with HMI and Sensors



Scroll down to Default screen.

Press TICK button, a cross (✕) will then be displayed on screen.

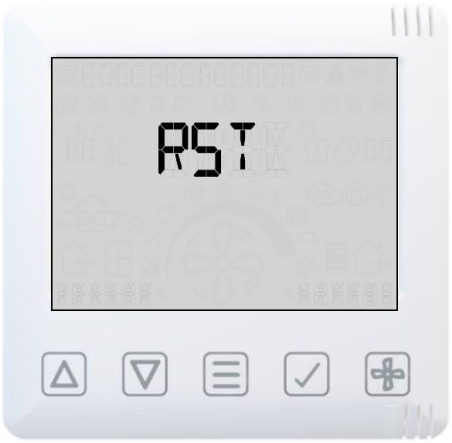
Press the up arrow to change the on screen cross (✕) to a tick (✓).

Press the TICK button to confirm.

Motors will stop and mainboard will reset, HMI will remain powered.

HMI Hard Reset

Warning: This will hard reset the user interface to default and unpair all sensors.



Press & hold the menu button for 13 seconds. LED will illuminate Red light.

Press the menu button to reset Mainboard pairing table.

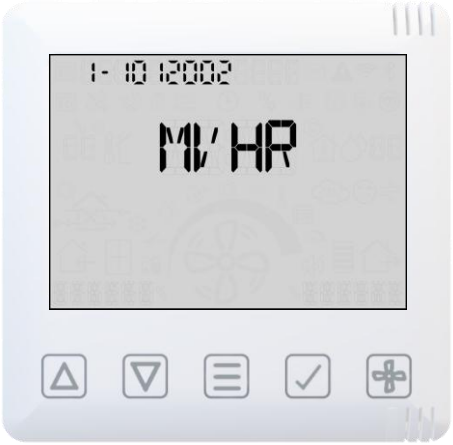
Press TICK button to Reset only HMI (including BLE PIN & WiFi PSK).

After resetting, if HMI not paired to mainboard, MVHR will be displayed.

Power cycle the unit to attempt auto-pairing.

HMI reset doesn't reset default values. It will restore the default values from commissioning (advance) menu.

MVHR Screen – Primary/Additional(Secondary) HMI is not paired with mainboard



If the primary/additional(secondary) HMI is not paired with mainboard, then MVHR screen will display with cyan LED.

Primary HMI

If this is the primary HMI on the unit to perform auto-pairing, power off the mains supply and re-power after 10 seconds.

After power cycle, HMI initialization is done and home screen should display with solid white LED illuminated.

If not showing white idle LED, follow hard reset instructions (Page 32) to reset pairing table.

Secondary HMI

If this is a secondary HMI, enable pairing on the primary (press & hold Menu button from the home-screen for 3 seconds which should then show flashing white LED) and then repeat this on the remote HMI until paired (it shows green flashing while pairing and solid green when paired).

Maintenance

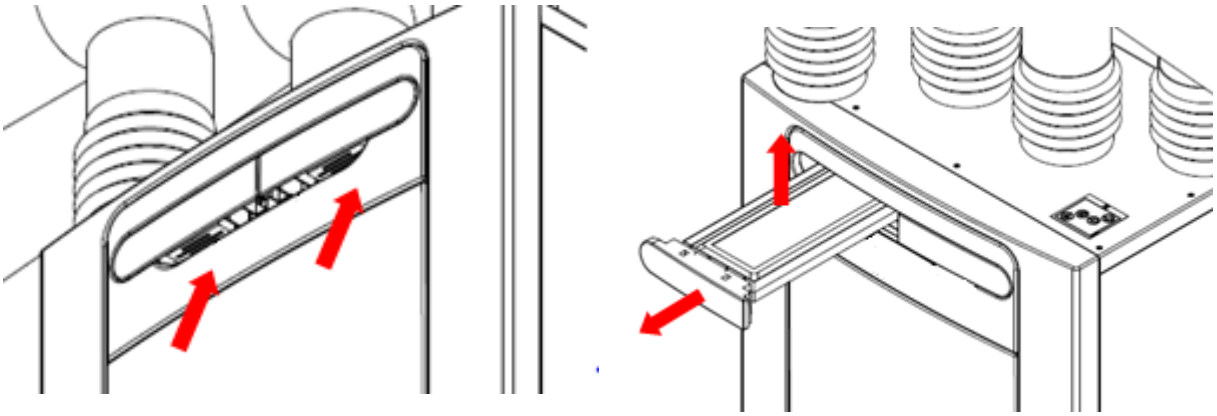
Filter Maintenance

Heat recovery units require regular maintenance. The Econiq range has been designed to allow easy access to filters with no tooling required.

When the unit displays a warning symbol and warning code: W-12 filter cleaning/replacement is overdue. When it displays notification N-1 the filter may need cleaning/replacement within the next month.

This is a reminder to ensure that the filters are not so dirty that they are blocking the airflow or allowing dirt to pass through. The rate at which the filters become dirty will vary hugely depending on the environment and the activity within the property. See page 35 for a list of spare filters.

1. Open the filter drawers by pressing the finger plate upwards and sliding the drawer out.
2. Lift each filter out and clean gently by tapping or carefully using a vacuum cleaner if necessary.



3. Replace the filters. (G4 as standard).
4. Close the filter drawers, ensuring the latches have clicked back into the locked position.
5. After maintenance of the filters, the filter timer can be reset via the controller (see page 25).

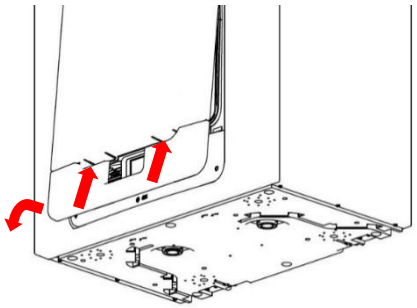
Periodic Maintenance

WARNING

THE FAN AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING MAINTENANCE.

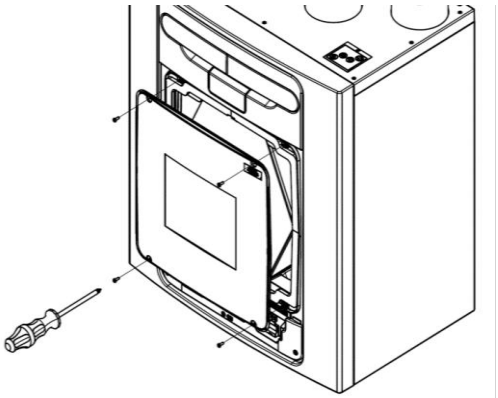
Heat Exchanger Cell

Step 1: Remove the outer cover by pressing the tabs either side of the control module and lifting the cover outwards from the bottom edge.



Step 2: Remove the inner door by undoing the 4 retaining screws.

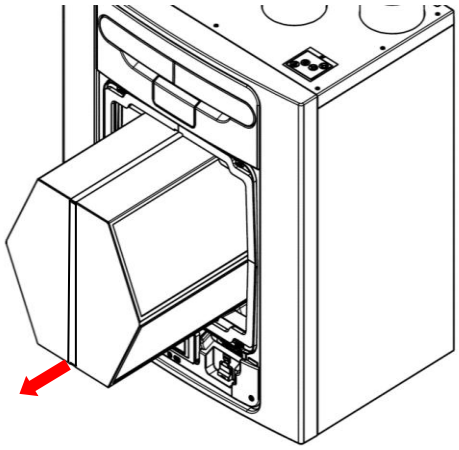
Note: (When fitting inner door back to the unit, make sure the arrow is in the up position shown).



Step 3: Slide the heat exchanger out from the unit. (If cell is stiff to pull out of unit, pull cell strap from top, then from the bottom).

Warning: Sharp edges on cell ribs. Keep hands away from corners & wear gloves.

Step 4: Wash the outer cover and heat exchanger in warm water using a mild detergent (such as Milton Fluid) and dry thoroughly.



NOTE: Keep water away from all electrical components and wiring within the unit.

Motors

Inspect the motors for build-up of dust and dirt on the impeller blades, which could cause imbalance and increased noise levels. Vacuum or clean if necessary.

Condensate Drain

Check the condensate drain tube is secure and clear of debris. Clean if necessary. Ensure the trap is filled to the appropriate level of water if using a wet trap.

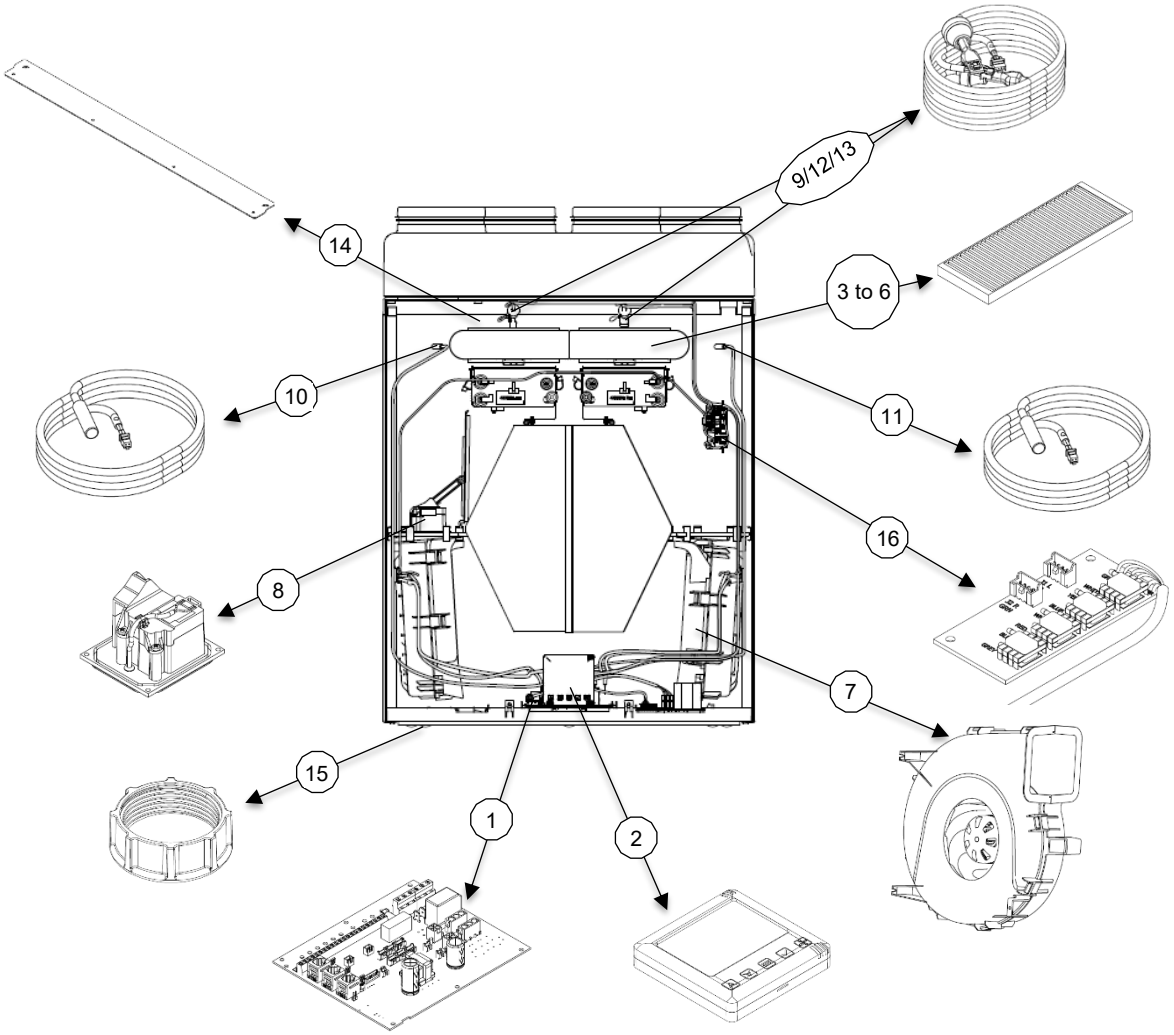
Fastenings

Check that all unit and wall-mount fastenings are sufficiently tight and have not become loose. Re-tighten if necessary.

Spares

The following spare parts may be ordered from Vent-Axia:

Item No.	Part No	Description
1	----------	Main PCBA – **Contact Technical Support**
2	411622	Control Module (HMI controller with Display & with RF)
3	411689	Filters G4, 2 per pack
4	415318	Filters G4, 50 per pack
5	472669	Filters M5, 1 per pack
6	472671	Filters F7, 1 per pack
7	494844	Motor Scroll Assembly
8	472675	Summer Bypass Motor Assembly
9	411976	Temperature/Humidity Sensors T1 & T3 (Green & Yellow)
10	472679	Temperature Sensor T2 (Red)
11	472683	Temperature Sensor T4 (Brown)
12	411708	CO2/Temp Humidity Sensor T1 (Green)
13	411706	CO2/Temp Humidity Sensor T3 (Yellow)
14	476354	Wall Bracket
15	476356	Condensate Drain Cap & Screw pack
16	478335	Constant Volume + Clean Filter Pressure Sensors PCBA



Troubleshooting

Diagnosing a Problem

In the event of a problem, always troubleshoot the unit according to:

- **Notification code** displayed on the control unit.
  A notification flag indicates service/maintenance will be due soon.
- **Warning code** displayed on the control unit.
  A warning code is advisory and will not immediately stop the function of the unit.
- **Fault code** displayed on the Control Unit.
  The unit may have stopped functioning due to the fault.
- **Fault LED** if connected.

Service/Fault Codes

For assistance contact the service provider and quote the fault code number and the product serial number which can be found behind the front cover.
Note that the fault code is not displayed until the fault has been present for 5 minutes.

Fault Codes	
ID	**Cause**
F-1	Intake Temperature
F-2	Extract Temperature
F-3	Supply Fan
F-4	Extract Fan
F-7	Preheater Stuck on
F-8	Supply Too cold*
F-32	HMI Comms Lost

* Refer Page 43

Warning Codes	
ID	**Cause**
W-1	Supply temperature
W-2	Exhaust temperature
W-3	Preheated temperature
W-4	Intake RH
W-5	Extract RH
W-6	Supply flow
W-7	Extract flow
W-10	System over-pressure
W-11	Preheater tripped
W-12	Filter clean overdue
W-13	Service overdue
W-14	Network Sensor lost
W-15	BMS offline
W-18	Bypass/cell efficiency
W-19	Preheater IO offline
W-20	Cooling Unit offline

Notification Codes	
ID	**Cause**
N-1	Filter Clean/Replace due soon
N-2	Service due Soon
N-3	Device Offline
N-4	Cooling is suspended
N-5	Cooling insufficient

There may be new fault codes not listed here, please ensure that you always review the latest F&W available on our website under the product page and downloads.

Note:

- **Warnings 1-7,10,11 and 20 will clear only after fixed and power cycle the unit, warnings disappear after power cycle.**
- **Warnings 12-19 will clear after setting the correct values.**

Power on Self-Test

The LED blinks RED for 'X' times, based on the error bit flag that is set.
e.g. "Storage" 3x flash – Pause – 3x flash…….

MVHR (HMI)

Self-Test Failures	
Flash	**HMI**
1	RNG - Random Number Generator (RNG) peripheral has failed as part of self-test routine
2	Flash - DS-45DB081E flash chip initialisation failed
3	Storage – Error with Read/Write access to flash
4	HMI – Initialisation for UC1677LCD (LCD driver) failed
5	CapSense – Error with initialisation of CAP1298
6	SHT3x – Sensor Initialisation failed
7	ESP32 – No response the Sync event as part of self-test
8	RF868 – Core 2 not initialized, or Auto Tune has failed (Auto tune yet to be added)
9	AppInit- Error with respect to Initialisation of Application modules

MVHR (Mainboard)

Self-Test Failures	
Flash	**Mainboard**
1	RNG - Random Number Generator (RNG) peripheral has failed as part of self-test routine
2	RTC – RTC initialisation failed
3	*Eeprom(reserved) – not used for now*
4	Flash – DS-45DB081E flash chip initialisation failed
5	Storage – Error with Read/Write access to flash
6	External RAM – FM24V01A RAM Chip Initialisation failed
7	Ventilation Engine – Ventilation Engine not initialised
8	AppInit- Error with respect to Initialisation of Application modules
9	Modbus – Modbus intialisation failure

Accessories

Part No	Description
496429	Temp/RH Wired & Wireless RS485 & RF868
496431	Temp/RH Battery Powered
496433	CO2 +Temp & RH Wired & Wireless
496438	PIR Wired & Wireless
496437	SSU Speed Switch 4-WAY Battery, Wireless (White)
497689	SSU Speed Switch 4-WAY Battery, Wireless (Black)
496620	SSU Speed Switch 4-WAY Mains, Wireless (White)
497693	SSU Speed Switch 4-WAY Mains, Wireless (Black)
496621	SSU Speed Switch 4-WAY Mains, Wired (White)
497697	SSU Speed Switch 4-WAY Mains, Wired (Black)
413662	In-Duct Heater - Ø125mm /1.25kW
413663	In-Duct Heater - Ø200mm /2.5kW
411628	Wall-Mounting HMI Kit
448356	Remote LED indicator and lead

Technical data

Radio Equipment Directive (RED) data

	Frequency Range	Maximum Radio Frequency Power
Wireless (868)	868.0 - 868.6 MHz	+15dBm
Bluetooth	2.4 – 2.483 GHz	+9dBm
Wi-Fi	2.4 – 2.484 GHz	+20.5dBm (802.11b) +14dBm (802.11n)

Flow Rate Settings

The Unit has four user defined speeds which are adjustable in the engineer menu or via the App. The default speed names are also customisable via the App.

Default speed modes names: -

- Low
- Normal (Unit default operating mode)
- Boost
- Purge

Frost Protection

Frost Protection is required to prevent condensate freezing in the heat exchanger at low temperatures. The process is fully automatic. The method used for frost protection will depend on the model and building it is installed in. *For more details refer to the Page 30 on this manual.*
For buildings with a leak rate of 3m^3/hr or less (at 50Pa), a balanced frost protection mode must be used. A balanced mode must also be used when a combustion device without a dedicated air supply is present.

Airflow (Imbalanced)
Airflow mode reduces the Intake flow and increases the Extract flow in varying proportions dependent on the incoming air temperature. The unit will continue to recover heat as low as “-20°C”. At this point, the unit switches to 'Extract Only' mode.

Bypass (Balanced)

Bypass mode opens the Summer Bypass and stops recovering heat until the external temperature increases sufficiently. **Please be aware that Frost Protection is not advised in this mode.**

Airflow & Preheater (Balanced)
If a 2kW preheater is fitted, the preheater will turn on to warm the incoming air to prevent freezing. If the air temperature is so low that the heater cannot warm the air sufficiently, both the supply and extract flow rate will be reduced to compensate.

Airflow & Preheater (Imbalanced)

If a 2kW preheater is fitted, the preheater will turn on to warm the incoming air to prevent freezing. If the air temperature is so low that the heater cannot warm the air sufficiently, the supply flow rate will be reduced to compensate.

Modbus Registers

RS485 settings can be set via the Vent-Axia Connect App.

Register Map

Input Registers	Description	Unit
30001	Run time	uint16 days
30002	Service timer	uint16 months remaining
30003	Filter timer	uint16 months remaining
30004	Faults present h	uint32 bitmask
30005	Faults present l	
30006	Warnings present h	uint32 bitmask
30007	Warnings present l	
30008	Notifications present h	uint32 bitmask
30009	Notifications present l	
30010	System power	uint16 W
30011	Current airflow override	
30012	Bypass status	
30013	Antifrost status	Uint16 enum
30014	Supply RPM	Uint16 RPM
30015	Supply measured flow	Uint16 l/s
30016	Extract RPM	Uint16 RPM
30017	Extract measured flow	Uint16 l/s
30020	Attention Ventilation LED output	bool
30021	Cooling enable output	bool
30022	Preheater enable output	bool
30023	Controlled cooling output	bool
30024	Controlled heating output	bool
30025	Mechanical ventilation active	bool
30100	Intake duct temperature T1	int16 °C x10
30101	Intake duct RH	uint16 %
30102	Intake duct CO2	uint16 PPM
30110	Supply duct temperature T2	int16 °C x10
30120	Extract duct temperature T3	int16 °C x10
30121	Extract duct RH	uint16 %
30122	Extract duct CO2	uint16 PPM
30130	Exhaust duct temperature T4	int16 °C x10
30200	Zone 0 Temperature	int16 °C x10
30201	Zone 0 RH	uint16 %
30202	Zone 0 CO2	uint16 PPM
30210	Zone 1...	
30220	Zone 2...	
30230	Zone 3...	
30240	Zone 4...	
30250	Zone 5...	
30260	Zone 6...	
30270	Zone 7...	
30280	Zone 8...	
30290	Zone 9...	
30300	Zone 10...	

Holding Register	Description	Unit
40001	Virtual Input 1	Int16 x10
40002	Virtual Input 2	Int16 x10
40003	Virtual Input 3	Int16 x10
40004	Virtual Input 4	Int16 x10
40005	Virtual Input 5	Int16 x10
40006	Virtual Input 6	Int16 x10
40007	Virtual Input 7	Int16 x10
40008	Virtual Input 8	Int16 x10
40009	Virtual Input 9	Int16 x10
40010	Virtual Input 10	Int16 x10
40020	BMS Shutdown	Int16 x10
40021	BMS Bypass override	
40030	User Override	Int16 x10
40040	Machine Date - Year	uint16
40041	Machine Date - Month/Day	2x uint8
40042	Machine Time - hh:mm	2x uint8

Attribute	Default Value
Address	2
Baud Rate	115200
Parity	No Parity

Input Registers	Description	Unit
30310	Zone 11...	
30320	Zone 12...	
30330	Zone 13...	
30340	Zone 14...	
30350	Zone 15...	

Summer Bypass Mode

The MVHR includes an intelligent Summer Bypass (SBP) feature, this bypasses the heat exchanger when necessary to provide free cooling, this is triggered when the desired Indoor Temperature is above the ambient temperature.

Note that the volume of air provided by a ventilation system is a fraction of that required for space heating or space cooling and will not in itself be sufficient to cool a room. It will however provide a contribution.

Modes of operation

Bypass Mode	Operation
00 : Off	Summer Bypass feature is disabled, Bypass will be active during Anti-frost
01 : Normal	When active the unit will run on Normal speed, conditions no longer met
02 : Evening Fresh	When active the unit will run on the user selected speed for 5-hours before reverting to Normal, until conditions are no longer met
03 : Night-Time Fresh*	When active the unit will run at the user selected speed, until conditions are no longer met
04 : Modulated Normal	When active the unit will run on Modulated Normal speed, conditions no longer met
05: Modulated Evening Fresh	When active the unit will run on the user selected speed for 5-hours before reverting to Modulated Normal, until conditions are no longer met
06 : Modulated Night-Time Fresh	When active the unit will run at the user selected speed, until conditions are no longer met

Bypass mode will operate when both the Indoor and Outdoor temperature thresholds are exceeded, and the outdoor temperature is below the indoor temperature.

Mode 1 to 3 when active will operate at 100% Bypass of the heat recovery cell.
Mode 4 to 6 when active will operate at approximately 50% Bypass of the heat recovery cell, this allows partial heat recovery during colder periods.

Indoor Temp: This is the maximum desired indoor temperature. Above the set indoor temperature, the summer bypass will operate. The temperature range is 16-30°C.

Indoor temp should be set, 2-3°C higher than the central heating thermostat to prevent the bypass operating in winter, and 2-3°C lower than any air conditioning thermostat if fitted.

Outdoor Temp: This is the minimum allowed outdoor air temperature. The air temperature must be above this value for the Bypass to operate, use this value to prevent the bypass operating in winter. The temperature range is 5-20°C.

The suggested Outdoor Temp, is 14°C, set as appropriate for your region.
Bypass mode will be cancelled until conditions no longer met when either :

- The internal air temperature drops below the Indoor Temp threshold, or
- The external air temperature drops below the Outdoor Temp threshold

It is recommended that the user selected mode chosen for Evening Fresh and Night-Time Fresh is higher than Normal flow rate to reduce the indoor temperature more rapidly.

*Night-Time Fresh Mode is intended for use through the night when cooling is a higher priority than any increase of noise. Note, that the air noise in your system is influenced by flowrate, ducting design, layout and the size and type of vents used in the rooms. If improvements are required, please contact your installer.

Input Ports allocation menu

Inputs are allocated to zone 0 by default.

Mains (LSx) or Dry Contact (voltage free) (SWx) are applicable to all modes on all LS/SW inputs.

Continuous

Continuous menu is used with a rocker switch or Relay.

The input shall result in the continuous running of the Airflow Mode {default}.

In “normal” airflow mode, the delay defines the amount of time the input needs to be active before the override begins. If the input deactivates before the end of the delay, there is no override. Once the override begins, it remains active whilst the input is active. When the input goes inactive, overrun timer begins and the override remains until the timer has elapsed. If the input reactivates during the overrun, the state returns to override active (i.e. the delay is ignored).

- Delay timer - delays the action after the user first operation, (by default closing the switch).
- Overrun timer - continues for the selected time on the preset speed selected, after the rocker switch is operated second time(by default turned off).
- Polarity, changes from the default Normally Open to Normally Closed operation.
- Comfort mode - delays the ventilation unit changing to the preset speed selected (BOOST by default) after the input has been activated for the Overrun time set, to reduce noise and cold drafts while bathing.

With Comfort Mode enabled, activation of the input are as follows:

1. If LS is activated and comfort mode is enabled the fan should run at 10% reduced speed before the boost is activated.
2. If the input is deactivated within 3 minutes no change will occur.
3. If the input is deactivated between 3-20 minutes, the ventilation unit will change to the selected preset speed with duration of [Overrun] + [Time input was active] minutes.
4. If the input is active for over the [Delay time] minutes, the ventilation unit will change to the selected preset speed; when the input is eventually deactivated, the ventilation unit will continue on the selected preset speed for [Overrun] + [Boost Delay] minutes.

Momentary
Momentary menu is used with a retractive switch type (Push Button) or non-latching pull cord switch.

- Overrun timer - continues for the selected time on the preset speed selected, after the switch is operated.
- Second operation will cancel and return to Normal (default) speed preselected.

PIR
PIR is used with a Presence detection sensor.

- Overrun timer - continues for the selected time, on the preset speed selected, after the presence detected. If during the Overrun time a new presence is detected, the Overrun timer will restart.

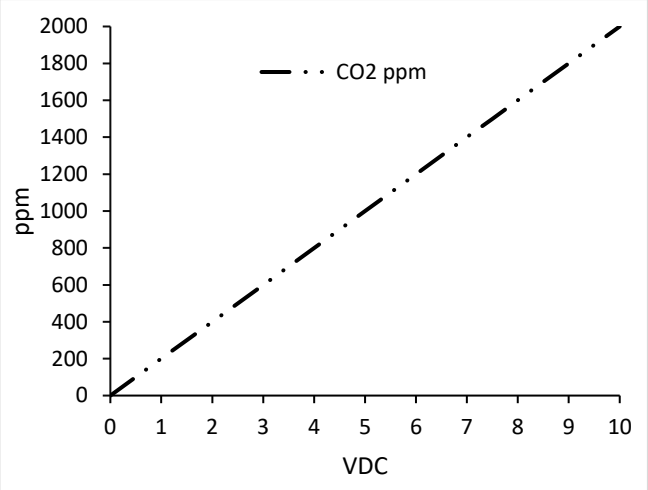
Fire Alarm
Fire Alarm is used with a Fire alarm Normally Closed Relay contact.

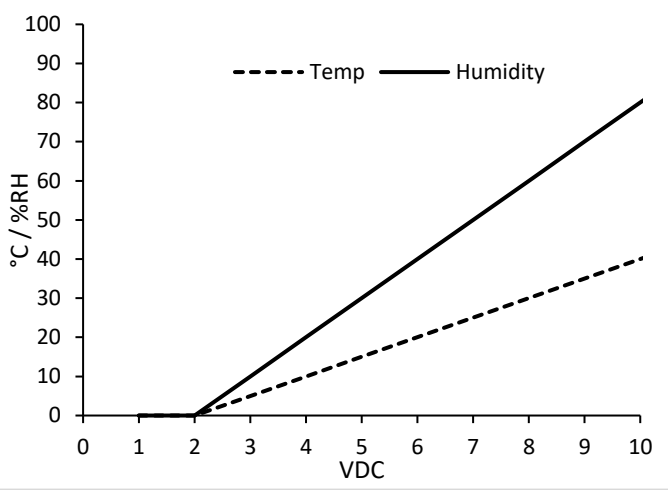
- The ventilation stops if the Fire alarm Relay contact OPENS.
- This operation can be inverted [Polarity] if the contact available from the Fire Alarm is Normally Open.

Central Heating Active

When configured, the ventilation system will not implement any cooling strategies like summer bypass or enable cooling on models with these support features if the Central heating is active.

Proportional inputs (0-10V)
This type of control is typically used with Temperature sensors, Humidity sensors, CO2 sensors or any other Inner Air Quality sensors, with analog 0-10V outputs. If the voltage is between 0 to 0.5V no sensor will be detected.





CO2 Sensor Mode

- Two thresholds can be set (this correspond to a Voltage level between 0.5V-0PPM and 9.5V-2000PPM), below the lower threshold the ventilation unit will run in Normal preset speed.
- Between the two thresholds (proportional zone) the ventilation unit will proportionally increase the speed up to Boost preset speed.
- Above the second threshold the ventilation unit will stay in Boost speed preset.

Humidity Sensor Mode

- One threshold can be set (this correspond to a Voltage level between 0.5V-0% and 9.5V-100%), below the lower threshold (10%) the ventilation unit will run in Normal preset speed.
- Above the second thresholds (proportional zone) the ventilation unit will proportionally increase the speed up to 100%.

Pure 0-10V Mode

Intended to be used with one manual override controller (such as BMS with 0-10V output).

- Pure 0-10V sensor units are presented as % (the voltage to % response curve is linear)
- Ventilation unit speed will be linear from Normal speed to 100% (this correspond to a Voltage level between 0.5V-0% and 9.5V-100%).

Supply too Cold

A requirement of Passivhaus is to shut down, if the supply air temperature falls below 5°C, the system automatically shuts down to prevent damage. Once every hour, the system will restart for at least 5 minutes to check if the temperature has risen above 5°C (if the fault conditions have cleared). This 5-minute window allows the sensors to adjust to the current conditions. If the temperature is still too low, the system shuts down again and repeats this cycle.

Relative Humidity Configuration

When RH Sensors are wired into the unit the system is normally operated on four selectable settings: threshold, rapid, ambient and overrun.

Threshold: Proportional control from 10% below the threshold, such that there is 100% demand at the threshold. For example, with a 70% threshold set, the proportional control shall be between 60% RH and 70% RH. Therefore, there will be 50% proportional boost at 65% RH.

This threshold may be set by the user between 50% to 90%. If a threshold of greater than 90% or equal to 100% or lower than 50% or equal tos ≤0% is set, threshold demand shall be disabled.

Rapid: Enable / Disabled - The monitoring of a rapid rise in RH is run every 30 seconds, comparing the current RH level, with that recorded 5 minutes ago. Proportion boost is calculated from the RH delta between +5% and +15%. For example, if the RH 5 minutes ago was 55% and the RH measured now is 65%, that's a delta increase of +10%, so there will be a proportional boost of 50%.

Ambient: Enable / Disabled - The ambient response only affects the RH threshold proportional control and is designed to prevent unwanted ventilation boosts as the ambient temperature drops overnight.
This is achieved by increasing the threshold by 3% for every 1K from the ambient temperature range of 18°C to 12°C. If temperature is not available for a zone, ambient response shall not be available (but standard threshold and rapid-rise still function as normal).

In-Duct Heaters (Frost Control)
Supplied either as an Accessory or included with the Passivhaus In-Duct Heater Kits

The Frost heaters, models 413662 (1.25kW) and 413663 (2.5kW), are equipped with TC3 controller, which allows for a setpoint temperature range from -5°C to +40°C. It is specifically designed to act as pre or re-heaters in small branch ducts from a main systems where the supply fan is controlled from elsewhere.

Temperature control is managed via a thermistor sensor embedded in the DTFS, a combined airflow and temperature sensor. The thermistor reports resistance back to the controller based on the actual air temperature.

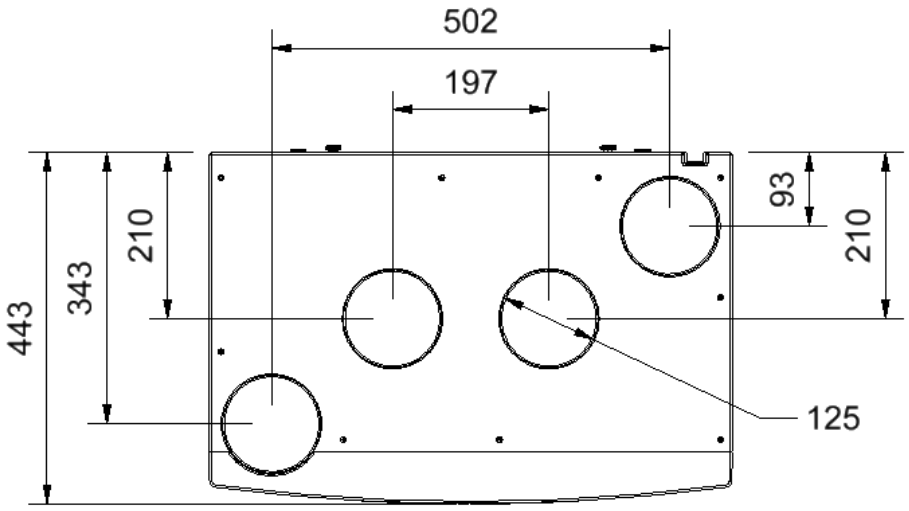
To operate the unit, simply set it to the desired air-off temperature. For example, if you require a discharge air temperature of 5°C, set the controller to 5°C. The heater will activate only when the incoming air temperature falls below the setpoint.

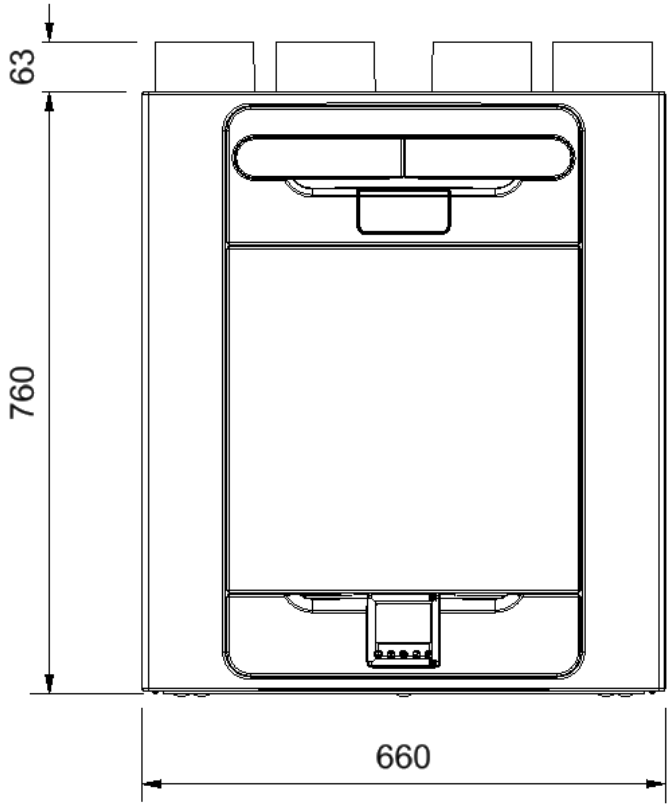
If the outside ambient temperature is above the setpoint, the heater will remain off. As the temperature drops below the setpoint, the TC3 controller will automatically modulate the heater's output to bring the temperature back up to the target.

The system operates with a 1°C deadband—typically triggering heating when the temperature drops about 0.5°C below the setpoint and deactivating it at approximately 0.5°C above.

This regulation will maintain the desired temperature as long as there are no significant fluctuations in airflow and the heating capacity (kW) is sufficient to meet the temperature rise required at the given airflow rate.

Product Dimensions





Remove front cover (see page 12) to view Rating label.
(Label is positioned to the right of the controller).

Default settings

Parameters	Default	Comments
Timeslot (By Date) 1	Start date/time 1/1/1970 0:00, end date/time 1/1/1970 0:00, preset 3, zone 0, not enabled, not silent hours	App only - "Holiday Mode"
Timeslot (By Date) 2-10	As timeslot 1	Not public
Weekly timeslots 1-50	Start 0:00, end 0:00, preset 3, zone 0, not enabled, not silentHrs, no days flagged	
Summer bypass mode	Normal, outside 16, inside 25	
Filter Interval Remaining Months	12	
Service Interval Remaining Months	24	
Unit Configuration	Right hand	Fixed / not editable on preheater models
Control Mode	Fixed %	CV if sensors fitted
Airflow units	Litres per second	Cubic metres per hour if EU model
Preset flow 1	20/20, name Low	Model specific in CV mode from V1.09
Preset flow 2	30/30, name Normal	Model specific in CV mode from V1.09
Preset flow 3	50/50, name Boost	Model specific in CV mode from V1.09
Preset flow 4	100/100, name Purge	Model specific in CV mode from V1.09
Live Switch LS1/ LS2 and Switch Inputs SW1/SW2/SW3/SW4/SW5	Continuous, Zone 0, Delay 0, Overrun 15m, preset 3, not silent hours	
Proportional Inputs P1 and P2	CO2, Zone 0	
Zone 0 setting	Type:Extract, Icon:utility, Preset:3 (boost), RH ambient enabled, RH rapid-rise enabled, temperature 21C, RH 70%, CO2:1000-1500 PPM, overrun 15m	These are used for built-in RH+CO2 sensors too
Zone 1-15 setting	As zone 1	App only
Antifrost mode	Airflow imbalanced	Preheater balanced if preheater model
Commissioning PIN	0000	
Service phone	Not set	Settable in App
Commissioning Address	Blank	Settable in App
Commissioning Date	Not set (1/1/1970 0:00)	Settable in App
Commissioning Email	Blank	Settable in App
Phone number	Blank	Settable in App
Machine Name	Blank	Settable in App
Filter type 1	Blank	Settable in App
Filter type 2	Blank	Settable in App
LED Output	Attention Ventilation	Settable in App
BMS Modbus attributes	Mode:Modbus, address 2, serial 115200/8/N/1	To be added to app
BMS Virtual inputs 1 - 10	RH, Zone 0	To be added to app
Networked sensor config (1-31)	Blank name, zone 0	App only

Product Fiche

Name:	Vent-Axia
Model ID (Stock Ref.):	499883 - Sentinel Econiq S 417810 - Sentinel Econiq S (Export) 412465 - Sentinel Econiq Se 411077 - Sentinel Econiq SC 499890 - Sentinel Econiq SCP RH 499891 - Sentinel Econiq SCP LH 413664 - Sentinel Econiq SCP RH with In-Duct Heater Passivhaus kit 413665 - Sentinel Econiq SCP LH with In-Duct Heater Passivhaus kit
SEC Class	A+
SEC Value ('Average')	-42.64
SEC Value ('Warm')	-17.27
SEC Value ('Cold')	-87.72
Label Required? (Yes/No=Out of scope)	Yes
Declared as: RVU or NRVU/UVU or BVU	RVU/BVU
Speed Drive	Variable Speed
Type HRS (Recuperative, Regenerative, None)	Recuperative
Thermal Eff: [(%), NA (if none)]	93
Max. Flow Rate (m3/h)	350
Max. Power Input (W): (@Max.Flow Rate) Excludes Preheater	166
LWA: Sound Power Level (dB)	48.5
Ref. Flow Rate (m3/s)	0.068
Ref. Pressure Diff. (Pa)	50
SPI [W/(m3/h)]	0.31
Control Factor & Control Typology: (CTRL/ Typology)	
Control Factor; CTRL	0.65
Control Typology	Local Demand Control
Declared: -Max Internal & External Leakage Rates (%) for BVUs or carry over (for regenerative heat exchangers only), -&Ext. Leakage Rates (%) for Ducted UVUs;	<5% Internal, <5% External
Mixing Rate of Non-Ducted BVUs not intended to be equipped with one duct connection on either supply or extract air side;	N/A
Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	Refer to User Instructions
For UVUs (Instructions Install Regulated Supply/Extract Grilles Façade)	N/A
Internet Address (for Disassembly Instructions)	www.vent-axia.com
Sensitivity p. Variation@+20/-20 Pa: (for Non-Ducted VUs)	N/A
Air Tightness-ID/OD-(m3/h) (for Non-Ducted VUs)	N/A
Annual Electricity Consumption: AEC (kWh/a)	2.07
Annual Electricity Consumption: AEC (kWh/a) Per. 100m²	207
Annual Heating Saved: AHS (kWh/a)	
AHS: Average	47.14
AHS: Warm	21.32
AHS: Cold	92.22

CE00537

Vent-Axia
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UK CA

UK DECLARATION OF CONFORMITY

Reference Number: CE00537
Issue: A 1023
Product Name(s)/Description:

Sentinel Econiq S Range

Model Name(s)	Part Number(s)
Sentinel Econiq S	499883
Sentinel Econiq Se (Export)	412465
Sentinel Econiq SC	411077
Sentinel Econiq SCP RH	499890
Sentinel Econiq SCP LH	499891

Following the provisions of Directives & Regulations as appropriate.

Electrical Equipment (Safety) Regulations 2016: Great Britain	☒
Electrical Equipment (Safety) Regulations 2016: Northern Ireland	☒
Electromagnetic Compatibility Regulations 2016	☒
RoHS Regulations 2019	☒
WEEE Waste electrical and electronic equipment Regulations 2013	☒
REACH UK Registration, Evaluation, Authorisation and restriction of Chemicals Regulation	☒
Ecodesign requirements for ventilation units (EU) regulation No 1253/2014 Implementing Directive 2009/125/EC	☒
Radio Equipment Regulations 2017	☒

Standards Applied - Radio	Standards Applied - Safety	Standards Applied - EMC
BS EN 300 328 V2.1.1 & V2.2.2	BS EN60335-1:2012 + A11:2014	BS EN55014-1:2006+A2:2011
BS EN 300 220 V2.4.1	BS EN60335-2-80:2003+A2:2009	BS EN55014-2:1997+A2:2008
BS EN 301 489 V1.9.2 In accordance with BS EN 301 489-17 V2.2.1		

Vent-Axia · FLEMING WAY · CRAWLEY · WEST SUSSEX · RH10 9YX · UK

.....
Lee Austin, Group Technical Director (Crawley, UK)

12/10/23
.....
Date

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CE

EU DECLARATION OF CONFORMITY

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Sentinel Econiq S	499883
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Sentinel Econiq SCP LH	499891

Following the provisions of Directives & Regulations as appropriate.

Low Voltage Directive (2014/35/EU)	☒
Electromagnetic Compatibility Directive (2014/30/EU)	☒
RoHS use of hazardous substances Directive (2017/2102/EU)	☒
WEEE Waste electrical and electronic equipment Directive (2012/19/EU)	☒
REACH Registration, Evaluation, Authorisation and restriction of Chemicals Regulation (EC 1907/2006)	☒
Ecodesign requirements for ventilation units (EU) regulation No 1253/2014 Implementing Directive 2009/125/EC	☒
Radio Equipment Directive (RED) (2014/53/EU)	☒

Standards Applied - Radio	Standards Applied - Safety	Standards Applied - EMC
EN 300 328 V2.1.1 & V2.2.2	EN60335-1:2012 + A11:2014	EN55014-1:2006+A2:2011
EN 300 220 V2.4.1	EN60335-2-80:2003+A2:2009	EN55014-2:1997+A2:2008
EN 301 489 V1.9.2 In accordance with EN 301 489-17 V2.2.1		

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12/10/23

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Lee Austin, Group Technical Director (Crawley, UK)

.....
Date

EU Authorised Representative: Vent-Axia Sigarenmaker 5 - 5521DJ Eersel Nederland authorisedrep@vent-axia.nl

Volution Ventilation UK Limited (Co No: 11352032) Trading as Vent-Axia. Registered office: Fleming Way, Crawley, West Sussex RH10 9YX.

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EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Reference Number: **CE00537**
Issue: **A 05/26**
Product Range: **Sentinel Econiq S (Export) MVHR Range**
Range Description: **Residential Ventilation Unit with Heat Recovery and integrated Wi-Fi & Bluetooth connectivity. The Sentinel Econiq SEP RH & LH models have a pre-heater.**

Model Name(s)	Stock Reference No.
Sentinel Econiq S (Export)	417810
Sentinel Econiq SE	412465
Sentinel Econiq SEP RH	416828
Sentinel Econiq SEP LH	416829

The object of the declaration described as above is in conformity with the following Directives:
Radio Equipment Directive (RED) (2014/53/EU)
RoHS in Electrical and Electronic Equipment Directive (2011/65/EU)
Ecodesign for ventilation units, Regulation (EU) No 1253/2014, Implementing Directive 2009/125/EC

Standards Applied - RED Directive
ETSI EN 300 328 V2.2.2
ETSI EN 300 220-2 V3.2.1
ETSI EN 301 489-1 V2.2.3
ETSI EN 301 489-3 V2.3.2
ETSI EN 301 489-17 V3.2.4

Standards Applied - RoHS Directive
EN IEC 63000:2018

Safety Standards (Red Article 3.1(a))	EMC Standards (RED Article 3.1(b))
EN 60335-1:2012 +A15:2021	EN 55014-1:2021
EN 60335-2-80:2003 +A2:2009	EN 55014-2:2021
EN 62233:2008 +AC:2008	EN 61000-3-2:2019
	EN 61000-3-3:2013
	EN 60335-1:2012 +A15:2021

Accessories and Components which allow the radio equipment to operate as intended:	
498657- HMI Control PCBA	Radio Control PCB

Signed for and on behalf of Vent-Axia:

Sam Gregson, Engineering Delivery Director
Crawley, UK

Date: .....08/05/26.....

EU Authorised Representative: Vent-Axia Kerver 16 - 5521DJ Eersel Nederland authorisedrep@vent-axia.nl

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Disposal

This product should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority for recycling advice.

The Vent-Axia Guarantee

Applicable only to products installed and used in the United Kingdom. For details of guarantee outside the United Kingdom contact your local supplier.

Vent-Axia guarantees its products for two years from date of purchase against faulty material or workmanship. In the event of any part being found to be defective, the product will be repaired, or at the Company's option replaced, without charge, provided that the product: -

- Has been installed and used in accordance with the instructions given with each unit.
- Has not been connected to an unsuitable electricity supply. (The correct electricity supply voltage is shown on the product rating label attached to the unit).
- Has not been subjected to misuse, neglect or damage.
- Has not been modified or repaired by any person not authorised by the company.

IF CLAIMING UNDER TERMS OF GUARANTEE

Please return the complete product, carriage paid to your original supplier or nearest Vent-Axia Centre, by post or personal visit. Please ensure that it is adequately packed and accompanied by a letter clearly marked "Guarantee Claim" stating the nature of the fault and providing evidence of date and source of purchase.

The guarantee is offered to you as an extra benefit and does not affect your legal rights.

Vent-Axia

UK Head Office:
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CALL CENTRE: -

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