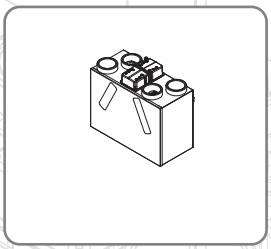
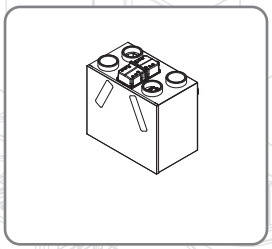
Manual B2 Units

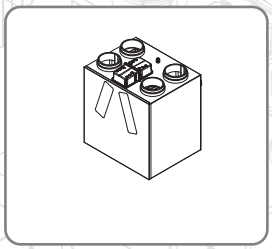
EN



HRV 1.35 *Q Plus*



HRV 1.6 *Q Plus*



HRV4 *Q Plus*
HRV4.25 *Q Plus*

Titon®
ventilation systems

Warnings, Safety Information and Guidance

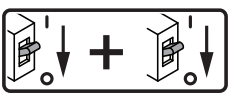
Important Information

Important: read these instructions fully before the installation of this appliance

1. Installation of the appliance and accessories must be carried out by a qualified and suitable competent person and be carried out in clean, dry conditions where dust and humidity are at minimal levels.
2. This manual covers the installation of the Heat Recovery Ventilation (HRV) unit
3. All wiring must conform to current I.E.E. Wiring Regulations and all applicable standards and Building Regulations.
4. Inspect the appliance and electrical supply cord. If the supply cord is damaged, it must be replaced by the manufacturer, their service agent or similarly qualified persons in order to avoid a hazard.
5. The unit is supplied with a mains rated 3 core flexible cord (PVC sheathed, brown, blue and green/yellow 0.75mm²).
6. The appliance must be connected to a local double pole isolation switch with a contact separation of at least 3mm.
7. The appliance must be earthed.
8. HRV1.35, HRV1.6 & HRV4 *Q Plus* units suitable for 230V ~ 50/60Hz single phase with a fuse rating of 3A.
9. HRV4.25 *Q Plus* suitable for 230V ~ 50/60Hz single phase with a fuse rating of 5A.
10. Control, Boost & communication cable access is via the fitted cable gland(s) which are suitable for Ø3- 6mm cable.
11. Control, Boost & communication cables - Unshielded 4 Core minimum
    18-24AWG Stranded, Tinned Copper. Control Cables must not be twisted pairs.
12. All Control, Boost & Communication cables should not be placed within 50mm or on the same metal cable tray as any 230V~ lighting or power cables.
13. Ensure all cable glands are fully tightened.
14. The unit must be stored in a clean and dry environment.

15. Do not install the appliance in areas where the following may be present or occur;
    - Excessive oil or a grease laden atmosphere,
    - Corrosive or flammable gases, liquids or vapours.
    - Ambient temperatures above 40°C or below -5°C.
    - Humidity levels above 90% or is a wet environment.
16. The appliance is not suitable for installation to the exterior of the dwelling.
17. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children should be supervised to ensure that they do not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
18. Ensure that external grilles are located away from any flue outlet, in accordance with relevant Building Regulations.
19. The unit must not be connected to a tumble dryer or a cooker hood.
20. Heat recovery systems and extract fans can create negative pressures within rooms. Ensure precautions are taken to avoid negative pressure creating a back-flow of gases into the room from an open flue.
21. Ensure all ducting, condensate drain and associated pipe work is free from debris and blockages before switching on the unit

Explanation of symbols on the appliance

Symbol	Definition
	Read instruction Manual.
	Risk of Electric Shock.
	General hazard safety alert.
	Wait until all machine components have completely stopped before touching them.
	Disconnect the mains supply before removing this cover.
	Disconnect the mains supply before removing this cover. Before obtaining access to terminals or removing this cover, all supply circuits must be disconnected.

This symbol on this unit or the package, indicates that disposal of this unit after its life-cycle could harm the environment.

Do not dispose the unit as unsorted municipal waste; it should be disposed by a specialized company for recycling. This unit should be returned to your distributor or to a local recycling service. Respect the local environmental rules.

Manufacture Recommendations:

- Any flexible ducting should only be used for final terminations only and must be a maximum of 300m long and be pulled taut, and straight.
- A minimum distance of 200mm between the MVHR unit and any sharp bends in duct work.
- Ducting should be insulated where it passes through unheated areas and voids with the equivalent of at least 25mm of a material having a thermal conductivity of ≤0.04 W/(m.K) to reduce the possibility of condensation forming. Where a duct extends externally above roof level the section above the roof should be insulated or a condensate trap should be fitted just below roof level.
- Ducts within the building heated envelope between the external terminals and the unit's From Atmosphere and To Atmosphere ports should be insulated and wrapped additionally with a vapour barrier outside the insulation.
- Where duct pass through any fire barriers or walls, they must comply with the requirements of local Building Regulations.
- A ducting condensate drain must be fitted to vertical To Atmosphere duct work.
- Ducting must be installed in such a way that resistance to airflow is minimised.
- Ducting connected to the From Atmosphere & To Atmosphere ports, must be to/from the external air outside the building envelope.
- Duct joints to the unit's duct ports must be fixed using a method that ensures a long term seal is achieved. If using a short piece of flexible ducting secure using a hose clamp, do not over tighten hose clamp; as over-tighting may distort and reduce the unit's port.
- A minimum distance of 2m exists between the external supply and exhaust terminals.

Contents

When this document is viewed as a PDF the headings & sub headings on this page are hyper links to the content. Additionally the page numbers in this document are hyper links back to this contents page.

Units

List of Products

This Manual is for the following Products

TP418B2	HRV1.35
TP418B2_T	HRV1.35 with aura-t
TP419B2	HRV1.6
TP419B2_T	HRV1.6 with aura-t
TP431B2	HRV4
TP431B2_T	HRV4 with aura-t
TP433B2	HRV4.25
TP433B2_T	HRV4.25 with aura-t

Product Information

The Titon HRVs are Mechanical Ventilation with Heat Recovery (MVHR) units. They are designed for the energy efficient ventilation of dwellings. The units are designed for continuous ventilation, exhausting stale moist air from bathrooms, toilets, kitchen and utility rooms.
As the stale air is extracted, the unit's heat exchanger transfers heat, which would have been wasted, to the fresh air being supplied to the bedrooms and living rooms.

Packaging Contents

Inspect the unit when taking delivery. Each unit is supplied with various accessories. Check the unit for damage and that all unit specific accessories have been supplied.

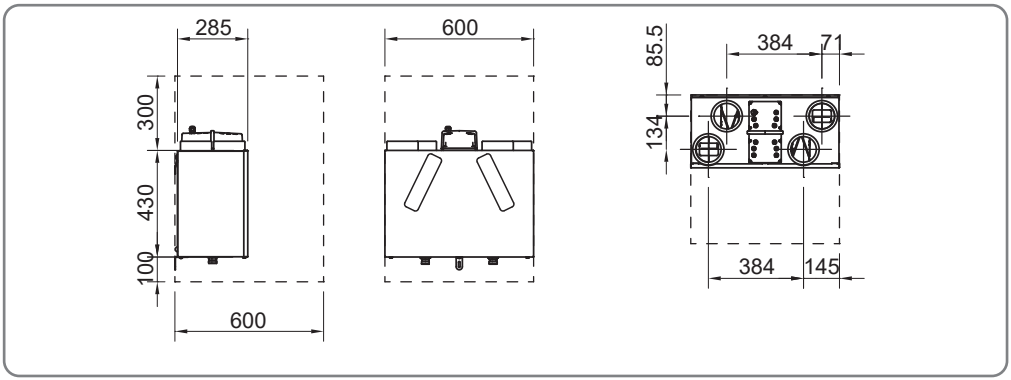
Unit	Accessory	Mounting Bracket	Safety Bracket(s) Kit	Condensate Drain Olive & Nut	M6x10 Pan HD screw	M6 washer	Transport Bungs	Product Manual	EuP Documentation
HRV1.35		2	1	1	4	4	4	1	Yes
HRV1.6									
HRV4 & 4.25									

Units' Weights

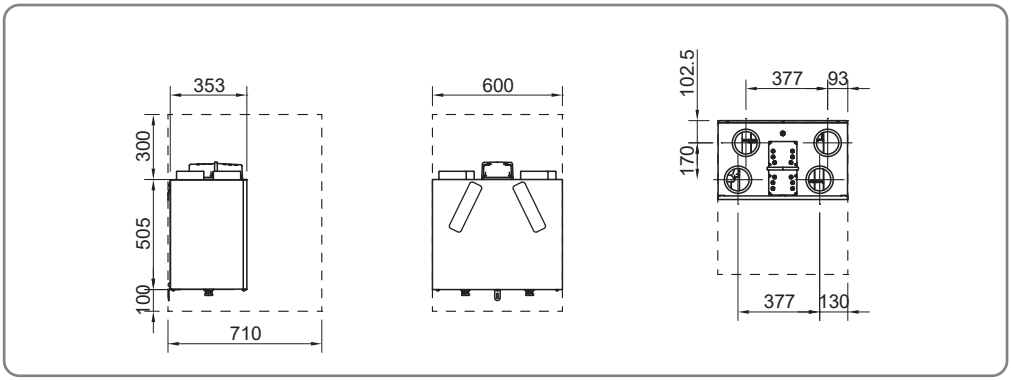
Unit	Compatabile Ducting (mm)	Weight (kg)
HRV1.35	Ø125	16
HRV1.6	Ø125	22
HRV4 & 4.25	Ø150 & Ø160	28.5

Units' Dimensions

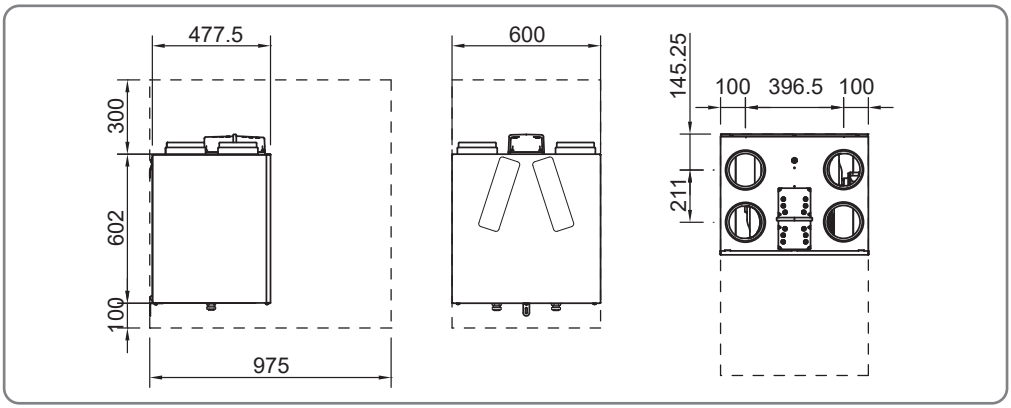
The following diagrams detail the overall size of the units, the duct port positions & the additional space required around the units (Service Void - - - -) to allow for commissioning and future service and maintenance.



HRV1.35 *Q Plus*



HRV1.6 *Q Plus*



HRV4 & 4.25 *Q Plus*

Product Features

Right or Left Hand

All units are supplied as Left Handed Units. Units can be reconfigured on site to Right Hand units using the aura-t controller or the Service Tool.

Boost Overrun Timer

A programmable timer that controls the time the HRV remains at Boost Speed after all boost, PIR switches & humidity sensors, have been released; including a 3 Position Switch.

Boost Inhibit

Prevents the HRV switching into Boost Speed 3 or Summer Boost - Speed 4 or allowing the fan speed to be increased above speed 2 by any proportional sensor speed control. This function is triggered by a connected controller.

Boost Alert

If HRV has been held at Boost, Speed 3 for more than 2 hours; Boost Alert is activated and a visual indication will be displayed on a connected controller.

Internal Humidity Sensor

The HRV has a relative humidity (RH) sensor. The RH sensor can be programmed to increase the fan speed of the HRV from Continuous Speed 2 to Boost Speed 3 proportionally.

Filter Change Alert

The unit can display a filter warning via the connected controller

Four Fan Speeds

The units have 4 programmable speed settings. All speeds allow independent speed setting of both supply and extract ventilation rates.

SUMMERboost®

SUMMERboost® allows both the supply and extract fans to run at Speed4 whenever the Summer Bypass is activated. By default SUMMERboost® is enabled.

Balanced Frost Protection

In properties where it is essential to maintain a balance airflow; perhaps because there is an open flue fireplace Balanced Frost Protection can be enabled. In this mode both fans are stopped when there is the risk of ice forming inside the heat cell.

Summer Bypass

Summer Bypass is designed to operate during hot periods where fresh air can be vented straight into the property without being preheated by the extracted stale air. Summer Bypass operation is automatically controlled.

The Summer Bypass mechanism diverts the stale air being extracted from the dwelling around the heat cell so that its heat energy is not transferred to the fresh air being supplied to the dwelling.

Duct Heater Control

To maintain ventilation flow rates where prolonged periods of very low temperatures occur, the facility for the control of an electrically powered Duct Heater is provided, MAX 1800W. The Duct Heater is placed in-line between the outside supply vent and the From Atmosphere terminal on the HRV. In these applications, the heater is used to pre-warm the outside fresh air supply before it enters the HRV.

Four, Proportional Sensor Inputs

Enables connection of environmental sensors to the HRV which can be used to proportionally control HRV fan speeds.

Three, Volt Free Switch Inputs

Enables connection of single pole momentary switches, latching switches or relay contacts to the HRV. These can be used to switch between fan speeds, disable SUMMERboost, turn the fans off or manually enable Summer Bypass.

Two, Live Switch Inputs

These are live input switches which can also perform all of functions of the volt free inputs.

Frost Protection Program (Default)

During very cold weather, the Frost Protection Program will detect temperatures that could cause ice to form inside the unit. It will reduce or stop the supply ventilation rate, thus allowing the warmer stale air to raise the temperature within the heat cell to such a level that prevents the formation of ice. As temperatures rise the Frost Protection Program will increase the supply ventilation flow rate back to the commissioned
settings.

Multiple Internal Temperature Sensors

The unit measures From Atmosphere and To Atmosphere air temperatures in real-time. Additionally the temperature of the heat cell is monitored.

Supply Air Comfort Control

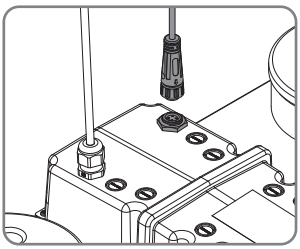
If the supply to dwelling air temperature falls below 10°C the unit will limit the maximum speed to 45%.
If the supply to or extract from the dwelling air temperature falls below 6°C the unit will limit the maximum speed to 23%.
If the supply to or extract from the dwelling air temperature falls below 3°C the unit will limit the maximum speed to 18%.

Analogue Outputs

There are two open collector analogue outputs. Connecting these to an external circuit allows the status of the filter and fans to be monitored as they are driven low (to 0V) when the filters need replacing or a fan has failed.

Axillary Connection Socket compatibility

All units are supplied with the connection socket. This socket enables the connection of axillary indicators, controllers and the Service Tool. The socket is located on top of the electrical box, fitted with a protective cap.



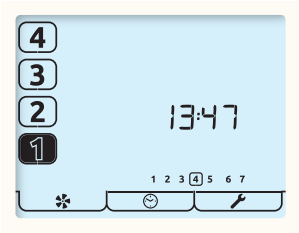
Connection Socket & Plug

MVHR	Compatibility		
on-board aura-t	external auralite	external aura-t	Service Tool
N	Y	Y	Y
Y	Y	N	Y

When an external device is connected the onboard aura-t will be disabled and will display rEmo otE.

aura-t

The aura-t™ controller is a programmable touch screen controller which monitors and displays the status of a HRV unit.
It allows the unit to be commissioned, and gives the user both manual and timed control of fan speeds.
The screen is backlit, the backlight operates when the screen is touched.



Timer

The aura-t™ has a programmable timer that can be used to switch the MVHR to Speed 1 at specified times. Using the auraSMART® app all speeds can be controlled.

Status Icons

The aura-t™ displays icons to indicates modes of operation in Real-time.

Backlight

The LCD backlight turns on when the screen is touched; turns off after 30s of inactivity.

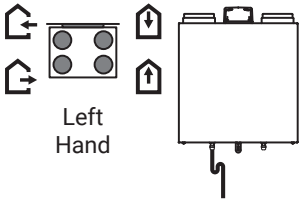
Eco Mode

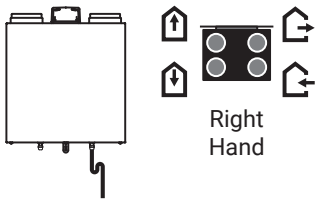
The aura-t can be configured to run in Eco Mode which reduces power consumption.
Eco mode is unavailable on aura-t™ SMART.

IMPORTANT

All units are supplied as Left Handed Units and can be reconfigured on site to Right Hand Units

Before installation of Ducting, Condensate Drain & the HRV, the hand of the installation must be confirmed and communicated to ALL persons involved with the installation and commissioning of the HRV.



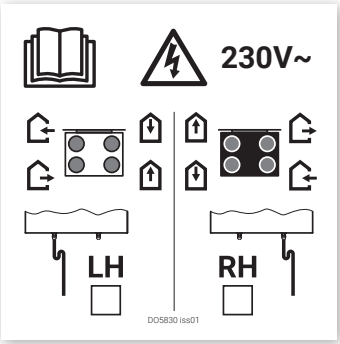


EXTRACT FROM DWELLING - This duct port is connected to the ducting that carries waste air from the 'Wet Rooms' to the HRV unit.

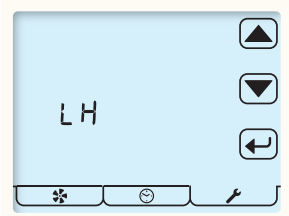
SUPPLY TO DWELLING - This duct port is connected to the ducting that carries the fresh warmed air to the habitable rooms from the HRV unit.

TO ATMOSPHERE - This duct port is connected to the ducting that carries the waste air to outdoors from the HRV unit.

FROM ATMOSPHERE - This duct port is connected to the ducting that carries fresh outdoor air to the HRV unit.



This label is affixed to the top of the unit it must be marked with a permanent marker to identify the handing of the unit.



Handing of the unit is achieved by the physical connections to the unit; ducting & condensate drain and electronically with the aura-t **or the Service Tool.**

Handing of the unit is achieved by using Setup Sub Menu; item 5.

Unit Mounting

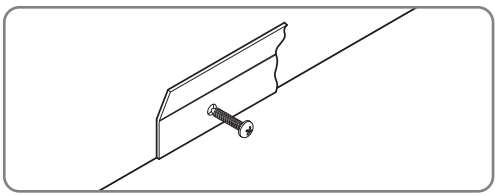
Read and observe the guidance & safety notices listed in Warnings, Safety Information and Guidance .

Do not remove the Port Covers, where fitted, until connecting ducting. Port Covers are fitted to prevent debris falling into the unit and causing blockages and damage:

- The mounting surface must be sufficiently strong to support the unit.
- Consider the positioning of electrical services and the Condensate Drain when siting the unit.
- Ensure there is sufficient access around the HRV *Q* **Plus (**Service Void - - -) for future maintenance; see Units' Dimensions Section for details.
- Do not 'box-in' the unit making access to the unit difficult for maintenance and repair. (Duct Covers are available)

The Unit Must be mounted plumb and level front to back and side to side.

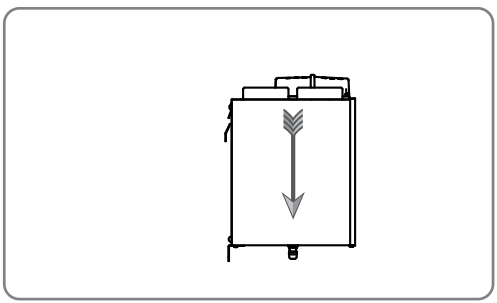
1. Mark a horizontal line on the wall using a spirit level. This line will be approximately 95mm below the location of the top face of the unit when fitted (excluding duct ports).
2. Use the Mounting Brackets as a template to mark the three fixing hole centres.
3. Drill holes for fixings, always use a fixing suited to the wall type.
4. Fix the Mounting Bracket to the wall ensuring the interlocking side is at the top; as shown. Mount the unit by locating the two mounting Brackets together.
5. Ensure a positive location is made between the two Mounting Brackets.



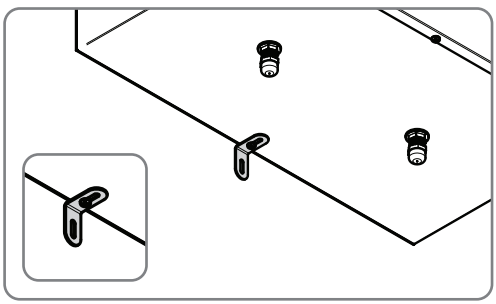
Safety Bracket

The Safety Bracket(s) MUST be used.

Fix the lower Safety Bracket as shown using the remaining M6 screw, washer and suitable wall fixing. Packing to be used as required behind the Safety Bracket to ensure unit is level

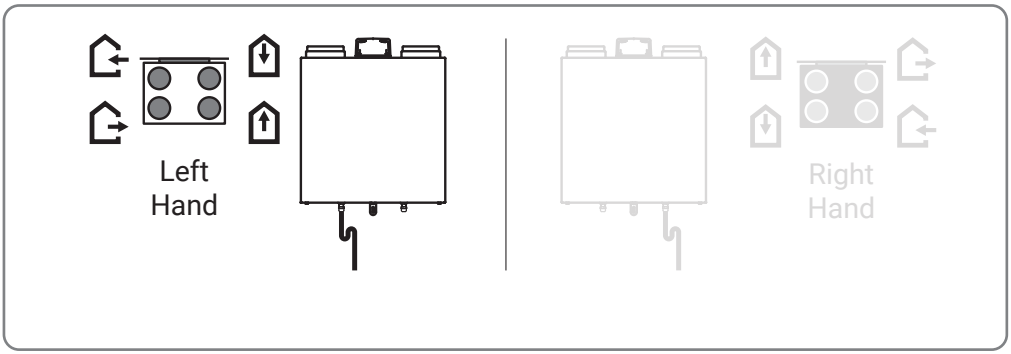


Hook Unit onto Wall Bracket



Left Hand Units

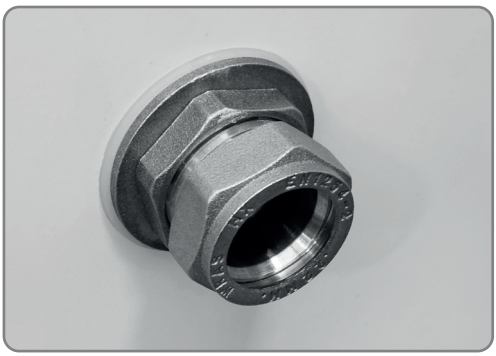
All units are supplied as Left Handed Units



Left / Right Hand Drain Connection & corresponding Ducting Connections

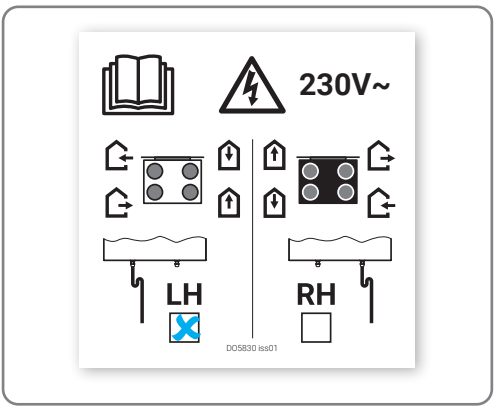
Blanking Plug

The Blanking plug must be fitted to the unused condensate outlet.



Condensate Outlet

Blanking Plate fitted to unused Outlet



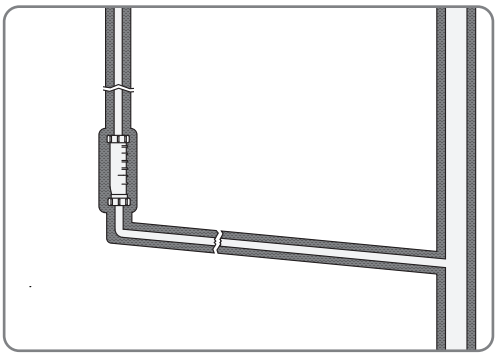
This label affixed to the top of the unit must be marked with permanent marker to identify the handing of the unit.

Condensate Drain

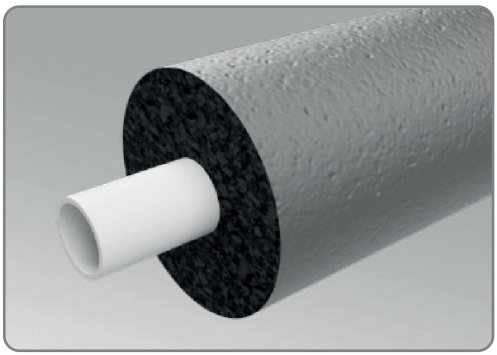
The unit's Condensation Drain Pipe must be fitted and connected to the dwelling's foul water drainage system in accordance with the relevant building regulations. Condensation Drain Pipe Is attached via a 22mm compression fitting.

The Condensate Drain:

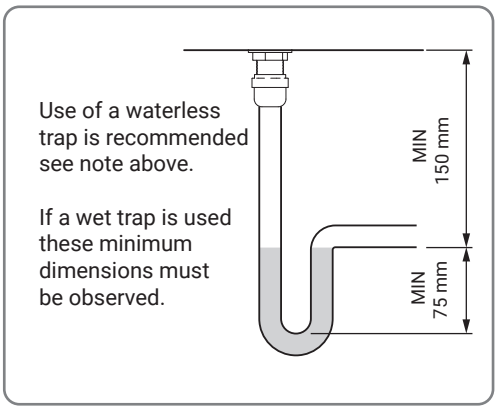
- Must incorporate a suitable trap, which must act as an air lock, ie must be sealed.
- Must be adequately secured along it's length.
- Must be insulated if any part of the pipe passes through a unheated void or a space which could fall below 10°C.
- Must be installed to have a 3 to 5° fall from the unit.
- Titon recommend the use of a diaphragm type waste valve, in place of a conventional 'wet' trap which could dry out; Such as a 'Hepworth HepvO® Hygienic self sealing (waterless) plastic waste valve' recommended as an alternative to traditional U-Traps (BRE certificate no. 042/97).
- If using a wet U-trap please ensure the U-trap has been filled to a suitable level of water to avoid any air locks.



Insulated Self Sealing (waterless) Trap and Waste



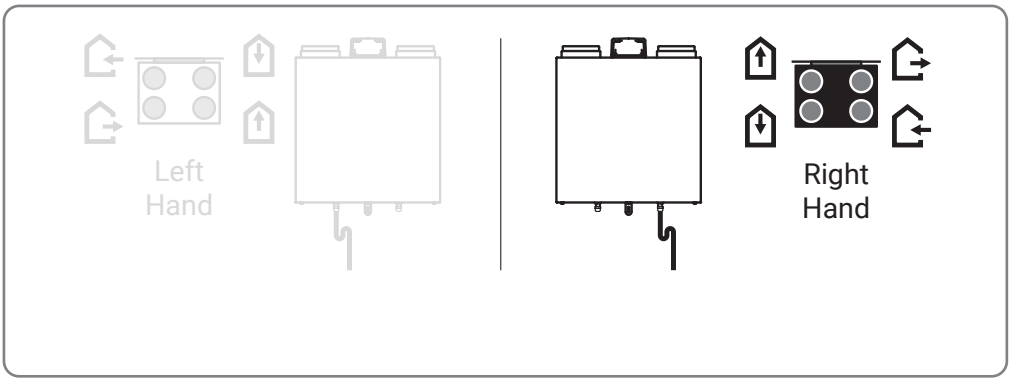
Insulated Condensate Drain



Wet Condensate Drain Minimum Dimensions

Right Hand Units

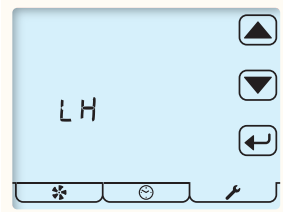
Handing Change



Left / Right Hand Drain Connection & corresponding Ducting Connections

1. Change the Hand using either an aura-t or the Service Tool.
2. Connect the Condensate Drain pipe work to the Right Hand Condensate Outlet
3. Fit the Brass Blanking Plate to the left-hand Condensates Outlet.
4. Use a permanent marker to identify the handing of the unit on the Port Identification and Handing Label affixed to the top of the unit.

Left Hand/Right Hand switching

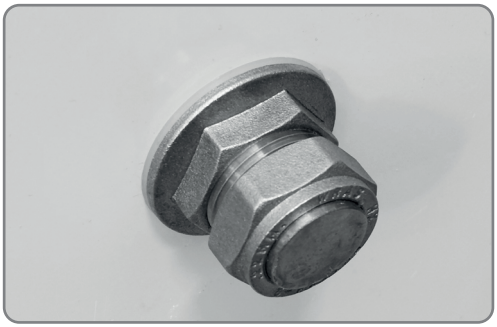


Use the Arrow buttons to select between LH and RH

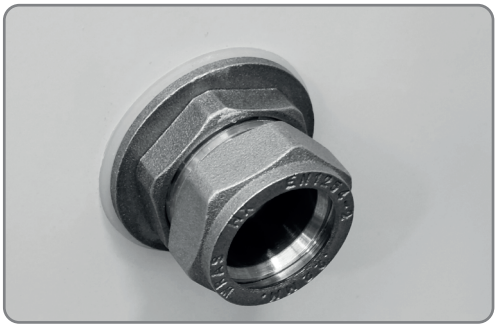
Tap Enter key
to save and exit.

Blanking Plug

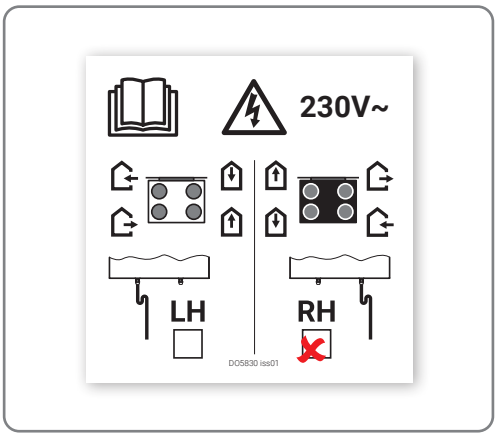
The Blanking plug must be fitted to the unused condensate outlet.



Blanking Plate fitted to Condensate Outlet



Condensate Outlet



Port Identification and Handing Label

This label affixed to the top of the unit must be marked with permanent marker to identify the handing of the unit.

EXTRACT FROM DWELLING - This duct port is connected to the ducting that carries waste air from the 'Wet Rooms' to the HRV unit.

TO ATMOSPHERE - This duct port is connected to the ducting that carries the waste air to outdoors from the HRV unit.

SUPPLY TO DWELLING - This duct port is connected to the ducting that carries the fresh warmed air to the habitable rooms from the HRV unit.

FROM ATMOSPHERE - This duct port is connected to the ducting that carries fresh outdoor air to the HRV unit.

Ducting Connections

The MVHR unit has a labels with the icons indicating which port is which.

Read and observe the Warnings, Safety Information and Guidance.
It is very important that ducting is connected to the correct ports in line with the icons below.

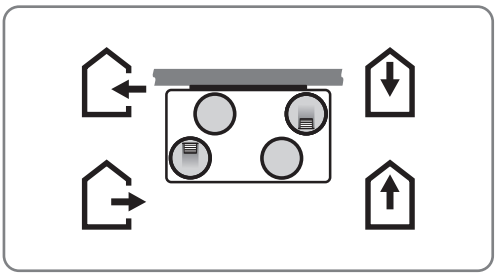
EXTRACT FROM DWELLING - This duct port is connected to the ducting that carries waste air from the 'Wet Rooms' to the HRV unit.

TO ATMOSPHERE - This duct port is connected to the ducting that carries the waste air to outdoors from the HRV unit.

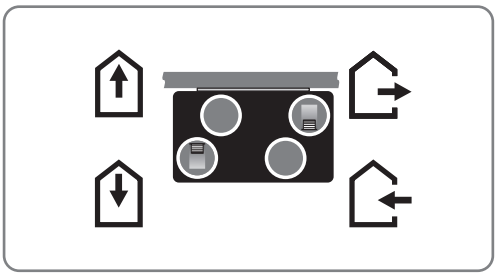
SUPPLY TO DWELLING - This duct port is connected to the ducting that carries the fresh warmed air to the habitable rooms from the HRV unit.

FROM ATMOSPHERE - This duct port is connected to the ducting that carries fresh outdoor air to the HRV unit.

Port Designations



Left Hand Units' Duct Connections



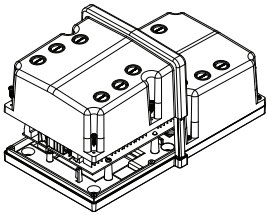
Right Hand Units' Duct Connections

Wiring Access

All wiring must conform to current I.E.E. Wiring Regulations and all applicable national standards and Building Regulations.

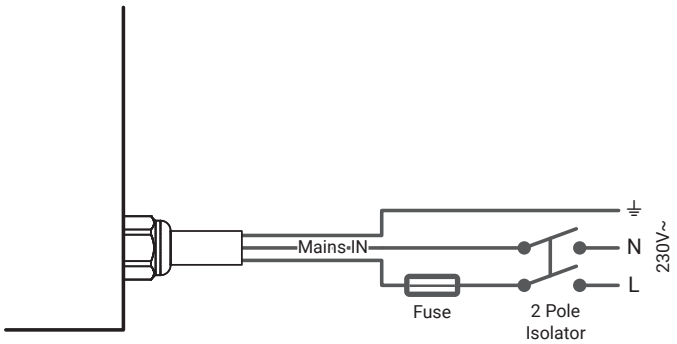
Read and observe the Warnings, Safety Information and Guidance.

The front lid must always be removed before the rear lid; both lids are fixed by four screws. All wiring must be routed into the electronics compartment using cable glands or similar.



Electronics Terminal Enclosure

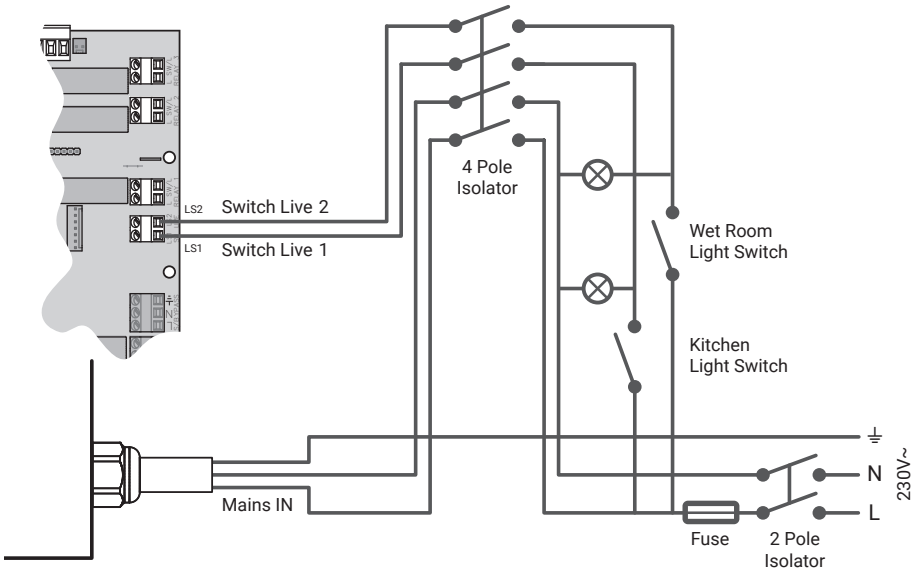
Supply



Supply Wiring

Switching & Controls

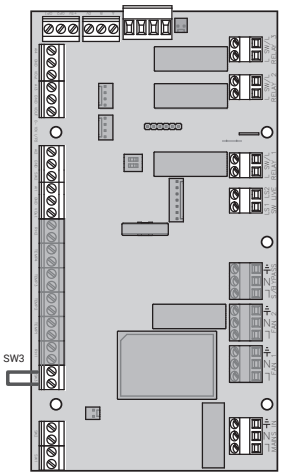
The Switched Live (LS1, LS2) Boost(s) must be supplied via the same circuit as used to power the unit.
A 3 (LS1 only) or 4 (LS1 &LS2) pole local isolator must be installed.
The Boxed Relay (Part No. TP505) may be required to switch from other circuits.



Supply Wiring with Switch Inputs

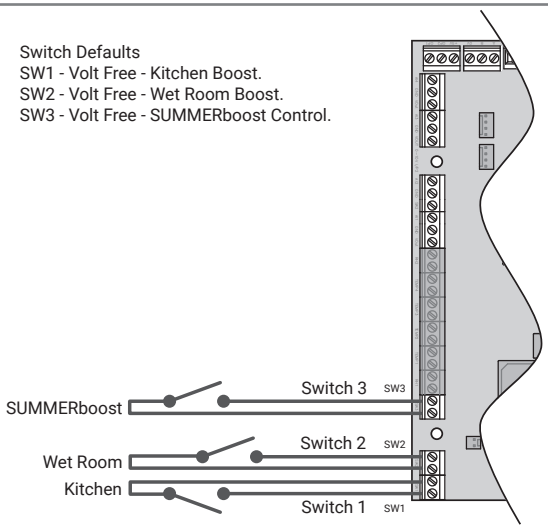
Take care when connecting to the PCB screw terminals; unwind the screw in an anti-clockwise direction, ensuring that the jaws are fully open to accommodate the conductor. Then tighten the screw in a clockwise direction until the wire fits snugly between the jaws. Finally, apply a 90-degree clockwise turn to fully secure the conductor.

All Switch, Boost & Communication cables should not be placed within 50mm or on the same metal cable tray as any 230V~ lighting or power cables.

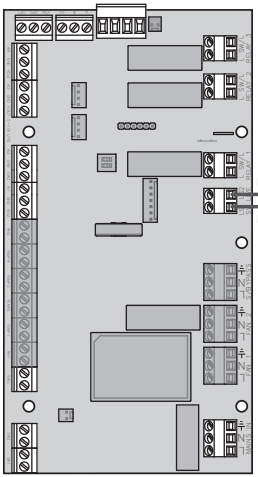


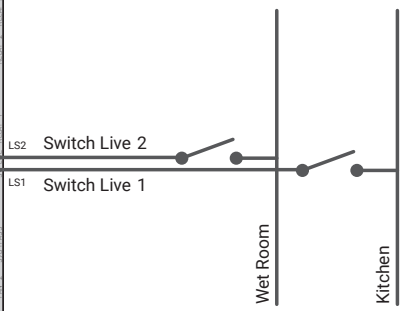
SUMMERboost Link Wire must
be removed to enable SUMMERboost

Switch Defaults
SW1 - Volt Free - Kitchen Boost.
SW2 - Volt Free - Wet Room Boost.
SW3 - Volt Free - SUMMERboost Control.



Volt Free Switch Inputs

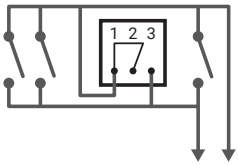




Switch Defaults
LS1 - 230V~ - Kitchen Boost
LS2 - 230V~ - Wet Room Boost
The Switched Live (LS1, LS2) Boost(s) must be supplied
via the same circuit as used to power the unit.

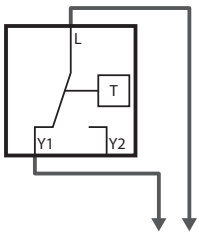
LIVE Switch Inputs

Any of these switch arrangements can be used in switch inputs SW1 to SW3 depending on their configuration and the type of MVHR.

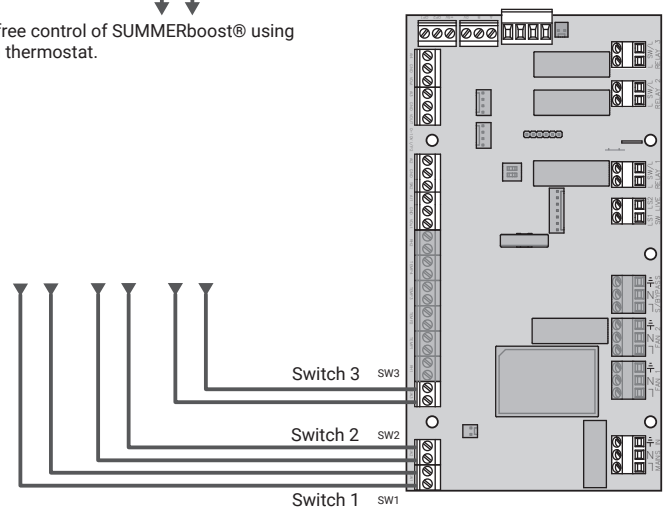


Volt-free boost switching of MVHR using single-pole switches TP502, TP503, TP507 and / or TP500/TP501 Humidistat.
There is a maximum of 10 single pole switches or Humidistats that can be used.

TP522 Latching SUMMERboost® switch.



Volt-free control of SUMMERboost® using room thermostat.



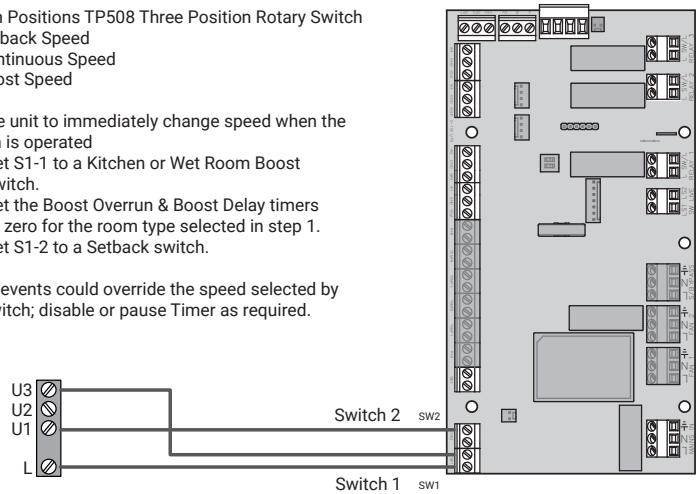
External Sensors

Switch Positions TP508 Three Position Rotary Switch
1 - Setback Speed
2 - Continuous Speed
3 - Boost Speed

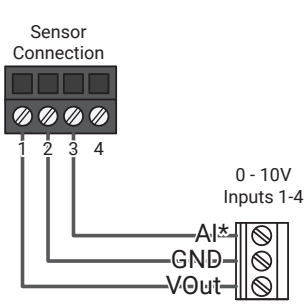
For the unit to immediately change speed when the switch is operated

1 Set S1-1 to a Kitchen or Wet Room Boost switch.
2 Set the Boost Overrun & Boost Delay timers to zero for the room type selected in step 1.
3 Set S1-2 to a Setback switch.

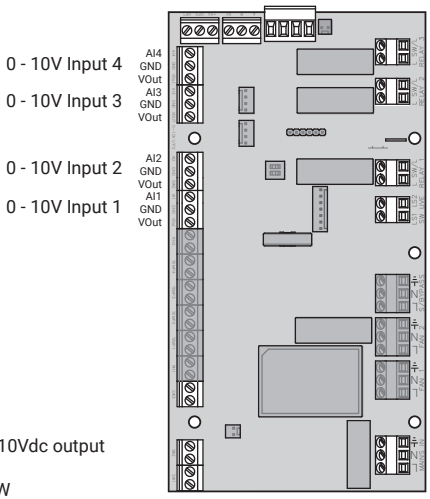
Timer events could override the speed selected by the switch; disable or pause Timer as required.



Three Way Rotary Switch



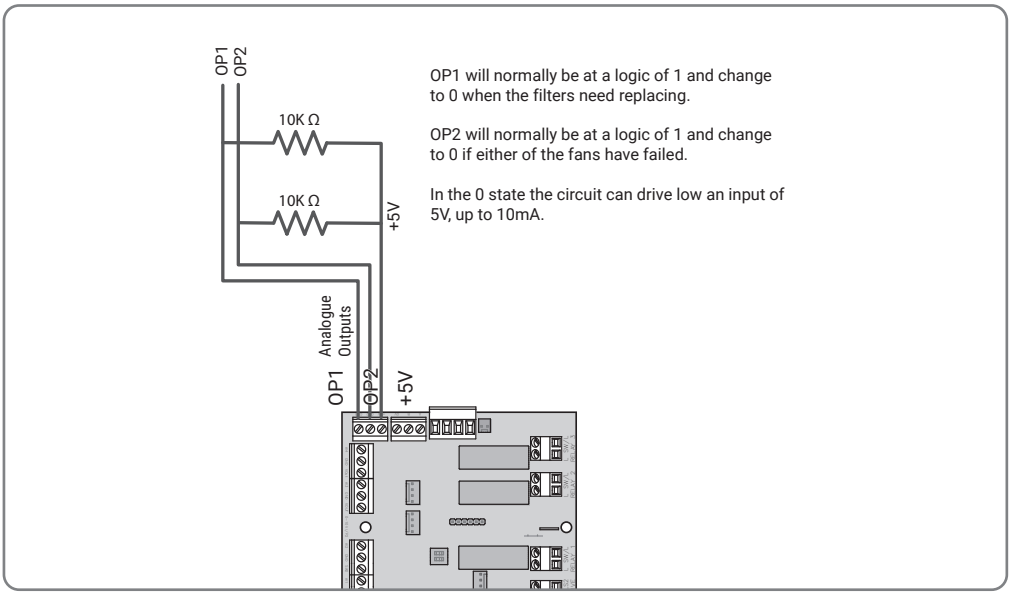
Sensor Options
TP540 VOC
TP541 CO_2
TP542 Humidity



- Ensure sensors are configured to give a 0-10Vdc output
- VOut = 24Vdc
- Combined sensor load must not exceed 4W

0-10V Sensor Connections

Analogue Output



Analogue Output connection information

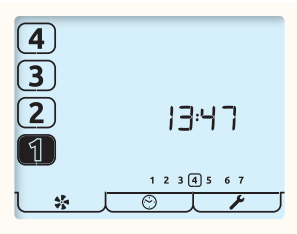
Take care when connecting to the PCB screw terminals; unwind the screw in an anti-clockwise direction, ensuring that the jaws are fully open to accommodate the conductor. Then tighten the screw in a clockwise direction until the wire fits snugly between the jaws. Finally, apply a 90-degree clockwise turn to fully secure the conductor.

aura-t User Interface

Menu Tabs

The aura-t™ screen has three interactive menu screens which are selected via tabs at the bottom of the touchscreen.

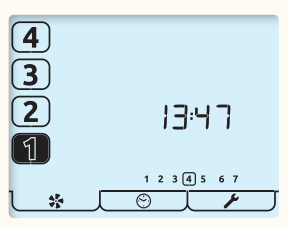
Tab			
Function	Monitor & Control Fan Commission	Timer	Setup
Name	Run Mode	Timer Mode	Setup (Tap) Setup Menu



Tab			
Option	Displays: Fan Speed, Time, Day and Status. Gives access to: Fan Speed Setup.	Gives access to: Timer Run/Pause Timer Setup Second press display HRV's runtime.	Gives access to: Time, Day, RH threshold, Overrun Timers, WiFi, Filter Setup, Filter Reset.
		Second press display MVHR's runtime.	Setup (Long Press) Setup Sub-Menu
		Third Press Displays the Unit's Temperature & Humidity Sensor values	Gives access to: Eco Mode, Switch setup, Summer Bypass, 0-10v Inputs (Room Sensors), Passcode settings, HRV handing settings, Frost setup.

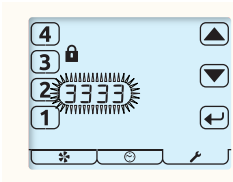
Run Mode

The aura-t™ controls the HRV unit's 4 programmable speed settings.



This is the Run Mode screen; use the number buttons to select the required fan speed.

1	Press and Hold the [1] button to turn the unit off, just the [1] icon will be displayed; Tap the button to turn the unit back on.
	The current running speed will be indicated by the corresponding number button being highlighted.



Passcode Screen

The passcode is always required to edit fan speeds and is optional for protection of the Setup-Sub-Menu settings.

Passcode - 3333

The time of day is also shown on this screen in 24 hour format along with the days of the week; the current day is ringed.

Status Icons

If the fan speed is being controlled by an external switch, a sensor or the timer this is indicated by an icon beneath the speed selection buttons being visible. The icons are as follows:

An external switch is active and is controlling a function of the unit.

The timer is active and is keeping the HRV at Speed 1. Using the auraSMART® app all speeds can be controlled.

The speed the HRV is running at is being controlled by the internal humidity sensor or an external Proportional Input sensor

Other Icons

Filters require replacement. Refer to the Controller Setup for details of how to reset.

Frost Protection, if this icon is constantly lit the temperature outside is low and the HRV Supply Fan has been stopped (both fans if Balanced Frost Protection enabled) to prevent damage to the Heat Cell.
If the Frost icon is flashing the indoor temperature is low and both fans will be restricted to 23% @ 6°C or 18% @ 3°C..

Summer Bypass is in operation, air from outside is being supplied directly to the property without recovering heat from the Heat Cell. This is often accompanied by SUMMERboost®, both fans switch to Speed 4 to increase the rate fresh air is supplied to the property and stale hot air is extracted.
Press & Hold the [4] button to cancel SUMMERboost®.

The Boost Overrun timer is active and is holding the HRV at Speed 3; this follows an external Boost switch being deactivated.

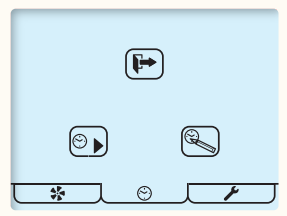
The padlock icon adjacent to the Speed 3 button and accompanying the timer icon indicates Boost Inhibit is active; the HRV's maximum speed is Speed 2. The unit will not respond to external Boost switches or the internal Humidity sensor & proportional Input sensors can only increase the HRV to Speed 2.

The warning icon flashing at the bottom of the screen adjacent to the Fan icon indicates a fan failure has been detected; a flashing supply or extract icon at the top of the screen indicates which fan has failed; contact the installer. If very high temperatures are detected inside the HRV, fan failure mode will be enabled to protect the HRV from damage.

When the Backlight is flashing along with the Speed 3 button the HRV has been held at Boost, Speed 3 for more than 2 hours; Boost Alert is active.

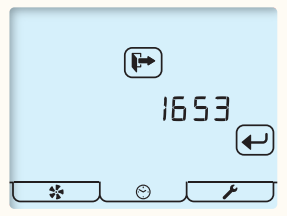
Timer Mode

The controller has a seven day, four events per day timer. The timer is used to automatically change the HRV speed to Setback, Speed 1 at programmed times.
An additional function of the timer is that when it activates Setback there is an option to engage Boost Inhibit.



This is the Timer Mode screen; the buttons displayed on screen have the following functions:

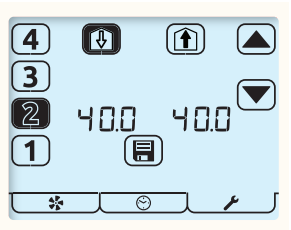
	Tap the Play / Pause button to toggle between play and pause. Press and Hold to pause timers indefinitely.
	The Run arrow indicates the timer is currently active and will be used to switch the HRV in and out of Speed 1
	The Pause and Hour Glass symbols indicate the Timer is temporarily paused; Timer will restart 8 hours after being invoked.
	The Pause symbol indicates the timer is currently inactive and will have no effect on fan speeds; this pause is indefinite.
	Timer Setup , Tap this button to adjust the Timer, see Timer Setup section.
	Tap this to Exit and return to Run Mode. When the timer has automatically switched the HRV to Speed 1 this can be manually overridden by tapping [2-4] keys. Tap the Speed 1 key to return to timer control. When the next timed event occurs the unit will revert to timer control. Manual override is not possible if Boost Inhibit is in operation.



Second Press of Timer Tab
Displays HRV runtime.

	Updates displayed fan speeds; used during fan speed cloning.
	Exit tab to Run Mode

Fan Commission



	Fan Commission Mode is entered by pressing the Fan Button for 5 seconds whilst in Run Mode.
	A flashing item on the screen indicates it is being edited.
	1. Select the required fan speed using the number buttons at the left of the screen. The current fan speeds are highlighted, the HRV will run at the selected speed.
Supply Extract	2. Use the Supply to dwelling or Extract from dwelling buttons at the top of the screen to select which fan is to be adjusted.
	3. Use the arrow keys to adjust the fan speed. The fan will respond in real-time to the adjustment being made.
	4. Repeat the above for all fan speeds requiring adjustment.
	5. When all of the fan speeds are correct tap the Save button to store all the fan speed settings to memory and exit back to Run Mode.

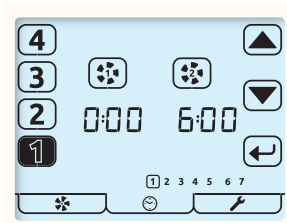
The temperature sensors are not active during fan commissioning, this prevents Frost Protection and the duct heater from functioning. Take care not to damage the heat cell if commissioning during extremely cold weather.

To set the fan speed to Zero/Off set Speed 1 to the minimum speed for the selected units and press and hold the [1] key

Timer Setup

Timer setup is achieved in three steps

1 Day Selection



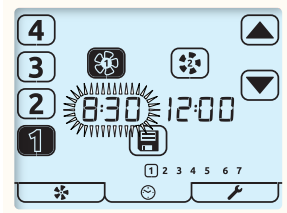
1. Tap the Timer Mode tab to enter the Timer Mode menu.

2. Tap the Timer Setup Key to commence setup.

3. A ring around the day selected will blink. Change the day that the timers are to be edited by using the Arrow Keys. .

4. Tap the Enter Key to start editing timers for that day.

2 Select Event & Edit Timers



In this example; tapping the Save key will save the settings; these will set the unit to run at Speed 1 between 08:00 & 12:00

5. Tap the event number to be edited [1-4] from on left hand side of the screen. The selected event will highlight.

6. Use the fan keys to select either the time the HRV will switch into Speed 1 or Speed 2.

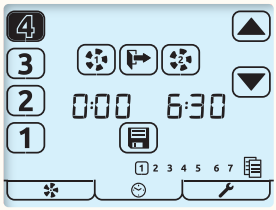
7. Speed 1 key toggles between selecting Speed 1 and selecting Speed 1 with Boost Inhibit indicated by Padlock Icon.

8. The selected time will flash, use the arrow keys to adjust in 5 minute increments.

9. Select the other events [1-4] to edit/check their times and function as required.

10. When all events for the current day Tap to save.

3 Copy Timers or Exit Timer Setup



1. The flashing Copy icon indicates the option to copy just edited settings to another day.

2. Tap the Enter Key to commence copy procedure.

3. Tap the Exit key to start editing another day's times or press a second time to exit to Run Mode.

4. When copying; the just edited day is ringed and the following day has a flashing ring. Tap the Enter key to select this day, solid ring indicates selection or use the arrow keys to choose days and the Enter key to select/deselect.

5. When all required day(s) have been selected tap the Save key to complete the copy and return to step 1 Day Selection Screen.

6. Repeat day, event and timer setup or tap the Exit key to return to Run Mode.

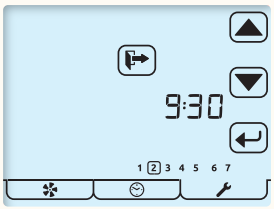
Timer Defaults

- The Speed 2 cannot be set earlier than Speed 1.
- Events where Speed 1 and Speed 2 are identical are ignored by the timer.

1 2 3 4 5 6 7 Days	Event	Speed 1	Speed 2
1 2 3 4 5	1	00:00	06:30
	2	08:30	12:00
	3	13:30	18:00
	4	22:30	00:00
6 7	1	00:00	07:30
	2	09:30	12:00
	3	14:00	18:00
	4	22:30	00:00
	Press & Hold the Timer Tab to load/reload the above default setting for the timer; this action also opens Timer Setup.		

Controller Setup

Setup menu



Enter key.

Exit Key.

Tap the Setup Menu tab to enter the Setup Menu

All the editable settings in the Controller Setup menu are accessed in the same way. Menu navigation is achieved by first Setting Selection and then Editing.

Setting Selection

- Arrow keys are used to select a setting, the setting will flash.
- Tapping the Enter key will allow the setting to edited.
- Tap the Exit button to return to Run Mode.

Setting Editing

- Arrow keys are used to change setting value.
- Tapping the Enter key whist editing will save and move to the next setting in the list.

The order in which editable settings are displayed is as follows.

1. Time (24 hour clock)
2. Day of week.
3. Humidity threshold
4. Kitchen Overrun timer.
5. Wet room Overrun timer.

Filter Change Interval (months 1-24)

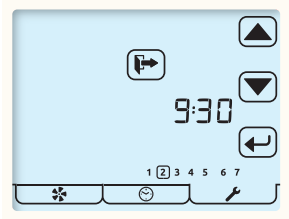
6. Filter Reset; also displays remaining time in days

If a filter change is required the reset ring will be flashing. Tap the Enter key to reset or the Exit key.

If a filter change is not due but the filter timer requires resetting press the Enter key twice.

Tap Exit key to return to Run Mode.

Setup Sub Menu



Enter key.

Exit Key.

Long Press the Setup Menu tab to enter the Setup Sub Menu, if the Passcode is enabled enter the Passcode.

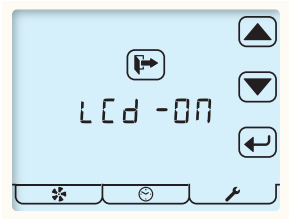
The order in which editable settings are displayed is as follows.

1. Eco Mode
2. Switches, 5 switches.
3. Summer Bypass
4. Room Sensors, 4 sensors

Passcode

5. Unit Handing
6. Frost Setup; balanced / unbalanced
7. Tap Exit key to return to Run Mode.

Eco Mode Setup



Use to adjust between the options. Eco or On

Tap Enter key
to save and exit.

On - LCD display (not the Backlight) is on continuously.
Eco - After a one minute period of inactivity the aura-t will enter sleep mode.

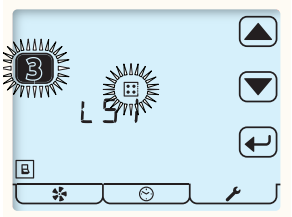
Eco mode will only operate when timers are permanently paused.

To manually wake the screen up from Eco Mode tap anywhere on the screen.

The screen will wake from Eco Mode if there is a fault; ie Fan failure, Filter Change, Boost Alert, Internal Frost.

Switch Setup Menu

In this menu the installer can configure the function of the HRV unit's switch inputs S1, S2, S3, LS1 & LS2 (see HRV Product Manual for details)

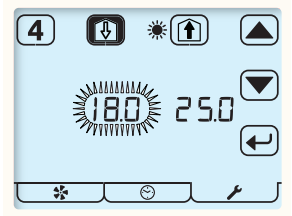


Enter key.

Exit Key.

B	Switch Setup menu active.
All switch inputs to the HRV unit; S1, S2, S3, LS1 & LS2 can be assigned any of the following functions.	
3	Kitchen Boost, Speed 3.
3	Wet Room, Boost, Speed 3.
1	Speed 1, Setback
4	SUMMERboost disable.
4	Speed 4
OFF no	Off Normally Open
OFF nc	Off Normally Closed
	Manual Summer Bypass
rELAY	Relay control.

Summer Bypass Setup



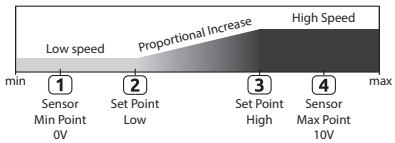
Use to adjust value up or down.

Enter key.

Supply / Extract	Use the Supply and Extract buttons to select which threshold is to be adjusted. Supply represents from atmosphere air temperature; Extract represents from dwelling air temperature.
4	Tap button[4] to enable / disable SUMMERboost. Unfilled icon (shown) represents disabled.

0-10V Inputs (Room Sensors)

The 0-10V inputs control fan speed.

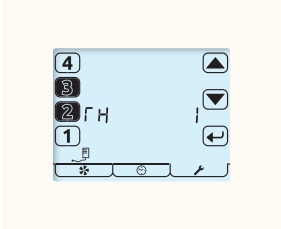


There are 4 room sensors connections available; each Sensor has two configuration screens, each pair of screens is displayed sequentially. ie 1a, 1b, 2a, 2b, 3a etc.

The first screen (a) configures:

- The sensor type either RH, Air Quality, CO2, Temperature or OFF.
- The Speed range that the sensor operates between; either 2 to 3 or 1 to 4.

The number adjacent to the arrow buttons display the Sensor number..

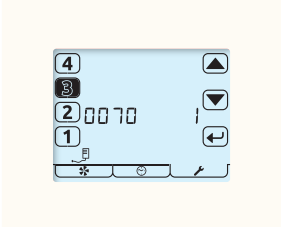


Use to cycle through the sensor options

Use the number keys to select the sensor Speed range.

Tap Enter key to save and move to next screen.

The second screen (b) configures:-
The Sensor Min Point 0V, Set Point Low, Set Point High, Sensor Max 10V
The number adjacent to the arrow buttons display the Sensor number..



Use to adjust parameter value.

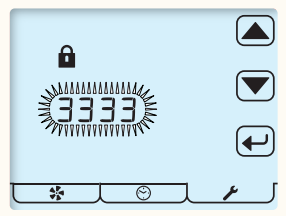
Use the number keys to select which parameter to adjust,

Tap Enter key to save and exit.

1	Sensor Min Point 0V
2	Set Point Low; the lower threshold where the fan speed begins to proportionally increase.
3	Set Point High; the upper threshold where the fan speed will go to Speed 3 or Speed 4 depending on the range selected on the previous screen.
4	Sensor Max 10V

The above is repeated for Sensors 2, 3 and 4.

Passcode Enable / Disable



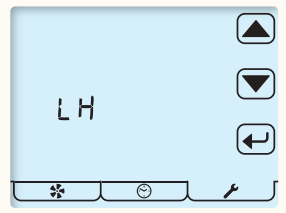
Tap Enter key
to edit state.

Use to enable / disable Passcode.

- - - - indicates Passcode is disabled.
3 3 3 3 indicates Passcode is enabled.
Enabling the Passcode only protects the menu items in the Setup Sub Menu.
The passcode is permanently enabled on the fan commission screen

Unit Handing

Left Hand/Right Hand switching

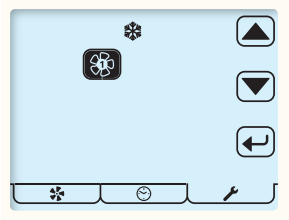


Use the Arrow buttons to select between LH and RH

Tap Enter key
to save and exit.

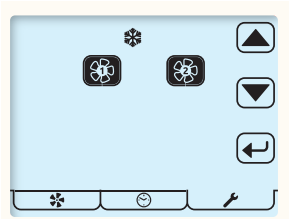
Frost Setup

This screen is used to select between unbalanced Frost Protection, where only the supply fan stops (default) or balanced where both fans stop. Balanced Frost Protection is for use in properties with an open flue fireplace.



Use the Arrow buttons to select between supply fan or both fans.

Tap Enter key to save and exit.



Appendix

aura-t Configurable Defaults

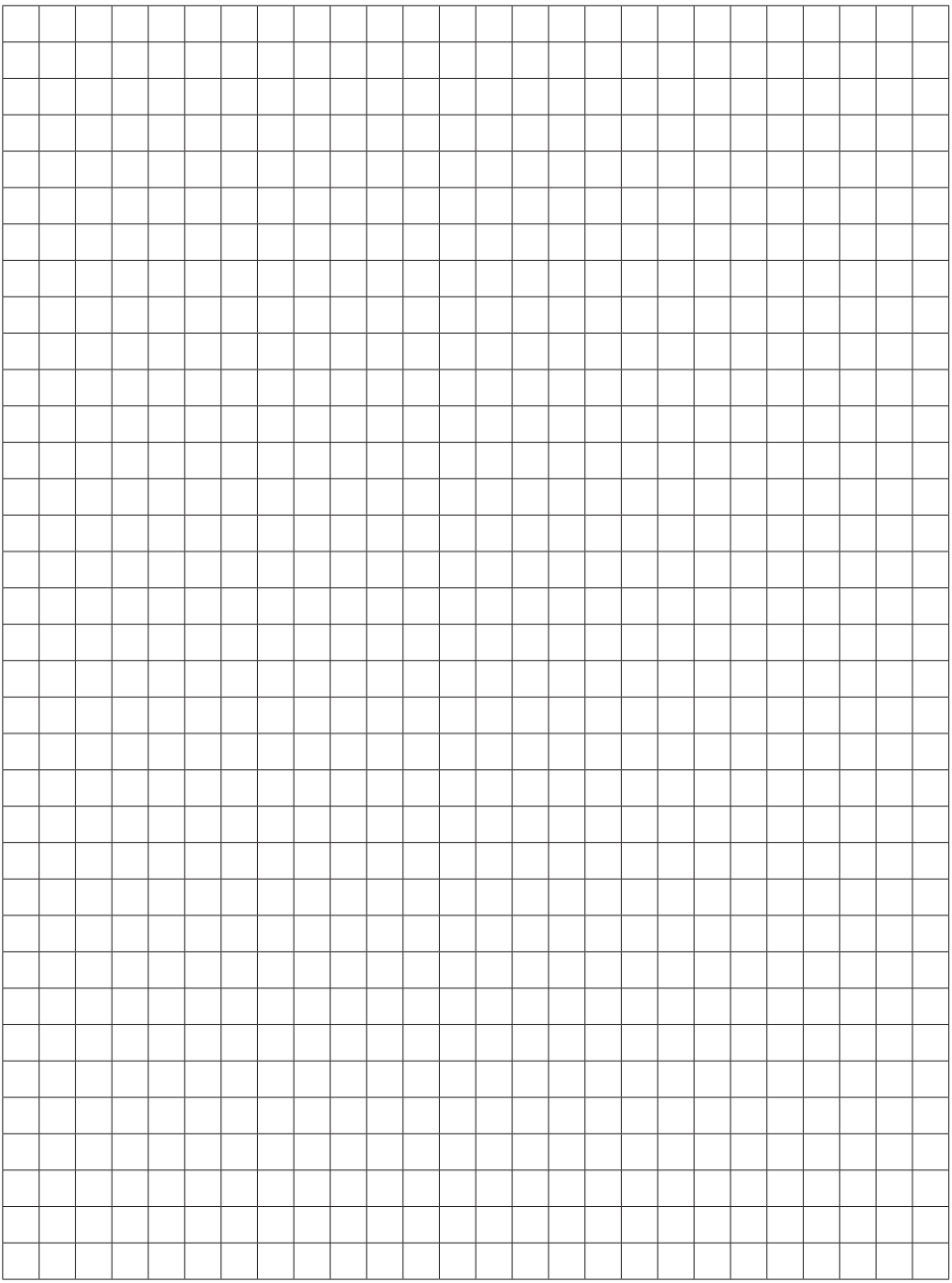
The table below details the default values and the range of available settings, plus any additional information about those settings the aura-t can configure. There is space available in the table where the installer should record all configuration settings.

Configurable Item		Range		Default	Configured	Additional information
		Min	Max			
Boost Overrun	Kitchen	0 mins	60 mins	15 mins		
	Wet Room	0 mins	60 mins	15 mins		
Boost Overrun timers are set independently for Kitchen and Wet Room inputs. Boost Overrun timers must be set greater than zero for any momentary switch to trigger boost. When using latching switches to initiate Speed 3, Boost, the Overrun timer will start when the latching switch is disengaged.						
Proportional Humidity Set point		30%	100%	70%*		
Proportional Humidity proportionally varies the fan speed between Continuous Speed 2 and Boost Speed 3 depending on the measured RH. This occurs over a 20%RH operating range with the set point being the mid point of this range. When the measured RH reaches a level 10%RH below the set point the fan speed starts to increase in proportion to the measured RH. This increase continues until at 10%RH above the set point the fans will be running at Boost speed. Note:- for set points of 80%RH or above the 20%RH operating range will be reduced and Speed 3 may not actually be reached.						
Room Sensor 1						
Enable/Disable		Enabled		Enabled		
Room Sensor Type		%RH		%RH		
Sensor Min Point 0V		0000	9999	0000		
Set point Low		0000	9999	0060		
Set point High		0000	9999	0070		
Sensor Max Point 10V		0000	9999	0100		
Room Sensor 2						
Enable/Disable		Enabled		Enabled		
Room Sensor Type		CO2		CO2		
Sensor Min Point 0V		0000	9999	0000		
Set point Low		0000	9999	0800		
Set point High		0000	9999	1400		
Sensor Max Point 10V		0000	9999	2000		

Configurable Item		Range		Default	Configured	Additional information
		Min	Max			
Room Sensor 3						
Enable/Disable		Enabled		Enabled		
Room Sensor Type		%RH		%RH		
Sensor Min Point 0V		0000	9999	0000		
Set point Low		0000	9999	0060		
Set point High		0000	9999	0070		
Sensor Max Point 10V		0000	9999	0100		
Room Sensor 4						
Enable/Disable		Enabled		Enabled		
Room Sensor Type		CO2		CO2		
Sensor Min Point 0V		0000	9999	0000		
Set point Low		0000	9999	0800		
Set point High		0000	9999	1400		
Sensor Max Point 10V		0000	9999	2000		
Speed 1, Setback.	Supply	14%	100%	25%		
	Extract	14%	100%	25%		
Speed 2, Continuous.	Supply	14%	100%	40%		
	Extract	14%	100%	40%		
Speed 3, Boost.	Supply	14%	100%	70%		
	Extract	14%	100%	70%		
Speed 4, SUMMERboost®	Supply	14%	100%	100%		
	Extract	14%	100%	100%		
Summer Bypass	Extract (From property)	17°C	35°C	25°C		
	Supply (From atmosphere)	10°C	20°C	18°C		
In order for the Summer Bypass to operate the temperatures of both the air being extracted from the property and supplied from outside must be above their individual thresholds. If the temperature of the Supply air is less than 1°C cooler than the Extracted air the Summer Bypass does not operate to prevent the warmer air being supplied directly to the property. Manual Summer Bypass switches the Summer Bypass in or out regardless of the measured temperatures.						
SUMMERboost®		Enabled	Disabled	Enabled		
SUMMERboost® operates in conjunction with Summer Bypass and switches the fans to Speed 4. It can also be disabled by a latching switch if fitted.						

Configurable Item		Range		Default	Configured	Additional information
		Min	Max			
Filter Change Interval		1 month	24 months	12 months		
Display Mode		ECO	ON	ON		
Switch Inputs	LS1			Kitchen Boost"		
	LS2			Wet Room Boost		
	SW1			SUMMER boost® Disable		
	SW2			Wet Room Boost		
	SW3			Speed 1 Setback		

Switch options are: Kitchen Boost, Wet Room Boost, Speed 1, SUMMERboost disable, Speed 4, OFF (normally open), OFF (normally closed), Manual Summer Bypass & Relay.
When configured as Kitchen or Wet room Boost, the switch will use the associated Boost overrun time for that room.
When configured as OFF (normally open) both fans will stop when the switch is closed or if OFF (normally closed) is configured the fans will stop when the switch is opened.



Maintenance

Routine Maintenance

All ventilation units require periodic maintenance. Routine maintenance, apart from filter changes, must only be carried out by a suitably qualified and competent person.

WARNING: The unit uses a ~230V supply and contains rotating mechanical parts.

ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop before undertaking any Servicing or Maintenance.
The unit may be supplied with multiple live supplies if a Duct Heater is fitted or uses switched live for Boost Speed control.

Cleaning Exterior

For best results use a clean damp cloth. Do not use abrasive cleaners, solvents or any other fluids.

Cleaning Interior

For best results:

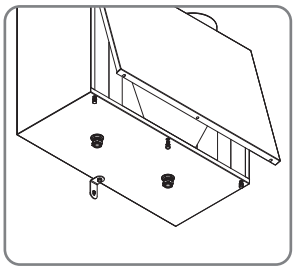
1. Slide out the Filters.
2. Carefully remove any dust from face of heat exchanger, interior of the unit and the Bypass using a vacuum cleaner

Do not use water or any other fluids

HRV1.35, 1.6, 4 & 4.25

Front Cover Removal

3. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop
4. Loosen the two corner screws located on the bottom front of the unit
5. Completely remove the centre screw
6. Completely remove the Front Cover by pulling it away from the unit at the bottom and lifting

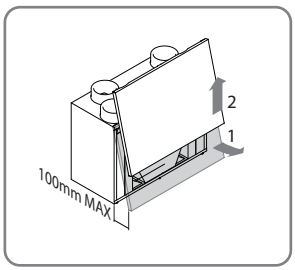


Cover replacement is the reverse of the above steps. Ensure it is securely located at the top before tightening screws.

Condensate Tray

If the Condensate Tray is split a replacement must be ordered and fitted.

HRV 1.35 *Q Plus*	Part No. XP40042M
HRV1.6 *Q Plus*	Part No. XP4010649M
HRV4 & HRV4.25 *Q Plus*	Part No. XP4011570



Filter Replacement

Filters should be replaced at least annually, or more regularly dependent on environmental conditions. Filters should be replaced with like for like components. The connected controller will indicate filter change required in line with the Filter Change Interval settings. Replacement filter part number numbers below.

Model	G3 Filter Set Both faces white	G4 Filters Set One face white, one face blue	G4 Filters Set	F7 Single Filter	G4 & F7 Filter Set
HRV1.35 *Q Plus*	XP40032	XP46022			
HRV1.6 *Q Plus*	XP2011902	XP2011903			
HRV4 *Q Plus*			XP2011629	XP2011630	XP2011754
HRV4.25 *Q Plus*					

Following filter replacement the HRV controller's Filter Warning should be reset, refer to Product Manual of controller for details.

HRV1.35, 1.6, 4 & 4.25

The Filters are available in different grades G3, G4 & F7. Filter media should be replaced like for like. Filter Part numbers in table above.

To replace filters.

1. Remove Filter Covers.
2. Slide out Filters make note of any arrows on the filters.
3. Replace Filters by carefully sliding in the replacement filters. Ensure that filters are replaced in the same orientation as they were removed.
4. Replace Filter Covers.

Installed by:

In the event of any queries please contact the system installer.
Ensure this booklet is passed to the householder once installation & commissioning of the ventilation system is complete.

This Product Manual must be kept in the Home Information Pack.

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