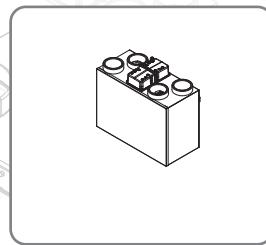
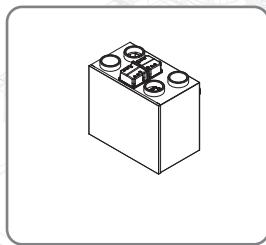


# Manual

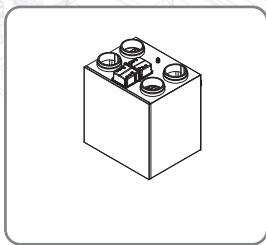
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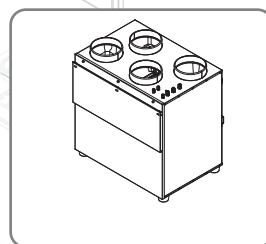
HRV 1.3 Q Plus  
HRV 1.35 Q Plus



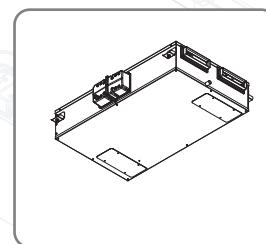
HRV 1.6 Q Plus  
HRV 1.65 Q Plus



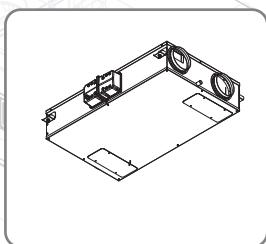
HRV4 Q Plus  
HRV4.25 Q Plus



HRV20 Q Plus



H200 Q Plus



H200 Q Plus



 **Titon**<sup>®</sup>  
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 0.75mm<sup>2</sup>).
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. HRV1.3, HRV1.35, HRV1.6, HRV1.65, HRV4, H200 Q Plus units suitable for 230V ~ 50/60Hz single phase with a fuse rating of 3A.
9. HRV4.25Q Plus & HRV20Q 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. 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.

15. The appliance is not suitable for installation to the exterior of the dwelling.

16. 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.

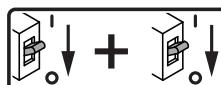
17. Ensure that external grilles are located away from any flue outlet, in accordance with relevant Building Regulations.

18. The unit must not be connected to a tumble dryer or a cooker hood.

19. 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.

20. 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.

## **Titon Recommend:**

- 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 HRV 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  $\leq 0.04 \text{ W}/(\text{m.K})$  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 overtightening may distort and reduce the unit's port.
- A minimum distance of 2m exists between the external supply and exhaust terminals.

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## Units

### List of Products

This Manual is for the following Products

HRV1.3	HRV1.35	HRV20 Enthalpy	HRV4
HRV1.35 Enthalpy	HRV1.6	HRV4.25	H200 204x60
HRV1.6 Enthalpy	HRV1.65	H200 Ø150	H200 Ø160
HRV1.65 HE	HRV20		

Part number definitions

- LR Left/Right Hand selectable at installation with an aura-t controller
- LR-T Left/Right Hand selectable at installation with on board aura-t controller.
- AR Autorregulable - Constant Volume Unit.
- HE High Efficiency Heat Exchanger.

# Product Information

The 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

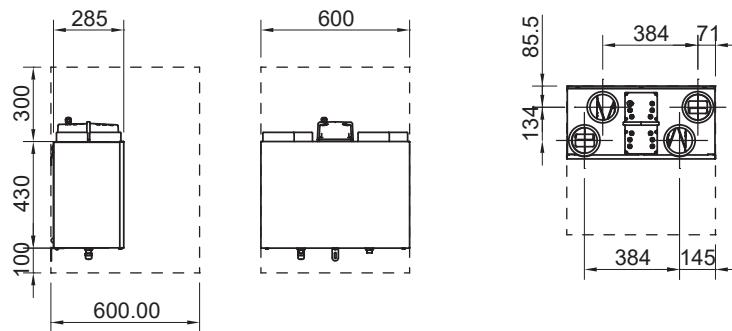
Inspect the unit when taking delivery. Each unit is supplied with various accessories. Check the unit for damage and that all unit specific accessories have been supplied.

Unit	Accessory	Mounting Bracket	Safety Bracket(s) Kit	Condensate Drain Olive & Nut	Condensate Drain Blanking Plate	M6x10 Pan HD screw	M6 washer	Transport Bungs	Product Manual	EuP Documentation	40x12 Hose Clamp	Port Cover / 150-125mm adapters	Condensate bung	M5x10 Pan HD screw	M5 Star washer	
HRV1.3 & 1.35																
HRV1.6 & 1.65		2	1	1	1	4	4	4								
HRV4 & 4.25																
HRV20		2	2			6	6									
H200		4								1	2	2	1	8	8	
										Yes						

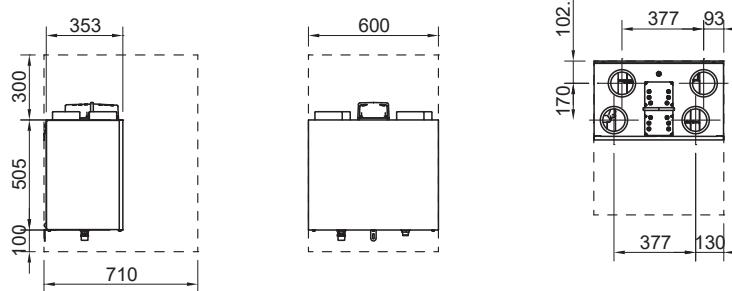
# Units' Dimensions

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.

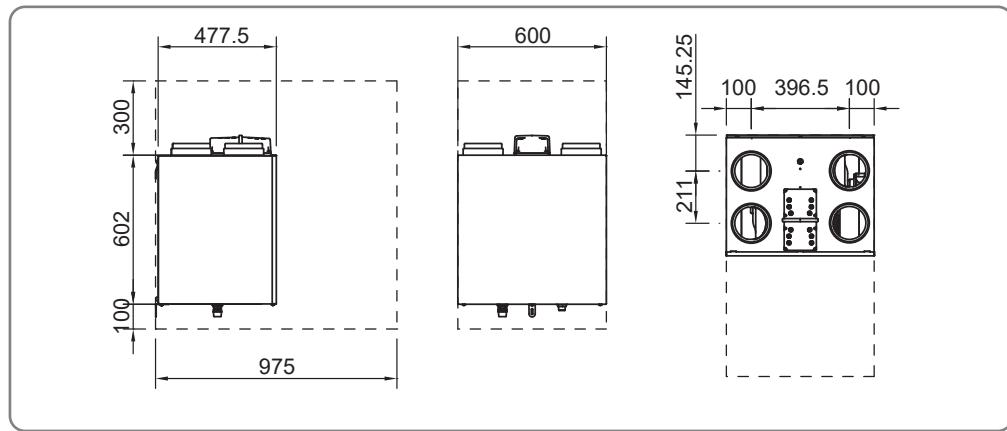
Unit	Compatable Ducting (mm)	Weight (kg)
HRV1.3 & 1.35	Ø100 & Ø125	16
HRV1.6 & 1.65	Ø100 & Ø125	22
HRV4 & 4.25	Ø150 & Ø160	28.5
HRV20	Ø200	46
H200	Ø150, Ø160 & 204x60	32



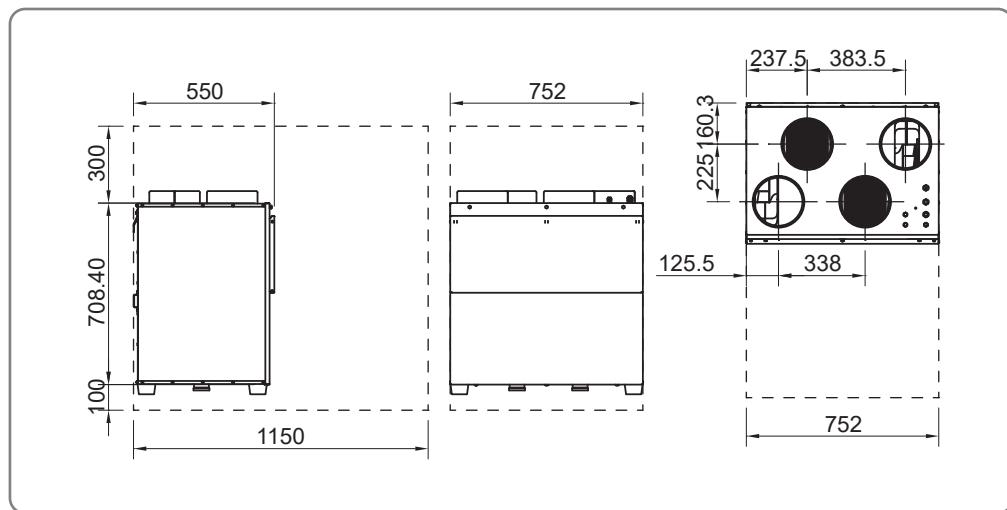
HRV1.3 & 1.35 Q Plus



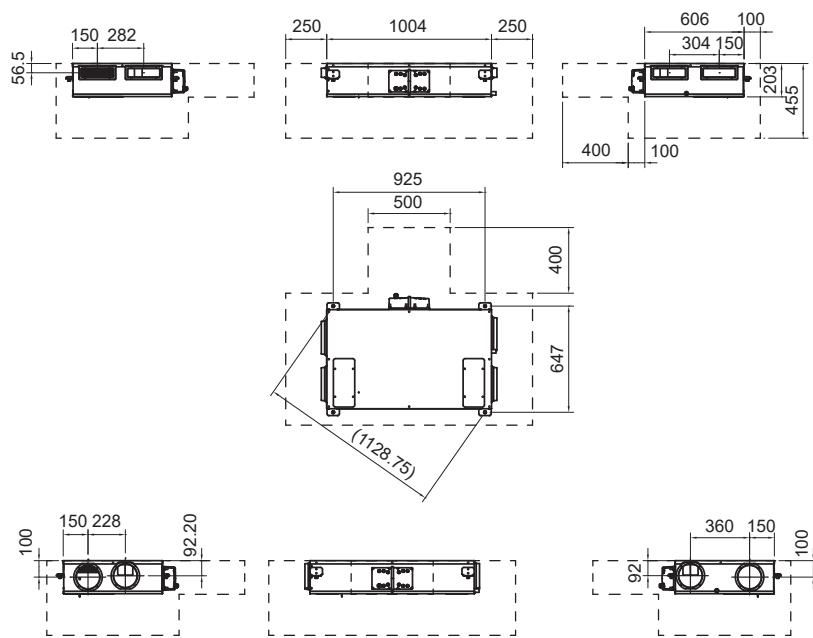
HRV1.6 & 1.65 Q Plus



HRV4 & 4.25 Q Plus



HRV20 Q Plus



H200 Q Plus (Horizontal Unit)

# Product Features

## Right or Left Hand

Other than the H200 all units are supplied as Left Handed Units and can be reconfigured on site to Right Hand units using a aura-t controller either on board or plug in.

## 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.

## 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.

## 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 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.

## 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.

## 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%. Additionally, if the supply to or extract from the dwelling air temperature falls below 6°C the unit will stop both fans.

## Additional Relays

There are two additional relays on the PCB. By default they are unused, but they can be factory configured for various functions.

## Analogue Outputs

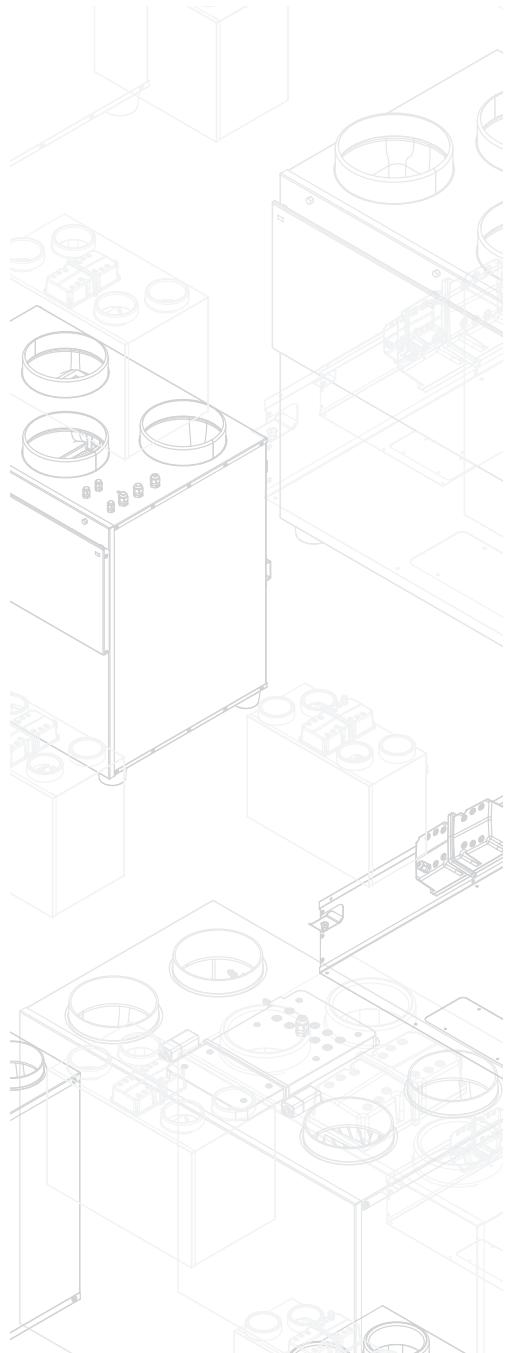
There are two open collector analogue outputs. Connecting these to an external circuit allows the status of the filter and fans to be monitored as they are driven low (to 0V) when the filters need replacing or a fan has failed.

## Enthalpy humidity-recovery

Units with an E in their part number are manufactured with an enthalpy heat recovery core that recovers some of the humidity as well as heat.

## Modbus Port

The Modbus RTU port using RS485 allows the HRV to be monitored or controlled by any Modbus Master device.

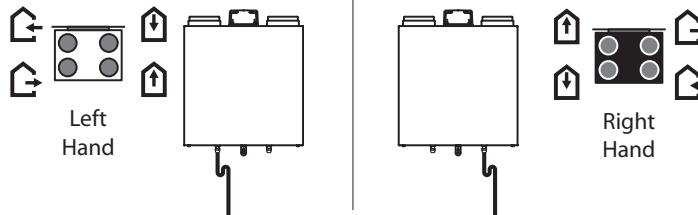


# Installation

## IMPORTANT

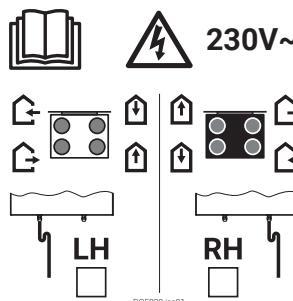
Other than the H200 all units are supplied as Left Handed Units and can be reconfigured on site to Right Hand Units using an aura-t controller.

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.

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



handing of the unit. 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** .

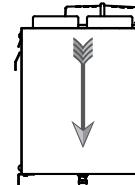
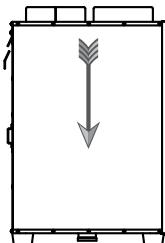
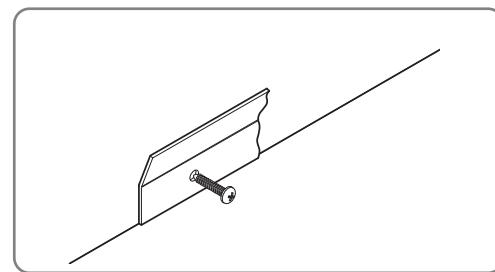
Do not remove the Port Covers, where fitted, until connecting ducting. Port Covers are fitted to prevent debris falling into the unit and causing blockages and damage:

- 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.**

### All Units except H200

1. Mark a horizontal line on the wall using a spirit level. This line will be approximately 95mm HRV1.3, 1.35, 1.6, 1.65, & 4 & 4.25 Q Plus 110mm HRV20 Q Plus 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.



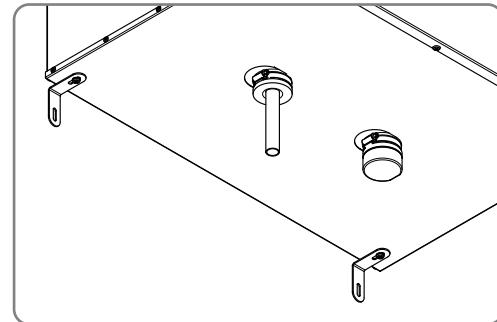
Hook Unit onto Wall Bracket

## Safety Bracket

The Safety Bracket(s) **MUST** be used.

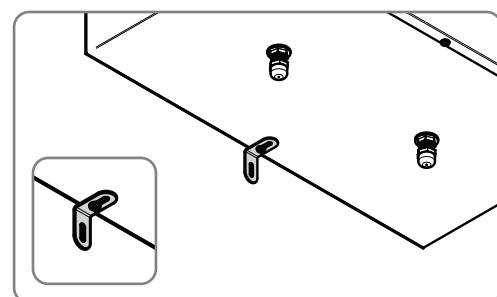
### HRV20

1. Remove the rear Transport Feet to enable fitment of the Safety Brackets and remove the front Transport Feet and M6x40mm fixing screw and discard. Fit the supplied M6x10mm screws from the Safety Bracket Pack.
2. The Safety Brackets **MUST** be fitted. Fix the lower Safety Brackets as shown using the remaining M6 screws, washer and suitable wall fixing. Packing to be used as required behind the Safety Bracket to ensure unit is level.



### Other Units

- 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



## Mounting H200

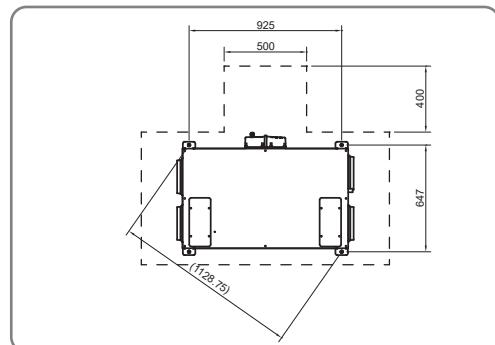
Read and observe the guidance & safety notices listed in **Warnings, Safety Information and Guidance** .

- The units are designed to be mounted on the underside of a horizontal surface.
- The mounting surface and fixings must be sufficiently strong to support the unit. The H200 unit is 32Kg.
- 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.

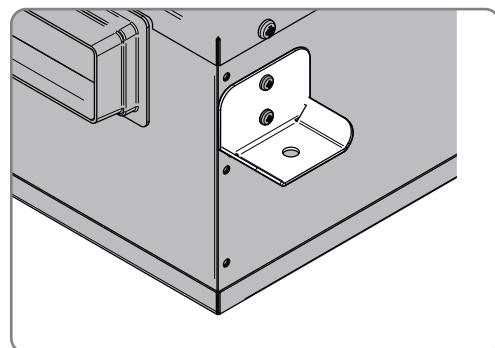
**The unit must be mounted plumb and level front to back and side to side.**

1. Position four Ø8mm fixings in the mounting surface in the positions specified. Fixings must be suitable for the mounting surface substrate and the weight of the unit. Fixings are not supplied due to the variation in materials. For advice on suitable fixings contact your local specialized fixings dealer.

2. Fit the 4 mounting brackets to the sides of the unit with the M5 screws and M5 star washers, ensure all mounting brackets are orientated as illustrated.
3. Secure the unit using Ø8mm fixings Ensure the unit is plumb and level front to back and side to side.



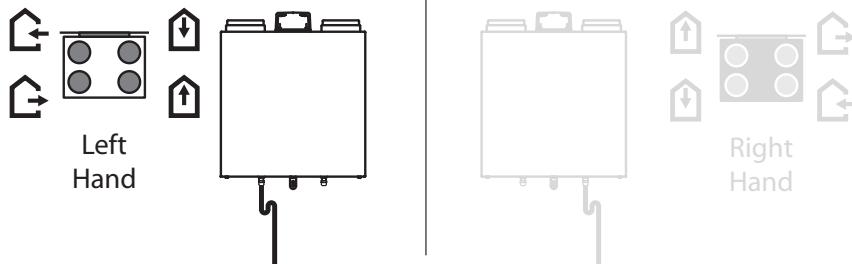
Locations of Fixings



Orientation of Mounting Bracket

# Left Hand Units

Other than the H200 all units are supplied as Left Handed Units.



Left / Right Hand Drain Connection & corresponding Ducting Connections

## HRV1.3 & 1.35

The Condensation Drain Pipe Is attached via a 22mm compression fitting, units without a LR part number suffix use a 15mm compression fitting.

## HRV 1.6 1.65, 4, & 4.25

Condensation Drain Pipe Is attached via a 22mm compression fitting.

## Blanking Plug

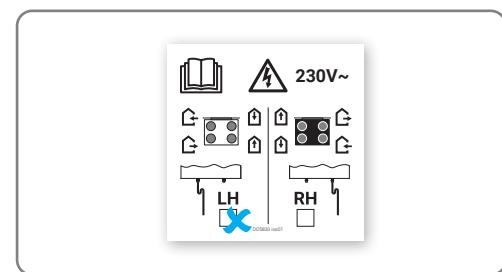


The Condensate Outlet Blanking plug must be fitted to the unused condensate outlet.



Blanking Plate fitted to unused Outlet

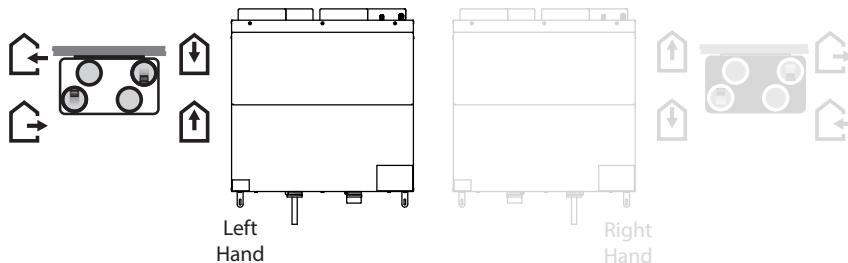
This label affixed to the top of the unit must be marked with permanent marker to identify the handing of the unit.



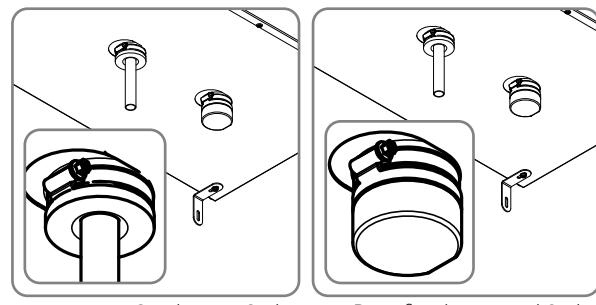
Port Identification & Handing Label

## HRV20

1. Fit hose clamps around both Condensate Drain Sockets, ensuring they are pushed over the lip and aligned with recess in sheet metal casing
2. Insert 22mm O/D PVC pipe into Condensate Drain Socket up to the stop, no more than 35mm of pipe should be inserted into Condensate Drain Socket.
3. Insert Condensate Bung fully into opposite Condensate Drain Socket.
4. Hand tighten the hose clips. Do not over tighten.

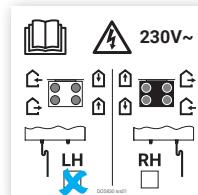


Left / Right Hand Drain Connection & corresponding Ducting Connections



Condensate Outlet      Bung fitted to unused Outlet

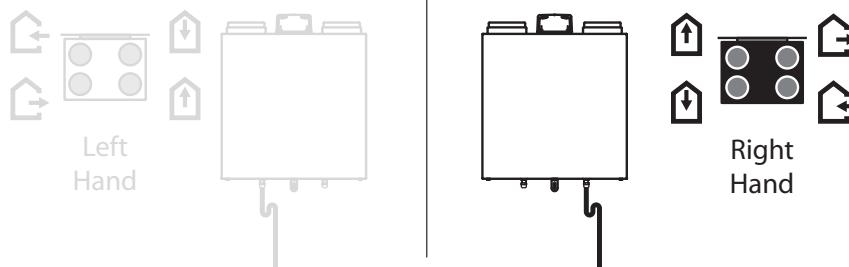
This label affixed to the top of the unit must be marked with permanent marker to identify the handing of the unit.



Port Identification & Handing Label

# Right Hand Units

Other than the H200 all units are supplied as Left Handed units and they can be reconfigured on site to Right Hand units using an aura-t controller.

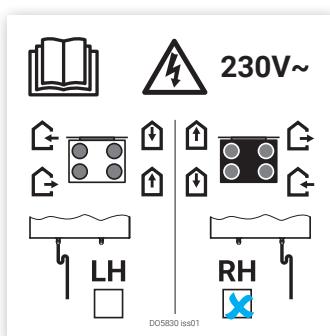


Left / Right Hand Drain Connection & corresponding Ducting Connections

## Handing Change

For units other than the HRV20; use the following steps to change to Right Hand Configuration.,

1. Use the aura-t controller to change from LH to RH; see section Setup Sub Menu; item 5
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.



Port Identification and Handing Label



Blanking Plate fitted to Condensate Outlet



Condensate Outlet

### Blanking Plug

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



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.



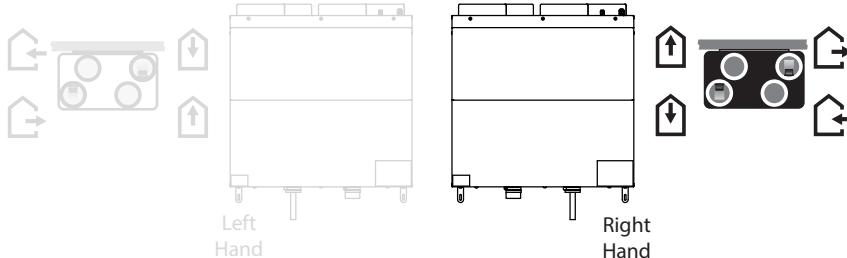
SUPPLY TO DWELLING - This duct port is connected to the ducting that carries the fresh warmed air to the habitable rooms from the HRV unit.



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

## HRV20 Handing Change

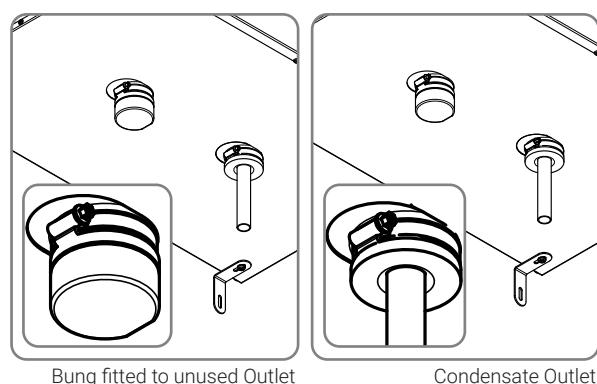
1. Fit hose clamps around both Condensate Drain Sockets, ensuring they are pushed over the lip and aligned



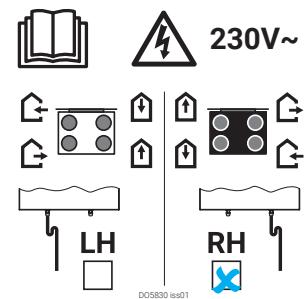
Left / Right Hand Drain Connection & corresponding Ducting Connections

with recess in sheet metal casing.

2. Insert the condensate drain pipe into the right hand Condensate Drain Socket up to the stop, no more than 35mm of pipe should be inserted into the Condensate Drain Socket.
3. Insert the Condensate Bung fully into the LH Condensate Drain Socket.
4. Hand tighten both hose clamps. Do not over tight



5. Use the aura-t controller to change from LH to RH; see section Setup Sub Menu; item 5
6. 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.



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.



**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.



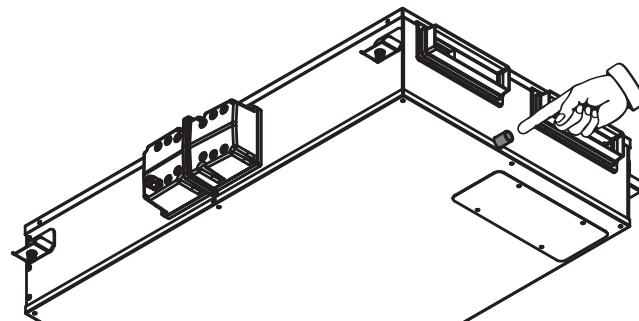
**FROM ATMOSPHERE** - This duct port is connected to the ducting that carries fresh outdoor air to the HRV unit.

# Horizontal Unit(s)

## H200

The H200 is only available with one port configuration.

- Condensate output is a Ø21.4mm plastic pipe positioned on the end of the unit.
- Drain pipe must be fitted to the unit with a removable fitting.

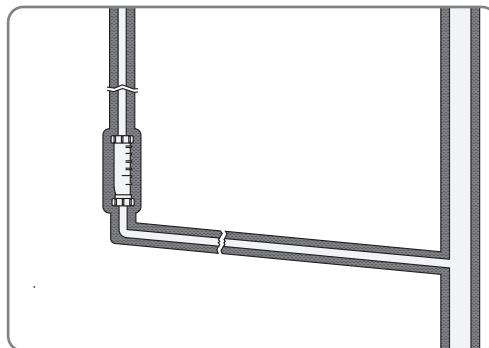


# Condensate Drain

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.

## The Condensate Drain:

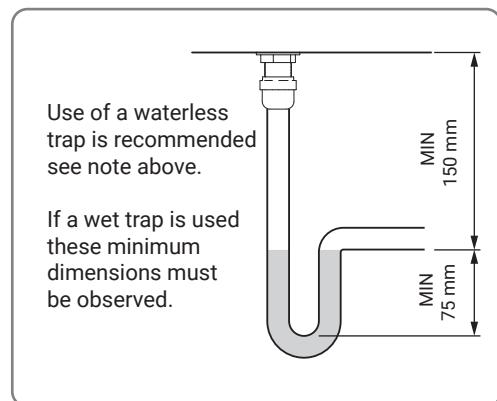
- Must incorporate a suitable trap, which must act as an air lock, ie must be sealed.
- Must be adequately secured along it's length.
- Must be insulated if any part of the pipe passes through a unheated void or a space which could fall below 10°C.
- Must be installed to have a 3 to 5° fall from the 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

# Ducting Connections

The HRV unit has 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.**

## Port Designations



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



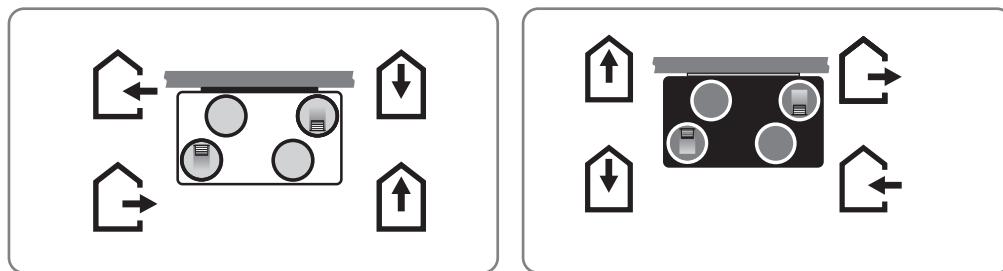
TO ATMOSPHERE - This duct port is connected to the ducting that carries the waste air to outdoors from the HRV unit.



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.

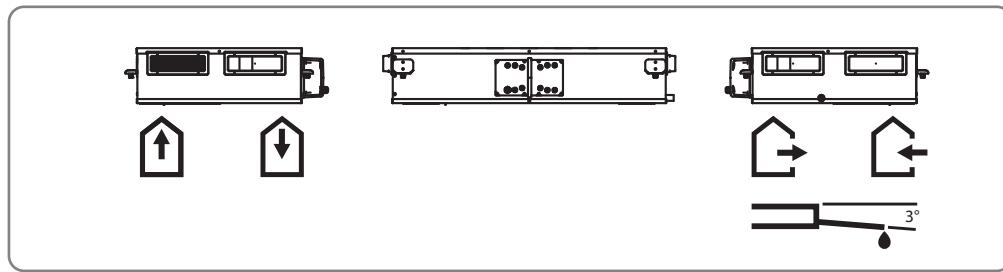


FROM ATMOSPHERE - This duct port is connected to the ducting that carries fresh outdoor air to the HRV unit.



Left Hand Units' Duct Connections

Right Hand Units' Duct Connections



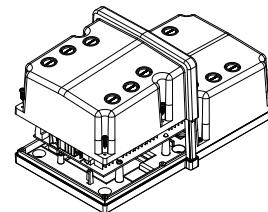
H200 Duct Connections

## 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.

With the exception of the HRV20 all units use the same Electronics Terminal Enclosure. The compartment has two removable lids. The front (Right - H200) 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.

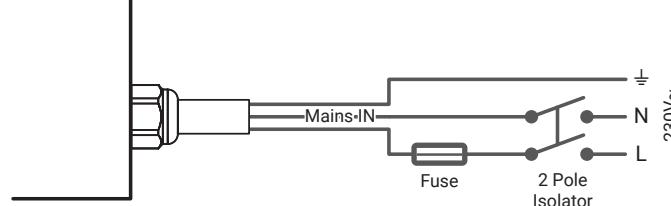


Electronics Terminal Enclosure

## HRV20

To access the electronics compartment remove the Front Panel of the unit (see Maintenance section) and partially slide out the electronics tray.

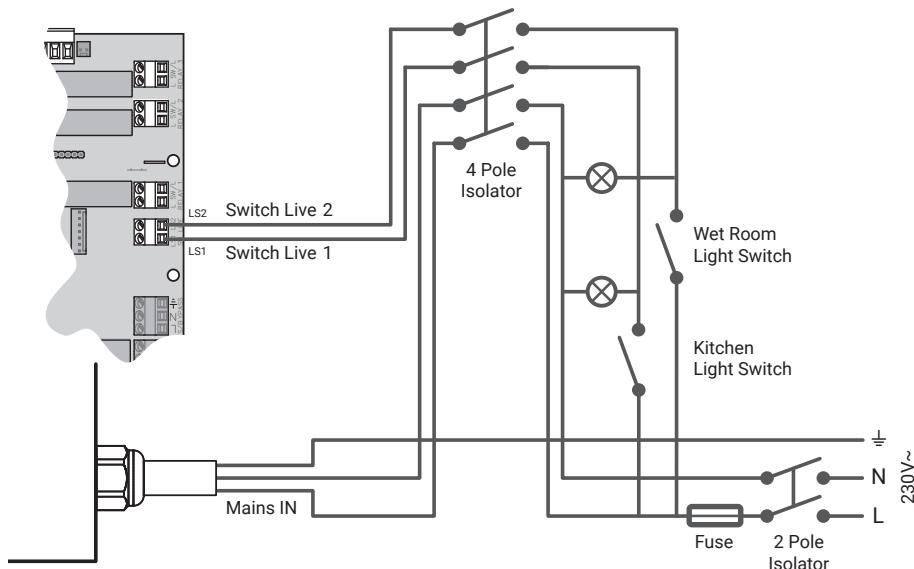
## Supply



Supply Wiring

## Switching & Controls

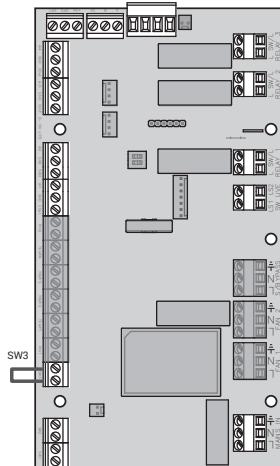
The Switched Live (LS1, LS2) Boost(s) must be supplied via the same circuit as used to power the unit.  
A 3 (LS1 only) or 4 (LS1 & LS2) pole local isolator must be installed.  
The Boxed Relay (Part No. TP505) may be required to switch from other circuits.



Supply Wiring with Switch Inputs

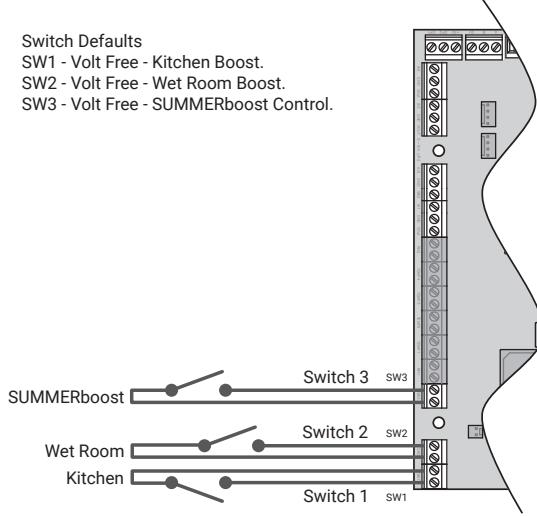
Take care when connecting to the PCB screw terminals; unwind the screw in an anti-clockwise direction, ensuring that the jaws are fully open to accommodate the conductor. Then tighten the screw in a clockwise direction until the wire fits snugly between the jaws. Finally, apply a 90-degree clockwise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

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

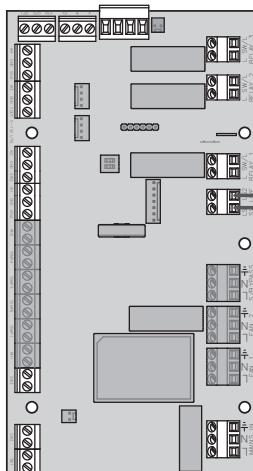


SUMMERboost Link Wire must be removed to enable SUMMERboost

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



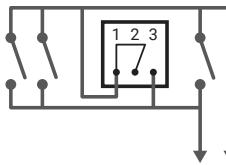
## Volt Free Switch Inputs



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

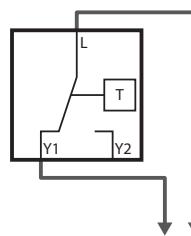
Any of these switch arrangements can be used in switch inputs SW1 to SW3 depending on their configuration and the type of MVHR.



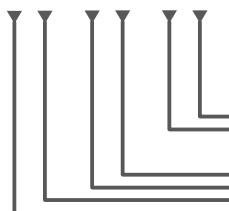
Volt-free boost switching of MVHR using single-pole switches TP502, TP503, TP500/TP501 Humidistat.  
There is a maximum of 10 single pole switches or Humidistats that can be used.



TP522 Latching SUMMERboost® switch.



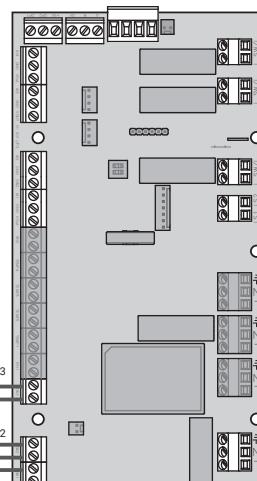
Volt-free control of SUMMERboost® using room thermostat.



Switch 3 SW3

Switch 2 SW2

Switch 1 SW1



## External Sensors

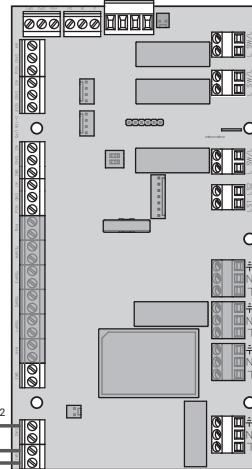
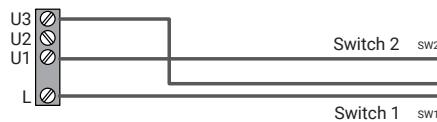
## Switch Positions TP508 Three Position Rotary Switch

- 1 - Setback Speed
- 2 - Continuous Speed
- 3 - Boost Speed

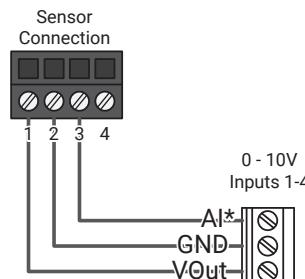
For the unit to immediately change speed when the switch is operated

- 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.

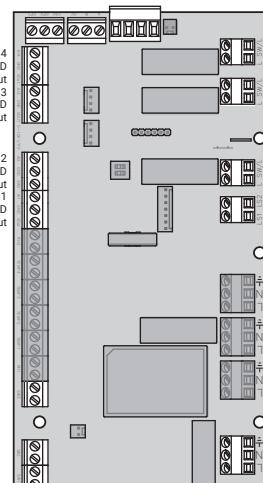


## Three Way Rotary Switch



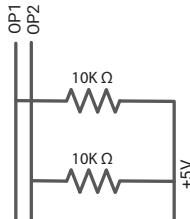
Sensor Options  
TP540 VOC  
TP541 CO<sub>2</sub>  
TP542 Humidity

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



## 0-10V Sensor Connections

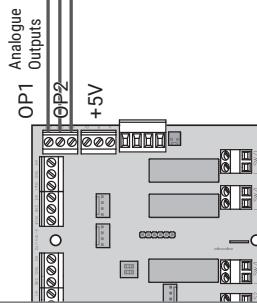
## Analogue Output



OP1 will normally be at a logic of 1 and change to 0 when the filters need replacing.

OP2 will normally be at a logic of 1 and change to 0 if either of the fans have failed.

In the 0 state the circuit can drive low an input of 5V, up to 10mA.



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.

# Commissioning

Once installation of the HRV is complete the ventilation system will need to be commissioned and setup using aura-t controller, All units have compatibility with the aura-t™ controller.

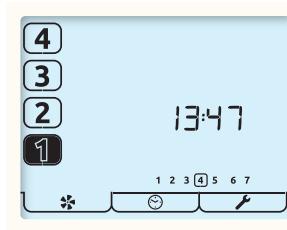
The aura-t™ controller is a programmable touch screen controller which monitors and displays the status of a HRV unit. It allows the unit to be commissioned, and gives the user both manual and timed control of fan speeds.

The screen is backlit, the backlight operates when the screen is touched.

## User Interface

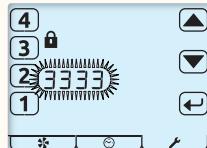
### Menu Tabs

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



Tab	1	2	3
Function	Monitor & Control Fan Commission	Timer	Setup
Name	Run Mode	Timer Mode1	Setup (Tap) Setup Menu
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 threshold2, Overrun Timers, WiFi3, Filter Setup, Filter Reset.

Tab			
			Setup (Long Press) Setup Sub-Menu
			Gives access to: Eco Mode5, Switch setup, Summer Bypass, 0-10v Inputs (Room Sensors), Passcode settings, HRV handing settings4, Frost setup.



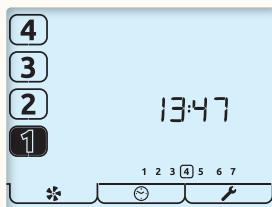
Passcode Screen

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

Passcode - 3333

## 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.

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

Other status icon that may be visible on the screen are listed below:



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 slowly flashing and the Speed 1 button is highlighted, the unit is in Pre-Frost mode; both fan speeds will have been reduced as an attempt to maintain balanced ventilation and avoid going into full Frost Protection mode. If the Frost icon and backlight are flashing the indoor temperature is low and both fans will have stopped. Tap any of the fan speed number buttons to restart the fans. If the temperature is still too cold, Frost Protection will be activated. If this occurs with an indoor temperature above approximately 5°C it could indicate the handing of the unit is wrong or the ducting is misconnected.



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.



Supply  
Extract

In an HRV with constant volume functionality; when one of the fans has reached the maximum permissible speed for constant volume operation, either of these icons will slowly flash to indicate which fan is running too fast. Check the duct work and filters for restrictions or blockages



Supply  
Extract

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.

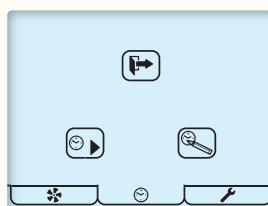


When the Backlight is flashing along with the Speed 3 button the HRV has been held at Boost, Speed 3 for more than 2 hours; Boost Alert is active.

## 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.

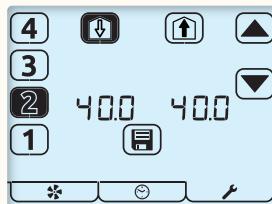


Updates displayed fan speeds; used during fan speed cloning.



Exit tab to Run Mode

## Fan Commission



For constant volume (AR) units the fan speeds will be displayed as either:

- m3/hr
- l/s
- l/s to 0.1 resolution



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.



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.

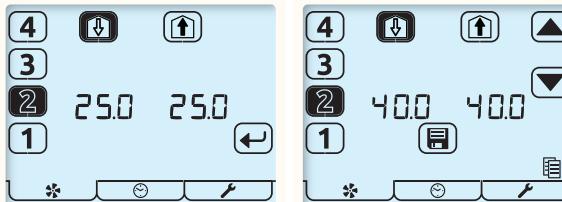
5. When all of the fan speeds are correct tap the Save button to store all the fan speed settings to memory and exit back to Run Mode.

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

## Cloning

Cloning allows the commissioned fan speeds to be copied from one unit to another using an external aura-t; for connection details refer to the manual supplied with the aura-t.



Enter Fan Commission Mode by pressing the Fan button for 5 seconds whilst in Run Mode. The HRV's fan speeds will be displayed. Tap the Fan button to display the fan speeds stored on the aura-t™. The stored speeds can be viewed using the number buttons, the HRV will run at the selected speed.



To copy the stored speeds to the HRV tap the Enter button, the arrow buttons will be illuminated and the speeds could be adjusted as detailed in Commissioning or simply written to the HRV by tapping the Save button



If the stored speeds are incompatible with the HRV model the aura-T is connected to, dashes will be shown in place of the numbers and the warning triangle will be illuminated.

## Saving Fan Speeds to the aura-t™



To save the current fan speed to the aura-t™ press and hold the Supply or Extract buttons whilst on the fan commission screen. The copy icon will be illuminated and when save is tapped the fan speeds will be saved to the aura-t™ and written to the HRV.

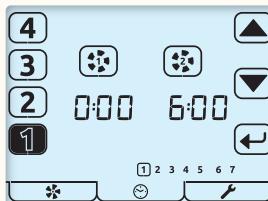


The aura-t™ could then be connected to another HRV and the stored speeds written or **Cloned** to it as detailed previously.

## Timer Setup

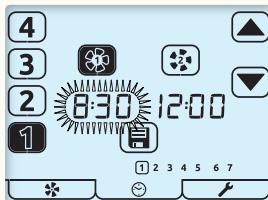
Timer setup is achieved in three steps

### 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.

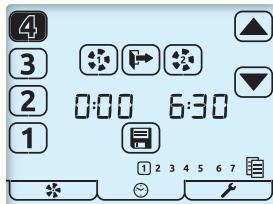
### 2 Select Event & Edit Timers



*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*

1. Tap the event number to be edited [1-4] from on left hand side of the screen. The selected event will highlight.
2. Use the fan keys to select either the time the HRV will switch into Speed 1 or Speed 2.
3. Speed 1 key toggles between selecting Speed 1 and selecting Speed 1 with Boost Inhibit indicated by Padlock Icon.
4. The selected time will flash, use the arrow keys to adjust in 5 minute increments.
5. Select the other events [1-4] to edit/check their times and function as required.
6. 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

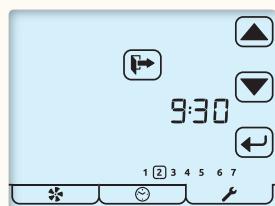
## Event timings:

- 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



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 be edited.
- Tap the Exit button to return to Run Mode.

#### Setting Editing



- Arrow keys are used to change setting value.
- Tapping the Enter key whilst 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.



6. Filter Change Interval (months 1-24)



7. 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.

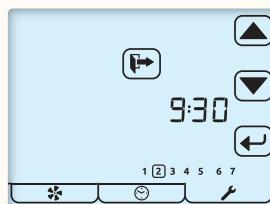


If a filter change is not due but the filter timer requires resetting press the Enter key twice.



Tap Exit key to return to Run Mode.

## Setup Sub Menu



Long Press the Setup Menu tab to enter the Setup Sub Menu, if the Pass code 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



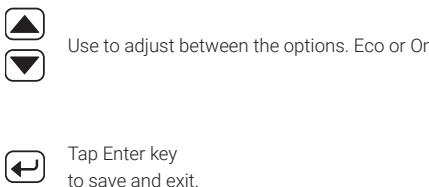
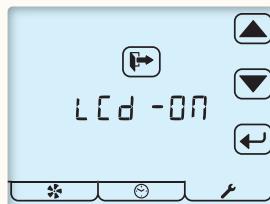
5. Unit Handling
6. Frost Setup; balanced / unbalanced



7. Tap Exit key to return to Run Mode.



## Eco Mode Setup



On - LCD display (not the Backlight) is on continuously.

Eco - After a one minute period of inactivity the aura-t will enter sleep mode.

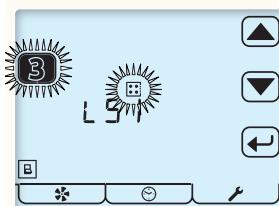
Eco mode will only operate when timers are permanently paused.

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 or Fan Flow Warning.

## 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.



Switch Setup menu active.

All switch inputs to the HRV unit; S1, S2, S3, LS1 & LS2 can be assigned any of the following functions.

Kitchen Boost, Speed 3.

Wet Room, Boost, Speed 3.

Speed 1, Setback

SUMMERboost disable.

Speed 4

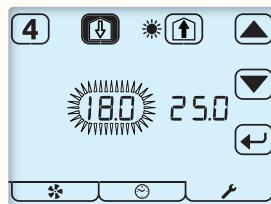
OFF no Off Normally Open

OFF nc Off Normally Closed

Manual Summer Bypass

RELAY Relay control.

## Summer Bypass Setup



Use to adjust value up or down.

Enter key.



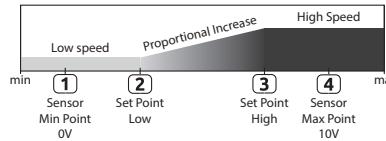
Supply Use the Supply and Extract buttons to select which threshold is to be adjusted. Supply represents from atmosphere air temperature; Extract represents from dwelling air temperature.



Extract Tap button[4] to enable / disable SUMMERboost.  
Unfilled icon (shown) represents disabled.

## 0-10V Inputs (Room Sensors)

The 0-10V inputs control fan speed.

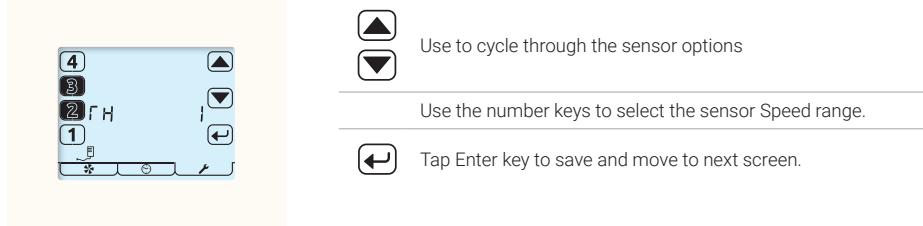


There are 4 room sensors connections available; each Sensor has two configuration screens, each pair of screens is displayed sequentially. ie 1a, 1b, 2a, 2b, 3a etc.

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.

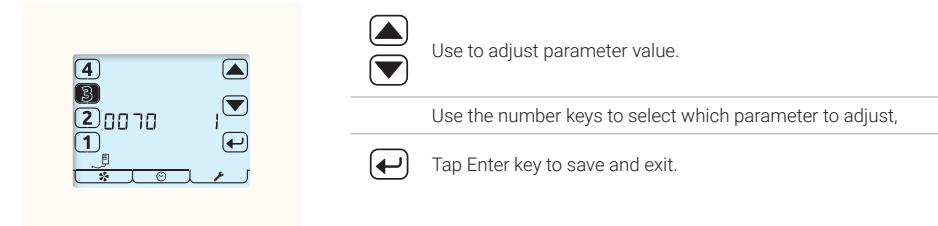
The number adjacent to the arrow buttons display the Sensor number..



The second screen (b) configures:-

The Sensor Min Point 0V, Set Point Low, Set Point High, Sensor Max 10V

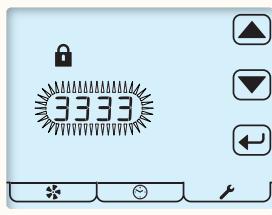
The number adjacent to the arrow buttons display the Sensor number..



- 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.

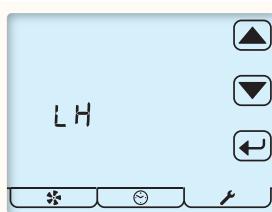
3 3 3 indicates Passcode is enabled.

Enabling the Passcode only protects the menu items in the Setup Sub Menu.

The passcode is permanently enabled on the fan commission screen

## Unit Handling

Left Hand/Right Hand switching

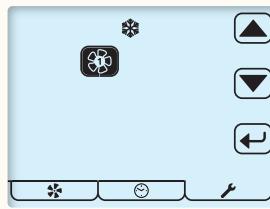


Use the Arrow buttons to select between LH and RH

Tap Enter key to save and exit.

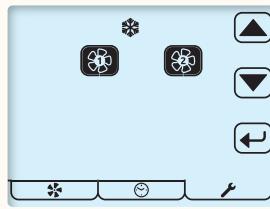
## Frost Setup

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.



If this setting has been defined by MODBUS the Frost Setup menu item will not be displayed.

## Default Settings

The HRVs are delivered with default factory settings these are detailed below.

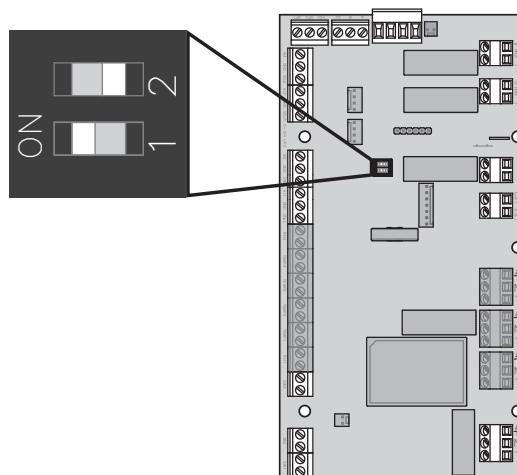
Constant volume (AR) units will have different flow rate defaults dependant on the performance of their fans.

Configurable Item	B2	
SPEED 1 Setback	Supply	25 %
	Extract	25 %
SPEED 2 Continuous	Supply	40 %
	Extract	40 %
SPEED 3 Boost	Supply	70 %
	Extract	70 %
SPEED 4 SUMMERboost®	Supply	100 %
	Extract	100 %
Boost Overrun	Kitchen	15 mins
	Wet Room	15 mins
Boost Delay Timer	Kitchen	0 mins
	Wet Room	0 mins
Filter Change Interval		12 months
Boost Alert Timer		2 hours
Summer By Pass	Extract	25 °C
	Supply	18 °C
SUMMERboost®		Enable
Duct Heater Enable/Disable		Enabled
Room Sensor 1		
Enable/Disable		Enabled
Room Sensor Type		%RH
Sensor Min Point 0V		0000
Set point Low		0060
Set point High		0070
Sensor Max Point 10V		0100
Room Sensor 2		
Enable/Disable		Enabled
Room Sensor Type		CO <sub>2</sub>
Sensor Min Point 0V		0000
Set point Low		0800
Set point High		1400
Sensor Max Point 10V		2000

Configurable Item		B2
<b>Room Sensor 3</b>		
Enable/Disable		Enabled
Room Sensor Type		%RH
Sensor Min Point 0V		0000
Set point Low		0060
Set point High		0070
Sensor Max Point 10V		0100
<b>Room Sensor 4</b>		
Enable/Disable		Enabled
Room Sensor Type		CO <sub>2</sub>
Sensor Min Point 0V		0000
Set point Low		0800
Set point High		1400
Sensor Max Point 10V		2000
%RH Boost Set point		
Switch Input 1		Kitchen Boost
Switch Input 2		Wet Room Boost
Switch Input 3		SUMMERboost® disable
Live Switch 1 (LS1)		Kitchen
Live Switch 2 (LS2)		Wet Room

## Modbus Configuration Reset

There are a number of settings which are adjustable via Modbus, but could be left in a state where it is not possible to adjust them via any other controller. If the Modbus master has been disconnected from the unit it is possible to reset these settings back to default settings by switching DIP Switch 1 to the ON position and cycling the power to the unit.



DIP Switch Location

The following settings will be restored:

Modbus Baud Rate	19200
Modbus Slave Address	1
Modbus Parity	None
Summer Bypass	Enabled
Temperature Controlled Summer Bypass	Enabled
Summer Boost	Enabled
Internal Humidity sensor	Enabled
Filter change warning	Enabled
Frost Protection	Unbalanced

### Please Note

- These are standard factory defaults, the original settings for custom configured units may differ.
- Once the reset has been performed switch Dip Switch 1 to off.
- The unit should not be routinely operated with Dip Switch 1 in the ON position.

# 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:

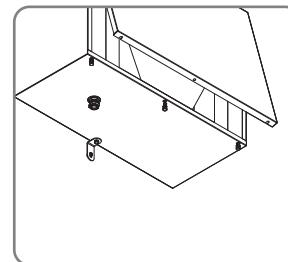
1. Slide out the Filters.
2. Carefully remove any dust from face of heat exchanger, interior of the unit and the Bypass using a vacuum cleaner

**Do not use water or any other fluids**

## HRV1.3, 1.35, 1.6, 1.65, 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.

HRV1, 1.25, 1.3 & 1.35 Q Plus

Part No. XP40042

HRV1.6 & 1.65 Q Plus

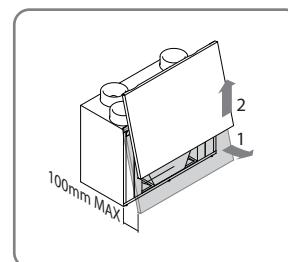
Part No. XP4010649

HRV4 & HRV4.25 Q Plus

Part No. XP4011570

HRV20

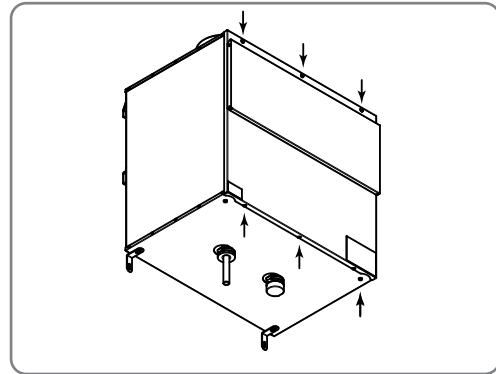
Part No. XP4011654



## HRV20

### Front Cover Removal

1. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop
2. Loosen the two corner screws located on the bottom front of the unit
3. Completely remove the centre screw.
4. Completely remove Front Cover top cap nuts.
5. Completely remove the Front Cover by pulling it away from the unit at the bottom and lifting
6. Cover replacement is the reverse of the above steps. Ensure it is securely located before tightening screws.



## H200

### Access to Interior for cleaning

1. ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop.
2. Remove Condensate Drain Pipe from the unit using the removable fitting.
3. Remove the Front Cover, Front Cover is attached with 8 screws.
4. Remove the black ribbed panel.
5. Remove the Condensate Tray Retaining Strap by rotating as indicated.
6. Carefully slide the Condensate Tray towards the centre of the unit until the Condensate Tray Drain Spigot is clear of the case.
7. Heat Cell can be removed by pulling the strap downwards.
8. Reassembly is the reverse of the above steps.

## 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	Slim G4 Pre-Filter	F7 Single Filter	G4 & F7 Filter Set
HRV1.3 Q Plus	XP40032	XP46022				
HRV1.35 Q Plus						
HRV1.6 Q Plus	XP2010671	XP2010897				
HRV1.65 Q Plus						
HRV4 Q Plus			XP2011629		XP2011630	XP2011754
HRV4.25 Q Plus						
HRV20 Q Plus			XP2010561			XP2010929
H200			XP2010173	XP2010172		XP2010174

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

### HRV 1.3, 1.35, 1.6, 1.65, 4 & 4.25

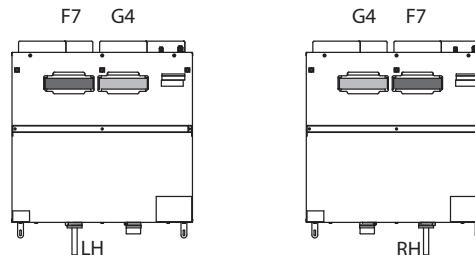
The Filters are available in different grades G3, G4 & F7. Filter media should be replaced like for like. Filter Part numbers in table above.

To replace filters.

1. Remove Filter Covers or open Filter Door.
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 the Front Cover or Filter Covers.

## HRV20

Titon HRV20 Q Plus Filters are available in two grades G4 x 2 and G4 + F7. Filter media should be replaced like for like. When replacing G4 + F7 filters make a note of the relative positions of the filters before removing. Ensure the F7 and G4 filters are replaced in the same positions. Filter Part numbers in table above.



To replace filters

1. Open Filter Cover door, the door is hinged at the bottom, pull from the top.
2. Slide out Filters.
3. Replace Filters by carefully sliding in the replacement filters. Ensure the F7 and G4 filters are replaced in the correct positions.
4. Close Filter Cover.

## H200

The H200 can be specified with filters of different grades. Filters must be replaced with like for like replacements, failure to do so will result in changed system airflows and will necessitate the re-commissioning of the ventilation system. Filter Part numbers in table above.

To replace filters.

1. Remove Filter Covers, each cover is attached with four screws.
2. Slide out Filters.
3. Replace Filters by carefully sliding the replacement.
4. If using cardboard framed pleated Filters ensure arrows printed on the ends of the Filters point towards the centre of the unit.
5. Replace Filter Covers. When refitting do not overtighten screws.

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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