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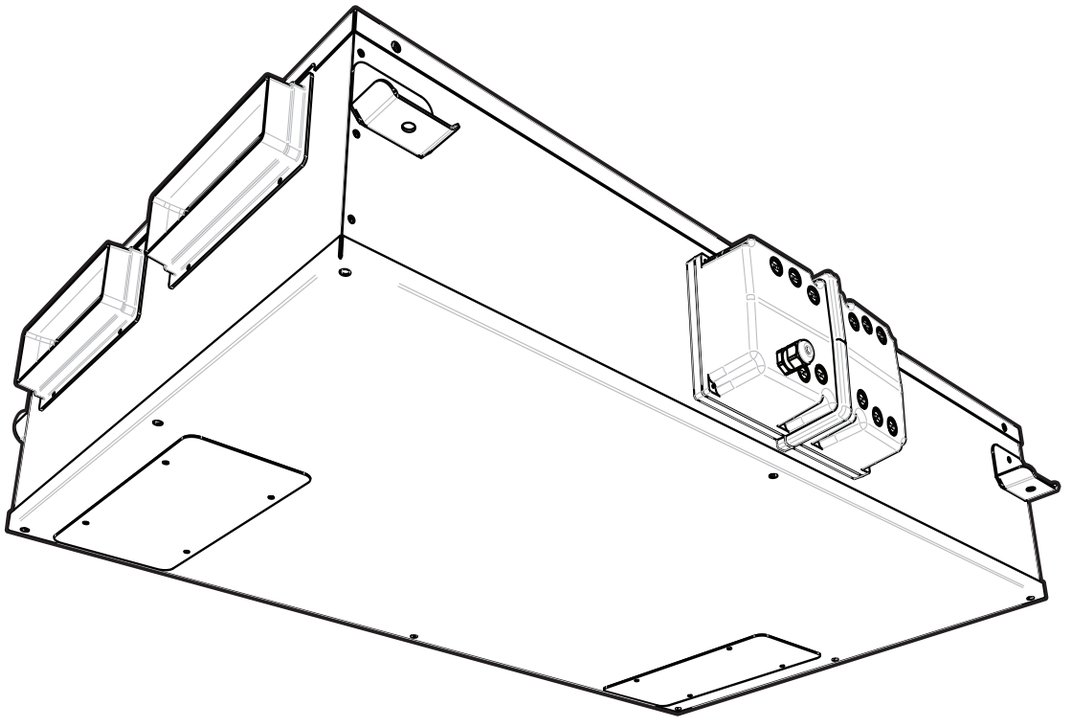


Section B

aurastat, auramode & aura-t compatible units

H200 *Q Plus* ECO 204x60	TP461B
H200 *Q Plus* ECO Ø150	TP462B
H200 *Q Plus* ECO Ø160	TP463B

Section BC

Cold Climate HRV Units

H200 *Q Plus* ECO 204x60	TP461BC
H200 *Q Plus* ECO Ø150	TP462BC
H200 *Q Plus* ECO Ø160	TP463BC

Heat Recovery Ventilation Units

Product Manual

Titon®
ventilation systems

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^2).
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. H200 Q Plus suitable for 230V ~ 50/60Hz single phase with a fuse rating of 3A.
9. aura control & communication cable access is via the fitted cable gland(s) which are suitable for Ø3- 6mm cable.
10. aura control & communication cable - Unshielded 4 Core 18-24AWG Stranded, Tinned Copper.
11. Control & communication cables should not be placed within 50mm or on the same metal cable tray as any 230V~ lighting or power cables.
12. Ensure all cable glands are fully tightened.
13. 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.

14. The appliance is not suitable for installation to the exterior of the dwelling.
15. 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.
16. Ensure that external grilles are located away from any flue outlet, in accordance with relevant Building Regulations.
17. The unit must not be connected to a tumble dryer or a cooker hood.
18. Precautions must be taken to avoid the back-flow of gases into the room from an open flue appliance.
19. 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.

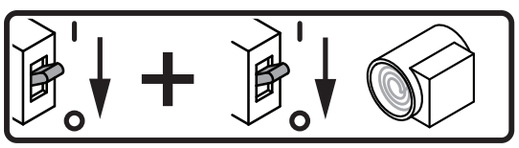
Read instruction Manual.

Risk of Electric Shock.

General hazard safety alert.

Disconnect the mains supply before removing this cover.

Wait until all machine components have completely stopped before touching them.



Disconnect the mains supply before removing this cover.

&

Before obtaining access to terminals or removing this cover, all supply circuits must be disconnected.

Titon Recommend:

1. A short piece of flexible ducting, approximately 200mm long is used to connect the unit to the ducting system.
2. Any flexible ducting used must be pulled taut.
3. A minimum distance of 200mm between the HRV unit and any sharp bends in duct work.
4. Ducting should be insulated where it passes through unheated areas and voids with the equivalent of at least 25 mm 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.
5. 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.
6. Where ducts pass through fire barriers, they must be appropriately fire stopped in accordance with the requirements of Building Regulations.
7. A ducting condensate drain must be fitted to vertical To Atmosphere duct work.
8. Ducting must be installed in such a way that resistance to airflow is minimised.
9. Ducting connected to the From Atmosphere & To Atmosphere ports, must be to/from the external air outside the building envelope.
10. 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.
11. 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.

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.

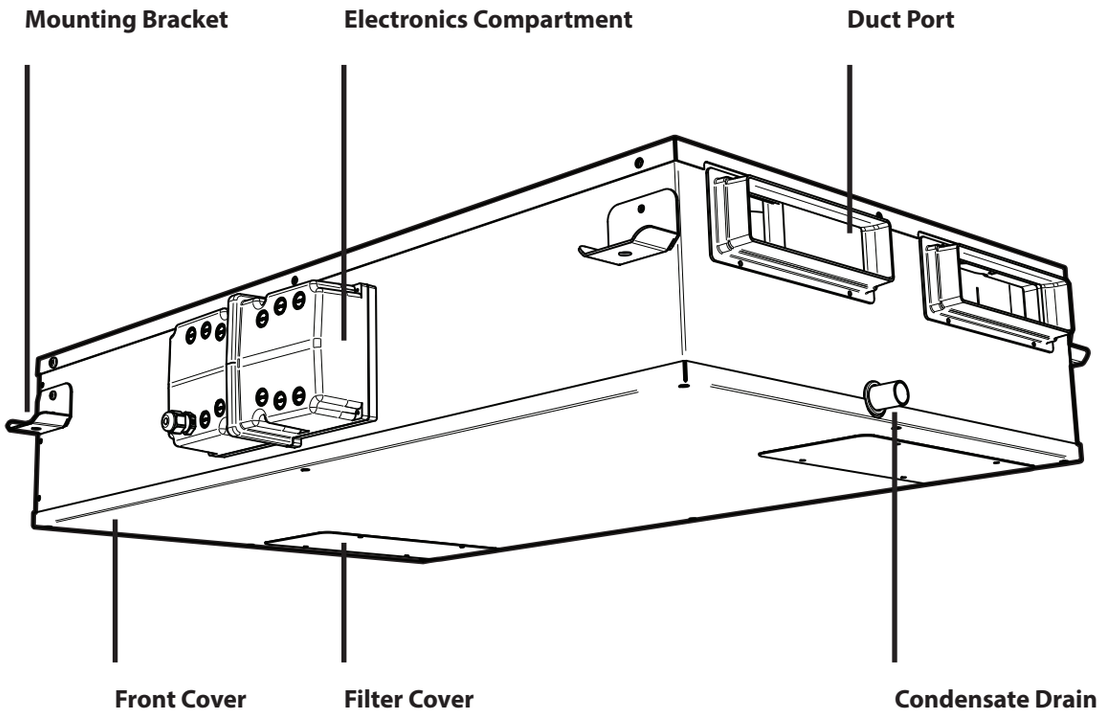
Packaging Contents

Inspect the unit when taking delivery. Check the unit for damage and that all accessories have been supplied. Package supplied with;

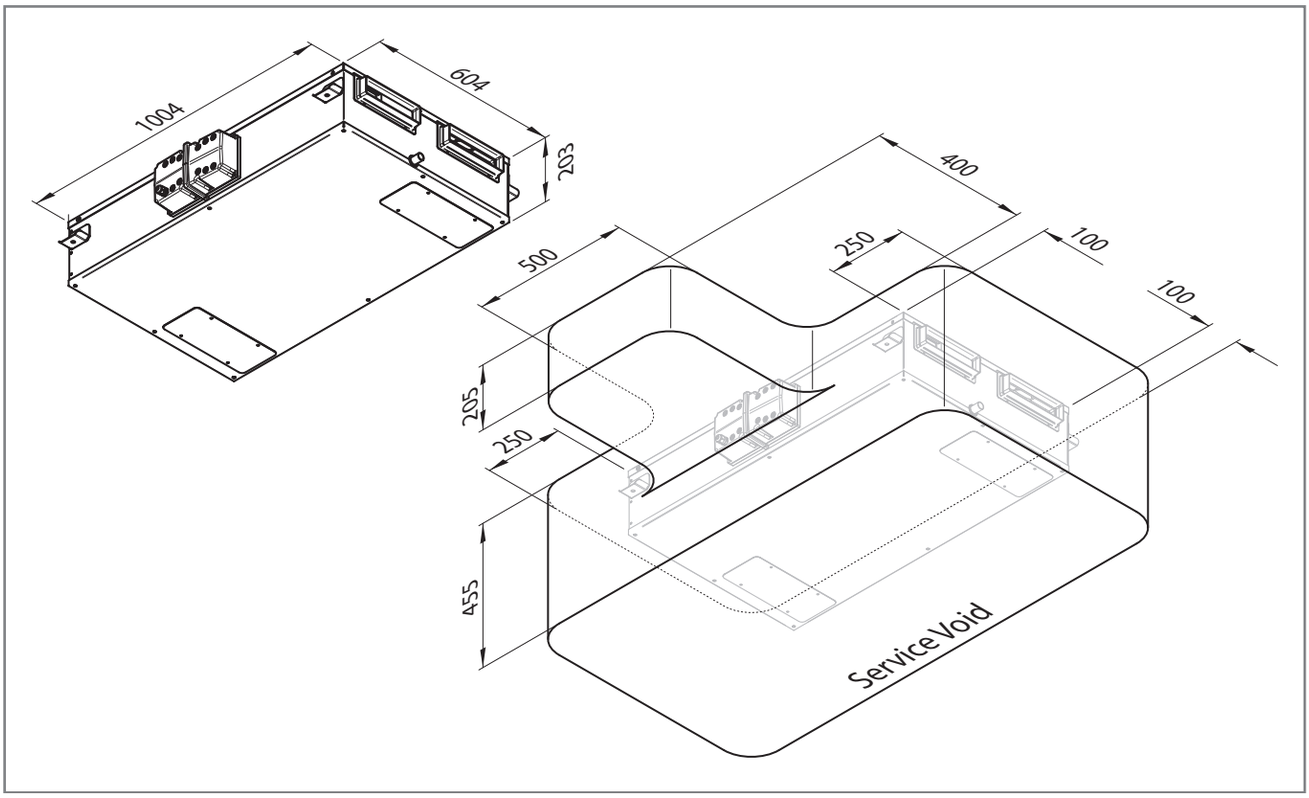
- HRV unit x 1.
- Mounting Bracket x 4.
- M5x10mm Pan head screws x 8.
- M5 Star washers x 8.
- Product Manual x 1.
- EuP Documents.

Any shortages or damage must be immediately reported to the supplier.

Component Identification



Dimensions



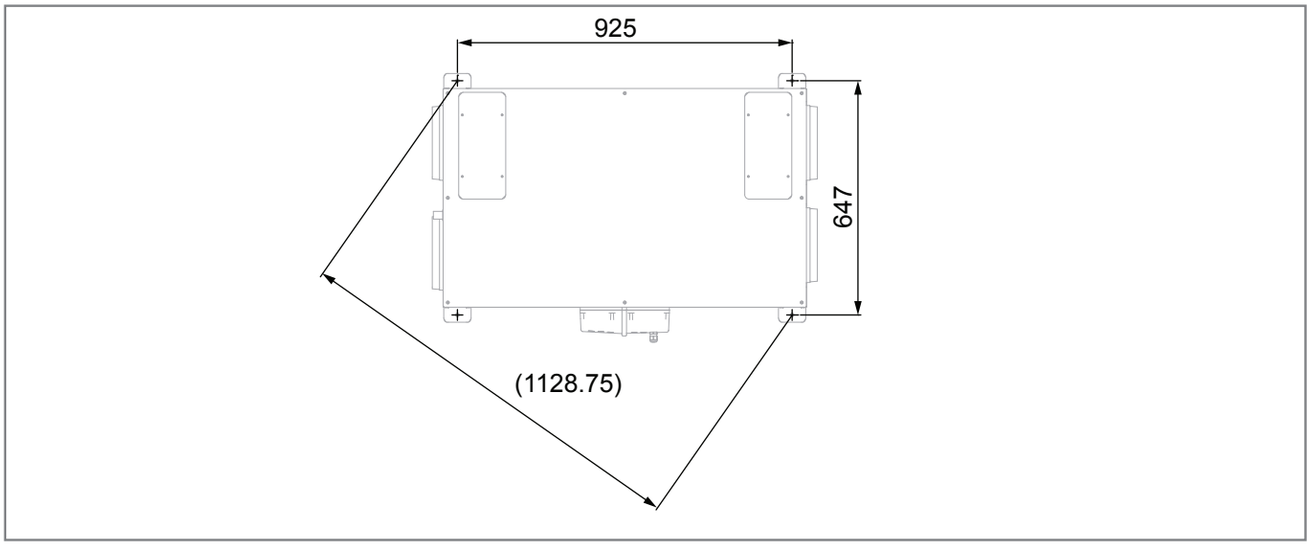
H200 *Q Plus* **DO NOT BOX IN UNIT**

H200 *Q Plus*

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

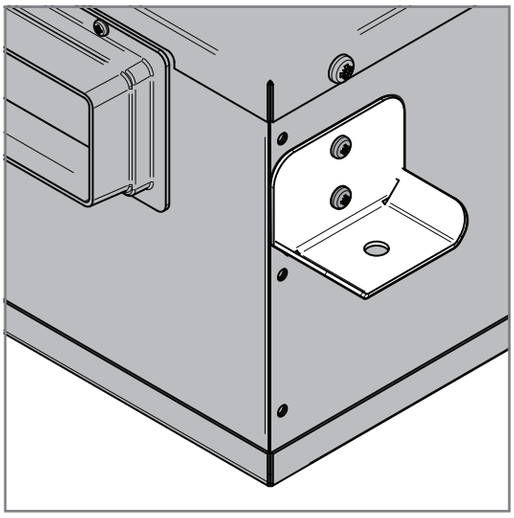
- The units are designed to be mounted on the underside of a horizontal surface.
- The mounting surface and fixings must be sufficiently strong to support the unit. The unit is H200 32Kg,
- Consider the positioning of electrical services and the Condensate Drain when siting the unit.
- Ensure there is sufficient access around the HRV *Q Plus* for future maintenance.
- 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.



Fixing Locations H200

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.

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.

- 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.
- Drain pipe must incorporate a suitable trap, which must act as an air lock.
- Must be adequately secured and be insulated with the equivalent of at least 25mm of insulating material with a thermal conductivity of 0.04 W/(mK) if any part of the pipe passes though an unheated void
- Condensate drain pipe must be installed to have a minimum 3° fall from the unit.
- Titon recommend the use of diaphragm type waste valve in place of a conventional 'wet' trap which could dry out. Such as, BRE certificate no. 042/97 'Hepworth Hepv0 Hygienic self sealing plastic waste valve' recommended as an alternative to traditional U-Traps.

Ducting Connections

Read and observe the Warnings, Safety Information and Guidance.

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

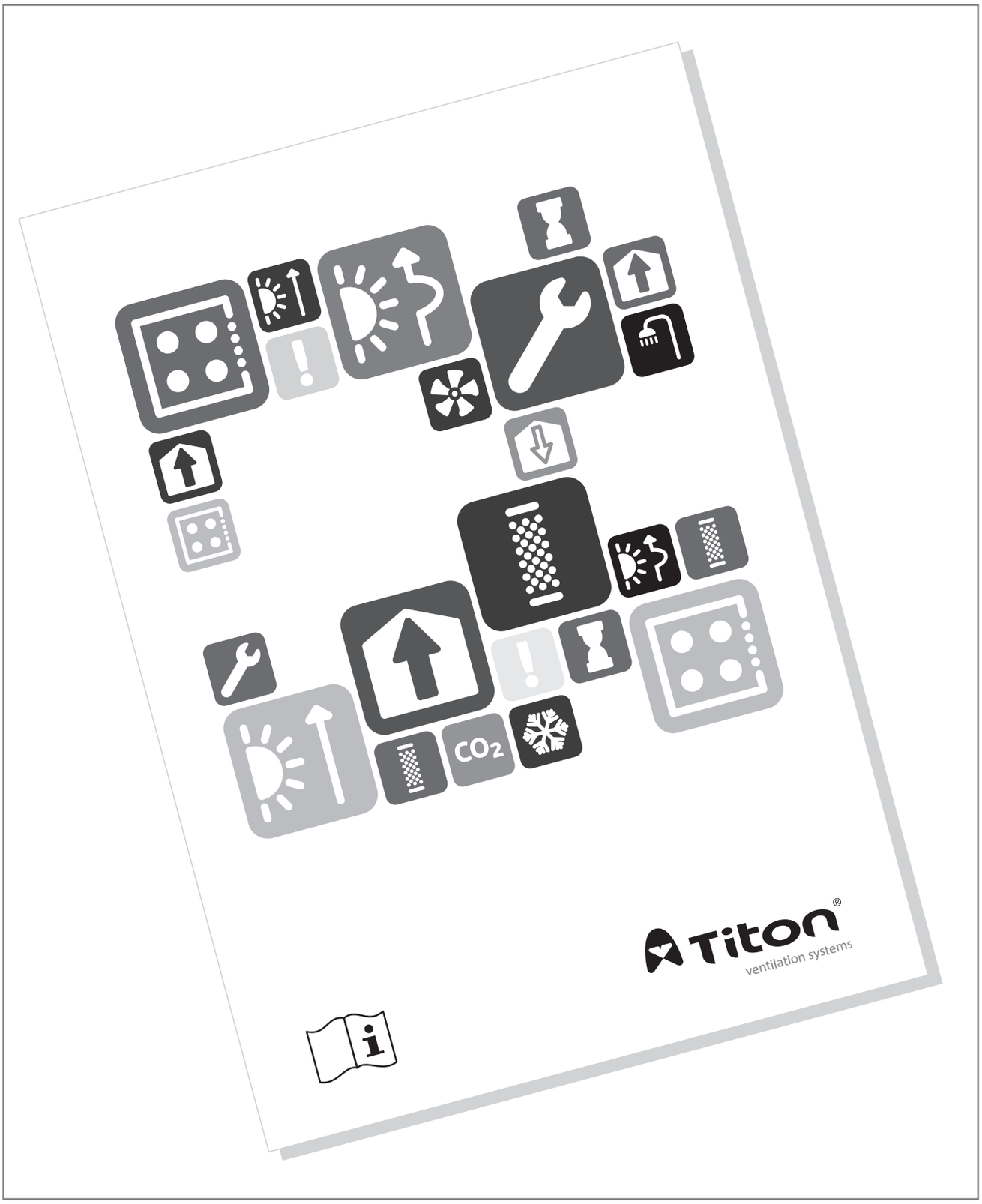
Wiring Connections Access

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 electronics compartment is mounted on the side of the unit. The compartment has two interlocking removable lids. Remove all eight screws to remove both lids.
All wiring must be routed into the electronics compartment via the knock-outs and using cable glands or similar.

HRV Controller Product Manual

Once installation of the ducting, HRV and aurastat® is complete the ventilation system will need to be commissioned and setup. See the aurastat® HRV Controller Product Manual for how to change fan speeds and other settings



aurastat® **HRV Controller Product Manual**

Control & Features

The TPxxx B & BCunits are programmable with Titon controllers.

Boost Overrun Timer

A programmable timer that controls the time the HRV remains at Boost Speed after all boost switches have been released.

Boost Delay Timer

A programmable timer which can be used to delay the HRV running at Boost Speed after a boost switch has been activated.

Boost Inhibit

A programmed time period that prevents the HRV switching into Boost Speed or SUMMERboost®.

Internal Humidity Sensor

The HRV has a relative humidity (RH) sensor. The RH sensor can be programmed to switch the HRV into Boost Speed.

Filter Change Alert

The unit can display a filter warning via a connected controller

4 x Fan Speeds

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

Summer Mode

Summer Mode operates by slowing or stopping the supply fan. This reduces the supply of From Atmosphere air to the dwelling. Summer Mode is triggered automatically or via a Volt Free input. Summer Mode must not be enabled or installed in dwellings where open flue combustion appliances are used.

SUMMERboost®

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

Summer By Pass

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.

2 x Proportional Sensor Inputs

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

3 x Volt Free Inputs

Enables the connection of single pole momentary switches, latching switches or normally open relay contacts to the HRV. These can be used to switch between fan speeds or control SUMMERboost® and Summer Mode.

2 x Live Switch Inputs

These inputs are used to switch the HRV to Boost Speed via a switched live input.

Frost Protection Program

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 unit 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

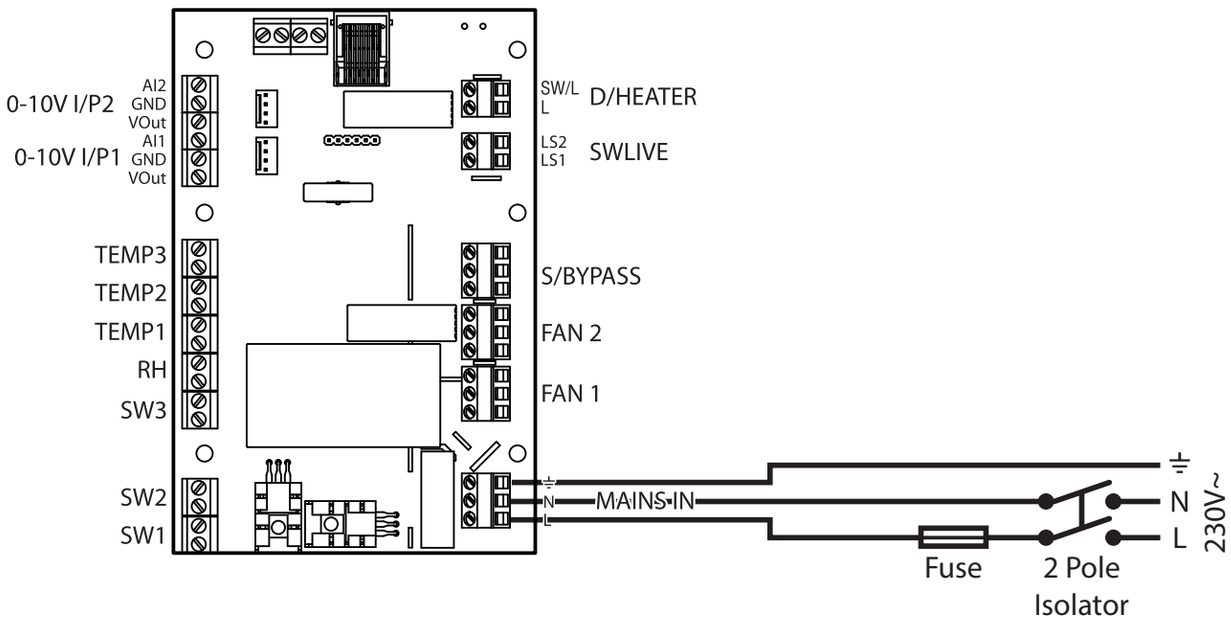
The unit measures From Atmosphere and To Atmosphere air temperatures in real-time. Additionally the temperature of the heat cell is monitored.

Supply Air Comfort Control

The Cold Climate units TPxxx BC have additional fan speed 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 dwelling air temperature falls below 6°C the unit will stop both fans.

Wiring Diagrams

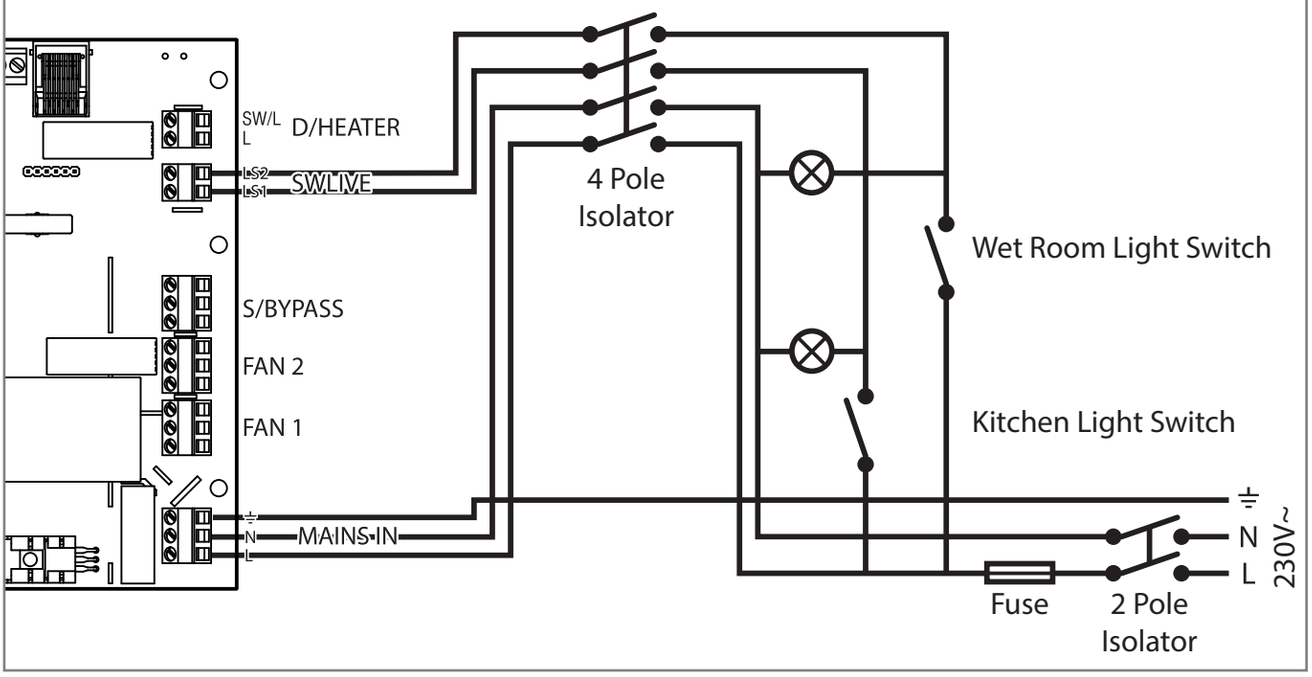
Supply



Supply wiring Ref EE167

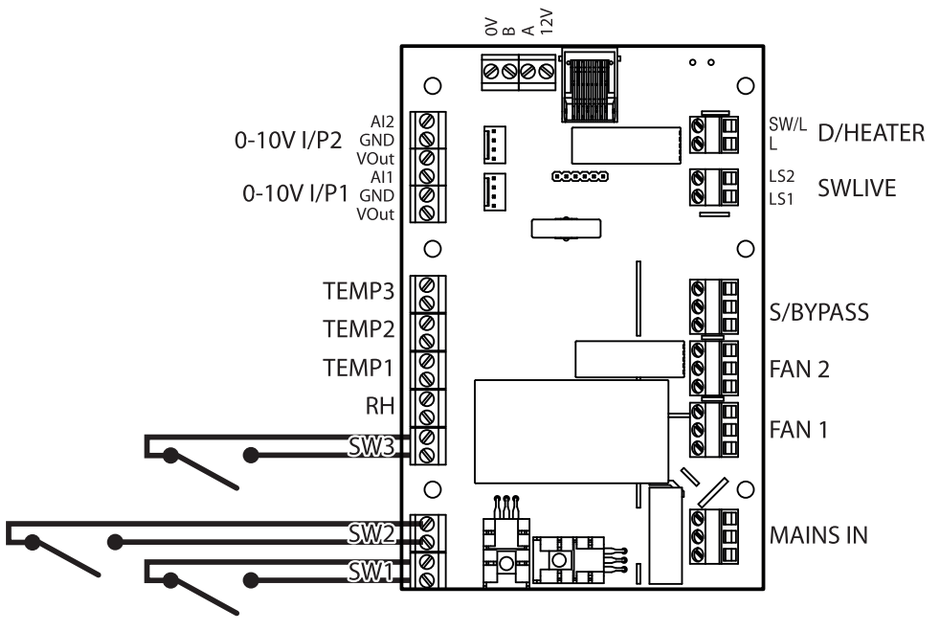
Switching & Controls

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.



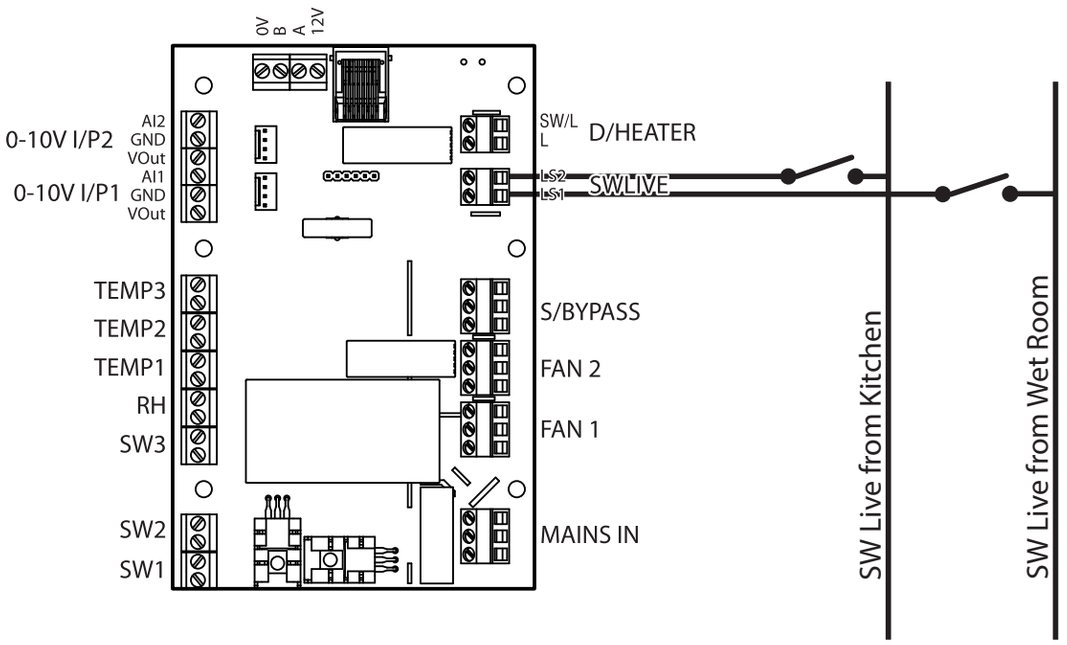
Supply wiring with switch inputs Ref EE166

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



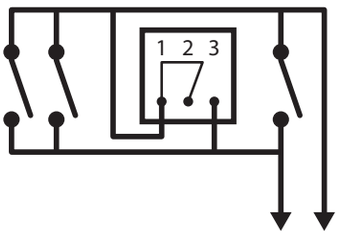
Volt Free switch inputs Ref EE163

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.



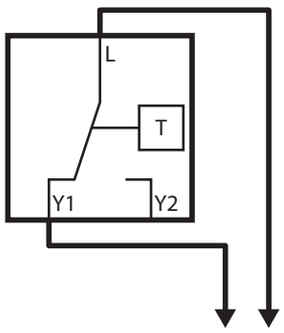
LIVE switch inputs Ref EE163

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

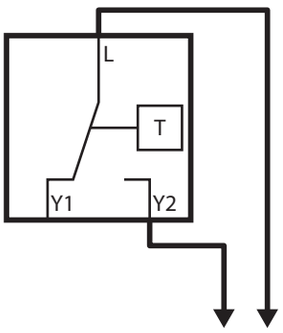


Volt-free boost switching of MVHR using single-pole switches TP502, TP503, TP507 and / or TP500/TP501 Humidistat.
There is a maximum of 10 single pole switches or Humidistats that can be used.

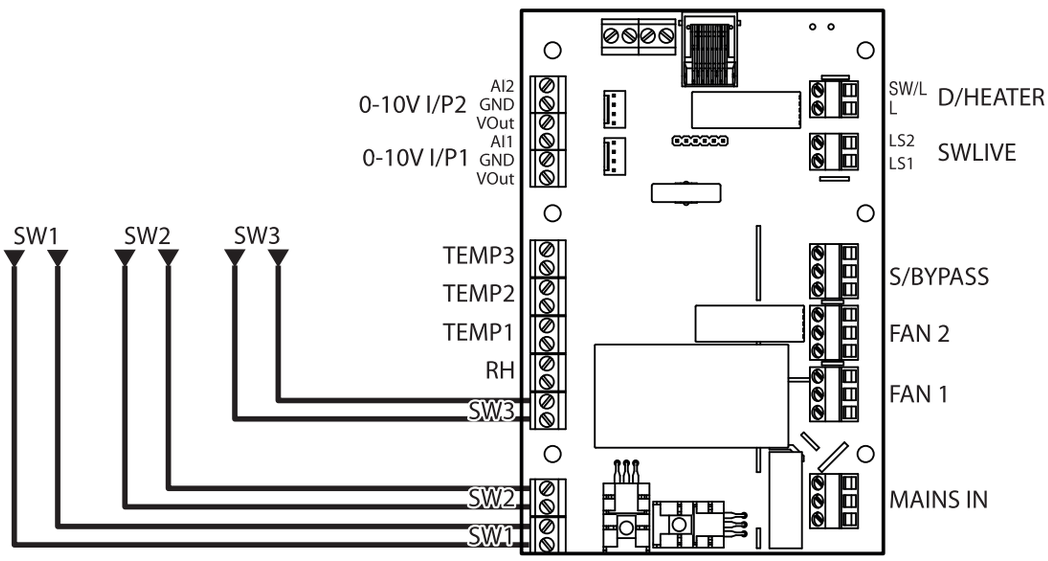
TP506 Latching Summer Mode switch / TP522 Latching SUMMERboost® switch.



Volt-free control of SUMMERboost® using room thermostat. TP509 Room Thermostat

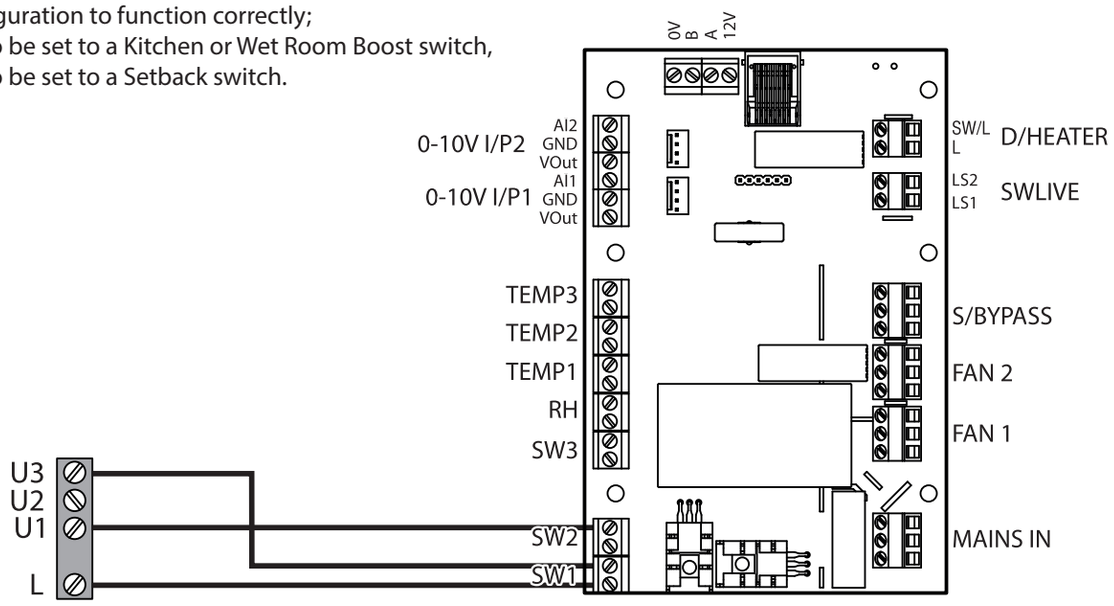


Volt-free activation of Summer Mode using room thermostat. TP509 Room Thermostat



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

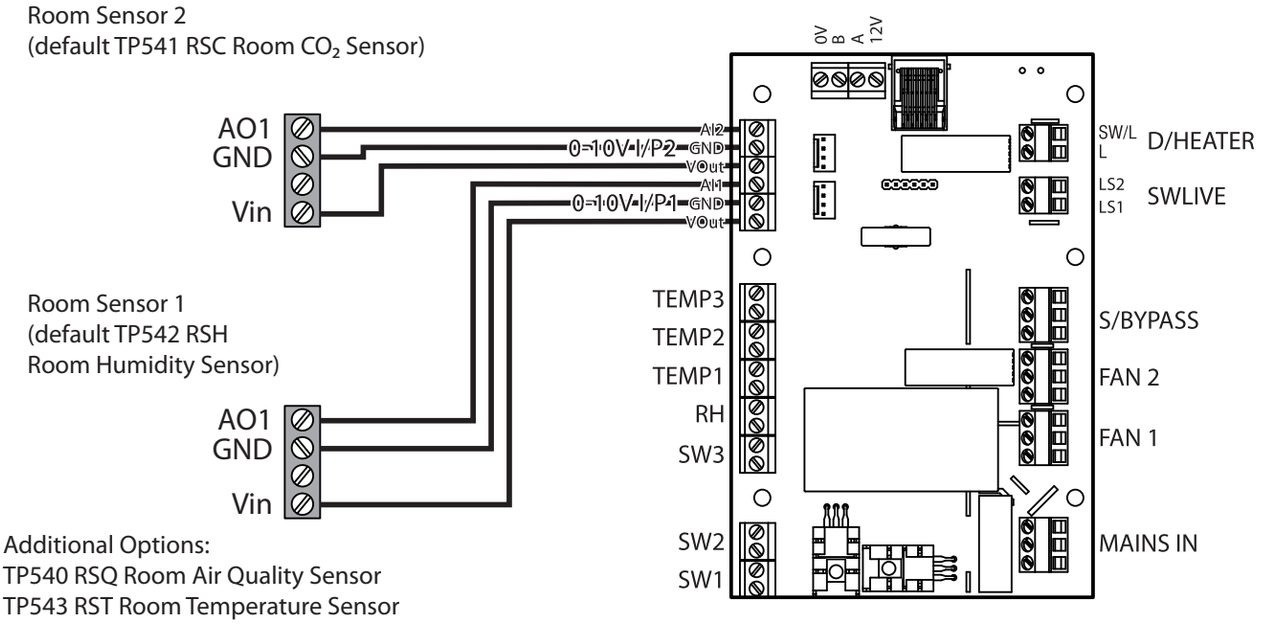
For this configuration to function correctly;
S1-1 Needs to be set to a Kitchen or Wet Room Boost switch,
S1-2 Needs to be set to a Setback switch.



3-Way rotary switch Ref EE162

External Sensors

If sensors are fitted with switches ensure they are switched to VDC



Additional Options:
TP540 RSQ Room Air Quality Sensor
TP543 RST Room Temperature Sensor

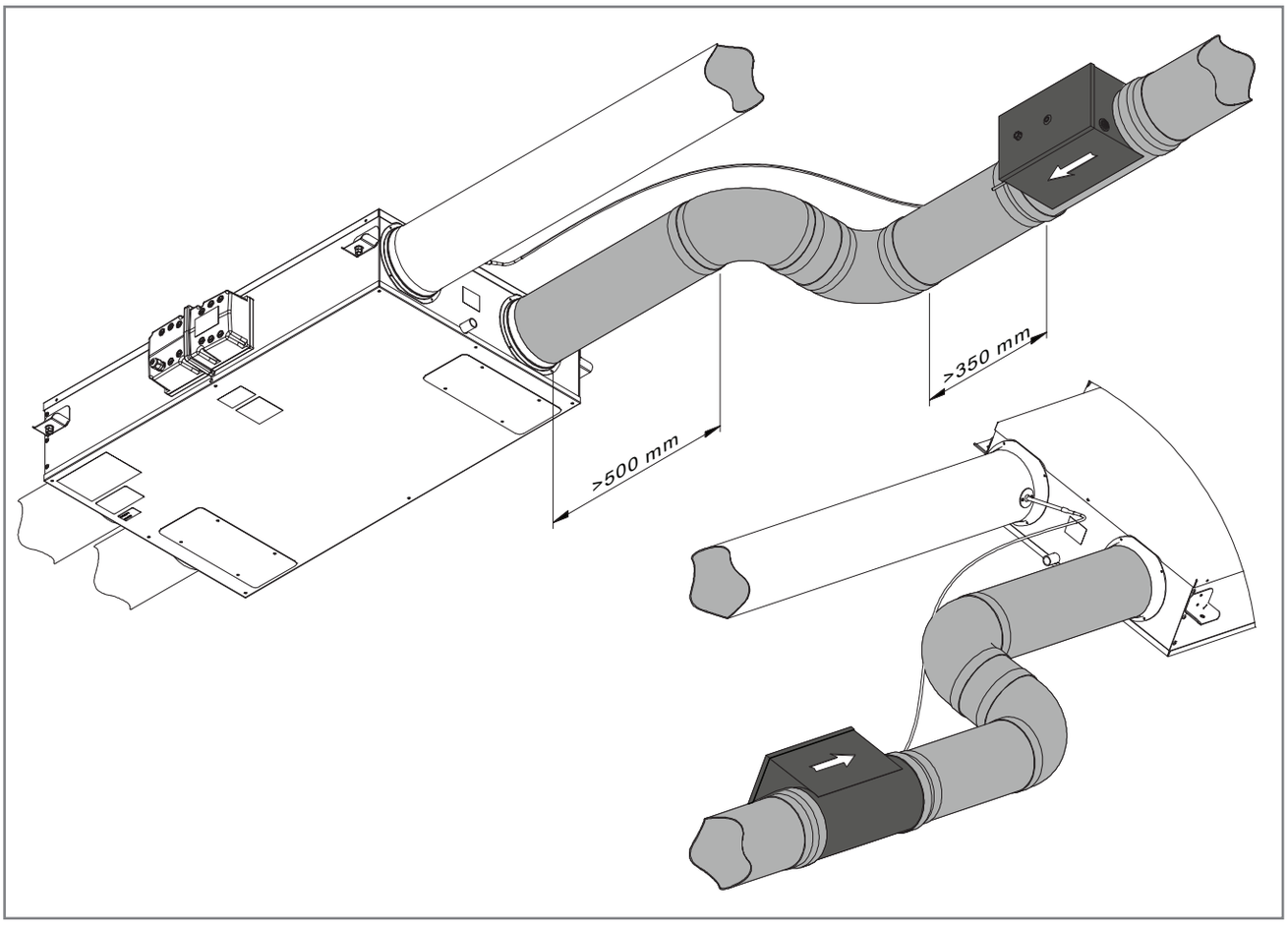
0-10V Sensor connections Ref EE161

Duct Heater

If a Duct Heater is required it must be fitted to the From Atmosphere ducting.

Ducting Layout

To ensure From Atmosphere air is thoroughly mixed with air heated by the duct heater; ducting must be fitted using two 90° bends and the dimensions below.

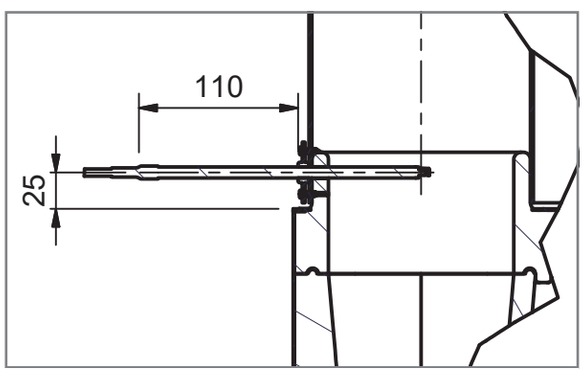


Duct heater to be installed in accordance with the manufacturers instructions

Sensor Installation

The TJ-K10K sensor is positioned in the To Atmosphere (Stale air Out) duct.

1. An Ø 8.0 mm hole is drilled through the duct and the EPP of the HRV unit in the position shown on the diagram.
2. The sensor is secured to the ducting with two Ø3.0mm self-tapping screws (must be suitable for the ducting material), using the two holes in the flange on the sensor.
3. Apply a suitable sealant around the outside diameter of the flange to seal around the duct.
4. The sensor position may need adjustment to ensure that the temperature of the airflow at the centre of the duct is measured. See diagram for positioning dimensions.



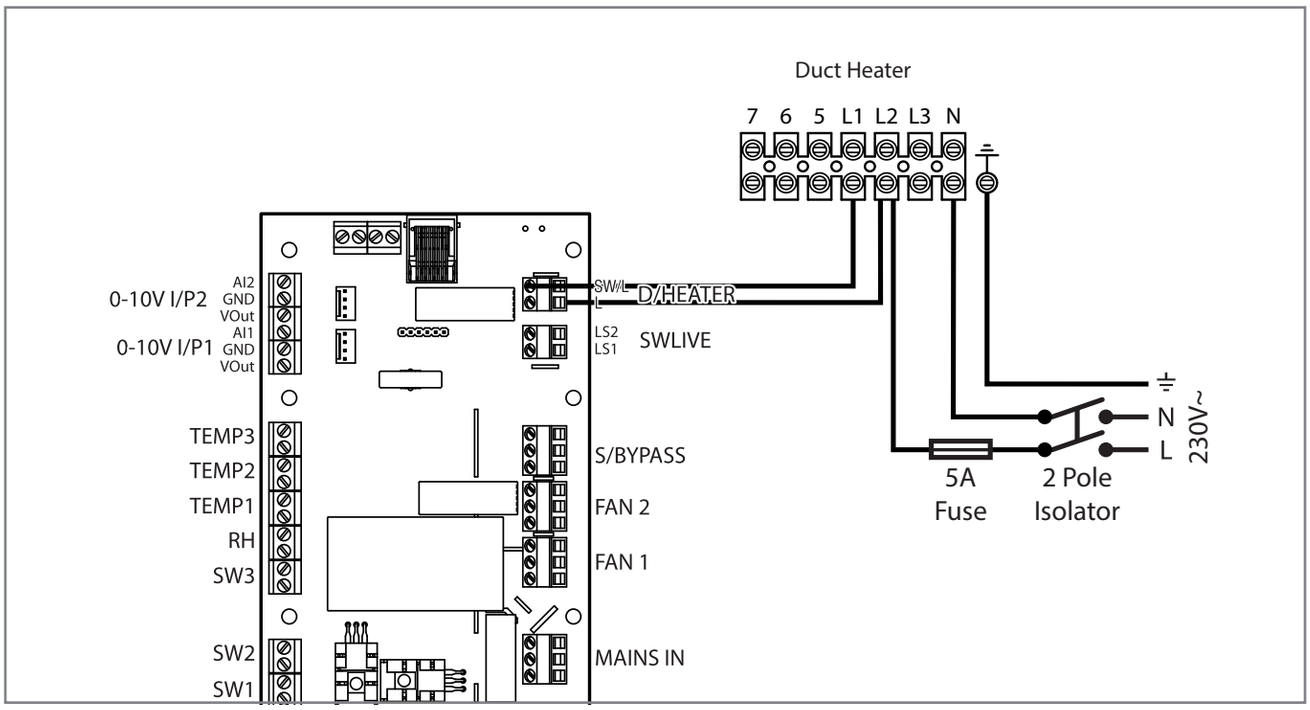
Location of Probe

Duct Heater Set Point

With the TJK10K sensor positioned as shown, the duct heater set point must be set to 8˚C using the potentiometer on the front electrical cover of the duct heater.

Wiring

Installer to ensure correct rated Fuse is fitted and used.



Typical Connection of Duct Heater

Commissioning Units TPxxxB/BC

HRV Controller Options

Once installation of the ducting and HRV is complete the ventilation system will need to be commissioned and setup using a compatible Titon display interface unit

The Titon display interface units are:

- aurastat V
- aurastat VT
- auramode
- aura-t

The HRVs are delivered with default factory settings these are detailed below. The information in the table supersedes any default settings detailed in any other Product Manual.

Configurable Item		B models	BC models
SPEED 1 Setback	Supply	18 %	25 %
	Extract	18 %	25 %
SPEED 2 Continous	Supply	40 %	40 %
	Extract	40 %	40 %
SPEED 3 Boost	Supply	70 %	70 %
	Extract	70 %	70 %
SPEED 4 SUMMERboost®	Supply	100 %	100 %
	Extract	100 %	100 %
Boost Overrun	Kitchen	15 mins	15 mins
	Wet Room	15 mins	15 mins
Boost Delay Timer	Kitchen	0 mins	0 mins
	Wet Room	0 mins	0 mins
Boost Inhibit On/Off		Off	Off
Boost Inhibit Times	Start	23 : 00	23 : 00
	End	05 : 00	05 : 00
Filter Change Interval		12 months	12 months
Boost Overrun Timer	Kitchen	15 mins	15 mins
	Wet Room	15 mins	15 mins
Boost Delay Timer		0 mins	0 mins
Boost Alert On/Off		On	On
Boost Alert Timer		2 hours	2 hours
Summer Mode Enable/Disable		Disable	Disable
Summer Mode	Extract	22 °C	22 °C
	Supply	18 °C	18 °C
	Supply Fan Speed	0 %	0 %
Summer By Pass Enable/Disable		Enable	Enable
Summer By Pass	Extract	25 °C	25 °C
	Supply	18 °C	18 °C

Configurable Item		B models	BC models
SUMMERboost®		Enable	Enable
Duct Heater Enable/ Disable		Disable	Enabled
Duct Heater		Frost	Frost
Hyst		1 °C	1 °C
Duct Heater threshold		4 °C	4 °C
Room Sensor 1			
Set point Low		0060	0060
Set point High		0070	0070
Room Sensor 2			
Set point Low		0800	0800
Set point High		1400	1400
Internal Humidity Boost		Off	On
%RH Boost Set point		70 %	70 %
%RH Boost Overrun timer		15 mins	15 mins
%RH Boost Hysterisis		1 %	1 %
Frost set point		2 °C	2 °C
Frost Protection Mode		Off	Off
Room Sensor 1 Enable/Disable		Disable	Disable
Room Sensor Type		%RH	%RH
Sensor Min Point 0V		0020	0020
Sensor Max Point 10V		0090	0090
Room Sensor 2 Enable/Disable		Disable	Disable
Room Sensor Type		CO_2	CO_2
Sensor Min Point 0V		0450	0450
Sensor Max Ponit 10V		1850	1850
Switch Input 1		Kitchen	Kitchen
Switch Input 2		Wet Room	Wet Room
Switch Input 3		SUMMERboost®	SUMMERboost®
Live Switch 1 (LS1)		Kitchen	Kitchen
Live Switch 2 (LS2)		Wet Room	Wet Room

If the BC models are factory reset via the aurastat V or auraststst VT user non configurable settings and default settings (above) will revert to the B model values; The unit will require reprogramming by the manufacturer to the correct BC Settings to maintain correct function as Cold Climate units.

Maintenance

Filter Replacement

Filters should be replaced at least annually, or more regularly dependent on environmental conditions. The installed aura controller will indicate filter change required in line with the Filter Change Interval settings.

Filters should be replaced with like for like components.

The H200 can be specified with filters with 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.

Type	Part Number
2 Standard G4 panel filters	XP2010173
1 F7 panel filter & 1 G4 panel filter	XP2010174
1 Slim G4 pre-filter, optional for use with F7 filter	XP2010172

How to Change 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.
6. After filter replacement reset filter indicator on controller.

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 undergoing any Servicing or Maintenance. The unit may be supplied with multiple live supply if a Duct Heater is fitted or uses switched live for Boost Speed control.

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.

Cleaning Interior

For best results:

1. Slide out Filters.

2. Carefully remove any dust from face of heat exchanger, interior of the unit and the Bypass(if fitted) using a vacuum cleaner.

Do not use water or any other fluids

Cleaning Exterior

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

Service Record

Serviced By	Company	Date	Notes

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 and used as a service record.

Installed by:

Important environmental information about this product.
This symbol on this unit or the package, indicates that disposal of this unit after its lifecycle 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. If any doubt contact your local authorities about waste disposal rules.

Titon®

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