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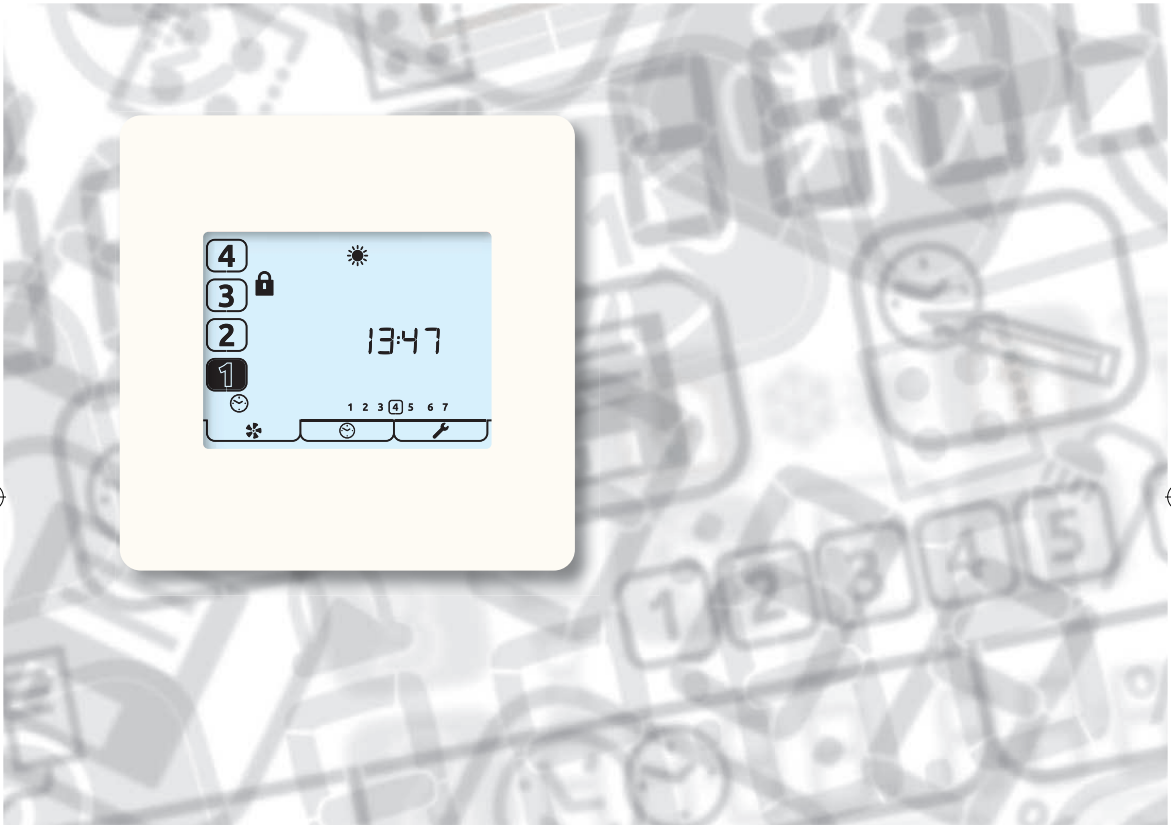

aura-t

TP536/EU

Product Manual

HRV controller

Titon®
ventilation systems

Warnings, Safety information and Guidance

Important Information

Read instructions fully before the installing this appliance.

1. This manual covers the operation of the HRV control system only, it must therefore be read in conjunction with the relevant heat recovery unit Product Manual.
2. 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.
3. All wiring must conform to current I.E.E. Wiring Regulations and all applicable standards and Building Regulations.
4. aura-t must be connected using the communication cable provided.
5. Control & communication cables should not be placed within 50mm or on the same metal cable tray as any 230V lighting or power cables.
6. Ensure all cable glands are fully tightened.
7. 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.

8. The appliance is not suitable for installation to the exterior of the dwelling.
9. 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.
10. Children should be supervised to ensure that they do not play with the appliance.
11. To avoid damaging the touch screen, do not operate it with sharp or hard objects; do not apply excessive fingertip pressure.
12. Do not use abrasive cleaners, waxes, solvents or alcohol based cleaning products; do not use paper towels for cleaning the aura-t.

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Description

The aura-t is a programmable touch screen controller which monitors and displays the status of a Titon ECOaura HRV unit. It allows the unit to be commissioned, and gives the user both manual and timed control of fan speeds. The aura-t is connected to the HRV via a low voltage connection and can be sited remotely from the unit.

Packaging Contents

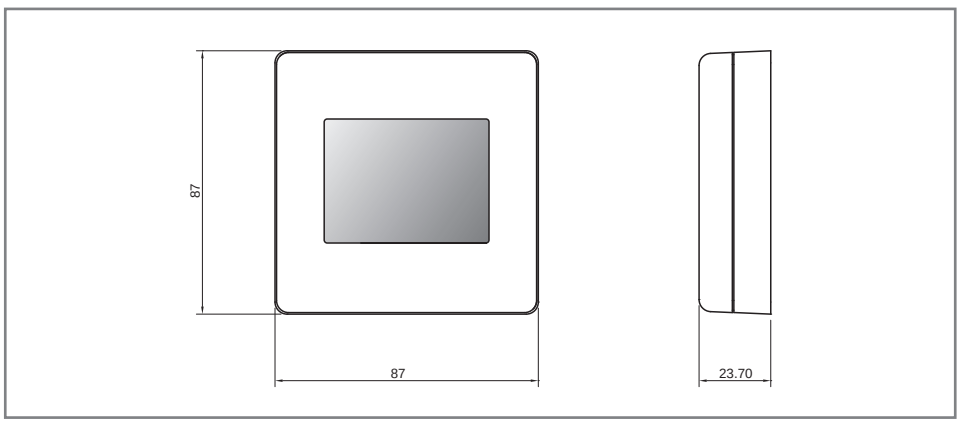
Inspect the unit when taking delivery. Check the unit for damage and that all accessories have been supplied.

Package supplied with:-

- 1 x aura-t controller.
- 1 x ~3m aura-t communication cable.
- 1 x Product Manual.

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

Dimensions



aura-t

Features

The following gives an outline description for each of the product features.

Speed Selection & Display

The unit speed can be manually selected via the on screen 1, 2, 3 & 4 buttons/ icons which are also used to display any automatically selected speed.

24 Hour Clock

The aura-t has a twenty four hour clock with a battery backup.

Day of Week Display

The aura-t displays the days of the week as numbers.

Boost Overrun Timer

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

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 aura-t will display an alert after a specified time when the HRV filters require changing.

Programmable Speeds

The unit has 4 programmable speed settings, all speeds are variable between 14-100% and allow independent speed setting of both supply and extract ventilation rates

- Speed 1, Setback.
  Reduced ventilation.
- Speed 2, Continuous.
  Normal ventilation.
- Speed 3, Boost.
  Increased ventilation
- Speed 4, SUMMERboost®.
  Very high ventilation.

Timer

The aura-t has a programmable timer that can be used to switch the HRV to Speed 1 at specified times.

Boost Inhibit

Boost Inhibit is used to prevent the HRV's speed increasing. Boost Inhibit is used in conjunction with a Timer event.

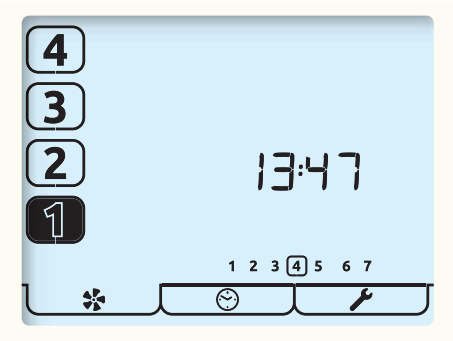
Status Icons

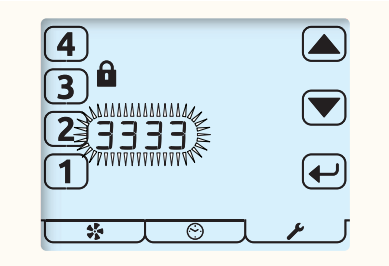
The aura-t displays icons to indicates modes of operation in Real-time.

The aura-t is operated via a LCD touchscreen. The screen is backlit, the backlight operates when the screen is touched.

Menu Tabs

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



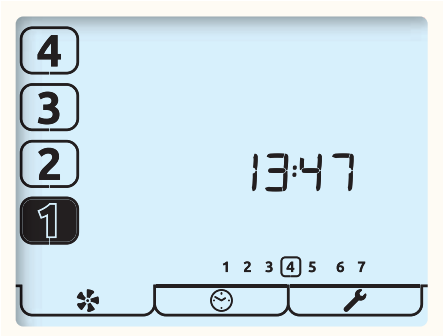


Passcode Screen

Tab			
Function	Monitor & Control Fan Commission	Timer	Setup
Name	Run Mode	Timer Mode	Setup Mode
Description	Displays Fan Speed, Time, Day and Status. Gives access to Fan Speed Setup	Gives access to Timer Run/Pause and Timer Setup	Gives access to Time, Day, RH threshold, Overrun Timers, Summer Bypass, Passcode settings & Filter Reset. Switch Setup in a Sub-Menu.
	If passcode is enabled enter 3333 to activate the above menus.		

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 holding the HRV at the indicated speed.
	The timer is active and is keeping the HRV at Speed 1.
	The speed the HRV is running at is being controlled by the internal humidity sensor or an external Proportional Input sensor

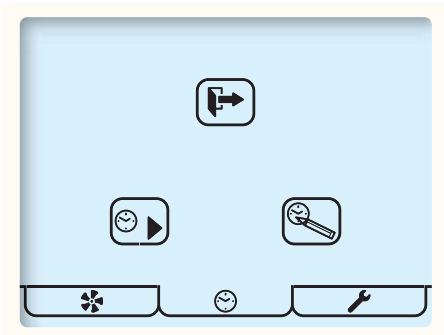
Other Icons

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

	The filters need changing or cleaning, refer to the Settings Menu for details of how to reset the timer.
	Frost Protection, if this icon is constantly lit the temperature outside is low and the speed of the HRV Supply Fan has been reduced to prevent damage to the Heat Cell. 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 temprature is still too cold, Frost Protection will be activated.
	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 or if the internal Humidity sensor has put the unit into Boost and the Humidity has reduced below the set-point.
	The padlock icon adjacent to the Speed 3 button and accompanying the timer icon indicates Boost Inhibit is active. The HRV is being held at Speed 1 by the timer and will not respond to external Boost switches or the internal Humidity sensor; it is also not possible to manually increase the speed the HRV's running speed. Proportional Input sensors are not affected.
	The warning icon flashing at the bottom of the screen adjacent to the Fan icon indicates a fan failure has been detected; contact the installer. If very high tempratures are deteced inside the HRV, fan failure mode will be enabled to protect the HRV from damage.

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.

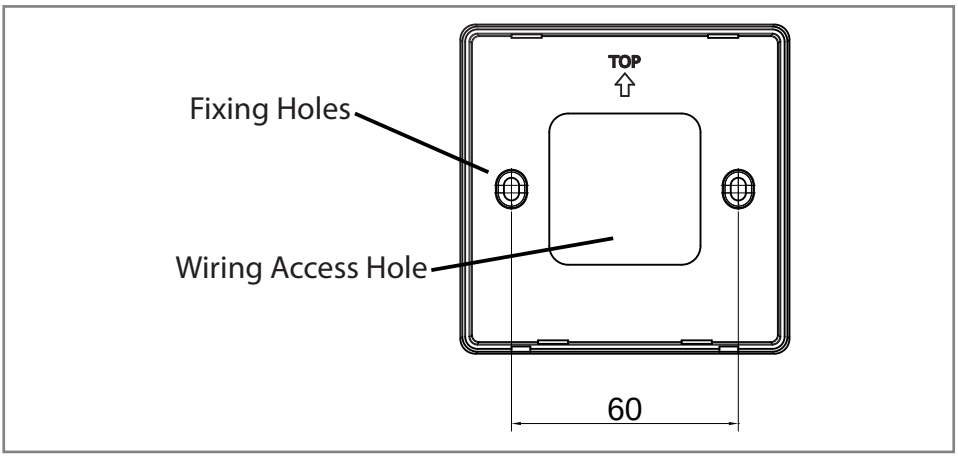
Installation

Location

The aura-t should be mounted in position convenient for the householder and where the supplied control cable will reach.

Fixing

1. Un-clip the front of the aura-t case from the Back Plate.
2. Thread the control cable through the hole in the Back Plate.

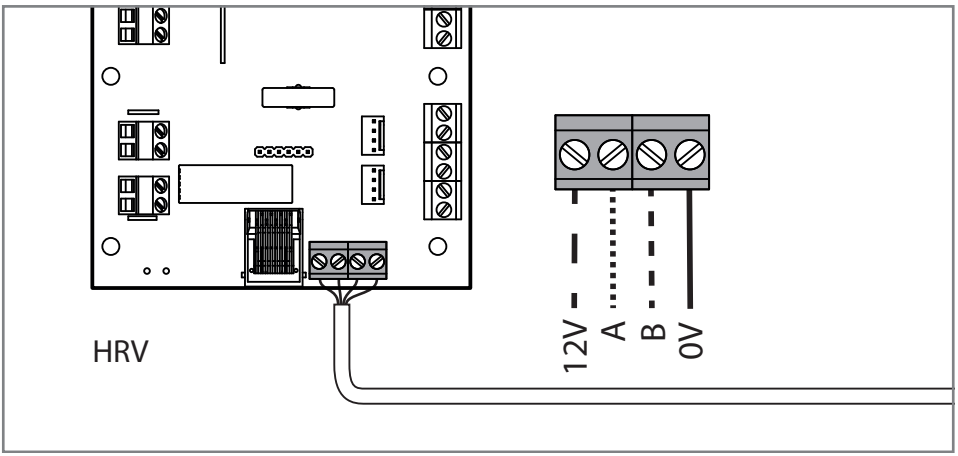


Connection to HRV

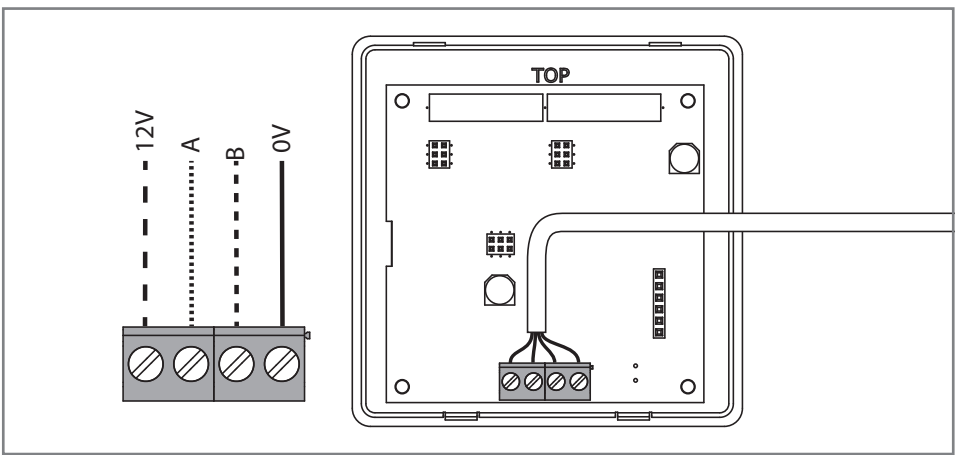
3. Fix Back Plate .
4. Connect the communication cable, see Wiring section.
5. Clip the front of aura-t to the Back Plate.

Wiring

The aura-t's control cable may be supplied fitted with a plug in connector for connection to the HRV, if the HRV does not have a socket remove the plug and use the wiring diagrams below.

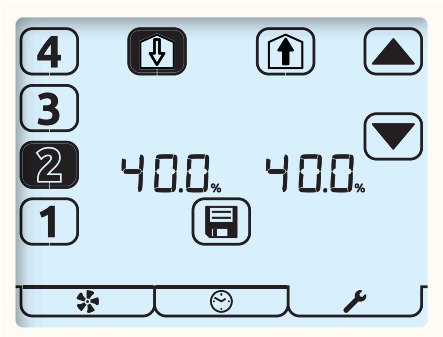


Connection to HRV



Connection to aura-t

Fan Commission

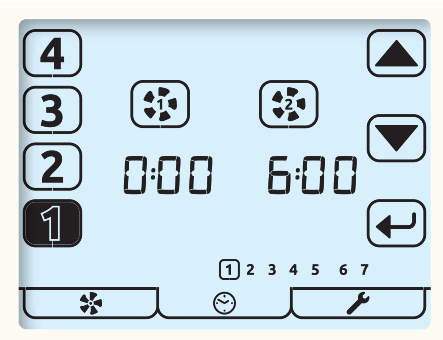


	Fan Commission Mode is entered by pressing the Fan Button for 5 seconds whilst in Run Mode.
	A flashing item on the screen indicates it is being edited.
	1. Select the required fan speed using the number buttons at the left of the screen. The current fan speeds is highlighted, the HRV will run at the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

Timer Setup

Timer setup is achieved in three steps

1 Day Selection



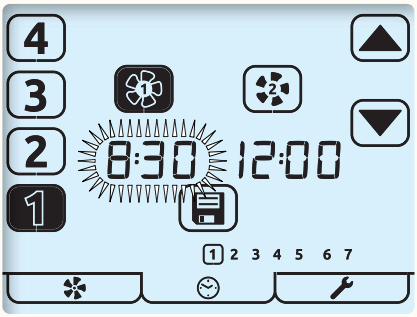
Tap the Timer Mode tab to enter the Timer Mode menu.

1. Tap the Timer Setup Key to commence setup.

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

3. 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.

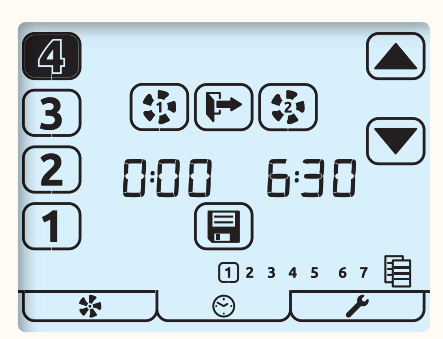
3. Speed 1 key toggles between selecting Speed 1 and selecting Speed 1 with Boost Inhibit indicated by Padlock Icon.

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.

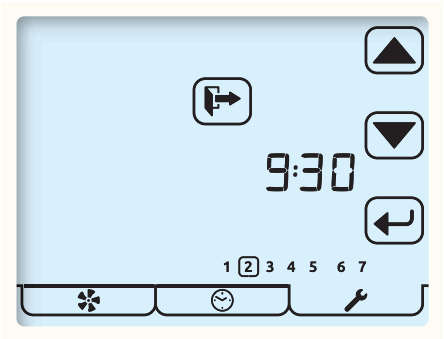
Timer Defaults

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



Enter key.

Exit Key.

Tap the Setup Mode tab to enter the Setup Mode menu.

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

Setting Selection

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

Setting Editing

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

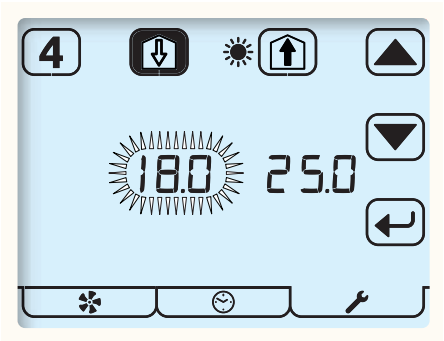
The order in which editable settings are displayed is as follows.

6:30 1. Time (24 hour clock)

1 2 3 4 5 6 7 2. Day of week.

	3. Humidity threshold
	4. Kitchen Overrun timer.
	5. Wet room Overrun timer.
	6. Summer Bypass Setup.
	7. Passcode Disable / Enable.
	8. Filter Reset
	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.

Summer Bypass Setup



Use to adjust value up or down.

Enter key.

Supply

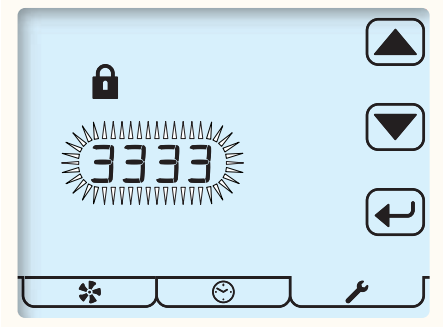
Extract

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

4

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

Passcode Enable / Disable



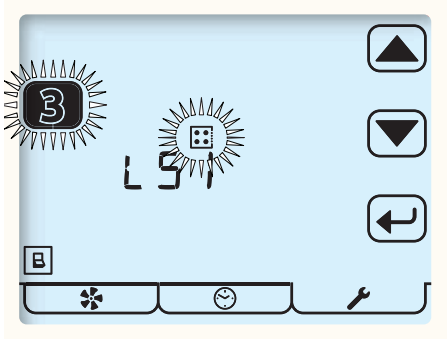
Tap Enter key to edit state.

Use to enable / disable Passcode.

- - - - indicates Passcode is disabled.
3 3 3 3 indicates Passcode is enabled.

Switch Setup Menu

In this Sub-Menu of the Setup 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.

	Press and Hold the Setup Mode tab to enter the Switch Setup Mode menu.*
	Switch Setup menu active.
All switch inputs to the HRV unit; S1, S2, S3, LS1 & LS2 can be assigned any of the following functions.	
3	Kitchen Boost, Speed 3.
3	Wet Room, Boost, Speed 3.
1	Speed 1, Setback
4	SUMMERboost disable.
4	Speed 4

* If Passcode is enabled, acesss to the Switch Setup Menu is only avaiable from the Time setup menu.

Maintenance

The aura-t is maintenance free.

Cleaning Exterior

For best results use a clean damp micro fibre cloth. Do not use abrasive cleaners, waxes, solvents or alcohol based cleaning products; do not use paper towels for cleaning the aura-t.

Appendix

aura-t Configurable Defaults

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

Configurable Item		Range		Default	Configured	Additional information
		Min	Max			
Time		Any Time		00:00		24 hour clock.
Day of Week		1	7	1		Two groups, five week days & two weekend days.
Boost Overrun	Kitchen	0 mins	60 mins	15 mins		
	Wet Room	0 mins	60 mins	15 mins		
Boost Overrun timers are set independently for Kitchen and Wet Room inputs. Boost Overrun timers must be set greater than zero for any momentary switch to trigger boost. When using latching switches to initiate Speed 3, Boost, the Overrun timer will start when the latching switch is disengaged.						
Internal Humidity Boost (Set point)		30%	89%	70%		
Speed 1, Setback.	Supply	14%	100%	18%		
	Extract	14%	100%	18%		
Speed 2, Continuous.	Supply	14%	100%	40%		
	Extract	14%	100%	40%		
Speed 3, Boost.	Supply	14%	100%	70%		
	Extract	14%	100%	70%		

Configurable Item		Range		Default	Configured	Additional information
		Min	Max			
Speed 4, SUMMERboost®	Supply	14%	100%	100%		
	Extract	14%	100%	100%		
Summer Bypass	Extract	17°C	35°C	25°C		
	Supply	10°C	20°C	18°C		
In order for the Summer Bypass to operate the temperatures of both the air being extracted from the property and supplied from outside must be above their individual thresholds. If the temperature of the Supply air is less than 1°C cooler than the Extracted air the Summer Bypass does not operate to prevent the warmer air being supplied directly to the property.						
SUMMERboost®		Enabled	Disabled	Enabled		
SUMMERboost® operates in conjunction with Summer Bypass and switches the fans to Speed 4. It can also be disabled by a latching switch if fitted.						
Switch Inputs	SW1			Kitchen Boost		
	SW2			Wet Room Boost		
	SW3			SUMMERboost® Disable		
Switch options are: Kitchen Boost, Wet Room Boost, Speed 1, Speed 4, SUMMERboost disable. When configured as Kitchen or Wet room Boost, the switch will use the associated Boost overrun and delay times for that room.						
Live Switch Inputs	LS1			Kitchen Boost		
	LS2			Wet Room Boost		
Live Switch options are: Kitchen Boost, Wetroom Boost. Live Switches also use the Boost overrun and delay times for the rooms they have been configured to.						

Some control features documented in this manual may not be compatible with older Titon HRV units.

HRV ECOaura Defaults

The table below details HRV settings and defaults, which that the aura-t CANNOT configure. During installation and commissioning they may be changed from the default values by an alternate Titon controller. There is space available in the table where the installer should record configuration settings.

Configurable Item		Range		Default	Configured
		Min	Max		
Boost Delay Timer	Kitchen	0 mins	60 mins	0 mins	
	Wet Room	0 mins	60 mins	0 mins	
If the Boost Delay Timer is set greater than zero momentary switches will not switch the HRV into Speed 3 Boost. When using latching switches the HRV will not Boost until the Delay time has elapsed.					
Filter Change Interval		3 Months	24 Months	12 Months	
Summer Bypass Enable/Disable		Enabled	Disabled	Enabled	
Frost Protection Mode		Off	Reduce	Off	
Frost Protection Threshold		-2°C	11.5°C	2°C	
When Frost Protection is operating in Off Mode the Supply fan is switched off when the temperature measured by the sensor on the to atmosphere side of the heat cell drops below the Frost Protection Threshold. When operating in Reduce Mode the speed of the Supply Fan is gradually reduced when the temperature drops below the threshold. At 4°C below the threshold it is stopped.					
Duct Heater Enable/Disable		Enabled	Disabled	Disabled	
Duct Heater Mode		Frost	User	Frost	
Duct Heater Threshold		-4°C	16°C	4°C	
Duct Heater Hysteresis		1°C	10°C	1°C	
When operating in Frost Mode the Duct Heater uses the sensor on the to atmosphere side of the Heat Cell and switches on 2°C above the Frost Protection threshold. When operating in User Mode it uses the sensor on the from atmosphere side of the heat cell and the threshold and hysteresis detailed above. In both modes the Duct Heater will be switched off if the Supply fan speed drops below 22.5% PWM.					
Internal Humidity Boost				On	
RH Boost Overrun		1 min	60 mins	15 mins	
RH Boost Hysteresis		1%	10%	1%	
When the Humidity of the air being extracted from the property reaches the threshold configured by the aura-t the fans switch to Speed 3 Boost. They remain at Speed 3 until the Humidity has dropped below the threshold minus the hysteresis and the RH Boost Overrun time has elapsed.					

Configurable Item		Range		Default	Configured
		Min	Max		
Room Sensor 1 Enable/Disable		Enabled	Disabled	Disabled	
Sensor Type				%RH	
Lower threshold				60%	
Upper threshold				70%	
Room Sensor 2 Enable/Disable		Enabled	Disabled	Disabled	
Sensor Type				CO_2	
Lower threshold				800PPM	
Upper threshold				1400PPM	

If fitted, Room Sensors are used to provide Demand Control Ventilation based on the environmental parameter they are measuring. Below their lower threshold they have no effect on the ventilation rate; once the lower threshold is exceeded the fan speeds proportionally increase from Speed 2, Continuous until the upper threshold is reached when the fans will be running at Speed 3, Boost. In addition to the %RH and CO_2 sensor detailed above Air Quality and Temperature Room Sensors may be fitted. With any Room Sensor the range of Demand Control Ventilation will be dependant on the individual sensor's characteristics and the thresholds configured by the installer.

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.

Installed by:

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DO 5546 Iss 01