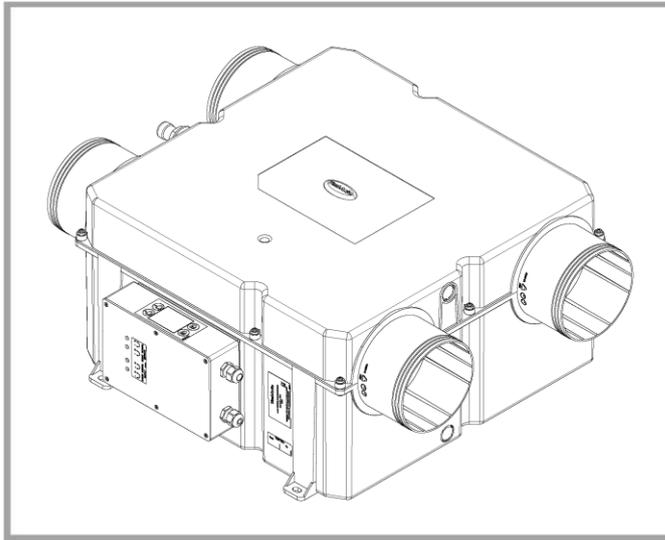


# Integra

## Integra Plus ECA MVHR

### Installation & Commissioning



**Stock Ref. N°**  
437666ECA  
Integra Plus ECA

***Vent-Axia***<sup>®</sup>

PLEASE RETAIN THESE INSTRUCTIONS WITH THE PRODUCT.

UK  
CA  
CE



### IMPORTANT SAFETY INFORMATION



**PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE COMMENCING INSTALLATION.**

1. Do not install this product in areas where the following may be present or occur:

- Excessive oil or a grease laden atmosphere.
- Corrosive or flammable gases, liquids or vapours.
- Subject to direct water spray from hoses.
- Ambient temperatures higher than 40°C and lower than -20°C.
- Possible obstructions that may hinder access to or removal of the unit.

2. All wiring must be in accordance with the current IEE wiring regulations BS7671, or appropriate standards of your country. Installation should be inspected and tested by a suitably qualified person after completion.

3. Ensure the mains supply (voltage, frequency and phase) complies with the rating label.

4. The power feed to the unit should be provided with a local double pole fused spur fitted with a 3A fuse having a contact separation of at least 3mm.

Depending on the installation, if LS1 and/or LS2 are used they should also have isolating switch of similar specification to the main power feed installed.

5. This unit must be earthed.

6. Precautions must be taken to avoid the back-flow of gases into the building from the open flue of gas or other fuel-burning appliances.

7. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

8. Young children should be supervised to ensure that they do not play with the appliance.

### INSTALLATION GUIDANCE

1. The installer is responsible for the installation and electrical connection of the system on site. It is the responsibility of the installer to ensure that the equipment is safely and securely installed and left only when mechanically and electrically safe.

2. All regulations and requirements must be strictly followed to prevent hazards to life and property, both during and after installation, and during any subsequent servicing and maintenance.

3. The unit's condensate drain must be connected to the building's wastewater drainage system.

4. Certain applications may require the installation of sound attenuation to achieve the sound levels required.

5. The unit must not be connected directly to a tumble drier.

6. The supply and exhaust valves must be fully opened prior to commissioning.

7. The supply air must be drawn from the exterior of the property.

8. The unit should be allowed to stabilise during commissioning for a minimum period of 5 minutes when changing between boost and normal speeds.

9. Ensure that the unit's external grilles are a minimum of 1500mm apart. The exhaust grille should be located at least 600mm away from any flue outlet. The inlet grille should be located 2000mm away from any flue outlet.

10. This product and associated duct installation should be carried out in accordance with the domestic ventilation compliance guide.

### Disposal



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

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## UK Building Regulations (Part F) Declaration of Conformance

Integra Plus ECA conform to the 2010 Building Regulations (Part F - Means of Ventilation) installed performance of a ducted mechanical extract fan when installed in accordance with the instructions in this document and the domestic ventilation compliance guide.

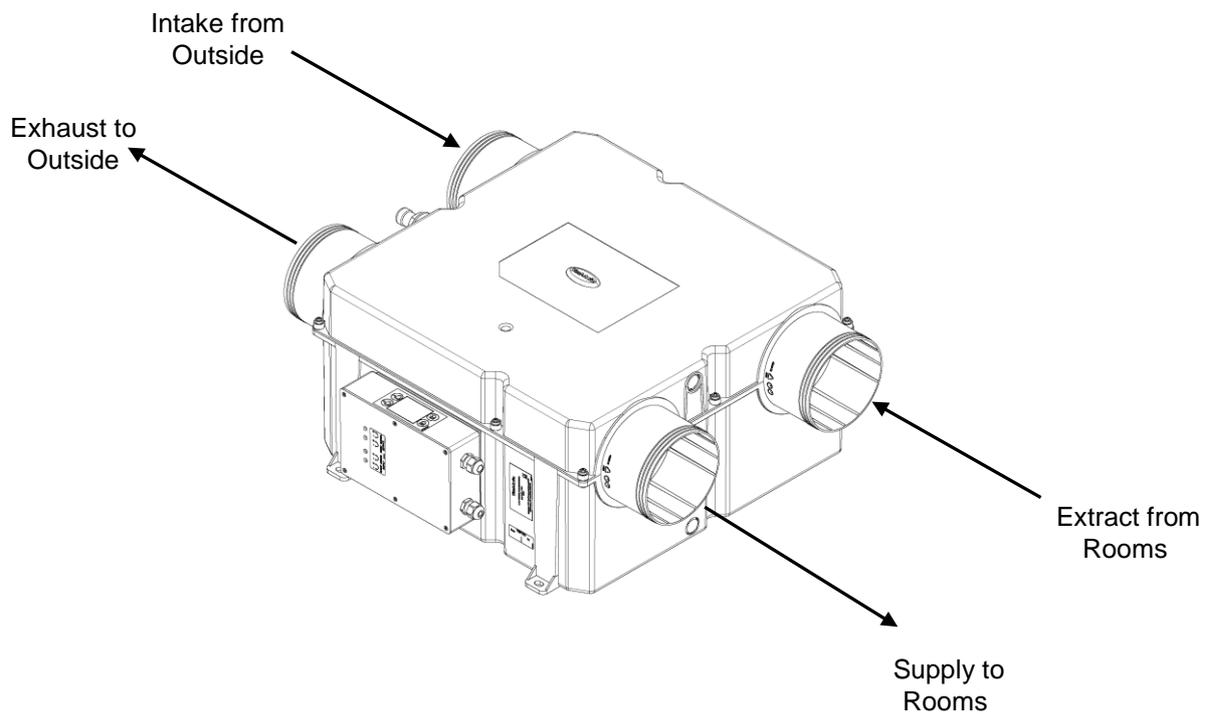
# Product Description

## Product Description

The Vent-Axia **Integra Plus ECA Mechanical Ventilation/Heat Recovery (MVHR)** is heat recovery unit designed for the energy efficient ventilation of houses and similar dwellings, conforming to the latest requirements of the Building Regulations document F 2010.

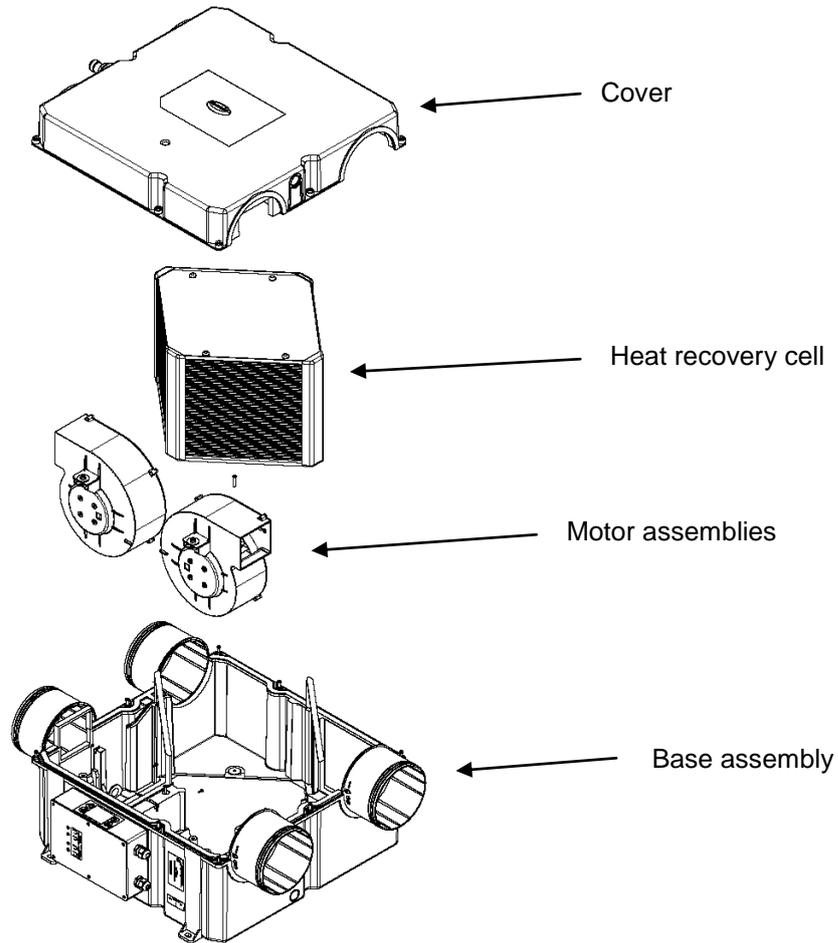
The unit is designed for continuous 24 hour exhaust ventilation of stale moist air from bathrooms, toilets and kitchens. As the stale air is extracted, a heat exchanger within the unit transfers up to 70% of the heat and transfers it into the supply air entering the bedrooms and lounge.

## Air Direction

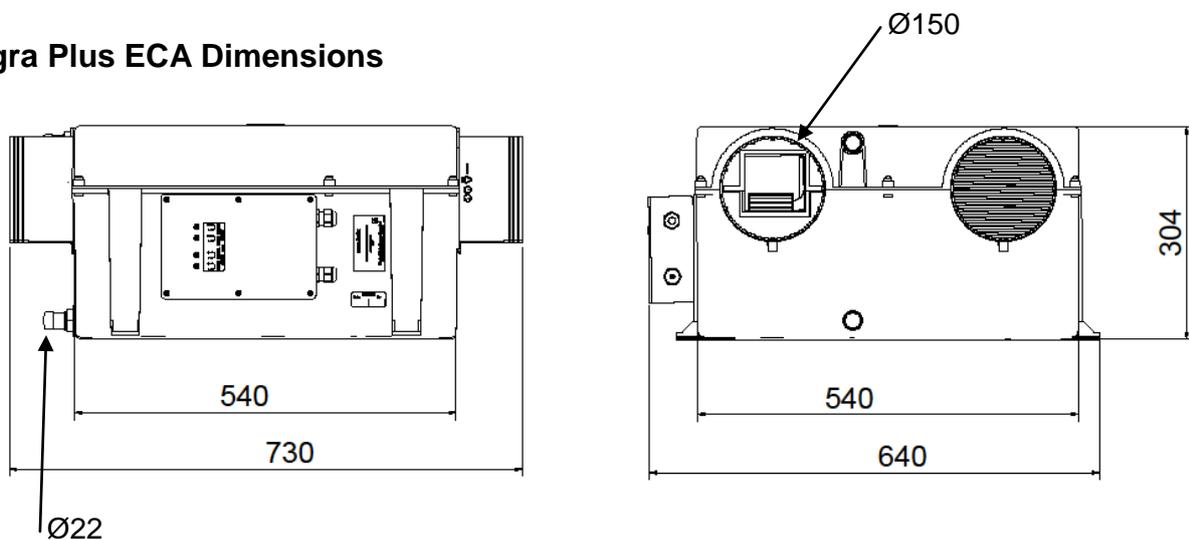


# Product Description

## Exploded View of Fan Unit



## Integra Plus ECA Dimensions



## Product Description

Performance	Integra Plus ECA
<b>Airflow</b>	<b>Maximum, FID, 478 m<sup>3</sup>/h</b>
<b>Sound levels (@ 3 m)</b>	48.8 dB(A) (70%), 56.8 dB(A) (boost)
<b>Power</b>	
<b>AC Voltage Input</b>	220-240 V AC (single phase)
<b>AC Frequency Input</b>	50 Hz nominal
<b>Rated Power</b>	167 W (max.)
<b>Physical</b>	
<b>Height (excluding spigots)</b>	304mm
<b>Width (excluding spigots)</b>	540mm
<b>Depth</b>	640mm
<b>Weight</b>	17.7 kg
<b>Spigot diameter</b>	150 mm
<b>Condensate pipe diameter</b>	22 mm
<b>Environmental</b>	
<b>IP Rating</b>	IPX2
<b>Operating Temperature</b>	-10°C to +45°C
<b>Air Intake Temperature</b>	As above
<b>Operating Humidity</b>	0% to 95% RH
<b>Storage Temperature</b>	-10°C to +45°C
<b>Storage Humidity</b>	0% to 95% RH

For all other technical details, please see the Product Catalogue or our website at [www.vent-axia.com](http://www.vent-axia.com)

A wide range of sensors are available that can be used to switch the Integra Plus ECA from normal to boost speed:

563519	TimeSpan
563506	Air Quality Sensor
563550	Ambient Response Humidity
563532	HumidiSwitch
563502	ThermoSwitch
455213	Normal Boost Switch
435960/446409	Vent Wise
459623	VisionX PIR

## Installation Guidance

The following instructions are intended to help prevent potential hazards and installation should only be carried out by a qualified electrician and installer.

**NOTE: we advise installers to fix all mains and sensor wiring prior to fixing the MVHR unit in position.**

## Before Installation of the Unit

### Inspect the Unit

When taking delivery of the unit, check the items delivered against the enclosed delivery note. Inspect the unit for damage in transit. If in doubt, contact Customer Services. Each box contains a Integra Plus ECA MVHR unit, Remote Boost Switch and an accessory pack containing condensate drain link pipes, clips, energy rating labels and product documentation.

### Lift and Move the Unit Safely

On page 7 check the weight of the unit that you are installing.

Always use appropriate lifting techniques and appliances when moving heavy equipment.

### Check Site Requirements and Safety Notices

Check that the physical and environmental conditions for the site meet, or exceed, the requirements detailed in the table on page 7.

Read and observe the safety notices listed in *Warnings and Safety Information* on page 3.

## Unit Installation

The Integra Plus ECA unit is typically installed on a wall in a utility room, storage cupboard, roof void, or similar.

The wall should have sufficient strength to support the unit.

Take into consideration the position of the electrical services and the condensate drain.

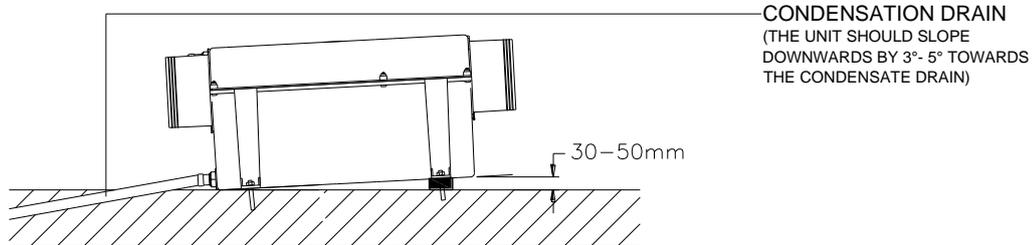
Ensure there is an adequate access for installation, operation and maintenance.

It is recommended that a local isolation switch is installed within 1m of the unit to facilitate future maintenance.

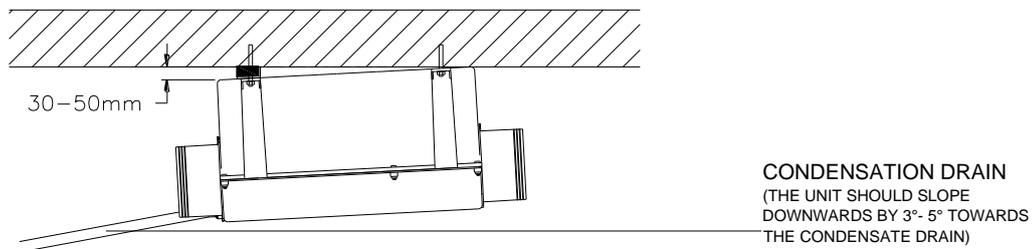
The unit can be mounted on a horizontal or vertical face, care should be taken to ensure the unit is angled towards the condensate drain.

## Select Unit Orientation

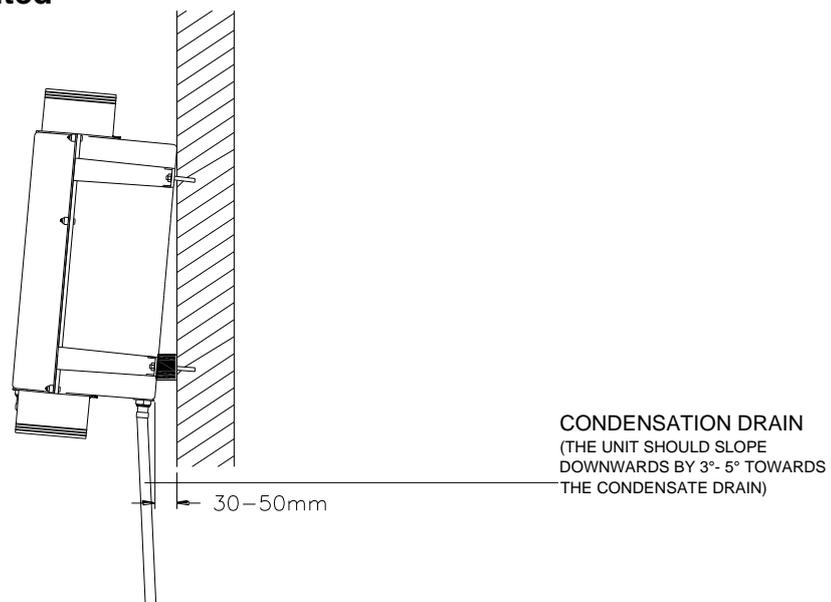
**Fig 3a. Mounted on joists**



**Fig 3b. Ceiling mounted**

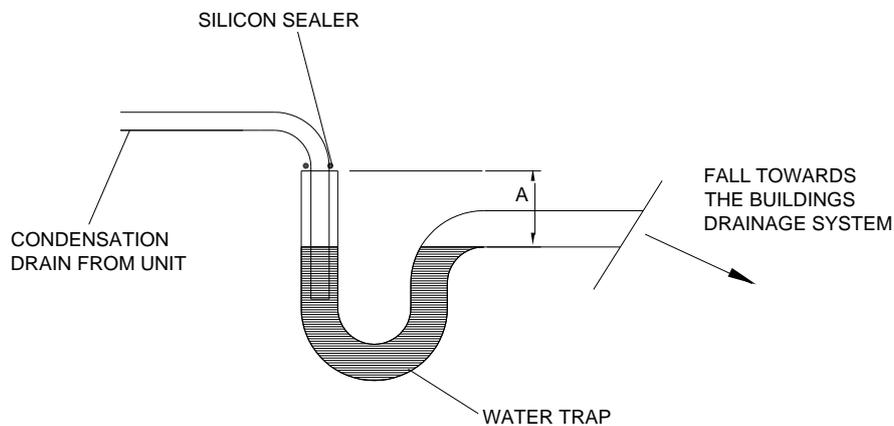


**Fig 3c. Wall mounted**



FOR FURTHER INFORMATION ON CONDENSATION WATER TRAP DETAIL, SEE FIG 4

**Fig 4. Water trap details**



NOTE:  
INSTALL THE CONDENSATE DRAINAGE TUBING IN ACCORDANCE WITH THE DIAGRAM.  
ENSURE THE WATER TRAP IS BELOW THE DRAIN ELBOW OUT LET "A"

### **To mount the unit on joists:**

Place the unit on a suitable platform across joists and attach the appropriate cabling, drainage and ductwork to the unit, with the Vent-Axia badge facing up. For optimum performance, ensure the ductwork does not turn 90° directly off the spigots. The unit should, for optimum drainage, be tilted by 3°- 5° towards the drain side. See Fig. 3a.

### **Ceiling mounted:**

Invert the unit with the Vent-Axia logo facing down and attach the unit securely to the rafters. For optimum performance, ensure the ductwork does not turn 90° directly off the spigots. The unit should, for optimum drainage, be tilted 3°- 5° towards the drain side. See Fig. 3b.

Please note - the location and position of installation for the unit must be decided before any drainage knockouts are removed, as they cannot be refitted.

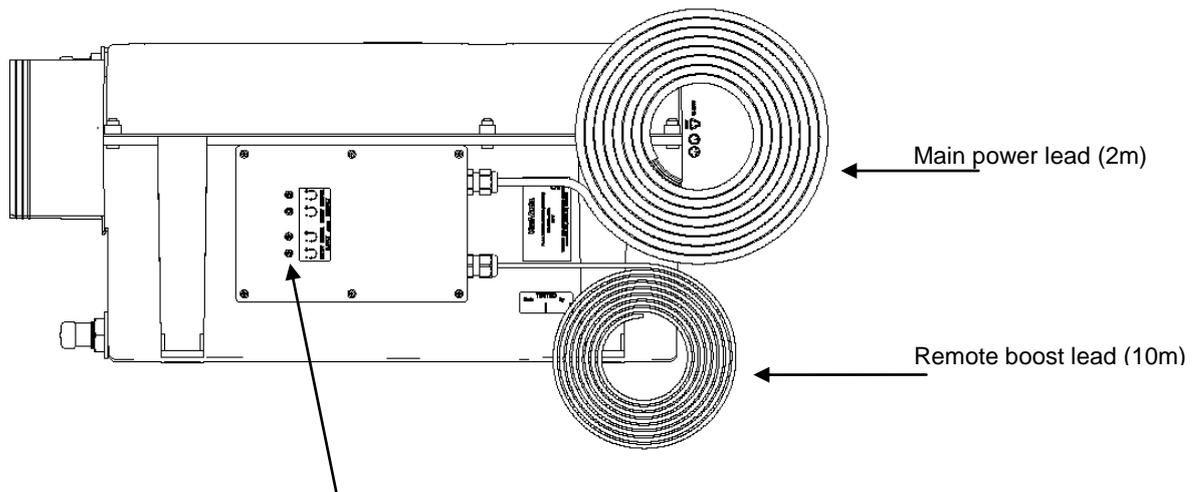
5. Having decided upon a location and position remove the knock out for the condensate drain, this must be at the lowest point. Connect the drain of the ventilation unit to the drainage system using suitable 'U'-bends (see fig 4).
6. Install suitable internal and external grilles/ terminals and connect them to the ventilation unit using suitable 150mm ducting. If flexible ducting is used, it should be stretched in order to obtain the best performance.

## Electrical Installation

### Connect Switches and Sensors

Table 1: Mains Cable Connections

Terminal No.	Name	Cable connection	Description
L	Mains Live	Brown	220-240 V AC, 50 Hz input
N	Mains Neutral	Blue	220-240 V AC, 50 Hz input
EARTH	Mains Earth	Yellow/Green	Earth connector
LS1	Switched Live 1	Black	220-240 V AC, 50 Hz input
LS2	Switched Live 2	Grey	220-240 V AC, 50 Hz input



Speed adjustment ports.

Ports must be covered by label (supplied in accessory pack) to maintain the Moisture Ingress Protection rating.

## Connect the Power Supply



### WARNINGS

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

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

A 2m cable is connected internally to the unit for connection to a switched fused spur.

To connect the power supply:

1. Ensure the local AC power supply is switched off.
2. One end of the power cable supplied is already connected to the unit and routed into the control housing via a suitable gland to ensure the IP rating of the unit is not affected.
3. Connect the other end of the cable to the switched fused spur.
4. Use cable clamps and clips to secure the cable, as appropriate.

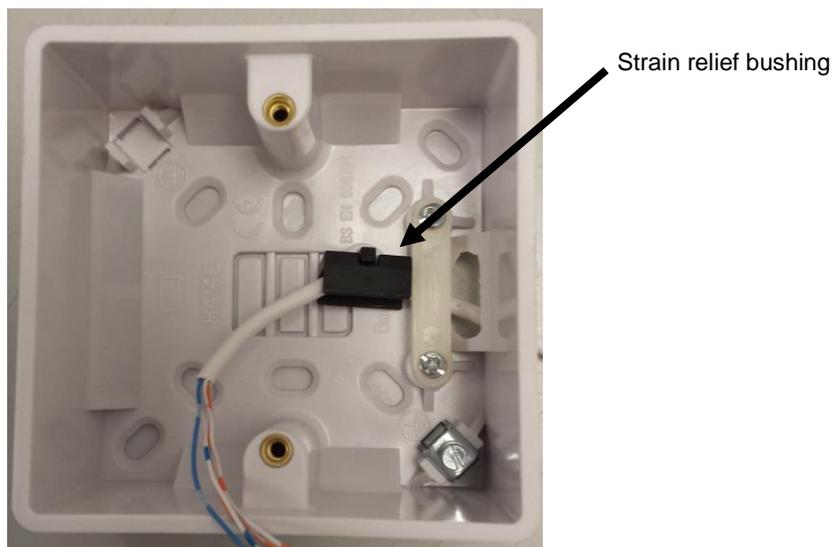
## Connecting the Remote Boost Switch

The Integra Plus ECA is supplied with a Remote Boost Switch, the boost switch is also used to enable Summer Mode.

The lead for the Remote Boost Switch is supplied connected to the main unit. The lead should be run from the main unit to the intended location of the Remote Boost Switch.

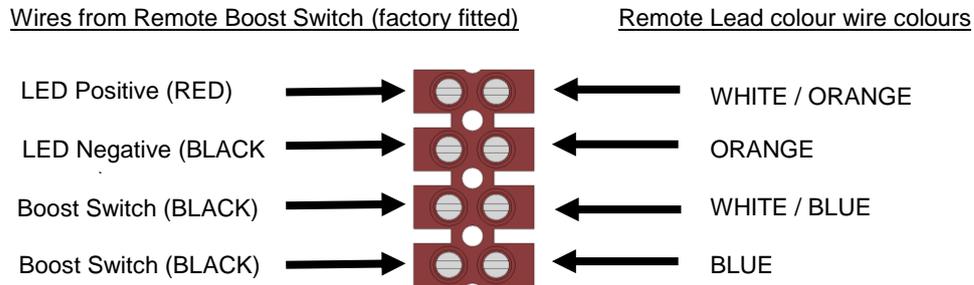
The lead should be shortened and the wires bared in preparation for fitting the Remote Boost Switch.

If the remote lead is exposed at any point between the main unit and the Remote Switch, then the supplied Back Box and strain relief bushing must be used in the manner shown below.



# Installation

The remote lead is connected to the Remote Boost Switch



The unit can be switched to boost by applying 220-240V to the LS1 or LS2 inputs. Alternatively, the boost button on the Remote Boost Switch may be used.

LS1 and LS2 inputs can be from a lighting circuit or other mains voltage supply, alternatively an optional external control unit can be used. Note that the LS2 connection has a boost start time delay of 5 minutes.

In the event that the unit is inadvertently left running on boost, it will revert to normal speed after 2 hours.

## Powering Up the Unit

### Switching On

Switch on the power at the mains supply isolator feeding the unit and the fan motors will start.

### Switching Off

Turn the power off at the mains supply isolator switch.

## Commissioning Overview

The instructions in this section are intended to provide configuration and operation information for setting up the equipment.

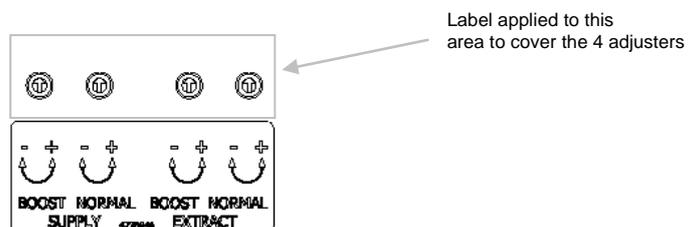
Follow good practice when commissioning the unit. Ensure that the system is installed according to the system designers intent incorporating any acoustic ducting, that all joints are air tight, ducting is well supported, bends are avoided close to vents, and that the vent valves are fully open at the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

## Commissioning and Control

The commissioning control enables you to adjust the fan flow rates. These are factory set to minimum and can be adjusted by using a small flat screwdriver through the four holes as shown below.

Measure the flow from the extract and supply grilles in the usual way. Adjust the potentiometers to suit.

Apply the label supplied in the accessory pack after the flow rates have been set to ensure that the holes are sealed and the Moisture Ingress Protection rating is maintained.



## Modes of Operation

### Normal Mode

Normal Mode is the default operating mode of the unit. The unit will run continuously in Normal Mode unless a signal input is received from the Remote boost switch, LS1 or LS2. The Normal Mode flow rate is adjustable within the full range of the unit, but would normally be set for background ventilation.

### Boost Mode

Boost Mode can be triggered when additional ventilation is needed. Boost Mode is triggered by an input from the Remote Boost switch, LS1 or LS2. Boost Mode will timeout after 2-hours unless cancelled. The Boost Mode flow rate is adjustable within the full range of the unit but is normally set at a level required when cooking or showering. The LED will not illuminate when Boost Mode is triggered.

Remote Boost switch: Press once to activate Boost mode, press once to exit Boost mode.

LS1: Boost will activate while LS1 is active

LS2: Boost will activate while LS2 is active, after a 5-minute delay



### Purge Mode

Purge mode will run the unit at 100% and can only be triggered and cancelled via the Remote Boost switch. A 5-second press and hold of the Boost Switch will trigger, or cancel Purge Mode. Purge mode will timeout after 30 minutes. The LED will not illuminate when Purge Mode is triggered.



### Summer Mode

Summer Mode is useful when the indoor temperature is higher than desired, and the outdoor temperature is lower than the indoor temperature. Summer mode stops the supply fan, this prevents the recovery of heat from the extract air stream by thereby allowing the cooler outdoor air to enter the property via an open window or trickle vent.

To activate Summer Mode press the Boost button 3 times in less than three seconds, after a short pause the LED will illuminate green and the supply fan will stop.

To exit Summer Mode press 3 times in less than three seconds, after a short pause the green LED will turn off and the supply fan will restart.

Summer mode must be cancelled by the user, it will not timeout.



If the LED on the Remote Boost switch flashes green, there is an error with the units Temperature sensor. The sensor is used by the frost protection system. If the unit was in Summer mode it will return to normal operation. Please contact the Vent-Axia Technical Support for assistance.



**WARNING**

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

## Maintenance

Heat recovery units require regular maintenance. The Integra Plus ECA has been designed to facilitate access to enable maintenance to be carried out easily. The actions below should be carried out at least every 12 months, however in areas with increased humidity or pollution more frequent maintenance may be necessary.

Item	Action
Unit & Heat Exchanger Cell	Inspect and clean the unit 1. Isolate the mains power supply. 2. Remove front cover from the unit. 3. Undo the two cell retaining screws 4. Slide out the heat exchanger. 5. Wash the outer cover and heat exchanger in warm water using a mild detergent (such as Milton Fluid) and dry thoroughly. <b>NOTE: Keep water away from all electrical components and wiring within the unit.</b>
Motors	Inspect the motors for build-up of dust and dirt on the impeller blades, which could cause imbalance and increased noise levels. Vacuum or clean if necessary.
Condensate Drain	Check the condensate drain tube is secure and clear of debris. Clean if necessary.
Fastenings	Check that all unit and wall-mount fastenings are sufficiently tight and have not become loose. Re-tighten if necessary.

## Spares

The following spares maybe ordered from Vent-Axia:

Integra Plus ECA	
Part No	Description
431485	Heat Recovery Cell
443048	Temperature Sensor
474049	Motor Assembly Extract
474048	Motor Assembly Supply
428612	Spigot (Single)
474805	Remote Boost Switch
454965	Condensate Hose
474050	Accessory Pack
474811	Fitting and Wiring Leaflet
474813	Control PCB

## PRODUCT FICHE

For Residential Ventilation Units (Complying Commission Delegated Regulation (EU)

No 1254/2014

Name:	Vent-Axia	Vent-Axia
Model ID (Stock Ref.) :	Integra Plus ECA - 437666ECA	Integra Plus ECA – 437666ECA
SEC Class	B	A
SEC Value ('Average')	-32.34	-38.85
SEC Value ('Warm')	-11.18	-15.86
SEC Value ('Cold')	-70.06	-79.77
Label Required? (Yes/No=Out of scope)	Yes	Yes
Declared as: RVU or NRUVU/UVU or BVU	RVU/BVU	RVU/BVU
Speed Drive	Multi-Speed	Multi-Speed
Type HRS (Recuperative, Regenerative, None)	Recuperative	Recuperative
Thermal Eff: [ (%), NA(if none)]	70	70
Max. Flow Rate (m3/h)	478.80	478.80
Max. Power Input (W): (@Max.Flow Rate)	167.00	167.00
LWA: Sound Power Level (dB)	48.83	48.83
Ref. Flow Rate (m3/s)	0.09310	0.09310
Ref. Pressure Diff. (Pa)	50.00	380.00
SPI [W/(m3/h)]	0.21	0.21
Control Factor & Control Typology: (CTRL/ Typology)		
Control Factor; CTRL	1.00	0.65
Control Typology	Manual Control	Local Demand Control
Declared: -Max Internal & External Leakage Rates(%) for BVUs or carry over (for regenerative heat exchangers only), -&Ext. Leakage Rates (%) for Ducted UVUs;	<5% Internal, <5% External	<5% Internal, <5% External
Mixing Rate of Non-Ducted BVUs not intended to be equipped with one duct connection on either supply or extract air side;	N/A	N/A
Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	N/A	N/A
For UVUs (Instructions Install Regulated Supply/Extract Grilles Façade)	N/A	N/A
Internet Address (for Disassembly Instructions)	www.vent-axia.com	www.vent-axia.com
Sensitivity p. Variation@+20/-20 Pa: (for Non-Ducted VUs)	N/A	N/A
Air Tightness-ID/OD-(m3/h) (for Non-Ducted VUs)	N/A	N/A
Annual Electricity Consumption: AEC (kWh/a)	3.11	1.85
Annual Heating Saved: AHS (kWh/a)		
AHS: Average	39.45	42.79
AHS: Warm	17.84	19.35
AHS: Cold	77.17	83.71





## The **Vent-Axia**® Guarantee

Applicable only to products installed and used in the United Kingdom.

For details of guarantee outside the United Kingdom contact your local supplier.

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

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

### IF CLAIMING UNDER TERMS OF GUARANTEE

Please return the complete product, carriage paid to your original supplier or nearest Vent-Axia Centre, by post or personal visit.

Please ensure that it is adequately packed and accompanied by a letter clearly marked "Guarantee Claim" stating the nature of the fault and providing evidence of date and source of purchase.

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

# **Vent-Axia**®

Head Office: Fleming Way, Crawley, West Sussex, RH10 9YX.

EU Authorised Representative: Vent-Axia Bedrijvenweg 17 7442 CX Nijverdal Nederland. [authorisedrep@vent-axia.nl](mailto:authorisedrep@vent-axia.nl)

**UK NATIONAL CALL CENTRE**, Newton Road, Crawley, West Sussex, RH10 9JA

SALES ENQUIRIES: Tel: 0344 8560590 Fax: 01293 565169

TECHNICAL SUPPORT Tel: 0344 8560594 Fax: 01293 532814

For details of the warranty and returns procedure please refer to [www.vent-axia](http://www.vent-axia) or write to Vent-Axia Ltd, Fleming Way, Crawley, RH10 9YX

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