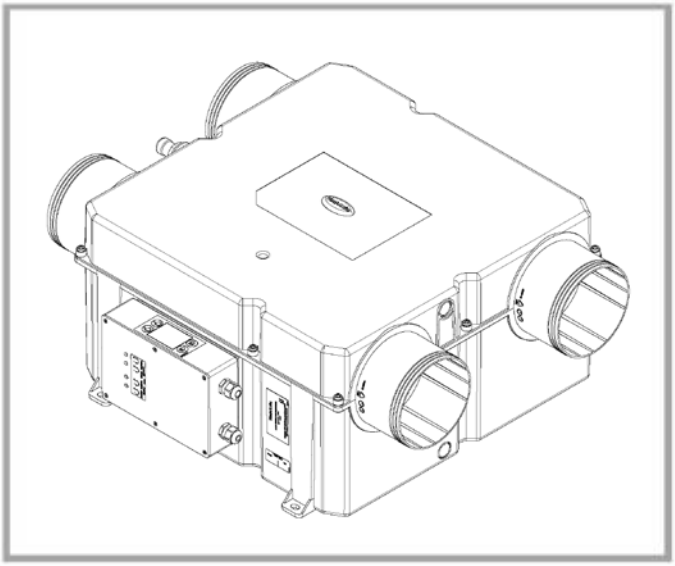
Integra

Integra Plus EC MVHR

Installation & Commissioning



Stock Ref. N°
437666EC
Integra Plus EC

Vent-Axia®

PLEASE RETAIN THESE INSTRUCTIONS WITH THE PRODUCT.

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

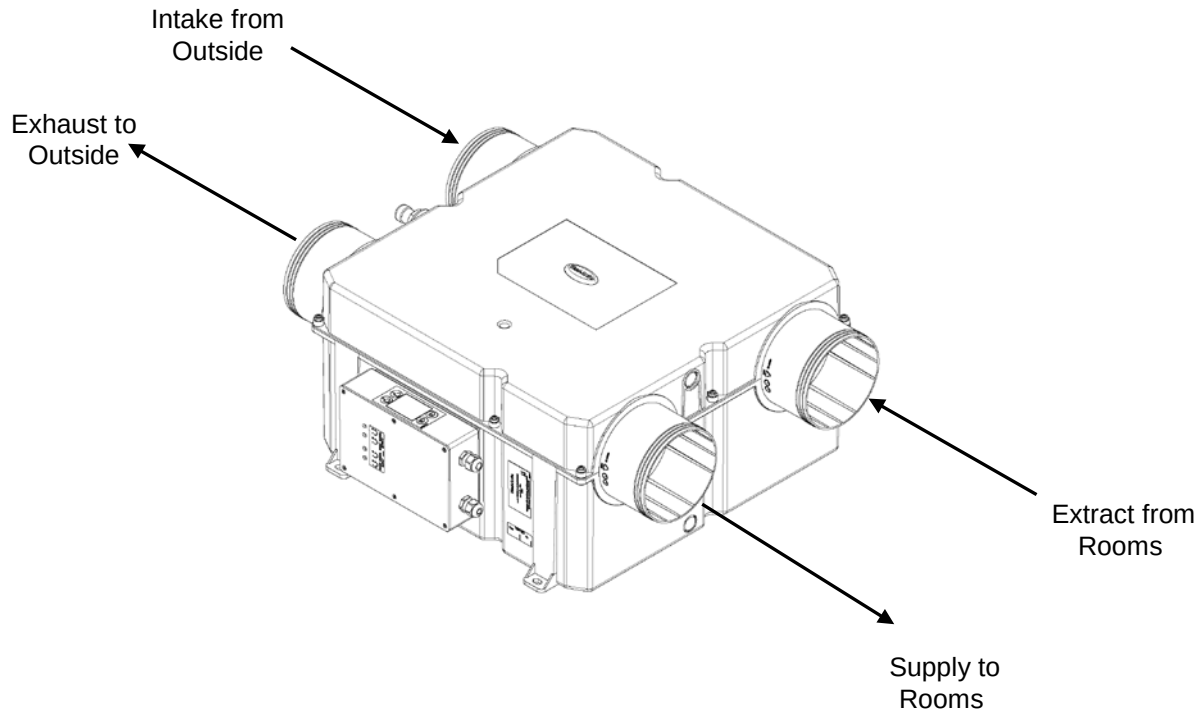
Integra Plus EC conform to the 2010 Building Regulations (Part F - Means of Ventilation) installed performance of a ducted mechanical extract fan when installed in accordance with the instructions in this document and the domestic ventilation compliance guide.

Product Description

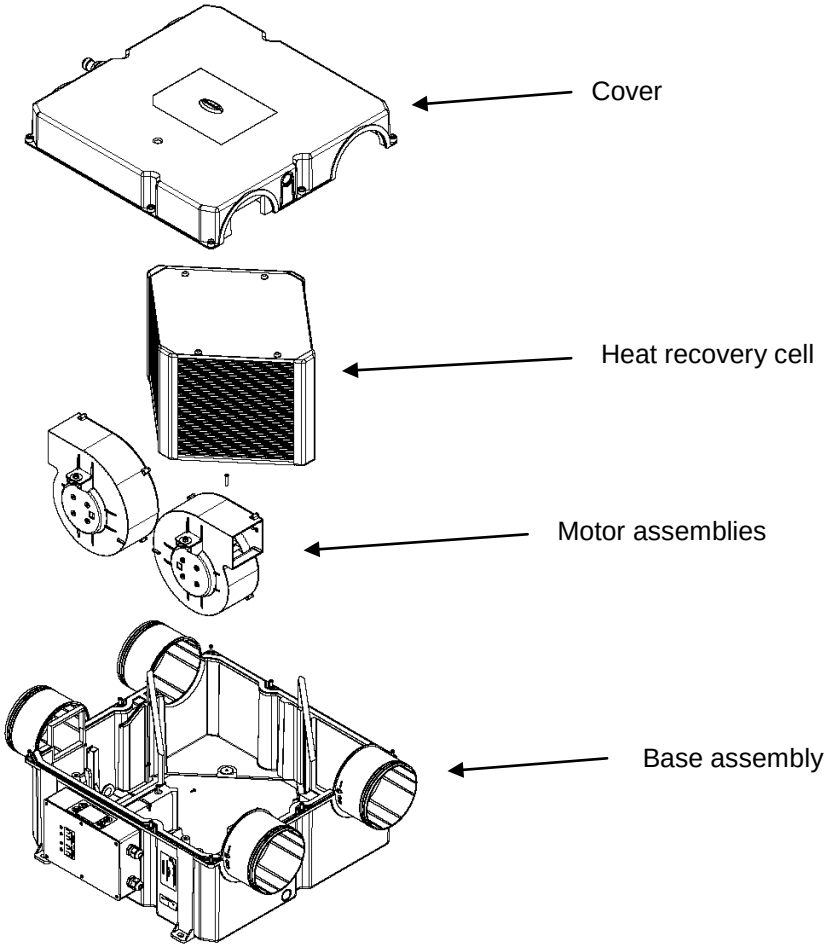
The Vent-Axia **Integra Plus EC Mechanical Ventilation/Heat Recovery (MVHR)** is heat recovery unit designed for the energy efficient ventilation of houses and similar dwellings, conforming to the latest requirements of the Building Regulations document F 2010.

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.

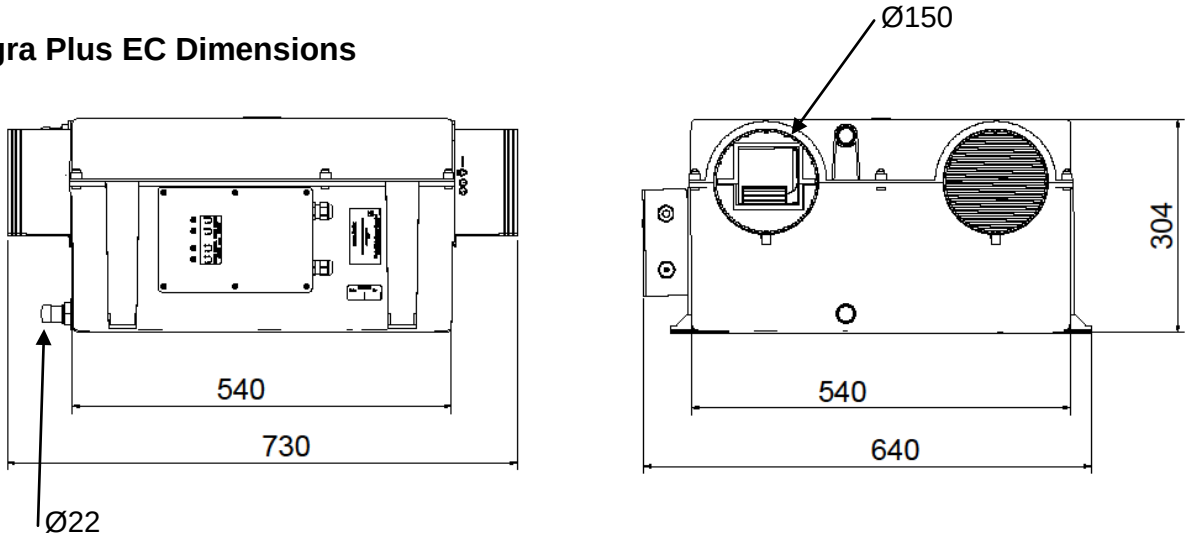
Air Direction



Exploded View of Fan Unit



Integra Plus EC Dimensions



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

For all other technical details, please see the Product Catalogue or our website at www.vent-axia.com

A wide range of sensors are available that can be used to switch the Integra Plus EC 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 EC 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 6 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 6.

Read and observe the safety notices listed in *Warnings and Safety Information* on page 2.

Unit Installation

The Integra Plus EC 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

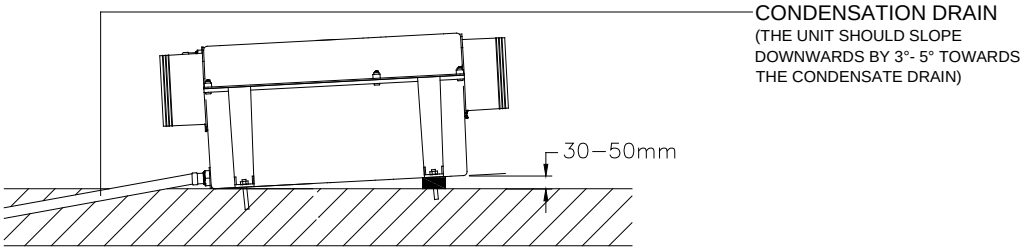


Fig 3b. Ceiling mounted

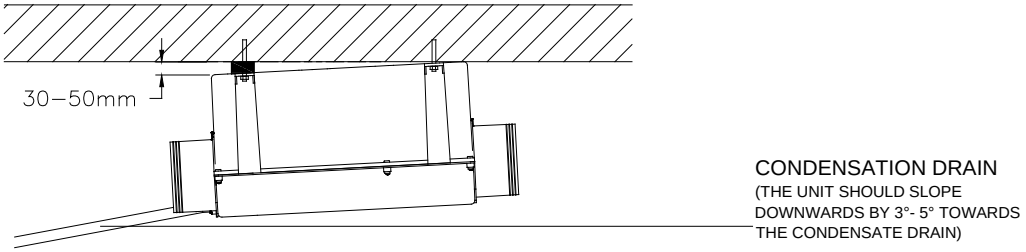
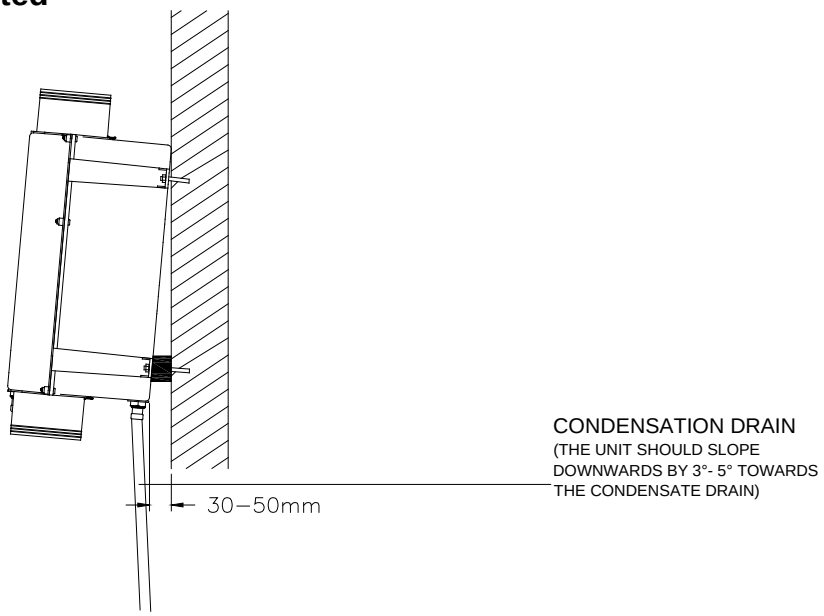
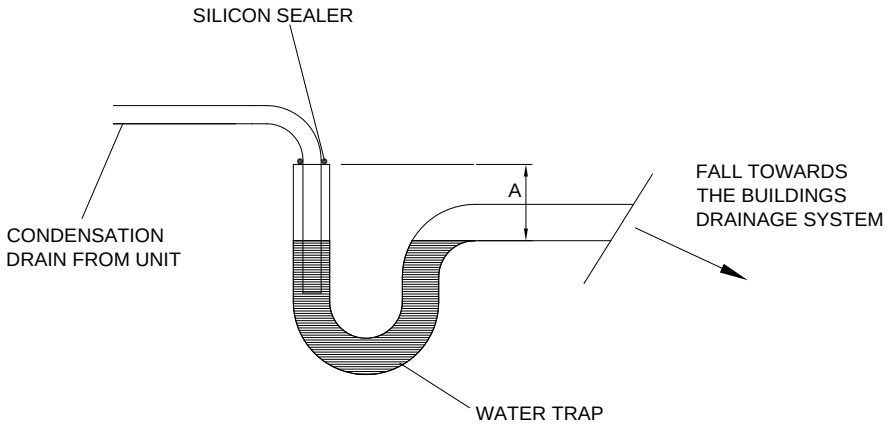


Fig 3c. Wall mounted



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.

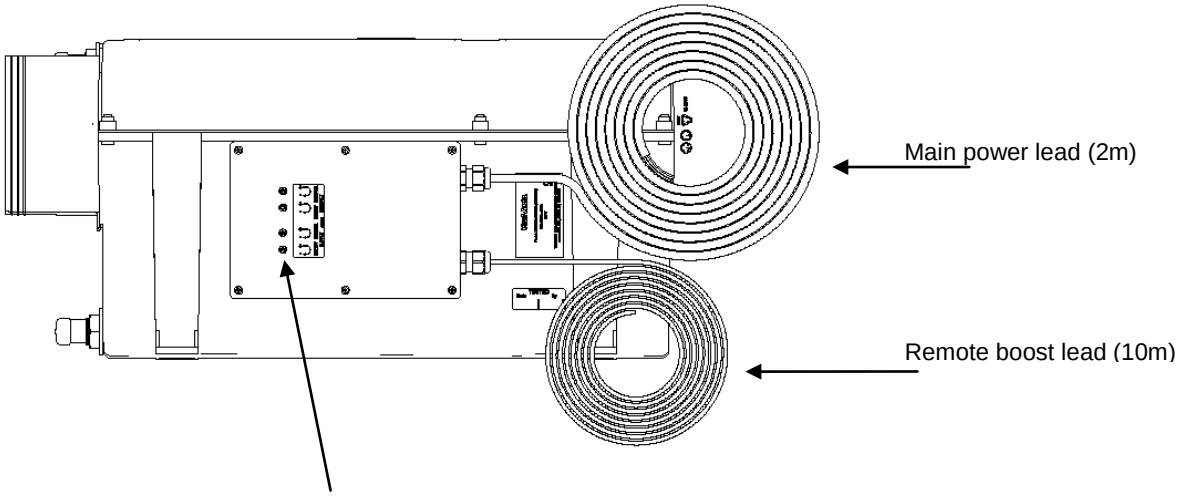
5. Having decided upon a location and position remove the knock out for the condensate drain, this must be at the lowest point. Connect the drain of the ventilation unit to the drainage system using suitable 'U'-bends (see fig 4).
6. Install suitable internal and external grilles/ terminals and connect 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



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.

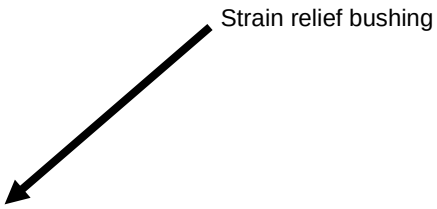
Connecting the Remote Boost Switch

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

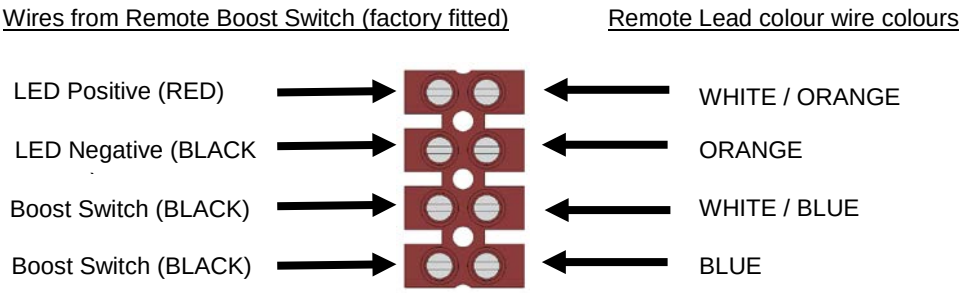
The lead for the Remote Boost Switch is supplied connected to the main unit. The lead should be run from the main unit to the intended location of the Remote Boost Switch.

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.



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.

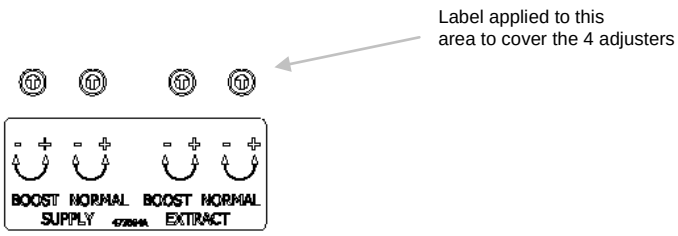
Follow good practice when commissioning the unit. Ensure that the system is installed according to the system designers intent incorporating any acoustic ducting, that all joints are air tight, ducting is well supported, bends are avoided close to vents, and that the vent valves are fully open at the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

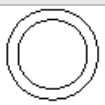
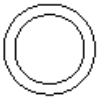
Apply the label supplied in the accessory pack after the flow rates have been set to ensure that the holes are sealed and the Moisture Ingress Protection rating is maintained.



Summer Mode

The unit is equipped with a “Summer Mode” for use when the indoor temperature is higher than desired and the outdoor temperature is lower than the indoor temperature. This prevents the recovery of heat from the extracted air stream by stopping the supply fan, thereby allowing the cooler outdoor air to enter the property via an open window or trickle vent.

Button and LED Operation

Button	LED	Function
	Off	Press once to activate Boost mode. Press once again to exit Boost mode. Boost mode works independent of Summer Mode, a 2 hour timeout applies to the boost function.
	On Solid	To activate Summer Mode press 3 times in less than three seconds, after a short pause the green LED will illuminate 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, there is no timeout.
-	On Flashing	There is an error with the Temperature sensor. If the unit was in Summer mode it will return to normal operation.



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 EC 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. **NOTE: Keep water away from all electrical components and wiring within the unit.**
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 may be ordered from Vent-Axia:

Integra Plus EC	
Part No	**Description**
431485	Heat Recovery Cell
443048	Temperature Sensor
474049	Motor Assembly Extract
474078	Motor Assembly Supply
428612	Spigot (Single)
472572	Remote Boost Control
454965	Condensate Hose
474050	Accessory Pack
472877	Fitting and Wiring Leaflet
436023	Cleaning Instructions

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 EC - 437666EC	Integra Plus – 437666EC
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 NRVU/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.

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 or write to Vent-Axia Ltd, Fleming Way, Crawley, RH10 9YX

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