

# VA100

## Lo-Carbon SELV RANGE

100mm AXIAL EXTRACT FAN

Installation and Wiring Instructions



### Stock Ref. N°

44 16 14A	- LP
45 90 49A	- XP
44 16 15A	- LT
45 90 50A	- XT
44 16 16A	- LHTP
43 60 64A	- XHTP

FAN UNITS 12V DC SELV (CLASS III)  
CONTROLLERS 220-240V 50Hz MAINS SUPPLY (CLASS II)  
WITH 12V DC SELV OUTPUT

# Vent-Axia®

PLEASE READ INSTRUCTIONS IN CONJUNCTION WITH  
ILLUSTRATIONS. PLEASE SAVE THESE INSTRUCTIONS.

IPX7

CE  
UK  
CA



## Installation and Wiring Instructions for the VA100 Lo-Carbon SELV Range of Extractor Fans.



**IMPORTANT:  
READ THESE INSTRUCTIONS  
BEFORE COMMENCING THE  
INSTALLATION**

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.
- Ambient temperatures higher than 40°C or less than -5°C.
- Possible obstructions which would hinder the access or removal of the Fan.

### **SAFETY AND GUIDANCE NOTES**

- A. All wiring to be in accordance with the current I.E.E. Regulations, or the appropriate standards of your country and **MUST** be installed by a suitably qualified person.
- B. The Fan should be provided with a local isolator switch capable of disconnecting all poles, having a contact separation of at least 3mm.
- C. Ensure that the mains supply (Voltage, Frequency, and Phase) complies with the rating label.
- D. The Fan should only be used in conjunction with the appropriate Vent-Axia products.
- E. The fan should only be used in conjunction with fixed wiring.
- F. When the Fan is used to remove air from a room containing a fuel-burning appliance, ensure that the air replacement is adequate for both the fan and the fuel-burning appliance.
- G. The Fan should not be used where it is liable to be subject to direct water spray for prolonged periods of time.
- H. Where ducted Fans are used to handle moisture-laden air, a condensation trap should be fitted. Horizontal ducts should be arranged to slope slightly downwards away from the Fan.
- I. 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.
- J. Children should be supervised to ensure that they do not play with the appliance.
- K. Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under over voltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

**IMPORTANT:- THESE FANS ARE SPECIALLY DESIGNED TO WORK ON 12V DC AND ARE NOT COMPATIBLE WITH OTHER CONTROLLERS. DO NOT CONNECT MORE THAN ONE FAN TO THE CONTROLLER.**

## **DESCRIPTION**

The VA100 Lo-Carbon SELV fan is an axial extraction fan suitable for domestic bathrooms and WC's and is with shutter timer and humidity combinations. The fan can be wall, panel/ceiling or window mounted using the appropriate ducting/grille kit (see Accessories section below).

Long life ball bearing DC motor with anti-vibration mounts provides low noise transmission into plasterboard/panels for quiet operation compared with other DC motor based fans.

**ACCESSORIES** (not supplied) Please see [www.vent-axia.com](http://www.vent-axia.com) for more information.

### **WALL FITTING KIT**

A range of 100mm wall kits are available for installing into most walls using telescopic liners supplied. White stock ref.: 254102, Brown stock ref: 254100.

### **WINDOW FITTING KIT**

Two window kits are available, for existing 105-110mm diameter holes use stock ref. 254101A. For 110-140mm holes use stock ref. 443234.

## **A. INSTALLATION**

### **SITING THE CONTROLLER**

1. The controller must not be installed in a shower cubicle or enclosure. It must be sited away from direct sources of water spray and out of reach (1.5m) of a person using a fixed bath or shower.
2. Site away from direct sources of heat. Ambient temperature range 0 to 40°C. Do not site in an area containing excessive levels of grease.
3. Decide where to site the controller and fan (see section siting the fan), and work out the required cable runs.

### **PANEL/CEILING MOUNTING**

1. For panel/ceiling mounting the fan should be installed into a closed duct system of at least 1.2m long (max 3m) or protected by an exterior air grille that must comply with the standard requirements of your country to prevent access to the fans impeller.
2. Cut a 105mm diameter hole.
3. Loosen the screw at the bottom of the grille and remove the grille. Mark the screw centres through the holes in the fan back plate. Drill, plug and screw into position.
4. Attach ducting as required for the installation.
5. Wire the fan as described in Section B-Wiring. Adjust any settings as required (see Section C-Setup).
6. Replace the grille and tighten the retaining screw.
7. After installation, ensure impeller rotates freely and the shutters can open.

## **WALL MOUNTING** (WALL KIT SUPPLIED SEPARATELY – SEE ACCESSORIES ON PREVIOUS PAGE)

1. For wall mounting cut a 117mm diameter hole through the wall and insert the wall sleeve. Slope the sleeve slightly downwards away from the fan. Cut to length and cement both ends into position flush with the wall faces.
2. Loosen the screw in the bottom of the grille and remove the front grille. Mark the screw centres through the holes in the fan back plate. Drill, plug and screw into position. Fix exterior grille into position with the louvres positioned downwards. (Note:- The grille must comply with the standard requirements of your country to prevent access to the fans impeller)
3. Wire the fan as described in Section B-Wiring. Adjust any settings as required (see Section C-Setup).
4. Replace the grille and tighten the retaining screw.
5. After installation, ensure impeller rotates freely and the shutters can open.

## **WINDOW MOUNTING** (WINDOW KIT SUPPLIED SEPARATELY – SEE ACCESSORIES ABOVE)

→ **The following instructions are for 105-110mm holes only – using the 254101A window mounting kit. For 110-140mm holes please use 443234 window kit and refer to the supplied instructions.**

1. Cut a 105mm diameter hole in the glass.
2. Fit spacers as required behind the fan back plate, engaging the locating pips in the corner holes.
3. Place the fan spigot through the hole in the glass from the inside, with a gasket on each side of the glass.
4. From the outside, place on the remaining spacer, with the locating pips facing outwards. For double-glazing and materials up to 40mm thick, one or more spacers may be discarded.
5. Draw the assembly together with the threaded fixing ring. Do not over-tighten.
6. Fix the exterior grille in position, using the screws provided, with the louvres pointing downwards.

***AFTER INSTALLATION ENSURE IMPELLER ROTATES FREELY***

## **B. WIRING.**



**WARNING: THE FAN AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING THE INSTALLATION / OR MAINTENANCE.**

**IMPORTANT: The Controller MUST be surface mounted to allow air to freely circulate around the unit. When installed in a loft void it **MUST NOT** be enclosed or covered with insulation.**

There are two methods of cable entry to the fan. If the side cable entry option is used, ensure the supplied grommet is used and maintains a good seal to prevent water ingress.

The fan must be powered at all times to allow the shutter to work correctly. If there is a requirement to switch the fan via an external switch, this should be connected to the LS connection and not by switching L/N supply.

1. Select and follow the appropriate wiring diagram. (Fig. 2 or 3)
2. Check all connections have been made correctly and ensure all terminal connections and cable clamps are securely fastened.
3. Ensure the impeller rotates and is free from obstructions.
4. **DO NOT TEST THE FAN WITHOUT THE GRILLE SECURELY FASTENED. THIS COULD POTENTIALLY CAUSE DAMAGE TO THE SHUTTER MECHANISM.**

### **C. SETUP**



**WARNING: THE FAN AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING THE INSTALLATION / OR MAINTENANCE.**

#### **SPEED SETTING (Fig. 4):**

The fan has two speed settings for different installation requirements:

- 1) High speed – for ducted installations: Replace jumper.
- 2) Normal speed – for wall/window installations: Remove jumper.

#### **TIMER ADJUSTMENT (LT/XT/LHTP/XHTP MODELS)**

*BEFORE ADJUSTING THE TIMER, SWITCH OFF THE MAINS SUPPLY. TIMER SHOULD ONLY BE ADJUSTED BEFORE OR DURING INSTALLATION.*

1. Remove the fan grille. The controller is factory set at 15 minutes approx. The overrun time period can be adjusted from approximately 3-30 minutes by altering the adjuster on the control PCB.
2. To REDUCE the operating time, use a small screwdriver to turn the adjuster Fig.4. ANTI-CLOCKWISE.
3. To INCREASE the operating time, use a small screwdriver to turn the adjuster Fig.4. CLOCKWISE.
4. Replace the fan grille.

#### **HUMIDITY SET-POINT ADJUSTMENT (LHTP/XHTP MODELS ONLY)**

*BEFORE ADJUSTING THE CONTROLLER, SWITCH OFF THE MAINS SUPPLY. HUMIDISTAT SHOULD ONLY BE ADJUSTED BEFORE OR DURING INSTALLATION.*

1. Remove the fan grille. The controller is factory set to switch on at about 70% RH. The humidity set point can be adjusted from 65-95%RH by altering the adjuster on the control PCB.
2. To LOWER the set-point use a small screwdriver to turn the adjuster Fig.4. ANTI-CLOCKWISE. This makes the controller MORE sensitive.
3. To RAISE the set-point use a small screwdriver to turn the adjuster Fig.4. CLOCKWISE. This makes the controller LESS sensitive.
4. Replace the fan grille.

**IMPORTANT:** Upon installation it is possible that the humidity controller will make the fan run continuously until it has acclimatised to the environment. As part of the installation process it is important to set/adjust the humidity sensitivity to the desired position. The controller is already factory set to switch on at about 70% R.H. If the room has not had a fan correctly working for sometime, the fan may run continuously for 2 or more weeks until the humidity drops below 70%RH.

### **PULLCORD OPERATION (LP/XP, LHTP/XHTP)**

The PULLCORD will activate the fan when switched. For the HTP models, the fan will return to the auto humidity sensing mode once the pullcord is switched into the off position. The LED indicator light will only activate if the PULLCORD is in the ON position.

### **LED INDICATOR LIGHT OPERATION**

The Neon will activate whenever the LS or PULLCORD is activated. The LED indicator light will switch off if the fan is running in Timer overrun or Humidity mode (if applicable).

## **D. SERVICING AND MAINTENANCE.**



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

1. At intervals appropriate to the installation, the fan should be inspected and cleaned to ensure there is no build up of dirt or other deposits.
2. Wipe the inlets and front face with a damp cloth until clean.

**The fan has sealed for life bearings, which do not require lubrication.**

Fig.1.

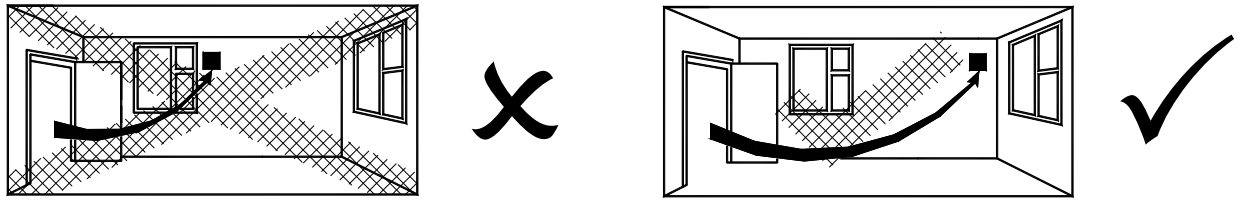


Fig.2 Models: LP/XP (LHTTP/XHTTP – if the Timer is not used)

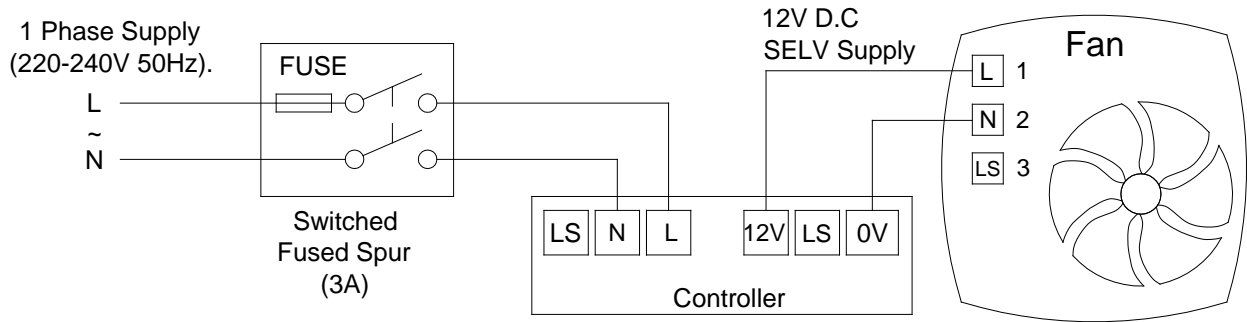


Fig.3 Models: LT/XT, LHTTP/XHTTP

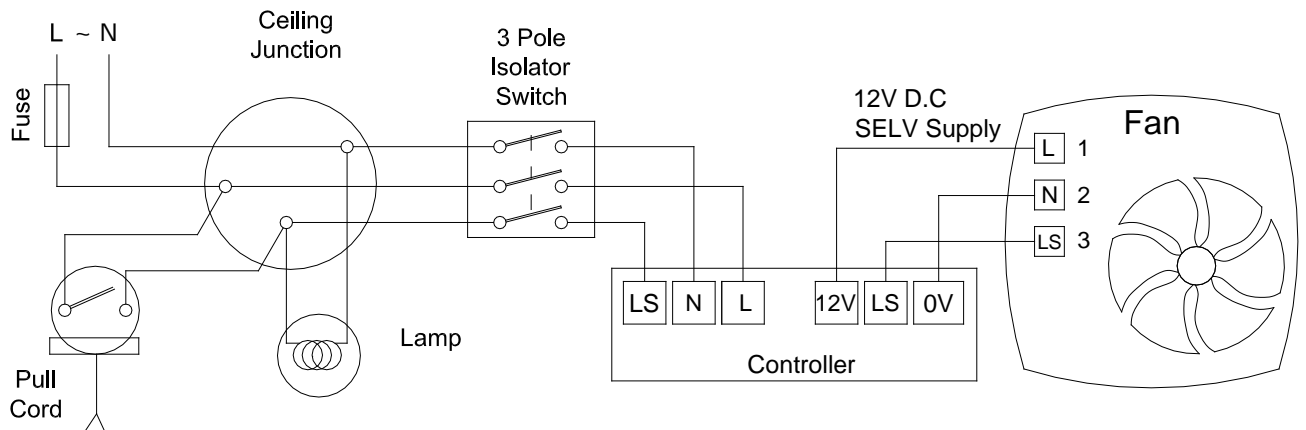
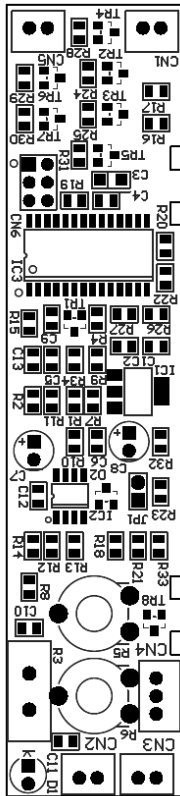






Fig.4.



**SPEED SETTING:**  
The fan has two speed settings for different installation requirements:

- High speed – for ducted installations: Replace jumper.
- Normal speed – for wall/window installations: Remove jumper.

 Humidistat set point adjustment (65-95%RH)

 Overrun timer adjustment (1-30min)

**PRODUCT FICHE**  
For Residential Ventilation Units (Complying Commission Delegated Regulation (EU)  
No 1254/2014

Name: Vent-Axia	Vent-Axia	Vent-Axia	Vent-Axia	Vent-Axia	Vent-Axia	Vent-Axia
Model ID (Stock Ref.) :	Lo-Carbon VA100 SELV LP - 441614	Lo-Carbon VA100 SELV XP - 459049	Lo-Carbon VA100 SELV LT - 441615	Lo-Carbon VA100 SELV LHTP - 441616	Lo-Carbon VA100 SELV XT 459050	Lo-Carbon VA100 SELV XHTP - 436064
SEC Class	F	F	E	C	E	C
SEC Value ('Average')	-10.00	13.97	15.72	26.23	15.72	26.23
SEC Value ('Warm')	-2.34	6.32	7.11	11.86	7.11	11.86
SEC Value ('Cold')	-23.35	27.32	30.75	51.31	30.75	51.31
Label Required? (Yes/No=Out of scope)	No	No	No	No	No	No
Declared as: RVU or NRVU/UVU or BVU	RVU-UVU	RVU-UVU	RVU-UVU	RVU-UVU	RVU-UVU	RVU-UVU
Speed Drive	2-Speed	2-Speed	2-Speed	2-Speed	2-Speed	2-Speed
Type HRS (Recuperative, Regenerative, None)	None	None	None	None	None	None
Thermal Eff: [ (%), NA(if none)]	N/A	N/A	N/A	N/A	N/A	N/A
Max. Flow Rate (m3/h)	75.60	75.60	75.60	75.60	75.60	75.60
Max. Power Input (W): (@Max.Flow Rate)	6.10	6.10	6.10	6.10	6.10	6.10
LWA: Sound Power Level (dB)	53.52	53.52	53.52	53.52	53.52	53.52
Ref. Flow Rate (m3/s)	0.01	0.01	0.01	0.01	0.01	0.01
Ref. Pressure Diff. (Pa)	N/A	N/A	N/A	N/A	N/A	N/A
SPI [W/(m3/h)]	0.12	0.12	0.12	0.12	0.12	0.12
Control Factor & Control Typology: (CTRL/ Typology)						
Control Factor; CTRL	1.00	1.00	0.95	0.65	0.95	0.65
Control Typology	Manual Control	Manual Control	Clock Control	Local Demand Control	Clock 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;	N/A	N/A	N/A	N/A	N/A	N/A
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	N/A	N/A	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	N/A	N/A	N/A	N/A
For UVUs (Instructions Install Regulated Supply/Extract Grilles Façade)	In F&W	In F&W	In F&W	In F&W	In F&W	In F&W
Internet Address (for Disassembly Instructions)	<a href="http://www.vent-axia.com">www.vent-axia.com</a>	<a href="http://www.vent-axia.com">www.vent-axia.com</a>	<a href="http://www.vent-axia.com">www.vent-axia.com</a>	<a href="http://www.vent-axia.com">www.vent-axia.com</a>	<a href="http://www.vent-axia.com">www.vent-axia.com</a>	<a href="http://www.vent-axia.com">www.vent-axia.com</a>
Sensitivity p. Variation@+20/-20 Pa: (for Non-Ducted Vus)	N/A	N/A	N/A	N/A	N/A	N/A
Air Tightness-ID/OD-(m3/h) (for Non-Ducted Vus)	N/A	N/A	N/A	N/A	N/A	N/A
Annual Electricity Consumption: AEC (kWh/a)	1.59	1.59	1.49	0.95	1.49	0.95
Annual Heating Saved: AHS (kWh/a)						
AHS: Average	13.97	13.97	15.72	26.23	15.72	26.23
AHS: Warm	6.32	6.32	7.11	11.86	7.11	11.86
AHS: Cold	27.32	27.32	30.75	51.31	30.75	51.31



---

## 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**<sup>®</sup>

Head Office: Fleming Way, Crawley, West Sussex, RH10 9YX. Tel: 01293 526062 Fax: 01293 551188

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.com](http://www.vent-axia.com) or write to Vent-Axia Ltd, Fleming Way, Crawley, RH10 9YX