

# Response

CONTINUOUS EXTRACT FAN

Installation and Wiring Instructions



## Stock Ref. N°

Response dMEV	404535
Response TP	404876
Response HTP	404877

220-240V~50Hz

**Vent-Axia®**

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

IPX4  
**CE**

## Installation and Wiring Instructions for the Response 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.** Young children should be supervised to ensure that they do not play with the appliance.

## **DESCRIPTION**

The Response fan is a continuously running extract fan for kitchens, utility rooms, bathrooms and toilets.

The product incorporates an airflow detection system that detects the installation duct resistance and maintains the correct fan speed to achieve the preset extract flow rate of either 6l/s, 8l/s or 13l/s, minimising energy use and noise (see Section C-Setup for more information).

The incorporated LED display allows the installer to verify the installed flow rate, and also provides feedback for system pressure and days installed (for landlords).

The fan can be wall, panel/ceiling or window mounted.

## **ACCESSORIES** (not supplied)

### **WALL FITTING KIT**

A range of white (stock ref. 254102) or brown (stock ref. 254100) 100mm wall kits are available for installing into most walls using telescopic liners supplied.

**WINDOW KIT** stock ref. 407927

**CEILING KIT** stock ref. 407928

**150mm COVERION KIT** stock ref. 408680

## **A. INSTALLATION**

### **PANEL/CEILING MOUNTING**

1. Cut a 105mm diameter hole.
2. Remove the front panel by carefully pulling away from the fan.
3. Loosen the two self-retaining screws and remove the inner grille by carefully pulling away from the housing.
4. Mark the screw centres through the holes in the fan back plate. Drill, plug and screw into position. 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. After installation, ensure impeller rotates freely.
7. Replace the inner grille and tighten the retaining screws. Replace the front panel.

### **WALL MOUNTING**

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. Where necessary cut to length and cement both ends into position flush with the wall faces.
2. Fix exterior grille into position with the louvres positioned downwards.
3. Remove the front panel by carefully pulling away from the fan.
4. Loosen the two self-retaining screws and remove the inner grille by carefully pulling away from the housing.
5. Mark the screw centres through the holes in the fan back plate. Drill, plug and screw into position.
6. Wire the fan as described in Section B-Wiring. Adjust any settings as required (see Section C-Setup).
7. After installation, ensure impeller rotates freely.
8. Replace the inner grille and tighten the retaining screws. Replace the front panel.

## WINDOW MOUNTING

1. Refer to window kit instructions supplied with the kit.

## B. WIRING.



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

### IMPORTANT

- The cross - sectional area of supply cord used should be ranged from 1 -1.5mm<sup>2</sup>.
- The extraction fan is suitable for connection to 220-240V 50Hz supply.
- The fan is a class II double insulated product and **MUST NOT** be earthed.

1. Select and follow the appropriate wiring diagram. (Fig. 1, 2 or 3)
2. Check all connections have been made correctly and ensure all terminal connections and supply wires are securely fastened.
3. Ensure the impeller rotates and is free from obstructions.

## C. SETUP



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

### 1) Trickle speed selection (6l/s or 8l/s) – (Fig. 5) (dMEV,TP & HTP models)

In normal running mode the fan can extract at either 6l/s (22m<sup>3</sup>/h) or 8l/s (29m<sup>3</sup>/h) flow rate. The fan will boost to 13l/s (46.8m<sup>3</sup>/h) when the LS connection is switched or humidity rises above the set point (see humidity setting below).

- Factory set at **6l/s** (22m<sup>3</sup>/h).
- Remove jumper connector (JP1) if **8l/s** (29m<sup>3</sup>/h) extract flow rate is required.

### 2) Airflow detection system – enable/disable (Fig. 5) (dMEV,TP & HTP models)

The airflow detection system will detect the installation duct resistance and also react to external wind conditions to ensure the fan maintains a constant extraction rate. This can cause the fan to ramp up and down and in most applications will not be required. To turn this feature on, complete the following:

- Push dip switch 1 (SW1) into the on position to turn on constant flow mode.
- Push dip switch 1 (SW1) into the off position to turn off constant flow mode. (Factory set)

**IMPORTANT** – On first power up, the fan will run through its initialisation routine. For the first 15 minutes, the flow rate, pressure and day logger will be displayed. The fan may not be fully functional until this is over. After the first 15 minutes, the fan will calibrate. See Fig.7 for the calibration procedure. Once this is complete the fan will operate normally with the display off.

### **3) LED Display with prism (Fig. 6) (dMEV, TP & HTP models)**

For the first 15 minutes EVERY time the fan is powered off and on (via the isolator), the display will cycle between displaying the actual airflow rate (l/s) being achieved\* and system pressure (Pa). They will cycle every 10-20 seconds, where the pressure will flash, and the airflow rate will be on constantly. The day logger feature will only be displayed once, after the first cycle of displaying the flow rate and system pressure.

\*Airflow detection system must be enabled to display the calibrated flow rate.

### **4) Adjustable timer (TP model only)**

The TP model incorporates an adjustable overrun timer. This adjusts the time the fan will continue to run on boost after the LS connection has been deactivated. The timer function is factory set at approx 15 minutes but can be adjusted between 1 & 30 minutes. This is also the run time period for the integral pullcord.

- To REDUCE the operating time, use a small screwdriver to turn the adjuster Fig.5. CLOCKWISE. To a minimum setting of 1 minutes.
- To INCREASE the operating time, use a small screwdriver to turn the adjuster Fig.5. ANTI-CLOCKWISE. To a maximum setting of 30 minutes.

### **5) Fixed timer (HTP model only)**

The HTP model incorporates an optional fixed timer – set at 15 minutes. This is the time the fan will continue to run on boost after the LS connection has been deactivated. The integral pullcord timer is fixed at 15 minutes and cannot be disabled.

- To ENABLE the fixed overrun timer, link JP2 as shown in fig. 5.
- To DISABLE the fixed overrun timer, remove the link in fig. 5.

### **6) Adjustable ambient response humidistat (HTP model only)**

The HTP model incorporates an adjustable ambient response humidistat. The fan will increase the extract rate if the humidity rises above the set point – adjustable via the pot shown in fig. 5.

- To LOWER the set-point use a small screwdriver to turn the adjuster Fig.5. CLOCKWISE. This makes the controller MORE sensitive.
- To RAISE the set-point use a small screwdriver to turn the adjuster Fig.5. ANTICLOCKWISE. This makes the controller LESS sensitive.

➔ Note: The ambient response feature will automatically boost the fan to 13l/s if the humidity rises quickly irrespective of the set point and run on for the pre-determined timeout period.

### **7) Pullcord (TP and HTP models only)**

The integral pullcord activates the timer (see 4 and 5 above) and the fan will run at 13l/s for the set time period. If the integral pullcord is pulled for a second time (once activated), the timer will be cancelled and the fan will revert back to the trickle extract rate.

➔ To remove the pullcord, cut the cord and leave the switch in place. There is no need to switch the fan on/off beforehand.

## 8) System pressure detection (dMEV, TP & HTP models)

The fan can detect the system pressure for fault finding. If the fan seems noisy or cannot achieve the desired flow rate, this could be due to a blocked duct or the ducting has not been suitably stretched during installation (if flexible ducting is used). This is displayed during the first 15 minutes EVERY time the fan is powered off and on (via the isolator). The number is displayed in Pascals (Pa) and the higher the number, the more torturous the system (and air path) – i.e. harder for the fan to move the air through the ducting. As a consequence the fan has to use more energy and it will increase the fans noise level.

The fan will maintain the correct airflow rate up to a maximum of 30Pa system pressure. The system pressure will be different for all speeds, but highest on the 13l/s setting.

9) **Fan silent running boost mode:** This feature delays the boost operation for a maximum of 20 minutes to reduce noise and cold drafts while bathing. After LS is disconnected, the fan will look at the amount of time since the LS was activated and then run the fan on boost for that same period or to a maximum of 20 minutes, whichever is shorter.

### a. Dip switch 2 in the off position – Traditional mode (factory set) (fig. 5):

- i. Standard running - with LS off, pullcord off. Fan continues to run on the set trickle speed - 6 or 8l/s.
- ii. When the integral pullcord is activated (**TP & HTP model only**), the fan will run at 13l/s (boost) for a timed period. (**Timer is adjustable on TP model, but fixed to 15 minutes on the HTP model**).
- iii. When the LS is connected, the fan will run at 13l/s until deactivated (plus overrun timed period where applicable).

### b. Dip switch 2 in the on position:

- i. Standard running – with the LS off, pullcord off. Fan continues to run on the set trickle speed - 6 or 8l/s.
- ii. When the integral pullcord is activated (**TP & HTP model only**), the fan will boost as per “**Traditional Mode**” above.
- iii. When the LS is activated, the fan will remain in trickle mode until the LS is disconnected for a maximum of 20 minutes.
- iv. After this 20 minute period or when the LS is disconnected (whichever happens first), the fan will change to 13l/s (boost mode) and continue to run on boost for the same period as between the LS activation and deactivation, up to a maximum of 20 minutes.
- v. However, if the LS is deactivated within 3 minutes of activation, then the fan continues in trickle mode and does not boost.

## 10) Calibration

The airflow sensor is calibrated at the factory using UKAS accredited equipment. Details of the equipment and certification can be found on the inside of the fan.

## 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. Carefully pull the front panel off the inner grille. (fig. 4)
3. Wipe the inlets and front face with a damp cloth until clean. **Be careful not to push dirt into the airflow sensor.**

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

## E. TROUBLESHOOTING

### 1. Display shows 999 during calibration.

- a. Cause:
  - i. The fan failed to calibrate due to excessive system pressure
- b. Solution:
  - i. Check that the ducting is not blocked and where flexible ducting is used that it is stretched as much as possible. Switch the power off and on again to retry calibration.

### 2. Fan continuously speeds up and down:

- a. Cause:
  - i. This usually means the fan cannot stabilise at the desired airflow rate.
  - ii. This could be due to the ducting being blocked, or being very windy.
- b. Solution:
  - i. If this persists after the ducting has been checked or the property is very exposed to high winds, it is recommended to turn the airflow detection system off. (Section C2)

### 3. The fan continuously runs in boost (HTP model only):

- a. Cause:
  - i. The room is damp or recently redecorated.
  - ii. The humidity set point is set too low.
- b. Solution:
  - i. If the room is damp or has recently been decorated, it could take up to 2 weeks for the humidity levels to stabilise. Please leave the fan to dry out the room and after this period the fan should run normally.
  - ii. The humidity set point could be set too low. Adjust the humidity set point to a higher setting. (Section C6)

### 4. The fan does not turn to boost when the humidity is high:

- a. Cause:
  - i. The humidity set point is set too high.
- b. Solution:
  - i. Adjust the humidity set point to a lower setting. (Section C6)

### 5. Water is dripping out of the fan when installed in a ceiling:

- a. Cause:
  - i. This is caused by condensation forming on the inside of the ducting and dripping out of the fan inlet.
- b. Solution:
  - i. This is normal and the fan is designed to handle condensation build up. However a condensation trap connected immediately after the fan will help to prevent water dripping into the room.

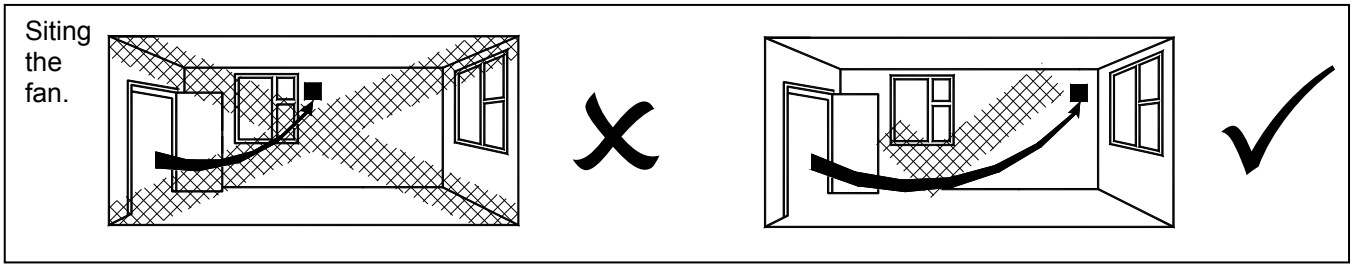


Fig.1 Continuous trickle (6l/s or 8l/s) with no boost facility. (The fan is internally fused)

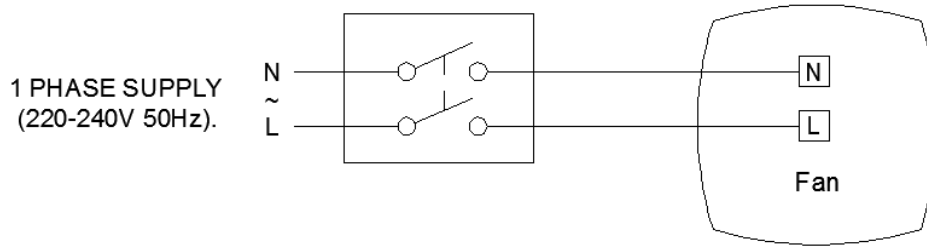


Fig.2 Continuous boost (13l/s) with no trickle facility. (The fan is internally fused)

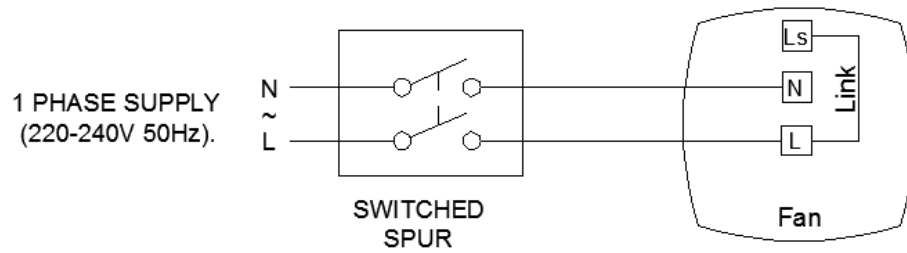


Fig.3 Continuous trickle with boost facility. (The fan is internally fused)

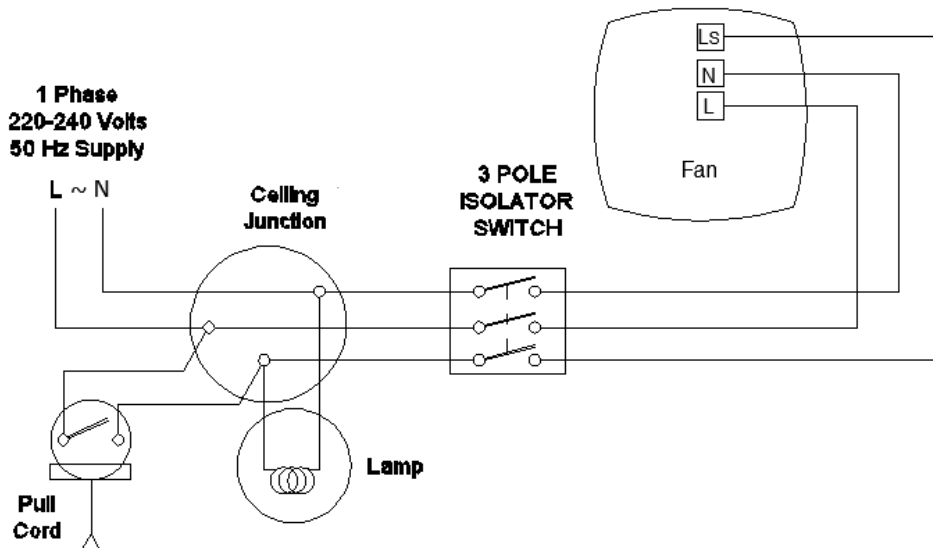
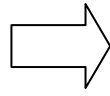




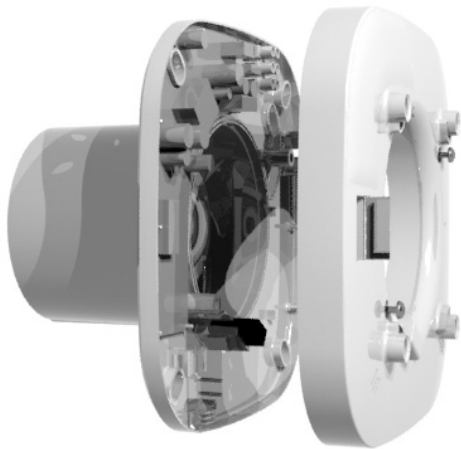
Fig.4. Removing the grille for wiring and setting the controls



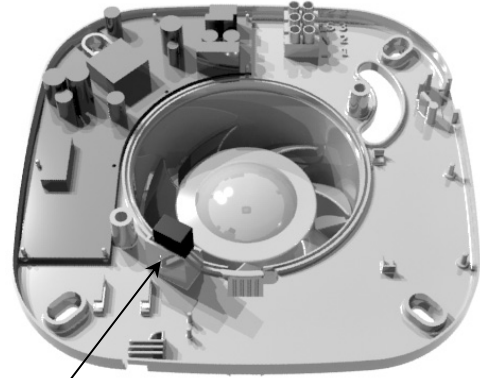
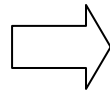
Pull front panel as shown.



Loosen screws – DO NOT REMOVE FROM GRILLE (the screws are self-retaining)



Pull inner grille away from housing as shown.



When replacing grille, ensure the flow sensor is aligned with the corresponding slot in the grille.

Fig.5. Controls

**Note:- Before changing any of the dipswitch positions the fan must be isolated from the power supply.**

**Trickle speed (JP1) (All models)**

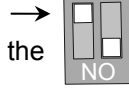
**8l/s** = Remove Jumper Connector

**6l/s** = Replace Jumper Connector (factory set)

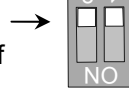
(For **13l/s**, permanently link terminal connections L to LS)

**Airflow detection system (All models)**

**Auto sensing mode** = Dip switch 1 (SW1) into the on position to turn on airflow detection system.



**Manual mode** = Dip switch 1 (SW1) into the off position to turn off airflow detection system (factory set)



**Silent running boost mode (TP & HTP only)**

**Off** = Dip switch 2 (SW1) in the off position Traditional mode (factory set)



**On** = Dip switch 2 (SW1) in the on position This feature will delay the boost operation for a maximum of 20 minutes. (see C.SETUP section Item 9)

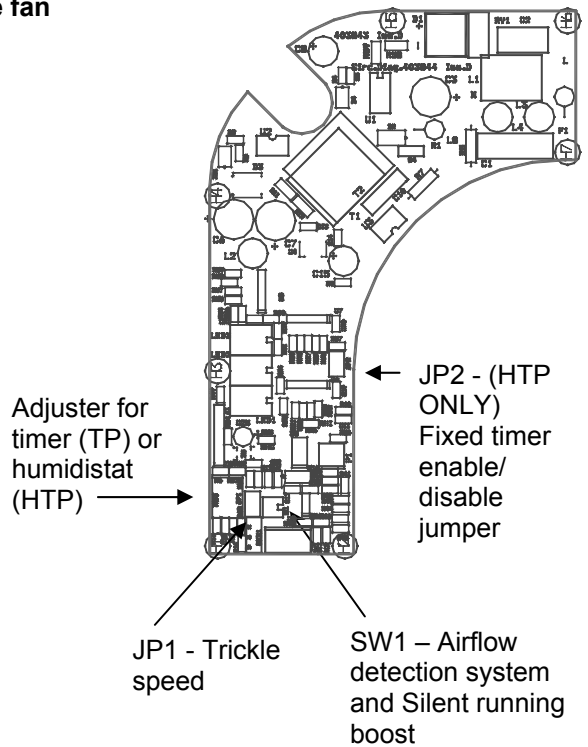
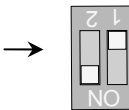


Fig.6. Display and prism



The display can only be seen from the side. This is to allow the installer to view the display with the cover attached as this can affect the airflow through the sensor.

Every 10-20 seconds the display will switch between displaying airflow rate and system pressure. The system pressure will flash.

Airflow will be displayed like this:           **13.2** (13.2l/s flow rate)

Pressure will be displayed like this:       **17** (flashing – 17Pa system pressure)

Fig.7 Calibration Process

After 15 minutes of run time, from initial start up the fan will enter the calibration process. This process will take a few minutes during which time the fan will speed up and down a number of times. This allows the flow sensor to calibrate the fan for the installation.

**Important: The fan will fail to calibrate unless it is installed in a duct or window kit. Do NOT attempt to calibrate before the unit is installed.**

**To bypass the 15 minute wait for calibration to start, pull the pull cord for at least 6 seconds then release it.**

0 0 0

is displayed when calibrating 13l/s

0 0 1

is displayed when calibrating 8l/s

0 1 1

is displayed when calibrating 6l/s

1 1 1

is displayed on calibration completion

9 9 9

is displayed If calibration fails, power cycle the fan in order to retry calibration.

To reset calibration put dip switch 1 (SW1) into the off position, turn the fan on and allow it to run for 30 seconds. Turn the fan off and place dip switch 1 (SW1) to the on position. When the fan is switched back on it will run the start-up procedure and calibrate itself after 15 minutes of running.

## 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

## PRODUCT FICHE

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

Name:	Vent-Axia	Vent-Axia	Vent-Axia
Model ID (Stock Ref.) :	Lo-Carbon Response dMEV - 404535	Lo-Carbon Response TP - 404876	Lo-Carbon Response HTP - 404877
SEC Class	C	C	C
SEC Value ('Average')	26.23	26.23	26.23
SEC Value ('Warm')	11.86	11.86	11.86
SEC Value ('Cold')	51.31	51.31	51.31
Label Required? (Yes/No=Out of scope)	No	No	No
Declared as: RVU or NRVU/UVU or BVU	RVU-UVU	RVU-UVU	RVU-UVU
Speed Drive	Multi-Speed	Multi-Speed	Multi-Speed
Type HRS (Recuperative, Regenerative, None)	None	None	None
Thermal Eff: [ (%), NA(if none)]	N/A	N/A	N/A
Max. Flow Rate (m3/h)	46.80	46.80	46.80
Max. Power Input (W): (@Max.Flow Rate)	1.70	1.70	1.70
LWA: Sound Power Level (dB)	50.02	50.02	50.02
Ref. Flow Rate (m3/s)	0.01	0.01	0.01
Ref. Pressure Diff. (Pa)	N/A	N/A	N/A
SPI [W/(m3/h)]	0.05	0.05	0.05
Control Factor & Control Typology: (CTRL/ Typology)			
Control Factor; CTRL	0.65	0.65	0.65
Control Typology	Local Demand Control	Local Demand 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
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
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
For UVUs (Instructions Install Regulated Supply/Extract Grilles Façade)	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>
Sensitivity p. Variation@+20/-20 Pa: (for Non-Ducted Vus)	N/A	N/A	N/A
Air Tightness-ID/OD-(m3/h) (for Non-Ducted Vus)	N/A	N/A	N/A
Annual Electricity Consumption: AEC (kWh/a)	0.37	0.37	0.37
Annual Heating Saved: AHS (kWh/a)			
AHS: Average	26.23	26.23	26.23
AHS: Warm	11.86	11.86	11.86
AHS: Cold	51.31	51.31	51.31

# 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 539209

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