

Lo-Carbon dMEV Unit

CONTINUOUS EXTRACT FAN

INTEGRAL CO2 AND HUMIDISTAT

Installation and Wiring Instructions



Stock Ref. N°

44 46 72 – CO2+H

220-240V~50Hz

Vent-Axia[®]

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

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Installation and Wiring Instructions for the Lo-Carbon dMEV CO2+H extractor fan.



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 young children or infirm persons without supervision.
- J. Young children should be supervised to ensure that they do not play with the appliance.

DESCRIPTION

The dMEV 100mm fan is a continuously running extract fan for kitchens, utility rooms, bathrooms and toilets. The integral CO2 and Humidistat sensor maintains the best possible air quality whilst using the minimum amount of energy and prevents over ventilation.

Long life ball bearing DC motor with anti-vibration mounts provides low noise transmission into plasterboard/panels for silent operation.

The fan can be wall, window or panel/ceiling 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 FITTING KIT

A window fitting kit is available (stock ref. 442947).

A. INSTALLATION

IMPORTANT: The fan should only be used in conjunction with fixed wiring.

PANEL/CEILING MOUNTING

1. For panel/ceiling mounting the fan should be installed into a closed duct system of at least 1.2m long 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 front 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). **Take extra care when removing the inner cap to prevent damaging the CO2 sensor cable/connector.**
6. Replace the grille and tighten the retaining screw.
7. After installation, ensure impeller rotates freely.

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. 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.
3. 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).
4. Wire the fan as described in Section B-Wiring. Adjust any settings as required (see Section C-Setup). **Take extra care when removing the inner cap to prevent damaging the CO2 sensor cable/connector.**
5. Replace the grille and tighten the retaining screw.
6. After installation, ensure impeller rotates freely.

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 fan should only be used in conjunction with fixed wiring.
- The cross - sectional area of supply cord used should be ranged from 1 -1.5mm².
- Cable entry can only be made from the rear of the fan.
- 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 cable clamps 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.

ACCESSING THE CONTROL SETTINGS – (Fig. 4 and 5)

1. Loosen the screw in the bottom of the grille and remove the front grille.
2. **Carefully** pull both parts of the inner cap from the centre of the fan away from the chassis **ensuring the CO2 sensor cable/connector is not strained/pulled. The CO2 sensor is mounted in the cap.**
3. Adjust the settings as outlined below.

TRICKLE SPEED SELECTION (6l/s or 9l/s) – (Fig. 7)

In normal running mode the fan can extract at either 6l/s (22m³/h) or 9l/s (32m³/h) flow rate. The fan will boost to 15l/s (54m³/h) when the LS connection is switched.

- Factory set at **6l/s** (22m³/h).
- Remove jumper connector (JP1) if **9l/s** (32m³/h) extract flow rate is required.

BOOST SPEED SELECTION (Fig. 8):

The fan has two boost speed settings for different installation requirements:

- 1) Max speed: Dip switch 2 in the 'OFF' position.
- 2) 15l/s speed: Dip switch 2 should be in the 'ON' position. (Factory set)



Dip switch 1 should be in the 'ON' position for constant trickle mode.

INTEGRAL CO2 SENSOR (Fig. 8):

IMPORTANT: DO NOT TOUCH THE CO2 SENSOR!

The fan will slowly increase in speed between the preset trickle and boost speeds in proportion to the ambient CO2 ppm (part per million) above 700ppm or 1000ppm (as set at installation).

- 1) 700ppm – 1400ppm – Dip switch 1 should be in the 'OFF' position.
- 2) 1000ppm – 1500ppm – Dip switch 1 should be in the 'ON' position. (Factory set)



INFORMATION: Outside fresh air will be around 400-500ppm. Rooms with CO2 levels of 1000ppm or above will appear to be 'stale' or 'stuffy'.

INTEGRAL HUMIDITY AND TEMPERATURE SENSOR

The fan will slowly increase in speed between the preset trickle and boost speeds in proportion to the Relative Humidity (%RH) set points of 70%RH (trickle speed) and 90%RH (boost speed). To prevent nuisance activation during the night or cold weather, the fan monitors the ambient temperature and increases the 70%RH set point to take into consideration the air becoming more dense as the temperature falls.

The humidity set points cannot be adjusted.

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 push the front panel of the grille upwards away from the base part of the grille (fig. 6).
3. Wipe the inlets and front face with a damp cloth until clean.

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

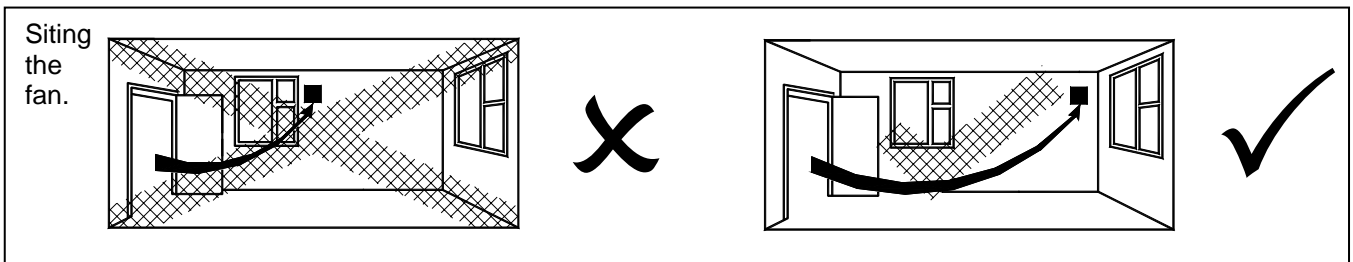


Fig.1 Continuous trickle (6l/s or 9l/s) with no manual boost facility (boosts automatically via CO2 or Humidity sensor)

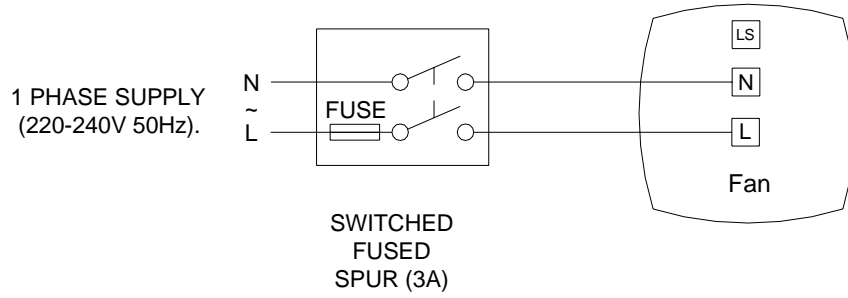


Fig.2 Continuous boost (15l/s or Max) with no trickle facility

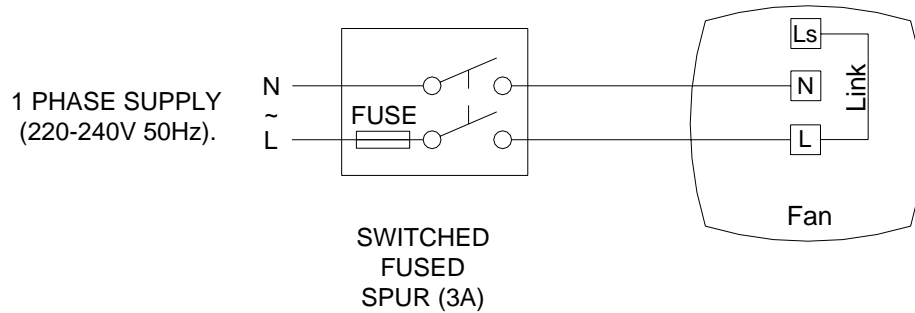


Fig.3 Continuous trickle with boost facility (boosts automatically via CO2 or Humidity sensor)

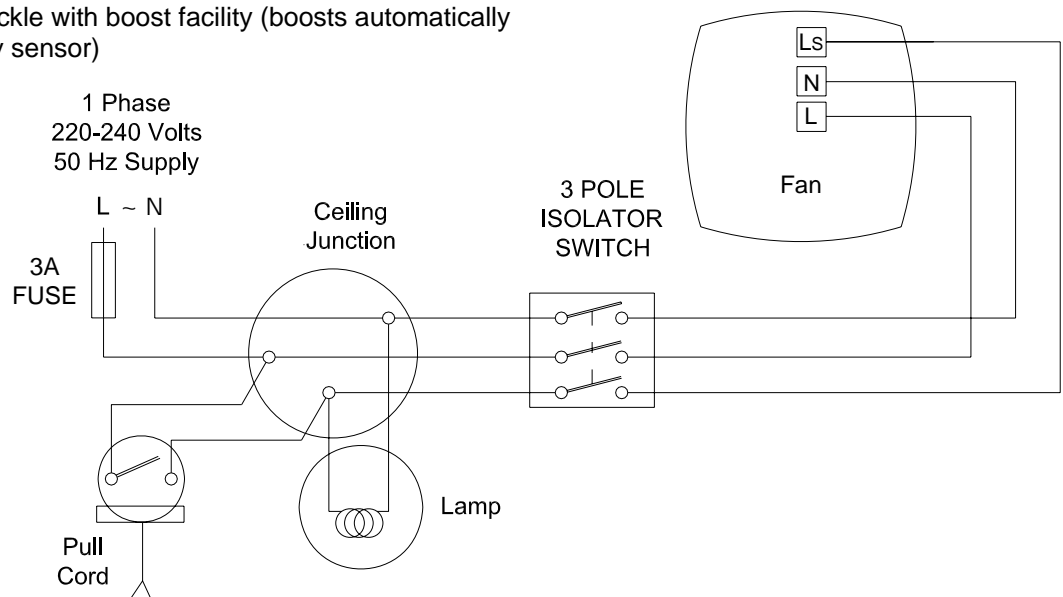
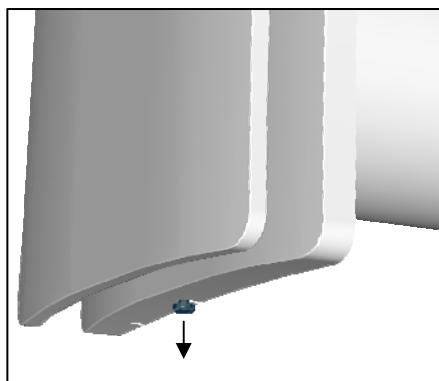
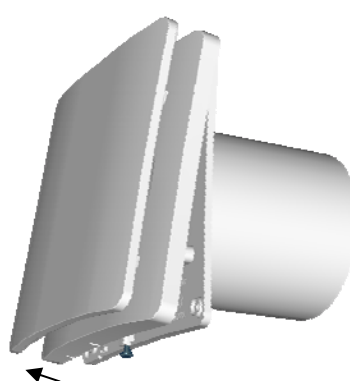


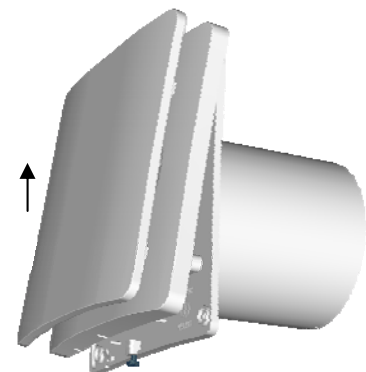
Fig.4. Removing the grille for wiring and setting the controls



1. Loosen screw.

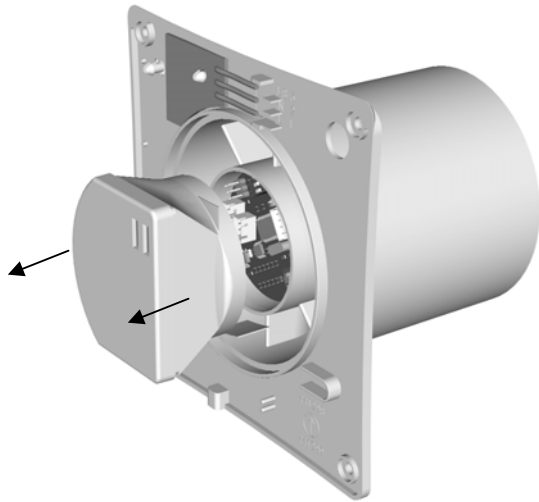


2. Pull grille slightly away from
bottom edge.



3. Push grille upwards until
clear from the fan chassis.

Fig.5. Accessing the control settings



Carefully pull both parts of the inner cap from the centre of the fan away from the chassis **ensuring the CO2 sensor cable/connector is not strained or pulled. The CO2 sensor is mounted in the cap.**

Fig.6. Removing the front grille panel for cleaning.

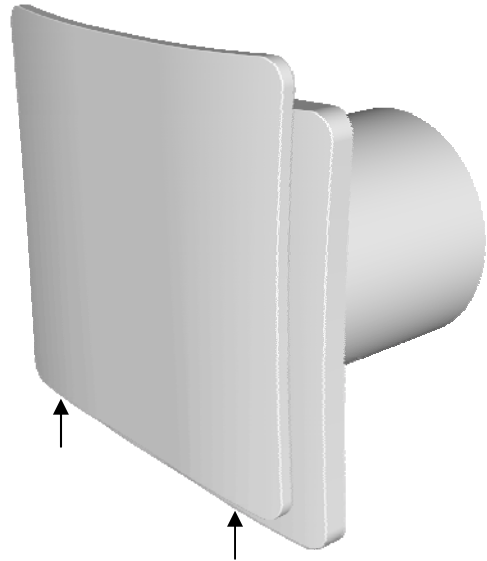
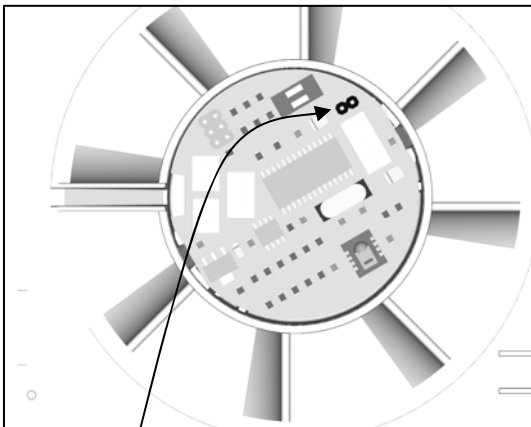


Fig.7. Trickle speed selection



9l/s = Remove Jumper Connector
6l/s = Replace Jumper Connector (factory set)

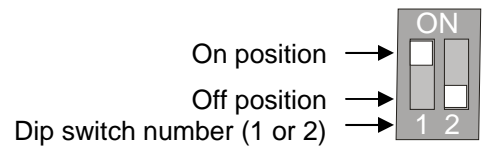
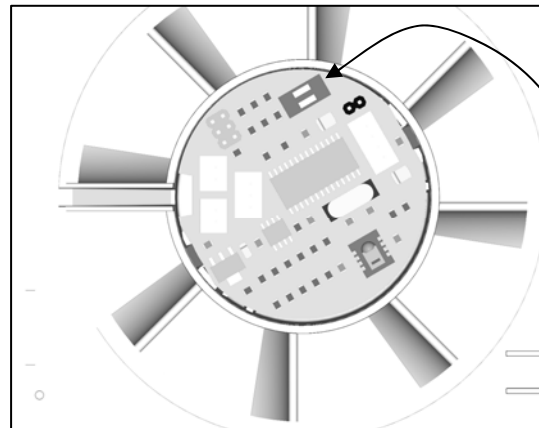
(For **15l/s**, permanently link terminal connections L and LS)

Flow rate conversion:

$$6\text{l/s} = 22\text{m}^3/\text{h}$$

$$9\text{l/s} = 32\text{m}^3/\text{h}$$

Fig.8. CO2 and Boost speed selection



CO2 Setting - Dip switch 1:

700-1400ppm – Dip switch 1 should be in the 'OFF' position.

1000-1500ppm – Dip switch 1 should be in the 'ON' position. (Factory set)

Boost speed setting – Dip switch 2:

Max speed boost: Dip switch 2 in the 'OFF' position.

15l/s speed boost: Dip switch 2 should be in the 'ON' position. (Factory set)

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 effect your legal rights

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As part of the policy of continuous product improvement Vent-Axia reserves the right to alter specifications without notice.