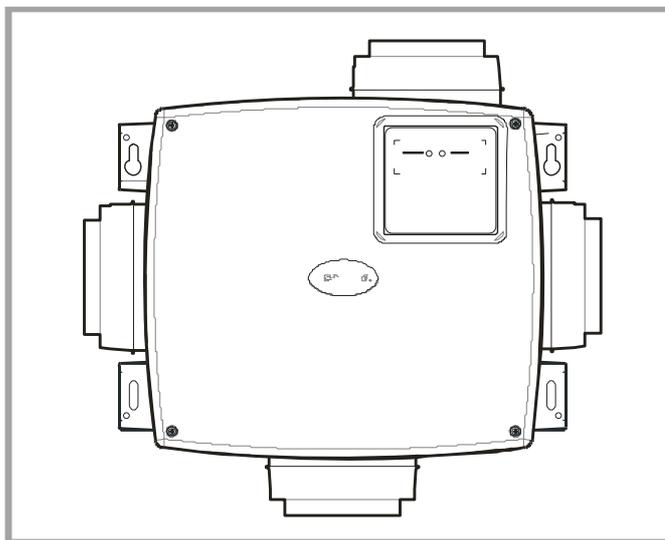


Lo-Carbon MULTIVENT MVDC-MS & MVDC-MS H VENTILATION SYSTEMS

Installation and Wiring Instructions



Stock Ref. N°

MVDC-MS 437634B

MVDC-MS H 443298A

220-240V ~50Hz

Vent-Axia®

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

IP22

CE

Installation and Wiring Instructions for the Multivent Multi-Speed Extract 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 exhaust air temperatures higher than 40°C or less than -5°C.
- Relative humidity above 90%
- Possible obstructions which would hinder the access or removal of the Unit.
- Sudden ductwork bends or transformations close to the Unit.

SAFETY AND GUIDANCE NOTES

1. DO NOT install this product in areas where the following may be present or occur:
 - 1.1. Excessive oil or a grease laden atmosphere.
 - 1.2. Corrosive or flammable gases, liquids or vapours.
 - 1.3. Ambient temperatures higher than 40°C or less than -5°C.
 - 1.4. Possible obstructions which would hinder access or removal of the Fan.
2. 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.
3. The fan should be provided with a 3A fused, isolator switch capable of disconnecting all poles, having a contact separation of at least 3mm.
4. Ensure that the mains supply (voltage, frequency, and phase) complies with the fan's rating label.
6. When the fan extracts air from a room containing an open flue of a gas or fuel burning appliance, precautions must be taken to avoid the back-flow of gases into the room.
7. The fan should not be used where it is liable to be subjected to direct water spray.
8. The fan should be mounted at the highest point in the system to protect it from condensation build up.
9. This fan should be vented to the outdoors.
10. 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.
11. Children should be supervised to ensure that they do not play with the appliance.
12. PLEASE NOTE: Some older fluorescent and low energy lighting products can interfere with other electronic/timing circuits. For reliable operation of timers use post 2000 low energy bulbs or tungsten filament bulbs in the room lighting circuit.

TYPICAL INSTALLATION



A. INTRODUCTORY NOTES

The MVDC-MS is an M.E.V (Mechanical Extract Ventilation) unit designed for simultaneous extract ventilation of multiple areas such as bathrooms, kitchens and toilets. The MVDC-MS employs a highly efficient backward curved centrifugal motor impeller set and is designed for continuous 24-hour use.

The MVDC-MS has 3 speed settings (Normal, Boost and Purge). Normal and Boost speeds are adjustable, whilst Purge is maximum speed. To achieve these 3 speed selections there are 2 LS inputs. The product will run at Normal speed unless the input from an accessory calls for a change to Boost or Purge speed.

For the **MVDC-MS (437634B)** the Boost setting is activated using a switched live supply (LS input). The other remaining LS input can be used to switch the unit to Purge speed.

For the **MVDC-MS H (443298A)** the Boost setting is activated by the internal humidity sensor. The internal humidity sensor uses one of the two available LS inputs, the other remaining LS input can be used to switch the unit to Purge speed.

The **MVDC-MS H** has the option to switch from Normal to Boost speed (in effect over-riding the internal humidity sensor), this can be achieved by connecting an isolated switched live connection to the LS connection on the power supply terminal block. This must be isolated by using, for example an Isolator Relay Control, Vent-Axia part number 442030, or similar.

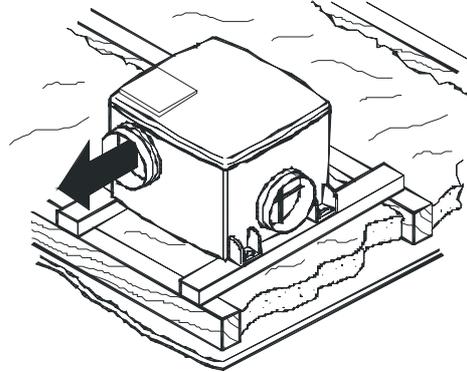
B. SITING

The MVDC-MS can be mounted in 3 orientations for convenient installation in roof voids with a height $\geq 250\text{mm}$.

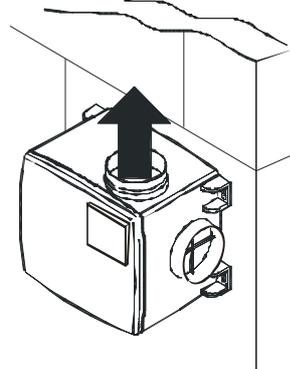
NOTE:

If the unit is sited in the heated void of the dwelling a condensate drain should not be necessary. When sited in a cold loft, consideration should be given to fitment of a condensate drain, particularly in Northern areas of the United Kingdom.

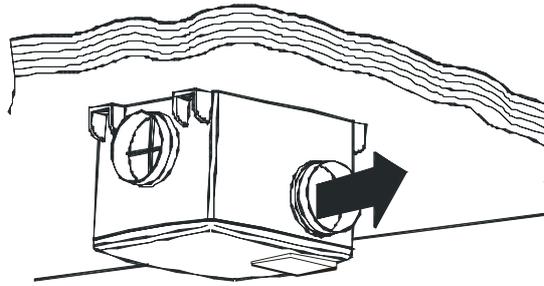
a). **Base mounted Installation** with ducting radiating out horizontally.



b). **Vertically mounted Installation** with the exhaust spigot at top. The electrical connections must come out of the bottom of the unit in order to maintain the water ingress protection.

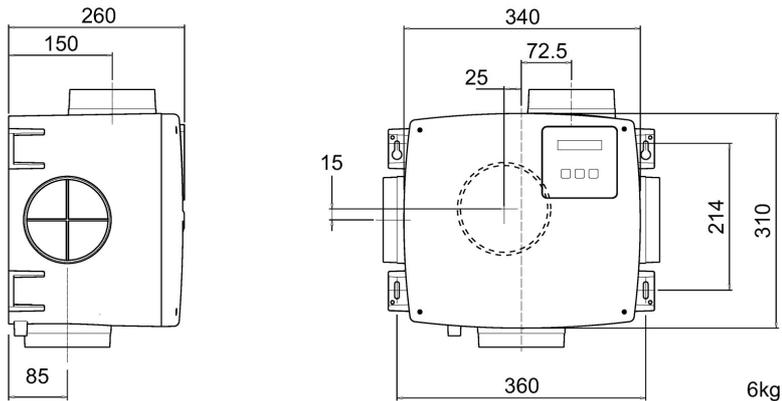


c). Ceiling mounted Installation.



See the dimensional details below for the mounting hole positions.

-Spigot diameters are 125mm



C. INSTALLATION

To reduce the system resistance in your duct system, and therefore lower the speed, power consumption and noise of the fan, please follow these instructions:

- Keep the length of duct runs to a minimum, particularly the exhaust duct run.
 - Use larger diameter ducting rather than smaller.
 - If you need to use flexible ducting, make sure that it is fully extended and not crushed, sagging or torn.
 - Try to minimise the use of dampers by having similar length duct runs to the inlets.
 - The bend radius, (measured to the inside of the bend), should be at least 1x the duct diameter. The larger, the better.
 - Avoid having any bends, filters or other obstructions within 250mm of the fan inlets and outlet.
1. Position the MULTIVENT, taking into consideration the position of the rooms to be ventilated, the exhaust position, the drainage position and the electrical services. Ensure there is adequate access for installation and maintenance. Securely mount the MULTIVENT through the mounting brackets on the casing using the appropriate anti-vibration mounts, screws, washers, rubber bushes etc.
 2. Ducting passing through an unheated space should be insulated.
The MVDC-MS can be connected to either Ø125mm or Ø100mm ducting. Remove the blanking caps to connect Ø125mm ducting. To connect Ø100mm ducting, peel out the centre of the cap with a screwdriver as indicated on the cap and leave the cap surround in position.
Please note that the exhaust duct must always be Ø125mm ducting.

D. WIRING



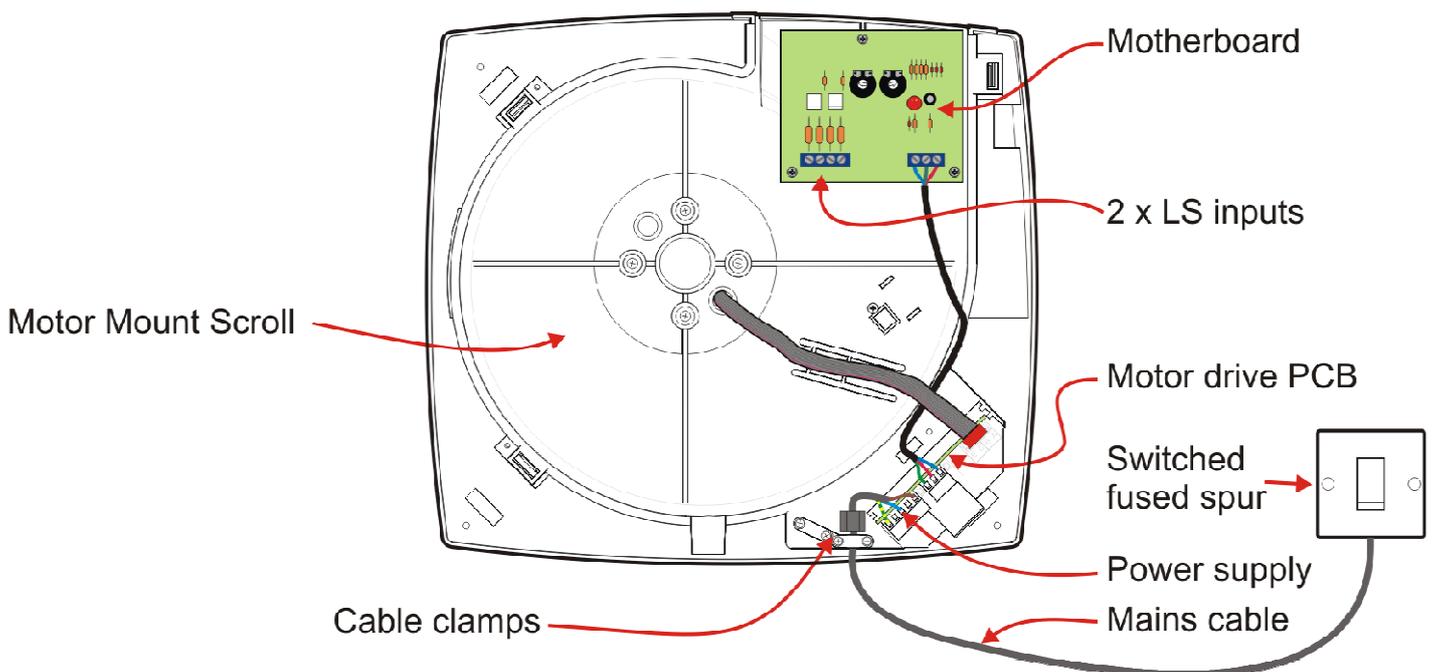
WARNING: THE MULTIVENT AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING THE INSTALLATION / OR MAINTENANCE.

THE MULTIVENT UNIT MUST BE EARTHED.

A. MVDC-MS (437634B):

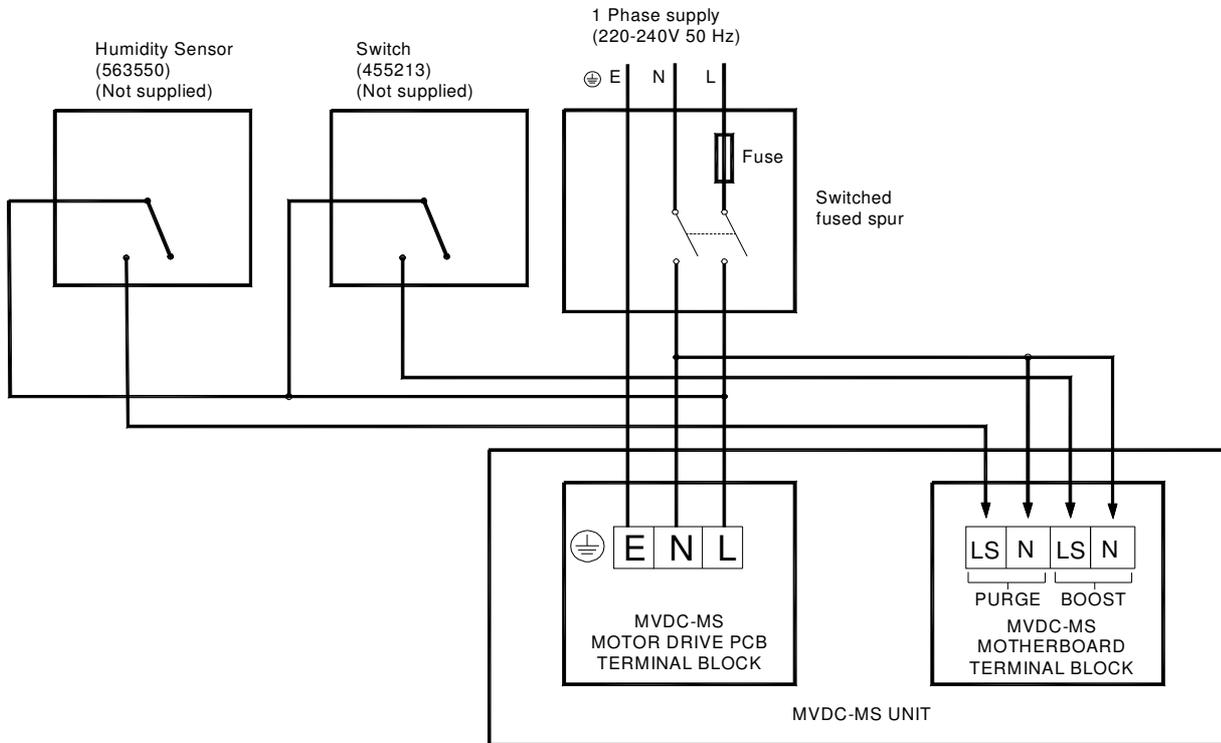
1. Remove the cover by undoing the four screws and lifting it away.
2. With the power off, connect a suitable mains power cable from a switched, fused spur to the power supply PCB. Use the cable clamps and clip provided to secure the lead.
3. Ensure all connections are correct and that all terminal screws and cable clamps are securely fastened.
4. To enable the fan to switch to boost or purge speed when a light is turned on, connect the switched live connection from the lighting circuit to one of the LS connections on the mother board.
5. The switched live output (230V) from any other switch or controller (such as a pullcord or push button switch, humidistat or PIR detector) can be connected to the LS terminal instead of connecting to a lighting circuit.
6. Following these set-up instructions, switch the mains supply on and check the system is operating correctly.

MVDC-MS (437634B) CONNECTION DIAGRAM



MVDC-MS (437634B) WIRING DIAGRAM

To achieve the stated energy efficiency rating with Local Demand Control (LDC), the unit should be used with two sensor and be able to run on all three speeds. An example of how this can be achieved is shown below, the sensors/switches can be chosen based on the installation requirements.



B. MVDC-MS H (443298A):

1. Remove the cover by undoing the four screws and lifting it away.
2. With the power off and using a suitable mains power cable from a switched, fused spur connect the Live and Neutral to the power supply Terminal block and connect the Earth to the power supply PCB. Use the cable clamps provided to secure the lead.
3. Ensure all connections have are correct and that all terminal screws and cable clamps are securely fastened.
4. To enable the fan to switch to purge speed (maximum speed) connect the switched live connection to the 'Purge' LS connection on the mother board.
5. The output (230V) from the internal humidistat PCB is connected to the 'Boost' LS terminal.
6. 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.
7. To **Lower** the set-point use the enclosed adjuster to turn the adjuster **ANTICLOCKWISE**. This makes the controller **More** sensitive.
To Raise the set-point use the enclosed adjuster to turn the adjuster **CLOCKWISE**. This makes the controller **Less** sensitive.
8. Following these set-up instructions, switch the mains supply on and check the system is operating correctly.

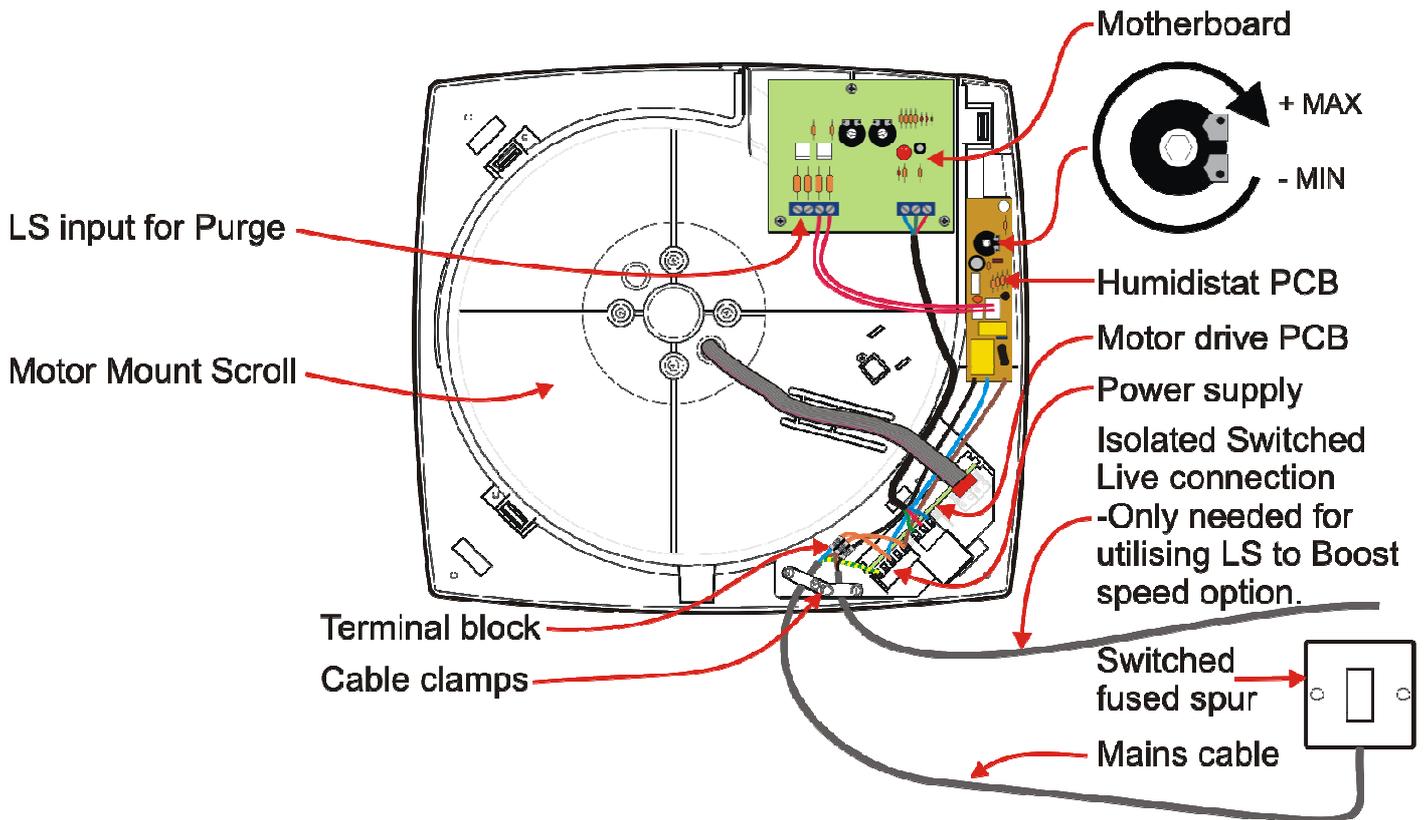
To allow the MVDC-MS H to switch from Normal to Boost speed using the LS Input:

1. Connect an isolated switched live connection to the LS connection on the power supply terminal block.



WARNING: THE SWITCHED LIVE CONNECTION TO THE LS CONNECTION MUST BE ISOLATED, FOR EXAMPLE USING AN ISOLATOR RELAY CONTROLLER, VENT-AXIA PART NUMBER 442030 OR SIMILAR.

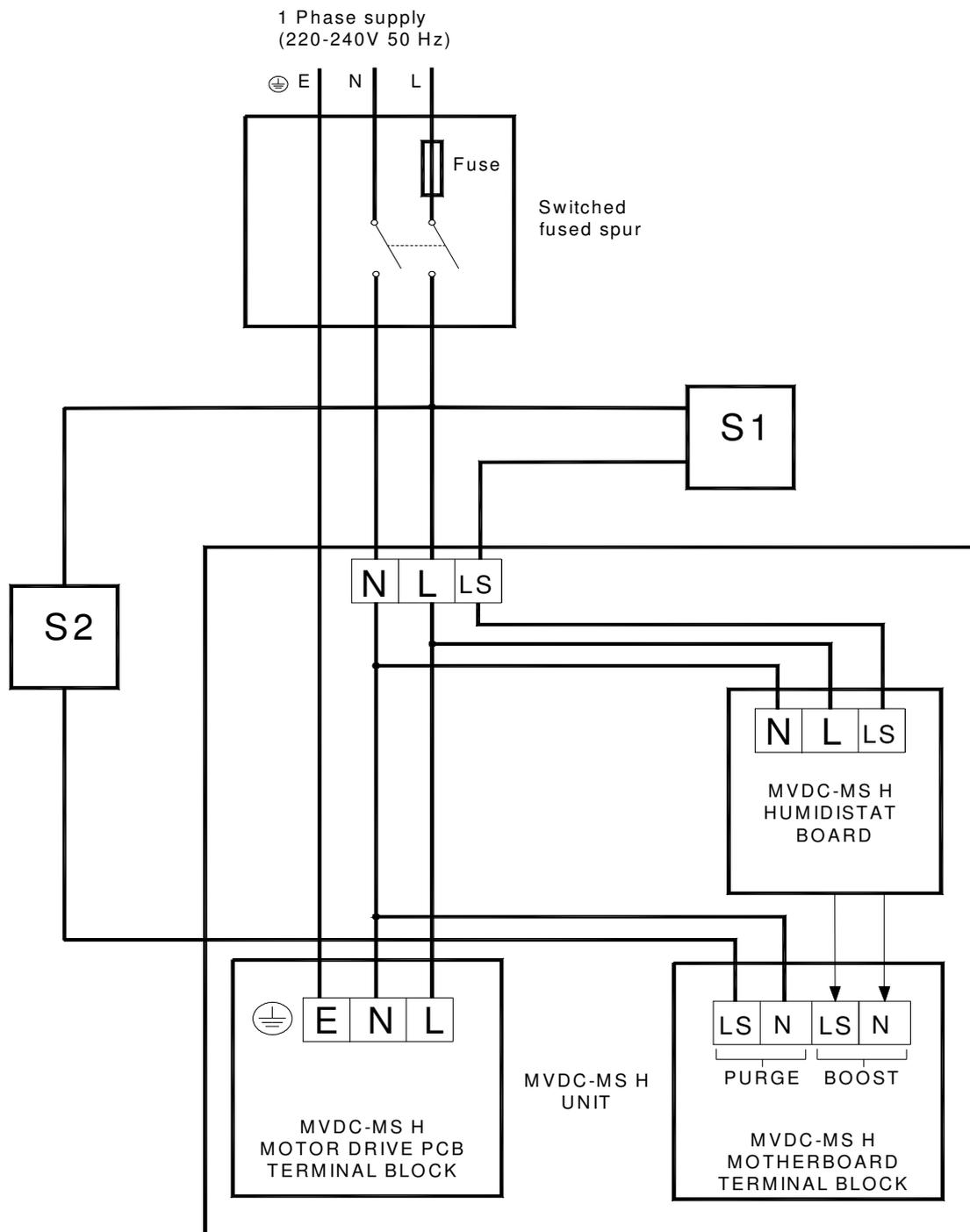
MVDC-MS H (443298A) CONNECTION DIAGRAM



Wiring the MVDC-MS H using two sensors in combination with the humidity sensor.

The arrangement below will allow the use of two sensors (S1 and S2) to trigger the Boost and Purge functions, in addition to the Humidistat triggering Boost.

To achieve the stated energy efficiency rating with Local Demand Control (LDC) the arrangement below should be used. The sensors (S1 and S2) can be chosen based on the installation requirements.



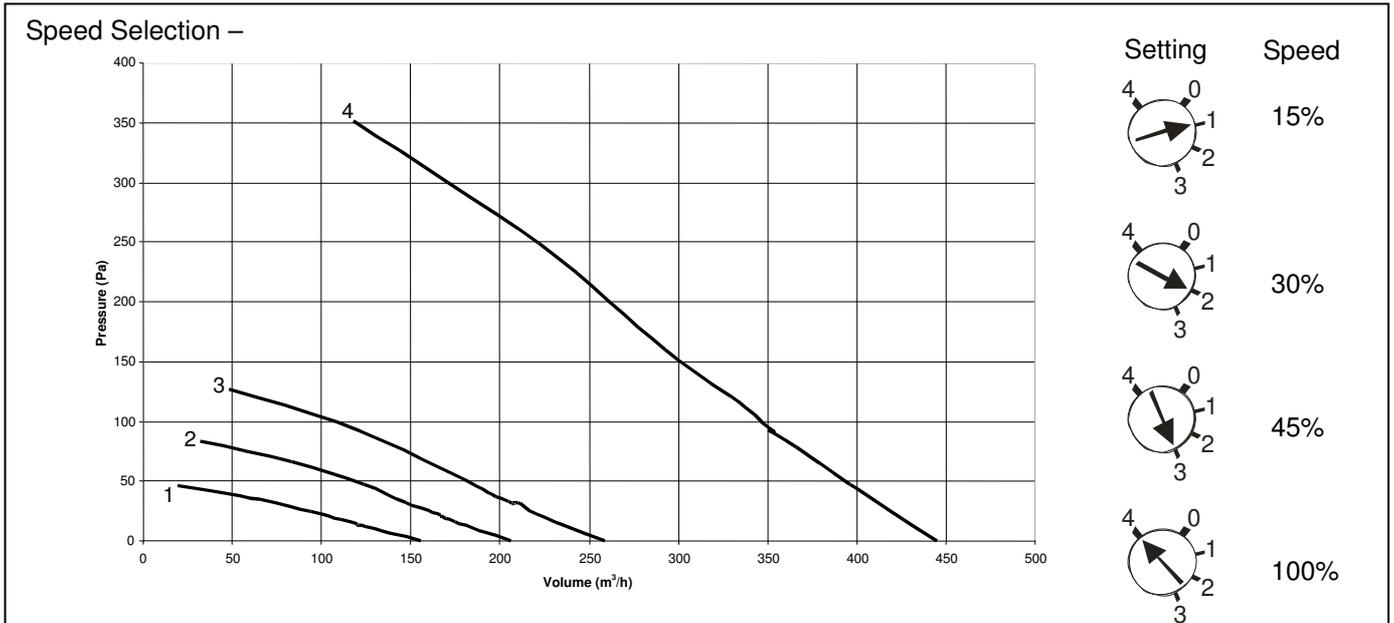
E. Commissioning

The speed and boost settings are fully adjustable via the potentiometers located on the front of the unit. However, for ease of adjustment during commissioning there are 4 pre-marked settings to assist in speed selection. As marked on the unit, the **left hand** potentiometer controls the **'Normal'** speed, the **right hand** potentiometer controls the **'Boost'** speed.

USE THE BLUE POTENTIOMETER DRIVER SUPPLIED WITH THE UNIT. Turning the potentiometer **clockwise** will increase the speed.

If a purge switch is installed this activates the unit at maximum speed.

Once the MVDC-MS is commissioned, apply white label over marked area containing 'Boost' and 'Normal' holes to ensure the potentiometers are inaccessible and that the unit returns to an IP22 rated status.



F. SERVICING AND MAINTENANCE.

This product contains a self-cleaning backward curved impeller that requires no servicing. **The fan has sealed for life bearings, which do not require lubrication.**

PRODUCT FICHE

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

Name:	Vent-Axia	Vent-Axia
Model ID (Stock Ref.) :	MVDC-MS - 437634 - LDC	MVDC-MSH - 443298 - LDC
SEC Class	B	B
SEC Value ('Average')	-27.43	-27.43
SEC Value ('Warm')	-11.92	-11.92
SEC Value ('Cold')	-54.49	-54.49
Label Required? (Yes/No=Out of scope)	Yes	Yes
Declared as: RVU or NRVU/UVU or BVU	RVU/UVU	RVU/UVU
Speed Drive	Variable Speed	Variable Speed
Type HRS (Recuperative, Regenerative, None)	None	None
Thermal Eff: [(%), NA(if none)]	N/A	N/A
Max. Flow Rate (m3/h)	335.88	335.88
Max. Power Input (W): (@Max.Flow Rate)	41.70	41.70
LWA: Sound Power Level (dB)	54.23	54.23
Ref. Flow Rate (m3/s)	0.07	0.07
Ref. Pressure Diff. (Pa)	200	200
SPI [W/(m3/h)]	0.07	0.07
Control Factor & Control Typology: (CTRL/ Typology)		
Control Factor; CTRL	0.65	0.65
Control Typology	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;	<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)	In F&W	In F&W
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)	0.35	0.35
Annual Heating Saved: AHS (kWh/a)		
AHS: Average	28.30	28.30
AHS: Warm	12.80	12.80
AHS: Cold	55.36	55.36

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

Vent-Axia

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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

Web:-www.vent-axia.com Email:- info@vent-axia.com

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

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