



SIMX Vent-Axia MultiVent Continuous Extract Ventilation User Manual

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SIMX Vent-Axia MultiVent Continuous Extract Ventilation



Product Information

The MultiVent Continuous Extract Ventilation System is a versatile ventilation system designed for simultaneous ventilation of separate areas in the home and as a multipoint extraction system for various commercial applications. It can be wall, ceiling, or loft mounted and includes condensate drains for areas with high humidity content. The product code for this system is FAN7200.

Product Usage Instructions

- Before using the MultiVent continuous extract ventilation system, please read all instructions in the user manual for correct function and safety.
- Ensure basic safety precautions are followed when using electrical appliances to reduce the risk of fire, electrical shock, and personal injury.
- Choose an appropriate location for installation, either on the wall, ceiling, or in the loft, based on your specific needs.
- If the ambient air has a high humidity content, make sure to connect the condensate drains provided.
- Connect the system to the ducts using the appropriate sizes: 125mm or 150mm.
- Ensure the fan wattage does not exceed 85W to prevent any electrical issues.
- For optimal performance, maintain the fan pressure within the recommended range of 0-810Pa.
- The free air fan performance is 159 l/s (572 m³/hr), which indicates the maximum airflow capacity of the system.
- At a pressure of 200Pa, the system performs at a rate of 123 l/s.
- The minimum specific fan power is 0.14 W/l/s, indicating the energy efficiency of the system.
- The sound level of the system is 52 dB(A).
- The system is classified as Class B.
- The SEC value represents the energy consumption of the system in different temperature conditions: -26.9 kWh/a (average warm) and -11.4 kWh/a (cold).
- The control factor is 0.65, indicating the efficiency of local demand control.
- Make sure to check and maintain appropriate internal and external leakage rates to ensure proper functioning.

- The system's annual electricity consumption is provided in kWh/a.
- The annual heating saved is measured in kWh/a for average warm and cold conditions.

The MultiVent continuous extract ventilation is designed for the simultaneous ventilation of separate areas in the home and as a multipoint extraction system for a wide range of commercial applications. The units can be wall, ceiling or loft mounted. Where the ambient air has a high humidity content condensate drains are provided.

Description	Product Code
MultiVent Continuous Extract Ventilation System	FAN7200

Thank you for purchasing this quality MultiVent continuous extract ventilation system. To ensure correct function and safety, please read all instructions before using the product and keep all instructions for future reference.

SPECIFICATIONS

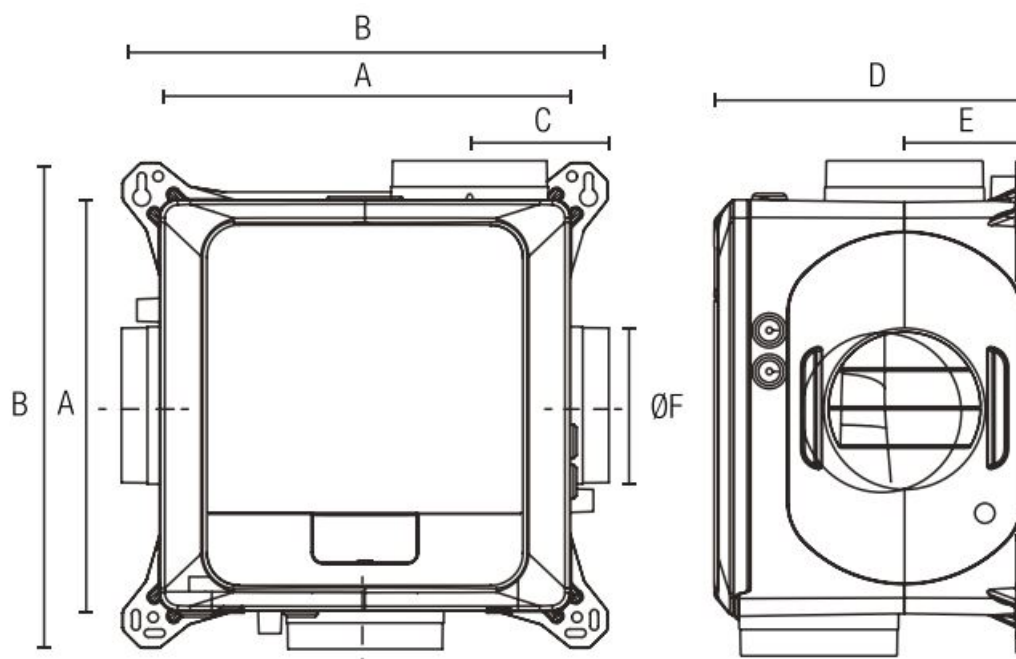
Duct (mm)	Max. Fan Watts (W)	Max. Fan Pressure (Pa)	Free Air Fan Performance		Performance at 200 Pa (l/s)	Minimum Specific Fan Power (W/l/s)	Sound dB(A)
			(l/s)	(m3/hr)			
125mm & 150mm	85	810	159	572	123	0.14	52

SEC				Control		Max. Leakage Rates		Annual Electricity Consumption (kWh/a)	Annual Heating Saved (kWh/a)		
Class	Value								Factor	Typology	Internal %
	Average	Warm	Cold								
B	-26.9	-11.4	-54.0	0.65	Local Demand Control	<5	<5	0.6	28.3	12.8	55.4

TYPICAL EXTRACTION LOCATIONS

TYPICAL EXTRACTION LOCATIONS – BATHROOMS, TOILETS, LAUNDRIES, KITCHENS

The unit uses a highly efficient backward curved centrifugal motor impeller set and is designed for continuous 24 hour use. Four settable speeds can be configured to change these speeds based on an integrated sensor or separate switch inputs (not supplied). The unit will run at a normal flow rate until the humidity sensor or external switch input trigger a speed change. In the case of the switched live and digital inputs, the units will perform a step change in speed to the appropriate level. In the case of the analog inputs and humidity sensor, the unit can be programme to give a proportional response to the change in conditions.



The extracted air is replaced through natural air flow through the gaps around doors and windows, trickle inlet slots, or best of all, the Manrose Puro Filtered Passive Vent Kit (DCT4565) with typhoon cowl that has an effective aerodynamic area of 3000mm² without the filter and 1400mm² with the filter fitted. Puro Filtered Passive Vent Kit DCT4565 Effective Aerodynamic Area

with Filter	1400mm ²
without Filter	3000mm ²

A	B	C	D	E	ØF
330	390	111	250	96	125

Supply	Max. Operating Temp	IP Rating	Motor Housing	Impeller & Outer Rotor	Weatherproof Cowl	Ducting
220-240V AC, 50Hz	40°C	IPX2	Die Cast Aluminium	PBT Plastic	150mm Stainless Steel	Aluminium Foil

MULTIVENT CONTINUOUS EXTRACT VENTILATION SYSTEM INSTALLATION AND ELECTRICAL CONNECTION MUST BE CARRIED OUT BY A REGISTERED ELECTRICIAN

CAUTION

- Do not install this product where excessive oil or a grease laden atmosphere is or may be, present
- Do not install this product where corrosive or flammable gases, liquids or vapours are, or may be, present
- Do not install this product where it may be subject to direct water spray from hoses
- Do not install this product where access to, or removal, of the unit may be obstructed
- Before use, please check that the supply voltage and that of the appliance are the same (see product rating label).

- All wiring and wiring connections must comply with all current national wiring rules and regulations including AS/NZS3000:2017, or latest edition thereof.
- Any changes or modifications made or attempted to this product, without the prior written approval of the manufacturer, will void any and all stated warranties.
- This MultiVent continuous extract ventilation system is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are capable of, and have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the MultiVent continuous extract ventilation system.
- In case of damage to the supply cord, switch off the device and do not tamper with it. Damaged supply cords must only be repaired or replaced exclusively by the manufacturer or by an appointed representative. Failure to comply with the above may endanger the safety of people and cause possible damage to the whole system.
- The unit must not be connected directly to a tumble drier.
- Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.
- The exhaust grille should be located at least 600mm away from any flue outlet.

BEFORE INSTALLING THE MULTIVENT CONTINUOUS EXTRACT VENTILATION SYSTEM, MAKE SURE YOU HAVE TURNED OFF THE MAIN ELECTRICITY SUPPLY. DO NOT TURN IT BACK ON UNTIL THE MULTIVENT CONTINUOUS EXTRACT VENTILATION SYSTEM IS FULLY INSTALLED AND READY TO USE. ALL ELECTRICAL WORK MUST BE CARRIED OUT BY A REGISTERED ELECTRICIAN IN ACCORDANCE WITH THE LATEST WIRING RULES AS/NZS3000.

IMPORTANT

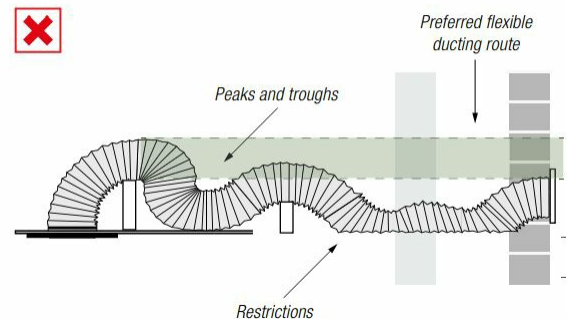
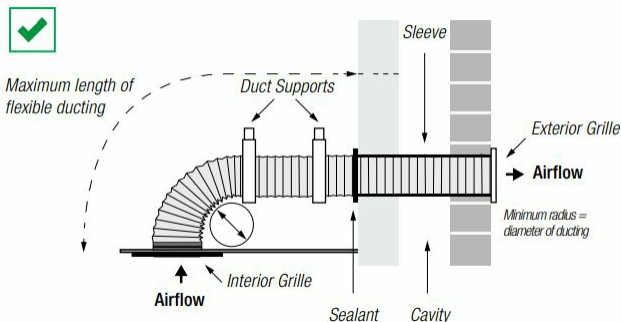
- This MultiVent continuous extract ventilation system is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. Keep combustible materials away from the unit and keep them away from the sides and rear.
- Do not use near or in the immediate vicinity of a bath or swimming pool or any wet areas.
- When installing fan through an external wall, an external wall grille must be fitted at all times.
- This appliance incorporates an earth connection for functional purposes only.
- To protect against electric shock, do not immerse cord or plug in water or any other liquids.
- Do not insert or allow foreign objects to enter any ventilation openings, as this may cause an electric shock, fire or damage to the fan.
- Do not put fingers or foreign objects into the grille while in operation.
- Any changes or modifications made or attempted to this product, without the prior written approval of the manufacturer, will void any and all stated warranties.
- To prevent overheating of this fan, keep the air inlets and outlets clean and free of anything that may cause blockage. Check all inlets and outlets from time to time to ensure it is clear of any dirt or dust accumulation. DO NOT COVER.
- Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
- This product contains recyclable materials. Do not dispose of this product as unsorted council waste. Please contact your local council for the nearest collection point.

INSTALLATION

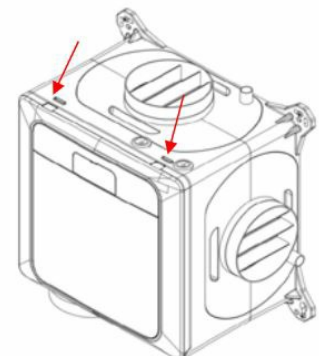
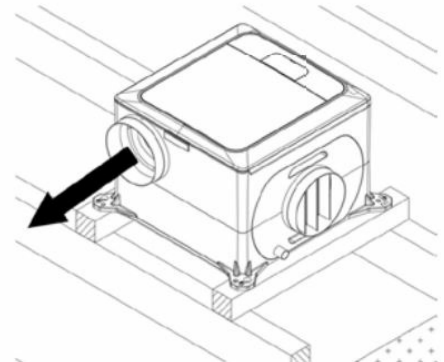
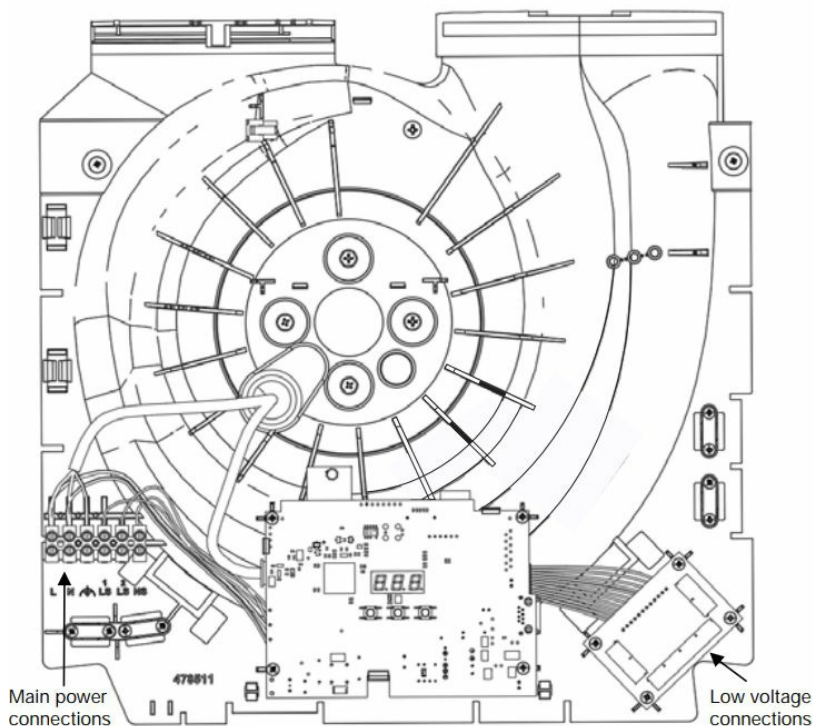
Position the unit, taking into consideration the position of the rooms to be ventilated, the exhaust position and the electrical services. Ensure there is adequate access for installation and maintenance. If the unit is sited in the heated void of the dwelling a condensate drain should not be necessary. When sited in a roof cavity, consideration should be given to fitment of a condensate drain. Alternatively the unit and ducting can be externally insulated to minimize condensation within the units housing.

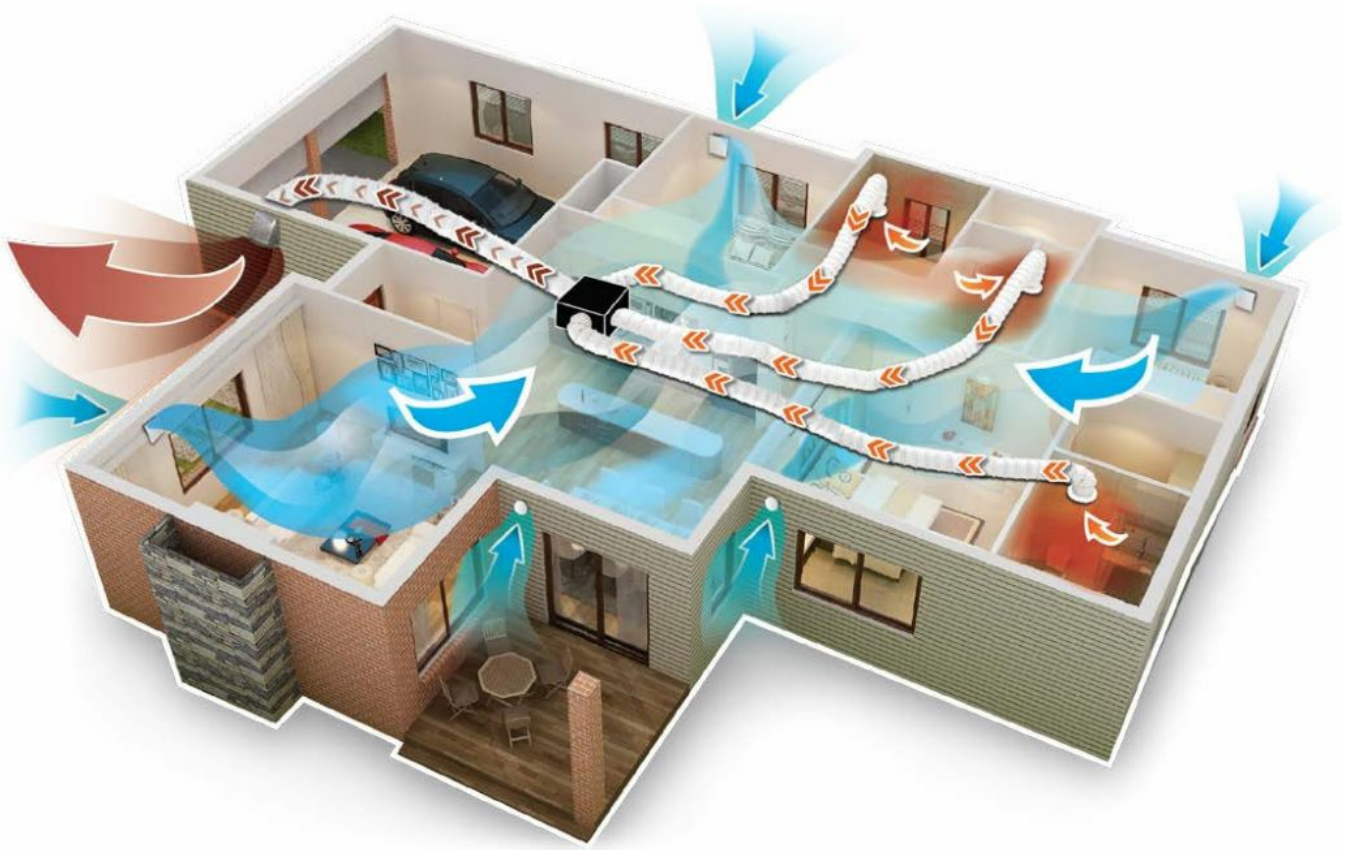
To reduce the system resistance in your duct system, and therefore lower the speed, power consumption and noise of the fan, follow these guidelines:

- Keep the length of duct runs to a minimum, particularly the exhaust duct run.
- When using the flexible ducting in the kit, make sure that it is fully extended and not crushed, sagging or torn.
- Try to minimize the use of diffusers/valves 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.
- Avoid having any bends, filters or other obstructions within 250mm of the fan inlets and outlet.



Securely mount the unit through the mounting holes on the casing using appropriate fixings (not supplied) for the mounting substrate. Fixings to be capable of securing 4x the weight of the unit. Unit weight: 4.1kg. Anti-vibration mounts, acoustic mats or rubber bushes can also be used. Installation example shown below. To maintain the IPX2 rating of the unit, the unit must not be mounted with the cover removal slots facing upwards (as indicated by the red arrows), or at an angle where they are visible from above. All other orientations are acceptable.





As per the picture above try to position the MultiVent fan housing in a location central to all of the rooms that you are planning to extract from. Also remember that the unit could create noise and should be mounted away from bedrooms. Mount the MultiVent using the 4 mounting points. Bear in mind that the exhaust (main extraction) is using 150mm aluminium foil ducting and a 150mm weather proof cowl. Each kit contains 3 x 6m lengths of 125mm aluminium foil ducting for the extraction points.



- Cut a 126mm (minimum) hole in the required locations in the kitchen (minimum 2m away from the stove top), bathroom and toilet.
- Disassemble the 125mm diffusers (DCT0186) and mount the 125mm spigots to the ceiling in each location using the four screws supplied.
- Fit the diffuser escutcheon by pushing it into the spigot.



- Extend the 125mm aluminium foil ducting and slide the spigot collar over the ducting by approximately 150mm.
- Slide the 125mm aluminium foil ducting over the spigot.
- Slide the spigot collar over the ducting pressing it firmly all the way down the spigot clamping the aluminium foil ducting in place on the spigot. To prevent the spigot being pushed out, have another person pushing up from below. Complete the other two rooms following the same instructions.



- Mount the 125mm duct joiner (DCT0037) to the exhaust port of the MultiVent.
- Fit the 150mm to 125mm reducer (DCT3239) to the 125mm duct joiner and tape both joints using the supplied duct tape.



- Fit the 150mm aluminium foil ducting (DCT0214) to the 150mm waterproof cowl with mesh (DCT3619) and tape it to the spigot.
- From outside of the building cut a 150mm (minimum) hole in the outside cladding of the home and push the 150mm ducting through the hole.
- Fit the waterproof cowl to the building exterior and then from the roof space pull the ducting taut and tape it off at the 150mm to 125mm reducer.

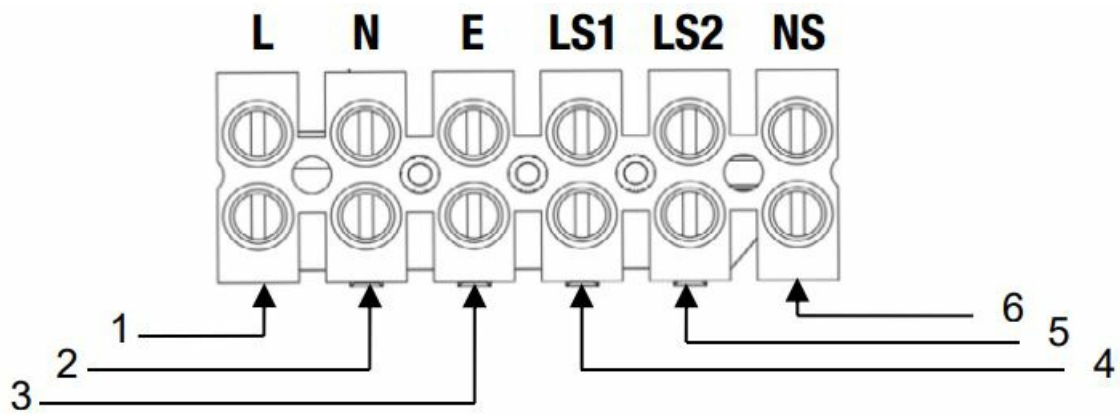


- Extend each length of the 125mm aluminium foil ducting pulling it taut and tape off the three extraction points to the MultiVent unit.
- Install electrical wiring as per page 3 of the instruction manual.

ELECTRICAL CONNECTIONS

To remove the cover, use a coin or similar; depress the retaining tabs via the slots in the side of the unit.

1. With the power off, connect a suitable mains power cable (preferably to an existing lighting circuit) to the screw terminal block (L, N, Earth) connections. Use the cable clamps and clip provided to secure the lead.
2. Two mains voltage Live Switched (LS1 and LS2) connections are provided, and can be used to trigger a change in speed. Common inputs would be from a bathroom lighting circuit. When commissioning the unit, a delay on timer and an overrun timer can be selected and adjusted in the software using the buttons and screen. See Commissioning section on page 10 of this document for details.
3. The switched live output (230V AC) from any other switch or controller, (such as a simple latching pullcord or push button switch, humidistat or PIR detector) can be connected to the LS terminal instead of connecting to a lighting circuit.



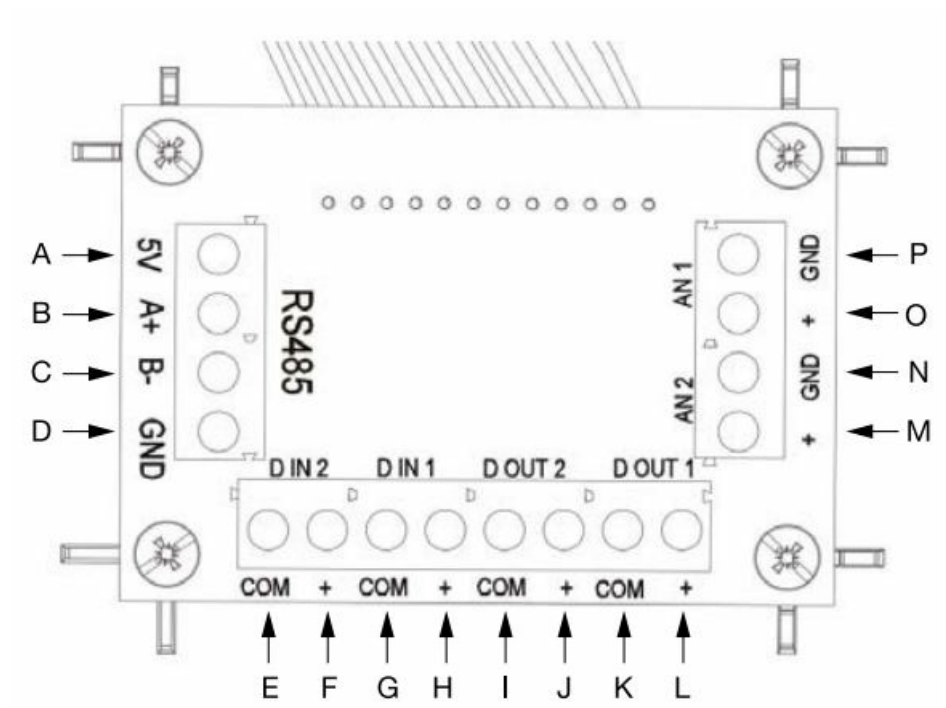
Terminal		Description	Connection
1	L	Live (220-240V AC)	L3 (Brown)
2	N	Neutral	N (Blue)
3		Protective Earth	E (Green/Yellow)

Terminal		Description	Connection
4	LS1	Live Switched 1, (220-240V AC), isolated	L2 (Black)
5	LS2	Live Switched 2 (220-240V AC), isolated	L1 (Grey)
6	NS	Neutral Switched, isolated	Link to N

NOTE: LS1, LS2 and NS terminals are electrically isolated. If the LS connections are used, a connection must be made with the NS terminal. This can be via a jumper or dedicated neutral connection.

LOW VOLTAGE CONNECTIONS

- Important:** Use 4-core, low voltage, twisted pair, telecoms type cable for accessories. Accessories are connected via the IO (Input Output) PCB; see the Low Voltage Connections diagram in the Main fitting and wiring guide.

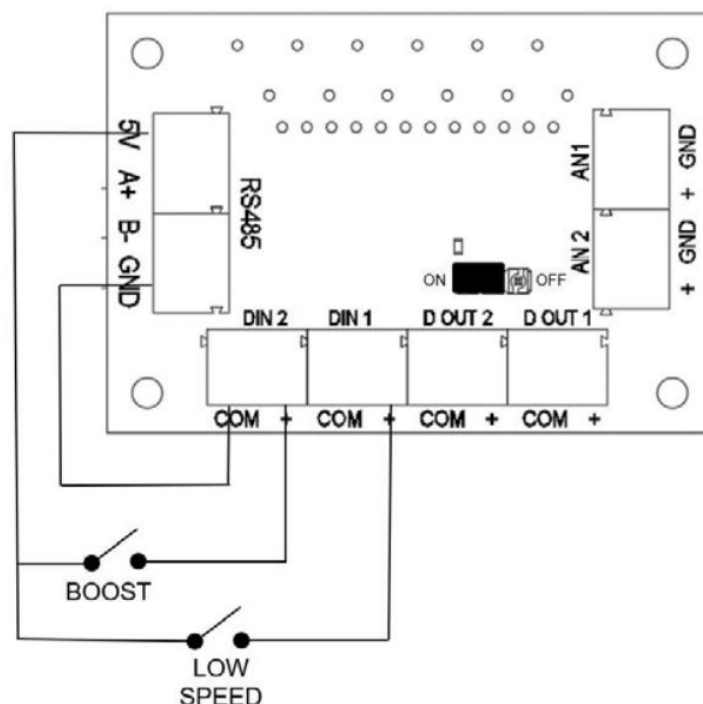


Pos/Label		Description	Action
A	5V	5V Output, Max 250mA	RS485 communication to wired accessories. Data connection (B, C) if available. The 5V and Ground connections are available on all units.
B	A+	Data	
C	B-	Data	
D	GND	Ground	
E	COM	Digital input common	Go to Boost speed (Min.1V, max. 6V). The 5V output from the RS485 connection can be used as a power supply
F	+	Digital input 2	
G	COM	Digital input common	Go to Low speed (Min.1V, max. 6V). The 5V output from the RS485 connection can be used as a power supply
H	+	Digital input 1	
I	COM	Digital output common	Unpowered Boost indicator Switch (switching 6V 50mA max)
J	+	Digital output 2	
K	COM	Digital output common	Unpowered LED fault indicator switch (switching 6V 50mA max)
L	+	Digital output 1	
M	+	Analog input 2	0-10V analogue input Two user settable voltage thresholds with two user settable actions. The unit will run at normal when supplied voltage is between the two thresholds.
N	GND	Ground	
O	+	Analog input 1	
P	GND	Ground	

2. RS485 Wired inputs

The RS485 terminals are used to connect compatible sensors and switches. The connection allows sensors be daisy chained to simplify wiring. The maximum length of cable run from the unit is limited to 250m. Once accessories are wired to the unit, they must be paired to the unit to function correctly.

Low Voltage Switch's – Boost & Low Speed



FEATURE DESCRIPTIONS

• Comfort Mode

If Comfort mode is enabled the unit will behave as follows to all LS inputs:

Trigger	Action
LS input active less than 5 minutes	No action (continue to run at Normal speed)
LS input active more than 5 minutes but less than 20 minutes	Once LS input is removed, fan will run at user selected speed for the length of time LS was present plus the set over-run time (if over run is enabled).
LS input active more the 20 minutes	Unit will Boost after 20mins. Once LS input is removed, fan will run at user selected speed for 20 minutes plus the set overrun time (if over run is enabled).

The above applies to all LS inputs. The times are not adjustable by the user.

• Delay On

A delay can be set so that the unit will not respond to an input until after the set delay has elapsed, applies to LS inputs only.

• Overrun Timer

The unit can be set to run for a defined period after the input is removed, applies to LS inputs only.

• Humidity – Rapid rise*

Rapid Rise humidity response functions to detect rapid rises in humidity when the ambient %RH is under the threshold setting. If a rapid rise is detected the fan will boost until the humidity lowers again.

- **Humidity – Ambient response***

When ambient response is enabled the threshold set point is modified based on the ambient temperature. This helps to prevent nuisance boosting of the unit as temperatures changes during the day.

- **Humidity – Threshold***

The unit will boost when the RH is above the threshold set point.

- **Analogue inputs**

Both analogue inputs have adjustable low and high trigger voltages within the 0-10V range. The response to being above or below either of the threshold voltages is user settable.

Note: The display doesn't show a decimal point, for example at threshold voltage of 5.2V, is displayed as "52" on the unit.

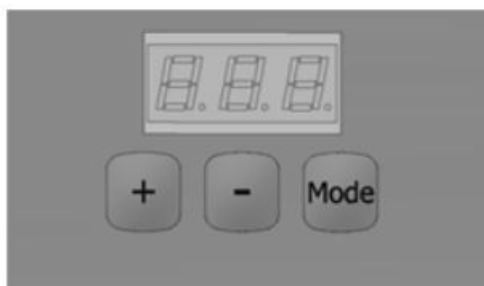
- **Digital Inputs**

The unit can be set to change speed (selectable), based on whether the digital inputs are above or below the threshold voltage. See the table of Low Voltage Connections for details.

- **Display Lock**

To protect the settings on the MultiVent unit a pin code can be enabled via the main menu. Once the lock function has been enabled the Pin code can be set. The 3-digit pin is A to F, 0 to 9, and the default is LoC.

UNIT ADJUSTMENT



1. Commissioning and configuration on all products is supported by the 3 digit user interface and associated push buttons.
2. When powered on, the unit will display the firmware revision number, after a few seconds the unit will display the first option in the menu structure (see below).
3. The display will enter standby mode after 30 seconds, press the Mode button to turn the display back on.
4. Changes to the settings can be made via the + and – buttons, the Mode button will accept changes and move onto the next menu option.
5. When setting the speeds, there is an internal logic: Low<Normal<Boost<Purge. I.e., Boost is always higher than Normal.
6. The actions for each of the Live Switched (LS), inputs are selectable. The setting for delays and over run timers are applicable to all inputs.
7. To restore factory settings, Press and hold "Mode" button for 10 seconds.

USER CONFIGURABLE PARAMETERS

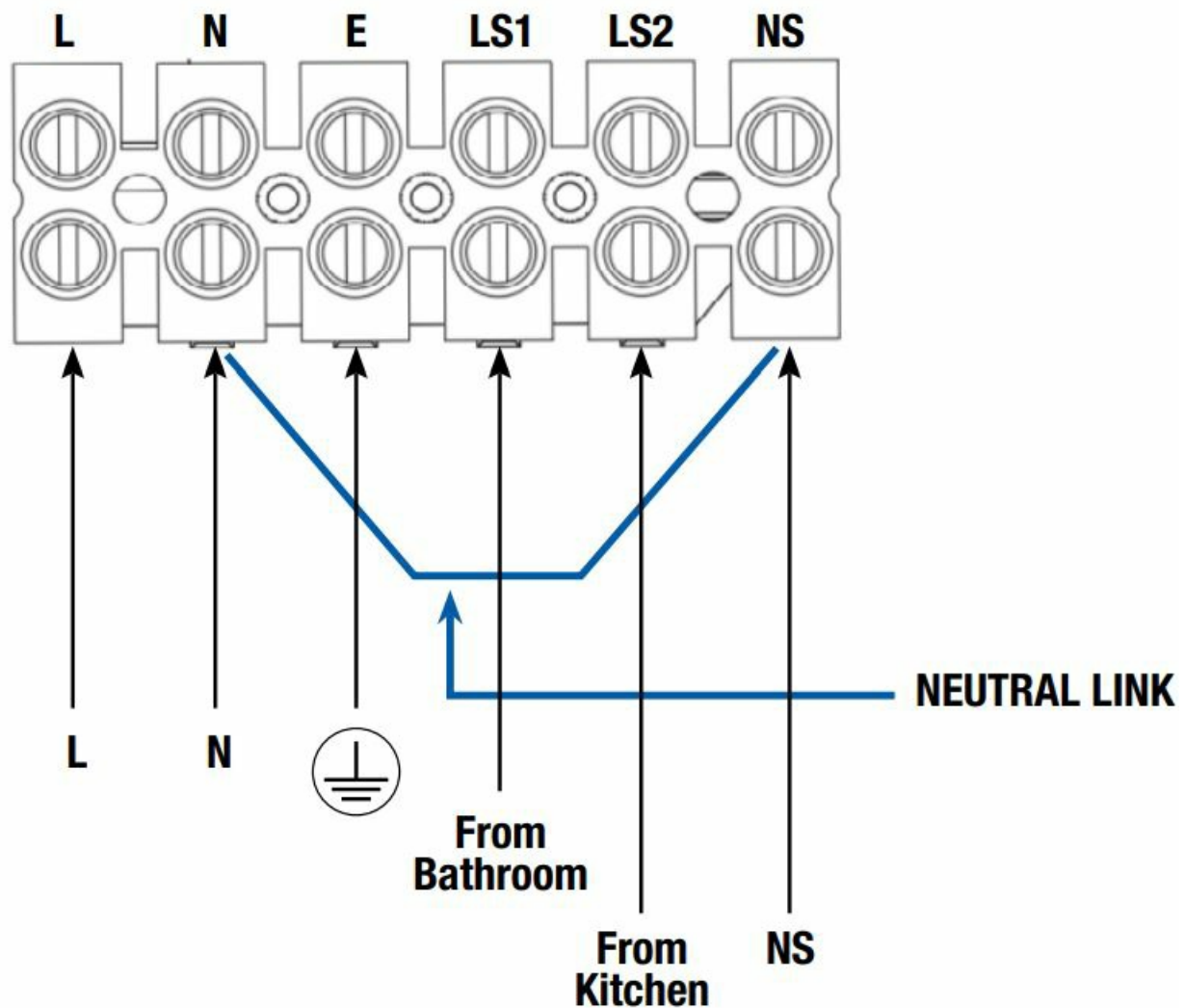
Display Text	Function	Selections	Default
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L10	Low Speed	1 to 97% motor speed	10%
n35	Normal Speed	2 to 98% motor speed	35%
b70	Boost Speed	3 to 99% motor speed	70%
P100	Purge Speed	4 to 100% motor speed	100%
LS1	Live Switch 1	Low, boost or purge speed	Low
LS2	Live Switch 2	Low, boost or purge speed	Boost
LS3	Live Switch 1 & 2	Low, boost or purge speed	Purge
c-n	Comfort Mode	Comfort mode – Yes or No	No
d-n	Delay On	Delay on – Yes or No	No
d10	Delay On Time	Delay to boost duration – 1 to 60 minutes	10m
o-n	Overrun	Overrun – Yes or No	No
o10	Overrun Time	Overrun duration – 1 to 60 minutes	10m
r-y	Humidity – Rapid Rise	Rapid Rise Rapid rise – Yes or No	Yes
A-n	Humidity – Ambient Response	Ambient response – Yes or No	No
h70	Humidity – Ambient Response Threshold	Ambient response threshold – 40 to 80% RH	70%
C2b	CO2 – Boost Threshold	Boost threshold 650 – 4950 PPM	950
C2P	CO2 – Purge Threshold	Purge threshold 700 – 5000 PPM	2000
A1LA	Analogue 1 – Low Action	Low, normal, boost or purge speed	Low
A1HA	Analogue 1 – High Action	Low, normal, boost or purge speed	Boost
A1tL	Analogue 1 – Low Threshold	Low threshold – 1 – 99	15
A1tH	Analogue 1 – High Threshold	High threshold – 1 – 99	75
A2LA	Analogue 2 – Low Action	Low, normal, boost or purge speed	Low
A2HA	Analogue 2 – High Action	Low, normal, boost or purge speed	Boost
A2tL	Analogue 2 – Low Threshold	Low threshold – 1 – 99	15
A2tH	Analogue 2 – High Threshold	High threshold – 1 – 99	75

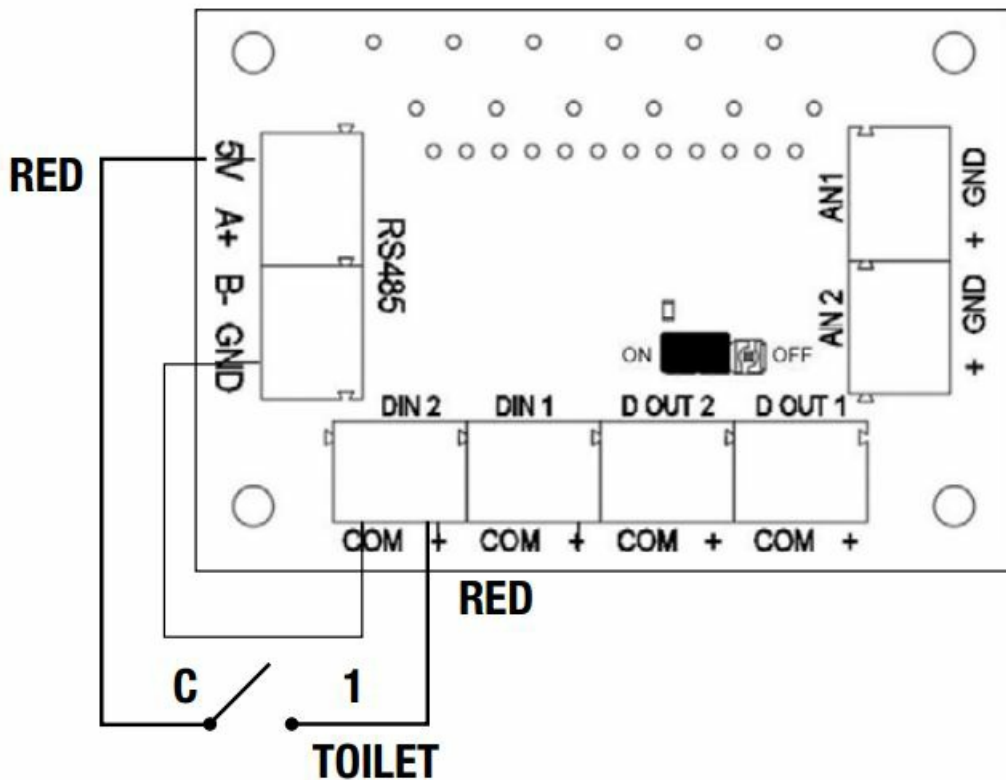
D1	Digital input 1 – Action	Low, boost or purge speed	Low
D2	Digital input 2 – Action	Low, boost or purge speed	Boost
unl	Unlock Code	Turn the menu lock OFF/ON	
PIn	Display Pin	3 characters A to 9	LoC
dt30	Display Time	Adjust display illumination period	30 s
rot	Rotate Display	Invert the display	rot
hu	Humidity	Show the current internal humidity	%
tu	Temperature	Show the current internal temperature	°C
CO2	CO2	Show the current CO2 level	PPM
end	End	End of menu (loop to start)	

COMMISSIONING – TYPICAL 3 ROOM SYSTEM

In the following step we will provide an example of how to wire and control an MultiVent system hardwired to a Bathroom, Kitchen and Toilet. The MultiVent will utilize Humidity – Rapid Rise in its response and the 2 larger rooms (Bathroom and Kitchen) will also provide a PURGE speed function if these 2 rooms are switched on together. Before commencing please ensure that all power is OFF and ensure that it is electrically safe before starting. Wire the 230VAC connections as per the diagram below. Wire mains connections from a suitable source (lighting circuit) or add a new dedicated circuit from an RCD protected 10A MCB with the cable to L (live – BROWN), N (neutral – BLUE) and E (protective earth – GREEN/YELLOW). Wire a 230V connection from a switch located in the Bathroom that could be either a dedicated FAN switch (or a connection from a LIGHT switch) and connect the L (BROWN) wire back to LS1. Do the same from a switch located in the Kitchen and connect the L (BROWN) wire back to LS2. Hardwire a NEUTRAL LINK (BLUE or BLACK) from the N (neutral – BLUE) mains connection to the connection labelled NS (neutral switched).



For the toilet the MultiVent will use its Extra Low Voltage connections for control. Using a short piece of wire connect a 0.5mm (or similar sized wire) from the GND terminal at the RS485 connection to the COM terminal adjacent to DIN 2 (digital input 2) + connector. Using a twin red TPS cable connect one RED core to the + connector at DIN 2 and connect the other RED core to the 5V terminal at the RS485 connection. Run the other end of the cable to the toilet FAN switch and connect the 2 red cores to the C (common) and the normally open (usually labelled 1) connections at this switch. See diagram below.



Using instructions from the section “UNIT ADJUSTMENT” make the following changes:

- LS1 change from Low to BOOST
- D2 change from Purge to BOOST

With this completed the MultiVent once switched ON will operate in NORMAL speed (35%) when the bathroom FAN switch is turned on the MultiVent will operate at BOOST (70%) speed clearing away steam and humidity if the kitchen FAN switch is turned on the MultiVent will operate at BOOST (70%) if both bathroom and kitchen FAN switches are turned on together the MultiVent will operate at PURGE (100%) speed helping to clear away steam and cooking odours. The toilet FAN switch will also turn the MultiVent on to BOOST (70%). Please note that only having the 2 larger rooms (bathroom and kitchen) switched on will activate PURGE (100%) speed.

FOR COMPLIANCE WITH G4/AS1 CLAUSE 1.5

These applications are to be installed and maintained to the requirements of AS/NZS 3666.1 and AS/NZS 3666.2.

FAULT CODES

If the MultiVent unit detects a fault it will display an error message on the HMI display.

Fault Code	Description
F01	Control fault – Unit failed startup check
F02	Motor Fault – No RPM
F03	Humidity/Temp sensor Fault – No value
F04	Temp or Humidity sensor connected via RF/RS485 is offline/Lost

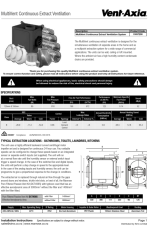
SPARE PARTS

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

1. Individual faulty parts should not be replaced due to complexity of assembly. Only the full scroll assembly is replaceable.
2. To remove the scroll assembly, isolate the power, then use a coin or similar to depress the cover retention clips and remove the cover.
3. Disconnect and remove the power supply and signal leads.
4. Remove the scroll assembly by unscrewing the two screws and unclipping the clips in the opposite two corners and lift the scroll assembly out of the housing.
5. The fan has sealed for life bearings, which do not require lubrication. Expected service life is at least 45,000 hours continuous running.
6. Upon reassembly, check all fixings are tight and secure.

Installation Instructions Specifications are subject to change without notice. Distributed by Simx Limited
sales@simx.co.nz
www.manrose.co.nz

Documents / Resources

	SIMX Vent-Axia MultiVent Continuous Extract Ventilation [pdf] User Manual FAN7200, Vent-Axia MultiVent Continuous Extract Ventilation, Vent-Axia Continuous Extract Ventilation, MultiVent Continuous Extract Ventilation, Continuous Extract Ventilation, Continuous Ventilation, Extract Ventilation, Ventilation
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References

-  [Manrose Extraction Fans | Proven Reliable Extraction Fans & Accessories](#)