AIROVENT RF MEV WH4H CENTRAL MECHANICAL EXTRACT VENTILATION UNIT WITH BUILT-IN HUMIDITY SENSOR

Installation / Operation and Service Guide

For unit versatility it is supplied without a controller. A choice of controllers is available at www.airflow.com

Contents

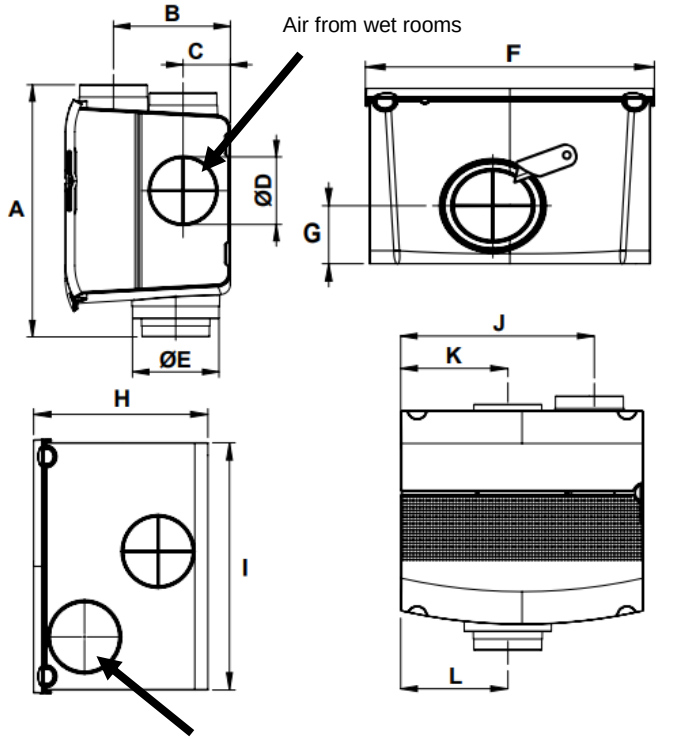
Introduction

The AIROVENT MEV WH4H CENTRAL EXTRACT is operated using a Radio Frequency (RF) control, which means that the central extract unit can be switched remotely and wirelessly by one or several remote controls, up to a maximum of 20. The RF control signal is received by a receiver on the printed circuit board (PCB) inside the central extract unit. A choice of two controls is available to be purchased separately:

- RF Controller – Basic (90001489)
- RF Controller with CO2 Sensor (90001490)

Each remote control is intended for exclusive use with Airflow AIROVENT RF MEV WH4H Central Extract Units. If bought separately, the remote control must be connected for the first time to the Airflow ventilation unit by the installer.

Unit Dimensions (mm)



Model	A	B	C	D	E	F	G	H	I	J	K	L
AIROVENT RF MEV WH4H	463	215	87	124	160	442	100	303	430	344	195	195

Unit Specifications

Specification	AIROVENT RF MEV WH4H
Air flow - up to m^3/h	600
Air flow - up to l/s	166
Fan type	Backward curve centrifugal
Fan motor type	EC
Sound level @ 200m3/h / 55.5l/s Lwa	40
Extract port size and number	4 x 125mm
Port size for expelled air to outside	125mm or 160mm
Controller radio frequency	868.3MHz
Electric supply	230V - 50Hz - 1Ph
Maximum power consumption (W)	50 or 82
Weight Kg	4.4
Dimensions (H x W x D)mm	303 x 442 x 430
Product Codes	**90001575**

Safety Information and Guidance

IMPORTANT!

Read these instructions carefully before installing this Mechanical Central Extract Unit.

This manual covers the operation of the AIROVENT RF MEV WH4H MECHANICAL EXTRACT UNIT WITH BUILT-IN HUMIDITY SENSOR only. It must therefore be read in conjunction with the relevant AIROVENT RF MEV WH4H CONTROLLER User Manual. (Product and part numbers referenced on page 3.)

Installation of this unit must be carried out by a qualified and competent person and carried out in clean, dry conditions where dust and humidity levels are at minimum.

All wiring must conform to current I.E.E Wiring regulations – see **Electrical Installation** on page 8 for more information. Do not install this unit 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 above 40°C or below 0°C, humidity levels over 90% or a wet environment.

Transport and Storage

Units should be stored in their original packaging in a dry environment protected from the weather. If palletised quantities are stored or transported, it is recommended they are covered to protect against particulate damage and contamination.

Suitable storage temperatures are between –10ºC and +40ºC.

Care should be taken when re-packing any unit to ensure the packaging is suitable for the required form of transport. Damage due to improper transportation, storage or installation is not covered under warranty. Care should be taken when lifting. Correct lifting techniques / apparatus should be used when necessary. Dropping or sharp blows to the fan can cause damage. Any damage to the fan or packaging should be inspected by a suitably qualified person or returned to Airflow Developments Ltd for inspection before use.

Fans should not be lifted or carried by an electrical lead, if fitted.

Electrical Installation

All electrical installations must be carried out by an approved electrician in accordance with the latest IET BS7671 Requirements for Electrical Installation, Low Voltage Directive 2014/35/EU, Machinery Directive 89/392/CE, or the appropriate regulations in the country of installation. All fans require a 240V 50 Hz single phase supply. Electric circuit to be used should be isolated before any work is carried out.

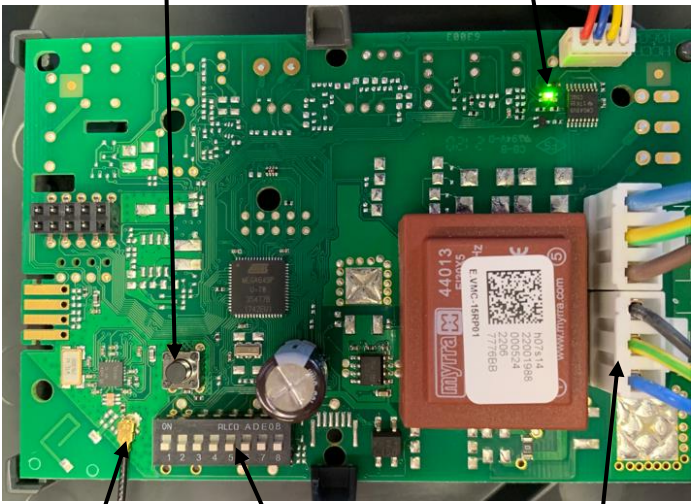
All electrical connections and controls can be found under the units white, top protective cover held on by locking tabs. See Fig. 1 - page 14. The units electrical supply cable must be fitted through the two cable retaining paths moulded into the unit's electrical connection tray. See below:

All cables should be suitably retained and enclosed where necessary to prevent damage taking place. A three-pole lockable isolation switch with a 3mm contact gap should be used on the mains supply to the unit.

The unit is supplied already fitted with a 1 metre long, three core cable as standard. Brown = Live. Blue = Neutral. Green/ Yellow = Earth. This unit should be protected by using a 3amp inline fuse.

Before function testing the fan, ensure the impeller runs freely. Also refer to page 12, Pairing Remote Controls. Function testing should be carried out by switching the fan on for a short time. When the fan is running, checks should be carried out for: impeller rotation direction, undue noise or vibration and power consumption. Immediately switch off the fan should any problems be found, and contact Airflow Developments Ltd. Fan motors used are suitable for continuous running and have a rated duty type S1 (motor is suitable to this duty type and rating at which the fan may be operated for an unlimited period).

PCB Main Features



Mechanical Installation

Mechanical installation should only be carried out by a competent person. Fans are supplied ready for installation. Care should be taken when removing the fan from its packaging. Correct lifting techniques/ apparatus should be used where necessary. Units should be inspected for any damage. If the Unit is found to be damaged, it should be returned to the supplier immediately. Units should be installed to a sufficiently solid structure giving adequate support. Fixings suitable for the mounting surface should be used. Airflow Developments Rubber mount (Part No: 90001294) can be used to help protect against mechanical noise transmission into the mounting surface.

Units are mounted by using the four moulded mounting slots either side of the unit, located at the base of the extract duct connection box. See Fig. 2, page 12.

Units can be mounted at any angle or position. When mounting ensure there is no distortion to the fan case or duct connection box.

Fig.1 – Top Cover Locking Tabs

Fig.2 – Mounting Slots

Fig.3 – Fan housing lifting handles

Duct Connections

This unit has three Ø125m and one Ø125/ 160mm diameter ports moulded on the extract duct connection box. Three ports are sealed off with blanking plates. The Ø125/ 160mm diameter port offers a choice of duct size, this is to help duct system pressure on higher airflows. Care should be taken when removing the Ø125mm diameter port and membrane to ensure no excess force is used which could cause irreputable damage. Failure to remove the whole membrane could cause excess system pressure and noise.

Air is expelled to outside from the unit by the Ø125mm diameter open port in the fan mounting case. See page 4. If the ducting from this port is installed vertically a condensation trap should be fitted (Part No: 90001242).

125mm diameter rigid ducting, or a rigid duct with at least 90% free surface area of a 125mm diameter duct should be used. This is to keep system pressure to a minimum.

Final connections can be made with a short length of flexible ducting (Part No. 52641009) and the correct sealing clamps (Part No. 51849403). The use of excessive amounts of flexible ducting will result in high system pressures and a noisy system. Ridged duct connections should be sealed with a non-hardening sealant (Part No. 90000356).

Pairing RF Controllers to Unit

To operate the unit, a compatible controller is required (sold separately). Two RF remote controllers are available:

- AIROVENT RF MEV WH4H CONTROLLER – BASIC (90001489)
- AIROVENT RF MEV WH4H CONTROLLER WITH CO2 SENSOR (90001490)

Each MEV WH4H unit must have at least one RF Controller paired. Each unit can be paired with up to 20 controllers. A mixture of controllers can be used to suit application.

Before pairing the unit should be isolated from the electric supply for a minimum of 5 seconds. The LED on the controller will flash red then green.

When electric power to the unit is re-installed the LED on the PCB will flash red and green (PCB Main Features – Page 10) and then remain green for 3 minutes. In this is the time RF controllers can be paired to the unit.

Please refer to the instruction leaflet included with the controller purchased with this unit and follow the pairing instructions provided. Once the controller(s) has been paired with the unit, please continue to **Fan Performance Settings** in this manual.

AIROVENT RF MEV WH4H CONTROLLER – BASIC (90001489)

AIROVENT RF MEV WH4H CONTROLLER WITH CO2 SENSOR (90001490)

Fan Performance Settings

This unit has two airflow performance curves to choose from. Each performance curve is broken down into three bands, low, medium, and high. Each band has several fan speeds to choose from. All of which can be set by adjusting the dip switch settings. The dip switch can be found on the units PCB, which is under the unit's white, top protective cover held on by locking tabs. (See Fig. 1 – page 12). Choice of appropriate band speed the fan runs at is by using the RF controllers (Part No's: 900001489 & 90001490).

Note: When controls are set to "auto" the unit will run on the low fan speed range until humidity or CO2 is sensed. When this happens, the unit will automatically increase the fan speed to the medium range then if needed to the high range.

Dips witch 8 = Controls the overrun time when the unit is sensing humidity.

When in the OFF position = 15 minutes.

When in the ON position = 30 minutes.

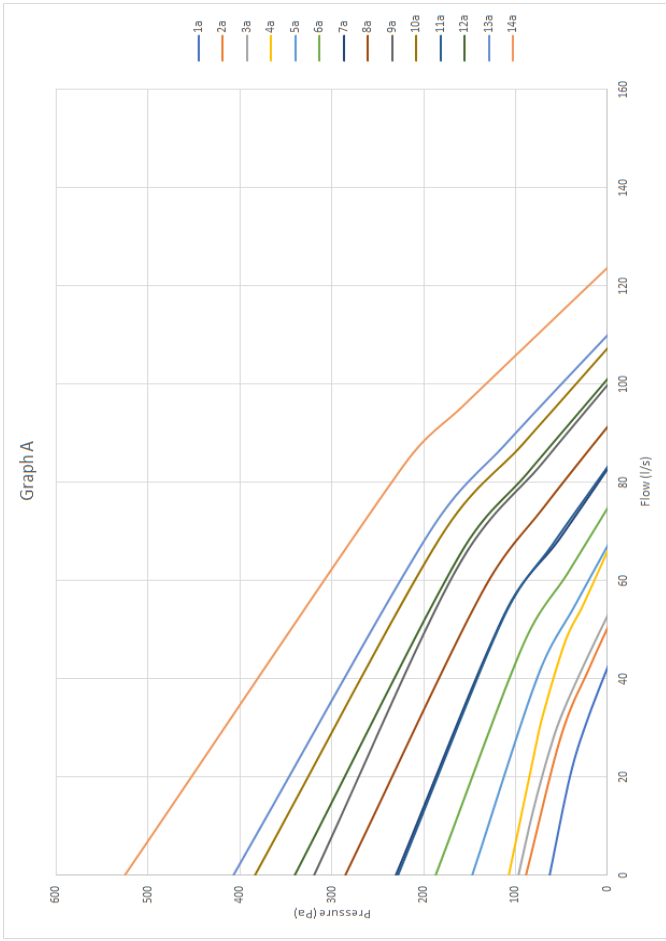
Dip Switch Settings - Table A

Fan Speed Band	Fan Speed Setting	Dip Switch Setting							Minimum Airflow at stated Pressure	Minimum Pressure at stated Airflow
	Switch Number ⬇	1	2	3	4	5	6	7	l/s (m3/h)	Pa
Low	1a	OFF							20.46 (74)	41
Low	2a	ON							28.20 (102)	51
Medium	3a		OFF	OFF	OFF			OFF	33.17 (119)	49
Medium	4a		ON	OFF	OFF			OFF	47.50 (171)	46
Medium	5a		OFF	ON	OFF			OFF	54.70 (197)	36
Medium	6a		ON	ON	OFF			OFF	61.60 (222)	44
Medium	7a		OFF	OFF	ON			OFF	68.28 (246)	53
Medium	8a		ON	OFF	ON			OFF	74.81 (269)	70
Medium	9a		OFF	ON	ON			OFF	84.12 (303)	70
Medium	10a		ON	ON	ON			OFF	87.70 (316)	92
High	11a					OFF	OFF	OFF	68.00 (256)	60
High	12a					ON	OFF	OFF	81.90 (295)	87
High	13a					OFF	ON	OFF	88.30 (318)	112
High	14a					ON	ON	OFF	95.35 (343)	158

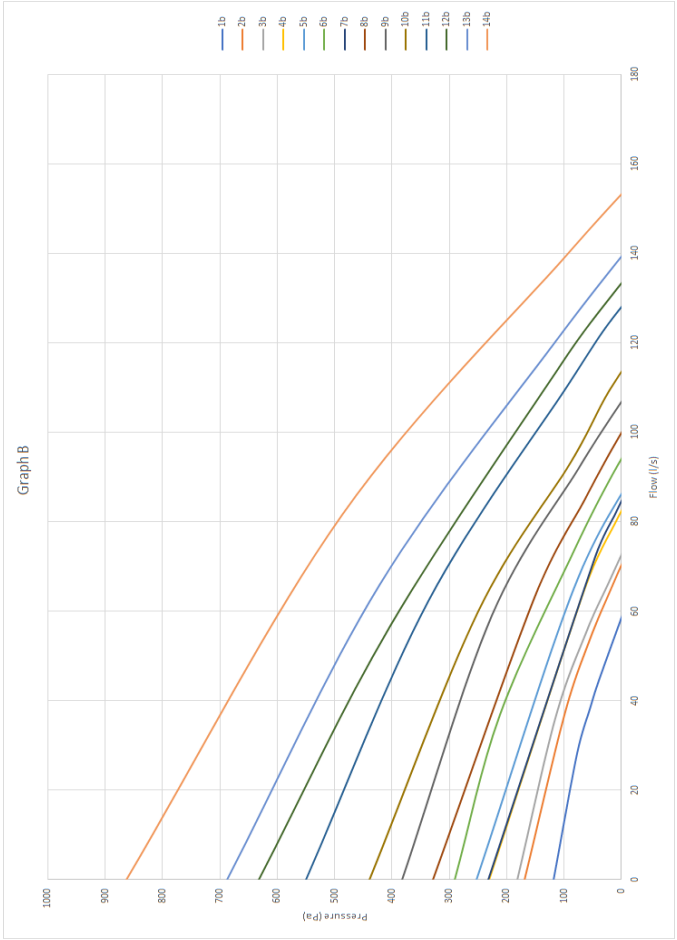
Dip Switch Settings – Table B

Fan Speed Band	Fan Speed Setting	Dip Switch Setting							Minimum Airflow at stated Pressure	Minimum Pressure at stated Airflow
	Switch Number ⬇	1	2	3	4	5	6	7	l/s (m3/h)	Pa
Low	1b	OFF							38.41 (138)	54
Low	2b	ON							53.12 (191)	57
Medium	3b		OFF	OFF				ON	55.35 (199)	61
Medium	4b		ON	OFF				ON	65.02 (234)	64
Medium	5b		OFF	ON				ON	64.84 (233)	84
Medium	6b		ON	ON				ON	73.21 (264)	83
High	7b				OFF	OFF	OFF	ON	72.09 (256)	46
High	8b				ON	OFF	OFF	ON	84.63 (305)	65
High	9b				OFF	ON	OFF	ON	91.91 (331)	75
High	10b				ON	ON	OFF	ON	93.31 (336)	88
High	11b				OFF	OFF	ON	ON	110.69 (398)	92
High	12b				ON	OFF	ON	ON	115.46 (416)	104
High	13b				OFF	ON	ON	ON	120.30 (433)	114
High	14b				ON	ON	ON	ON	139.74 (503)	94

Flow / Pressure Graph A



Flow / Pressure Graph B



Service and Maintenance

⚠ SAFETY FIRST!

Always isolate the fan unit from the power supply before carrying out any work on the fan. All electrical and mechanical installation guidelines stated in these instructions should be followed. Only competent qualified persons should embark on service and maintenance of these fan units.

All central extract systems should be serviced on a planned / regular basis to stop excess build-up of dirt, grease, and dust etc. The system should be inspected initially by a competent person on a six-monthly basis. After several inspections the competent person will be able to adjust the frequency of the service to suite. The frequency of service will be dependent on several factors such as lifestyle and where the property is positioned etc. Failure to do so causes excess system pressure which will reduce the systems airflow, make the system noisier and ultimately lead to fan unit failure.

To clean the unit, firstly remove the unit's white, top protective cover held on by the locking tabs – see Fig. 1 – page 12.

Once the top protective cover has been removed, the fan housing can then be lifted from the duct housing by using the lifting handles (see Fig. 3 – page 12). Cleaning of the fan units' parts should be carried out with a damp cloth or soft brush.

A damp cloth should not be used on the humidity sensor or PCB.

The humidity sensor is connected to the underside of the PCB.

The use of aggressive cleaning agents or high-pressure cleaning techniques / equipment is not recommended and can cause permanent damage and loss of fan performance.

Things to check when the unit is split:

1. Is all the duct connection to the box securely fixed?
2. Does the fan impeller rotate freely and quietly?
3. Is there any visible damage?

After re-connecting the electrical supply, the unit should be switched on. If there is any undue noise, switch the unit off immediately and the fault rectified. If the fault cannot be found contact Airflow Developments Ltd for advice at info@airflow.com.

Unit & Packaging Disposal

These fan units consist mainly of steel, iron, aluminium, copper, electrical insulation materials, cables, wires, and plastic.

Complete fans and parts that are at end of life due to wear and tear, corrosion, fatigue and or other effects that cannot be discerned must be disposed of in the correct manner conforming to local and / or international guidelines and regulations. Intended or unintended further use of worn parts, e.g., impellers and bearings etc. can result in danger to persons, the environment and fan unit.

Packaging materials should be disposed of in the correct manner conforming to local and / or international guidelines and regulations. Some packaging can be re-cycled. In this case seek advice from a qualified waste management company.

Assorted Accessories

Part Number	Description	Product Image
9041130	AirflexPro Ducting Round	
9041546	125mm Ø x 2m Round Ridged Ducting	
52641008	125mm Ø x 1m Airflex Round PVC Hose	
51849403	Metal Worm Drive Clamp for 125mm Ø Connections	
90000356	Grey Acrylic Duct Sealant Non-Hardening (380ml)	
9041223	125mm Ø Connection Terracotta Fixed Grill (Plastic)	
90000350	Roof Terminal (Seipia)	
90001489	RF Controller - Basic	
90001490	RF Controller with Built in CO2 Sensor	

Warranty

Airflow guarantees the Central Extract Fan Unit: MEV WH4H designated in these instructions for 2 years from date of purchase against faulty material or workmanship. Applicable to units installed and used in the UNITED KINGDOM.

Warranty covers the fan and not reinstallation if required. In the event of any defective parts being found, Airflow Developments Ltd reserves the right to repair, or at our discretion, replace without charge, provided the unit has been installed in accordance with the fitting and wiring instructions supplied with each unit and the below clauses:

Has not been connected to an unsuitable electrical supply.

Has not been subjected to misuse, neglect, or damage.

Has not been modified or repaired by any person not authorised by Airflow Developments Ltd.

Has been installed by a person who is recognised as a competent person.

Has only been used with Airflow Developments approved accessories.

Airflow Developments Ltd shall not be liable for any loss, injury, or other consequential damage, in the event of a failure of the equipment, arising from, or in connection with, the equipment excepting only that nothing in this condition shall be construed as to exclude or restrict liability for negligence. Full details at airflow.com/terms.

This warranty does not in any way affect any statutory or other consumer rights.

UK Head-Office
AIRFLOW DEVELOPMENTS LTD
Aidelle House, Lancaster Road
Cressex Business Park
High Wycombe
Buckinghamshire
HP12 3QP
United Kingdom

Tele: +44 (0) 1494 525252
Fax: +44 (0) 1494 461073
Email: info@airflow.com
Web: airflow.com

Germany
AIRFLOW LUFTTECHNIK GMBH
Wolbersacker 16
53359 Rheinbach
Germany

Tele: +49 (0) 222 69205 0
Fax: +49 (0) 222 69205 11
Email: info@airflow.de
Web: airflow.de

Czech Republic
AIRFLOW LUFTTECHNIK GMBH
o.s. Praha Hostýnská 520
108 00 Praha 10
Malešice
Czech Republlic.

Tele: +42 (0) 2 7477 2230
Fax: +42 (0) 2 7477 2370
Email: info@airflow.de
Web: airflow.cz.

Unit Service Notes

Installation / Service Date	Notes

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