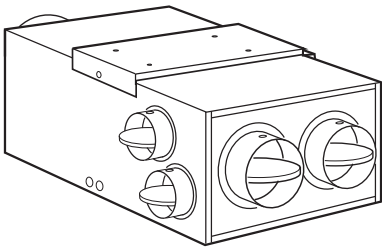


MEV Ecosmart

INCLUDING MEV-SVS

Continuous Mechanical Extract Ventilation Units

Installation and Maintenance

ecosmart energy saving control

1.0 Introduction

Nuaire's MEV Ecosmart units are designed to provide continuous mechanical extract ventilation to homes in accordance with BRE digest 398.

Coding:

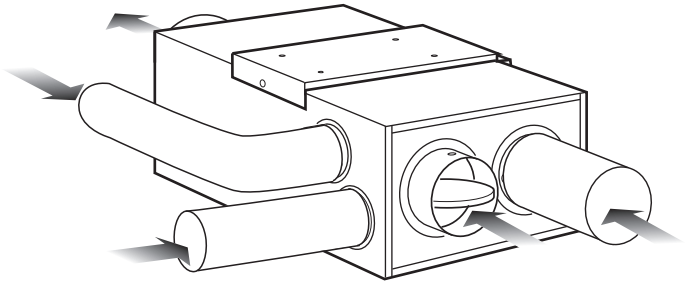
Two units are available as standard.
Unit codes/descriptions are as follows:

ES-MEV **Single fan unit.**

ES-MEV-H **Single fan unit with internal adjustable humidistat.**

The case is constructed in aluminium/zinc coated steel. Internal faces of the casing are acoustically lined with flame retardant acoustic foam. The full length access cover which is located on the underside of the unit, on the opposite side to the mounting bracket, is retained by four M5 screws.

Figure 1.

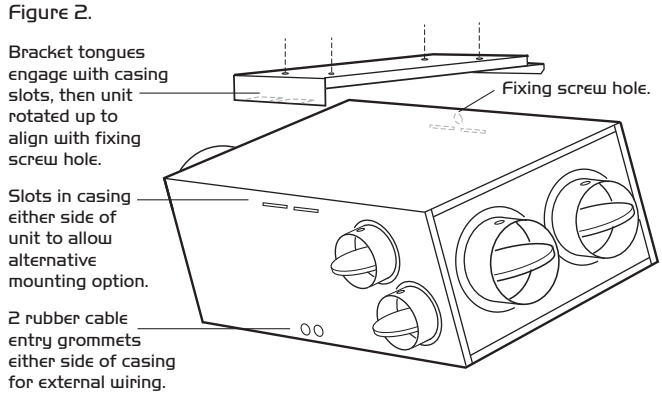


2.0 Installation

Installation must be carried out by competent personnel in accordance with the appropriate authority and conforming to all statutory and governing regulations.

The fan must be fitted indoors, away from sources of water spray or steam generation. The fan can be installed at any angle using the integral mounting bracket supplied (Figure 2).

Figure 2.



It is assumed that a solid non-reverberant mounting position has been selected and the electrical mains wiring and any optional control wires have been made ready.

It is also assumed that compatible ductwork is already installed and ready to be connected to the 125mm dia. discharge spigot and also the chosen 100mm dia and/or 125mm dia. inlet spigots.

Note the unit is not fitted with a backdraught shutter. (When using the continuous background vent facility a backdraught shutter is not needed). However a back-draught shutter is available from Nuaire if required.

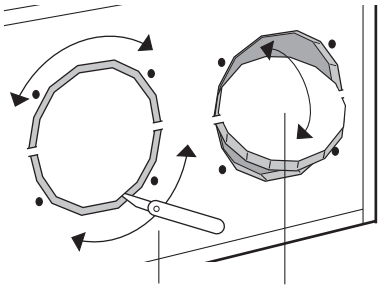
An integral fixing bracket with a single bolt fixing allows easy mounting and removal of the unit when necessary. The unit is supplied with the 125mm dia. discharge spigot for fitting during installation.

2.1 Unit fixing

The integral mounting bracket supplied can be offered up to position, the fixing points marked through and the bracket installed with 4 screws (by others). See figure 2.

Offer the unit into position and locate the bracket into the slots in the case before fixing with the single bracket fixing screw.

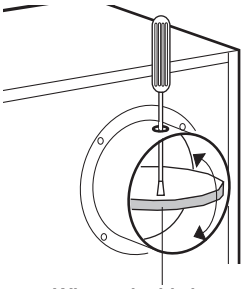
Figure 3.



Cut through the acoustic foam round the circumference of the damper.

Damper can be swivelled on the 2 body casing hinges.

Figure 4.



When spigot is in position, damper can be adjusted using a screwdriver.

Various damper/inlet spigot positions can be utilised as required to suit the system ductwork and extract grilles. All inlet dampers are 'closed' as knockouts when delivered but can be opened using a sharp knife. (See figure 3). After the spigot has been fixed adjust the damper with a screwdriver. (See figure 4).

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Leaflet Number 671266 July 2007

The spigot locations are as follows:

Two x 125mm inlet end spigots.
Two x 100mm inlet spigots on LH side of case.
Two x 100mm inlet spigots on RH side of case.
One x 125mm discharge end spigots.

Any, or all of these inlets can be utilised with individual volume control being available via the relevant damper.

A filter frame with a replaceable filter is 'push fit' located inside the case which is easily removed for cleaning following removal of the case cover.
Please note a clear space of at least 470 x 320mm is required to allow the cover to be removed and provide sufficient access for maintenance.

The fan is designed to be wired direct to the mains supply through a fused spur isolator (by others) and run continuously in the NORMAL mode (which is the low speed, background or trickle ventilation setting) with occasional BOOST airflow (high speed setting) as and when required.

The degree of extract from each room served can be adjusted with the inlet balancing spigots.

The unit is provided with adjustment for the low speed (NORMAL) and high speed (BOOST) ventilation rate as required.

2.2 Electrical connection

With the unit fixed in position and working from underneath the installation bring the external wiring through the chosen rubber cable entry grommet (two either side, see figure 2).

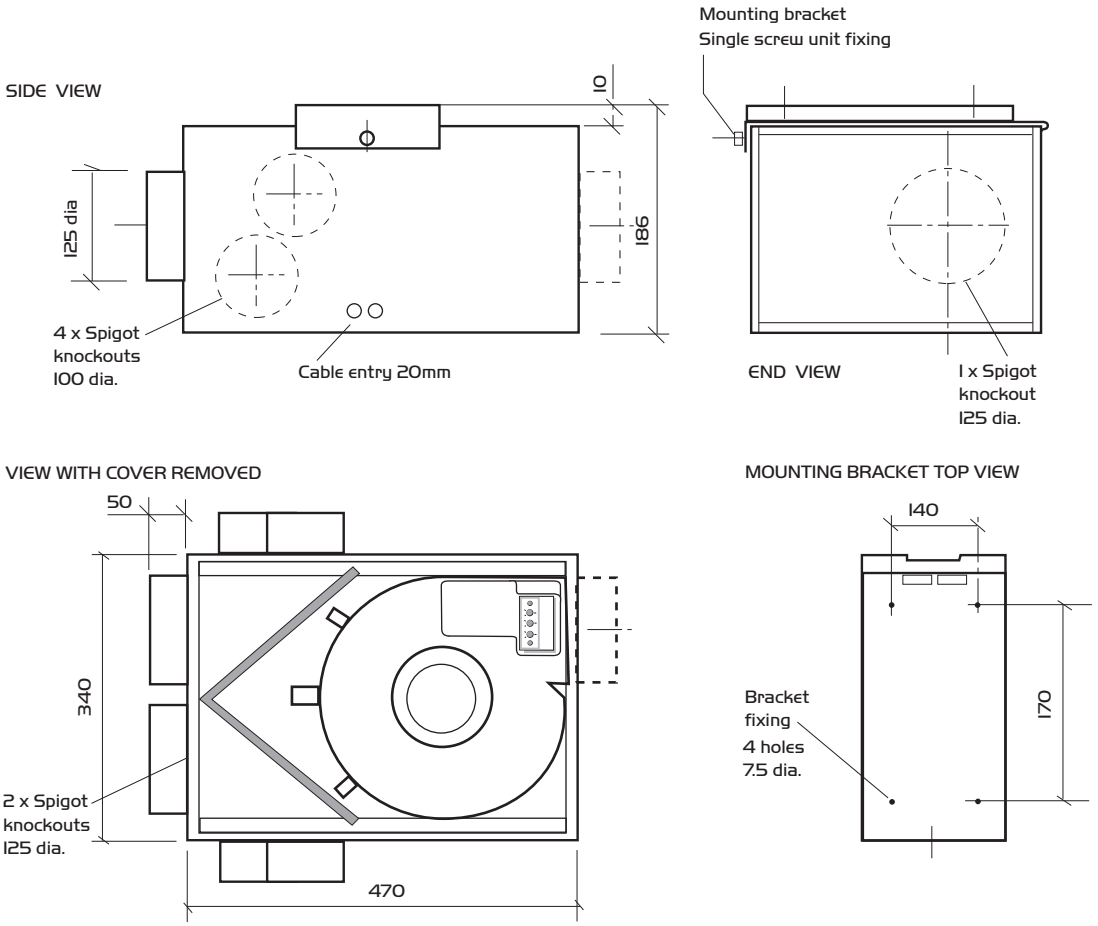
The unit MUST be Earthed.

IMPORTANT

Isolation - Before commencing work make sure that the unit, and Nuaire control are electrically isolated from the mains supply.

3.0 Dimensions

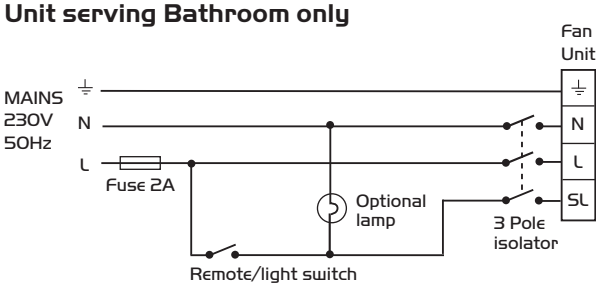
Figure 5. Dimensions in mm.



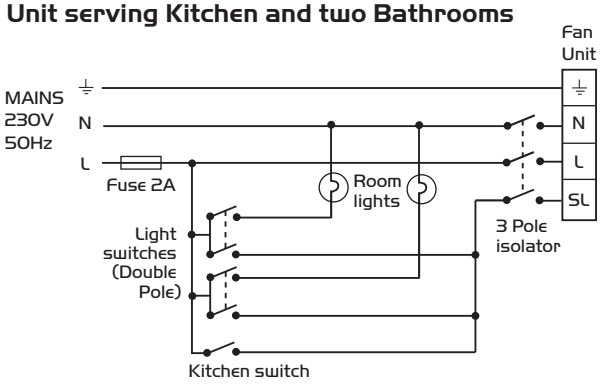
4.0 Electrical Wiring (basic)

Figure 6.

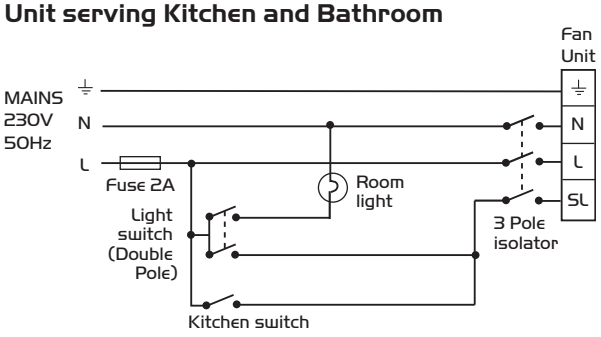
Unit serving Bathroom only



Unit serving Kitchen and two Bathrooms



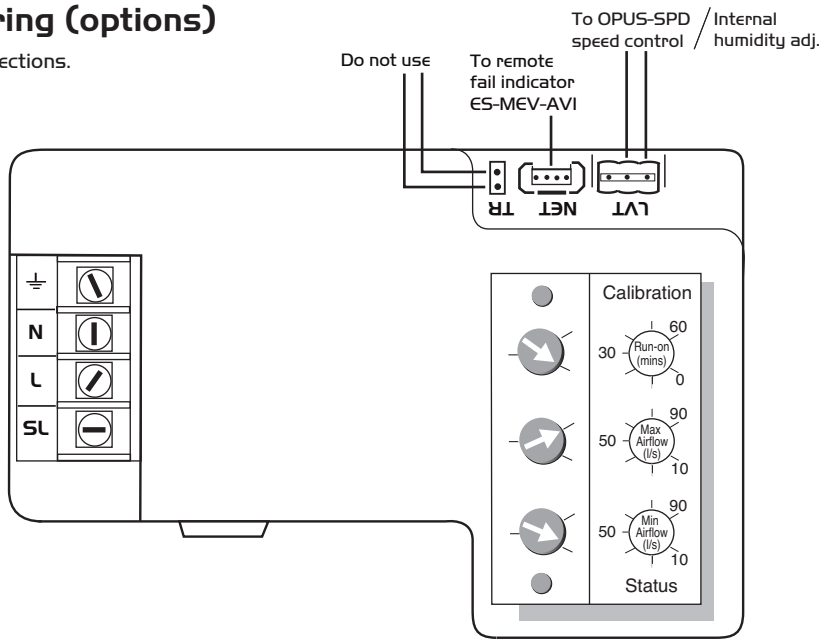
Unit serving Kitchen and Bathroom



All field wiring, switches and isolators, by others.

4.1 Electrical Wiring (options)

Figure 7. Circuit Board Connections.



The unit is normally designed to ventilate the property continuously to give between 0.5 and 0.7 air changes per hour.

A facility is included which boosts the duty as required. The boost can be achieved by the following methods:

IMPORTANT

For good EMC engineering practice, any sensor cables or switched live cables should not be placed within 50mm of other cables or on the same metal cable tray as other cables.

a) Switched Live (SL)

Connection of 230V mains to SL terminal.

b) Optional Remote Speed Control (OPUS-SPD)

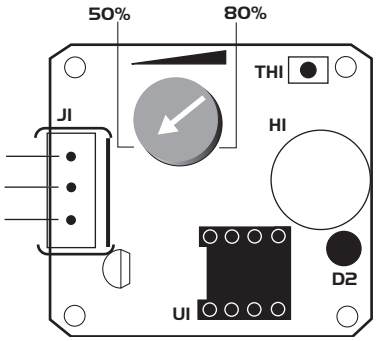
The speed control will mimic the speed between the max and min settings selected at the fan. Connect OPUS-SPD to LV terminal.

c) Internal Humidistat (on the ES-MEV-H unit only)

The internal humidistat can be found on the base of the fan case. The adjustment dial gives a range of 50 - 80% @ 20°C. (See figure 8). Setting to mid position gives 65% which should be acceptable for most circumstances.

If the unit boosts at unacceptable times, this dial should be turned clockwise by a small amount.

Figure 8.



5.0 Volume Control

To control the volume of air the unit is equipped with two control dials, for trickle and boost duties.

In order to comply with the BRE Digest the unit should be set to give a minimum of the 0.5 air change/hour for the dwelling continuously, plus 25% boost. To achieve this the volume of the property should be measured (in m^3) and this figure divided by 7.2. This gives the duty required in l/s.

The table below is intended as a guide to achieve the correct duty (based on 0.5 ACH with 25% boost).

No. of Bedrooms	Typical volume	Trickle/ Normal duty l/s	Boost l/s
1	140m^3	19	24
2	200m^3	28	35
3	260m^3	36	45
4	320m^3	44	56

5.1 Run-on Timer

The Run-on timer adjustment is from 0 - 60 mins. **Run-on is only available from the switched live (SL) signal.**

5.2 Start-up Routine

On power up or and after power failure the unit goes through a 2 minute set-up period.
During this period the unit:

1. **Starts at full speed**
2. **Ramps down to off**
3. **Restarts at 25% speed**
4. **Resumes normal operation**

5.3 Status Light

Green light - Fan running
Red light - Fan failure
Flashing green light - Set-up period
Flashing red light - Electronics failure

5.4 Calibration

By pressing the calibration button the unit re-sets itself by switching off for 30 seconds then re-starts at full speed before ramping down to the desired duty. Whilst running at full speed the status light flashes to indicate if the duty set on the adjustment dials can be achieved (green for yes, amber for no). Checks can be carried out in both the trickle and boost modes. If the light flashes amber check the resistance of the ducting, grilles etc. or turn down the adjustment dial.

6.0 Maintenance

It is inevitable that even with filtered extract grilles as recommended in BRE digest 398 some dust, fluff etc. will pass through the filter, and which, if allowed, will build up internally on motors and impellers, shortening the life of the unit and, in severe cases, leading to overheating of the motors.
Consequently, it is strongly recommended that all units are inspected and cleaned every six months. To clean the filter, remove from the unit and wash in tepid water to which a little mild detergent has been added. Shake out excess water and allow to dry naturally. Replace when dry.

7.0 Cleaning

Remove covers and carefully clean out interiors as necessary. Check for damage and security of components. Refit covers.

8.0 Replacement of Parts

Should any component need replacing Nuaire keep extensive stocks for quick delivery. Ensure that the unit is electrically isolated, before carrying out any work.
When ordering spare parts, please quote the serial number of the unit and the ARC number of the purchase if possible. **(This information will be available on the fan label).**

9.0 Service Enquiries

Nuaire can assist you in all aspects of service. Our service department will be happy to provide any assistance required, initially by telephone and If necessary arrange for an engineer to call.

Customer Services Department on 08705 002 555

DECLARATION OF INCORPORATION AND INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE

We declare that the machinery named below is intended to be assembled with other components to constitute a system of machinery. The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Council Machinery Directive.

Designation of machinery:	**ES-MEV**
Machinery Types:	Continuous Extract Ventilation Unit
Relevant EC Council Directives:	98/37/EC, 98/79/EC (Machinery Directive)
Applied Harmonised Standards:	BS EN ISO 12100-1, BS EN ISO 12100-2, EN294, EN60204-1, BS EN ISO 9001
Applied National Standards:	BS848 Parts One, Two and Five

Signature of manufacture representatives:

Name:		Position:	Date:
1) C. Biggs		Technical Director	20. 07. 07
2) W. Glover		Manufacturing Director	20. 07. 07

CE DECLARATION OF CONFORMITY

We declare that the machine named below conforms to the requirements of EC Council Directives relating to Electromagnetic Compatibility and Safety of Electrical Equipment.

Designation of machinery:	**ES-MEV**
Machinery Types:	Continuous Extract Ventilation Unit
Relevant EC Council Directives:	2004/108/EC (EMC) 2006/95/EC (Low Voltage Directive)
Applied Harmonised Standards:	EN55014-1, EN55014-2, EN60335-2-80
Basis of Self Attestation:	Quality Assurance to BS EN ISO 9001 BSI Registered Firm Certificate No. FM 149

Signature of manufacture representatives:

Name:		Position:	Date:
1) C. Biggs		Technical Director	20. 07. 07
2) W. Glover		Manufacturing Director	20. 07. 07

INFORMATION FOR SAFE INSTALLATION, OPERATION AND MAINTENANCE OF NUAIRE VENTILATION EQUIPMENT

To comply with EC Council Directives 73/23/EEC Low Voltage Directive

To be read in conjunction with the relevant Product Documentation (see 2.1)

1.0 GENERAL

1.1 The equipment referred to in this **Declaration of Incorporation** is supplied by Nuaire to be assembled into a ventilation system which may or may not include additional components.

The entire system must be considered for safety purposes and it is the responsibility of the installer to ensure that all of the equipment is installed in compliance with the manufacturers recommendations and with due regard to current legislation and codes of practice.

2.0 INFORMATION SUPPLIED WITH THE EQUIPMENT

2.1 Each item of equipment is supplied with a set of documentation which provides the information required for the safe installation and maintenance of the equipment. This may be in the form of a Data sheet and/or Installation and Maintenance instruction.

2.2 Each unit has a rating plate attached to its outer casing. The rating plate provides essential data relating to the equipment such as serial number, unit code and electrical data. Any further data that may be required will be found in the documentation. If any item is unclear or more information is required, contact Nuaire.

2.3 Where warning labels or notices are attached to the unit the instructions given must be adhered to.

3.0 TRANSPORTATION, HANDLING AND STORAGE

3.1 Care must be taken at all times to prevent damage to the equipment. Note that shock to the unit may result in the balance of the impeller being affected.

3.2 When handling the equipment, care should be taken with corners and edges and that the weight distribution within the unit is considered. Lifting gear such as slings or ropes must be arranged so as not to bear on the casing.

3.3 Equipment stored on site prior to installation should be protected from the weather and steps taken to prevent ingress of contaminants.

4.0 OPERATIONAL LIMITS

4.1 It is important that the specified operational limits for the equipment are adhered to e.g. operational air temperature, air borne contaminants and unit orientation.

4.2 Where installation accessories are supplied with the specified equipment eg. wall mounting brackets. They are to be used to support the equipment only. Other system components must have separate provision for support.

4.3 Flanges and connection spigots are provided for the purpose of joining to ductwork systems. They must not be used to support the ductwork.

4.4 In the event of RF interference the fan may increase in speed or make high pitched noises. This is normal and will have no adverse effect on the fan. The speed and noise will return to normal once the interference has subsided.

5.0 INSTALLATION REQUIREMENTS

In addition to the particular requirements given for the individual product, the following general requirements should be noted.

5.1 Where access to any part of equipment which **moves**, or can become **electrically live** are not prevented by the equipment panels or by fixed installation detail (eg ducting), then guarding to the appropriate standard must be fitted.

5.2 The electrical installation of the equipment must comply with the requirements of the relevant local electrical safety regulations.

6.0 COMMISSIONING REQUIREMENTS

6.1 General pre-commissioning checks relevant to safe operation consist of the following:

Ensure that no foreign bodies are present within the fan or casing.

Check electrical safety. e.g. Insulation and earthing.

Check guarding of system.

Check operation of Isolators/Controls.

Check fastenings for security.

6.2 Other commissioning requirements are given in the relevant product documentation.

7.0 OPERATIONAL REQUIREMENTS

7.1 Equipment access panels must be in place at all times during operation of the unit, and must be secured with the original fastenings.

7.2 If failure of the equipment occurs or is suspected then it should be taken out of service until a competent person can effect repair or examination. (Note that certain ranges of equipment are designed to detect and compensate for fan failure).

8.0 MAINTENANCE REQUIREMENTS

8.1 Specific maintenance requirements are given in the relevant product documentation.

8.2 It is important that the correct tools are used for the various tasks required.

8.3 If the access panels are to be removed for any reason the electrical supply to the unit must be isolated.

8.4 A minium period of two minutes should be allowed after electrical disconnection before access panels are removed. This will allow the impeller to come to rest.

NB: Care should still be taken however since airflow generated at some other point in the system can cause the impeller to "windmill" even when power is not present.

8.5 Care should be taken when removing and storing access panels in windy conditions.

Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such changes without prior notice.

11.0 MEV-SVS units

Nuaire's MEV-SVS units are designed to provide continuous mechanical supply/extract ventilation to homes enabling each room to be individually ventilated.

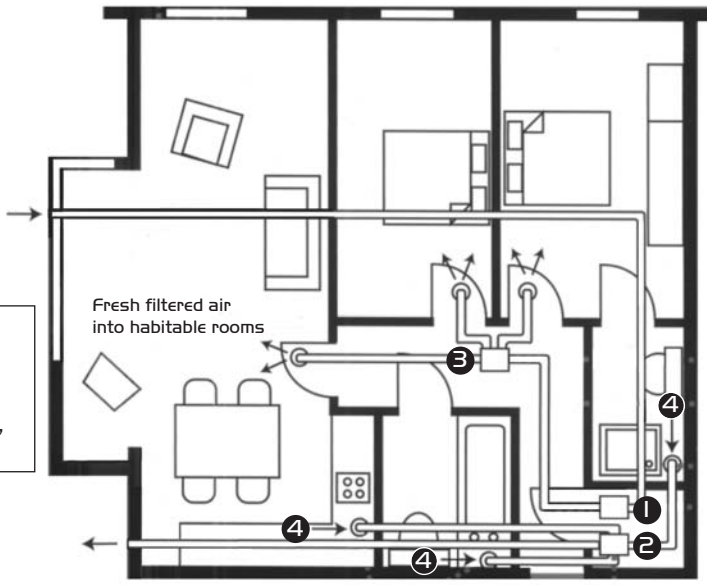
Coding:

MEV - SVS

Comprising a supply fan unit, an extract fan unit and a unique multi-spigoted distribution box.
Attenuators to be specified and supplied seperately.

1. Supply Unit
2. Extract Unit
3. Supply Air Distribution Box
4. Extract Points “Wet Rooms”

Figure 9. Typical installation.



12.0 Electrical Wiring (MEV-SVS)

MEV-SVS control wiring using remote speed control (Opus-SPD)

The extract fan operates continuously in trickle mode.

The supply fan will operate in trickle mode when activated by the supply fan switch.

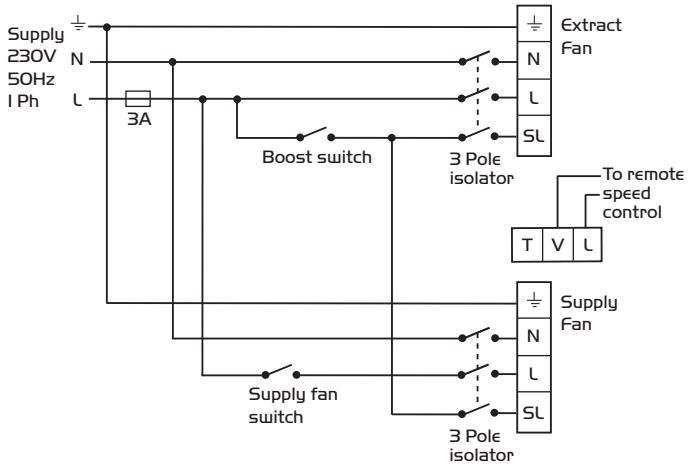
The remote boost switch will set both extract and supply fans to boost if they are operating in trickle mode. If the supply fan is switched off, only the extract fan will operate.

Supply fan boost airflow should be set to fully clockwise.

The supply fan will only operate on boost speed from the boost switch if the speed control is set to off.

Extract fan airflows should be set to meet Part F requirements.

Figure 10.



IMPORTANT

For good EMC engineering practice, any sensor cables or switched live cables should not be placed within 50mm of other cables or on the same metal cable tray as other cables.

MEV-SVS wiring using light/remote switches

The extract fan operates continuously in trickle mode.

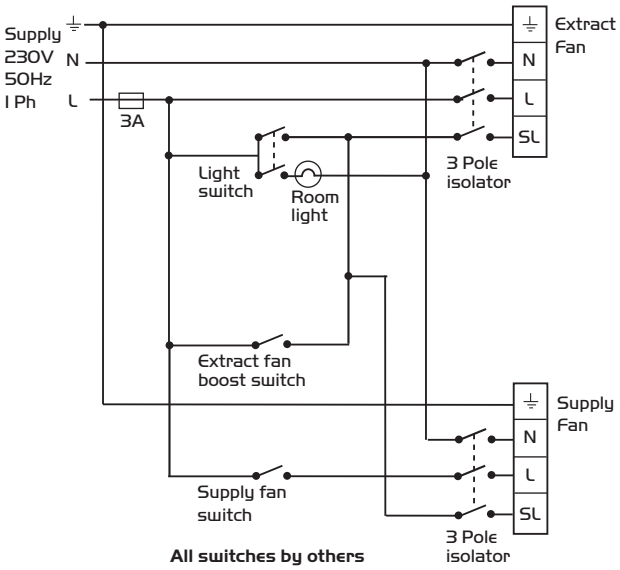
The supply fan will operate in trickle mode when activated by the supply fan switch.

The remote boost switch will set both extract and supply fans to boost if they are operating in trickle mode. If the supply fan is switched off, only the extract fan will operate.

Supply fan boost airflow should be set to fully clockwise.

Extract fan airflows should be set to meet Part F requirements.

Figure 11.



All switches by others