

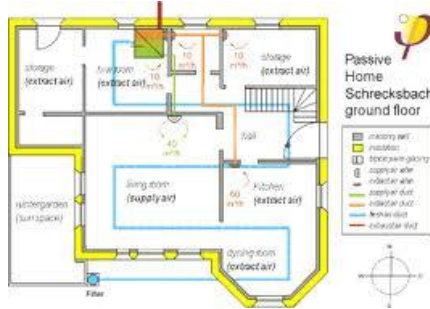


Installation of a Heat Recovery System
It is not rocket science !



Installation of a heat recovery system

Bpc will provide



- **A detailed floor plan**
with the approximate locations and dimensions of pipe but you may have to alter the design to suit specific requirements of the building not noted on submitted plans
- **A list of all supplied ducting**
Please check your delivery before you sign the docket for damage and for missing items
- **Technical support**
Available 8am to 4pm Monday To Friday
02893 378576 - 02893 378837
Please do not hesitate to contact us
- **Installation manual for the heat recovery unit**
- **Air flow rates**
For all the air valves to help commission the system



The amount of ducting provided is the amount calculated of received plans if more ducting is required this would be at an additional cost

Safety



- Always wear appropriate Personal protective equipment
- Always wear a protective face mask when using duct insulation
- It is recommended to use walking boards when working in loft void
- If loft is fully insulated when work is being carried out it is recommended to provide adequate ventilation
- We recommend that Electrical connections are made by a qualified electrician

Installation Procedure

The most popular order to install a MVHR system using a quality radial ductwork system

Design

We would recommend that you install 2 x pipes to the plenum if air flow requirement exceed 10 L/s or over 15 meter in length

Radial ductwork is suitable to be fitted below your loft insulation providing superior heat retention

Insulate any ductwork or Manifold/ Distribution boxes with a minimum of 25mm thermal duct wrap that go above insulation in unheated attic spaces

Slim-line manifolds are suitable for installation to concrete ceilings and only require a 100mm service void

Position supply plenums approx. 500mm from corner of wall (avoid areas above beds and wardrobes)

Position extraction plenums to outside of showers and above kitchen sink (not cooker)

Only extract from a room with a open appliance (stove) if there is a supply with equal or higher airflow

1st Fix

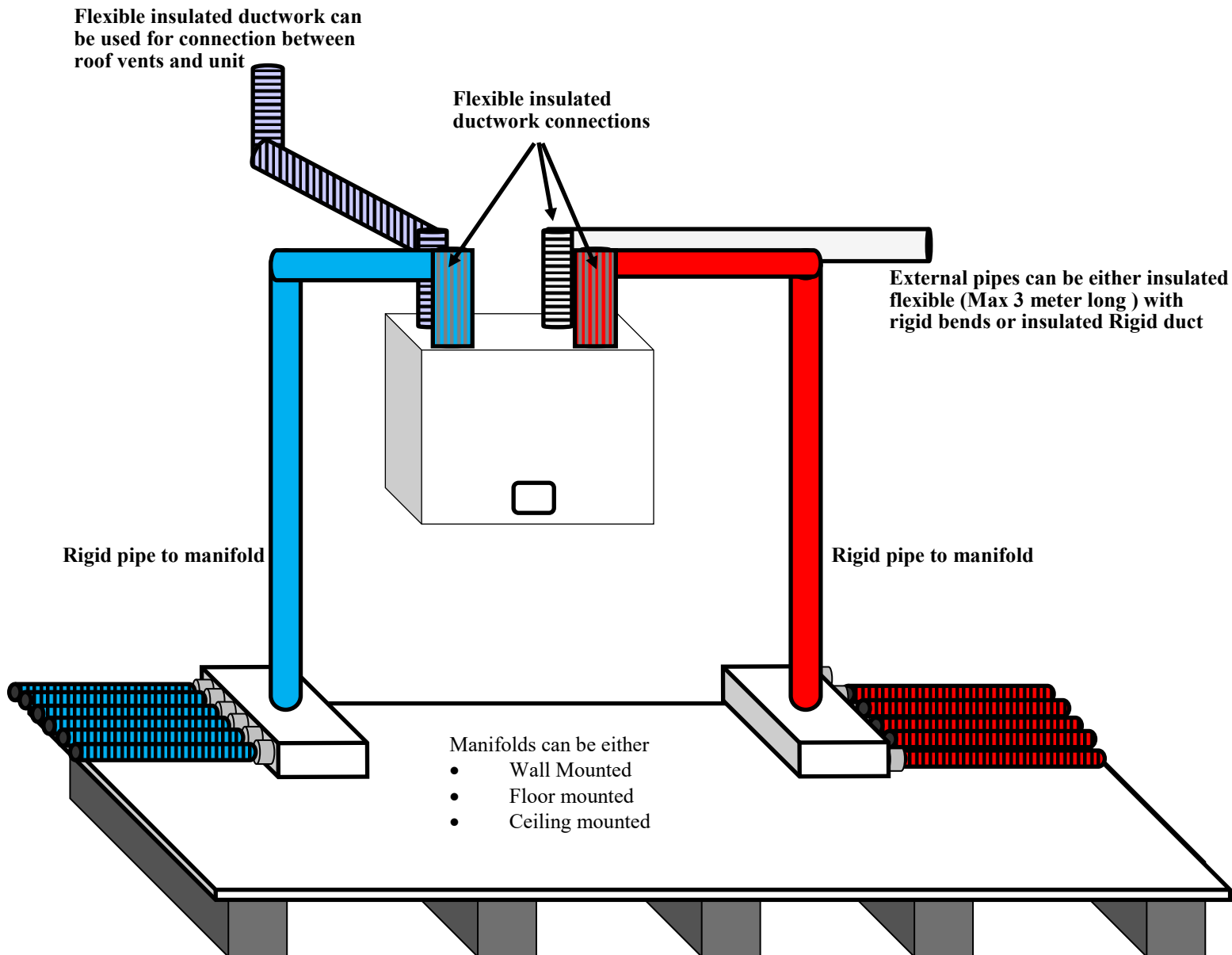
1. Position unit proverbially on a wall or vertical timber frame
2. Install wiring for controllers and condensation drain from unit
3. Install wall /Soffit vents or roof vents
(Minimum 1.5 meter apart)
4. Position distribution boxes in the chosen location
(proverbially in a central location minimising duct lengths)
5. Install solid rigid ductwork between distribution boxes and MVHR unit,
(If possible allow for insulated flexible ductwork for final connections of MVHR unit)
6. Install radial pipe into the distribution box , Cut to length and install pipe into ceiling plenum,
(insure you install rubber seal onto pipe) secure pipe in place with fixing band
7. **Warning !** There can be either one or two pipes going from the distribution box to the plenum depending on the required airflow , Always check plan that will indicate 1 or 2 pipes
8. Install insulated rigid or insulated flexible ductwork to external vents
9. Seal all open pipes to prevent debris and moisture ingress

2nd fix

1. Trim ceiling Plenums to height of plasterboard (Easier to do before plastering ceilings)
2. Install air valves to plenums (slightly open valve by two turns)
3. Install all controllers
4. Check that condensation drain has been fitted
5. Switch unit on and follow the set up procedures
6. Check air flow rates and commission system



Installation of a Heat recovery system



If you have any queries on installation please do not hesitate to contact one of our ventilation technicians

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Installation of **Airflex** Radial Ductwork

Distribution box



- Install the distribution box in central location to keep ductwork symmetrical and short as possible
- Install provided collars to the distribution box in the preferred direction
- To connect each pipe the airflex duct and the rubber washer ring that is fitted in the last groove are pushed into the outlet collar of the air distribution box and locked with two locking devices.
- It may be required to install a reducer from the distribution box to suite provided ductwork from the heat recovery unit
- The distribution boxes have sound attenuation and a service door. However, it is recommended to install a acoustic silencer between the ventilation unit and the air distribution box in order to silence the sound of the fan.

Wall and ceiling plenum



- The ceiling or wall plenum box have two outlets for the duct.
- To connect each pipe to the plenum insert the rubber washer ring that is fitted in the last groove and pushed into the outlet collar of the plenum
- The pvc models are locked with two locking devices and the metal models are locked by locking tongues
- If only one of the duct outlets or connection part is taken into use, the other outlet is closed with the shield plug supplied with the outlet. The shield plug is installed inside the duct outlet with a rubber washer ring and locked into position.
- Fasten to ceiling with two screw through holes on side of plenum
- If required we recommend you fasten plenum to a piece of timber between joists

Duct joiners and fittings

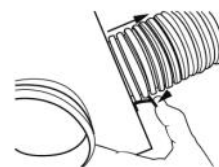
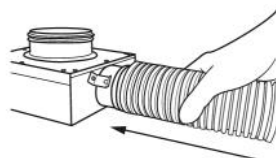


- All duct joins and fitting if required must be sealed with the rubber washer ring that is fitted in the last groove are pushed into the fitting and locked into position

Airflex radial ductwork is only available in Colour **Red**

Installation of Quiet-vent Radial Ductwork

Distribution box



- Install the distribution box in central location to keep ductwork symmetrical and short as possible
- To connect each pipe simply push and “click” to safely lock the radial ducting in place
- It may be required to install a reducer from the distribution box to suite provided ductwork from the heat recovery unit
- It is recommended to install a flexible or solid acoustic silencer between the ventilation unit and the air distribution box in order to further silence the sound of the fan.
- To remove or reposition the radial ductwork simply pull back on the locking tab and the duct can be detached without damage
- Insert sealing caps over unused spigots

Wall and ceiling Plenum



- The ceiling or wall plenum box have two outlets for the duct.
- To connect each pipe to the plenum insert the rubber washer ring that is fitted in the last groove and pushed into the outlet collar of the plenum
- The pvc models are locked with two locking devices and the metal models are locked by locking tongues
- If only one of the duct outlets or connection part is taken into use, the other outlet is closed with the shield plug supplied with the outlet. The shield plug is installed inside the duct outlet with a rubber washer ring and locked into position.
- Fasten to ceiling with two screw through holes on side of plenum
- If required we recommend you fasten plenum to a piece of timber between joists

Duct joiners and fittings



- All duct joins and fitting if required must be sealed with the rubber washer ring that is fitted in the last groove are pushed into the fitting and locked into position

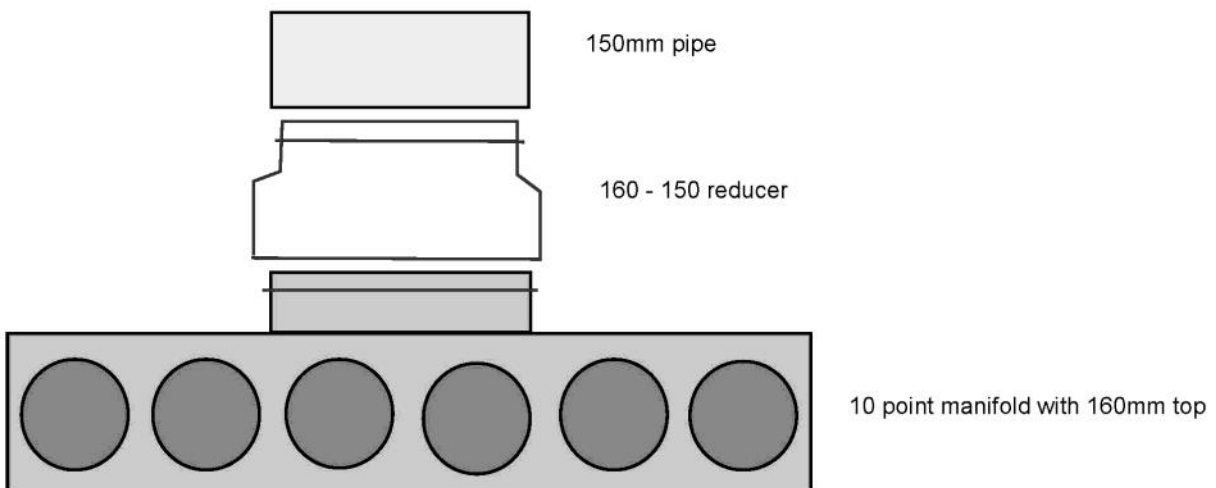
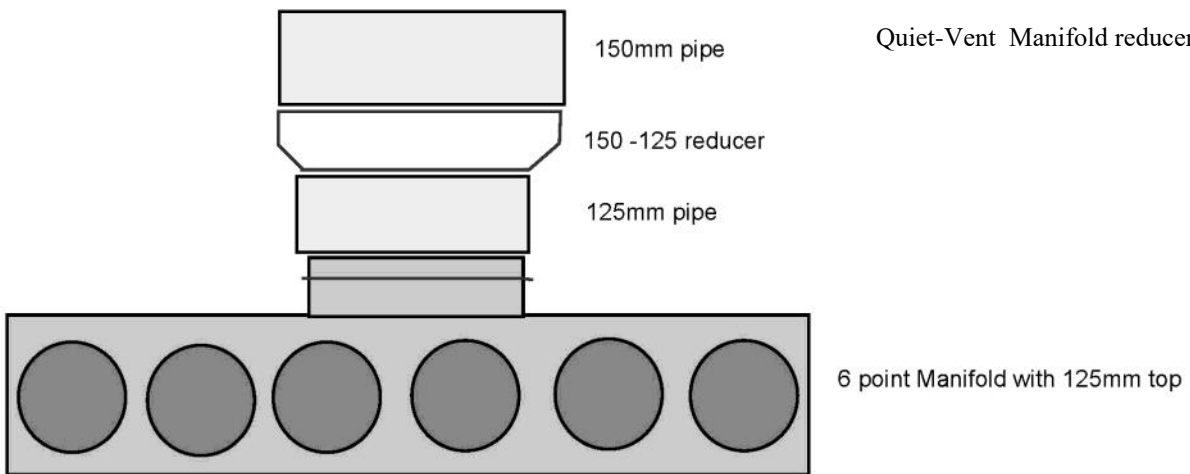
Quiet-vent radial ductwork is available in Colours **White** or **Blue**



Radial ductwork Can be installed above or through eco joists



Radial ductwork Can be installed above or below a concrete ceiling



Installation of Solid Rigid Ducting



Solid rigid ducting is used between the heat recovery unit and the distribution box's



- Solid Rigid Ducting require all joints sealed with a suitable sealant to provide a airtight seal
- Measure length of ducting
- Ducts must be cut perpendicularly by means of a saw with a fine tooth pitching (1–2 mm).
- Remove the rough edge from both the outside and inside surfaces with sandpaper, and bevel the inner edge of the cut head to facilitate insertion of the connection piece
- It is recommended that if you have a large number of fittings to connect together in one area, to Dry fix a small amount of fittings, mark locations with a permanent marker before sealant is applied.
- Install sealant in a even amount around the male fitting and push together ensuring that all waste sealant is on the outside of the pipes.
- We recommend you tape joints after sealant is applied to stop joints moving while sealant is curing
- If required you may also use a short self drilling stainless steel screw in difficult to access areas to insure correct sealing
- Always Insulate Rigid ducting going outside and in any unheated loft voids

Installation of insulated flexible Ducting

Insulated flexible ducting is used as a silencer to reduce turbulent air and vibration

To be fitted on the final connections between the MVHR unit and solid rigid ducting and for connection to roof / soffit vents

- Do not kink (if required insert a provided pvc bend)
- Measure and cut length of flexible ducting
- Pull taught with no tight bends or kinks
- Fasten inner pipe to fitting with jubilee clip, seal outer insulation with silver foil tape

Installation of a Heat Recovery system

Air Valves

Install the rigid pipe or plenum box past the level of the finished ceiling or plasterboard



When you have finished installing the plasterboard cut the extra pipe below the ceiling before plasterwork commences

Air Valves are installed and adjusted after the final cleaning of the work site.

Either push the air valve into position (Airflex Pro) or Insert the mounting frame in the duct and secure to the ceiling structure with screws and sealant (AV125)

You can adjust the air flow by screwing the valve in or out

The ventilation system is taken into use only when the building is completely Finished.

Always cover over ends of pipework to stop contaminants entering pipework during construction and do not use the system during construction work



Solid Rigid Duct Insulation

Duct insulation is available as a foil faced mineral wool and is normally only fitted to loft voids and unheated areas,

Insulation is fitted to the solid rigid ducting from the heat recovery unit to the Manifolds only

Ceiling voids between rooms do not require insulating but can be fitted to slightly increase the acoustic and insulation properties

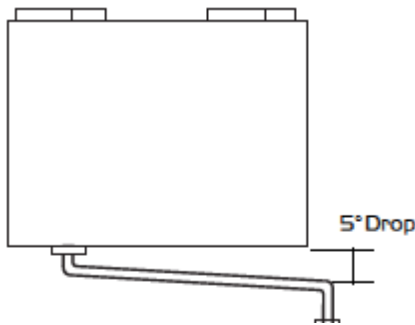
Cut rolls of solid insulation in strips to suite diameter of pipe and tape together with silver foil tape



Radial Ductwork insulation

Radial ducting is not normally individually insulated and is recommended to be fitted below your loft insulation

Installation of a Heat recovery system



Pipe fastening

To securely fasten ductwork to timber floor joists and concrete floors we recommend you use metal strapping or plastic securing clips

Condensation Drain

A condensation drain must be fitted from the heat recovery unit to preferably a internal drain with a water trap

External Vents

Do not install a conventional 100 mm roof vent to a heat recovery unit

External Air supply and extraction can be from either

- A range of plastic or metal louver wall vents
- A range of slate or concrete tile vents
- A range of soffit vents

Please insure that the size of the external vent is equal to or larger than the pipes exiting the heat recovery unit
Multiple outlets may be used if a single outlet is not suitable.

A minimum of 1.5 meter must be provided between the external supply and extract vents to insure no cross contamination

Our roof vents have a free area of 20,000mm and are suitable for up to a 160 mm duct



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Installation of a MVHR Unit



Silencers

We recommend that you install either a solid or flexible acoustic silencer to the main pipes between the heat recovery unit and the rigid ductwork



Unit Installation

As we supply a large range of units always read the provided unit installation instruction before installation of the unit or connecting ductwork

We Recommend that if is possible you install the unit to a vertical wall or stud partition to prevent vibration but if the unit is required to be installed on the floor we recommend a insulated platform

Balancing and Commissioning

The system must be balanced to achieve the air change rates calculated to meet the requirements of Building Regulation Part F.

This will require an air flow meter to measure the air velocity in metres per second at each inlet or extract point.

We can either recommend a local specialist or hire you a air meter

The velocity measurement in metres per second or litres per second is used to calculate the air volume

We will supply you with the required airflow rates when we provide you with the final duct plan

Generally in an unbalanced system the air inlets and outlets closest to the system will have the greatest flow rates, , and those furthest away the least.

To correct this and to achieve a quiet and efficient system :-

1. Start at the nearest valves and check the air flow volumes at all of the outlets and note the air volume to each room, whilst doing this make sure that the direction of flow is correct.
2. If the measured air flow is above or below the requirement adjust each air valve by rotating the central cone on its screw thread to increase or decrease the size of the air opening,
3. Replace the cover and re-measure the air volume. Repeat this process until the correct flow rate is achieved.
4. When all inlets and outlets are measured it may be found that the total for extract or supply may be greater or lesser than required in which case the speed of the fans must be adjusted at the air handling unit.
5. As any adjustments of individual air valves with affect the flow rates of all other valves on the duct system it will usually be necessary to re-balance the system three or more times before the correct readings are achieved in every room.

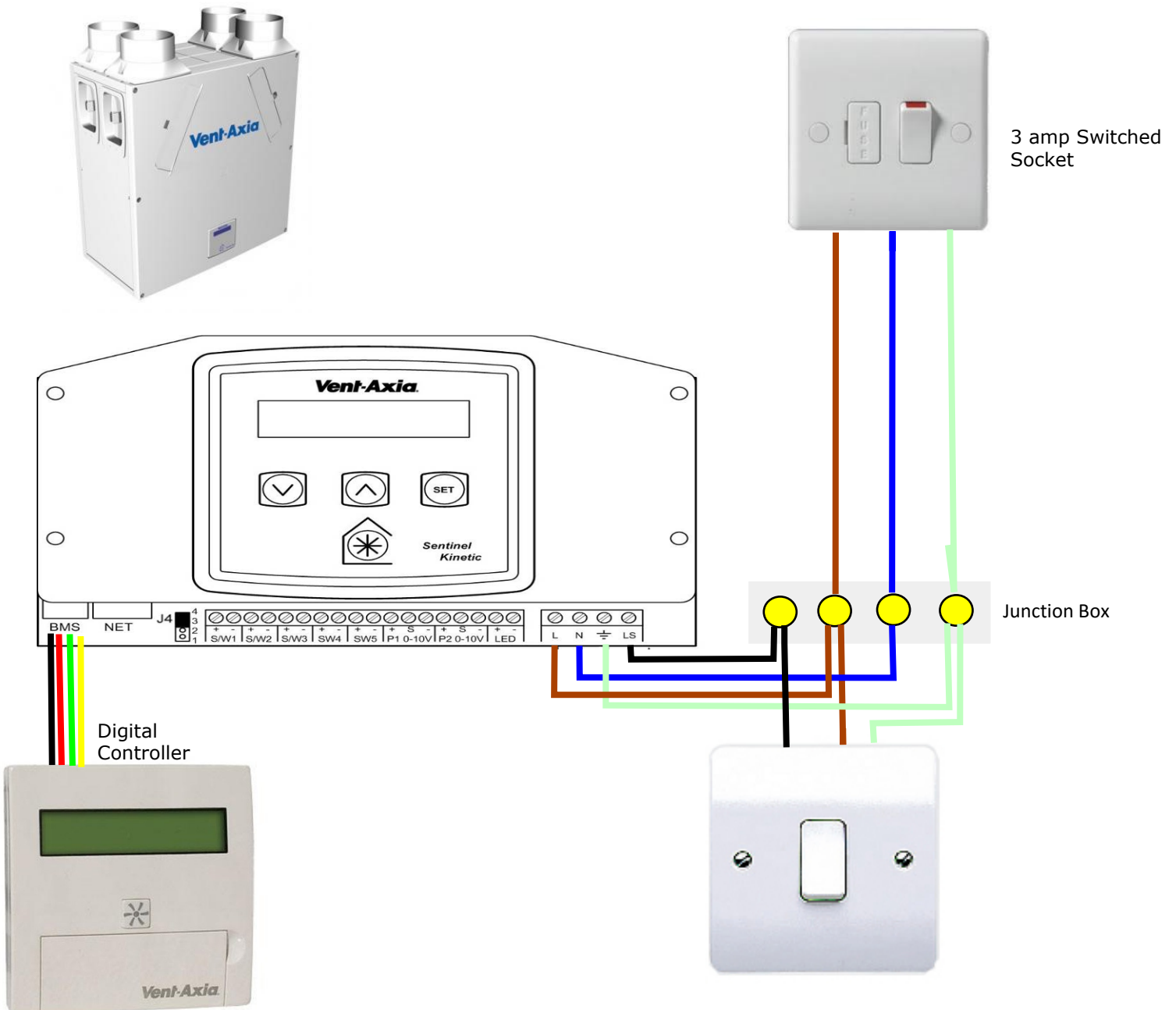


We Can Hire You a certified Air meter (Anemometer) to Balance system yourself



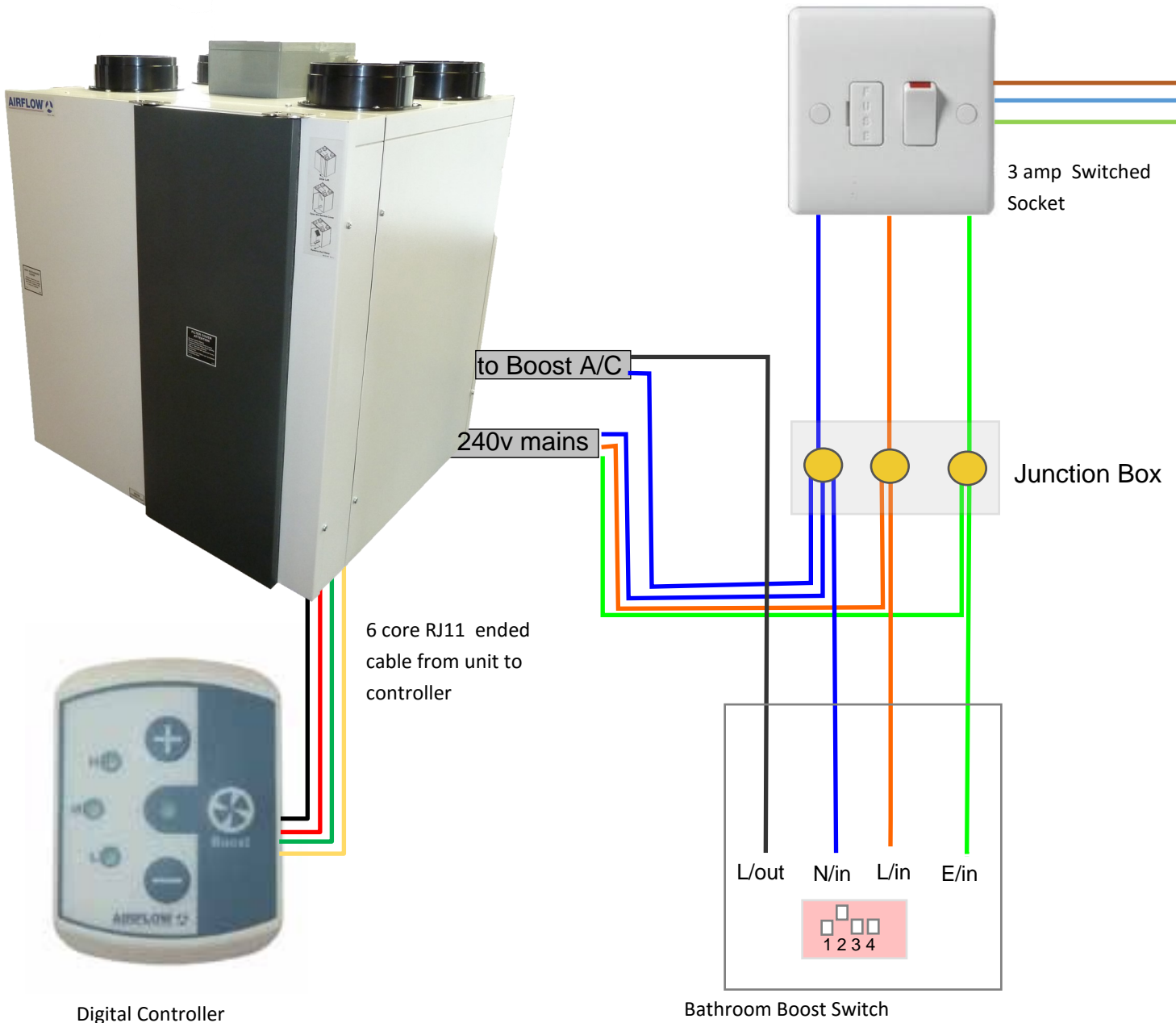
Vent Axia Kinetic

- You will be required to install a 3 amp switched spur beside unit
- The chosen unit requires a hard wired controller using 6 core alarm cable from unit to a single gang recessed box in the utility room (Comes complete with 15 meter cable with RJ12 fitting)
- Optional boost switches with timer to the bathrooms—you will require a 3 core 1.0 mm cable from unit to a single recessed box to outside of bathroom
- You will be required to install a 22 mm condensation drain with trap from heat recovery unit to proverbially a internal drain
- The dimensions of the Vent Axia Kinetic are 785 long, 632 high and 526 wide - please allow a suitable trap door or area to suit dimensions
- We can either supply 2 x roof vents or 2 x s-steel external cowl for you to install a distance of 1.5 meter apart



Airflow BV400

- You will be required to install a 22 mm condensation drain with trap from heat recovery unit to proverbially a internal drain
- You will be required to install a 3 amp switched spur beside unit
- The chosen unit requires a surface mounted hard wired controller using 6 core alarm cable with RJ11 connectors from unit (We can supply you a 15meter cable with factory fitted connection if required)
- boost switches with timer options to the bathrooms—you will require a 4 core 1.0 mm cable from unit to a single recessed box to outside of bathroom
- We have supplied 2 x S/Steel grilles or 2 x roof vents to be installed a distance of 1.5 meter apart
- The dimensions of the unit are 710 long, 800 high and 520 wide (with by-pass removed) please allow suitable trap door to suit

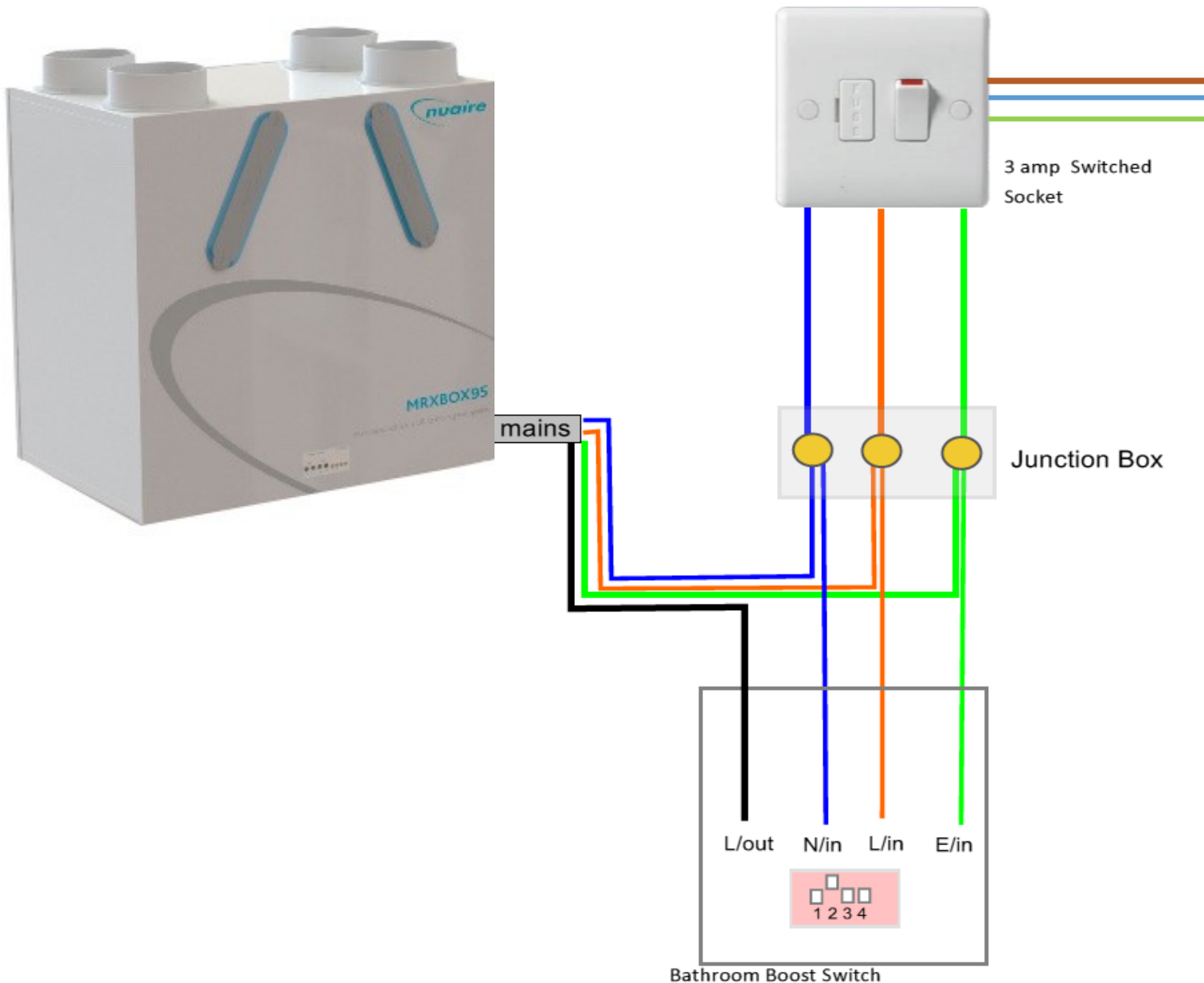


Digital Controller

Bathroom Boost Switch

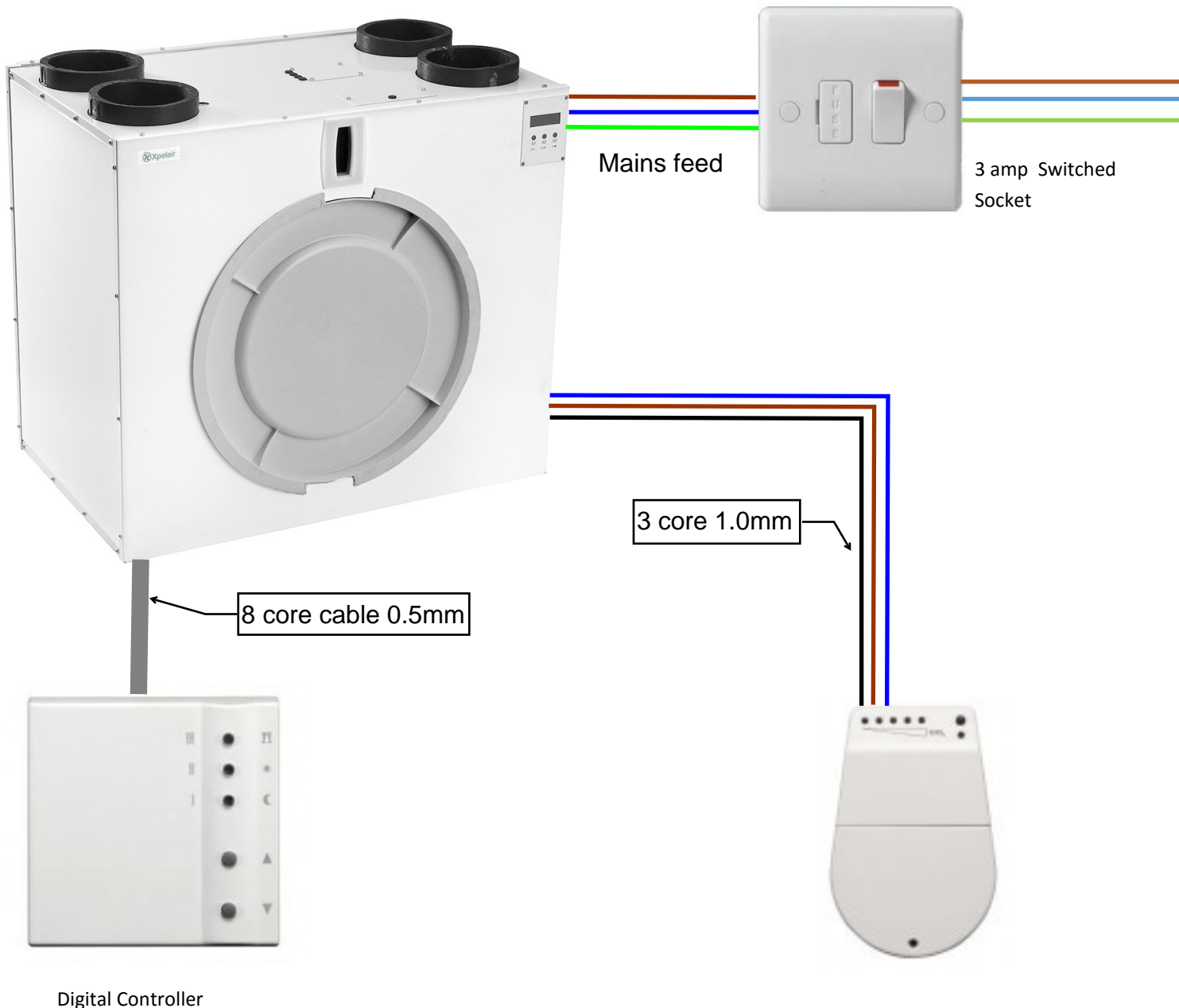
Nuaire MRXBOX MVHR units

- You will be required to install a 22 mm condensation drain with trap from heat recovery unit to proverbially a internal drain
- You will be required to install a 3 amp switched spur beside unit
- boost switches with timer options to the bathrooms—you will require a 4 core 1.0 mm cable from unit to a single recessed box to outside of bathroom
- We have supplied 2 x S/Steel grilles or 2 x roof vents to be installed a distance of 1.5 meter apart
- The dimensions of the unit are 655 long, 620 high and 431 wide please allow suitable trap door to suit



Xpelair Xcell 400 QVI

- You will be required to install a 22 mm condensation drain with trap from heat recovery unit to proverbially a internal drain
- You will be required to install a 3 amp switched spur beside unit
- The chosen unit requires a surface mounted hard wired controller using 8 core alarm cable from unit (normally installed utility room)
- Humidity Sensors to the bathrooms—you will require a 3 core 1.0 mm cable from unit to a humidity sensor in top corner of bathroom
- We have supplied 2 x S/Steel grilles or 2 x roof vents to be installed a distance of 1.5 meter apart
- The dimensions of the unit are 750 long, 660high and 455 wide please allow suitable trap door to suit





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