



AX

Circular Long Cased Axial Flow Fans Installation Manual



1.0 SAFETY INFORMATION

- The provision of the electrical supply and the connection of the unit to the mains must be carried out by a qualified electrician.
- Isolate from power supply before removing any covers. During installation / maintenance ensure all covers are fitted before switching on the mains supply.
- All-pole disconnection from the mains as shown in the wiring diagram must be incorporated within the fixed wiring and shall have a minimum contact separation of 3mm in accordance with latest edition of the wiring regulations.
- This unit must be earthed.
- Ducting must be securely fixed with screws to the spigot to prevent access to live parts. Duct runs terminating close to the fan must be adequately protected by suitable guards.
- 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.
- This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.

1.1 Hazard Symbols



GENERAL WARNING

Signifies a general warning regarding hazard specified by supplementary information.



ELECTRIC SHOCK

This unit must be completely electrically isolated before any panels are removed. Check mains supply and control connections.



ROTATING PARTS

This unit contains fast moving rotational parts which may start automatically. It is the sole responsibility of the installer to adequately guard these components.



REFER TO INSTRUCTION MANUAL

Read and understand the installation and maintenance manual before installing, operating or maintaining this product.

1.2 Important Information

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

While the product has been manufactured according to the accepted rules of current technology, there is still a danger of personal injury or damage to equipment if the following general safety instructions and the warnings contained in these instructions are not complied with.

- **Read these instructions completely and thoroughly before working with the product.**
- **Keep these instructions in a location where they are accessible to all users at all times.**
- **Always include the operating instructions when you pass the product on to third parties.**

1.3 Personal Protective Equipment

The following minimum Personal Protective Equipment (PPE) is recommended when interacting with Nuaire product:

- **Protective Steel Toed Shoes** - when handling heavy objects.
- **Full Finger Gloves (Marigold PU800 or equivalent)** - when handling sheet metal components.
- **Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent)** - when conducting light work on the unit requiring tactile dexterity.
- **Safety Glasses** - when conducting any cleaning/cutting operation or exchanging filters.
- **Reusable Half Mask Respirators** - when replacing filters which have been in contact with normal room or environmental air.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

2.0 INTRODUCTION

The AXUS range of axial flow fans are designed for 'in duct' applications. Manufactured from galvanised steel, the units are suitable for indoor or outdoor installation and at any installed angle.

Available for single and three phase supplies.
Case diameters of 250mm to 2400mm.
Unit codes AX25 to AX240.

Impellers have been selected at blade angle settings matched to various motor speeds to perform against the design criteria laid down in our selection catalogue.

Any attempt to adjust or reset impeller blade angles will invalidate warranty.

For full unit description, dimensional, weight and performance details refer to the Nuaire product catalogue. A comprehensive range of ancillaries and silencers are also listed.

2.1 Code Description:

AX 63 AD - 2 1 A 7 + 13M
 | | | | | | | | | |
 1 2 3 4 5 6 7 8 9 10

- | | |
|----------------------------|------------------------------------------------------------------|
| 1. Range: | Long Case Axial Fans |
| 2. Impeller Size (cm): | 31 to 160 |
| 3. Impeller Reference: | Contact Nuaire |
| 4. Guide Vanes: | * = Guide Vanes
- = No Guide Vanes |
| 5. Motor Poles: | 2, 4, 6, 8. |
| 6. Blade Angle Reference: | Contact Nuaire |
| 7. Impeller Material: | A = Aluminium
S = Steel |
| 8. Motor Insulation Class: | 3 = Class F Ambient |
| 9. Case Type: | Contact Nuaire |
| 10. Speed Control: | + = Must Be VSD Controlled
- = No Speed Control |
| 11. Further Options: | Contact Nuaire |

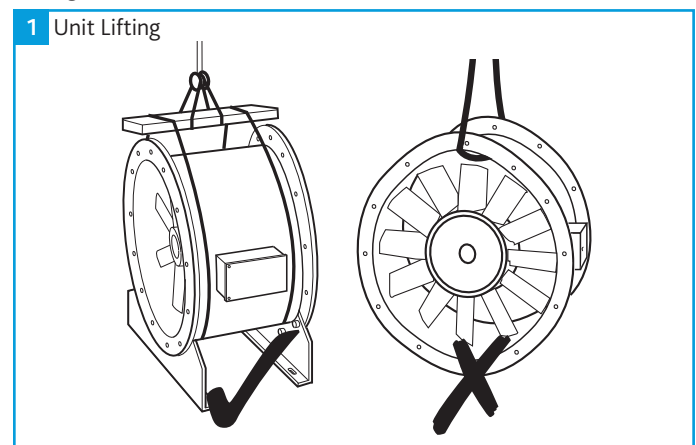
3.0 DELIVERY & HANDLING

All equipment is inspected prior to despatch and leaves the factory in good condition. Upon receipt of the equipment an inspection should be made and any damage indicated on the delivery note. Particulars of damage and/or incomplete delivery should be endorsed by the driver delivering the goods before offloading by the purchaser.

No responsibility will be accepted for damage sustained during the offloading from the vehicle or on the site thereafter. All claims for damage and/or incomplete delivery must be reported to Nuaire within two days of receipt of the equipment.

The fan impeller is carefully balanced and centralised in the fan case, it is therefore essential that great care is exercised when handling the unit. Check the weight on the rating plate details before attempting to lift and always use a spreader as shown (Figure 1), never pass lifting slings through the impeller.

Care must be taken when handling a unit/attenuator assembly fitted with flexible connectors as the connectors can be distorted or damaged.



4.0 INSTALLATION

Installation must be carried out by competent personnel, in accordance with good industry practice, the appropriate authority and in conformance with all statutory and governing regulations e.g. IEE, CIBSE, COSHH, HVCA, ATEX, BSI & EN standards etc.

If the fan is to be installed in a potentially explosive atmosphere it will have been designed to ATEX directive 2014/34/EU and will incorporate motors requiring compatible installation wiring direct to the motor termination box, to complete this installation also follow the guidance advice of data sheet 671216.

Before commencing installation check that all material, including optional ancillaries are available to complete the installation. Every unit is tested and serialised at works and a test certificate produced, the details recorded on the fan side rating plate should also be referred to before handling and installation.

Any damages or deviations should be immediately reported to the seller/supplier/agent quoting the order and product details from the product rating plate.

Do not reverse impeller direction of operation as performance of the unit is drastically reduced. Do not alter the blade angle of impeller without the permission of Nuairé, doing so may invalidate your warranty.

4.1 Mechanical Installation

Rotate the fan impeller by hand to ensure free and smooth rotation and that no transit or handling damage has occurred, observe the direction of flow/direction of rotation arrow and ensure that:

- All optional accessories such as support brackets, attenuators, inlet cones, guards, flexible connectors etc. are assembled to the fan.
- AV mounts isolate the fan only. Attenuators, backdraught dampers and other 'significant mass' accessories should form part of the fixed ductwork after the flexible connection.
- The optional support brackets are correctly fitted, at any position around the circumference, but suit the installation plane.
- External termination box is accessible to the electrician.
- When offering the fan to the ducted system that both inlet and outlet connections are perfectly aligned.
- In order to ensure performance is as stated, a minimum distance of twice the fan diameter is required between the appliance and any bends in the ductwork.

AV mounts isolate the fan only. Silencers / backdraught dampers and other "significant mass" accessories should form part of the fixed ductwork after the flexible connection.

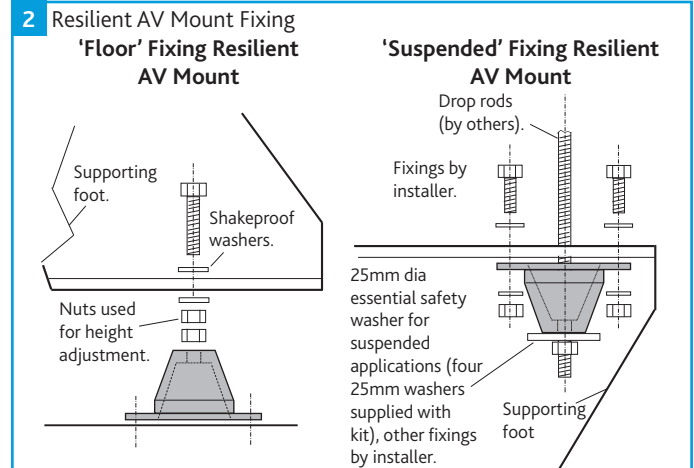
4.1.1 Horizontal on Floor or Supported from Wall etc.

Optional resilient mountings should be attached to the unit mounting brackets at this stage. If the unit is supported from a wall, supporting brackets should be used. Position and align the unit with the ductwork in both horizontal and vertical planes and pack height under mounting feet if necessary.

Matching attenuators if required; should be fitted to the fan with any other accessories before installation.

Matching flanges are fixed to the ductwork ends with rivets.

AV mounts isolate the fan only. Silencers / backdraught dampers and other "significant mass" accessories should form part of the fixed ductwork after the flexible connection.



4.1.2 Suspended Horizontally or Vertically

Anti-Vibration (A.V.) mounts must be arranged so that they are used in **compression** only. A suspended steel under frame would be necessary (by others) to support the unit, standing on A.V. mounts.

If Resilient A.V. Mounts NAV1 to NAV5 are specified the rubber mountings must also remain in compression. The large metal washers must be fitted under the studding nuts on each mounting (Figure. 2).

Other types of A.V. mounts - spring etc. are also designed to be used in compression only.

A suspended steel underframe would be necessary to support the unit, (by others) standing on A.V. mounts.

4.2 Ecosmart Control Mounting (optional)

The controller must be fitted indoors (an optional outdoor cover can be purchased) and away from water spray and heat source.

The operating range is -10°C to 35°C up to 85% relative humidity. The controller must be fitted to a vertical vibration free wall with appropriate fasteners and for ease of installation the cover should be removed and the casing separated from the base. If cooling fans are fitted they should be disconnected while installation takes place.

The cable connecting the Ecosmart control and the fan must be a screened power cable, not exceeding 30 metres.

The screening must be earthed at both ends using the special cable glands supplied.

Bridge any break in the screening (e.g. at local isolators) using braided earthing strap.

5.0 ELECTRICAL INSTALLATION

Isolation - Before commencing work, make sure that the unit, switched live and Nuair controls are electrically isolated from the mains supply.

To minimise the possibility of Electro Magnetic Interference:

- Always install screened cable between the control and the fan, maximum length 30 metres. Please consult Nuair if a longer cable run is needed.
- This product must be earthed and always 'earth' the screened cable at both ends. Ensure that ALL earth connections are the same potential. Cable glands are provided.
- Always keep mains supply cables and motor supply cables separate and DO NOT install any data cable or low voltage cable within 50mm or the same containment as mains carrying cables
- The screening of the power cable must be continuous. Bridge any breaks (e.g. at local isolators) using braided earthing cable. Ensure the screening is earthed at both ends.

It is essential to note that for all three phase fans of 4kW and above the final connection must be in Delta.

If T1/T2 are located in the fan terminal block, this is the motor overheat protection device which uses Thermistors or a Thermostat as specified.

If a Star/Delta starter is to be used, connect all six motor terminals to the appropriate terminals of the starter. If the fan is to be started direct on line (DOL) to a frequency inverter or Nuair's Ecosmart speed control the motor **must be connected in Delta**.

Units are not supplied with electrical isolators, their selection and provision is the responsibility of the installer.

Ensure the electrical supply is suitable for the fan and that all wiring, fuse and overload protection, etc. is appropriately sized by comparing with the rating plate.

Electrical connection is made direct to the motor termination box on all fans, if explosion proof motors are fitted they will require matched specified wiring; refer to data sheet 671216 for additional advice.

5.1 Wiring Diagrams

For specialist connections not shown always refer to the wiring diagram supplied with the unit. In the event of query or uncertainty contact NUAIRE directly before any connection is made.

Wiring connection diagrams; where a starter, frequency inverter or Ecosmart control is used also refer to the relevant control I&M instructions. Bifurcated fans should only be speed controlled by a frequency inverter.

If an inverter is used to provide speed control. When the fan is isolated, allow 5 minutes for the capacitors in the inverter to discharge before commencing any work on the unit.

5.1.1 Connection Details

Check that the voltage full load and starting current on the fan rating label is suitable for your supply. Units for external use require weatherproof conduit and glands.

Single speed motors below 4kW

Single speed motors below 4kW are suitable for Direct On Line starting only.

Single speed motors 4kW and above

Single speed motors 4kW and above are supplied with Star / Delta capability but Direct On Line starting is recommended as the simplest means for emergency equipment operation.

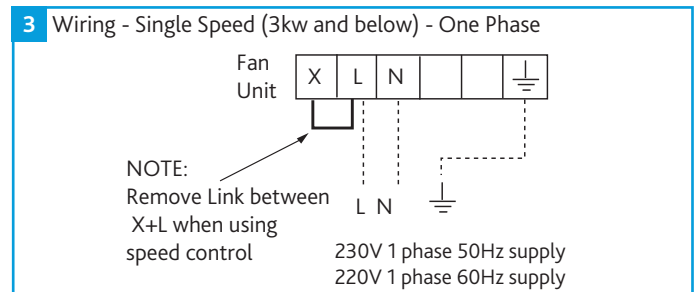
Two speed motors

Two speed motors are supplied TAP or PAM single winding or Dual Wound. All two speed types are designed for Direct On Line starting on both speeds only unless otherwise specified.

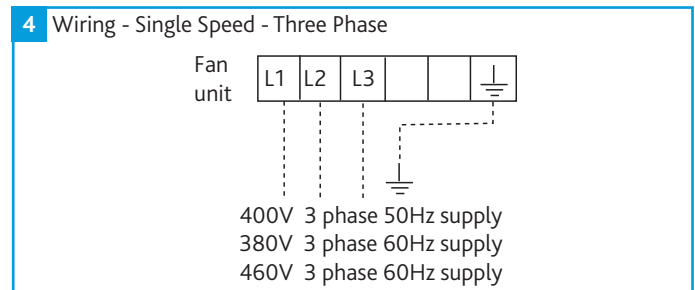
5.2 Wiring Diagrams

5.2.1 Single Speed (3kw and below) - One Phase

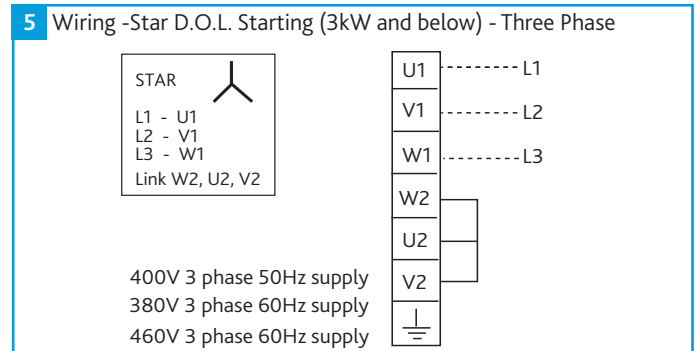
Remove link between X and L when using speed control.



5.2.2 Single Speed - Three Phase



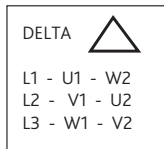
5.2.3 Star D.O.L. Starting (3kW and below) - Three Phase



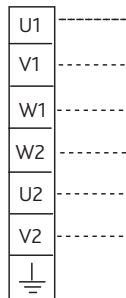
5.2.4 Delta D.O.L. Starting (4kW and above) - Three Phase

6 Wiring - Delta D.O.L. Starting (4kW and above) - Three Phase

For all D.O.L. (Direct On Line) operation or Inverter type Speed Control wire in DELTA

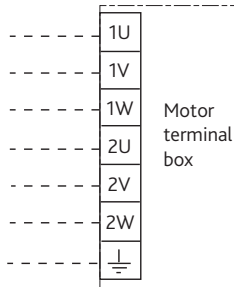


400V 3 phase 50Hz supply
380V 3 phase 60Hz supply
460V 3 phase 60Hz supply



5.2.5 Two speed - TAP / PAM Wound Motor - D.O.L. Starting (Both Speeds) - Three Phase

7 Wiring - Two Speed - TAP / PAM Wound Motor - Three Phase

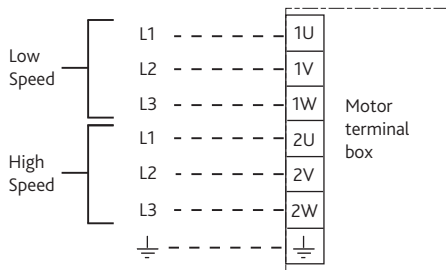


NOTE
HIGH SPEED
Supply: 2U 2V 2W
LINK: 1U 1V 1W
LOW SPEED
Supply: 1U 1V 1W

400V 3 phase 50Hz supply
380V 3 phase 60Hz supply
460V 3 phase 60Hz supply

5.2.6 Two Speed - Dual Wound Motor - D.O.L. Starting (Both Speeds) - Three Phase

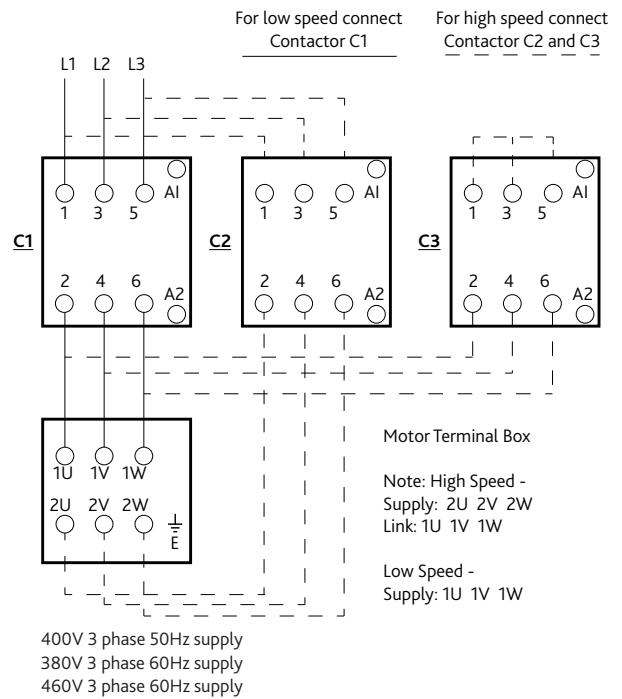
8 Wiring - Two Speed - Dual Wound Motor - Three Phase



400V 3 phase 50Hz supply
380V 3 phase 60Hz supply
460V 3 phase 60Hz supply

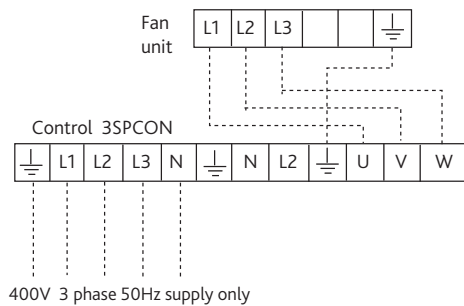
5.2.7 Example Contactor Control - Two Speed Motors - Three Phase

9 Example Contactor Control - Two Speed Motors - Three Phase



5.2.8 Transformer Speed Control - Three phase

10 Wiring - Transformer Speed Control - Three phase

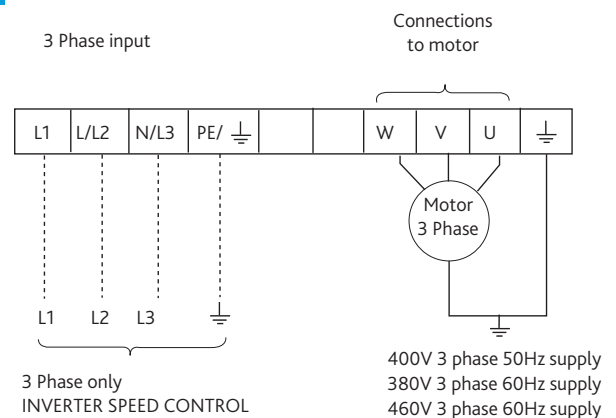


5.2.9 Electronic Speed Control - Three Phase

Total length of motor leads should not exceed 50 metres. If a screened cable is used, maximum length should be 30 metres. Consult our Technical Department if you wish to use longer leads.

Inverters are configured to suit specific fans and control applications as described on the Customer Order, free of charge.

11 Wiring - Electronic Speed Control - Three phase



6.0 ECOSMART CONTROL (OPTIONAL)

The mains power supply to the controller must be appropriately sized and installed via a local isolation switch (by others). The isolator must also accommodate the 230V switched live (if used).

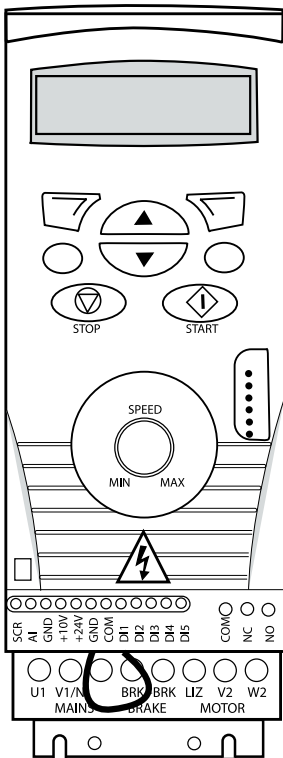
The mains supply from the Ecosmart controller to the fan must be appropriately sized, not exceeding 30 metres and must be a screened power cable, earthed at both ends. A four point gland plate is formed from the base of the control and in order to maintain EMC compliance, an EMC glanding kit is supplied.

Ecosmart controls and sensors are supplied with 10 metres of data cable plugged at both ends, if used these can now be fitted and plugged in to the low voltage sockets on the Ecosmart control board. **All other low voltage connections i.e. BMS can also be completed.**

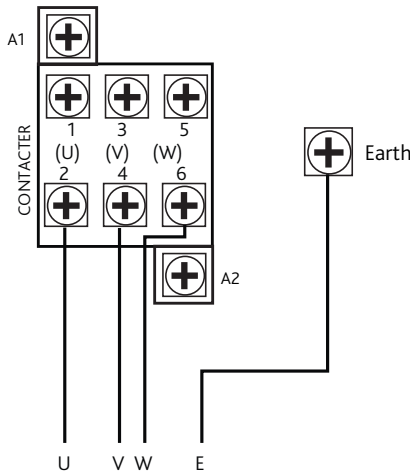
Internal connections between the supply terminals, output contactors, PCB and inverter are made at the factory.

6.1 Ecosmart Control Wiring Diagram

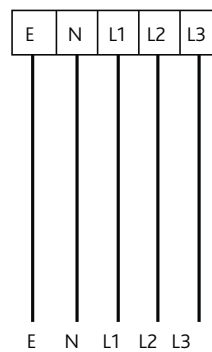
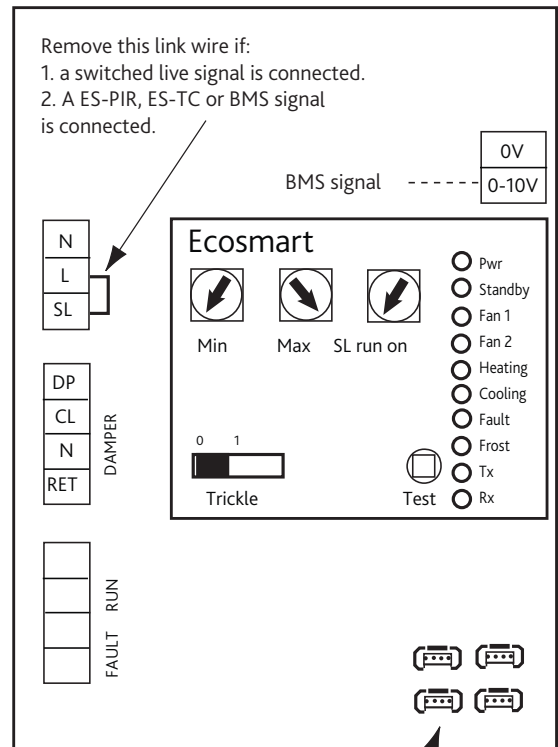
12 Wiring Diagram - Ecosmart Control - Three phase



Note: Internal connections between the supply terminals, output contactors the PCB and inverter are made at the factory



Connections to fan via screened power cable. Purpose made glands are provided to earth the screening



Mains supply connections 400V 50Hz 3ph + Neutral via local isolator

6.2 Connections

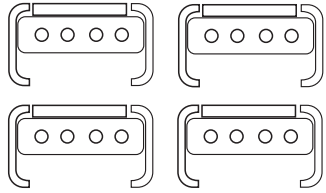
6.2.1 Mains Connections

Mains cables should be suitably sized and terminated at terminals shown on the appropriate diagram.

6.2.2 Control 'Net' Connections

Net - The 4 IDC plug-in connectors are provided for the connection of compatible sensors, manual controls and for linking the fans together under a common control. If more than 4 connections are required, the junction box (product code ES-JB) should be used (data cable installation).

13 Control 'Net' Connections For Ecosmart Devices



6.2.3 PCB Switched Live (SL) Terminal Connection

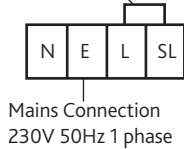
A signal of 100-230V a.c. will activate the fan from either its off state or trickle state (see setting to work-trickle switch). When the SL is disconnected the fan will over-run for 1 – 60 minutes (Figure 14).

Do not take this signal from an isolating transformer.

Remove link if switched live signal, an enabler or BMS signal is connected.

14 PCB Switched Live (SL) Wiring

Remove link if switched live signal, an enabler or BMS signal is connected.

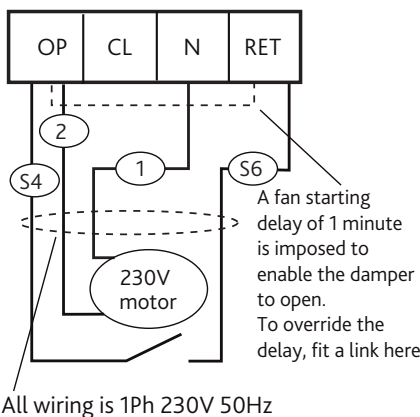


6.2.4 Damper Connections

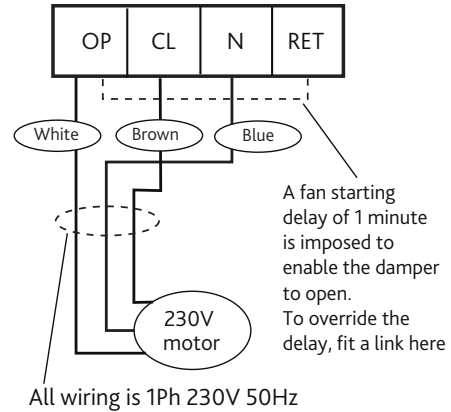
- OP** - 230V 50Hz 1A max supply to open the damper.
- CL** - 230V 50Hz 1A max supply to close the damper.
- N** - Neutral supply to damper.
- RET** - 230V ac return signal from the damper limit switch indicates the damper has reached its operating position. If the return signal is not present, the fan will wait for 1 minute before starting.

If a damper is not fitted, connect a link wire from OP to RET. This will cancel the delay.

15 Drive Open / Spring Close Damper Wiring



16 Drive Open / Drive Close Damper Wiring



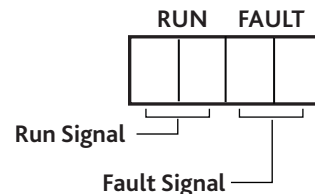
6.2.5 Volt Free Relay Contacts

Volt free contacts are not fused. If these are used to power any external equipment, the installer must provide adequate fusing or other protections. These contacts are rated at 5A resistive, 0.5A inductive.

Run connections - These contacts are closed when the fan is running.

Fault connections - No fault = the contacts are closed.
Fault = the contacts are opened.

17 Volt Free Relay Contact Wiring



6.2.6 Data Cable Connections

A 4-core SELV data cable is used to connect devices.

Do not run data cable in the same conduit as the mains cables and ensure there is a 50mm separation between the data cable and other cables. The maximum cable run between any two devices is 300m when it is installed in accordance with the instructions.

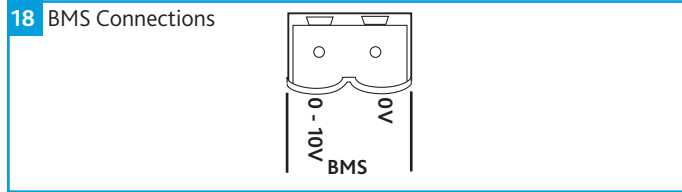
Total data cable length used in any system must be less than 1000m. Keep the number of cable joints to a minimum to ensure the best data transmission efficiency between devices.

The maximum number of devices (including fans) that can be connected together via the cable is 32, irrespective of their functions.

6.2.7 Other Low Voltage Cable Connections (e.g. BMS Signal)

Follow the basic principle shown in Section 6.2.6. Keep the cable run as short as possible, maximum cable length of 50m. If the cable is longer than 12m, Nuair recommend using screened cable with the screening grounded at one end only (preferably at the inverter end).

6.2.8 BMS Input Signals



Reversal of the BMS connection will damage the control.

The BMS connection is made with a plug-in connector via the socket (Figure 18).

To ensure the connection is made only by suitably qualified and authorised personnel the plug is not supplied.

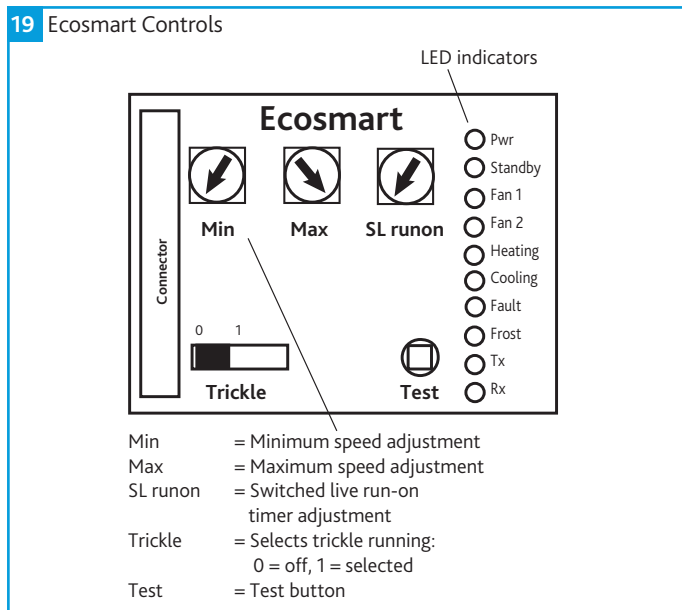
It is available from R S Components: Part No. 403-875 / Farnell: Part No. 963-021.

The BMS signal will override any sensors and user control connected in the system. The voltage tolerance is +/- 125mV and is measured at the fans terminal.

The system's response to a 0-10V dc BMS signal is given in the following table.

	Ventilation Mode
Local Control	0.00
OFF/Trickle	0.25
Speed 1	0.50
Speed 2	1.50
Speed 3	2.50
Speed 4	3.50
Speed 5	4.50
Speed 6	5.50
Speed 7	6.50
Speed 8	7.50
Speed 9	8.50
Speed 10	9.50

6.3 Controls



6.3.1 Test Button

The test button allows the blower within the unit to be checked for its operation. If the fan is running already, press the button once to stop the fan, press again to switch on the fan.

The fan will return to normal operation after 30 seconds.

6.3.2 LED Indication

PWR	GREEN: Power on & OK.
Standby	LED on when fan is not running.
Fan 1	GREEN: Fan 1 is running, RED: Fan 1 faulty.
Fan 2	GREEN: Fan 2 is running, RED: Fan 2 faulty.
Heating*	Not applicable, see note.
Cooling*	Not applicable, see note.
Fault	LED on when a fault is present on unit.
Frost*	Not applicable, see note.
Tx	LED on when the controller is transmitting data.
Rx	LED on when the controller is receiving data.

* The control panel is common to all the Ecosmart products and will have indicators for functions that are not available in this particular fan. However these indicators will not be illuminated.

6.3.3 Setting Maximum Airflow

- Ensure the power supply is switched off and that a link wire is connected from the supply L to the SL terminal. Unplug all items connected to the 'Net' connectors.
- Switch on the power supply.
- Wait for the fan to reach steady condition. Measure the airflow using standard commissioning instruments at a suitable point in the ductwork. If adjustment is required, rotate the pot marked 'MAX' to obtain the desired airflow. Remove the link wire if not required (Figure 14).

6.3.4 Setting Minimum Airflow

- Repeat the same procedure as for maximum airflow above but without the link wire between supply L and SL terminal. Ensure the trickle switch is in the 'ON' position. Adjustment must be made on the pot marked 'Min'.
- Note that the minimum setting (nominally 20%) must be below the maximum setting; otherwise minimum setting will be automatically set to be the same as the maximum.
- The minimum speed set is the trickle speed at which the fan operates.

The working speed range of the user control and sensors is between the minimum and maximum set points.

7.0 MAINTENANCE

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

It is important that maintenance checks are recorded and that the schedule is always adhered to, in all cases, the previous report should be referred to.

Only appropriately qualified personnel, familiar not only with the electrical aspect of the work but with the plant, area or application served by the unit, should carry out routine and preventative maintenance on this product.

Ensure all mechanical and electrical connections and fixings are secure and that inlet and outlet duct work is free of any obstruction or debris. Briefly switch the fan on/off to ascertain correct direction of rotation, compare the rotational label applied to the fan case and correct if necessary.

Motors are fitted with sealed for life bearings and do not require any lubrication.

7.1 Routine Maintenance

- Clean all areas of unit of dust or fibres and treat any areas of corrosion, including lifting lugs / eye bolts.
- Check all areas and ensure no damage is present on units i.e. impeller cracked, fan cowl bent, foot cracked etc.
- Check all access doors for leakage and if necessary locks should be adjusted and any replacement gasket materials should be replaced as required.
- Check insulation resistance is adequate, it is imperative this is checked after any prolonged shut down period.
- Check all fasteners and tighten if necessary.
- Ensure no excessive vibration.

7.2 Every 3 Months

- Check sealing of motor and gland plate is in good condition.

7.3 Annually

- Thoroughly inspect the unit and its components for corrosion, acting immediately to treat/restore any damaged areas.
- Check all cables are in good condition and all electrical terminals within the unit are tight.
- Check all earth connections.
- Check all cables are in good condition.
- Check bearing condition and if necessary re-grease bearings for 160 motor frames and larger.

7.4 Impellers

Impellers are dynamically balanced during manufacture, no special treatment is required during maintenance, other to clean and remove all dust and dirt residue taking care not to disturb the balance weights. Remove stubborn dirt with warm soapy water – do not use caustic fluids.

If an ATEX compliant unit, observe the advice of the guidance notes in document 671216.

The maintenance programme must conform to 'good custom and practice' and to the published recommendations of associations such as the HVCA, CIBSE etc. The HVCA's publication 'Standard Maintenance Specification for Mechanical Services in Buildings' Vol 2 Ventilating and Air Conditioning is a recommended reference.

8.0 WARRANTY

Axus AX units have a 3 year warranty. Units with Ecosmart control have a 5 year warranty. The warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details.

Failure to maintain the unit as recommended will invalidate the warranty.

9.0 END-OF-LIFE AND RECYCLING

Where possible Nuaire use components which can be largely recycled when the product reaches its end-of-life:

- Fans, motors, controls, actuators, cabling and other electrical components can be segregated into WEEE recycling streams.
- Sheet metal parts, aluminium extrusion, heating/cooling coils and other metallic items can be segregated and fully recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining items can be further segregated for energy from waste centres or, as a last resort, sent to landfill. Please call After Sales Support for further information on items not listed above.

Ensure that Nuaire product is made safe from any electrical / water / refrigerant supplies before dismantling commences. This work should only be undertaken by a qualified person in accordance with local authority regulations and guidelines, taking into account all site based risks.

10.0 AFTER SALES AND REPLACEMENT PARTS

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

If ordering spares please quote the serial number of the unit together with the part number, if the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing.

Telephone 02920 858 400
aftersales@nuaire.co.uk

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.



EU 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. All parts except for moving parts requiring the correct installation of safety guards comply with the essential requirements of the Machinery Directive. The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Machinery Directive.

Product: AXUS AXIAL FAN
Type: AX
Relevant EU Council Directives: 2006/42/EC (MACHINERY DIRECTIVE)

Applied EU Harmonised Standards: EN 60204-1:2006+A1:2009+AC:2010;
 EN ISO 12100:2010; EN ISO 13857:2008;
 EN ISO 9001:2015

Signature of manufacture representatives:

Name:	Position:	Date:
1) A. Thomas 	Technical Director	06. 08. 21
2) C. Sargent 	Manufacturing Director	06. 08. 21

Basis of Self Attestation: BS EN ISO 9001, BSI Cert No. FM 665203

Nuaire: A Trading Division of Polypipe, Western Industrial Estate, Caerphilly, CF83 1NA.

EU Authorised Representative: Eurolink Europe Compliance Limited, 25 Herbert Place, Dublin D02 AY86, Republic of Ireland.

All standards used were current and valid at the date of signature.

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

To comply with EC Council Directives 2014/30/EU (EMC), 2014/35/EU (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 e.g. 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 duct work systems. They must not be used to support the ductwork.

4.4 **Local Environment - Humidity.** Ambient humidity (the humidity at the unit's installed location) shall be within the range: 10 to 95% (for controls, non-condensing).
 Air humidity (the humidity of the air passing through the unit) shall be within the range: 10 to 95% (for controls, non-condensing).

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 (e.g. 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.

5.3 For EMC all control and sensor cables should not be placed within 50mm or on the same metal cable tray as 230V switched live, lighting or power cables and any cables not intended for use with this product.

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

8.4 **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.



UK 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. All parts except for moving parts requiring the correct installation of safety guards comply with the essential requirements of the Machinery Directive. The machinery shall not be put into service until the system has been declared to be in conformity with the provisions of the EC Machinery Directive.

Product: AXUS AXIAL FAN
Type: AX
Relevant UK Council Directives: 2008 No. 1597, The Supply of Machinery (Safety) Regulations 2008;

Applied UK Harmonised Standards: BS EN 60204-1:2006+A1:2009+AC:2010; BS EN ISO 12100:2010; BS EN ISO 13857:2008; BS EN ISO 9001:2015

Signature of manufacture representatives:

Name:		Position:	Date:
1) A. Thomas		Technical Director	06. 08. 21
2) C. Sargent		Manufacturing Director	06. 08. 21

Basis of Self Attestation: BS EN ISO 9001, BSI Cert No. FM 665203

Nuaire: A Trading Division of Polypipe, Western Industrial Estate, Caerphilly, CF83 1NA.

All standards used were current and valid at the date of signature.

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

To comply with UK Regulations: The Supply of Machinery (Safety) Regulations 2008 and Electromagnetic Compatibility Regulations 2016. 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

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 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 e.g. wall mounting brackets. They are to be used to support the equipment only. Other system components must have separate provision for support.
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 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 (e.g. 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.
 5.3 For EMC all control and sensor cables should not be placed within 50mm or on the same metal cable tray as 230V switched live, lighting or power cables and any cables not intended for use with this product.

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