

# Acoustic Fans

Single

In-line Duct Fan Range (ACQ)

Installation and Wiring Instructions



Stock Ref. N°

ACQ20012D  
ACQ25012D  
ACQ31512LD  
ACQ31514HD  
ACQ40014D  
ACQ50014D

## **Vent-Axia**

**PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE  
STARTING INSTALLATION. INSTALLATION AND WIRING  
INSTRUCTIONS SHOULD BE LEFT WITH END USER.**

**UK  
CA** **CE**

Air moving equipment may present mechanical, electrical or noise hazards. To minimize risks associated with these potential hazards, it is essential that safety, installation, operation and maintenance instructions are followed. Implementation of these instructions should always be undertaken by technically competent personnel.

Potential mechanical hazards must be eliminated by guarding against access to the rotating parts whilst the air moving equipment is operating. A range of guards are available for this purpose from Vent-Axia.

Installation work, both mechanical and electrical, must be undertaken in accordance with the safety and installation instructions before switching on the unit.

Maintenance work should not be attempted before first switching off and isolating the fan and its control from the electrical supply and ensuring that it cannot be accidentally turned back on again. It is essential to ensure that rotating parts have come completely to rest before maintenance work commences.

Air moving equipment may generate unacceptable noise levels when in operation. It may be necessary to take appropriate action to reduce sound levels. A range of products are available for this purpose from Vent-Axia.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision or instruction concerning use of this appliance by a person responsible for their safety.

Young children should be supervised to ensure that they do not play with the appliance.

## **IMPORTANT**

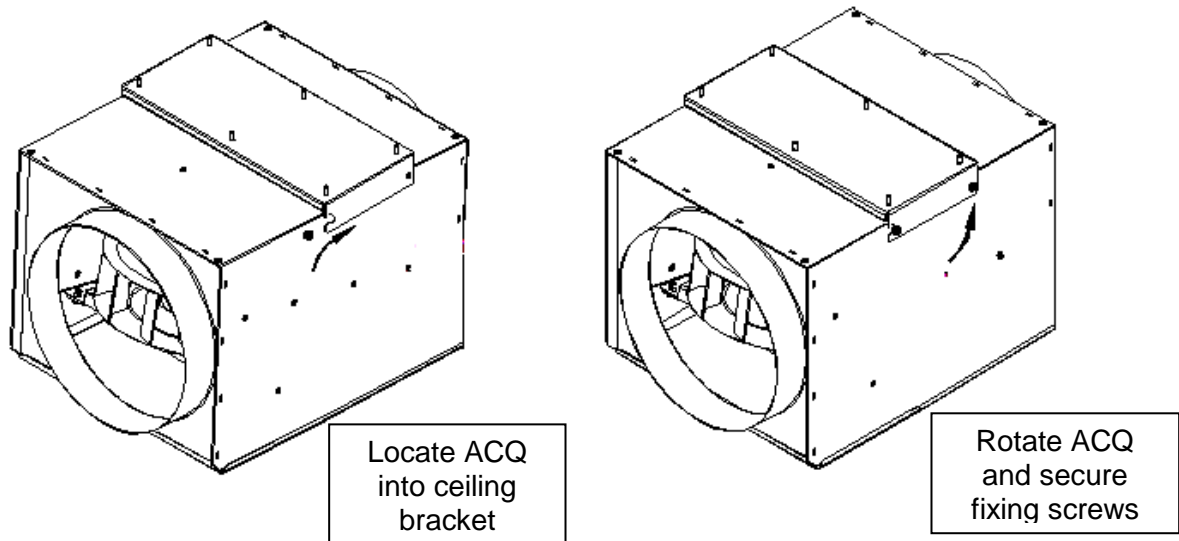
1. All electrical connections should be made by a properly qualified electrician. The fan must be sited and connected in accordance with current I.E.E Wiring Regulations, BS7671 (U.K.), or the appropriate standards in your country.
2. DO NOT use this appliance when the following are generated or present: Excessive grease or oil laden air, corrosive or flammable atmospheres.
3. When the fan is installed in a room containing a fuel burning appliance, the installer must ensure that the air replacement is adequate for both the fan and the fuel burning appliance.
4. If a fan is used to supply air into a room, the installer must ensure that the fan intake is located at least 600mm away from any flue outlet.
5. Site away from direct sources of heat. Ambient temperature range:  $-100^{\circ}\text{C}$  to  $+400^{\circ}\text{C}$ .
6. When installing unit, take care not to damage electrical or other hidden utilities.
7. Check the details on the rating label for correct voltage, frequency, speed, phase insulation class and IP rating.
8. It is the responsibility of the installer to ensure that all aspects of system design are taken into consideration.
9. Due to the weight of units it is recommended that two people are involved in the installation.

## **FAN MOUNTING**

1. Short duct runs terminating close to the fan (i.e. within 1.5m) require suitable guards.
2. The fan can be mounted in a variety of ways and at any angle to suit the application.
3. Plan the installation carefully, taking into consideration the safety points noted above, before securely fixing the fan using appropriate screws, bolts, rubber bushes, etc.

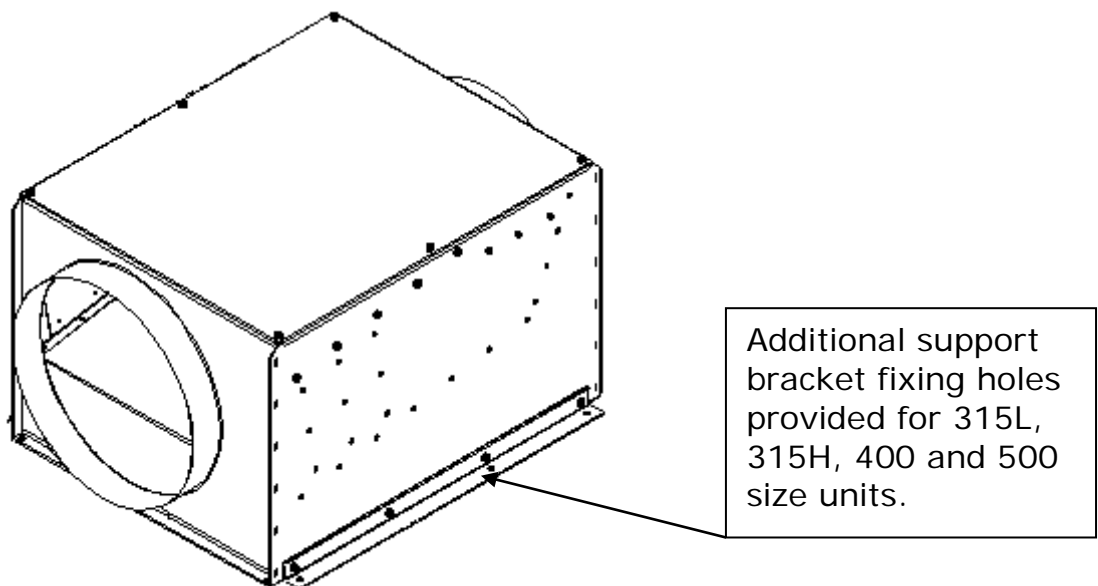
4. A range of accessories is available from Vent-Axia to assist installation including flexible connectors, mounting feet, anti-vibration mounts and attenuators.
5. For horizontal installations onto a flat roof or flat ceiling, a fixing bracket is provided with sizes 200 to 250.

**Pic. 1:** Location of ACQ unit in overhead fixing bracket



6. If the fixing bracket is used, firstly bolt the bracket to the roof or ceiling. Latch the ACQ into the 2 x bracket slots, as shown, then rotate and secure with 2 further bolts (**Pic. 1**).
7. Tighten all bolts.
8. If the fixing bracket cannot be used, 4 x Ø10mm clearance holes are provided for roof hanger rods.
9. With the larger 315, 400 and 500 fan sizes, parallel fixing brackets are provided for both sides of the unit (**Pic. 2**), and because of the additional weight of these sizes, extra fixing holes are provided for additional hanger rods.

**Pic. 2:** Support bracket used on larger ACQ unit.



10. Suitable fixing means are provided by the installer for any other installation orientation other than horizontal.

## **GENERAL WIRING INSTRUCTIONS**

**WARNING – THE FAN AND ANY ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING INSTALLATION AND/OR MAINTENANCE. THE EQUIPMENT MUST BE EARTHED.**

1. All electrical connections should be made by a properly qualified electrician.
2. All wiring and connections must be carried out in accordance with current regulations.
3. To comply with safety standards, an all pole isolator switch with a contact gap of at least 3mm must be fitted adjacent to the fan.
4. Remove the cover from the terminal box to expose the main terminal block and the thermal protection block (TK). The thermal protection device fitted is an automatic resetting type which must always be included in the circuit. For ducted applications a manual reset is required, an ancillary circuit will be required with the TK switch connected into the circuit. See page 6 for instructions.
5. Connect the power supply from the local isolator (via any appropriate controls if fitted) to the terminal box via the supplied cable gland using between 4.0mm and 7.0mm diameter cable. Refer to the wiring diagrams and select the appropriate connections for the fan, controller or other devices as being installed. If in doubt please ask.
6. **CAUTION:** In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.
7. Ensure that all earth connections have been made.
8. After making connections inside the terminal box, replace the cover ensuring that the sealing gasket is in place. Also ensure that all cable gland nuts, grommets etc. have been used correctly to prevent the ingress of water.

### **NOTES ON RUNNING**

#### **Before Connecting the power supply and running the Fan Check...**

Are all links and wiring complete as per wiring diagram?

Are all fixings secured?

Are all relevant guards fitted?

Are all Circuit protection devices fitted?

Are all Terminal box covers and sealing glands secured?

Are all Earth connections secured?

Check that no hazard exists for persons in the locality of the fan. Switch on the fan and check that the fan rotation is correct as per the direction arrows on the fan plate/casing. If not isolate power supply and check wiring. Check that the current (amps) taken by the fan does not exceed the current shown on the rating plate.

### **INSTALLER AND ELECTRICAL CONTRACTOR RESPONSIBILITY**

Vent-Axia Ltd, as suppliers of the equipment cannot be responsible for the final installation and electrical connection of the product on site. We have made reasonable effort to offer guidance and assistance but the installer and electrical contractor on site have a responsibility for ensuring the equipment is safely and securely installed and electrically/mechanically safe in accordance with statutory requirements.

The fans are supplied as a component to be incorporated into a ventilation system. The final complete system installation that includes the fans **MUST** meet the requirements of:-

Low voltage Directive - 2014/35/EU

Machinery Directive - 2006/42/EC

Electromagnetic Compatibility Directive - 2014/30/EU

If the fan is installed in an area where there is possible danger to safety or health then guards **MUST** be fitted.

Guards suitable for many applications are available from Vent-Axia Ltd.

Please remember that fans need maintenance, cleaning and inspection. Allow for reasonable access for these operations to be carried out safely.  
If in doubt, please ask.

***ROUTINE INSPECTION/MAINTENANCE***

**THIS MUST BE UNDERTAKEN BY A COMPETENT PERSON.**

**ISOLATE UNIT FROM ELECTRICAL SUPPLY AND ENSURE THAT IT CANNOT BE ACCIDENTALLY TURNED BACK ON.**

1. We recommend that after three months the fan should be inspected and cleaned to remove deposits on the impeller or motor. Thereafter, it should be checked and cleaned periodically as experience dictates, or at least twice a year.
2. If a build-up of dirt/deposits is evident then this should be carefully cleaned off. Please take care not to damage the fan or affect the balance of the impeller motor assembly (balance weights may be fitted to the impeller).
3. The fan motors are fitted with ‘sealed for life’ bearings and should not require maintenance under normal circumstances.

**Wiring Diagrams:**

**Important Notes:-**

- For ducted applications the Thermal Protector (TK) must be connected into a control circuit in order to ensure that the fan cannot restart before the fault condition is cleared and the circuit manually reset.
- To comply with the above statement, this product is intended for use with Vent-Axia overload relays or controls listed below.

**Vent-Axia D.O.L. Starter/Overload and Speed Controller stock reference numbers:**

Product	Starter	Overload	Electronic Controller	Electronic Controller	Auto Transformer Controller
ACQ20012D	-	-	W10303102M	10303103A	10314103A
ACQ25012D	-	-	W10303102M	10303103A	10314103A
ACQ31512LD	-	-	W10303102M	10303103A	10314103A
ACQ31514HD	444744	444700	-	10303103A	10314103A
ACQ40014D	444744	444702	-	10303103A	10314103A
ACQ50014D	444744	444702	-	10303106A	10314105A

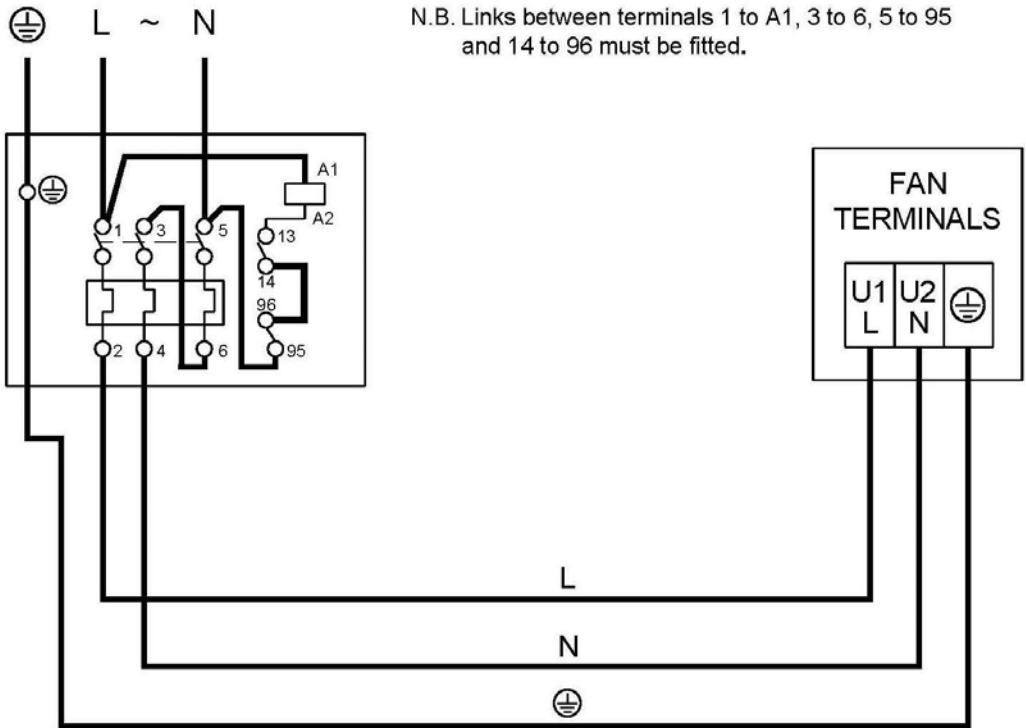
Product	Starter	Overload	Auto Transformer Controller	eDemand Voltage Controller	eDemand Inverter
ACQ20012D	-	-	-	444164	444169
ACQ25012D	-	-	-	444164	444169
ACQ31512LD	-	-	-	444164	444169
ACQ31514HD	444744	444700	-	444164	444169
ACQ40014D	444744	444702	RTRE35	444164	444169
ACQ50014D	444744	444702	RTRE60	444164	444169

**Fig. 1**  
**ACQ31514HD.**  
 Connected to a D.O.L. starter

1 PHASE SUPPLY  
 (230V 50Hz)

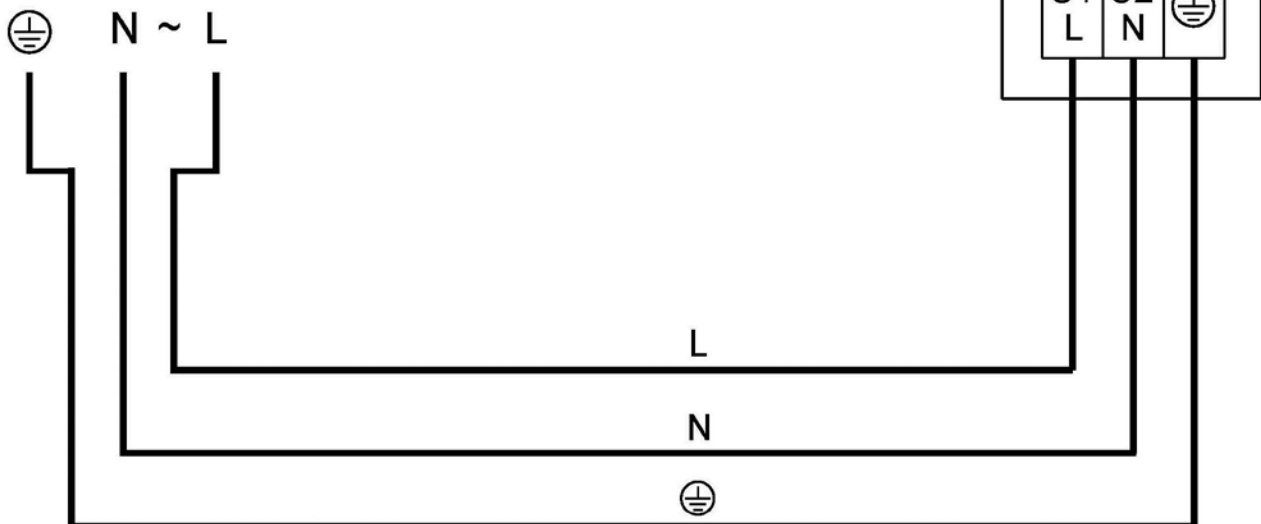
230V D.O.L. starter  
 A suitable sized overload relay must be fitted to provide motor protection.

N.B. Links between terminals 1 to A1, 3 to 6, 5 to 95 and 14 to 96 must be fitted.



**Fig. 2**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 \*Note; this diagram is not applicable to ACQ31514HD!  
 Supply connections

1 PHASE SUPPLY  
 (230V 50Hz)

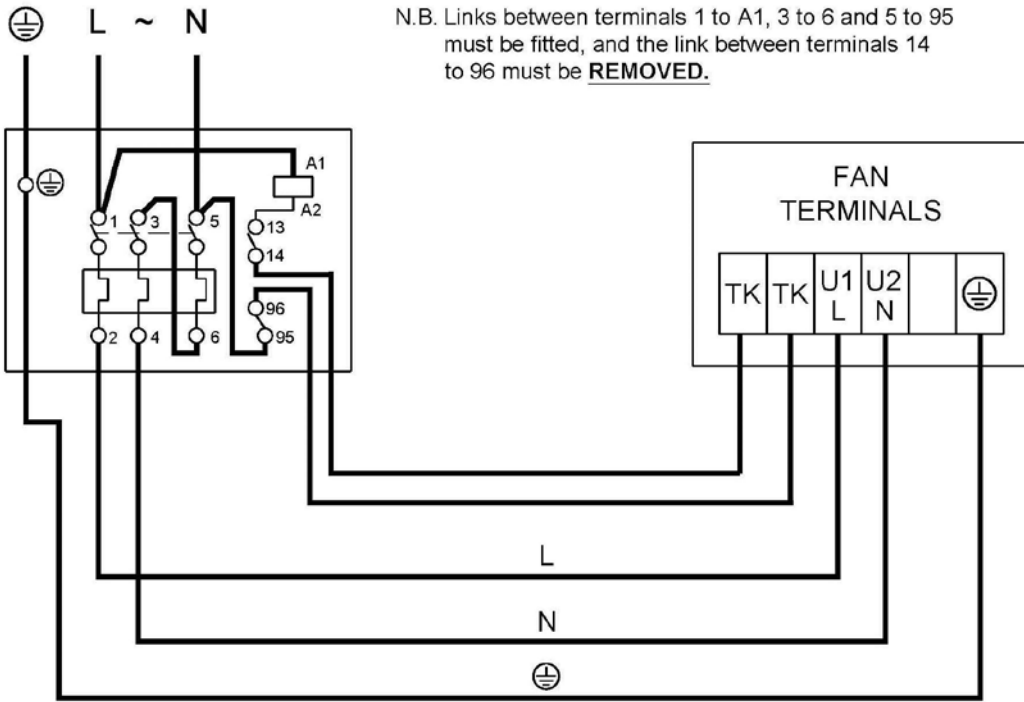


**Fig. 3**  
**ACQ40014D, ACQ50014D.**  
 Connected to a D.O.L. starter

1 PHASE SUPPLY  
 (230V 50Hz)

230V D.O.L. starter  
 A suitable sized overload relay must be fitted to provide motor protection.

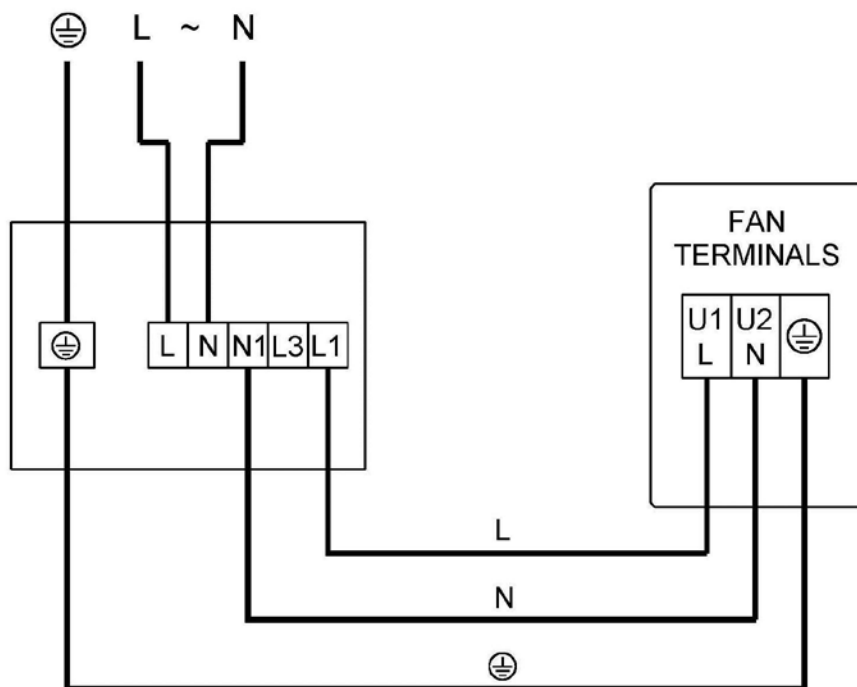
N.B. Links between terminals 1 to A1, 3 to 6 and 5 to 95 must be fitted, and the link between terminals 14 to 96 must be **REMOVED**.



**Fig. 4**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 Connected to an electronic controller

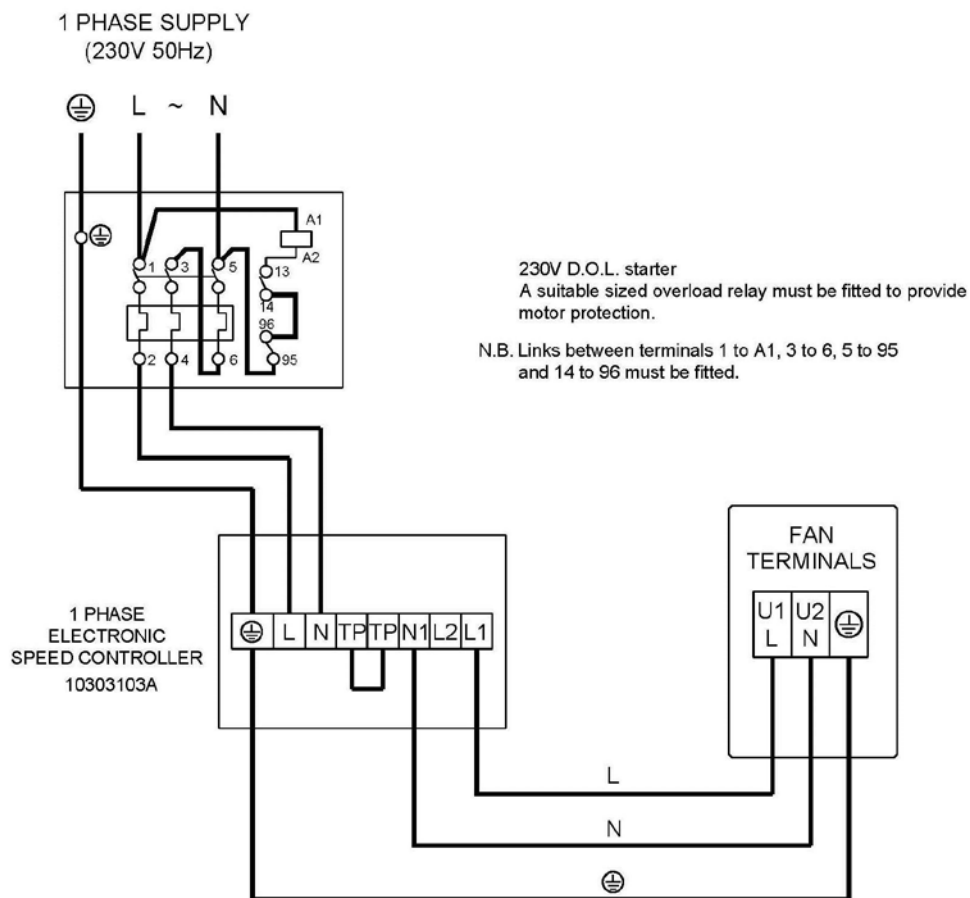
1 PHASE SUPPLY  
 (230V 50Hz)

1 PHASE  
 ELECTRONIC  
 SPEED CONTROLLER  
 W10303102M

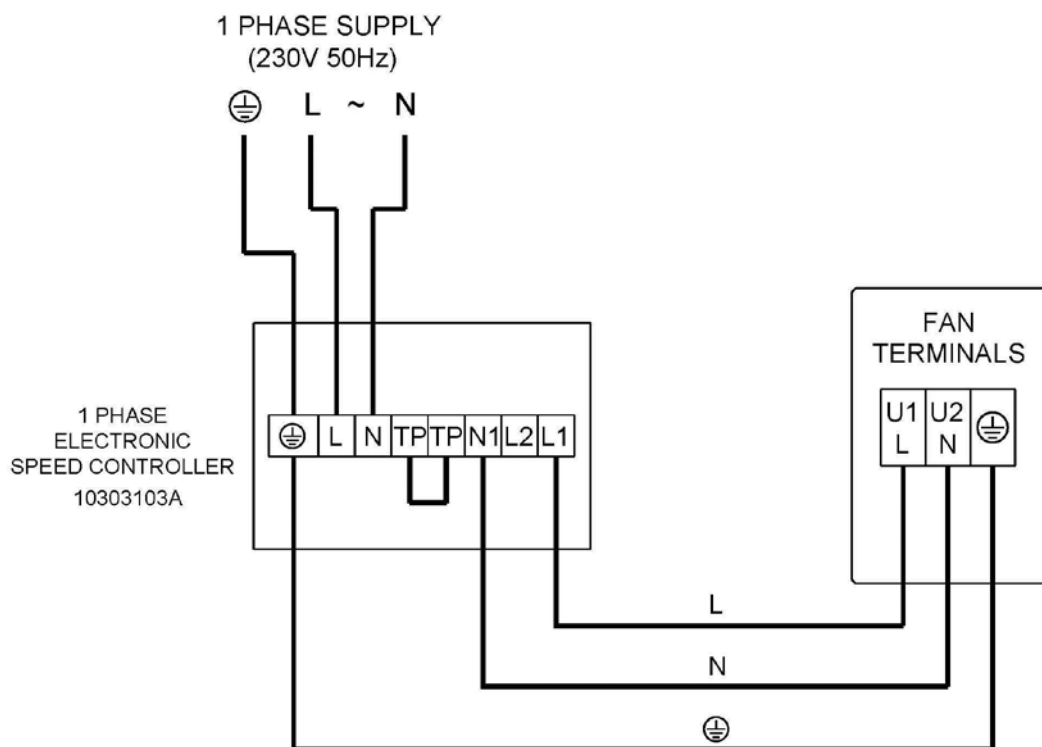




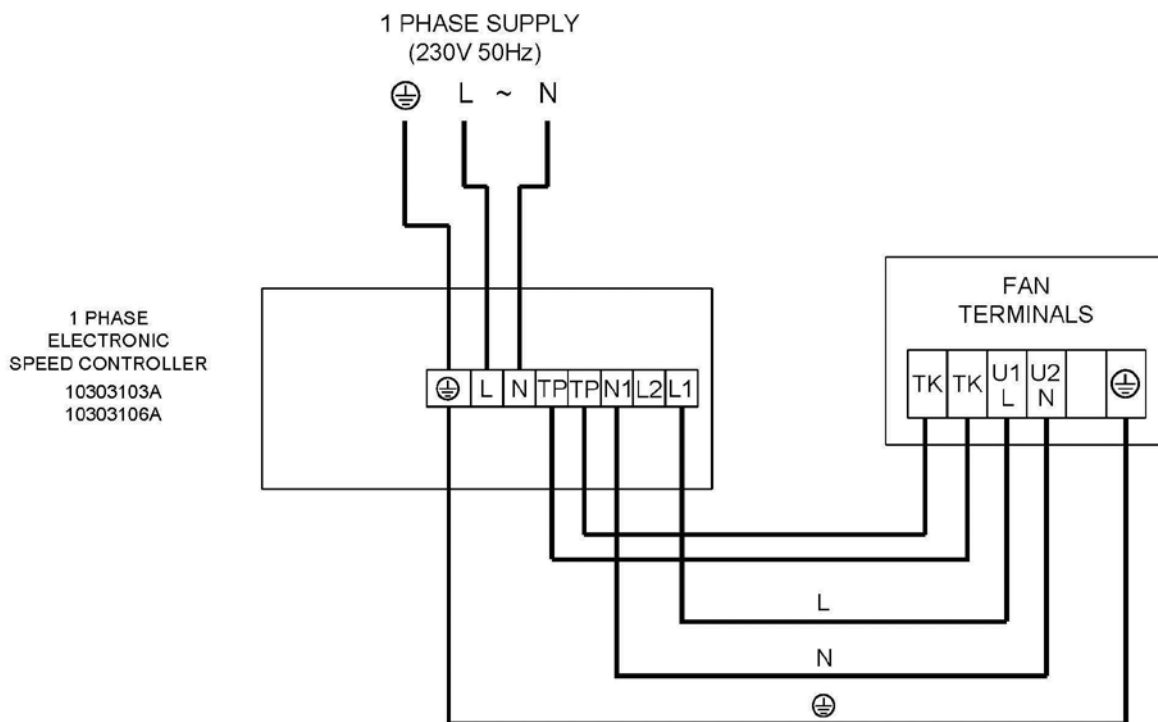
**Fig. 5**  
**ACQ31514HD**  
 Connected to a D.O.L. starter and electronic controller



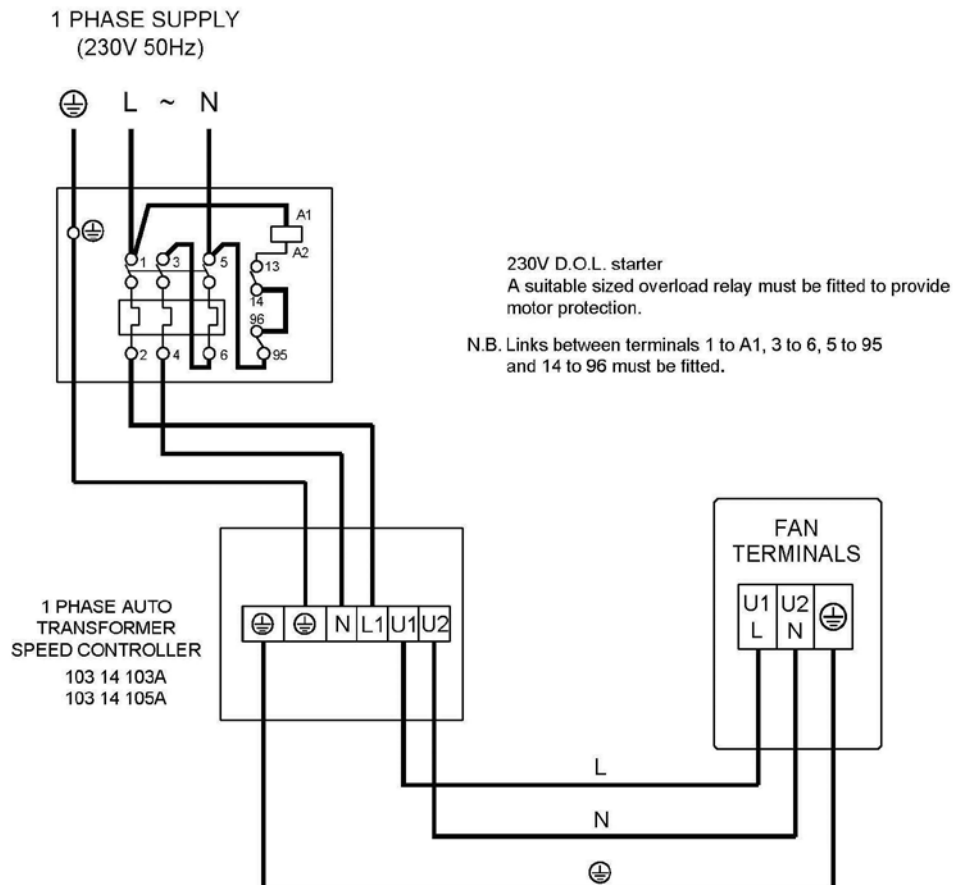
**Fig. 6**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 Connected to an electronic controller



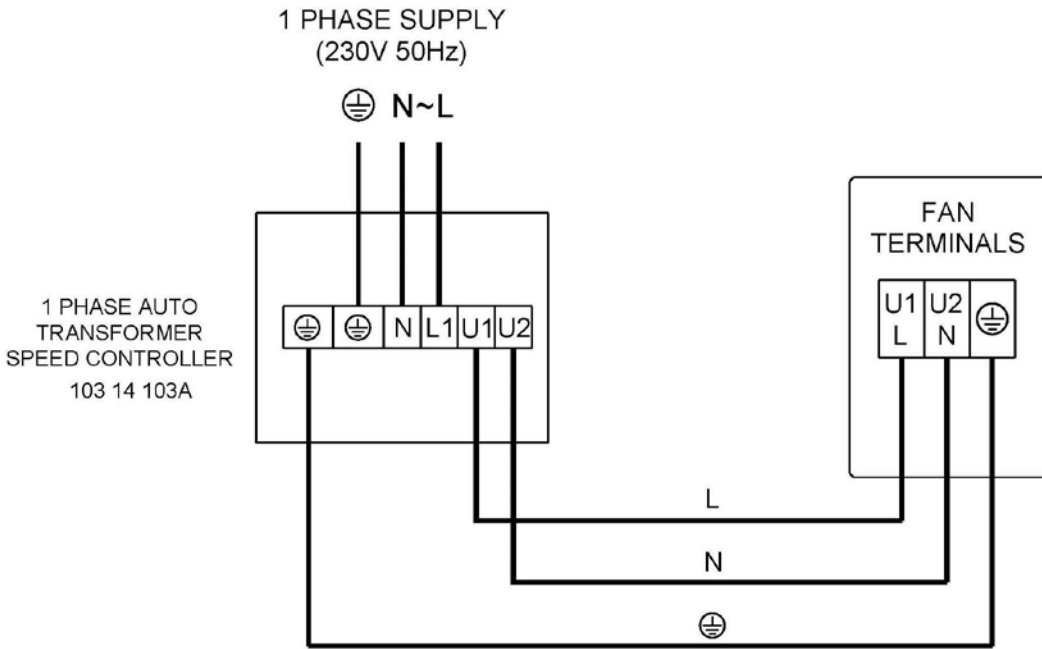
**Fig. 7**  
**ACQ40014D, ACQ50014D.**  
 Connected to an electronic controller



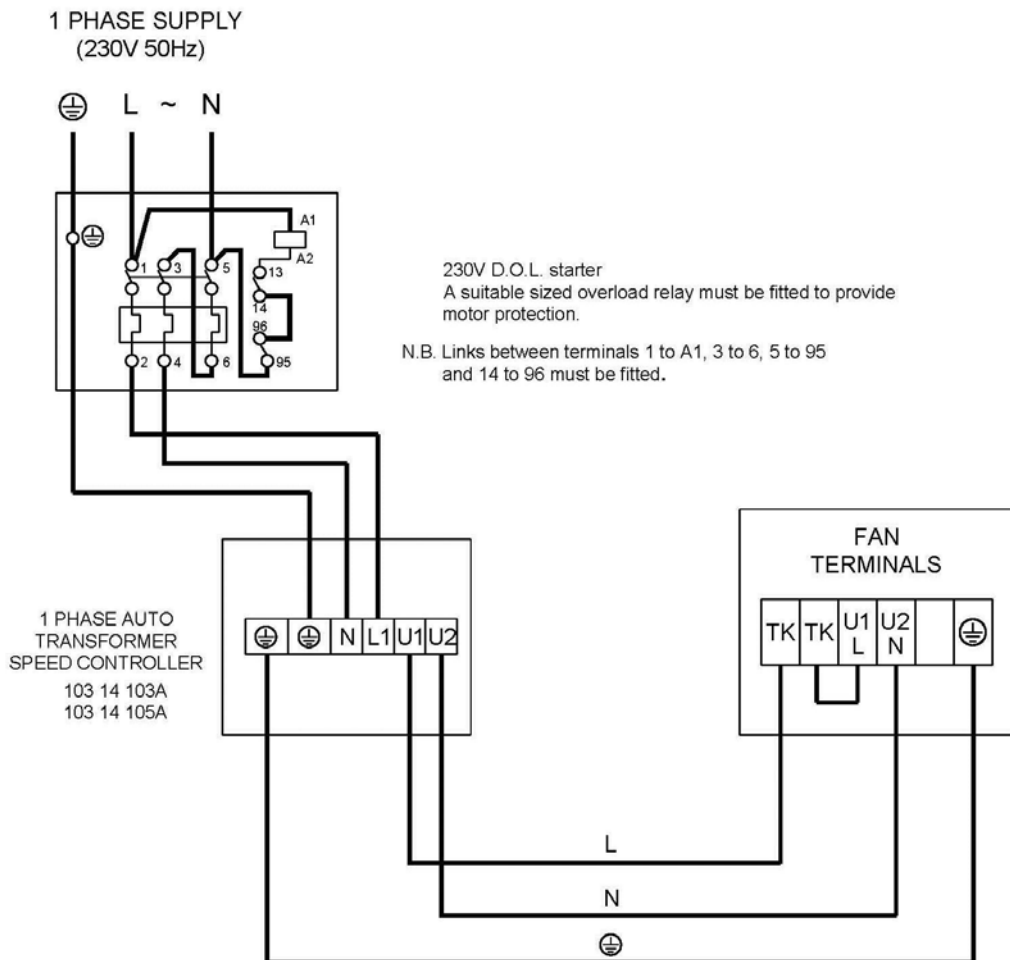
**Fig. 8**  
**ACQ31514HD.**  
 Connected to a D.O.L. starter and auto transformer controller



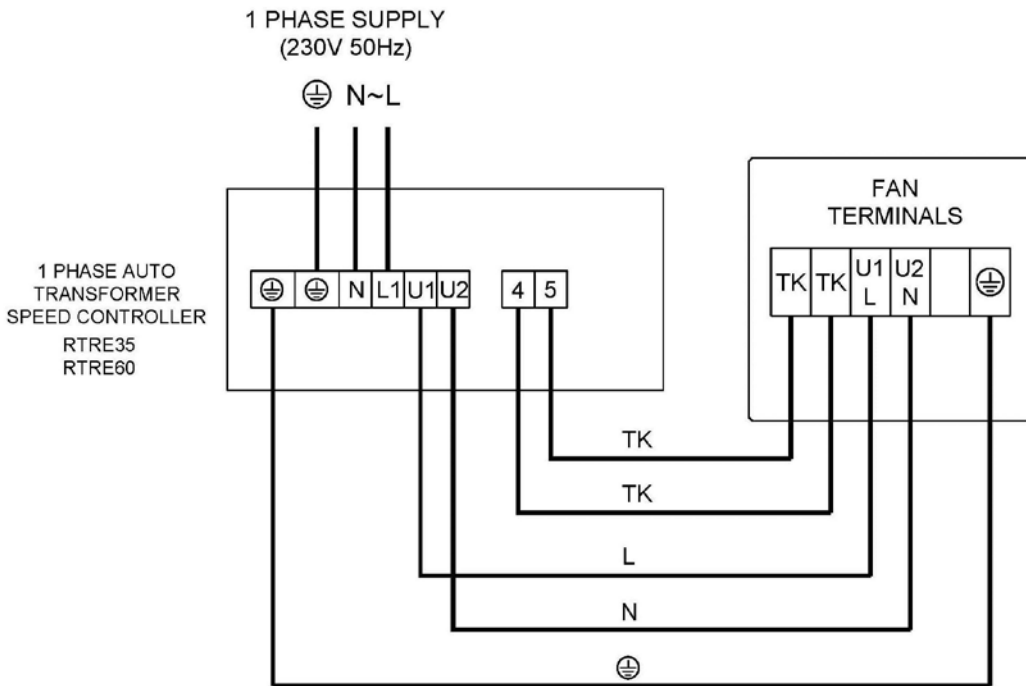
**Fig. 9**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 Connected to an auto transformer controller



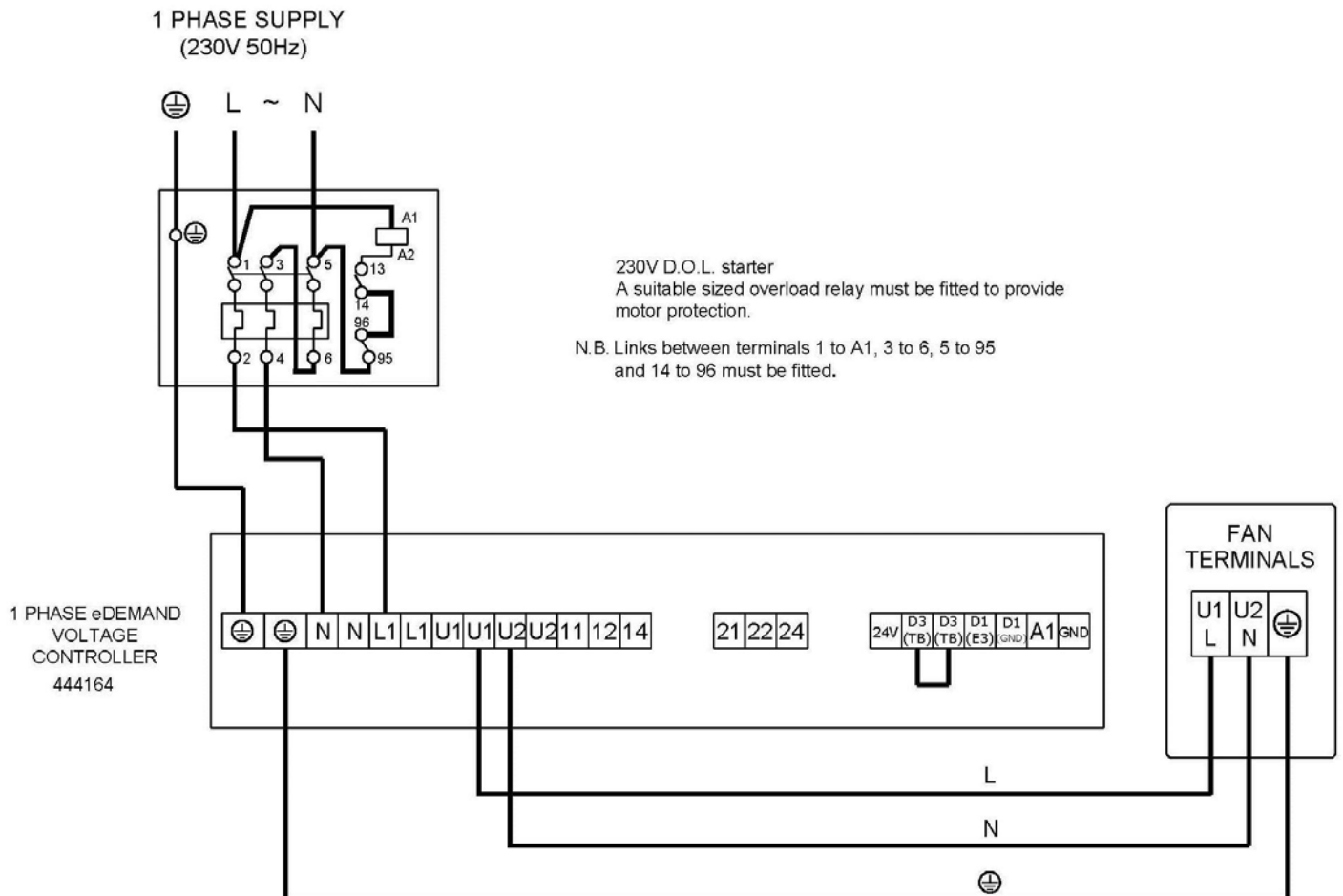
**Fig. 10**  
**ACQ40014D, ACQ50014D.**  
 Connected to a D.O.L. starter and auto transformer controller



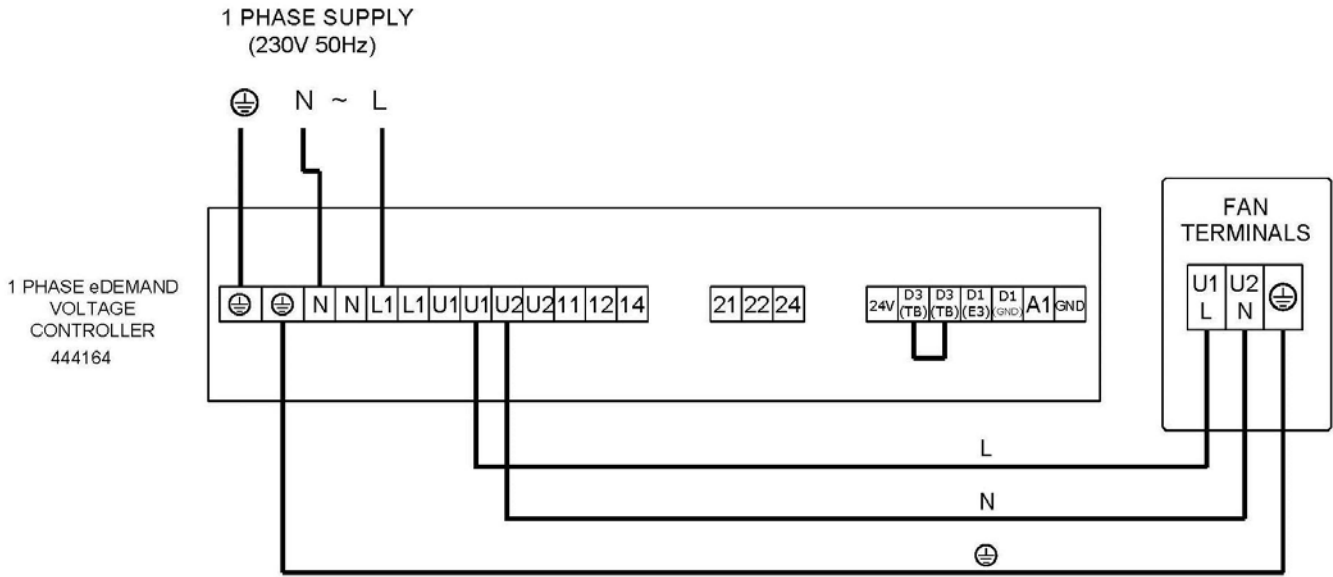
**Fig. 11**  
**ACQ40014D, ACQ50014D.**  
 Connected to an auto transformer controller



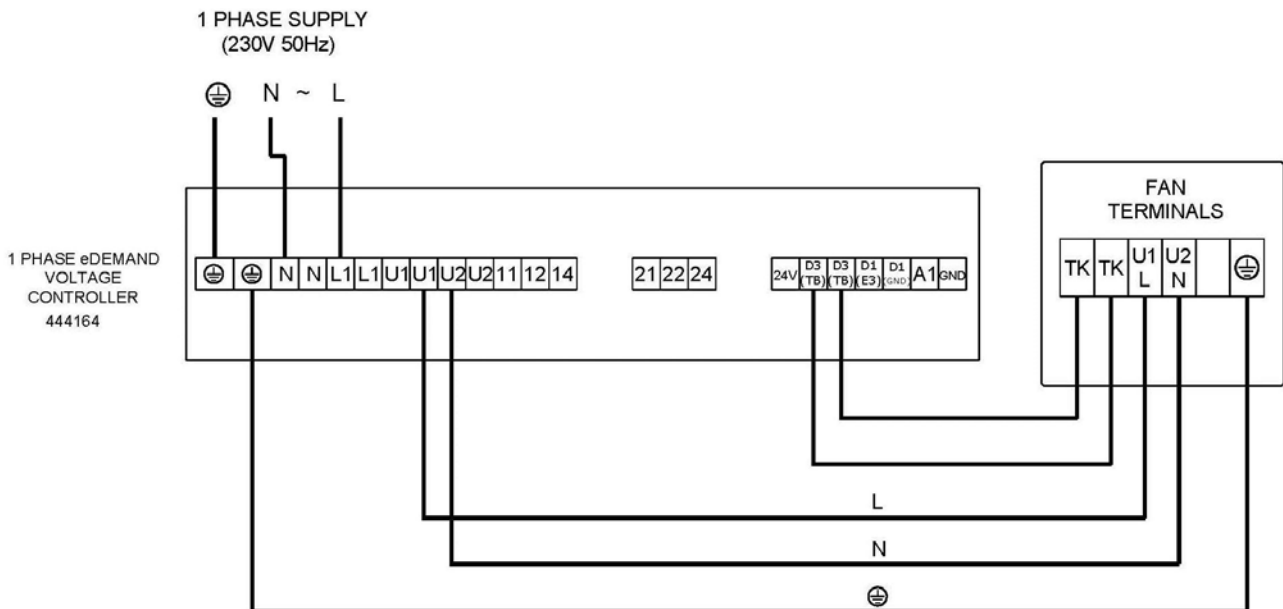
**Fig. 12**  
**ACQ31514HD.**  
 Connected to a D.O.L. starter and an eDemand voltage controller



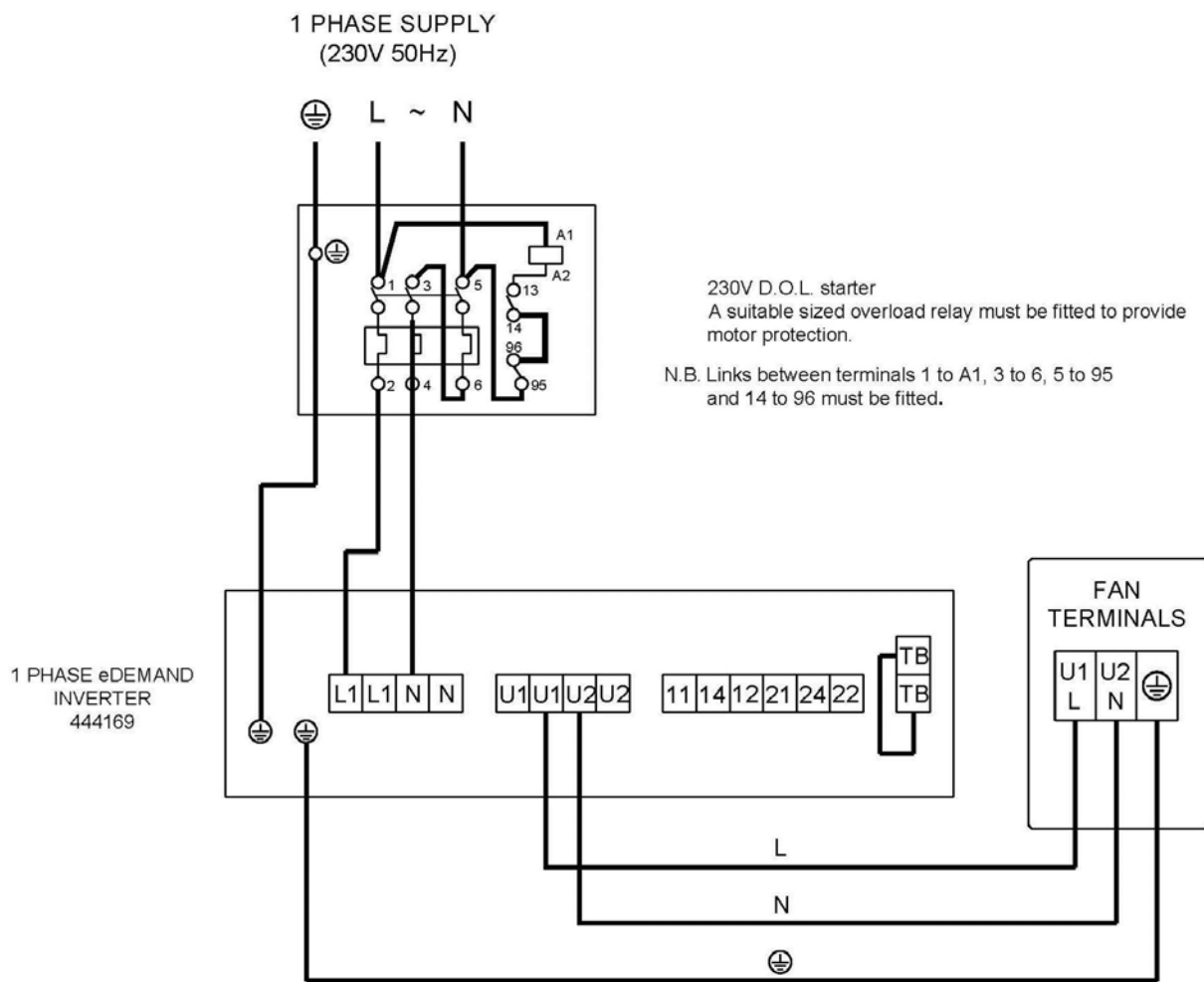
**Fig. 13**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 Connected to an eDemand voltage controller



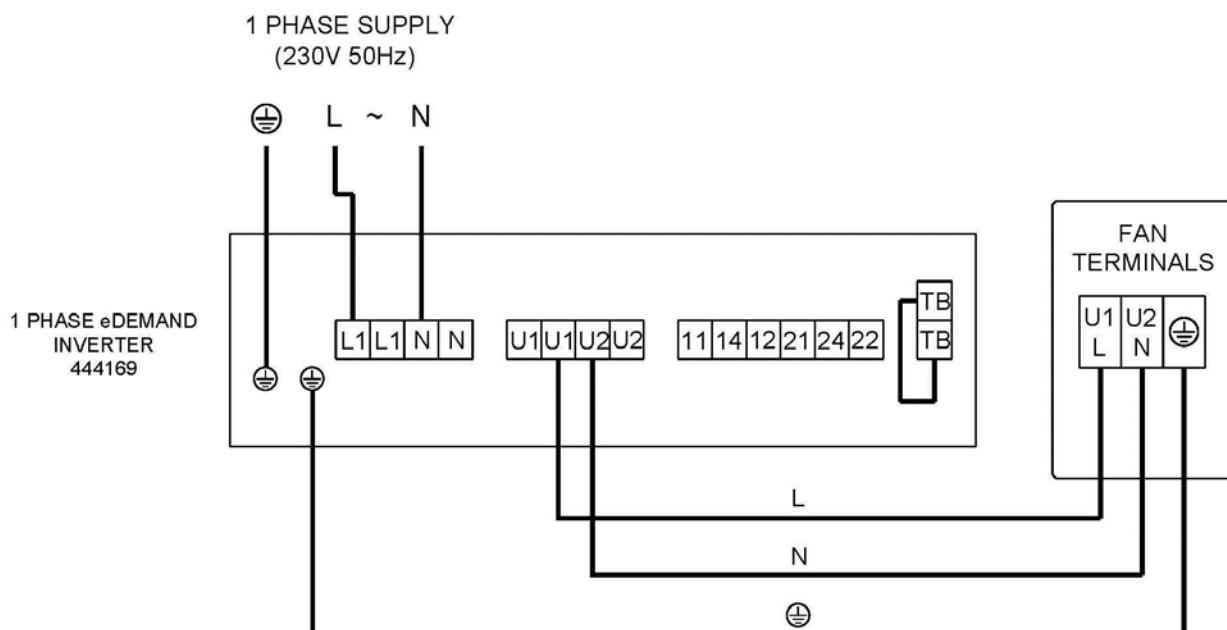
**Fig. 14**  
**ACQ40014D, ACQ50014D.**  
 Connected to an eDemand voltage controller



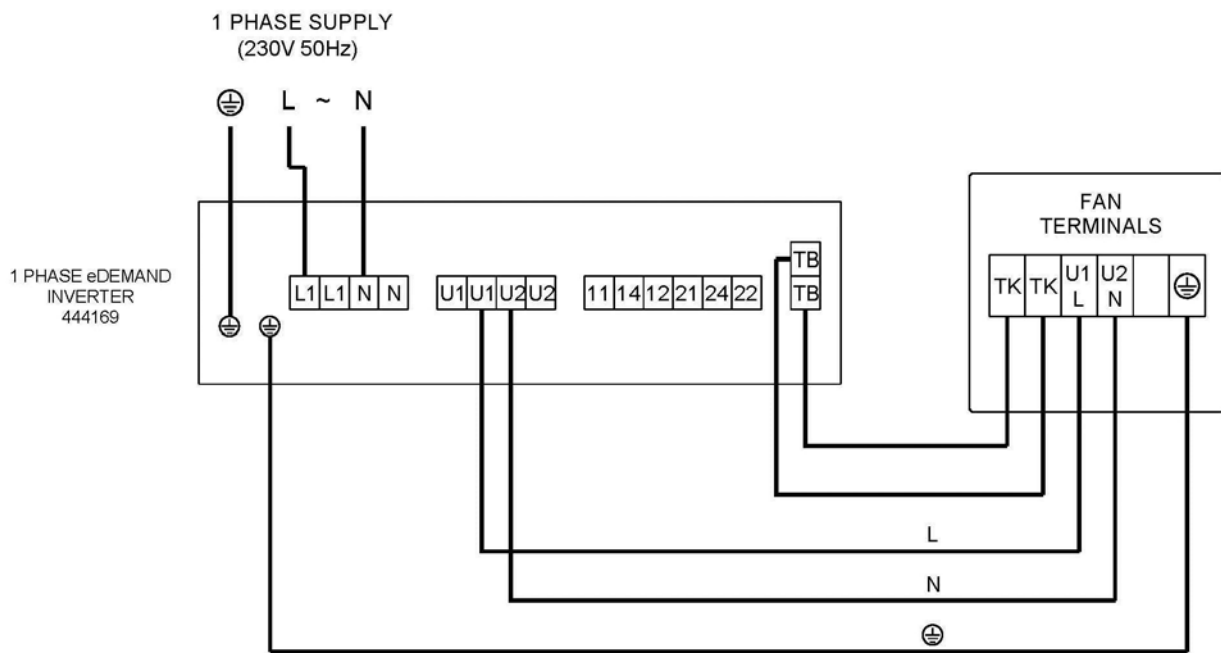
**Fig. 15**  
**ACQ31514HD.**  
 Connected to a D.O.L. starter and an eDemand inverter



**Fig. 16**  
**ACQ20012D, ACQ25012D, ACQ31512LD.**  
 Connected to an eDemand inverter



**Fig. 17**  
**ACQ40014D, ACQ50014D.**  
 Connected to an eDemand inverter



## Disposal



This product should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority for recycling advice.

### The Vent-Axia Guarantee

Applicable only to products installed and used in the United Kingdom. For details of guarantee outside the United Kingdom contact your local supplier.

Vent-Axia guarantees its products for two years from date of purchase against faulty material or workmanship. In the event of any part being found to be defective, the product will be repaired, or at the Company's option replaced, without charge, provided that the product:-

- Has been installed and used in accordance with the instructions given with each unit.
- Has not been connected to an unsuitable electricity supply. (The correct electricity supply voltage is shown on the product rating label attached to the unit).
- Has not been subjected to misuse, neglect or damage.
- Has not been modified or repaired by any person not authorised by the company.

#### IF CLAIMING UNDER TERMS OF GUARANTEE

Please return the complete product, carriage paid to your original supplier or nearest Vent-Axia Centre, by post or personal visit. Please ensure that it is adequately packed and accompanied by a letter clearly marked "Guarantee Claim" stating the nature of the fault and providing evidence of date and source of purchase.

The guarantee is offered to you as an extra benefit, and does not affect your legal rights.

Head Office: Fleming Way, Crawley, West Sussex, RH10 9YX.

EU Authorised Representative: Vent-Axia Bedrijvenweg 17 7442 CX Nijverdal Nederland [authorisedrep@vent-axia.nl](mailto:authorisedrep@vent-axia.nl)

#### UK NATIONAL CALL CENTRE

Newton Road, Crawley, West Sussex, RH10 9JA

SALES ENQUIRIES:           Tel: 0344 8560590           Fax: 01293 565169  
TECHNICAL SUPPORT:       Tel: 0344 8560594           Fax: 01293 539209

For details of the warranty and returns procedure please refer to [www.vent-axia.com](http://www.vent-axia.com) or write to Vent-Axia Ltd, Fleming Way, Crawley, RH10 9YX