

# GALAXY™

## TWIN FANS

GDB:Galaxy In-line belt driven, twin fan

GDD:Galaxy In-line direct driven, twin fan

GRB:Galaxy Roof mounting belt driven, twin fan

GRD:Galaxy Roof mounting direct driven, twin fan

### Installation and Wiring Instructions



#### Model Ranges

**GBD**

**GDD**

**GRB**

**GRD**

# ***Vent-Axia***®

**ROOF UNITS**  
from Vent-Axia

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION.  
THESE INSTRUCTIONS SHOULD BE LEFT WITH THE END USER.



## • STORAGE / INSTALLATION

The unit must be stored in clean, dry conditions. DO NOT install these fans in areas where the following may be present:-

- 1) Excessive oil or grease laden atmosphere.
- 2) Corrosive or flammable gases, fluids or vapours.
- 3) Ambient temperatures higher than 40°C and below -15°C.
- 4) Relative humidity above 95%
- 5) Possible obstructions which will hinder removal.
- 6) Sudden ductwork transformations close to the unit.

If the unit is to be stored for a long period of time the fan impeller must be rotated by hand at monthly intervals to prevent hardening of the lubricant and corrosion or static indentation of the bearings.

It is recommended that before installation the resistance to earth should be measured and if found to be less than 2 MΩ the motor should be dried out before applying mains voltage.

## • IMPORTANT - SAFETY

**All air moving equipment may present electrical, mechanical or noise hazards either during installation or during operation. These instructions are meant to help in the prevention and / or minimisation of these hazards. It is important that due consideration is given to the implementation of these instructions and to due attention being given to applicable statutory requirements.**

**Potential hazards from rotating parts that can be reached during operation must be eliminated by using appropriate guards meeting statutory requirements.**

**All electrical installation must be undertaken by a suitably qualified and competent person and must be carried out in accordance with all relevant Statutory Requirements. Please check the details on the unit rating plate to ensure that the correct power supply (Voltage, Frequency, and Phase) is available. Do not use the fans with an incorrect power supply, as overheating and failure of the motor will occur.**

**All fans generate noise during operation. Dependant on the installation sound attenuators or other acoustic treatment may be necessary to achieve acceptable noise levels in the ventilated area or the area surrounding the fan installation. The product catalogues indicate the noise levels generated by the equipment in standard test situations. The installed condition may affect the actual noise levels experienced in operation.**

**When the fan is installed in a room containing a fuel burning appliance, the installer must ensure that air replacement is adequate for both the fan and the fuel burning appliance. If the fan can be used to supply air into the room, the installer must ensure that the fan intake is located at least 600mm away from any flue outlet.**

**The appliance is not intended for use by young children or infirm persons without supervision.**

**Please note a wide range of accessories for this product are available from Vent Axia Limited.**

## • MOUNTING

Galaxy belt and roof mounted direct drive fan units, must only be installed horizontally. The lid of the roof mounting unit should be removed to gain access to fit M10 coach screws (not supplied by Vent Axia), when curb mounting.

The optional mounting brackets (2 off brackets per unit) are recommended, when mounting the duct mounted units (GDD & GDB). Holes will need to be drilled on each side of the unit to correspond with the respective number of holes provided on each support bracket (4 off – GDB and 2 off – GDD). Secure each bracket in place utilizing relevant fixings (not supplied by Vent Axia), ensuring they are level with each other and the unit.

Duct mounted direct drive (GDD) units may be mounted for bottom access by making a small change to the shutters as follows:

- 1) Remove the lid of the unit and the retaining screws of the outer shutter brackets.
- 2) Move the nylon bushes to the vacant holes in all shutter brackets.
- 3) Reassemble shutter flaps into the nylon bushes.
- 4) Refit the retaining screws of the outer brackets and refit the lid of the unit.

## • CHECK LIST

- 1) Are all links and wiring complete (refer to wiring diagrams)?
- 2) Are all fixings secured?
- 3) Are all relevant guards fitted?
- 4) Are all protective circuit devices fitted and wired correctly?
- 5) Are all terminal box covers and gland fittings secure?
- 6) Are all earth connections secured?
- 7) Check that no hazard exists for persons in the locality of the fan. 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.
- 8) Check that the current (amps) taken by the fan does not exceed the current shown on the rating plate.
- 9) Ensure rotation of impeller is correct. Incorrect rotation may cause irreversible damage to the motor. Three phase units require a trial connection, to reverse direction interchange any two supply leads.

## • RESPONSIBILITY

Vent Axia, 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.

## • INSPECTION

These pieces of equipment require maintenance, cleaning and inspection, therefore allow reasonable access for these operations to be carried out by a suitably qualified person, safely.

**ISOLATE ALL POLES FROM POWER SUPPLY AND ENSURE POWER CANNOT BE RE-CONNECTED BEFORE ANY WORK IS CARRIED OUT.**

It is recommended that the fan be inspected after three months or sooner if conditions dictate. 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).

Further inspections should be carried out periodically as necessary dependant on experience and site conditions. It is recommended that a minimum of two inspections per year be carried out.

The fan motors are fitted with “sealed for life” bearings and, under normal circumstances, should not require maintenance.

## • BELT TENSION AND ALIGNMENT (Belt driven units)

The belt tension and alignment should be checked:-

- 1) When fitting new belts, installing a new fan or just prior to starting the fan for the first time.
- 2) After the first 30 minutes of operation.
- 3) At least every 6 months.

### Alignment

Ensure that the pulleys are correctly aligned before checking the belt tension and after any adjustments.

### Method For Checking Belt Tension

Using a belt tension indicator, with metric calibration:-

- 1) Multiply the centre distance (in metres) by 16, this gives the deflection distance in mm.
- 2) Set the lower marking ring to the deflection distance required in mm on the lower scale.
- 3) Set the upper marker ring against the bottom edge of the top tube.
- 4) Place the tension indicator on top of the belt at the centre of span and apply a force at right angles to the belt deflecting it to a point where the lower marker ring is level with the top edge of the adjacent belt. (For single belt drives a straight edge should be placed across the two pulleys to act as a datum for measuring the deflection).
- 5) Read off the force value indicated by the top edge of the upper marking ring.
- 6) Compare this value to the kgf value shown in the table below.

Belt Section	Force required to deflect belt 16mm per metre of span		
	Small Pulley Dia. (mm)	Newton (N)	Force (kgf)
SPZ	67 to 95	10 to 15	1.0 to 1.5
	100 to 140	15 to 20	1.5 to 2.0
SPA	100 to 132	20 to 27	2.0 to 2.7
	140 to 200	28 to 35	2.8 to 3.5

If measured force falls within the values shown then the drive should be satisfactory. A measured force below the lower value indicates under tensioning.

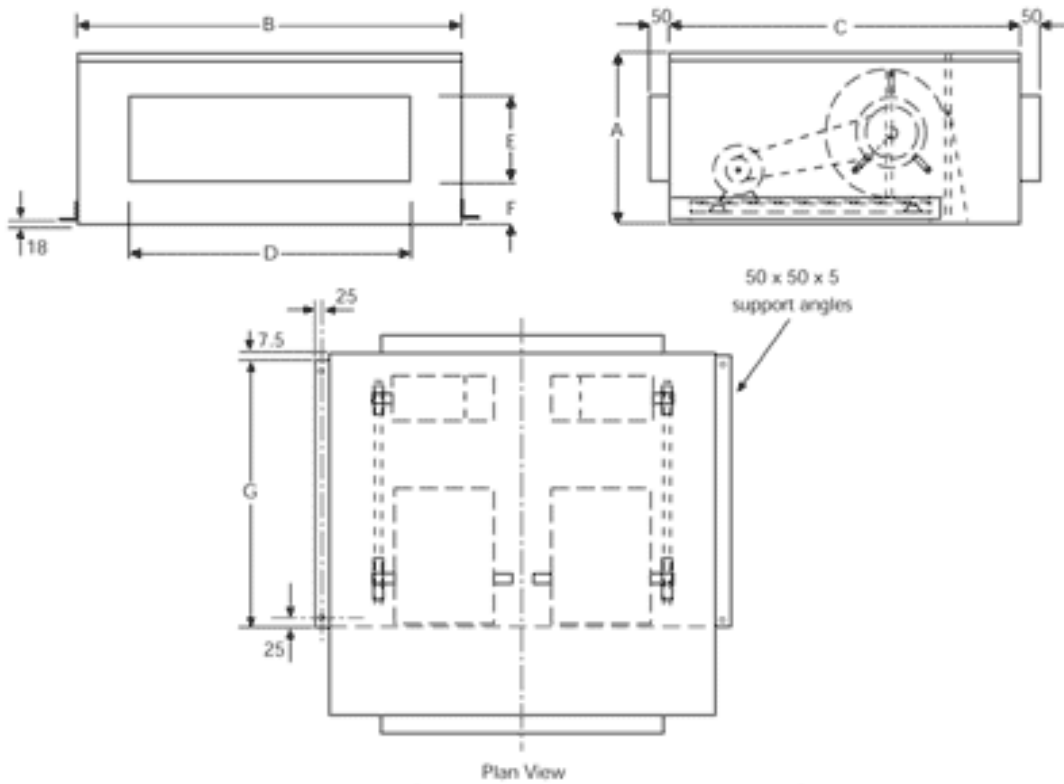
### Adjustment

The belt tension can be adjusted by displacing the motor. After any adjustment, re-check belt alignment.

### Replacement Of Drive Components

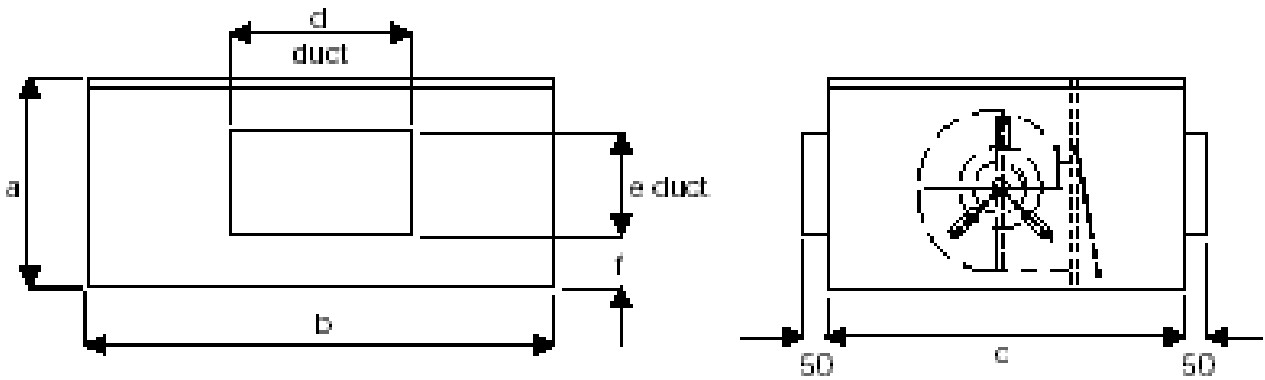
- 1) Belts: - The drive belts should be replaced periodically as they are worn. First move the motor toward the fan by a sufficient amount to allow the belts to be removed from the pulleys. All the belts in a drive should be replaced simultaneously. Ensure that the replacement belts are all matched (i.e. are exactly the same length). The new belts should be re-tensioned and aligned as per previous instructions and checked at the intervals stated.
- 2) Pulleys: - Belt drive units are normally fitted with taperlock pulleys and bushes.
- 3) Removal: - Remove the grub screws and oil lightly. Screw one of them into the extractor hole (on larger bushes two extractor holes are provided in which case two grub screws should be used). Tighten the screw(s) until the bushes are released from the hub of the pulley and the bush is released from the shaft. Pull the bush and pulley from the shaft as one unit.
- 4) Fitting: - Clean the bore of the pulley and the bush to ensure that all surfaces are free of grease and dirt. Fit the bush into the pulley. Oil the grub screws lightly and screw them by hand into the tapped holes between the pulleys and bush. Clean the fan shaft and fit the bush and pulley as one unit. Tighten the grub screws alternately whilst checking that the pulleys are in line until all of the screws are securely tightened. Fit the belt(s), re-tension and re-check the alignment of the drives as previously described.

### GDB Galaxy In-line Belt Driven, Twin fan



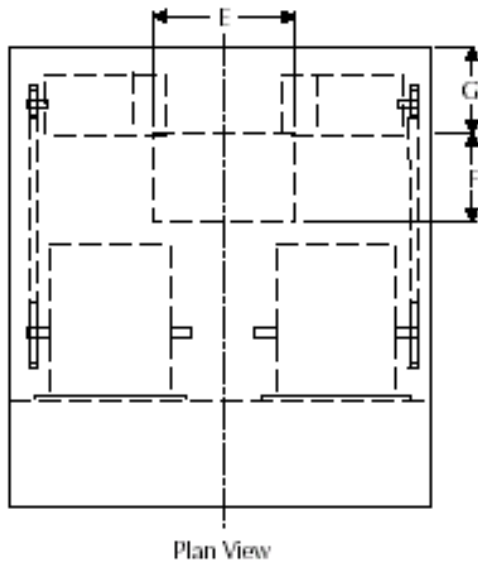
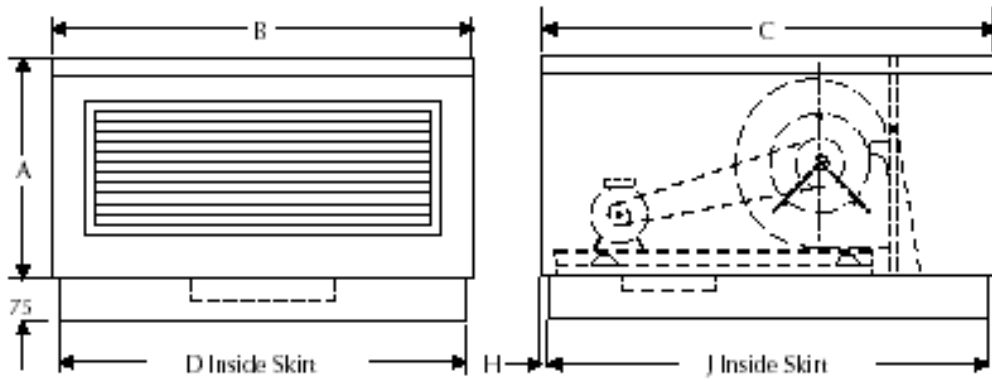
Unit	A	B	C	D	E	F	G	Weight kg
<b>GDB1</b>	480	850	1000	650	250	110	790	125
<b>GDB2</b>	540	1100	1175	762	305	116	790	175
<b>GDB3</b>	675	1250	1450	900	400	135	1090	210
<b>GDB4</b>	765	1500	1450	1000	457	153	1090	270

### GDD Galaxy In-line Direct Driven Twin fan

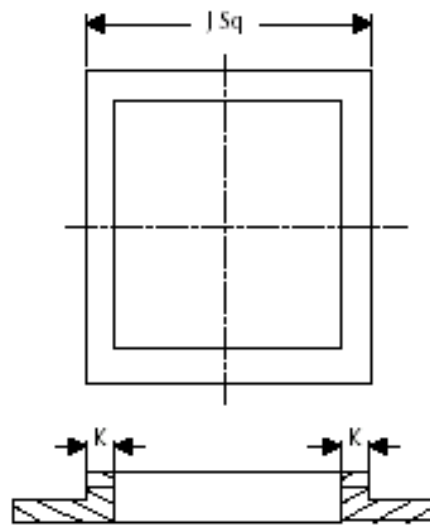


Unit	a	b	c	d	e	f	Weight kg
<b>GDD1</b>	210	530	425	175	100	55	20
<b>GDD1X</b>	210	530	425	175	100	55	20
<b>GDD2</b>	260	740	525	225	150	55	20
<b>GDD2X</b>	260	740	525	225	150	55	20
<b>GDD2XH</b>	260	740	525	225	150	55	20
<b>GDD3</b>	330	740	600	250	150	90	20
<b>GDD4S</b>	390	900	700	350	200	95	30
<b>GDD4</b>	390	900	700	350	200	95	30
<b>GDD5</b>	440	1000	800	400	325	57	52
<b>GDD6</b>	440	1000	800	450	350	44	59
<b>GDD7</b>	575	1250	1000	650	400	86	64

## GRB Galaxy Roof Mounting Belt Driven Twin fan

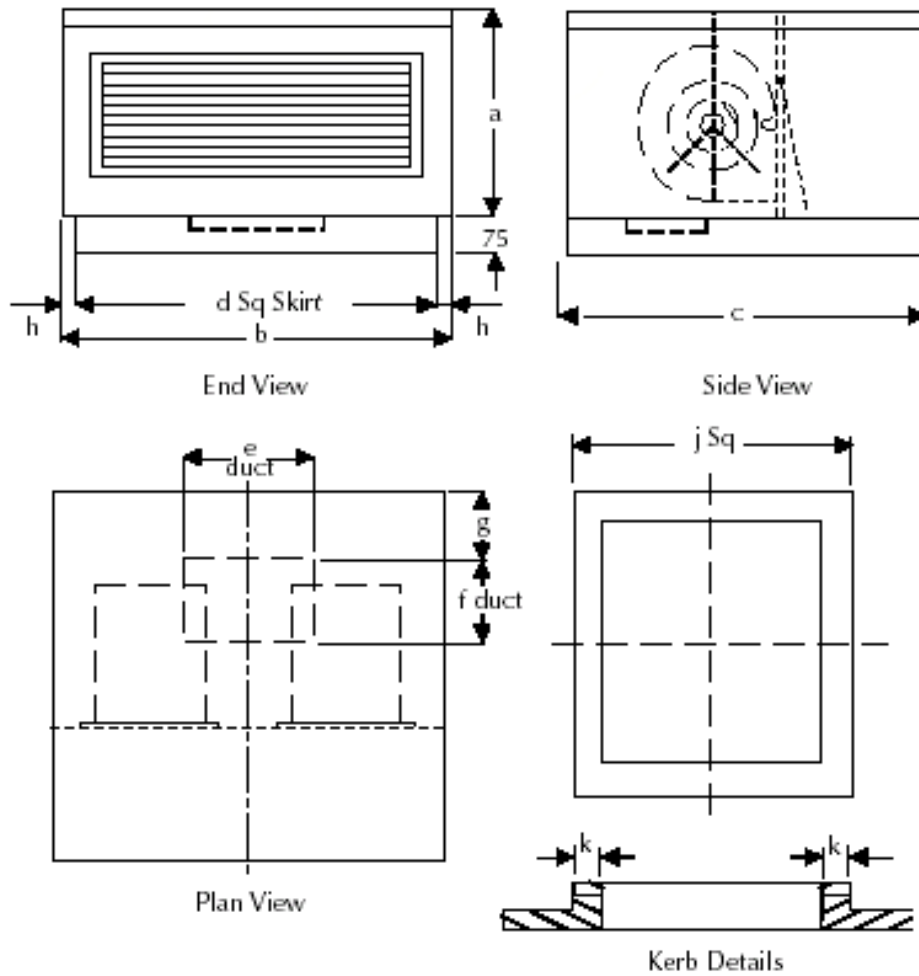


### KERB DETAIL DIMENSIONS (mm)



Unit	A	B	C	D	E	F	G	H	J	Weight kg
<b>GRB1</b>	500	900	1100	900	500	250	247	100	900	90
<b>GRB2</b>	600	1150	1175	1120	762	305	150	27.5	1120	120
<b>GRB3</b>	700	1450	1450	1450	900	400	150	-	1450	195
<b>GRB4</b>	800	1550	1450	1550	1000	450	150	-	1450	215

## GRD Galaxy Roof Mounting, Direct Driven



Unit	a	b	c	d	e	f	g	h	j	k	Weight kg
<b>GRD1</b>	250	670	500	500	150	100	150	85	490	75	11
<b>GRD1X</b>	250	670	500	500	150	100	150	85	490	75	11
<b>GRD2</b>	340	750	700	700	225	150	150	25	690	75	22
<b>GRD2X</b>	340	750	700	700	225	150	150	25	690	75	22
<b>GRD2XH</b>	340	750	700	700	225	150	150	25	690	75	22
<b>GRD3</b>	390	750	700	700	250	150	150	25	690	75	21
<b>GRD4S</b>	450	850	800	800	300	200	150	25	790	75	32
<b>GRD4</b>	450	850	800	800	300	200	150	25	790	75	32
<b>GRD5</b>	550	1000	950	950	500	250	150	25	940	75	55
<b>GRD6</b>	550	1050	1050	1050	600	300	150	-	1040	75	65
<b>GRD7</b>	650	1250	1150	1150	750	350	150	50	1140	75	65



## • GENERAL WIRING

Warning:- The Fan And Ancillary Control Equipment Must Be Isolated From The Power Supply During Installation And / Or Maintenance. The Equipment Must Be Earthed.

All-pole disconnection must be incorporated into the fixed wiring.

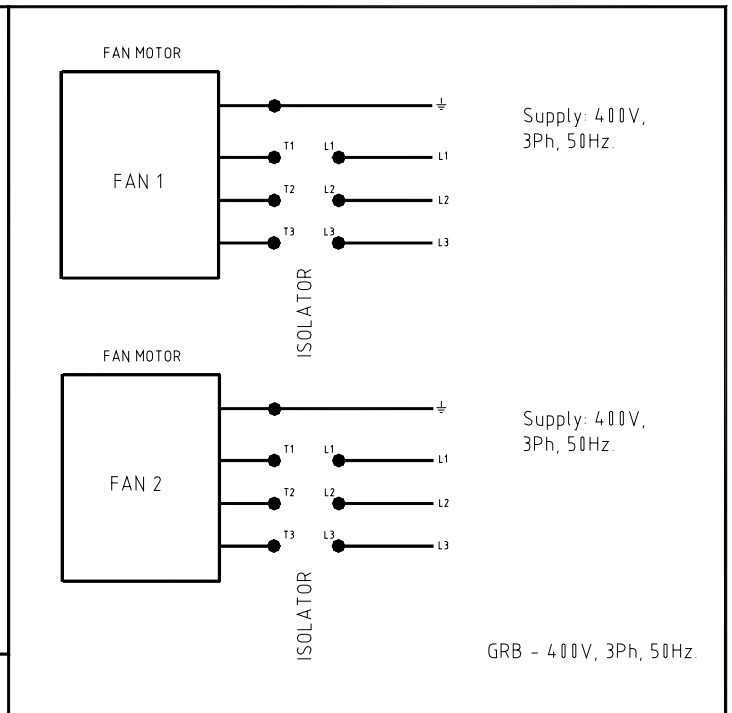
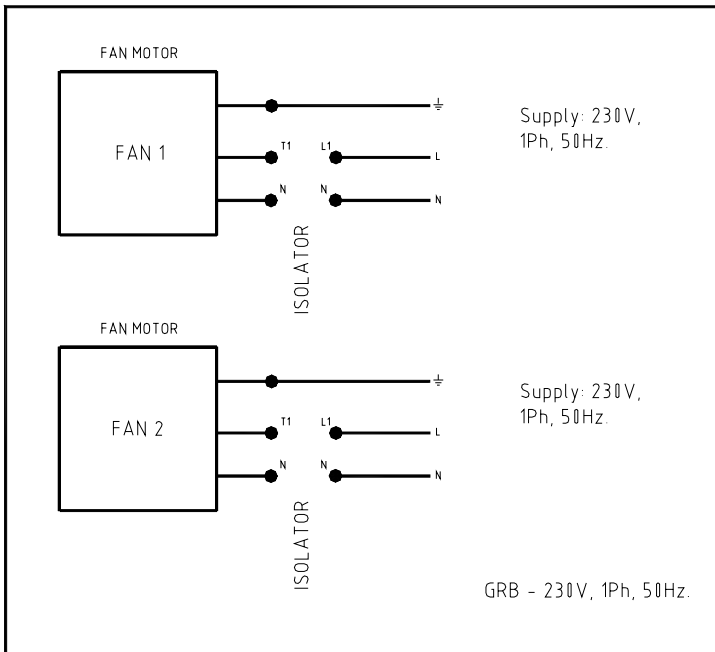
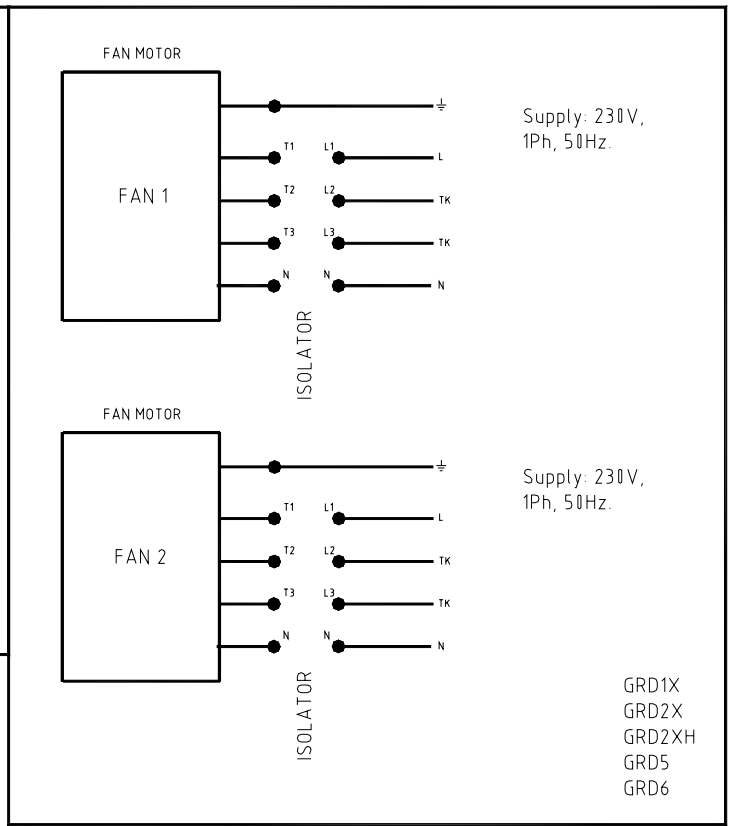
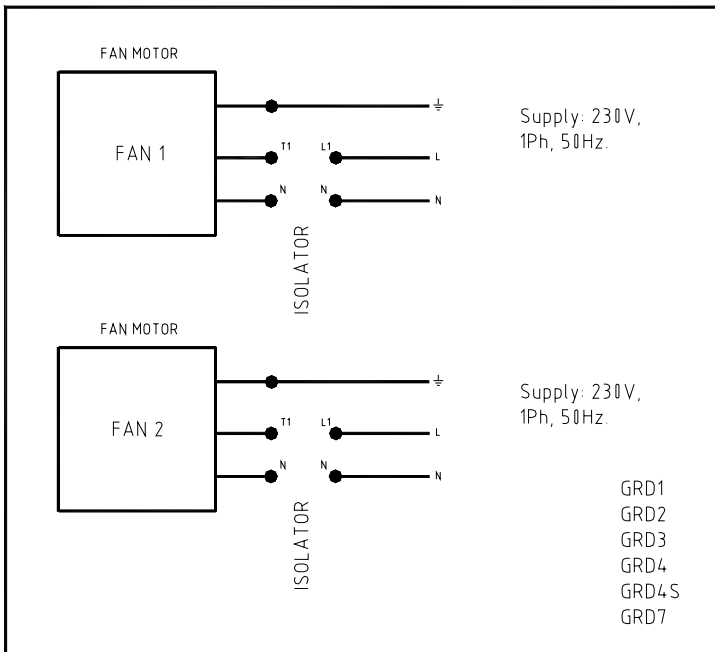
Only fixed wiring in conduit is required. Flexible cord must not be used.

1. Remove the cover from the fan terminal box.
2. Connect the power supply from the local isolator (via appropriate controls) to the terminal box/switch via an appropriate cable gland.
3. Refer to the wiring diagrams and select the appropriate connections for the fan, depending on the controller or other devices being installed.
4. Wiring instructions for the control equipment being used should be considered when making connections to the fan terminals.
5. Controls must include non-self resetting overload protection.
6. In addition to non-self resetting overload protection, 3 phase products must be provided with single phasing prevention.
7. Where products have TK connections on the fan terminal strip, these are independently connected to a thermal switch in the windings of the motor and should be used as part of the control system.
8. Ensure that all earth connections have been made.

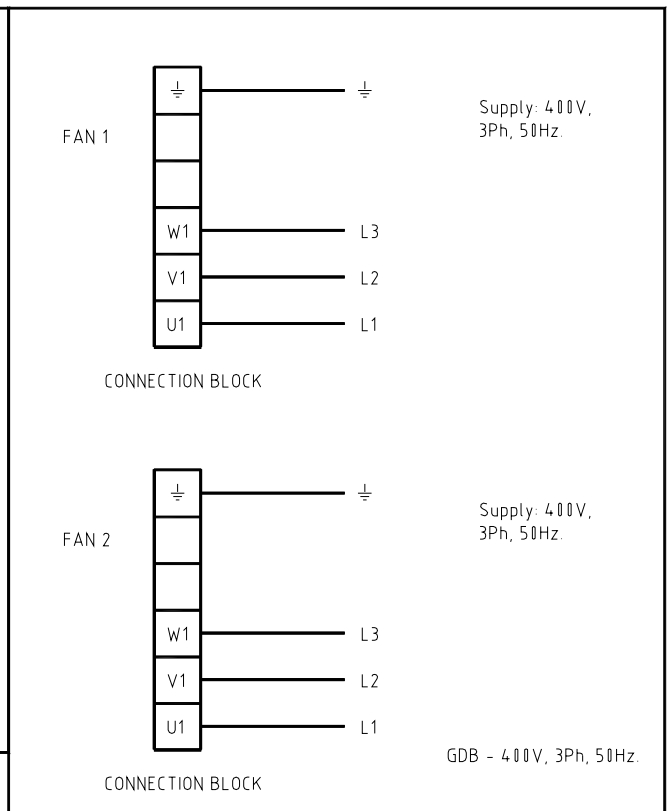
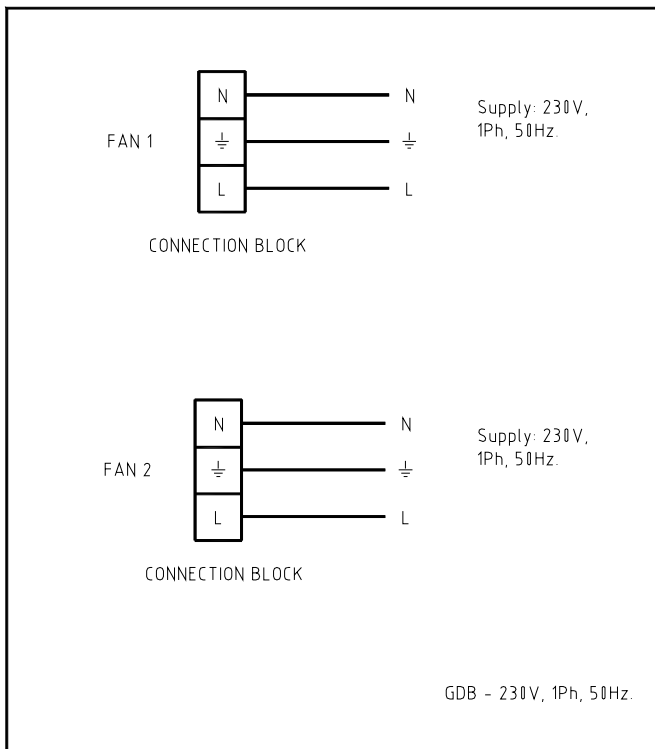
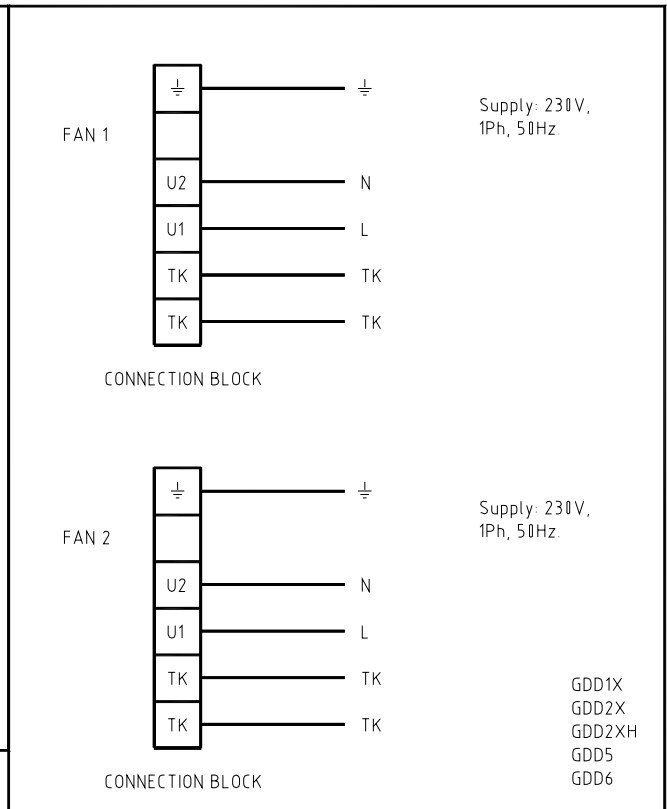
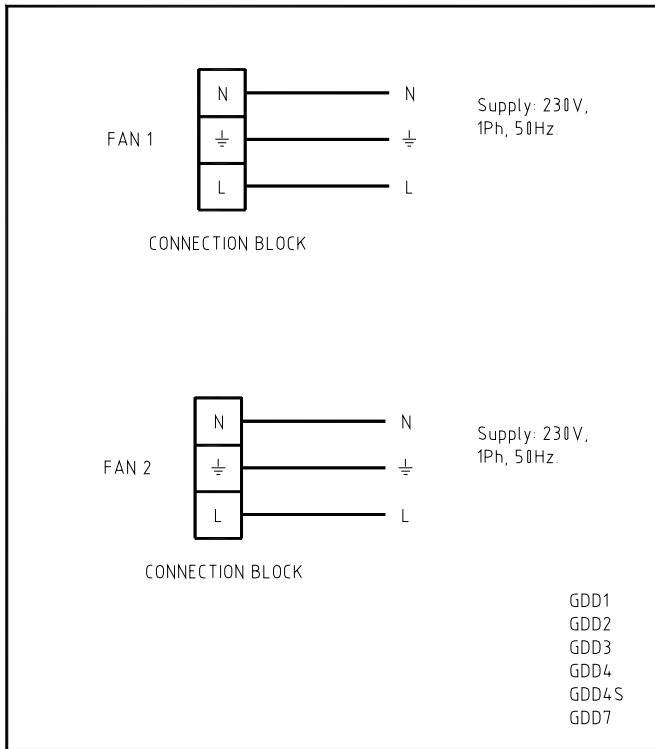
After completing and checking the connections to the terminal box, replace the terminal box lid ensuring that the gasket is correctly seated in place. Ensure that all cable gland / grommet fixings and terminal box lid fixings are tightened correctly to prevent water ingress.

Non-self resetting protection must be provided for this range of fans. If the protection device operates you **MUST** check for the cause before allowing the fan to resume operation. Failure to do so may cause damage to the motor and invalidate the guarantee.

Fuses in the circuit should be regarded as only protecting the wiring against short circuits or earth faults; they are not suitable for overload protection. Fuse ratings must be able to carry starting loads, which can be taken as a maximum of six times the running current for 25 seconds.



:



# **Vent-Axia®**

Head Office: Fleming Way, Crawley, West Sussex, RH10 9YX. Tel: 01293 526062 Fax: 01293 551188

**UK NATIONAL CALL CENTRE**, Newton Road, Crawley, West Sussex, RH10 9JA

SALES ENQUIRIES: Tel: 0844 8560590 Fax: 01293 565169

TECHNICAL SUPPORT: Tel: 0844 8560595 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  
As part of the policy of continuous product improvement Vent-Axia reserves the right to alter specifications without notice.

84GALAXY-INST

0309