

# NUAIRE

## Mains 'C' Twin Fan Control

### CT-A (auto duty share) CT-M (manual duty share)

# Installation and Maintenance

## NUAIRE

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**CE** The EMC directive: 89/336/EEC  
with modification 92/31/EEC  
The low voltage directive 73/23/EEC

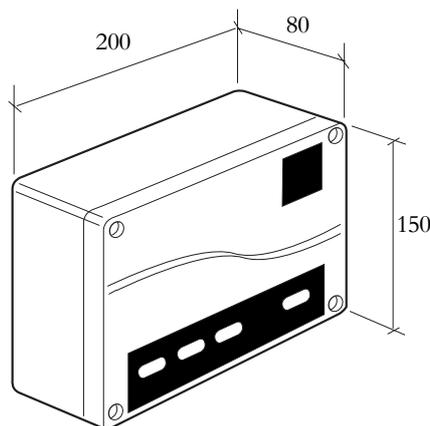


Figure 1. Unit overall dimensions (mm)

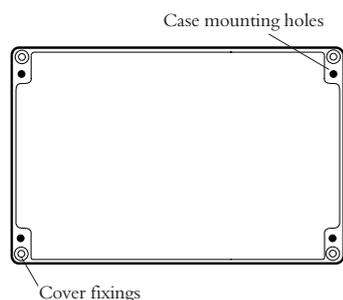


Figure 2. Fixing holes

## FEATURES

- IP 65 (Protection).
- Remote Fail (volt free contacts).
- Remote Run (volt free contacts).
- Switched Live operation.
- Adjustable run on 0-60 min.
- Audible failure indication.
- Visual failure indication.
- Auto Duty Share (CT-A only. 12 hr intervals).
- Microsave compatible.
- Automatic Changeover on failure.
- Failure detection of fan by Hall Effect sensors.

## IMPORTANT

The installation must be carried out by qualified personnel in accordance with the appropriate authority and conforming to all statutory and governing regulations eg. IEE, CIBSE, COHSE etc

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## Maintenance

The control requires no maintenance other than cleaning. Disconnect supply and clean with a damp cloth. Do not spray any cleaning fluids onto the control

## Introduction

This control has been designed specifically to suit NuAire Quietwin Twinfan Extract units.

Two versions of the control are available.

- 1) Manual Duty Sharing (CT-M model).
- 2) Automatic Duty Sharing (CT-A model).

Both models provide automatic change over from a failed fan to the standby fan. A list of unit features is shown opposite.

A general view of the unit with overall dimensions is shown in fig. 1.

## Installing the control unit

Carefully remove the case cover (4 screws). Drill the main case to allow the necessary cable access.

### NOTE:

**It is the responsibility of the installer to 'seal' the cable entries and to maintain the IP rating of the unit.**

Select a suitable surface mounting position and fix the main casing to it using the four case mounting holes provided. (fig 2).

**ISOLATE THE ELECTRICAL SUPPLY** and make your main electrical supply and fan unit connections to the terminals inside as shown in fig. 8.

## Controls Application Service (CAS)

A team of Engineers and technicians is available to provide pre and post order support.

We are on hand to provide help and advice from the most basic use of any NuAire equipment to the more complex applications, maximising on the versatility of our control products.

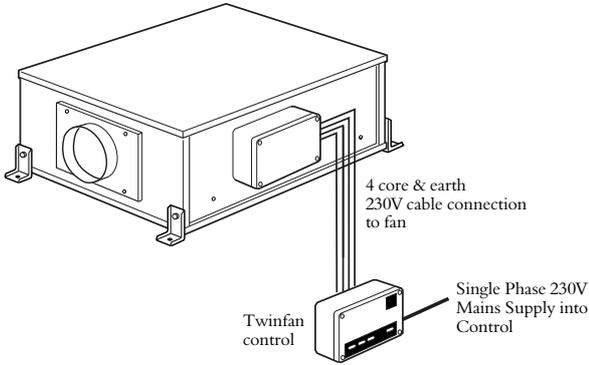
Telephone: **029 2085 8585**

Facsimile: **029 2085 8586**

## Control Applications

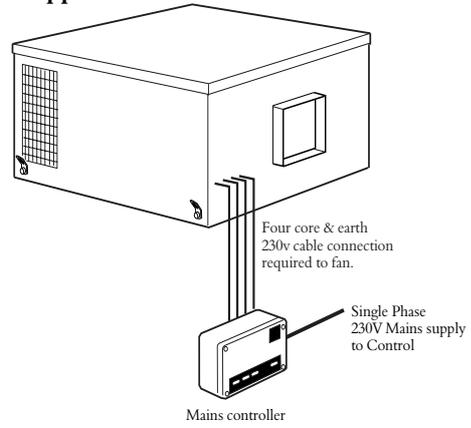
### NuAire QTI Twinfans

Single Phase application.



### NuAire QTE & QTR Twinfans

Single Phase application



Three Phase application.

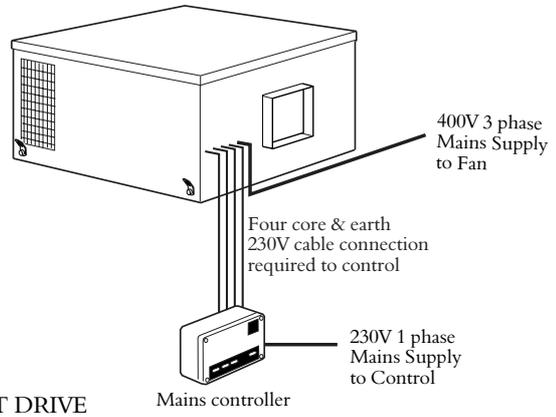
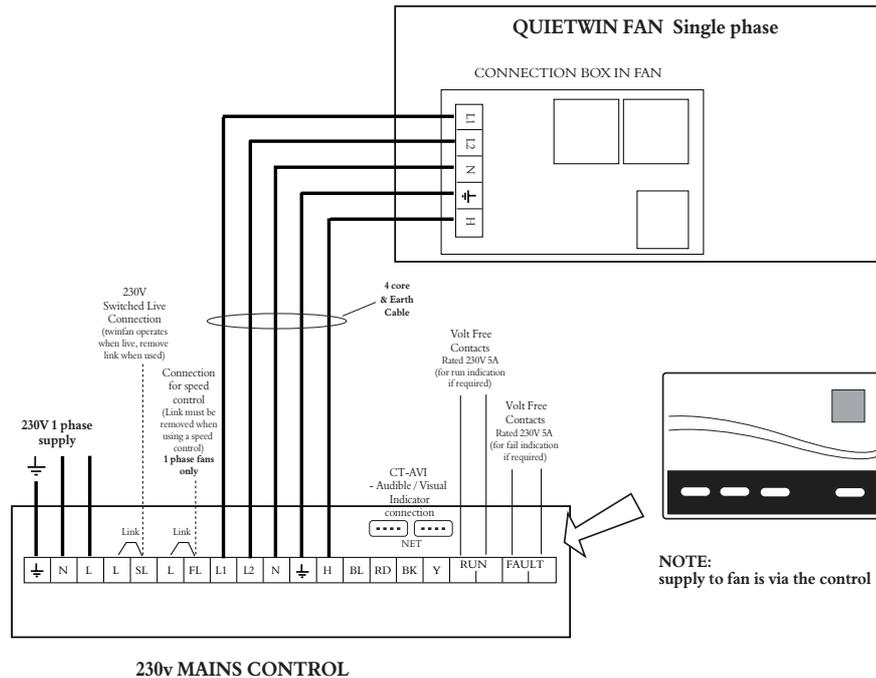


Figure 3. Control Applications

Figure 4.

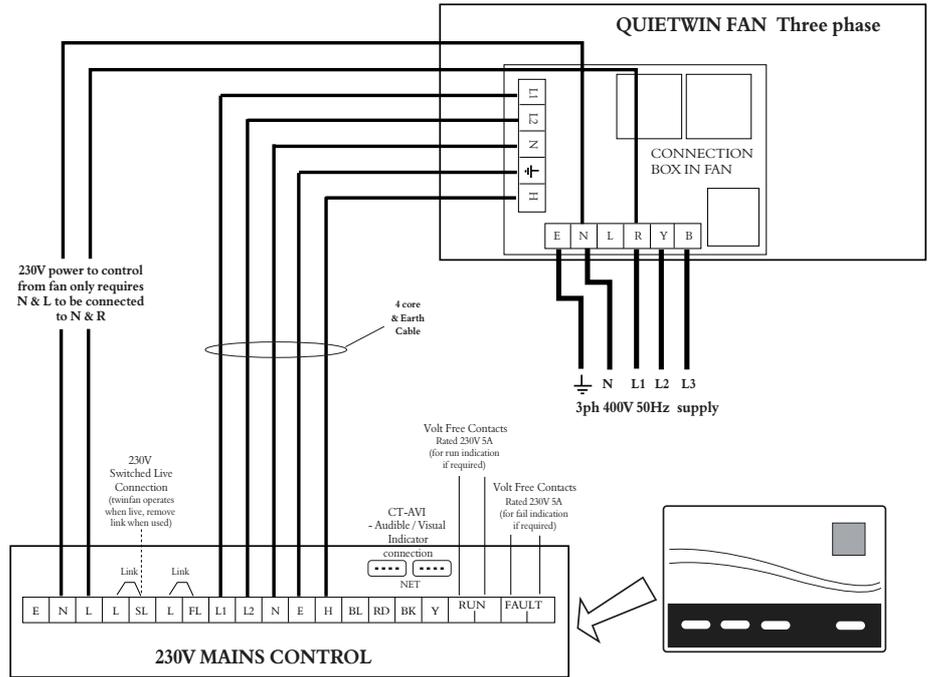
### Single Phase Quietwin units wiring diagram



## Details of alternative supply wiring to Mains Control

Figure 5.

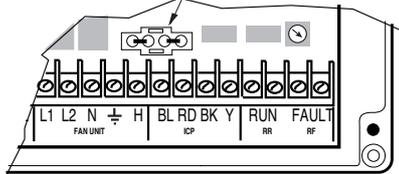
**Three Phase Fans (1ph power for control unit taken from Fan).**



### IMPORTANT NOTE: (BELT DRIVE TWINFANS)

A link plug is factory fitted to match this Twinfan Control to single phase twinfans

Remove this plug to allow control of belt drive fans

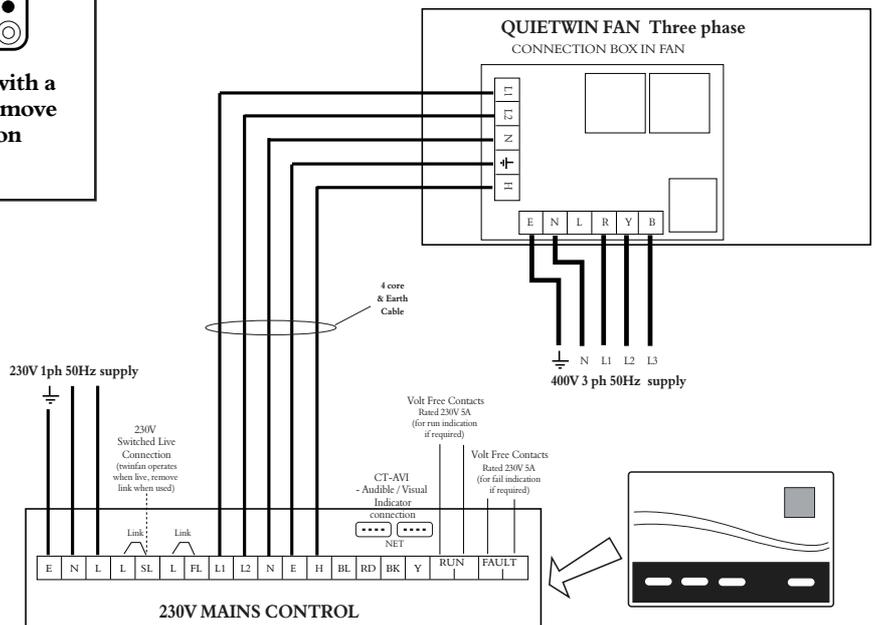


When using the Twinfan Control with a belt drive twinfan you must first remove this link plug which is located on the circuit board.

Figure 6.

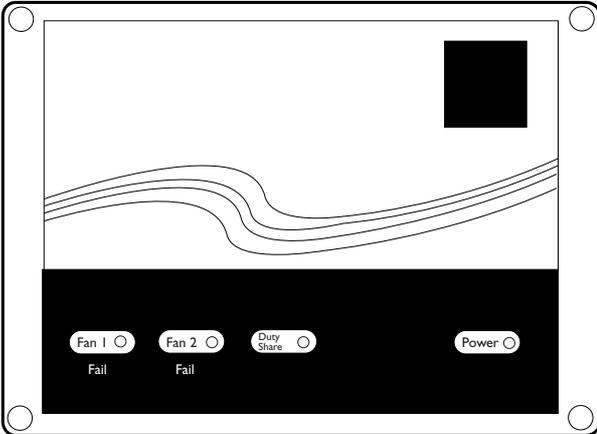
**Three Phase fan units (1ph power for control taken from independent source)**

**Note:** Installation must comply with electrical regulations as detailed on page 1



## Operating the Twinfan Mains Control

Pressing any of the panel buttons will be accompanied by an audible confirmation tone. The button functions are listed below.



**Figure 7.**  
*Twinfan Control buttons*

### Explanation of the button functions.

#### Fan 1 / Fan 2

Pressing either button selects that fan to run. If there is a fan failure, the fail indicator will remain illuminated even after the failure has been rectified and the control must be reset (by pressing the fan button to restart the fan).

#### Duty Share

(This button appears on CT-A models only). Pressing this button will enable or disable the duty sharing feature. When the Duty Share light is on, duty sharing is selected.

#### Fail

There are two 'FAIL' indicators, one under each Fan button. The fail indicators show which fan has failed. In the event of a failure, an audible alarm will also sound for 15 seconds. If the internal configuration switches have been selected for a continuous audible alarm, the alarm will continue until the fault is rectified.

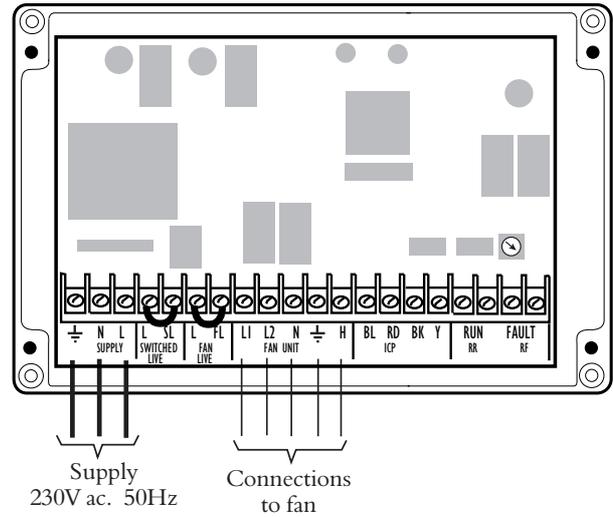
#### Power

Pressing this button switches the unit ON or OFF. When switched ON the associated light will show GREEN. When the unit is switched OFF the light will show RED. An AMBER light will indicate the unit is switched ON but there is no 230v signal connected to the SL terminal inside the case.

#### WARNING

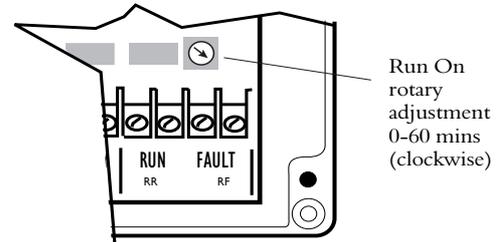
**Switching the unit OFF on the front panel Power button does not isolate the fan or the control.**

## Main terminal connections



**Figure 8.**  
*Connections to Control.*

## Run on Timer adjustment



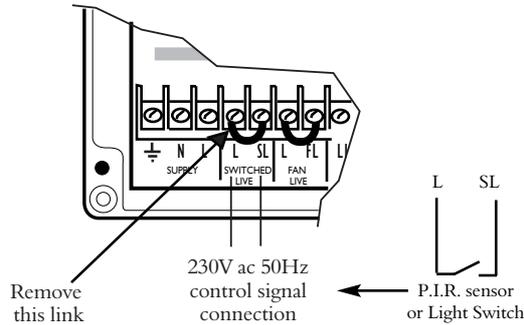
**Figure 9.**  
*Run on adjustment*

A Run On facility is provided so that when the 230V ac signal is disconnected from the SL terminals the fans can continue to run on for a period of up to 60 minutes. The run on time is set using a rotating screw (See fig. 9).

When the 230V ac signal is disconnected, the power lamp on the front of the unit will illuminate AMBER to indicate there is no SL signal.

## Switched Live connections

Typical Uses: PIR / Light Switch. / BMS.



**Figure 10.**  
Connections for Switched Live.

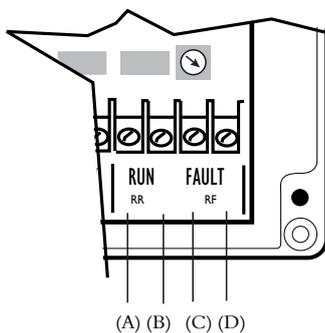
A control signal must be routed from the 230V line via the PIR or light switch to the SL terminal on the unit **and the factory link between the terminals L / SL must be removed.** (See figure 10). When 230V ac. is sensed on these terminals, the control will be actuated.

**NOTE:**

If you do not require SL switching you should retain the factory fitted link between terminals L & SL and set the run on timer to 0 minutes.

## Remote Run and Remote Fail connections

A volt free relay is included to provide status if any fan is running (Maximum load is 5amp 230V ac.) When a fan is running, A&B are connected. When a fan has failed, C&D are connected.



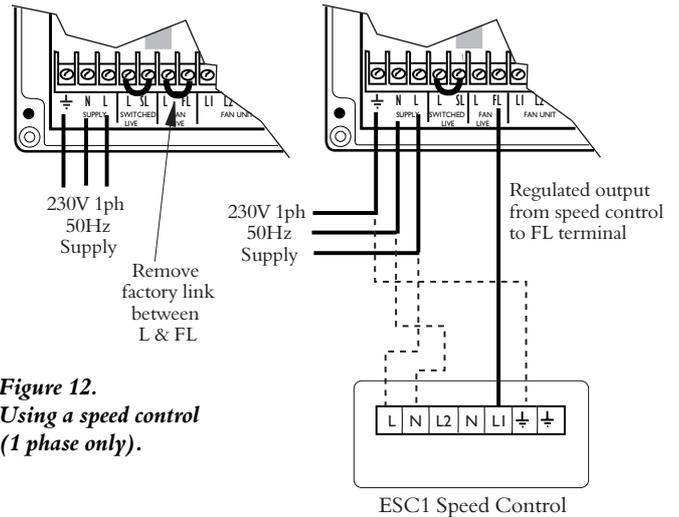
**Figure 11.**  
Remote Run & Remote Fail connections

## Using a Speed Control with a Quietwin

**(SINGLE PHASE TWINFANS ONLY)**

When using a Single Phase Twinfan it is possible to connect a Speed Control to modify the output of the fan when commissioning the system. Details of suitable Speed Controls are shown below.

When using a speed control with a single phase Twinfan, the factory link between terminals L and FL must be removed. The output of the Speed control should then be connected to the FL terminal (See figure 12).



**Figure 12.**  
Using a speed control  
(1 phase only).

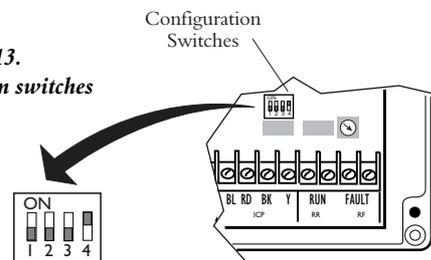
## Speed Control selection

Fan Unit Code	Speed Control
QTI, QTE, QTR 1 - 5	ESC1-3A
QTI, QTE, QTR 6	ESC1-6A
QTI, QTE, QTR 7 - 8	ESC1-10A

## Internal user selectable function switches

A configuration switch block is provided so that the installer can enable or disable certain functions. The small switch block is located just above the 'NET' sockets near the run on timer adjuster (see figure 13)

**Figure 13.**  
Function switches



Switch number	Switch position ON / OFF	Switch function
1	ON	Do not reset this particular switch (retain as set by factory)
2	OFF	Disables audible alarm
3	OFF	Unit will not switch off.
4	ON	Do not reset this particular switch (retain as set by factory)

*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.*

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