

# AIRFLOW™

## Installation and Operating Instructions QuietAir 100/120mm Axial Fan



MODEL:QT 100HT - Two Speed Fan (75/90m<sup>3</sup>/hr)

QT 120HT - Two Speed Fan (150/170m<sup>3</sup>/hr)

with Delay Start, Automatic  
Humidity control and Timer



- Low Energy
- Whisper Quiet
- Long Life
- Extra Safe
- Delay Start

### Warranty:

Applicable to units installed and used in the United Kingdom. Airflow's Warranty covers the QuietAir fan for TWO years. The Warranty can be upgraded to THREE years from date of purchase against faulty material or workmanship by registering on our web site at [www.airflow.com](http://www.airflow.com). The Warranty covers the product only and not the installation cost..

In the event of any defective parts being found, Airflow Developments Ltd reserve the right to repair or at our discretion replace without charge provided that the unit

1. Has been installed and used in accordance with the fitting and wiring instructions supplied with each unit
2. Has not been connected to an unsuitable electrical supply
3. Has not been subjected to issue, neglect or damage.
4. Has not been modified or repaired by any person not authorised by Airflow Developments Ltd.
5. Has been installed in accordance with latest Building Regulations and IEE wiring regulations.

Airflow Developments shall not be liable for any loss, injury or other consequential damage, in the event of a failure of the equipment or arising from, or in connection with, the equipment excepting only that nothing in this condition shall be construed as to exclude or restrict liability for negligence.

This warranty does not in any way affect any statutory or other consumer rights.

# AIRFLOW™

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IP45     

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**ec**  **air**  
RANGE

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**Correct Disposal of This Product** (Waste Electrical & Electronic Equipment)  
 (Applicable in the European Union and other European countries with separate collection systems)  
 This marking shown on the product or its Operation and Installation Instruction, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.  
 Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.  
 Business users should contact their supplier and check the terms and conditions of the purchase contract.  
 This product should not be mixed with other commercial wastes for disposal.

### CHAPTER 1

#### INSTALLATION AND OPERATING INSTRUCTIONS

##### WARNING

**1.0 Important information**  
 To ensure safety and correct operation please read and observe the following instructions carefully before proceeding. The electrical connection must be fully isolated from the supply up to the final assembly ! Keep the installation and operating instructions as a reference at the device. After the final assembly the document must be handed out to the operator (tenant/owner).

**1.1 Warning and safety instructions**  
**Accompanying symbol is a safety-relevant prominent warning label. All safety regulations and/or symbols must be absolutely adhered to, so that any danger situation is avoided.**

**1.2 Warranty – Exclusion of liability**  
 If the preceding instructions are not observed all warranty claims and accommodation treatment are excluded. This also applies to any liability claims extended to the manufacturer. The use of accessories not offered or recommended is not permitted. Potential damages are not liable for warranty.

**1.3 Certificates**  
 If the product is installed correctly and used for its intended purpose, it conforms to all applicable British and European legislation at its date of manufacture.

**1.4 Receipt**  
 Please check delivery immediately on receipt for accuracy and damage. If damaged, please notify carrier immediately. In case of delayed notification, any possible claim may be void.

**1.5 Storage**  
 When storing for a prolonged time the following steps are to be taken to avoid damaging influences: Protection of motor by dry, air- dustproof packing (plastic bags with drying agent and moisture indicators). The storage place must be water proof, vibration-free and free of temperature variations. When storing for several years or non rotation of motor an inspection of the bearings with possible relubrication and an electrical inspection to VDE 0701 and VDE 0530 are absolutely necessary before starting operation. When transshipping (especially over longer distances) check if the packing is adequate for method and manner of transportation. Damages due to improper transportation, storage or putting into operation are not liable for warranty.

**1.6 Application/Operation**  
 The fans are designed for air extraction of living spaces. If the unit is to be used in other applications where high humidity, excessive dust, temperature in excess of 40 °C or long periods at standstill (not running), please contact your local dealer for advice. This also applies for special technical and electrical applications. The complete fan corresponds to protection IP 45 (jet water-protected) , protection class II and is suitable for use in zone 1 of bathrooms.

##### NOTE

**The fan may only be used for its intended purpose !**

**1.7 Performance**  
 The unit must be installed correctly to achieve the optimum performance. This applies to the installation of the unit, the ducting and the replacement air supply. If installing in a room where the fan can affect a fuel burning device (e.g. a gas boiler) which has a balanced flue, it is the installer's responsibility to ensure that there is sufficient replacement air to prevent fumes being drawn down the flue when the fan is operating at maximum extract rate. The catalogue noise levels stated are A-rated sound power levels LWA (to DIN 45635 T.1). The A-rated sound pressure level LPA depends on the acoustic condition in the room in which it is installed. These affect considerably the adjusting noise.

**1.8 General information**  
 Intake air duct: Every room which must be ventilated must have an intake air opening to prevent negative pressure conditions.

##### NOTE

**1.9 Safety**

- All servicing and installations may only be carried out by a certified electrician.
- The fans may be operated only with the rated voltage indicated on the type plate.
- Technical data on type plate are to be adhered to without fail.
- The degree of protection given on the type plate is only valid with designed installation in accordance with these installation and operating instructions and with closed fascia.

**WARNING**

**1.10 Electrical connection**

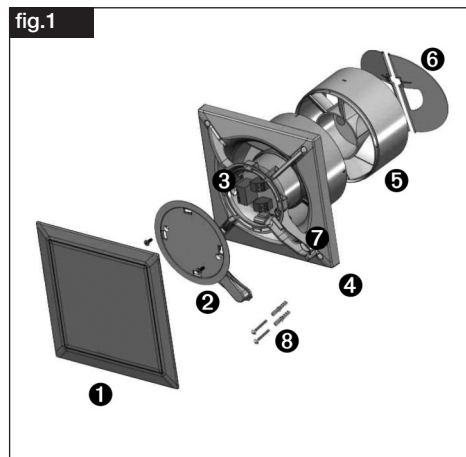
All work must be carried out with the equipment fully isolated from the power supply. The electrical connection are to be carried out in accordance with the relevant wiring diagram and are only to be done by a certified electrician. The electrical connection must be fully isolated from the supply up to the final assembly ! All relevant safety regulation, national standards and norms are to be adhered to. An appliance is required for cut off from the supply with a minimum of 3 mm contact opening of each pole. The rated voltage and frequency must correspond with the data on the type plate. The insertion of mains supply cable is carried out via a cable grommet which is included in the delivery. Never lead cable over sharp edges. The equipment corresponds to protection IPX5 (jet water-protected). In addition, they correspond to the safety class II.

**1.11 Overview of type.**

QuietAir 100HT with automatic humidity control and timer  
 QuietAir 120HT with automatic humidity control and timer

**2.0 Scope of delivery / packing unit**

Leave the fan in its box until installation. Check that the fan is in good condition and has not been damaged in transit.

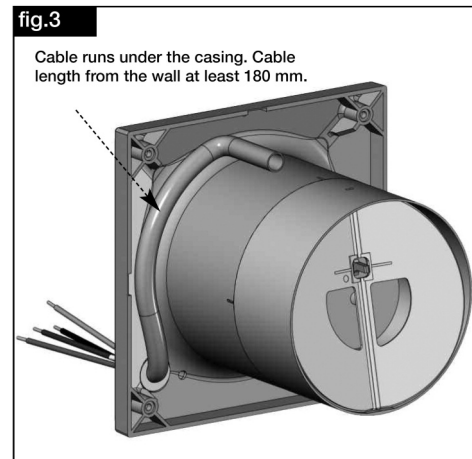
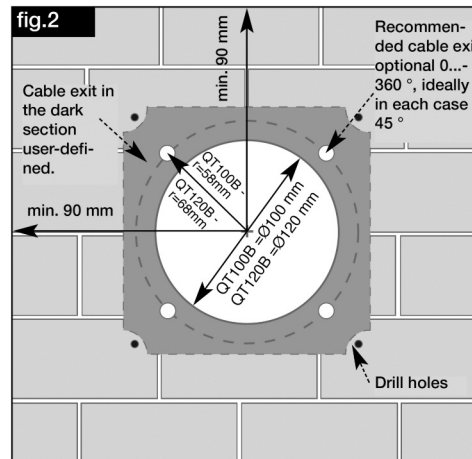


1. Fascia
2. Cover of control board including 2 x fastening screws
3. Electronic control board
4. Casing with impeller
5. Guide vane removable at reduced installation depth
6. Removable back draught shutter
7. Cable grommet
8. Assembly kit  
2 x screws with plugs for wall mounting

**3.0 Preparation for wall or ceiling installation (surface mounted)**

The assembly and start-up of the fan unit should be carried out first after finishing all other work and after the final cleaning in order to avoid damage and contamination of the fan unit. The position of the cable exit is variable (see fig.2/3).

**NOTE**



**3.1 Cable exit from the wall**

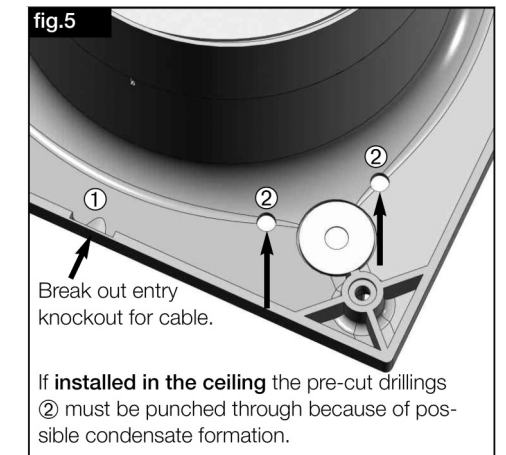
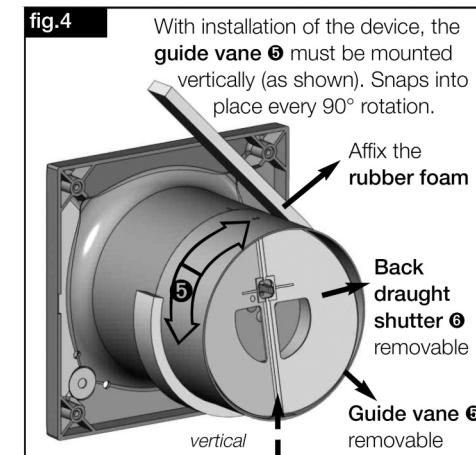
- Distance to the duct centre depending on cable exit 58/68 mm with a variable position under the casing.
- For a simple assembly an exit is recommended as shown (turnable by 90° in each case). The optimal position is 45° each if the cable exit is directly at the position of the cable grommet.
- Duct inside diameter QT100HT = 100mm / QT120HT = 120mm and distance to room corners: at least 90 mm
- Mounting hole radius QT100HT = 58mm / QT120HT = 68mm

**3.2 Drill holes**

- Set casing against the wall, mark the holes and drill. Fasten with at least 2 screws and plugs. For surface installation the casing is provided with a side entry knockout (Fig.5, Pos.1) for the cable ! The mains supply cable is to be kept in such a way that no ingress of moisture is made possible along the cable.

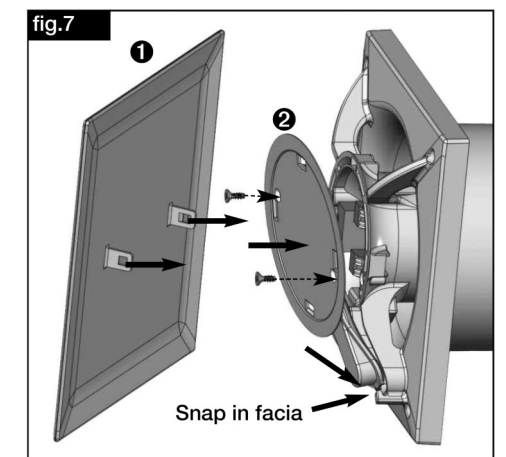
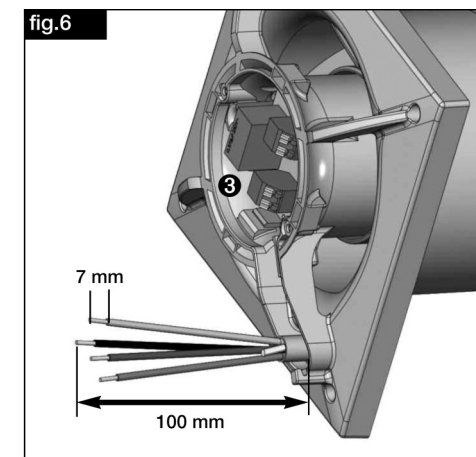
**NOTE**

**3.3 Wall or ceiling installation**



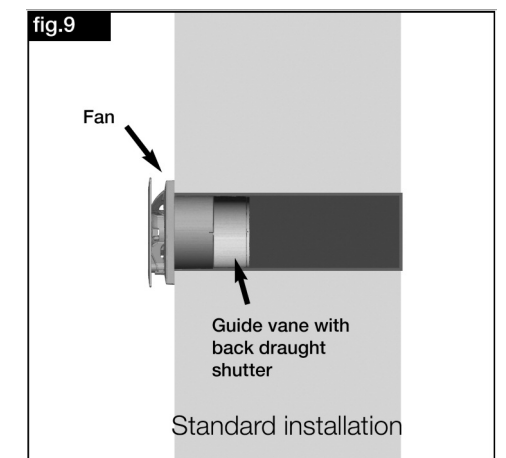
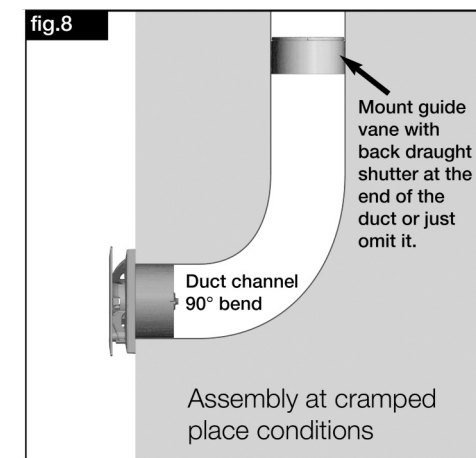
**3.4 Cable connections**

1. Pull cable through grommet, don't cut open!
2. Cut cable at least to length 180 mm and remove cable jacket at least 100 mm in length.
3. Connect fan according to wiring diagram (see page 5).
4. Run cable in the conduit. Ensure cable / grommet is sealed to maintain IP45.



- Length of single conductor 100 mm
- Length of stripped insulation 7 mm
- Strip plastic-sheathed cable flush with conduit.

1. Press cover of control board (2) on casing and fasten with screws.
2. Snap in fascia. (1)



CHAPTER 4

ELECTRICAL CONNECTION

WARNING

4.0 Electrical connection

All work must be carried out with the equipment fully isolated from the power supply. The electrical connection is to be carried out in accordance with the relevant wiring diagram and are only to be done by a certified electrician. The fans may not be operated with transformer controllers. All relevant safety regulation, national standards and norms are to be adhered to.

4.1 Electronic control board

PCB with automatic humidity control and timer. The control board is fitted into a splash-proof casing. QuietAir 100HT with automatic humidity control and timer  
QuietAir 120HT with automatic humidity control and timer

NOTE

EMV regulation

Important indication for the electromagnetic compatibility

Interference resistance according to DIN EN 55014-2 depending upon impulse form and energy rate of 1000 V to 4000 V. With operation with fluorescent tubes, switch power supplies, electronically regulated halogen bulbs etc. these values can be exceeded.

In this case additional suppression shielding activities are necessary (L -, C or RC elements, protection diodes, resistors).

CHAPTER 5

CLEANING AND MAINTENANCE

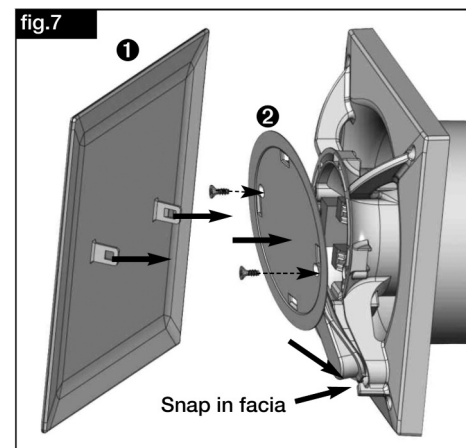
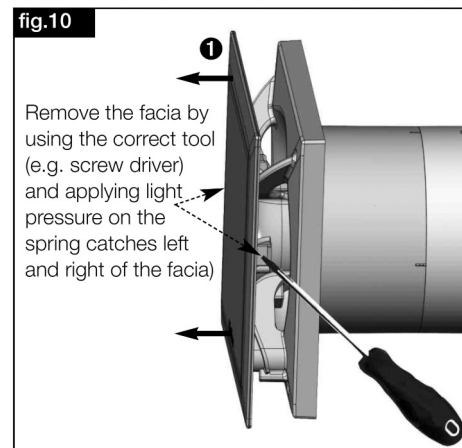
5.0 Cleaning and maintenance

- **IMPORTANT!** Before cleaning, ensure that the fan is isolated from the power supply to prevent unintentional restart! Cleaning and maintenance must **NOT** be carried out by children.
- Clean cover, protective guard and visible housing parts **ONLY** with a damp cloth.
- In principle the device is maintenance-free however the unit is not user serviceable. Nevertheless all necessary maintenance work must be carried out by a qualified electrician.
- Excessive deposits of dirt, dust, fats etc. on the impeller, motor, protective grids and especially between housing and impeller are not allowed; as it can lead to heavy imbalance in the impeller, overheat the motor or even block the impeller. In these instances the device must be cleaned.

5.1 Dismantling of fascia

Procedure:

1. Isolate the device from the power supply and prevent unintentional restart!
2. Remove the fascia (1) by using the correct tool (e.g. screw driver) and applying light pressure on the spring catches left and right of the fascia (Fig.10).
3. Unfasten the screws of the control board cover (2) (Fig.7).



6.0 Troubleshooting

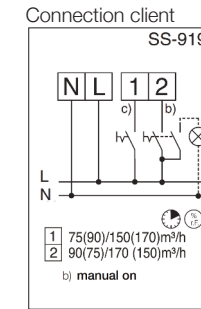
- If the thermal protection trips this could be the result of dirt build-up, a hard running impeller and/or bearings. Too high winding temperature through insufficient motor cooling, or too high air flow temperature could be the cause of disturbance.
- Abnormal noises can mean worn out bearings.
- Vibrations can originate from an unbalanced or dirty impeller or due to the installation.
- Extreme performance reduction can occur if the fan must work against too high resistance of the ventilation system or if there is a lack of sufficient supply air (causing also higher sound level).

CHAPTER 6

TROUBLESHOOTING

Wiring diagram overview

QuietAir 100HT - 75(90)m³/hr  
QuietAir 120HT - 150(170)m³/hr



WARNING

Terminal N/L:

A permanent supply voltage of 230v/1Ph/50-60 Hz should be connected to terminals N and L, for ALL installations. The unit is double insulated and does not require an earth. (drawing SS-919)

You need an additional switched live to Terminal 1 OR/AND Terminal 2 to give your fan its functionality.

Terminal 1 Functionality

Factory set 2 minute delay start, 15 minute timer overrun and humidity sensor is also live and active. (drawing SS-919)

Terminal 2 Functionality

Fan performs at a second speed by way of a second switch. (drawing SS-919)

TERMINAL 1 AND TERMINAL 2 FUNCTIONALITY

The fan functions as outlined in Terminal 1 above, when Terminal 1 timer delay or run on timer or humidity is not activated, then a separate switch wired to Terminal 2 enables you to use the second speed. (drawing SS-919)

See also notes 1, 2 and 3 below for more detail

1. Standard functionality out of the box with Terminal 1 ONLY used

This option activates a 2 minute delayed start and timer overrun and makes the humidity function live.

Delayed start 2 minutes

This energy saving function enables a short visit without the fan turning on. A useful facility, particularly at night.

Run on Timer

When the fan has been activated by a switch, the 15 minute run on timer is also activated when the switch has been turned off.

Automatic Humidity Control

With a progressive increase in humidity the fan will start when the pre-set value (factory setting 70% RH) is reached. However, when the sensor detects a rapid increase in humidity the fan will start automatically before the pre-set value has been reached so that preventive ventilation commences.

The fan switches off automatically when the humidity is reduced to 10% below the set point.

Note: It is possible that a high level of humidity is present within the room for a longer period of time due to generally high humidity in the ambient air (summertime) or a build up of high humidity over several hours (stream rooms/sauna etc)

2. Standard functionality out of the box with Terminal 2 ONLY live

Fan operates by a remote switch at the speed set in terminal 2.

3. Standard functionality out of the box with Terminal 1 AND 2 live

This option gives you all the functionality of terminal 1 as outlined above and the functionality of terminal 2 as outlined above. However terminal 2 only functions when none of the functions of terminal 1 are active.

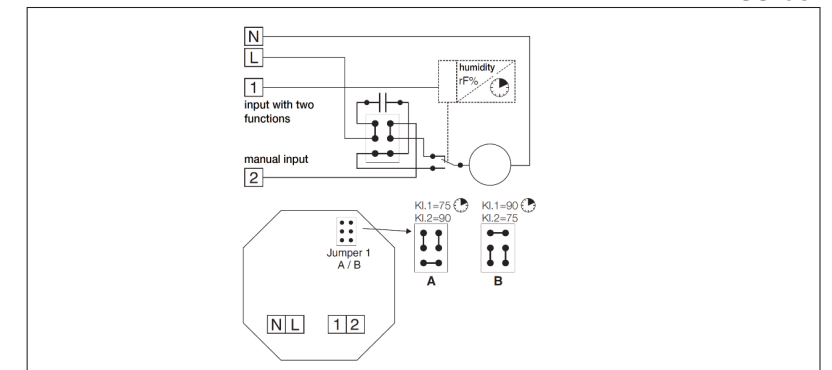
Test mode and calibration at initial start-up

When applying the supply voltage the fan is in the test mode for 1 minute (Note: Factory DIP switch settings must be in accordance with wiring diagram SS-941.2). In this mode the delayed start and the overrun timer functions are deactivated within the first minute.

Notes: To protect the fan an in line 3amp fuse shall be used and relevant RCD

Internal functional principle / Jumper position

SS-931



Adjustment of DIP-switchs

SS-941.2

QT ... HT	DIP-Schalter / Switch / Commutateur					
	1	2	3	4	5	6
Einschaltverzögerung / Delayed start / Démarrage temporisé	0 sec	off	—	—	—	—
Nachlauf / Einschaltzeit / Run on time / Running time	2 min	on	—	—	—	—
Temporisation / Durée de fonctionnement	6 min	off	off	—	—	—
—	12 min	—	off	on	—	—
—	15 min	—	on	off	—	—
—	21 min	—	on	on	—	—
—	70/60	—	—	off	off	—
—	90/80	—	—	—	on	—
—	80/70	—	—	—	on	off
—	60/50	—	—	—	on	on
—	—	—	—	—	—	off
—	—	—	—	—	—	on

The humidity sensor needs approximately 1 hour to calibrate itself at initial start-up (from switch on of mains supply). During the calibration period the fan may switch itself on, depending on the prevailing environmental conditions.

ADDITIONAL FUNCTIONALITY

De-activating the Humidity sensor temporarily

When a short switch on and off (minimum pulse 0.5 seconds) is supplied the humidity control is switched off for 1 hour.

In this mode all other settings are by-passed. When the switch is operated again within 1 hour the deactivation period is reset back to 1 hour.

Deactivation of humidity has no effect on the manual operation settings of terminal 2

CHANGING TERMINAL SPEEDS

The standard speed for terminal 1 is 75m³ and terminal 2 90m³. These can be changed around so that Terminal 1 is 90m³ and Terminal 2 is 75m³ Please see drawing SS-931 and jumper configuration.

Jumper 1

QT100HT / 120HT

Position A – Factory setting  
K1. 1 = 75 m³/hr / 150 m³/hr, activated via timer function with humidity sensor (%RH)  
K1. 2 = 90 m³/hr / 170 m³/hr manually activated by (optional) switch

Position B

K1. 1 = 90 m³/hr / 170 m³/hr, activated via timer function humidity sensor (%RH)  
K1. 2 = 75 m³/hr / 150 m³/hr, manually activated by (optional) switch

Changing the factory setting

The DIP switch settings shown on wiring diagram SS-941.2 can be changed to select alternative functionality. The additional functionality are: disable 2 minute time delay, adjust the run on time, adjust the humidity levels at which the fan is activated disable the run on timer and disable the humidity function.

Always isolate the unit from the mains electric supply before commencing any work.

Room lighting

When connecting the fan to the light switch (terminal 1 or 2), a double-pole switch must be used.

Wiring in parallel

IMPORTANT: Wiring in series of more than one fan is not permitted.