



# PRODUCT INFORMATION & INSTALLATION GUIDE 2023

Airius Model 45/EC 'Short'  
**STANDARD SERIES**

[www.airius.co.uk](http://www.airius.co.uk)

**AIRIUS**<sup>®</sup>  
saving you energy

## MODEL 45/EC SHORT DIMENSIONS AND PROPERTIES



### UNIT SIZE

|                |                  |
|----------------|------------------|
| Weight:        | 5.8 kgs (13 lbs) |
| Height to Rim: | 311 mm (12.2 in) |
| Total Height:  | 444 mm (17.4 in) |
| Diameter:      | 325 mm (12.7 in) |

### SHORT

### MOTOR

|                                     |                 |
|-------------------------------------|-----------------|
| Watts*:                             | 175             |
| RPM*:                               | 3050            |
| L/S*:                               | 448 (951 CFM)   |
| m <sup>3</sup> /hr:                 | 1615            |
| Centre Line Velocity <sup>1</sup> : | 1.53 m/s @ 12 m |
| AMPS*:                              | 1.40            |

### 230V @ 50 Hz

\*Motor data provided by motor manufacturer and is subject to change at anytime  
<sup>1</sup>Velocity profile tested in situ

### COVERAGE

#### Heating

#### Cooling

|                  |                                                  |                                                  |
|------------------|--------------------------------------------------|--------------------------------------------------|
| Ceiling Height = | Up to 15 m (49 ft)                               | Up to 8 m (26 ft)                                |
| Nozzle Height =  | Up to 14 m (46 ft)                               | Up to 7 m (22 ft)                                |
| Floor Area =     | Up to 139 m <sup>2</sup> (1500 ft <sup>2</sup> ) | Up to 88.8 m <sup>2</sup> (955 ft <sup>2</sup> ) |

All data is indicative only and can change subject to application. For more accurate design please contact Airius.

### MOTOR

Single Phase  
Electrically commutated, variable speed 92% efficient motor  
German EBM Papst EC motor  
230 Volt @ 50/60 Hz

### OPERATING TEMPERATURES

Operating Temperature = -25°C (-13°F) - 60°C (140°F)

### HOUSING

PC/ABS Resin - Inc. internal fixed blade stator, nozzle and cowl  
5VA flame resistance rating  
1.8 m steel safety leash cable (fastened to housing)  
Applicable to Titan Series Upgrade - Chemical resistant ABS resin housing and stator blades with stainless steel fixings

### INGRESS PROTECTION

IP44 Rated

### NOISE LEVELS

Sound Pressure Level = 52.8 dB(A)

Calculated from nozzle of unit to head height when installed at maximum ceiling height

For additional noise level information contact Airius

### COLOUR

Cool gray 2C - Off white as standard  
Can be tailor painted to your colour specifications  
Titan Series Upgrade - Black as standard

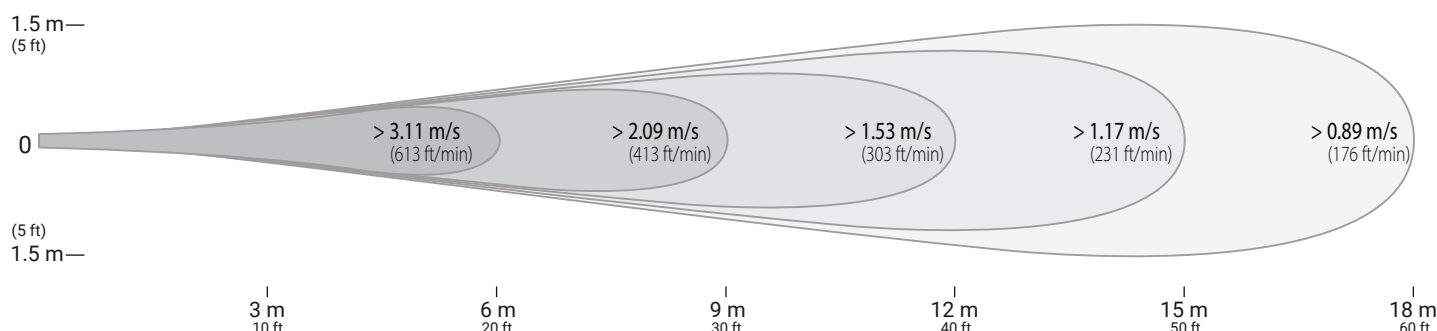
### ACCESSORIES & OPTIONS

Airius suspended ceiling kit - Allows Airius unit to be mounted in a suspended ceiling grid  
On/off speed controls allow for variable output from Airius unit.  
EC controls available  
Fully BMS controllable  
Bacnet Protocol for individual fan control  
For horizontal installations Airius recommend the use of a cradle, a second cable or a rod attachment to support the fan nozzle

### WARRANTY

5 years parts and workmanship from shipping date  
120 day money back guarantee (T's & C's apply)

## VELOCITY PROFILE



## UNIT PLACEMENT

### PREPARATION

Install electrical circuit(s) and outlet(s) in accordance with national and local electric codes.

Outlets should generally be mounted vertically unless a "twist/locking" type is being used.

Wall switch may be installed in circuit to disable power and prevent electrical hazards when servicing.

Confirm electrical continuity of Airius unit on the ground before permanently mounting in the ceiling.

### MAINTENANCE

Frequency of cleaning will vary by application and environment.

You may clean the plastic housing with a damp warm cloth, using mild household detergents.

Do not use petroleum products, thinners or solvents to clean any part of the Airius unit.

If the Airius unit fails, contact manufacturer.

### MATERIALS & PROPERTIES

Constructed from recyclable materials.

The outer shell, stator and fan blades are fire rated 5VA materials.

Power cord is a 1.8 m, 3 wire, 1.02 mm diameter 300VAC rated electrical cord - CE/EU compliance rated as HO5VV (PLUG NOT SUPPLIED).

Electrically commutated, variable speed 92% efficient motor.

Motor is thermally protected. Shutoff is at 135°C & reset is at 125°C.

No lubrication required. Bearings are sealed.

### OPERATION

Designed to operate 24 hours-a-day, 7 days-a-week to maintain air circulation/thermal equalization/humidity equalization.

Use optional speed control to fine tune RPM if needed.

### INSTALLATION

Do not hard connect fans in excess of 10 kgs unless agreed with Airius prior to Installation. When attaching it is preferred if some chain or cable is used between fan and the support. However it is not imperative.

Hang from the ceiling, typically 300 mm (12") - 450 mm (18") from the roof deck to fan intake.

For cooling applications fans can be installed slightly lower. Contact Airius for design details and assistance.

The Airius unit performs best when air column from the nozzle is unimpeded to the floor.

The Airius unit should not be mounted directly in front of heat ducts, vents or any other high heat source.

Use professionally installed hardware, capable of supporting a minimum of five times the weight of the fan unit.

Hardware to hang the unit includes but is not restricted to: Hooks, chains, cables, carabiners, bridle rings, beam clamps and bolts.

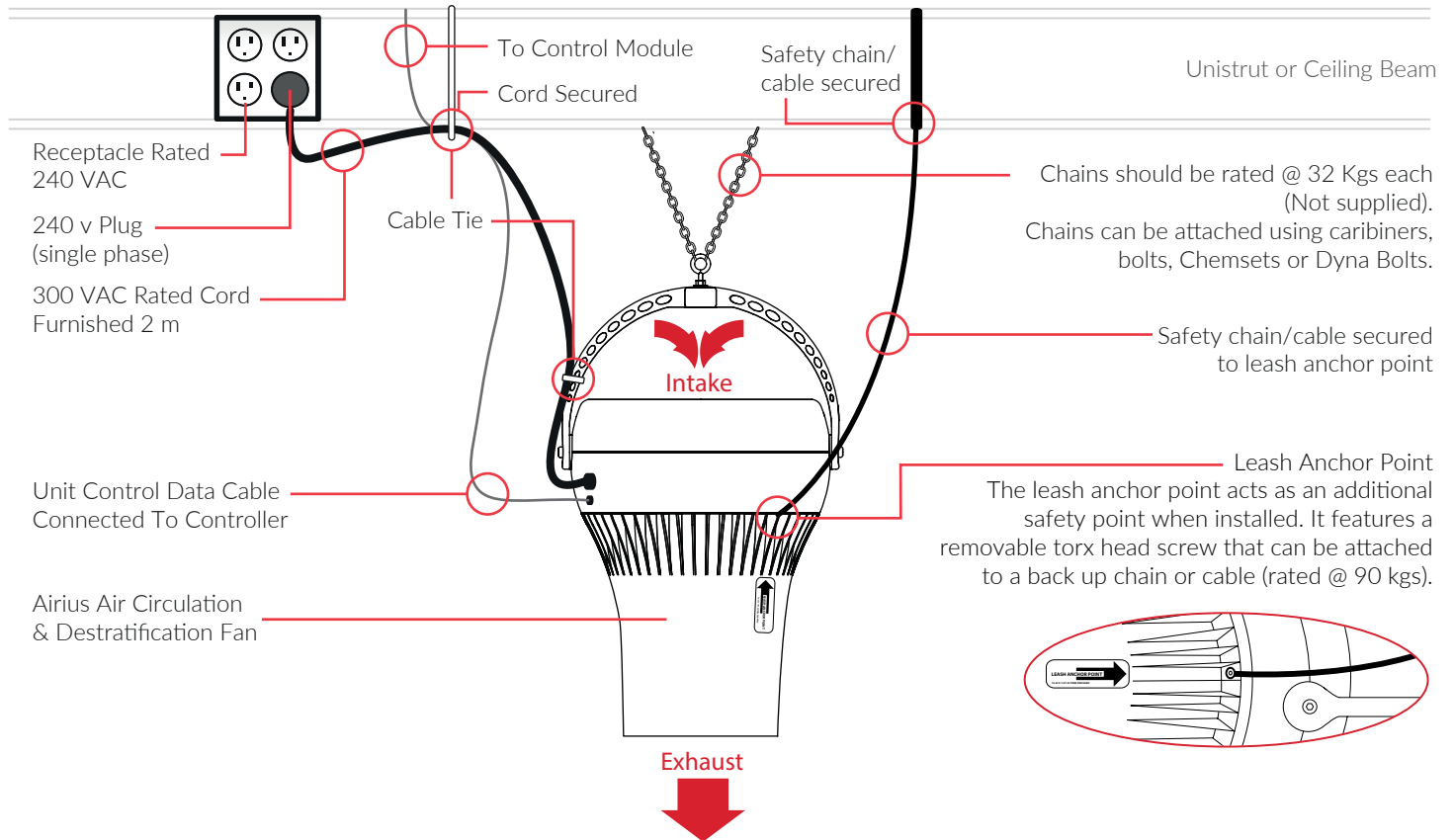
Density of the placement is directly related to the effectiveness, performance and savings.

Mount out of reach from people and animals.

Floor plans, mezzanines, office locations, machinery, people placement, plumbing, lighting, duct work, electrical systems, natural light/air systems, cranes, doors, windows, ventilation and fire suppression systems are all factors in properly locating the Airius system within the ceiling.

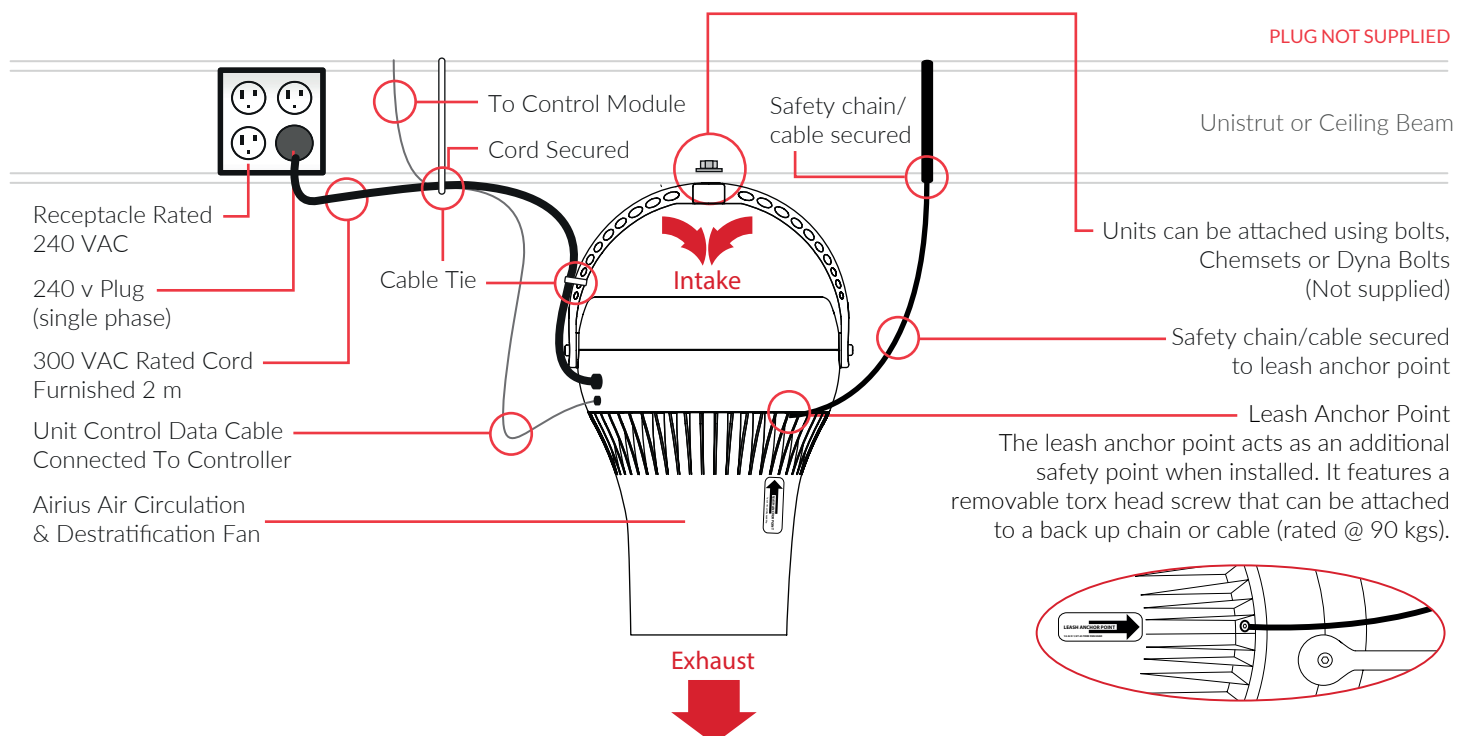
## CHAIN HUNG (STRAIGHT)

PLUG NOT SUPPLIED

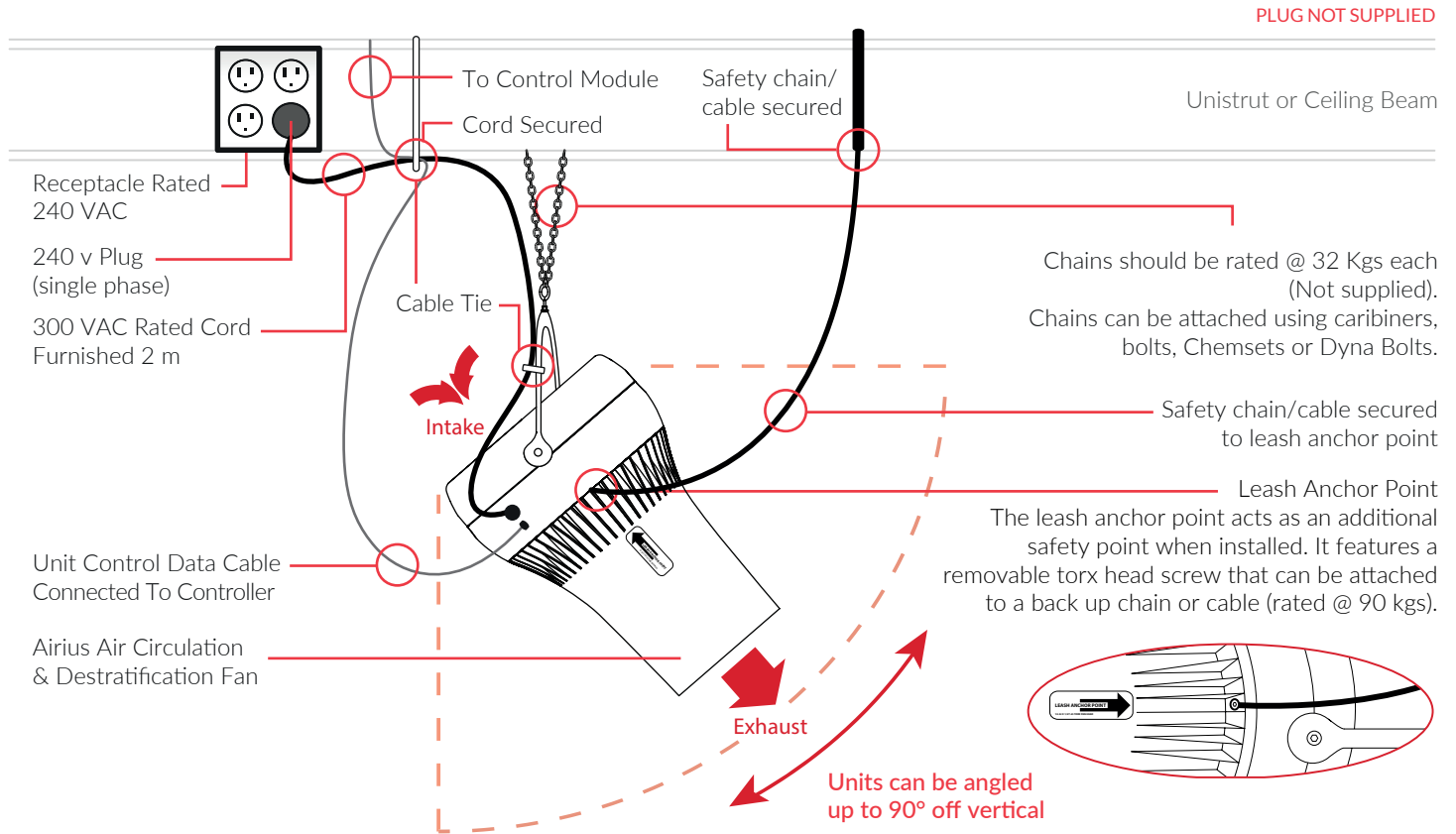


## CEILING FIXED (STRAIGHT)

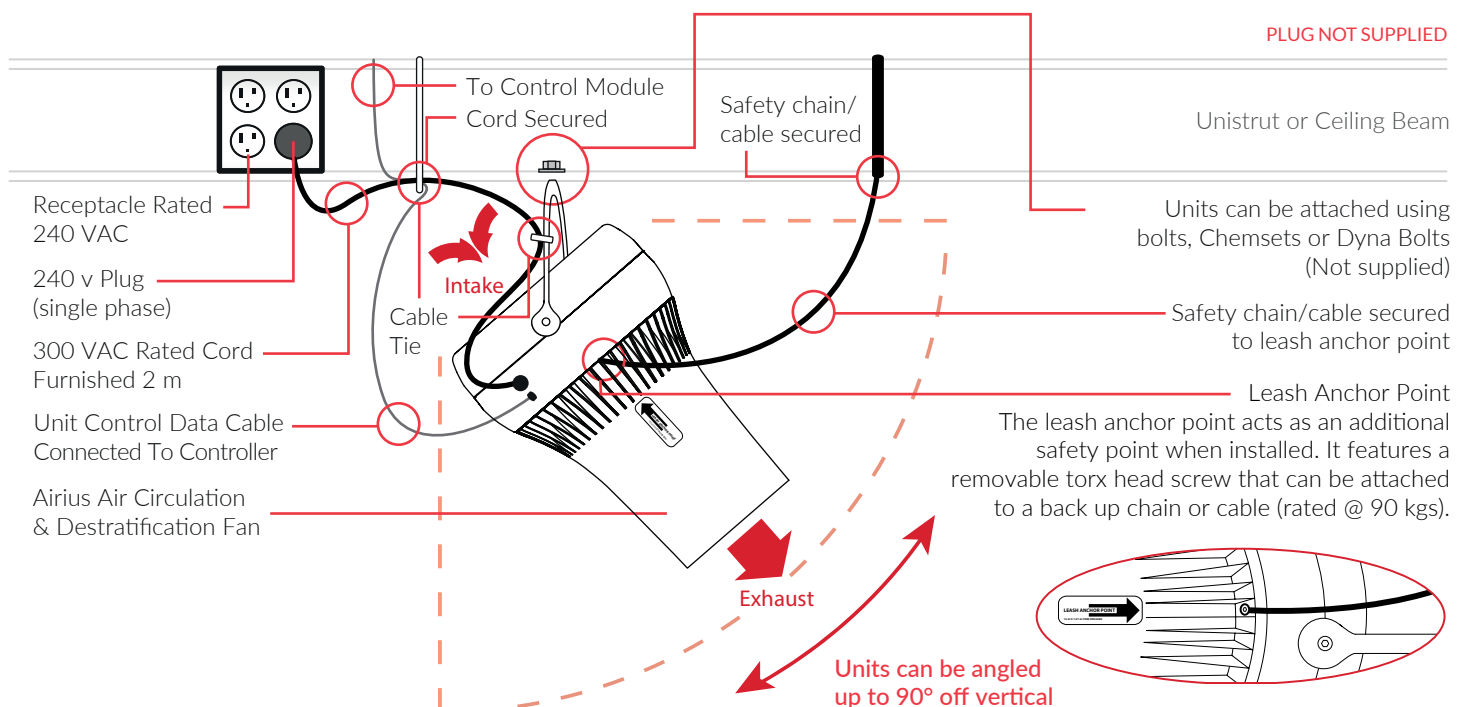
PLUG NOT SUPPLIED



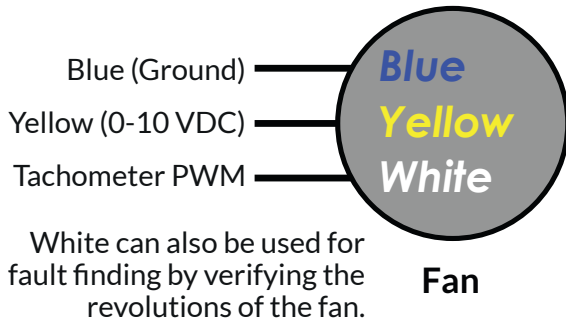
## CHAIN HUNG (ANGLED)



## CEILING HUNG (ANGLED)



## BMS CONTROL WIRING



### GENERAL NOTES

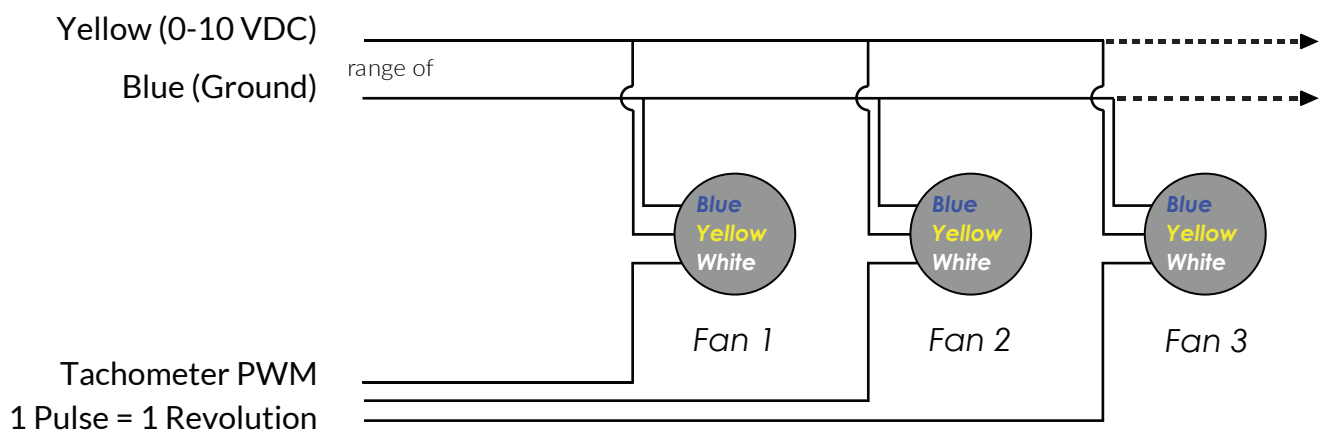
0-10 V signal allows infinitely variable open loop speed control

Connecting the red and yellow leads will allow EC fans to operate at full speed

A single controller can be used to control multiple fans with the same speed setting

The BMS generates this voltage to send to the signal (yellow)

Yellow is labelled as 0-10VDC because that is the acceptable range of voltages that the fan will accept





## (0-10V) POTENTIOMETER EC FAN SPEED CONTROLLER



### Technical Data

Voltage: 230VAC – 50/60Hz  
Output: 0-10 Vdc > 1 kOhm (max 8 mA)

**1 X EC CONTROLLER REQUIRED PER CIRCUIT.**

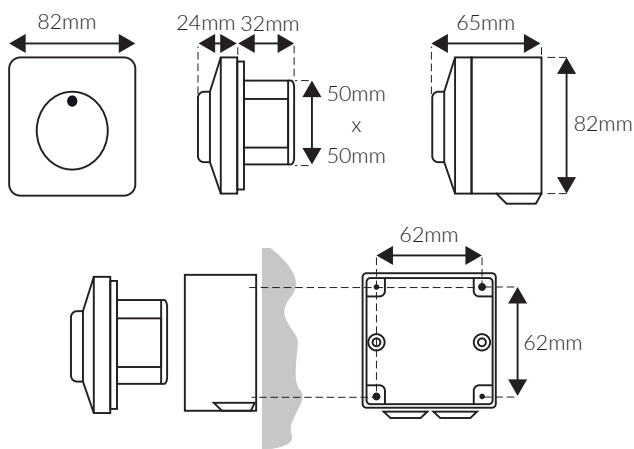
**PLEASE CONTACT AIRIUS FOR RECOMMENDED QUANTITY OF FANS PER CONTROLLER FOR YOUR UNIQUE APPLICATION.**

### WARRANTY

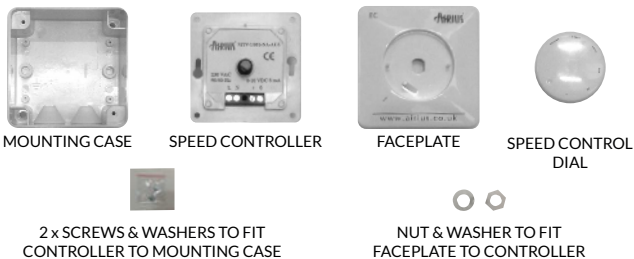
Two years from delivery date against defects in manufacturing. Any modifications or alterations to the product relieve the manufacturer of all responsibility.

The manufacturer bears no responsibility for any misprints or mistakes in this data, and modifications or improvements to the product can be made at any time after date of publication.

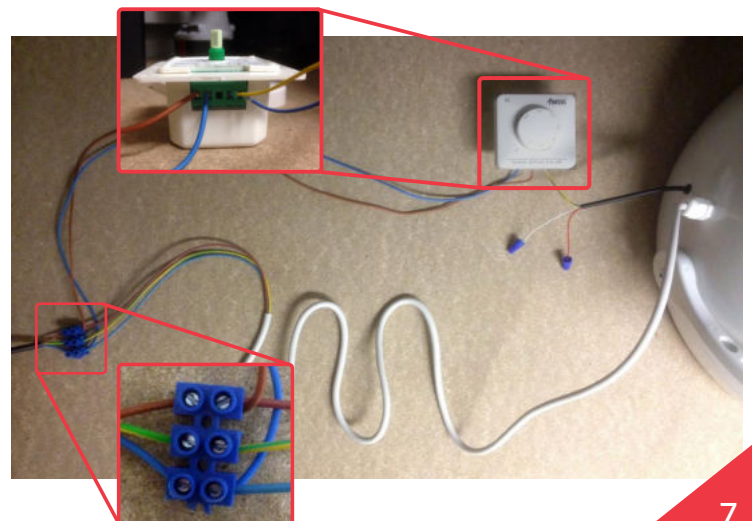
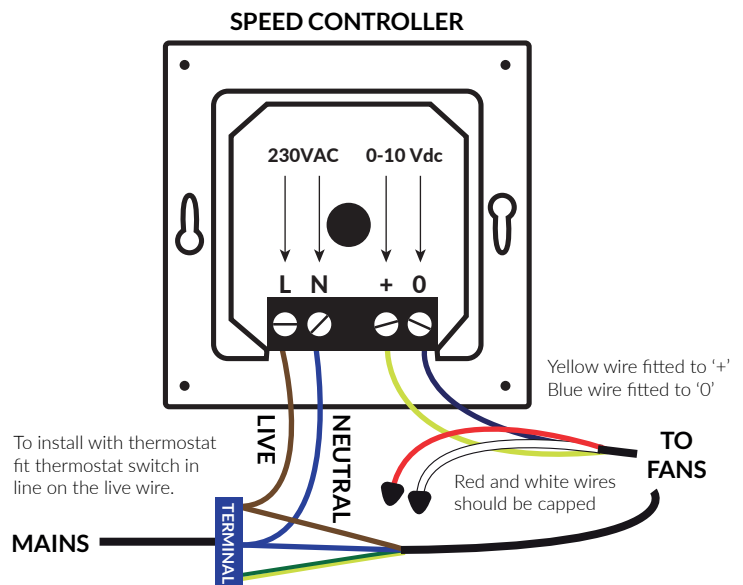
### DIMENSIONS



### COMPONENTS



### WIRING



### INSET MOUNTING (IP44)

Break mains voltage. Connect according to diagram. Mount the inner case to the wall with the connections pointing down. Mount cover with nut to the wall. Push knob in place at off position.

### SURFACE MOUNTING (IP54)

Break mains voltage. Mount surface mounting case to the wall together with included grommets. Connect according to diagram. Mount inner case in surface mounting case with included screws. Mount cover with nut to surface mounting case. Push knob in place at off position. When needed a 5mm hole for condensation water is to be drilled at the bottom of the surface mounting case.

### IN CASE OF FAULTY OPERATION

Please check: right voltage is applied, all connections are correct, the machine to be regulated is functioning.

### TRANSPORT AND STOCK KEEPING

Avoid shocks. Stock in original packaging. Avoid extreme conditions.

### MAINTENANCE

In normal conditions the controllers are maintenance-free. If soiled clean with dry or dampish cloth. In case of heavy pollution clean with a non-aggressive product. In these circumstances the controller should be disconnected from the mains. Pay attention that no fluids enter the controller. Only reconnect the controller to the mains when it is completely dry.

All works may only be carried out by skilled personnel following the local regulations and AFTER the controller is completely separated from the mains.

### CAUTION

Electrical installations should only be carried out by qualified personnel only. Follow safety measures to avoid electric shock.

According to the low voltage directive: 2006/95/EC/  
The EMC directive: 2004/108/EC







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