



PRODUCT INFORMATION & INSTALLATION GUIDE

AIRIUS MODEL 630/EC EMERALD

www.airius.com.au | v1.4

AIRIUS[®]
Airflow Reinvented

DIMENSIONS AND PROPERTIES



| UNIT SIZE | STANDARD |
|------------------------|-------------------|
| Weight: | 40kg |
| Total Height: | 630mm |
| Diameter: | 770mm |
| MOTOR | 230V @ 50Hz |
| Watts*: | 390 |
| RPM*: | 900 |
| L/S*: | 2882 |
| m3/hr: | 10,375 |
| Centre Line Velocity^: | 4 m/s @ 10m (est) |
| AMPS*: | 1.7 |
| Thrust*: | 25 Newtons (est) |

*Motor data provided by motor manufacturer and is subject to change at anytime. ^Velocity profile tested in situ.

COVERAGE

| | COOLING | HEATING |
|----------------|-------------------------|-------------------------|
| Ceiling Height | 8m - 18m | 8m - 23m |
| Floor Area | Up to 300m ² | Up to 350m ² |

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

| | |
|-------------------------|-------|
| Min start temp (approx) | -10°C |
| Min running temp | -25°C |
| Shut off | 135°C |
| Reset | 125°C |

HOUSING

Hi-Grade Aircraft Alloy - Inc. internal fixed blade stator
5VA flame resistance rating
4 x 1.5 metre 4mm chains supplied plus fittings

WARRANTY

5 years full manufacturers replacement from date of despatch. Subsequent 5 year 'half new price' rebuild cover.

NOISE LEVELS

| | |
|-------------------------------|--------------|
| Sound Power Level | 77 dB(A) est |
| Sound Pressure Level @ 7 mts | 48 dB(A) |
| Sound Pressure Level @ 10 mts | 45 dB(A) |

COLOUR

Dulux Natural White Pro Texture Flat 20T 1119F. Some custom colours available (additional costs & lead time applies)

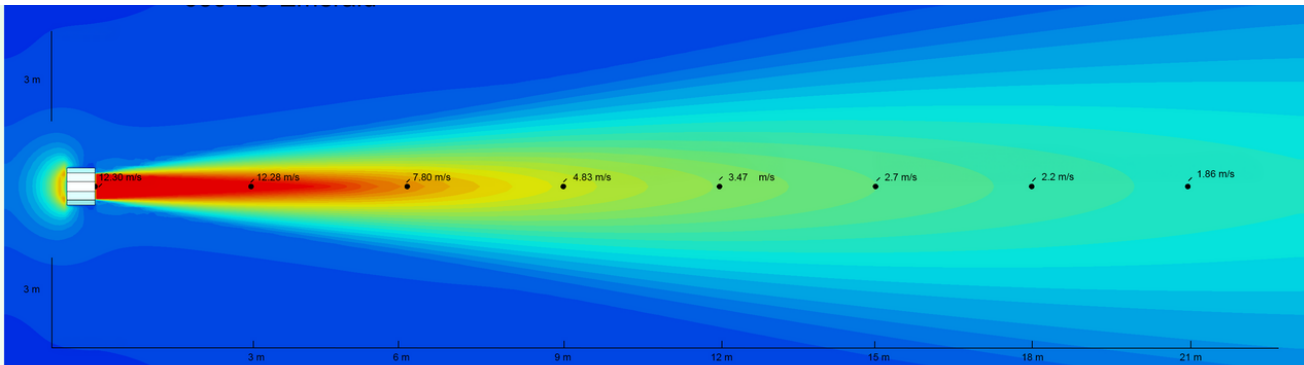
ACCESSORIES & OPTIONS

- Multiple speed control options available:
 - Full 0 - 100% potentiometer speed control option
 - Fully programmable Airius touch screen controller
 - Airius PearLink WiFi Control
- Fully BMS controllable
- Bacnet Protocol option for individual fan control
- RS 485 for modbus capable
- For horizontal installations it is imperative that there is a chain attached to the eyebolt supplied on the nose of the fan
- Airius strongly recommends all fans are speed controlled using one of the Airius options above

INGRESS PROTECTION

IP 55; H2 rated (H2 = Direct exposure to water from outside through rain, snow or ice formation.)
Max. relative humidity (%): 100
Corrosion requirements: Yes
Example applications: Condensers and heat exchangers, outdoors without protection against rain. Heat pumps, outdoors without protection against rain.

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 aluminium powder-coated housing with a non abrasive damp warm cloth and mild household detergent.

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.

Power cord is a 1.8m, 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

It is recommended to use the four chains (supplied) to hang the fan vertically onto two opposite eyebolts found on the fan. If extending the chain length, the same or stronger chain must be used to extend the fan support.

The load rating of chain of the Airius supplied chain is 150kgs.

Any extra chain supplied by others must match that performance criteria. The fans can be hung down to three metre below the ceiling.

For Cooling the Airius fan should be located to suit client's requirements. Suggested locations are from just under the ceiling or closer to the floor to ensure suitable air-cooling flow.

For Heating or Conditioned Spaces the Airius fan should be securely installed as close as possible to the ceiling. For combination applications fans can be installed close to ceiling or lowered slightly. 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.

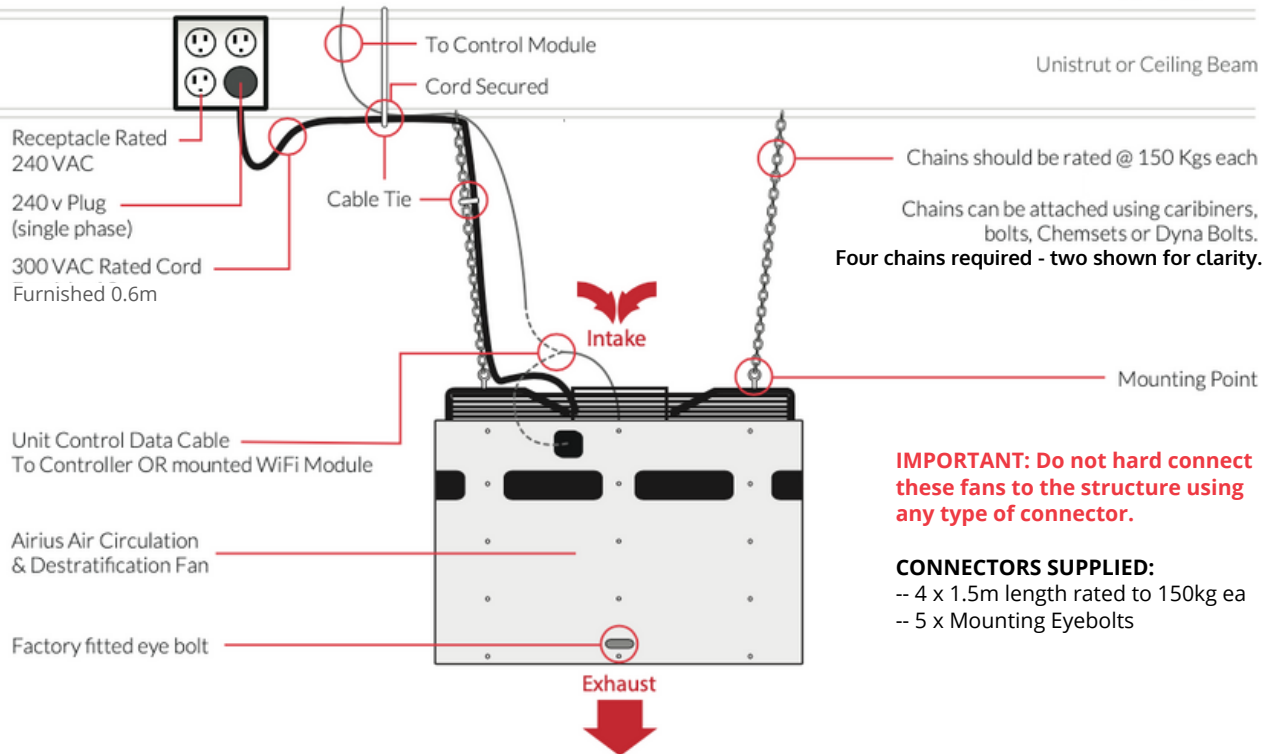
Density of the placement is directly related to the effectiveness, performance and savings.

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.

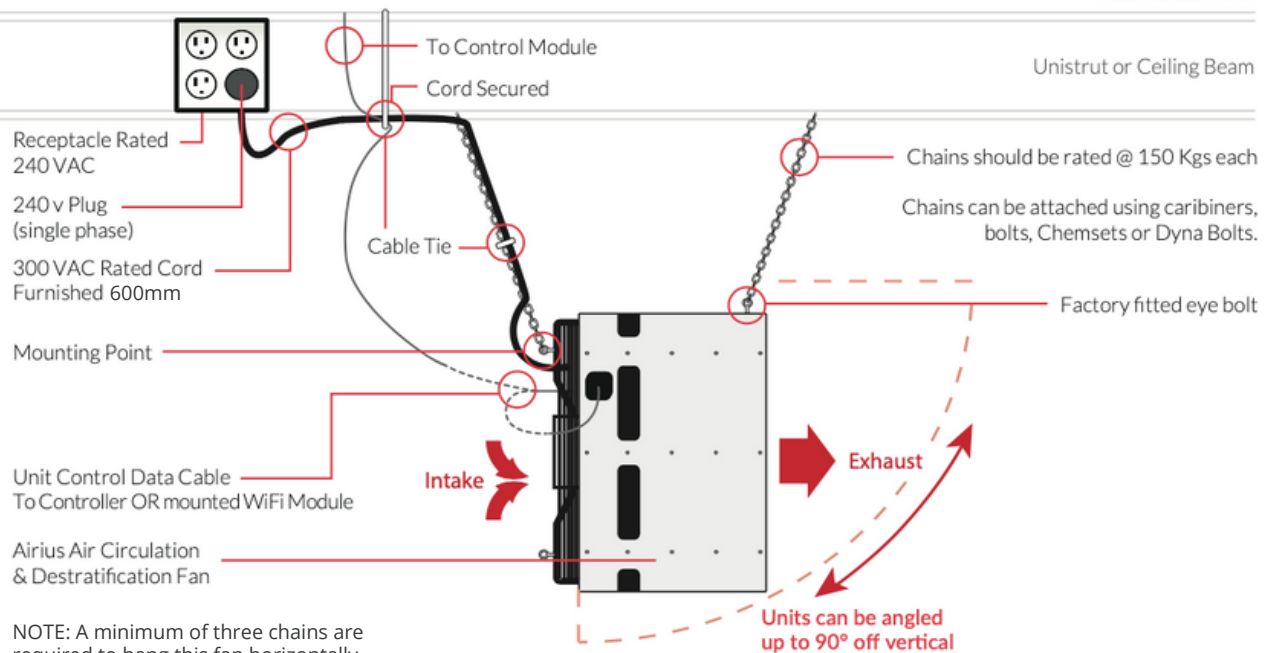
CHAIN HUNG (STRAIGHT)

PLUG NOT SUPPLIED



CHAIN HUNG (ANGLED)

PLUG NOT SUPPLIED



NOTE: A minimum of three chains are required to hang this fan horizontally. The two chains attached to the fan motor should be mounted at the flat point on opposite eyebolts splayed out at approx. 30 degrees to resist movement.

CONTROL WIRING CONNECTIONS

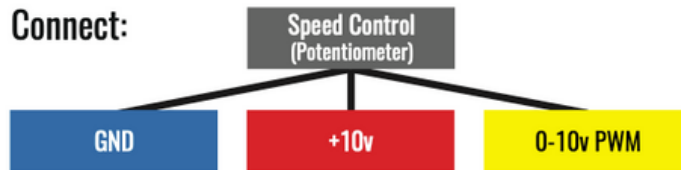
FULL SPEED WIRING

Connect:



SPEED CONTROLLABLE WIRING

Connect:



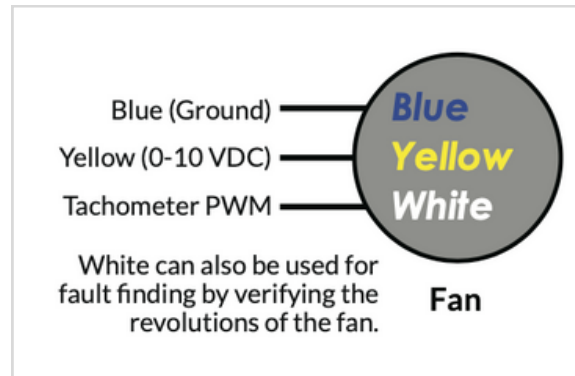
NOTE: 0-10 volt analogue signal supplied by fan motor. 3 wire low voltage cable or Cat 5 or Cat 6 cable to be used to either an Airius Potentiometer or a BMS controller (by others).

GENERAL NOTES

The brown and white cables found in the control cable are for RSA and RSB connections only.

Please note. There are two white cables included in the power cable that are redundant and are not required unless needing an alarm etc. Airius doesn't offer this service.

BMS CONTROL WIRING



GENERAL NOTES

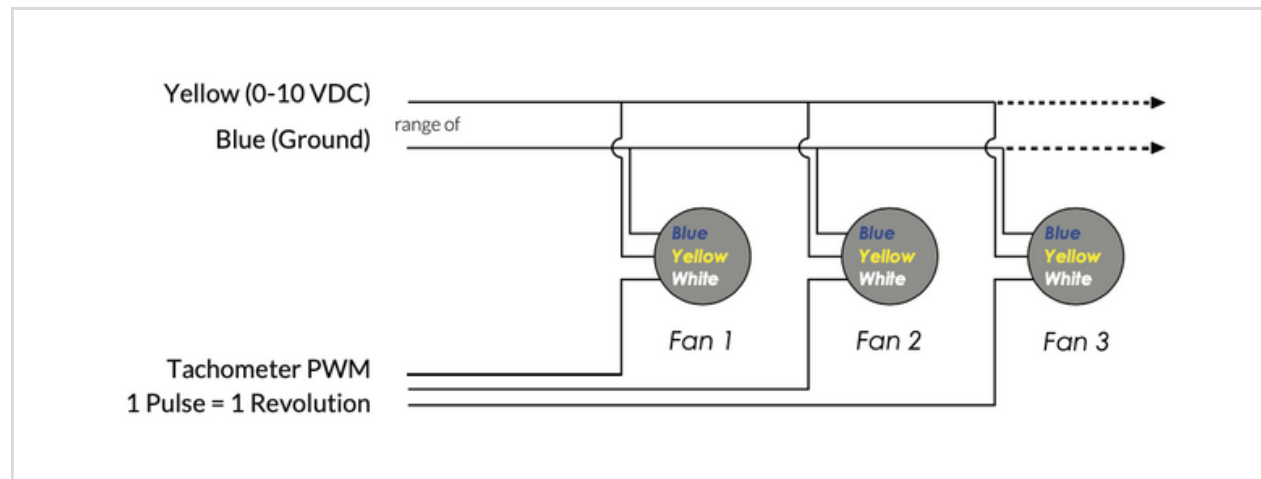
0-10 V signal allows infinitely variable open loop speed control

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

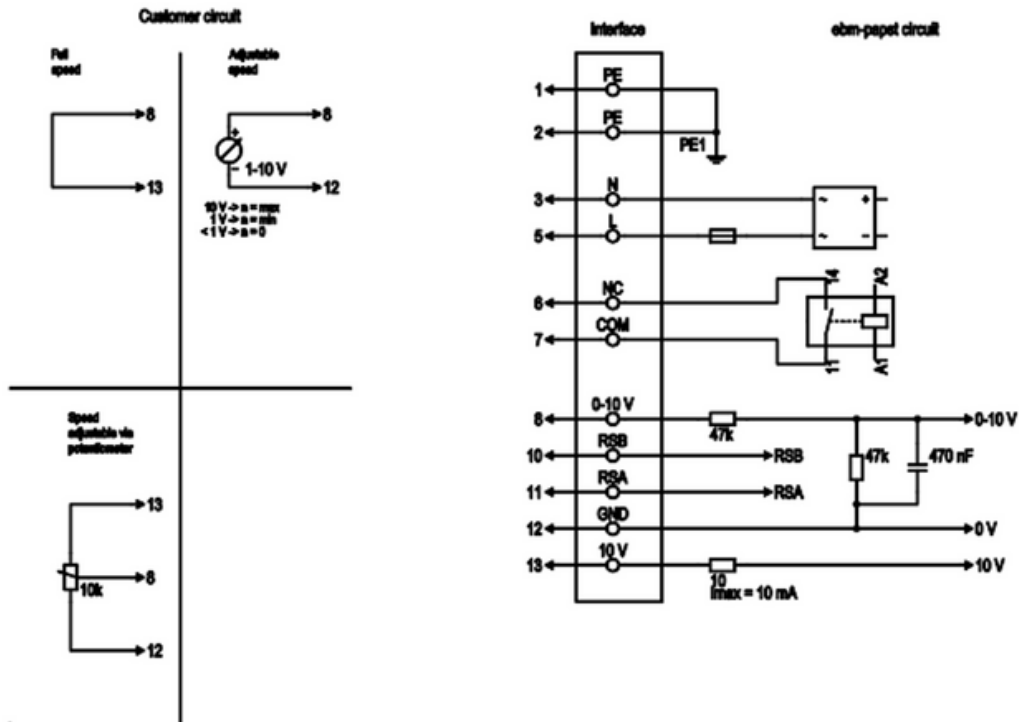
A single controller can be used to control multiple fans with the same speed setting.

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.



CONNECTION DIAGRAM



| No. | Conn. | Designation | Color | Function/assignment |
|-----|-------|-------------|--------------|---|
| 1 | 1, 2 | PE | green/yellow | Protective earth |
| 1 | 3 | N | blue | Power supply, neutral conductor, 50/60 Hz |
| 1 | 5 | L | black | Power supply, phase, 50/60 Hz |
| 1 | 6 | NC | white 1 | Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side |
| 1 | 7 | COM | white 2 | Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) / min. 10 mA, basic insulation on supply side and reinforced insulation on control interface side |
| 2 | 8 | 0-10V | yellow | Analog input (set value); 0-10 V; $R_i = 100\text{ k}\Omega$; adjustable curve |
| 2 | 10 | RSB | brown | RS485 interface for MODBUS, RSB |
| 2 | 11 | RSA | white | RS485 interface for MODBUS, RSA |
| 2 | 12 | GND | blue | Reference ground for control interface, SELV |
| 2 | 13 | +10V | red | Fixed voltage output 10 VDC, $+10\text{ V} \pm 3\%$; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot) |



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