PRODUCT INFORMATION & INSTALLATION GUIDE 2024

Airius Model 630/EC
EMERALD SERIES

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AIRIUS®
Airflow Reinvented

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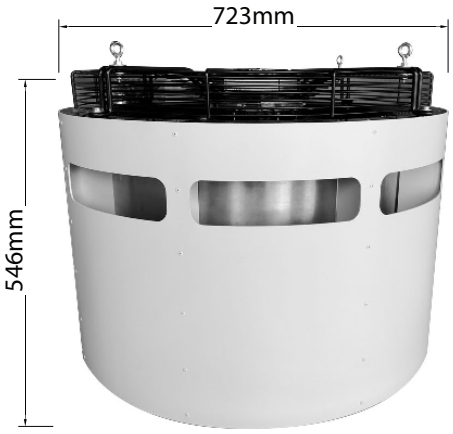
Product Information & Installation Guide
EMERALD SERIES - Model 630/EC

MODEL 630/EC DIMENSIONS AND PROPERTIES



Free hanging units can be angled up to 90° off vertical
Vertical attachment point provided near discharge.

UNIT SIZE	STANDARD
Weight:	40 kgs
Total Height:	630 mm
Diameter:	770 mm
MOTOR	**230V @ 50 Hz**
Watts*:	390
RPM*:	900
L/S*:	2882
m^3/hr:	10,375
Centre Line Velocity[1]:	4 m/s @ 10m (est)
AMPS*:	1.70
Thrust*:	25 Newtons

*Motor data provided by motor manufacturer and is subject to change at anytime
[1]Velocity profile tested in situ

COVERAGE

	COOLING	HEATING
Ceiling Height	= 8m - 18m	= 8m - 23m
Floor area	= Up to 300m²	= Up to 350m²

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

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 customcolours available (additional costs & lead time applies)

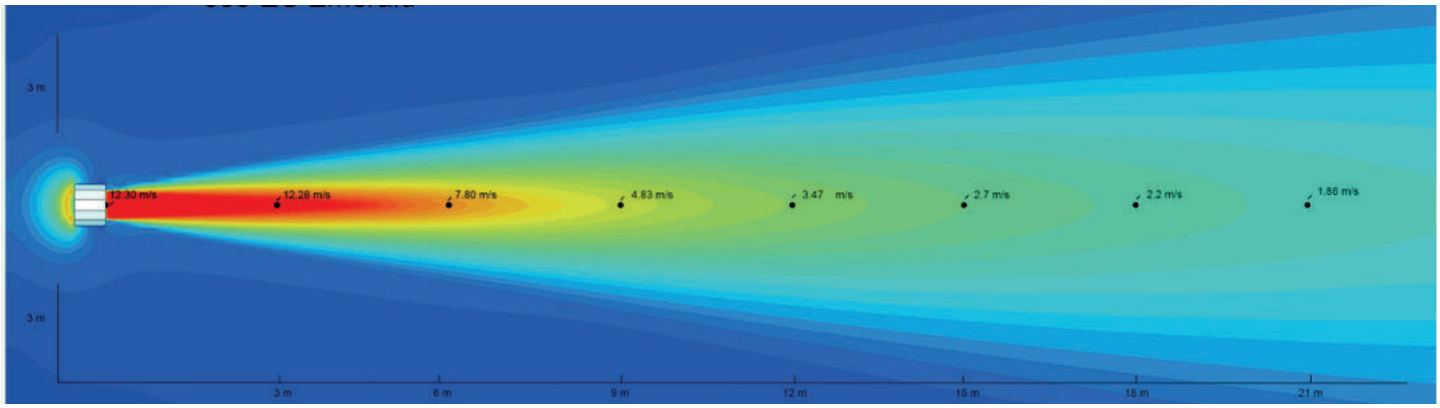
ACCESSORIES & OPTIONS

- 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 0.6m, 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 besecurely 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.

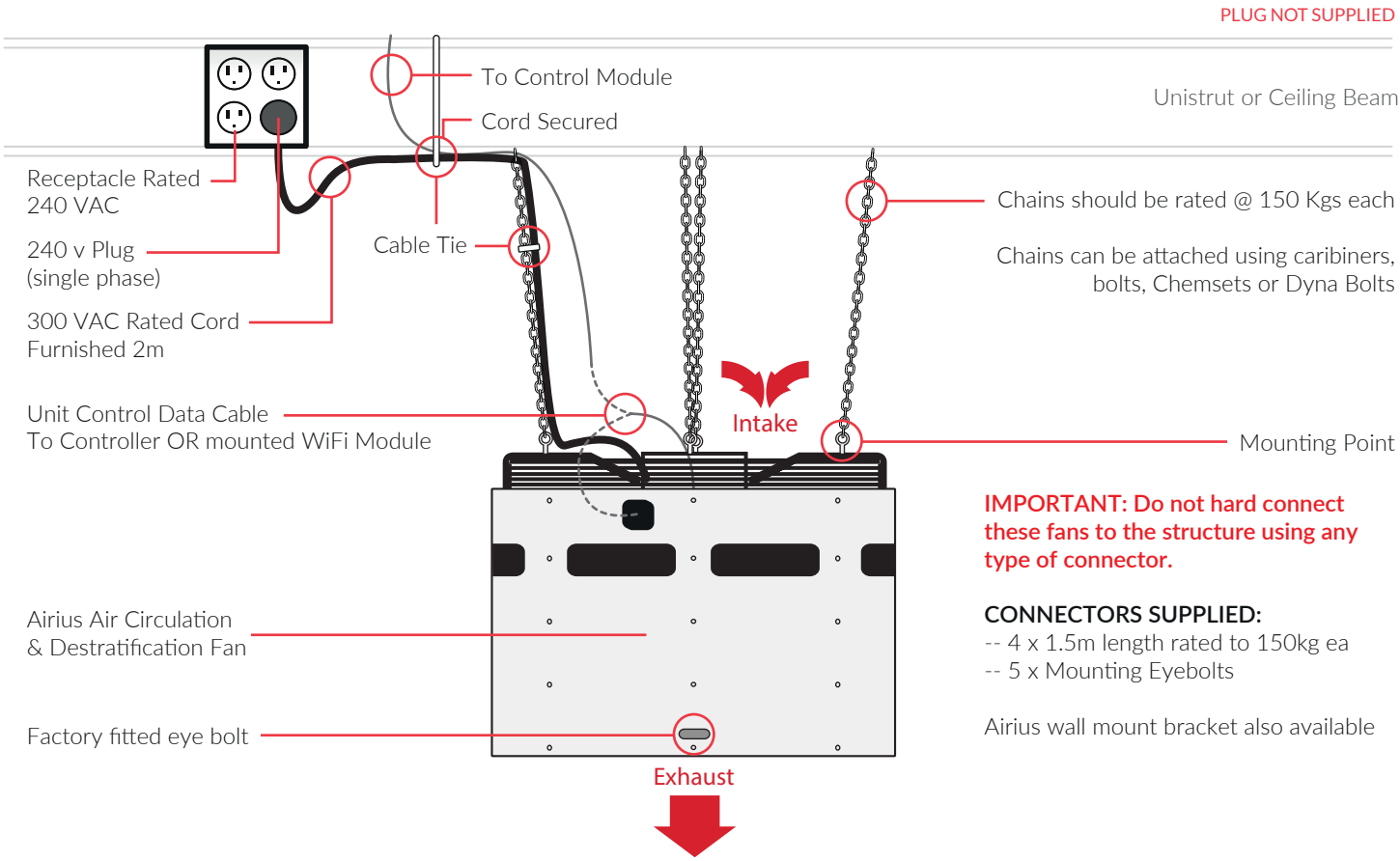
Hardware to hang the unit includes but is not restricted to: Hooks, chains, cables, carabiners, bridle rings, beam clamps and bolts.

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

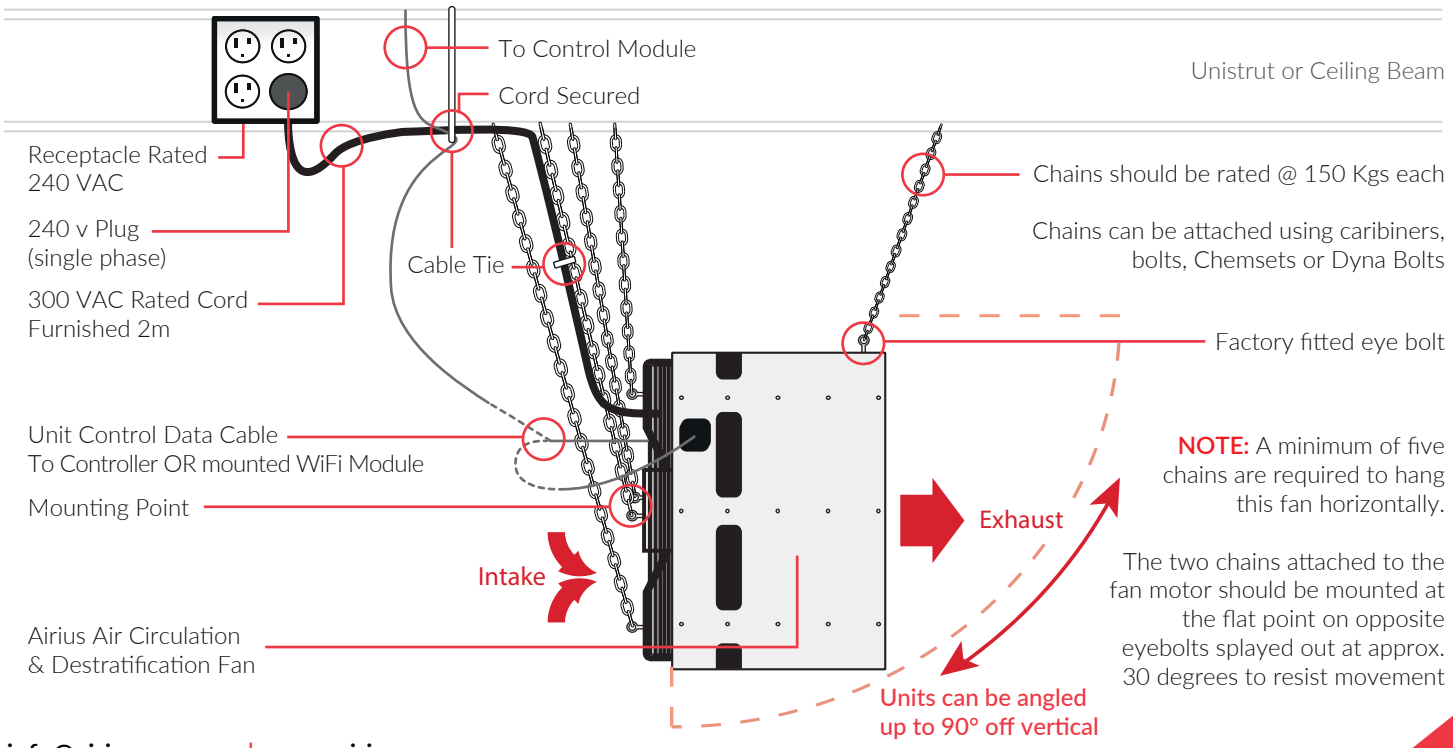
Mount out of reach from people and animals.

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)



CHAIN HUNG (ANGLED)



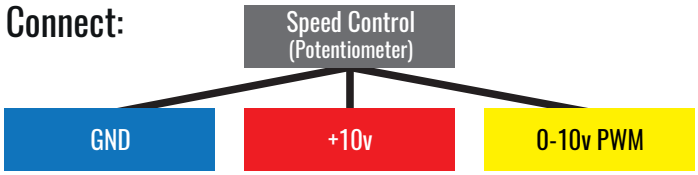
CONTROL WIRING CONNECTIONS

FULL SPEED WIRING

Connect:

SPEED CONTROLLABLE WIRING

Connect:



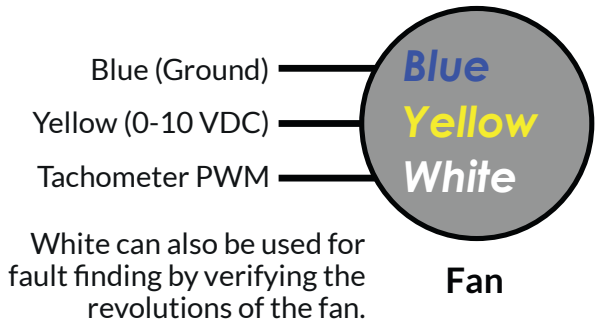
NOTE: 0-10 volt analogue signal supplied by fan motor. 3 wire low voltage cable or Cat 5 or Cat 6 cable to be used to either an Airius Potentiometer or a BMS controller (by others).

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

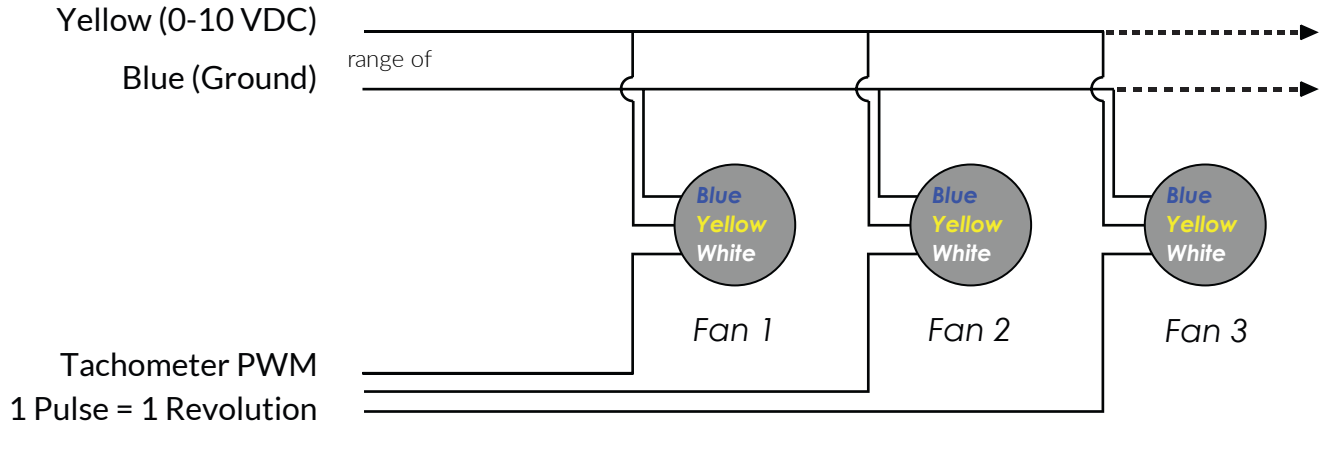
0-10 V signal allows infinitely variable open loop speed control

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

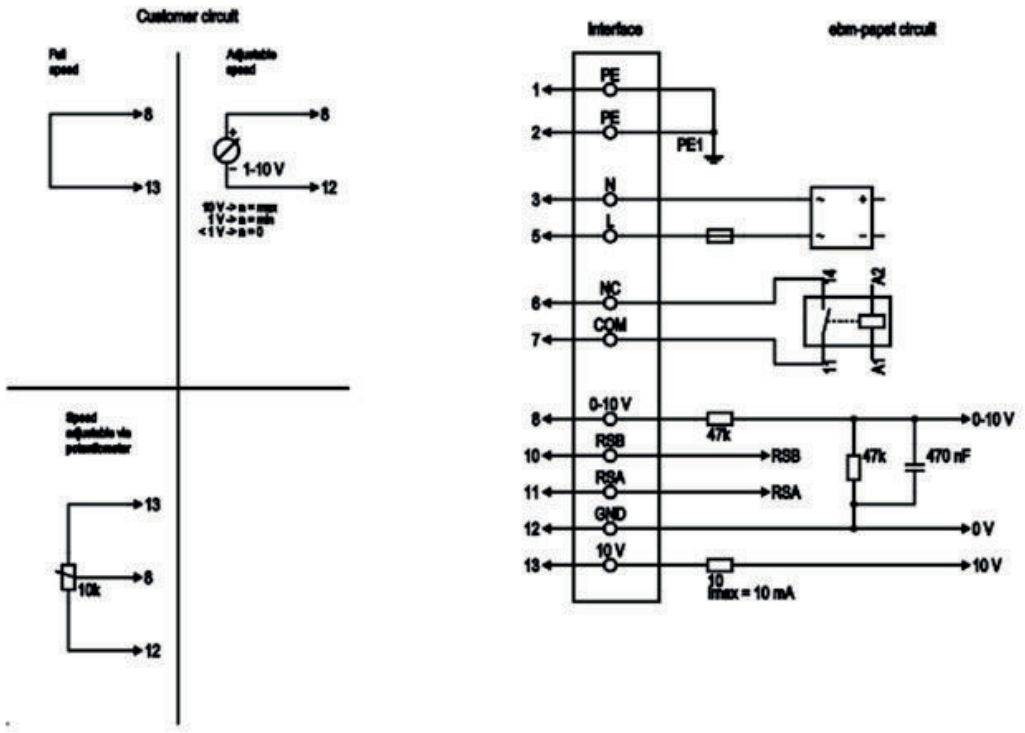
A single controller can be used to control multiple fans with the same speed setting

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/yelow	Protective earth
1	3	N	blue	Power supply, neutral conductor 50/60 Hz
1	5	L	blad<	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 interlace 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; Ri = 100 kΩ; 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 V ±3%; max. 10 mA: Short-circuit-proof: power supply for external devices (e.g. pot)

AIRIUS®

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