FabricAir

Rack Fans

— USER MANUAL

MODELS:

FabricAir®Rack Fan Ec-6

FabricAir®Rack Fan Ec-8

Fabricair®Rack Fan Ec-10

Fabricair®Rack Fan Ec-12

Thank you for choosing our fans for your ventilation needs. This RACK FAN series fan is built with a new generation EC motor which creates powerful, high-pressure airflow while saving energy. A compatible speed controller allows you to adjust the output of this unit to fit your application.
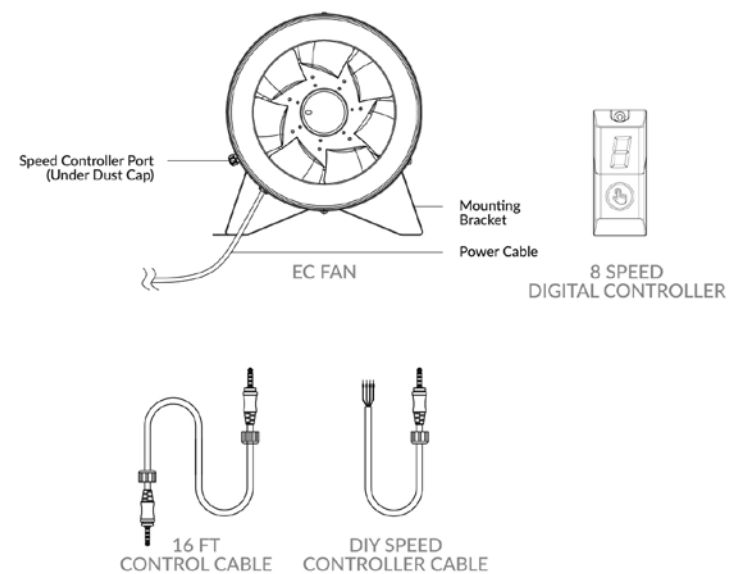
We do our best to ensure customer satisfaction. If you have any suggestions, questions or comments, please contact us directly at **sales-us@fabricair.com** or through our contact form at **fabricair.com.**

1. Safety warning

- This ventilation fan can be used by adults and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved.

- To avoid the risk of electrical shock, or injury to persons, always make sure that the fan is unplugged from the electrical outlet before relocating, servicing, or cleaning the product.

- Never touch moving parts when the fan is on or the impeller is moving.

- If installed without ducting, use a protective grille and install the fan away from the reach of children and pets.

- The fan contains no user-serviceable parts inside. Refer to the manufacturer for service.

- Do not pull the power cord too hard or hold the fan by the power cord. If the power cord is damaged or frayed it must be replaced by the manufacturer or a qualified service person.

- Keep this instructions manual for future reference.

2.1 Product contents

Speed Controller Port (Under Dust Cap)

Mounting Bracket

Power Cable

EC FAN

8 SPEED DIGITAL CONTROLLER

16 FT CONTROL CABLE

DIY SPEED CONTROLLER CABLE

2.2 Fan applications

Our fans generate powerful directional airflow required for ventilation in indoor plant cultivation. This product is built to be used as a component for FabricAir® Rack Flow System. Any other usage is unauthorized and shall void all warranty and liability.

3.1 Operating environment requirements

- This fan is intended and rated for indoor use only.

- Operating temperature range: -5°F – 140°F (-20°C – 60°C). Humidity range: 0-90%.

- Not suitable for applications in close proximity to open flame (wood or gas burning) furnaces. Temperatures over 140°F can cause permanent damage to electronic components.

- Not suitable for environments with flammable or hazardous substances, explosive gases or chemical dust.

- In environments with high dust or debris content, use a pre-filter to prevent dust, grease and other foreign substances from building up on the fan blades. Debris buildup leads to mechanical damage, increased vibration and noise.

3.2 Installation

- Inspect fan for shipping damage before installation. Ensure that the fan blade rotates freely without touching the housing.

- Securely attach the fan to a hard surface using the pre-installed mounting bracket and screws designed for the surface type in your application.

- Do not install on hollow drywall. Mount to hard surfaces (i.e..wood, concrete, metal).

- If used with securely installed carbon filters, it is acceptable to install the fan on top of the filter's duct collar. Secure the connection with a duct clamp.

3.3 Application tips

- The ducting has a strong effect on the air flow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

- A duct of matching size with the fan inlet and exhaust is recommended for best performance.

- Install the fan at least 6ft above the floor to keep it out of reach of children and pets. For added safety use metal grills/guards to keep fan's moving parts from the reach of children and pets.

- After installation, perform a test run to confirm that the fan operates as intended. A speed controller must be connected to the fan before power up.

- Once powered on, the fan blade should rotate freely and accelerate gradually.

- If excessive noise is present, verify that there are no foreign objects (duct pieces, screws, etc.) touching the fan blade. Secure installation to the FabricAir® Rack Flow system fan bracket is key to avoiding vibration and excessive noise.

4.1 Fan operation with speed controller

- You must use a speed controller in order to operate this fan. We include a digital speed controller in set with the fan.

- Locate the speed controller port under a screw-on plastic dust cap on the side of the fan.

- Controller – 8 speed digital speed controller. Each press of a button on the controller increases the speed by 1 level or 12.5%. Speed level 1 = 12.5% of maximum speed, Level 2 = 25%, Level 3 = 37.5%, Level 4 = 50%, Level 5 =62.5%, Level 6 = 75%, Level 7 = 87.5%, Level 8 = 100% (maximum speed).
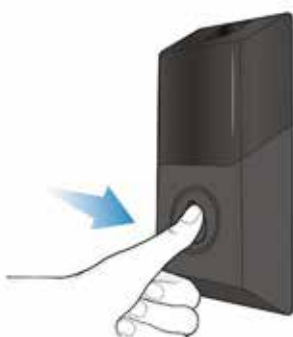
- Insert speed controller wire jack fully into the connection port until it clicks into position. Secure in place with a plastic locking nut located on the speed controller wire.

- This fan is rated for continuous use and can be operated 24/7.

4.2 Optional speed controllers

- PWM controllers (Arduino, Raspberry Pl, etc.) use the frequency range of 15-32 kHz and voltage range of 10-12 V.

- If used with a third-party speed controller, use the provided TRRS 3.5 mm connection wire or a DIY speed controller wire with pin outputs to connect the fan with the controller

- Refer to the illustration below for a description of pin outputs on the DIY speed controller wire.

4.3 Speed controller wiring diagram

Max.Speed	
	RED
	BLUE

Speed Control via 0-10V	
+	BLUE
0-10V	
−	BLACK

Speed Control via PWM	
Imax=10mA	BLUE
12V	BLACK

Speed Control via POT	
	RED
	BLUE
10K	BLACK
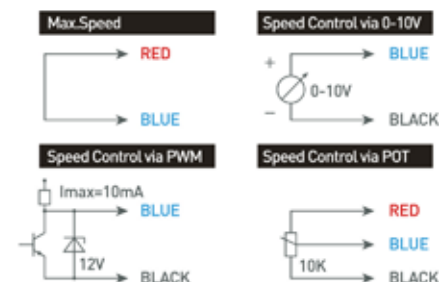
4.4 Speed controller wire

GND
+10V
TACH
0-10/PWM
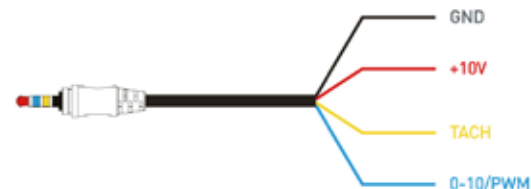
5. Fan maintenance

- Use a damp cloth to remove dust and any debris build up from fan components every 6-12 months

- To avoid mechanical damage, do not apply pressure to the fan blades.

6. Warranty

FabricAir® Rack Fan series fans are covered by a 2-year warranty from the date of purchase against any defects in workmanship or materials. Under warranty, the fan will be either replaced or repaired and must be accompanied by proof of purchase. The warranty doesn't apply to any damage caused by excess heat or humidity, misuse in harsh industrial environments, physical damage or normal wear and tear of the unit, any other than a component for FabricAir® Rack Flow System usage is unauthorized and shall void all warranty and liability.

7.1 Note on fan output and static pressure

- The CFM rate stated on the fan and in the tables below is a "nominal" airflow rate and is applicable only when no additional equipment is attached to the fan.

- When you attach any equipment to the fan (ducts, vent caps, filters, splitters, elbows, etc.) you are introducing static pressure, an obstacle in the path of the airflow. This will cause the final amount of airflow delivered by the fan to be lower than the nominal airflow.

- Each duct fan has a maximum pressure rating which equals to the maximum static pressure it can counteract in order to move a certain volume of air.

- A pressure drop is the amount of static pressure introduced by a filter or any equipment attached to the fan.

7.2 Dimensions in mm

MODEL	LL	L2	H1	H2	D1	D2	WL	W2	W3	Ø
Rack Fan EC 6	180	164	176	23	154	150	125	70	15	10
Rack Fan EC 8	230	214	225	23	0204	0200	160	80	30	10
Rack Fan EC 10	290	270	277	23	0254	0250	200	100	30	10
Rack Fan EC 12	360	336	256	40	0317	0313	290	164	38	9

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7.3 Fan specifications

MODEL NUMBER / SKU	RATED VOLTAGE	MAX POWER CONSUPTION	FREQUENCY	MAX SPEED	MAX AIRFLOW	MAX STATISTIC PRESSURE	MAX NOISE LEVEL
Rack Fan EC-6	110-240 VAC	36 W	50/60 Hz	5000 RPM	288 CFM/ 489 M3H	1.59''W.G./ 396 Pa	7.44 Sones/ 56 dBa
Rack Fan EC-8	110-240 VAC	74 W	50/60 Hz	3800 RPM	569 CFM / 966 M³H	1.66"W.G. / 412 Pa	9.35 Sones / 60 dBA
Rack Fan EC-10	110-240 VAC	126 W	50/60 Hz	3200 RPM	946 CFM / 1607 M³H	1.65"W.G. / 410 Pa	11.84 Sones / 63 dBA
Rack Fan EC-12	110-120 VAC	268 W	50/60 Hz	2800 RPM	1662 CFM / 2823 M³H	1.86"W.G. / 463 Pa	18.30 Sones / 70 dBA

smart air solutions.