

# Product data sheet

## Specifications



EC Axial Fan , Two Ball Bearing ,  
230VAC , 180W , IP22 , CE

Product name: EC Axial Fan

Model number: F2E-205B23HRP

Order number: 2029.007

## General Specification

Item	Description	Condition
1-1. Dimension	205*205*72 mm	
1-2. Bearing Type	Two Ball Bearing	
1-3. Rated Voltage	230 VAC	
1-4. Operating Voltage	150-240 VAC	
1-5. Start-up Voltage	150 VAC	25°C Power ON/OFF
1-6. Operating Frequency	50~400 Hz	A. At Rated Voltage
1-7. Rated Power	127.2 W MAX: 180.0 W	B. 25°C
1-8. Rated Speed	3800 Rpm/min±10%	C. 65%RH
1-9. Max. Air Flow	824.61 CFM	D. Measured after 5 minutes
	23.34 m <sup>3</sup> /min	
1-10. Max. Static Pressure	53.11 mmH2O	A. PQ Measurement Apparatus
	2.09 inchH2O	
1-11. Noise Level	68.7 dBA Max: 74.0 dBA	B. Standard: AMCA
		C. Rated Voltage
1-12. Life Expectancy	70000 hrs at 25°C	D. Rated Current
		Failure Criteria:
1-13. Weight	/ grams	A: Speed <15% of original
1-14. Packing	1 pcs/Carton	B: Current >15% of original
1-15. Pole	6 Poles	C: Fan not running
1-16. Rotation Direction	Anticlockwise (viewed from fan blade)	
1-17. Other Features	Tachometer Output	<input type="checkbox"/> FG
	Lock Rotor Alarm	<input checked="" type="checkbox"/> KR
	Low Speed Alarm	<input type="checkbox"/> LD
	Auto Start	<input checked="" type="checkbox"/> AS
	Soft Start	<input checked="" type="checkbox"/> SS

1-17. Other Features	Speed Control Modes	<input checked="" type="checkbox"/> PWM	<input checked="" type="checkbox"/> VC	<input type="checkbox"/> TC
	Waterproof Level	<input checked="" type="checkbox"/> IP22		

## Electrical Specification

Item	Condition
2-1. Locked Rotor Protection	<input type="checkbox"/> Safety Condition
	<input checked="" type="checkbox"/> Auto power off after locking at rated voltage for 1-3 seconds; Automatic restart attempt every 2-6 seconds; No damage after 72-hour locking
2-2. Polarity Protection	<input type="checkbox"/> Open circuit when Vcc & GND are reversed
	<input type="checkbox"/> Circuit undamaged within 5 seconds of reverse connection
2-3. Insulation Resistance	<input checked="" type="checkbox"/> At least 10MΩ at 500 VDC between housing and both lead wires
2-4. Dielectric Strength	<input checked="" type="checkbox"/> Withstand 500 VAC for 1 minute (1mA) between housing and lead wires

## Specification of Main Materials

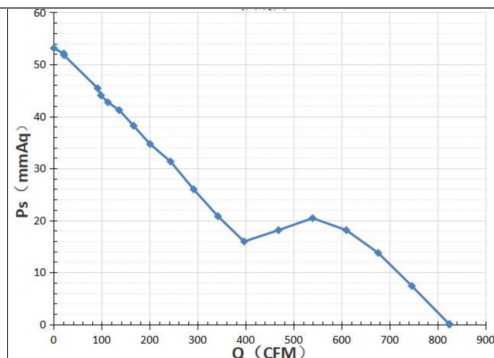
Item	Specification
3-1. Frame	Aluminum alloy
3-2. Propeller	PBT UL94V-0
3-3. Bobbin	PBT UL94V-0
3-4. Lead Wires (Out of Frame)	UL 1007 18AWG, brown-blue UL 1007 24AWG, red-blue-black-yellow-white
3-5. Connector	7P Wiring Terminal Block
3-6. Label Marking	Model : F2E-205B23HRP Rated Voltage : AC 230V Rated Current : 180.0W

## Environmental Specification

Item	Condition
4-1. Operating Temperature/Humidity	Temperature : -10~+70°C
	Humidity : 15%~90% RH
4-2. Storage Temperature/Humidity	Temperature : -40~+85°C
	Humidity : 15%~90% RH

## P-Q Characteristic Curve Test

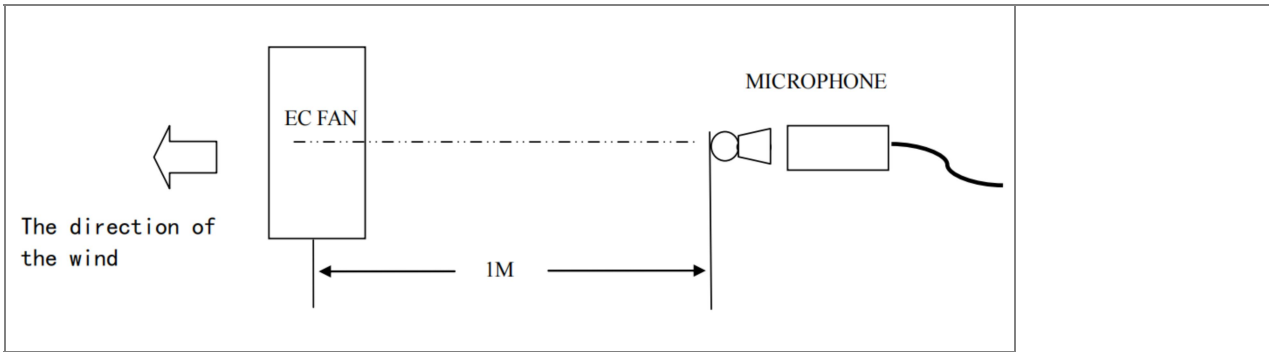
Test Conditions and Methods	
Constant Voltage:	Rated Voltage
Barometric Pressure:	752.4 mmHg
Relative Humidity:	66.825 % RH
Temperature:	25 °C
Test Data:	
Max Flow Rate:	824.61 CFM
Max Ps:	53.11 mmAq



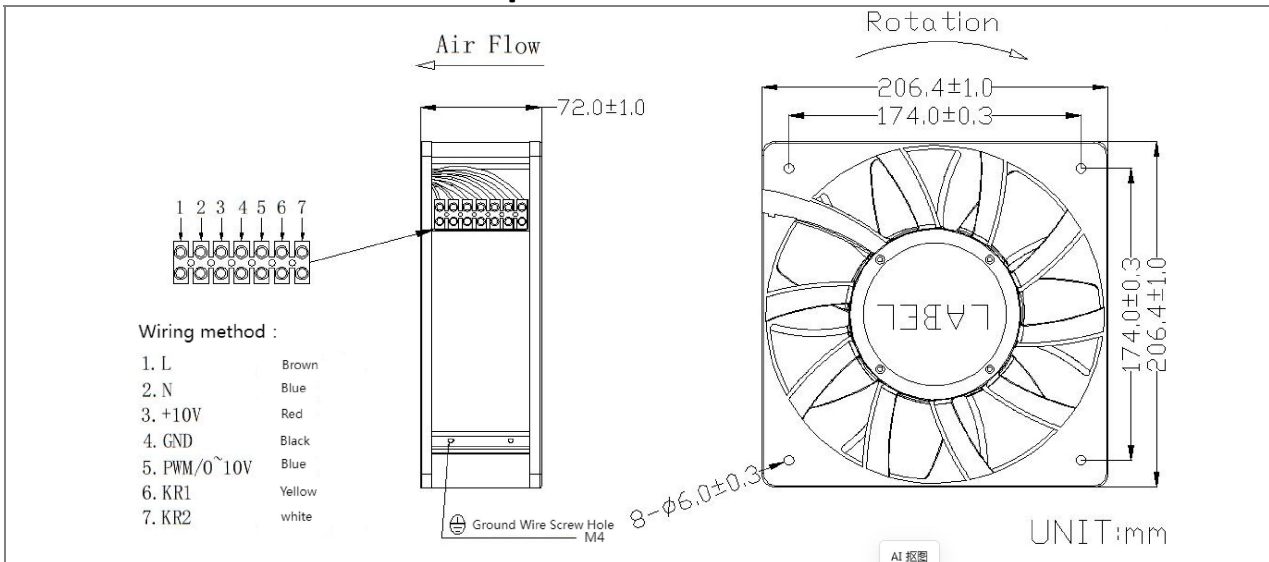
# Noise test

Test Condition	Test Method
1. Temperature: 26 °C	1.Test Position: 180°
2. Humidity: 62 %RH	2.Test Distance: 1.0M from fan intake
3. At Rated Voltage	3.Background Noise: 14.8dB(A)
4. At Rated Speed	4.This test executes to ISO3745 standard
Test Equipment: AWA6290M double channels Acoustic Analyzer	
Test Result: Leq: 68.7 dB(A)	

## Noise test method diagram



## Wire Color Function Description



Brown	L	Voltage input AC220—240VAC
Blue	N	Voltage input AC220—240VAC
Red	+10V	Output +10V Rated Voltage
Black	GND	Control Input, Signal Output Negative Terminal
Blue	PWM	Control Input (vinh=10Vdc, vinl=0Vdc) or Voltage Control Input 0~10V
Yellow	KR1	Relay Dry Contact
White	KR2	Relay Dry Contact

**Note:**

1.The blue control wire must receive a signal for the fan to operate. If speed control is not needed, simply short-circuit the red and blue wires, and the fan will run at full speed.

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2.During operation, the yellow and white wires are connected; when the machine is locked, the yellow and white wires are disconnected.

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**Label Marking**

	Model No.	F2E-205B12HRP
	Rated Voltage	230VAC
	Max Power	180.0W
	Label Size	φ47mm
	Label Color	White
	Safety Approvals	CE

**Electric Relay Function KR**

1. Relay Mode: During operation, the relay is in normally closed (NC) state, meaning the yellow wire and white wire are connected; when the fan is stalled, the relay is in normally open (NO) state, meaning the yellow and white wires are disconnected.

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2.The relay uses a solid-state relay, with a contact impedance of approximately 20 ohms when the dry contact is closed.

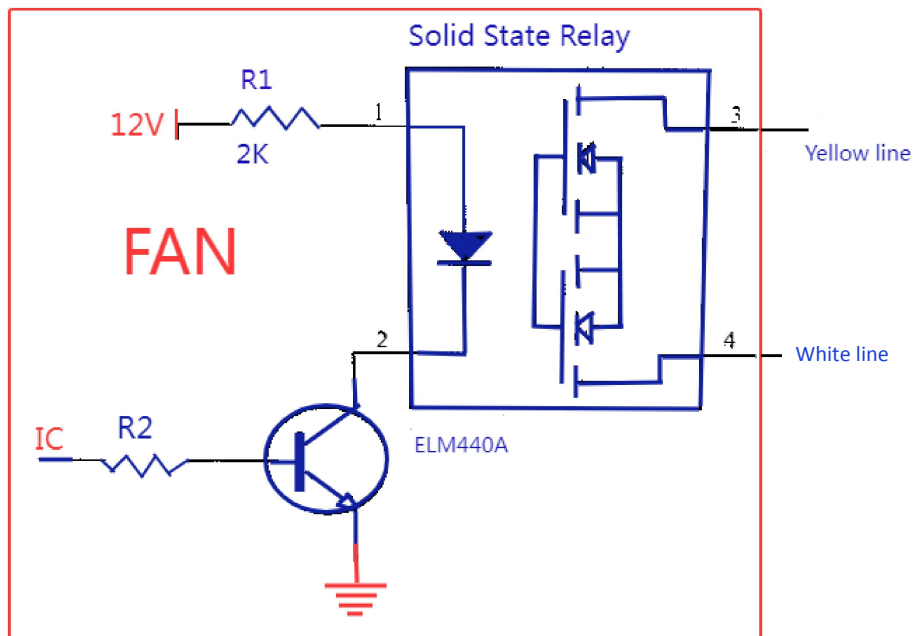
Model: ELM440A

Contact current rating: AC 350V / DC 24V 100mA

**Different models of solid-state relays should be selected according to different load requirements.**

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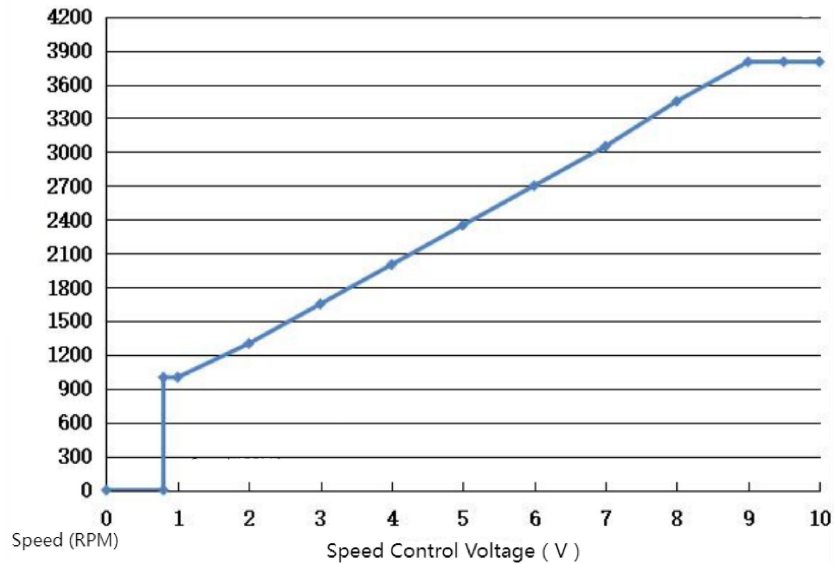
**3.Relay Schematic Diagram:**



#### 4. Precautions when RD has relay output alarm:

This product has a power-on self-check time, typically around 3–5 seconds. During this self-check period, the motherboard—which starts scanning immediately upon power-up—may detect the device as faulty and trigger an alarm. This issue is intermittent; sometimes the device is detected, and sometimes it is not. The customer's alarm program maintains a persistent alarm state, continuously indicating a fan fault. It is recommended that the customer implement verification checks in their software or introduce a read delay longer than the fan's self-check duration. Customers unable to optimize their programs should proactively contact our technical support team for assistance.

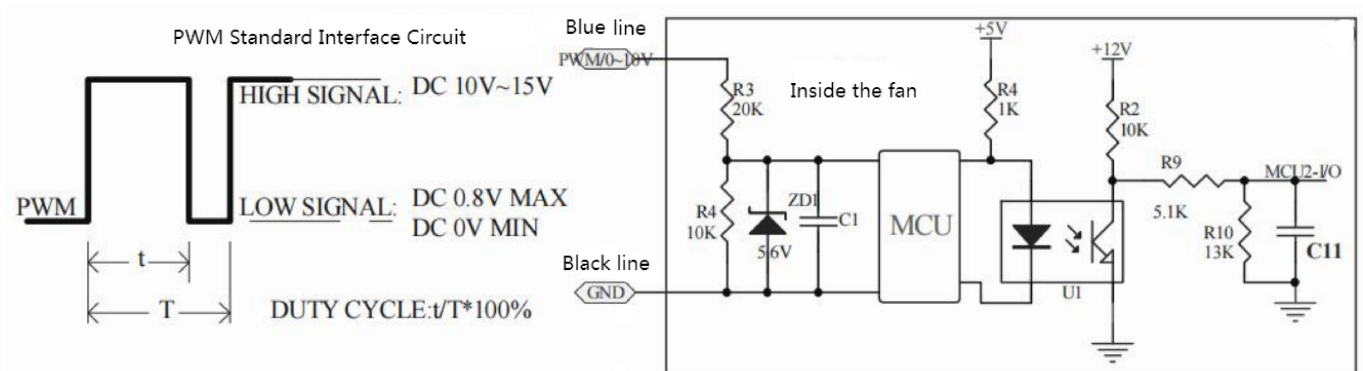
### PWM and Speed Curve:



#### 1. Curve Description:

0V(0%)	0RPM
2.0V(20%)	1300±300RPM
10.0V(100%)	3800±10%RPM

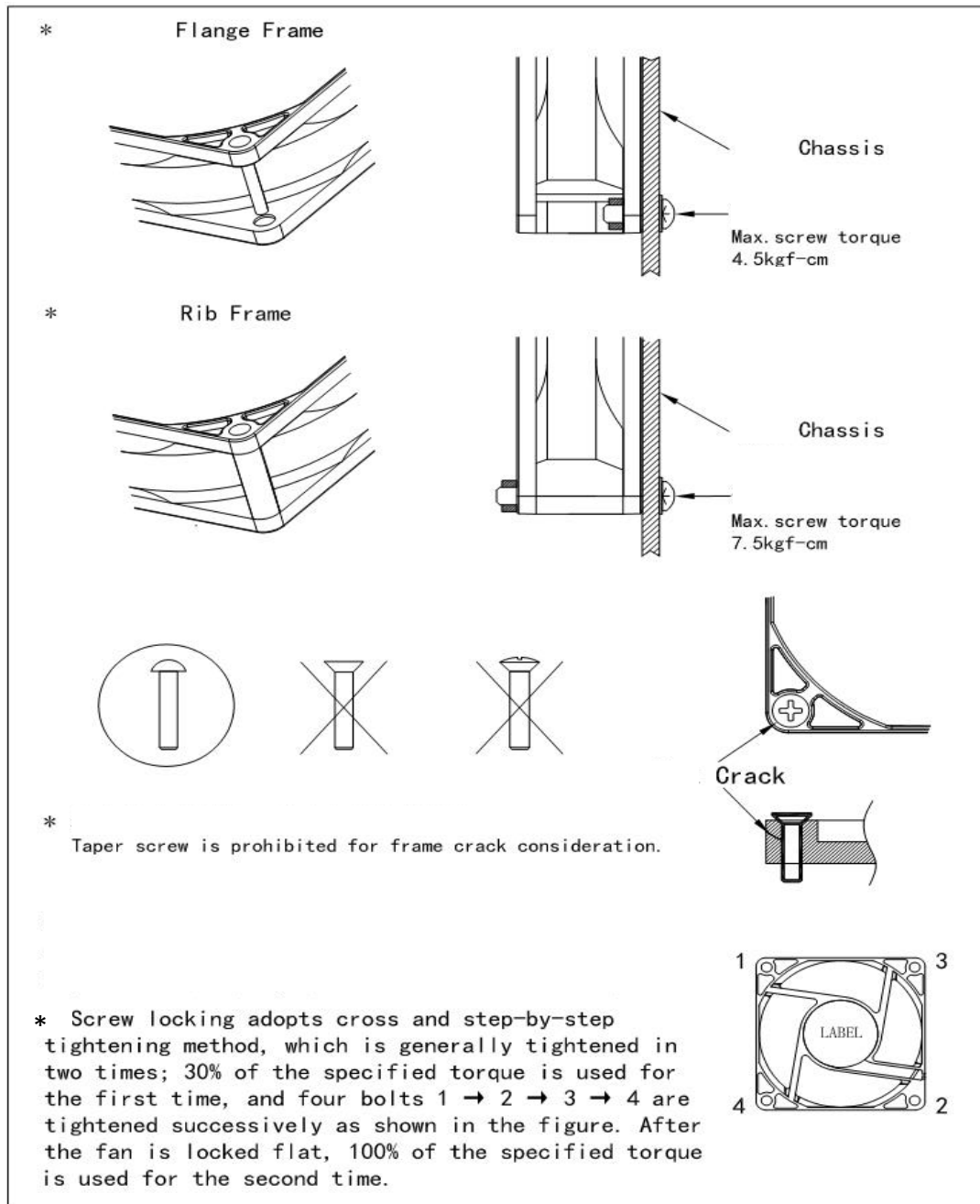
#### 2. PWM Control Signal



#### 3. Input PWM Frequency Range: 1kHz-30kHz

#### 4. VC Voltage Range : 0V-10V

# Fan installation method and screw torque recommendations



## Notes

1. Do not exceed the limits specified in this specification during use; otherwise, we do not guarantee this product.

2. If any specification in this document needs to be changed, please be sure to put forward the request in advance.

3. Do not press the blades, wrap the power cord around the fan, or pull the power cord forcefully, as this will damage the shaft and power cord.

4. This product does not guarantee against shortened lifespan or defective products caused by the ingress of dust, water droplets, or small insects.

5.If there is any data or document inconsistent with this data, this data shall be the main reference.

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6.Do not use in flammable gas or any harmful environment.

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7.When assembling the fan, pay special attention to noise generated by resonance or vibration.

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8.When the fan is being transported or operated, avoid dropping it: dropping from a height of 50cm or more will cause variation in the balance of the fan blades, and the ball bearings are prone to internal damage and abnormal noise.

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9.Do not touch the blades when the fan is running, as this is very dangerous and may easily injure your fingers.

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