Product data sheet

Specifications

EC Axial Fan , Two Ball Bearing , 230VAC , 65W , IP22 , CE

Product name： EC Axial Fan

Model number： F2E-180B23HRP

Order number： 2029.004

General Specification

Item	Description	Condition
1-1. Dimension	180*180*61mm	
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℃ Power ON/OFF
1-6. Operating Frequency	50~400 Hz	A. At Rated Voltage B. 25℃ C. 65%RH D. Measured after 5 minutes
1-7. Rated Power	51.2 W MAX :65.0 W	
1-8. Rated Speed	3500 Rpm/min±10%	
1-9. Max. Air Flow	438.72 CFM	A. PQ Measurement Apparatus B. Standard: AMCA C. Rated Voltage D. Rated Current
	12.42 m^3/min	
1-10. Max. Static Pressure	26.93 mmH2O	
	1.06 inchH2O	
1-11. Noise Level	64.0 dBA Max: 69.0 dBA	A. Rated Voltage B. Mute Room C. Distance: 1M D. Background Noise: <18dB
1-12. Life Expectancy	70000 hrs at 25℃	Failure Criteria: A： Speed <15% of original B： Current >15% of original C： Fan not running
1-13. Weight	/ grams	
1-14. Packing	1 pcs/Carton	
1-15. Pole	6 Poles	
1-16. Rotation Direction	Anticlockwise (viewed from fan blade)	
1-17. Other Features	Tachometer Output	☐ FG
	Lock Rotor Alarm	☑ RD
	Low Speed Alarm	☐ LD
	Auto Start	☑ AS
	Soft Start	☑ SS

1-17. Other Features	Speed Control Modes	☑ PWM ☐ VC ☐ TC
	Waterproof Level	☑ IP22

Electrical Specification

Item	Condition
2-1. Locked Rotor Protection	☐ Safety Condition
	☑ 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	☐ Open circuit when Vcc & GND are reversed
	☐ Circuit undamaged within 5 seconds of reverse connection
2-3. Insulation Resistance	☑ At least 10MΩ at 500 VDC between housing and both lead wires
2-4. Dielectric Strength	☑ Withstand 500 VAC for 1 minute (1mA) between housing and lead wires

Specification of Main Materials

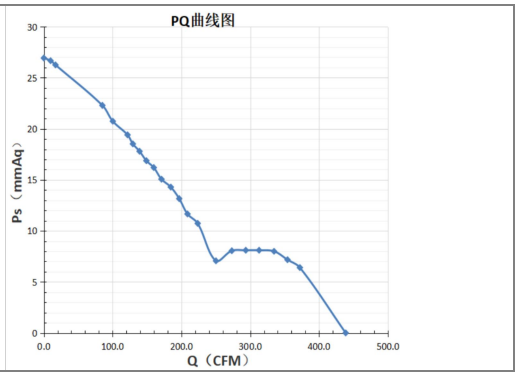
Item	Specification
3-1. Frame	Aluminum alloy-Black
3-2. Propeller	PBT UL94V-0
3-3. Bobbin	PBT UL94V-0
3-4. Lead Wires (Out of Frame)	UL 1007 20AWG, black-black 300±10 mm（Not Contain Connector） UL 1007 24AWG, Gray-yellow-blue 300±10 mm（Not Contain Connector）
3-5. Connector	NO
3-6. Label Marking	Model : F2E-180B23HRP Rated Voltage : AC 230V Rated Current : 65.0W

Environmental Specification

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

P-Q Characteristic Curve Test

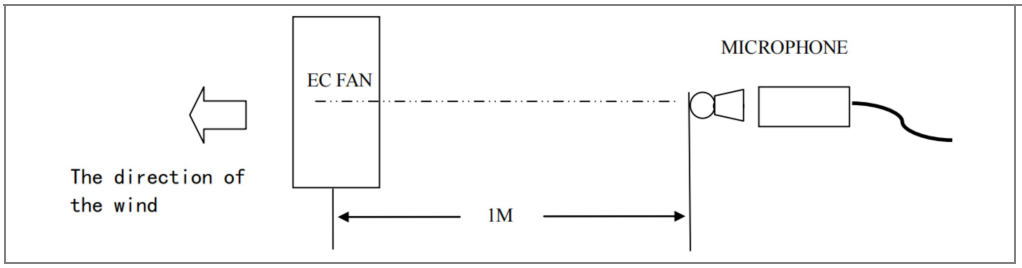
Test Conditions and Methods	
Constant Voltage:	Rated Voltage
Barometric Pressure:	752.4 mmHg
Relative Humidity:	66.825 % RH
Temperature:	25 °C
Test Data:	
Max Flow Rate:	438.72 CFM
Max Ps:	26.93 mmAq



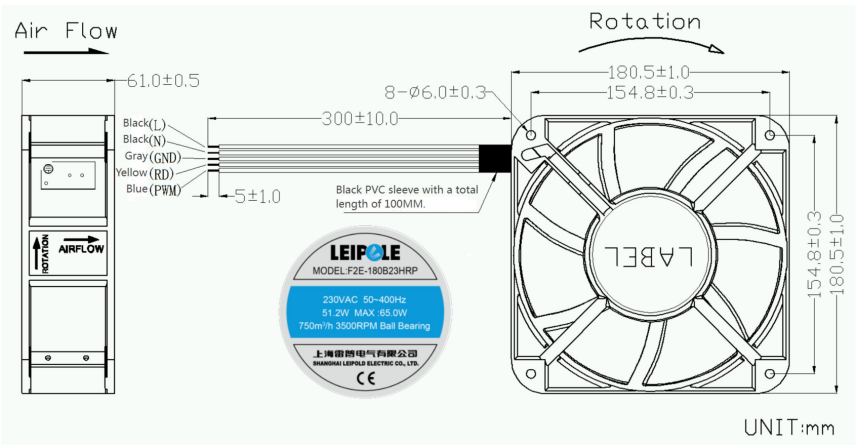
Noise test

Test Condition	Test Method
1. Temperature: 26 ℃	1.Test Position: 180º
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: 64.0dB(A)	

Noise test method diagram



Wire Color Function Description



Black	L	Voltage input AC220—240VAC
Black	N	Voltage input AC220—240VAC
Gray	GND	Control input, signal output negative.
Yellow	RD	Output signal: OC output; requires external pull-up resistor, Ir < 5mA.
Blue	PWM	Control Input (vinh=10Vdc, vinl=0Vdc)

Label Marking

Model No.	F2E-180B23HRP
Rated Voltage	230VAC
Max Power	65.0W
Label Size	ϕ75mm
Label Color	White
Safety Approvals	CE

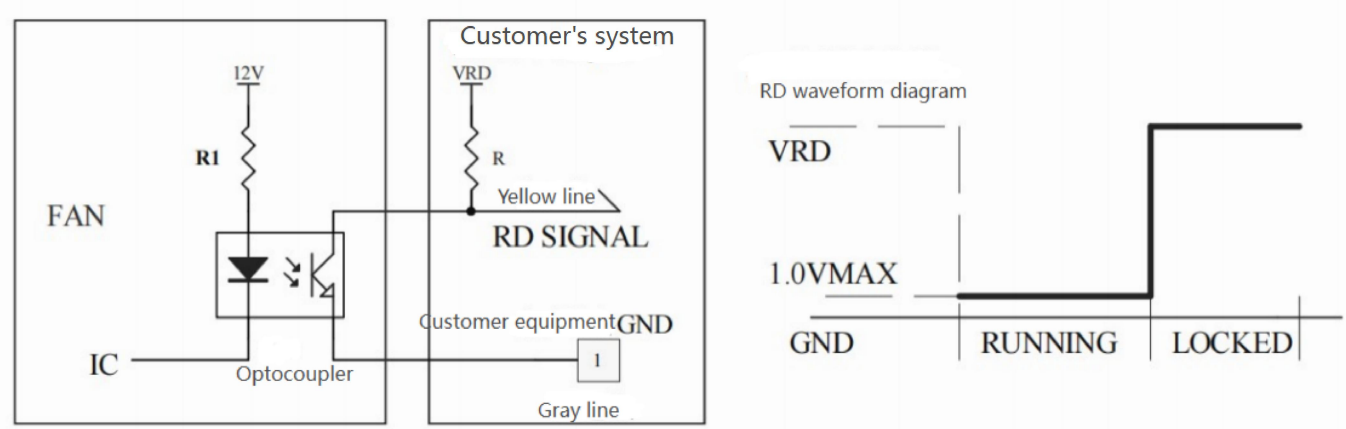
RD SIGNAL (ROTATION DETECTION)

RD：During operation, the signal pin outputs a low level; when the rotor is stalled, it outputs a high level. External devices can determine whether the fan is operating or stopped by monitoring the high or low levels.

1.The RD output circuit is in open-collector mode.

2. Specification:

VRD=15Vmax　Rext(min)=VRD/Imax　Imax=5mA　Vce=1.0Vmax

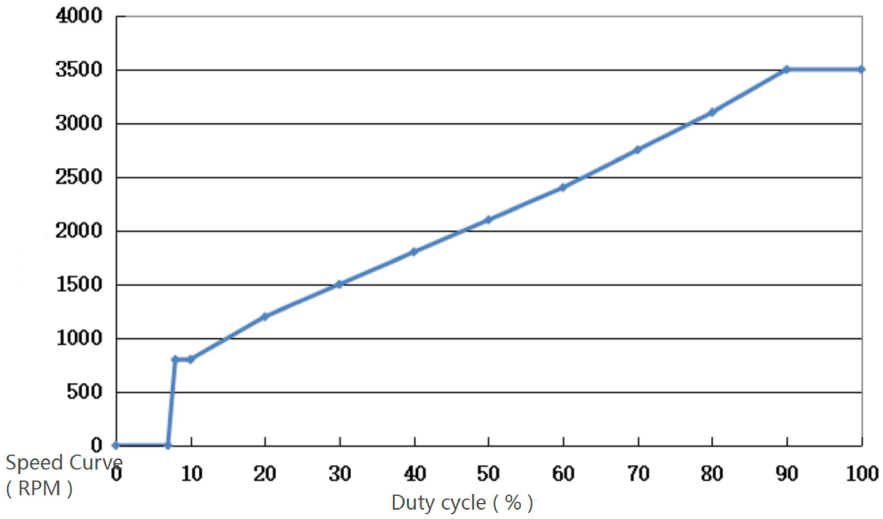


Note:

3. RD signal wire must not contact "+" and "-" leads.

4. RD alarm threshold is recommended to be set above 5V to avoid false alarms caused by ground line interference and large ripple.

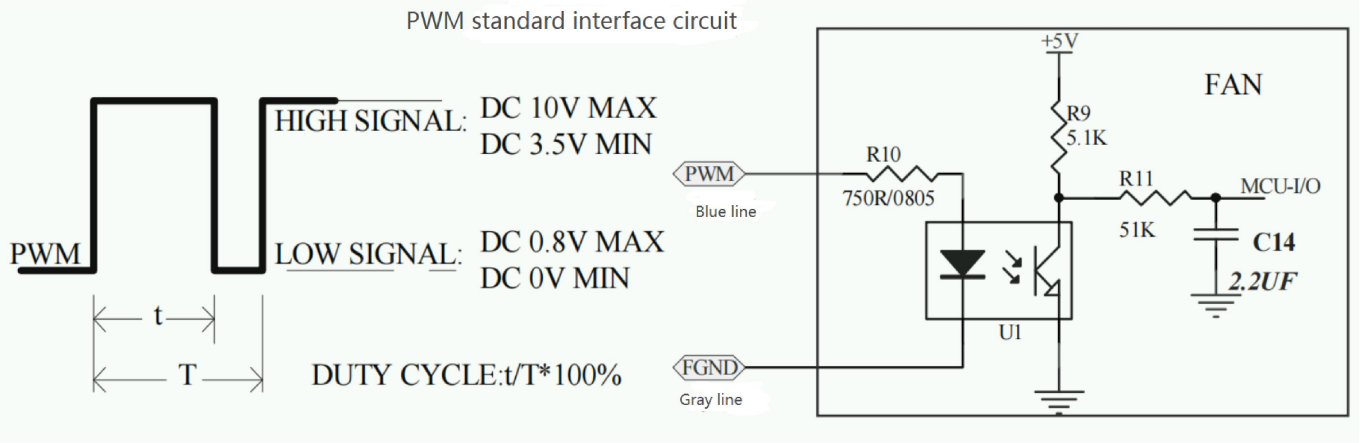
PWM and Speed Curve：



1.Curve Description:

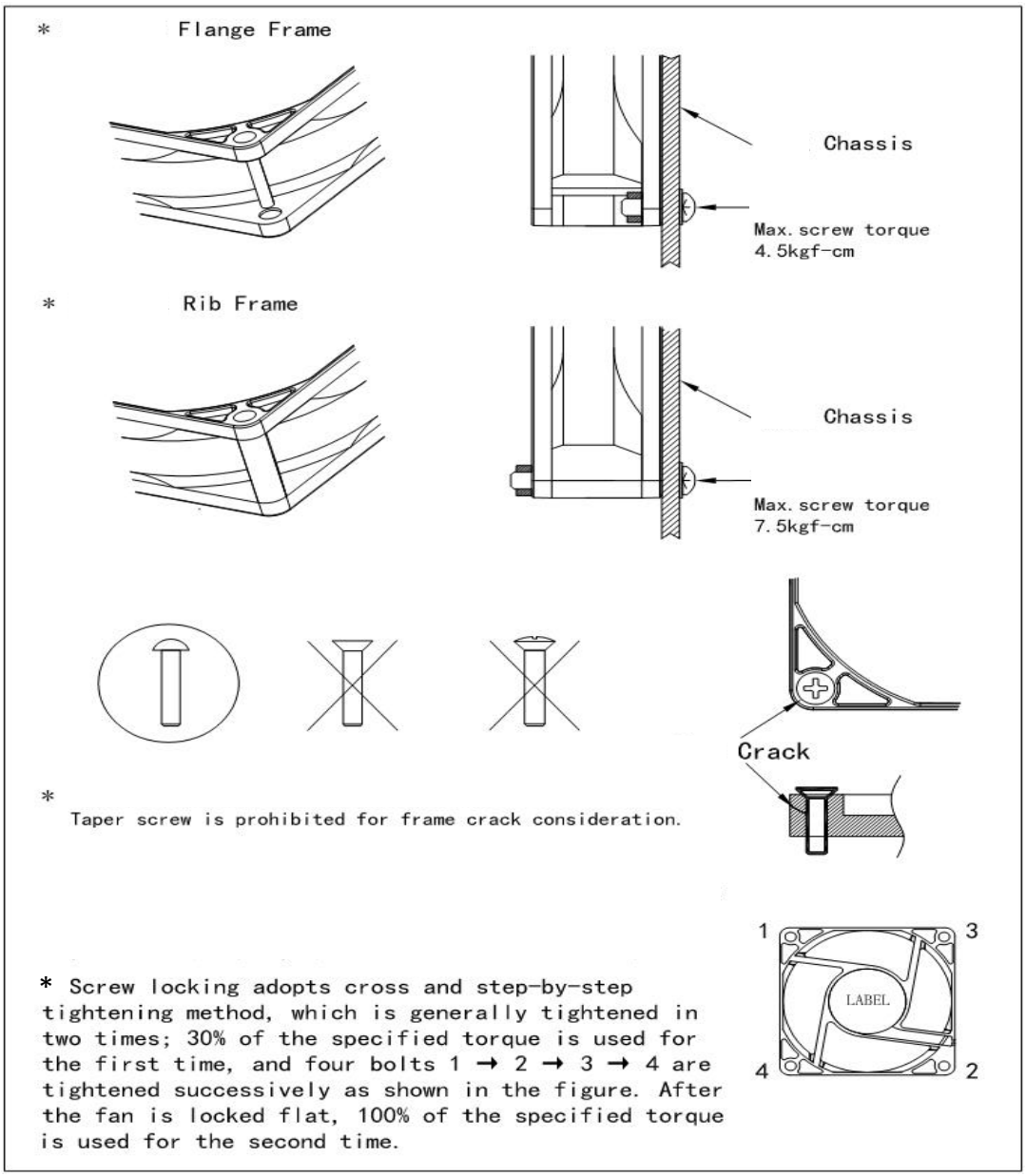
0%	0RPM
20%	1200±300RPM
100%	3500±10%RPM

2.PWM control signal：



3.The Input PWM frequency range: 1Khz-30Khz

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.

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

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

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.

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