

The Krube logo is located in the top left corner, enclosed in a white circle with a blue border. The logo itself consists of the word "krube" in a bold, lowercase, sans-serif font, with a small orange and blue graphic element to the right of the letter 'e'.

krube

SPECIFICATION

MODEL
K-EC146-D230-22W

1.Status and conditions in standard use

Rating time	S1
Operating temperature	-20°C ~ +45°C
Storage temperature	-25°C ~ +60°C
Relative humidity	RH95%max/No Condensation
Altitude	1000m max
Mounting direction	Motor shaft level or Motor shaft is straight down.

2.Mechanical Characters

2.1 Outline specification

2.1.1 The appearance and shape shall be as shown in the attached outline drawing: refer to Appendix.

2.1.2 There are no unsuitable spines, distortions, cracks or burrs visible on the final product.

2.2 Impeller

The impeller is made of galvanized sheet.

2.3 Scroll housing

The scroll housing is made of galvanized sheet. No corrosion, spots, bubbles, scratches, deformation, disbonding and coating peeling on the surface of the volute.

2.4 Balance

Residual unbalance of the fan shall be less than the limit dictated by G4.0(Balancing precision grade),according to JB/T9101.

2.5 Runout of impeller

Runout of impeller in axial and radial direction \leq 1.0mm.

2.6 Vibration

The vibration value of the fan at 2250r/min is \leq 3.6mm/s,according to JB/T 8689.

2.7 Protection level.

The protection level of fan is IP44.

2.8 Life expectancy

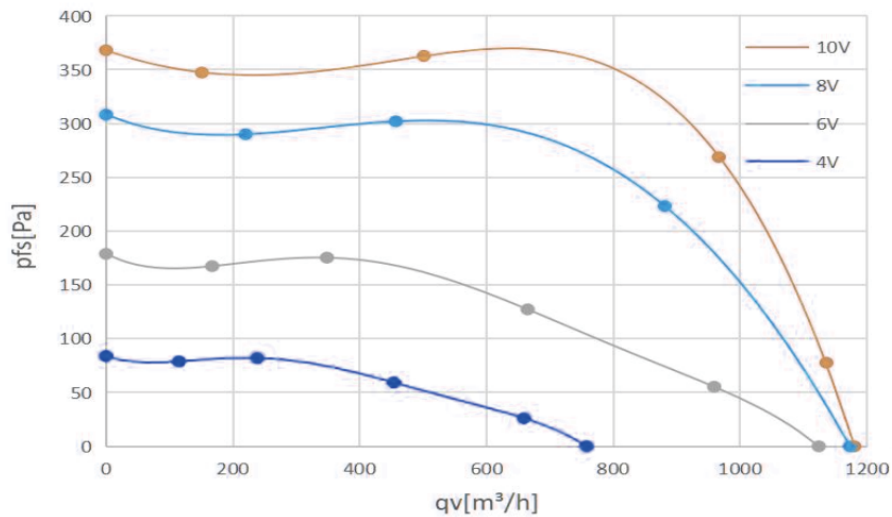
When running continuously at rated voltage, ambient temperature 25°C and rated speed, the expected life of the fan is 30000 hours. (According to the actual application condition of the product, the life expectancy is different, and the warranty period shall prevail) .

3.Fan performance

3.1 Ratings

Item	Specification	Remark
Rated Voltage	230 \pm 10% VAC	
Frequency	50/60 Hz	
Speed	2250 \pm 5% r/min	
Input Power	240 \pm 7% W	
Current Draw	1.6 \pm 7% A	
Max Air Flow	1180 \pm 7% m ³ /h	
Max Static Pressure	370 \pm 7%Pa	
Noise	\leq 74 dB(A)	Venting status
Insulation Class	F	

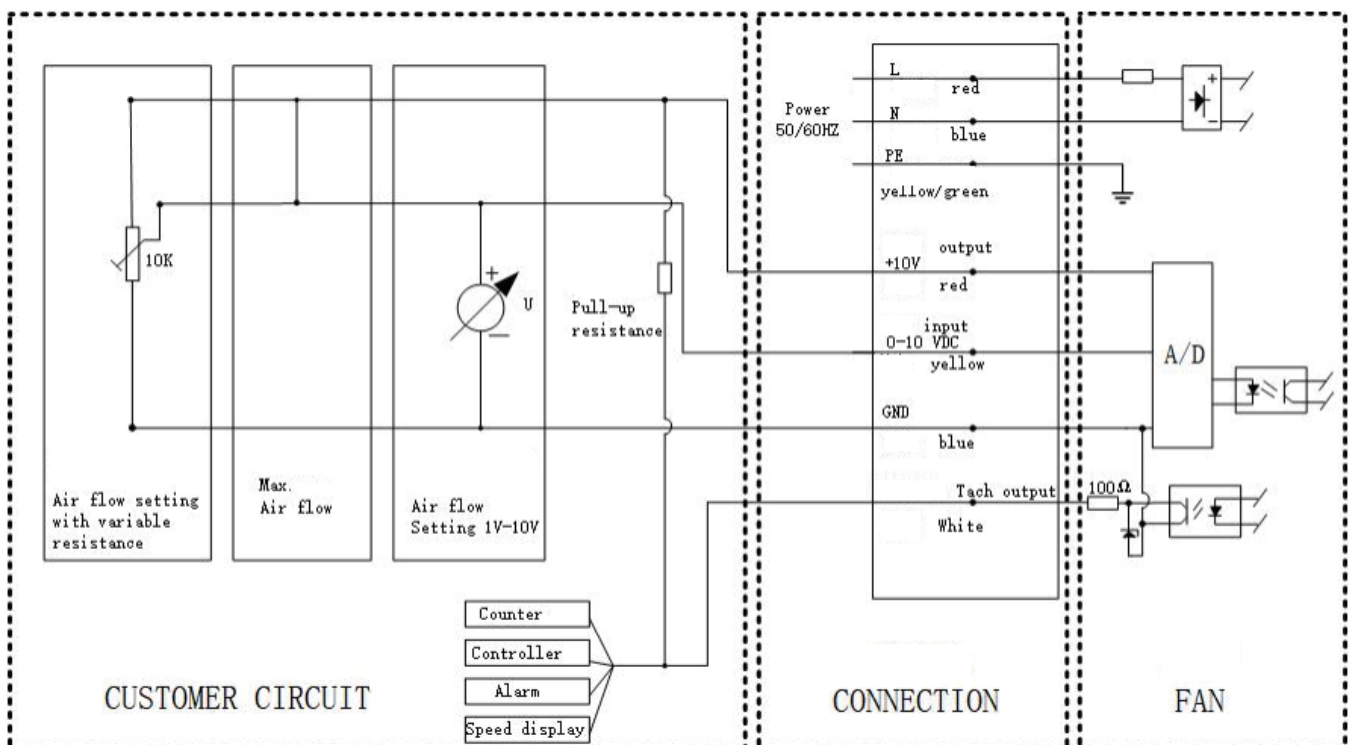
3.2 Fan P-Q curve



4. Electrical performance

4.1 Function of terminal

NO.	Terminal code	Function of Terminal	Color	Remark	Type of wiring
1	L	Firewire-L	Red		Power wiring
2	N	Zero line-N	Blue		
3	PE	Ground wire-PE	Yellow/Green		
4	+10V	+10V	Red	+10VDC Output	Signal wiring
5	Vsp	Speed control voltage input	Yellow	0 ~ 10 VDC Starting voltage: 0.7 ~ 1.0 VDC Full speed voltage: 8.6 ~ 10 VDC	
6	GND	GND	Blue		
7	FG	Revolution pulse output	White	12Pulse/rev	



4.2 Electrical strength/Insulation resistance/Leakage current

Item	Condition	Specification
Electric strength	AC 1500V 1 min	< 10mA
Leakage current	1.06 times rated voltage	< 3.5mA

4.3 Software protection

4.3.1 Over current protection

Built-in Motor circuit have current protection function, including software over-current protection and hardware over-current protection. when the motor operation is started or overloaded ,the current peak value reaches to set value, the function operates.

4.3.2 Overheat protection

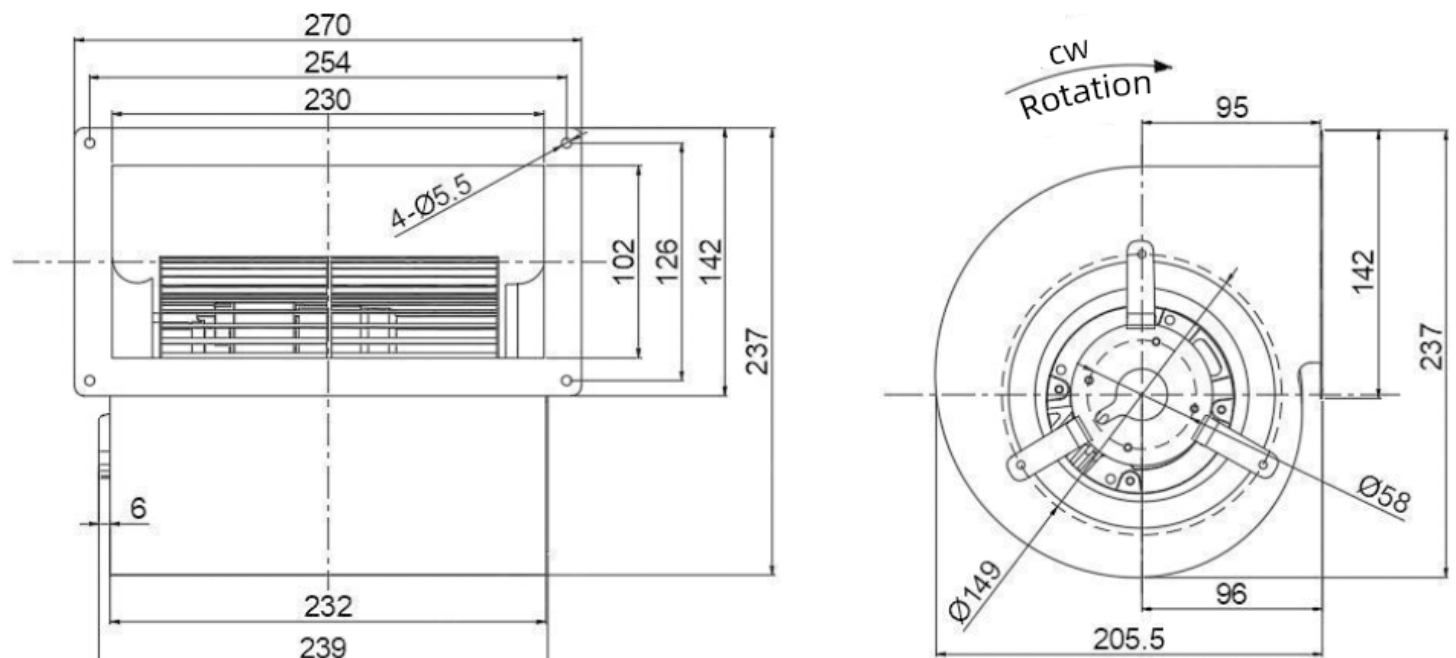
In the circuit of motor, it has a overheat protection function (NTC). If it reaches overheating protection temperature (TSD on), the motor will be turned off. And it will be turned on when the temperature is lower than the overheating protection recover temperature (TSD off) and the accumulated time is more than 1 min.

Item	Min.	Typ.	Max.
Overheating protection Operation temperature(TSD on)	90°C	95°C	100°C
Overheating protection release temperature(TSD off)	76°C	80°C	84°C

4.3.3 Blocking protection

When the motor is running and the motor shaft is suddenly locked, the program will continue to detect for about 4S. After this time, the program will enter the running locked-rotor protection state; after 10S, the program will try to restart, if the motor shaft is still If the motor is locked, the protection will be performed according to the start-up lock-rotor link; when the motor shaft is locked during the motor startup process, the program will continue to drag for a period of time, and then the lock-rotor protection will be triggered again, and then wait for 5S to restart again.

5.Outline drawing



6.Packaging

The packaging of the fan must have suitable structure,so that the fans will not be damaged in transportation. The writing and marking on the outer wall of the package should be clear and tidy.

7.Note in use

7.1 Please connect and disconnect connector when power supply is zero volt and motor stops.

7.2 Please do not disassemble the fan, the safety and performance cannot be guaranteed when motor is disassembled.

7.3 As the cutting surface of the stamping parts is easy to cause cuts, operators should wear gloves and other protective tools.

7.4 Never directly lift the wires during operation.

7.5 Do not disassemble, repair or modify the fan, otherwise the motor may run abnormally and fail to meet the performance requirements specified in the specification.

7.6 During the installation and wiring of the fan, be careful not to touch the lead of the fan.

Otherwise, it may cause electric shock, burning, and fire.

7.7 During the energizing process, do not touch the rotating part of the fan, otherwise injury may occur. Please strictly enforce it!

7.8 Please do not use this product in a state other than that described in this specification, otherwise, it may cause damage or failure!

8.Request to customer

8.1 Please confirm the conformity of final products to regulations, laws, etc. by your side.

8.2 Please confirm the final products about Structure, Dimensions, Life, Sound, Performance, etc. by your side.

8.3 It is not guaranteed, if fans are used beyond the range and scope specified in this specification.

8.4 When the specification of customer final product is changed or when the destination country of the product is changed, or when this fan will be used in other product, the reconfirmation is necessary. Please inform to us beforehand too.

8.5 When the specification detail of this product is changed, the details will be revised in our specification or the documents send to your side. In the case that the change affects to fan function or characteristic, the fan samples will be prepared and the specification detail can be changed after the confirmation is finished.

8.6 For the topic that is not specified in this specification, and it is the topic that necessary to be fixed, please inform us beforehand. In the case that there is no such information from your side, it is assumed that there is no problem occurs when the fan is setting with your products.

8.7 In case of occurrence of any failure, it will be solved through mutual consultation based on the description of this specification.