

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 above the letter 'e'.

krube

SPECIFICATION

MODEL
K-EC310-K400-35

1、Engineering standard and safety regulations

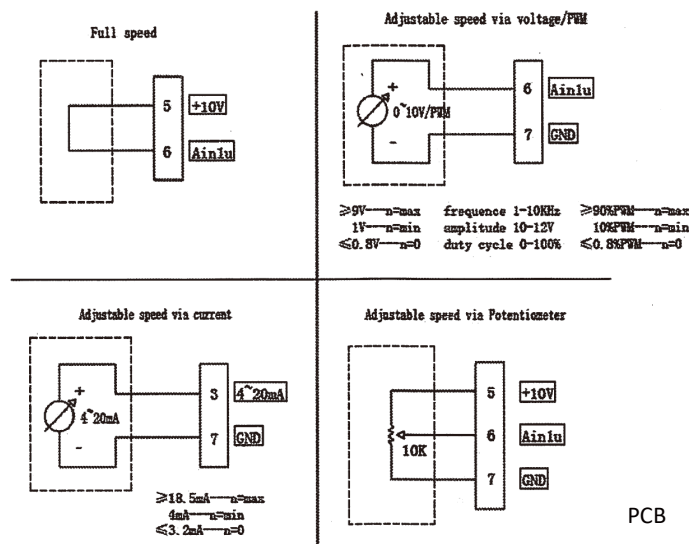
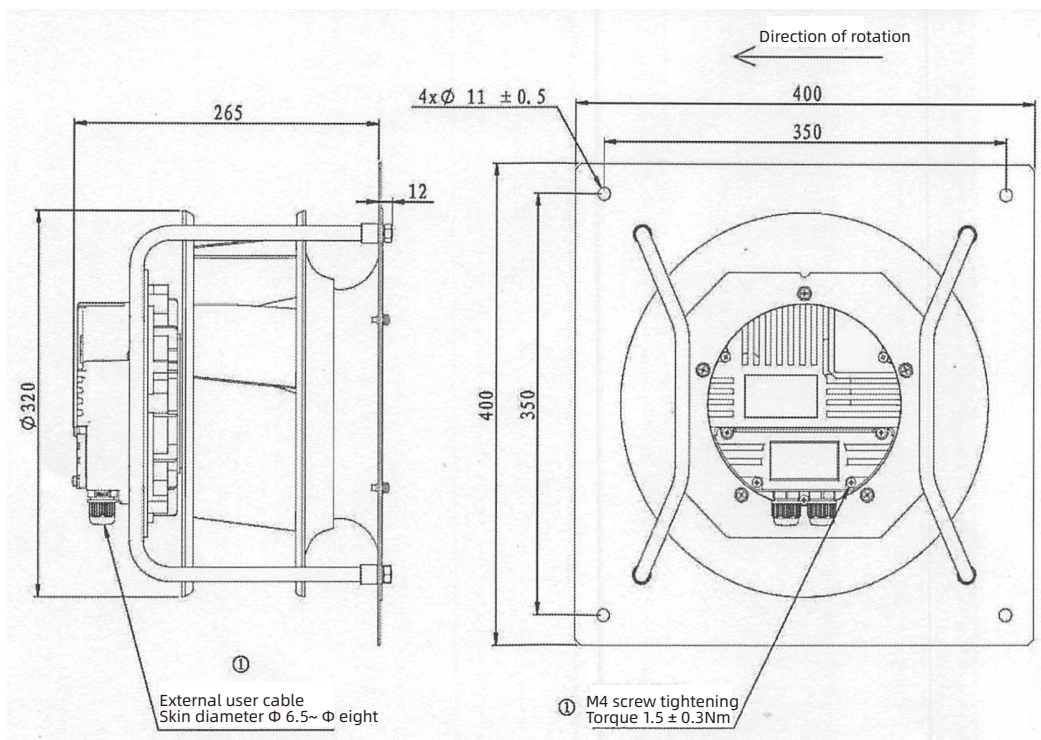
- ◆ GB14711 Safety requirements of small and medium size rotating electrical machines
- ◆ JB/T10563-2006 Technical specification for general purposes centrifugal fan
- ◆ The fan vibration speed virtual value according to JB/T6411-1992 standard

All materials accord with RoHS.

2、Operating environment requirements

- ◆ Operating temperature: $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$
- ◆ Operating humidity: $5\% \sim 95\% \text{RH}$
- ◆ Storing temperature : $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- ◆ Storing humidity: $5\% \sim 95\% \text{RH}$
- ◆ Altitude: $\leq 1000\text{m}$

3、Dimension drawing





NO	Pin	Signal	Assignment/Function
KL1	1	RSA	Bus connection RS485;RSA;MODBUS RTU
	2	RSB	Bus connection RS485;RSB;MODBUS RTU
	3	4~20mA	Analogue control input Only usable as alternative to input 0-10V/PWM
	4	+20V	Fixed voltage output 18~30VDC,max.20mA power supply for ext.devices(e.g.potentiometer)
	5	+10V	Fixed voltage output 10±10%VDC, max.10mA power supply for ext.devices(e.g.potentiometer)
	6	Ain1U	Control input 0-10VDC/PWM only usable as alternative to input 4~20mA
	7	GND	Signal ground for control interface KLL
	8	FG	Speed Signal Feedback/Fault feedback
KL2	9	XXX	Programed serial ports are only used by fan manufacturers
	10		
	11		
KL3	12	L1	Mains supply connection,supply voltage 3[PH]400VAC;50/60Hz(Note: The power supply needs 5~10A specification air switch or slow break type fuse)
	13	L2	
	14	L3	
PE	15		Earth connection,PE connection

Nominal data	
Nominal voltage	3[PH]400VAC
Nominal voltage range	320 ~ 528VAC
Frequency	50/60Hz
Capacitor(±5%)	/
Current draw(±10%)	1.7A
Power input(±10%)	1010W
Speed (±10%)	3500r/min
Air flow (±10%)	4150m ³ /h
Noise (-7/+3)	LpA:83dB(A)
Method of obtaining data	Free air

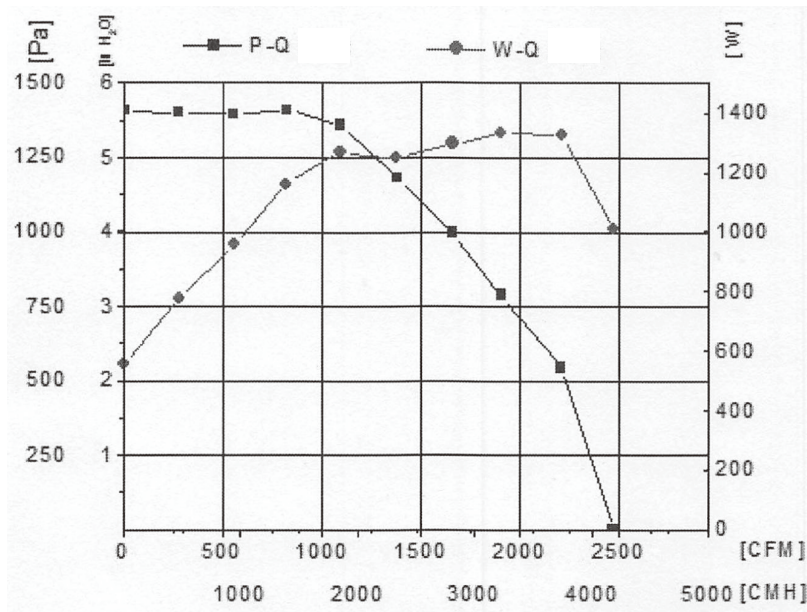
Mechanical data	
Motor	
Impeller	sheet aluminum primitive color
Scroll housing	/
Weight	12Kg
Motor degree of protection	IP54
PCB degree of protection	IP54
Bearing	Ball Bearing
Vibration	≤3.5mm/s
Balancing	When the fan is running at 3500±10%/min, the dynamic balance accuracy of each end side is not lower than the balance quality grade G6.3.

Parameters at maximum efficiency point	
Pst	1182Pa
Power input	1247W
Air flow	2332m ³
Speed	3418r/min

Electrical description	
Insulation class	F
Protection class	I (with customer connection of ground protection)
touch current	≤3.5mA (EN60335-1)

Parameters at maximum current point (For reference)			
Rated voltage	3[PH]400VAC	Current draw	2.32A
Frequency	50Hz	Power input	1413W
Capacitor	/	Speed	3500r/min
Pst	847Pa	Air flow	3190m ³ /h

4、Performance curve

P-Q&W-Q


UDC	U VAC	F HZ	I A	P W	N r/min	Pts Pa	Qv CMH	Pts imh ₂ O	Qv CFM
10	400	50	1.07	592.4	3511	1409	0	5.64	0
10	400	50	1.94	1179	3507	1424	1370	5.7	807
10	400	50	2.29	1399	3476	1017	2805	4.07	1652
10	400	50	1.7	1010	3500	0	4156	0	2463

Tested at room temperature of 25°C and relative humidity of 85% RH.

Air volume is tested according to ISO 5801 installation category A standard

Noise is tested for sound pressure level, according to GB/T 2888 Fan and Roots

Blower Noise Measurement Method, the axis is placed vertically and the fan is tested

1 meter away from the air inlet of the fan. The given value is valid under the above

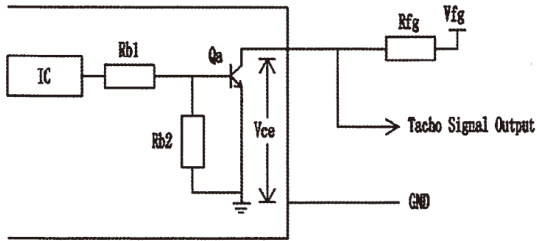
conditions and may vary according to the actual installation situation. Measurement

Method, the axis is placed horizontally and the fan is tested 1 meter away from the

air inlet of the fan. The given value is valid under the above conditions and may vary

according to the actual installation situation.

5、 Technical features

<p>Soft start</p>	<p>The motor starts at low speed and reaches full speed after 30 seconds'running for reducing power supply current surge.</p>
<p>Over-current protection function</p>	<p>Overcurrent protection</p>
<p>Passive PFC</p>	<p>Power factor at full speed≥ 0.75</p>
<p>Driving module over-temperature protection function when operates under rising temperature</p>	<p>When the temperature of the drive module rises to a certain extent the speed is reduced in one step. When the drive module overheats, the fan stops running.</p>
<p>Tfan brake function</p>	<p>When only connect the main power supply and not connect the speed control power,the fan brake,External forces cannot make the fan rotate.</p>
<p>Loss phase protection</p>	<p>When the power supply loss phase,the fan will stop; until the power returns to normal,restart the operation.</p>
<p>Feedback function of rotary speed</p> 	<p>$V_{FG} = (5-30) \text{ VDC}$, $R \geq 1000 * (V_{FG}) \Omega$。 /VFG and pull up resistor are out connected by customer.$V_{FG} = (5-30) \text{ VDC}$, $R \geq 1000 * (V_{FG}) \Omega$</p> <p>When the fan is in the standby mode, the signal of speed outputs low voltage; when the fan is in the error mode, the signal of speed outputs high voltage; When the motor is running, the FG terminal outputs a duty cycle of 50% square wave signal. Each revolution of the motor outputs 5 complete outputs of the square wave of the cycle.</p> <p>The power supply of FG signal circuit needs to be stable, input power supply voltage is not allowed exceeding specification and surge pulse. External resistance needs to accord with specification FG port needs to prevent electrostatic damage.</p>

<p>Locked-rotor protecting function</p>	<p>When the fan is blocked, the fan will stop running; It will try to start up after each stop. The operator needs to power off the fan and solve the problem</p>
<p>On-line communication function</p>	<p>RS485 communication function</p>
<p>Auxiliary power output</p>	<p>The output 10±10% VDC, Max 10mA The output 18~30VDC, Max 20mA</p>
<p style="text-align: center;">Speed control</p> <p style="text-align: center;">调速曲线</p>	<p>1、 When the RMS of the minimum control voltage is 1.0 ±0.2V, the motor starts to run; when the voltage is lower than the minimum control voltage of 0.2V, the fan stops when the effective value of the control voltage is 9V~10V the motor runs at full speed; the maximum control voltage input should be less than 12V to avoid damage to the controller.</p> <p>2、 The PWM signal voltage amplitude is: 10V~10.5V; the frequency range is: 1~10KHz; the minimum duty cycle effective value is 10% ±2%, and the motor starts to run when the value of the starting duty ratio is lower than 2%, the fan stops; when the effective value of the duty cycle is between 90%~100%, the motor runs at full speed the input voltage amplitude should be less than 12V to avoid damage to the controller.</p> <p>3、 When the RMS of the minimum control current is 5mA ±1mA, the motor starts to run; when the current is lower than the minimum control current of 1mA, the fan stops when the effective value of the control current is 18.5~20 mA, the motor runs at full speed; the maximum control current input should be less than 25mA to avoid damage to the controller.</p>