LANGDI

Specifications

Name: EC Backward Curve Centrifugal Fan

Model: EB190ST-72-XX

Version: A0

This specification mainly describes the mechanical properties, electrical properties, fan performance and product standards of EC backward centrifugal air.

Executive standards: GB/T21418-2008 "Permanent magnet brushless motor system general technical conditions", JB/T10563-2006 "General purpose centrifugal fan technical conditions".

Maker		客户确认（CUSTOMER APPROVE）/ 日　　期(DATE)
Examiner		
Reviewed		
Approved		

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1. Technical Data

1—1	Rated voltage	230VAC
1—2	Operating voltage range	200~277 VAC
1—3	Minimum possible starting voltage	≤199VAC
1—4	Rated speed	3100±100 RPM
1—5	Rated current	≤0.7A
1—6	Input power	71±10%W (0pa)
1—7	Wind capacity	710±10% M3/H (A 型出风侧风室)
1—8	Static pressure	500 Pa (A 型出风侧风室)
1—9	noise	≤71dB(A)
1—10	life	25,000 hours (L10) At 40℃, the temperature of 15%~65%RH environment
1—11	Impeller steering	Viewed from the rotor end, it is regarded as clockwise rotation
1—12	Insulation class	Class F
1—13	Withstand voltage	Test voltage 1800VAC, maximum leakage current 10mA, lasting 1 second.Test site: test between the positive electrode of the motor power lead and the motor housing.
1—14	Protection function	Locked-rotor protection Soft start protection Overcurrent protection Overvoltage protection High voltage constant power control (input voltage above 240VAC constant speed)
1—15	Speed control function	Input 0~10VDC/PWM(input duty cycle and amplitude)
1—16	Minimum governing voltage	≤1.3VDC
1—17	Class of protection	IP44
1—18	Insulation resistance	Test voltage 500 VDC, resistance value greater than or equal to 50 megohm.Test site: test between the positive electrode of the motor power lead and the motor housing.
1—19	Feedback signal	FG signal, output open circuit FG, no built-in pull-up resistor inside the motor, the client needs an external pull-up resistor, the rotor output 2 pulses per turn (can be set according to customer requirements).
1—20	Vibration	≤4.6mm/S

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2.Mechanical performance:

2—1	Overall dimension	Φ190mm X 95mm(见外形图)
2—2	Impeller material	PA66+GF25%
2—3	Leaf number	7
2—4	Impeller chassis	/
2—5	Impeller color	black
2—6	Rotor surface treatment	electrophoresis
2—7	Shaft bearing	Ball bearing
2—8	Power lead	AC(AWG#18 UL 1332),DC(AWG#22 UL 1332)
2—9	Net weight	1.3 Kg
2—10	Packing method	Sample: Shock-proof material + wooden case.Order: Carton + shock-proof material + wooden pallet.

3. Electric performance:

3—1	Locked-rotor protection	When the motor is operating at normal voltage, the rotor is subjected to external resistance, stops running, the motor will automatically power off, about 2 to 4 seconds later, restart.If the resistance continues to exist, after restarting for 3 times, the motor completely stops starting, and the resistance must be lifted and re-powered, so that the motor can return to normal state.
3—2	High voltage constant power control	Under a certain speed regulation voltage (0~10VDC), when the input voltage is greater than 240VAC, the fan speed will not increase with the increase of the input voltage, but maintain constant speed operation, which can prevent the instantaneous impact of the fan caused by power grid fluctuations, the protection function can extend the service life of the fan and maintain the stable operation of the fan.
3—3	Soft starting	Under the working voltage, the motor starts to the constant speed, the duration is about 8 seconds, to protect the motor from excessive starting current and damage.
3—4	Overcurrent protection	Under the working voltage, the input current of the motor exceeds the maximum limit value, and the protection will be automatically cut off.
3—5	Overvoltage protection	When the power supply voltage exceeds the maximum limit voltage, the motor will automatically power off protection.

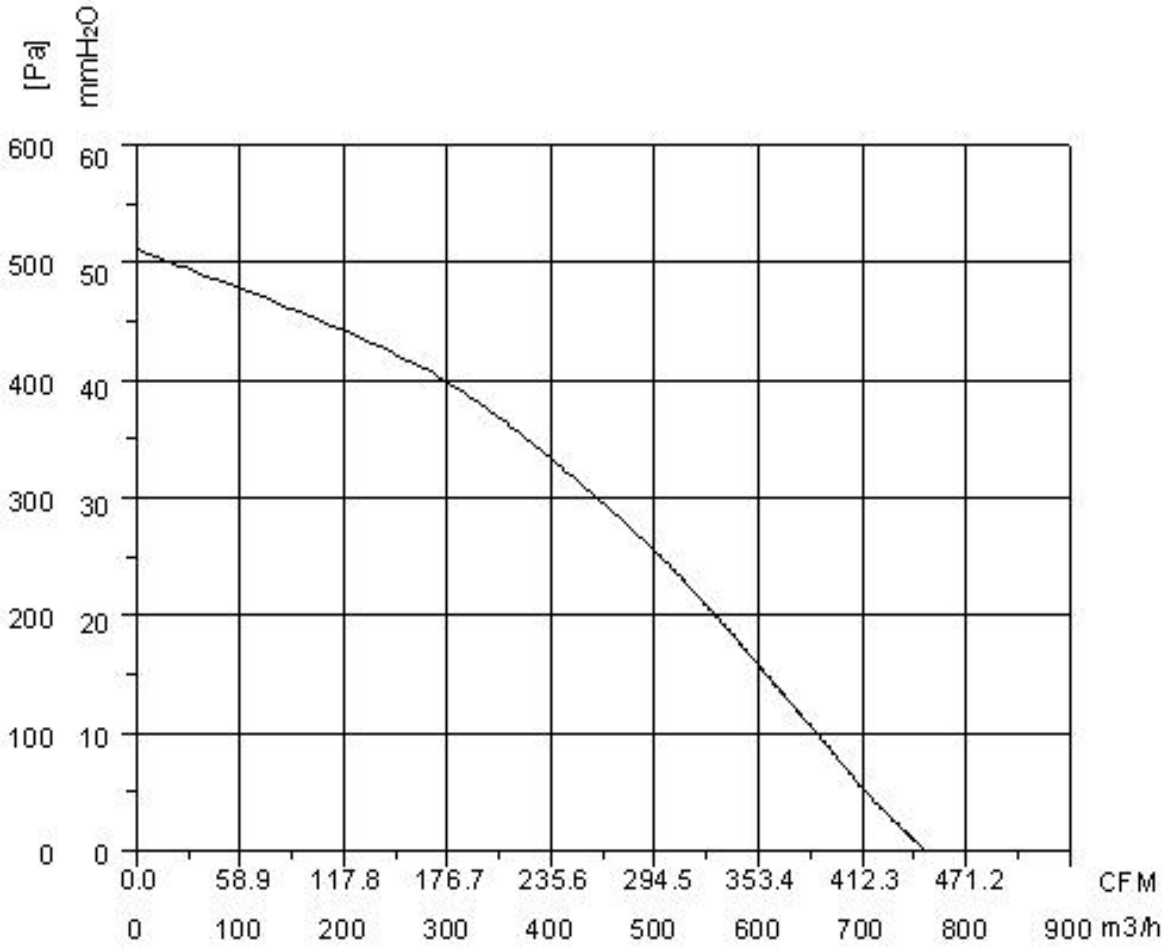
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4. Environment and Test:

4—1	Operating ambient temperature	-25℃ to 60℃
4—2	Storage ambient temperature	-40℃ to 75℃
4—3	Ambient humidity	5% to 90% RH
4—4	Storage ambient humidity	5% to 95% RH
4—5	Drop test	In the state of minimum packing amount, three sides of the packing box fell from 30cm high to 10mm thick wood, the packaging is intact, the fan is not damaged.
4—6	Vibration test	Sinusoidal waveform: Displacement amplitude: 0.75mm(10G). Frequency: 10Hz to 55Hz / 30 seconds. 55Hz to 10Hz / 30 seconds. Cycle 120 times Duration: 2 hours Test direction: X,Y,Z.
4—7	Impact test	At peak acceleration of 50 g, continuous 11ms (half sine wave).
4—8	Dust proof test	Temperature range :15 ° C to 35 ° C. No metal body with a diameter of 1mm should pass between the rotor and the stator.Comply with IEC 60592 IP4X.Note: This test is only applicable to the motor test, not suitable for the fan, the fan rotor after rotation, do not touch the rotor, there is a risk of personal injury.
4—9	Waterproofing test	Splashing water in all directions of the housing has no harmful effect. Complies with IEC 60529 IPX4
4—10	RoHS	All raw materials comply with RoHS requirements.

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5, Curve



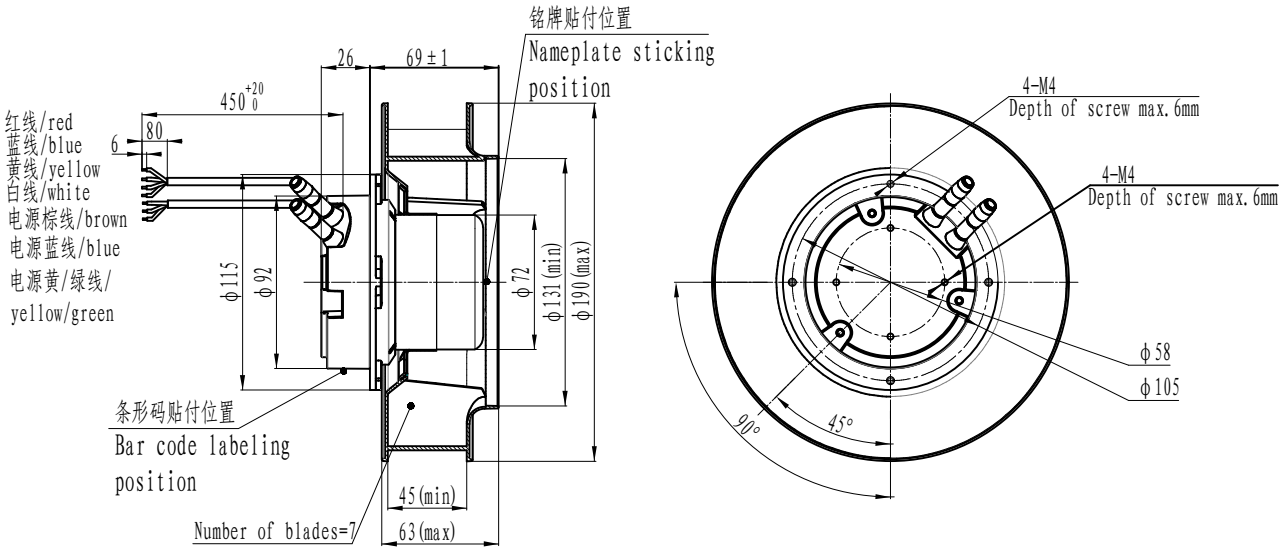
Test conditions:

Input voltage ---- Rated voltage (230VAC)

Temperature ---- room temperature

Temperature ----65%RH

6, Size drawing:



Note:

1, power leads: 4X AWG22, 3X AWG20;

The red line is +, the yellow line is 0-10VDC/PWM(input duty cycle and amplitude), the white line is FG, and the blue line is GND.

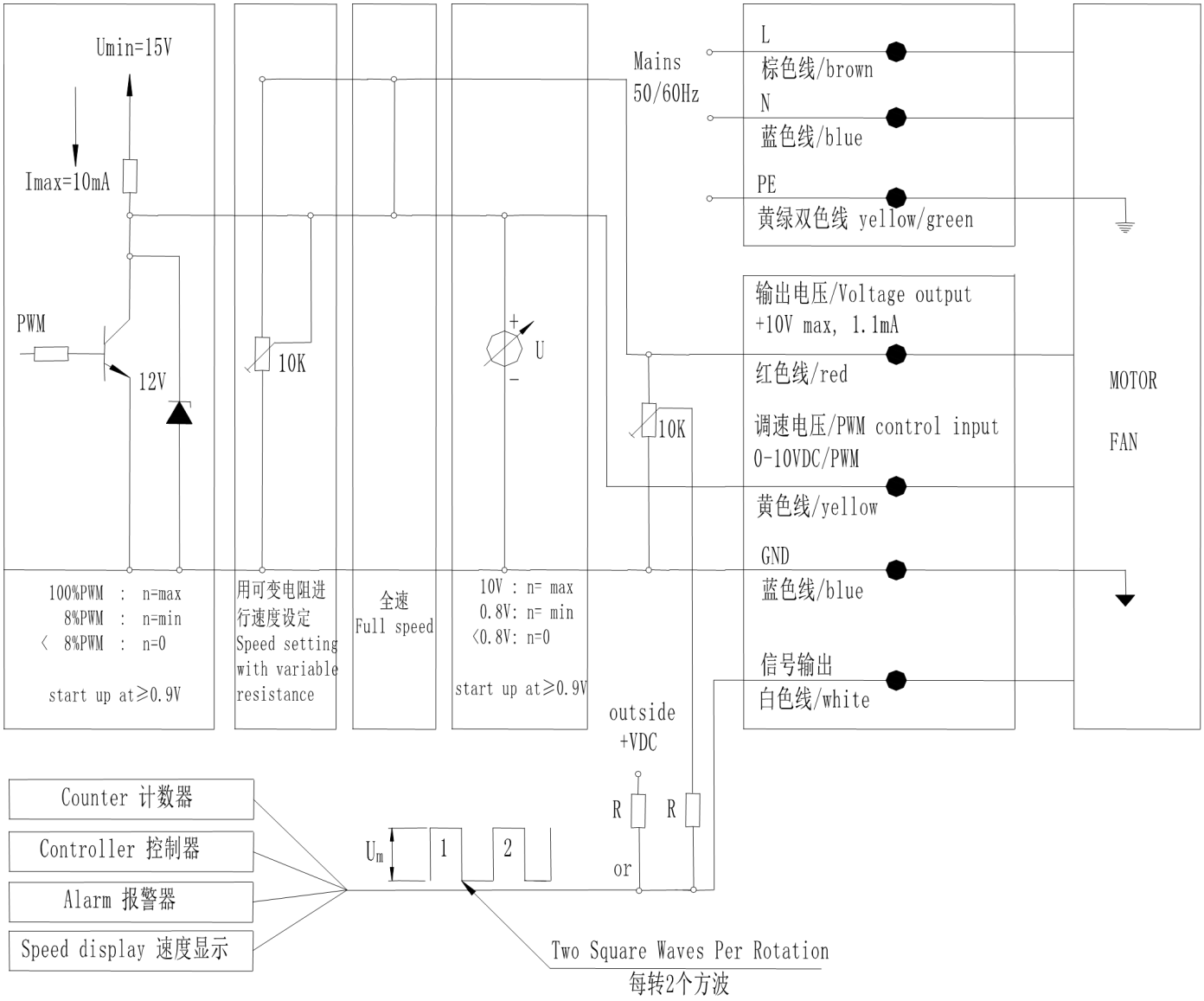
The brown line is L, the blue line is N, and the yellow-green two-color line is the ground line.

2, 4XM4 screws;Maximum thread depth 6mm;

3, accessories: None.

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7, Wiring Diagram:



R: The value depends on the signal current of the customer. You are advised to use the +10VDC partial voltage to obtain +5VDC, and R is 1 kω. The value can also be connected to the DC power supply Voutside+ (+VDC).

1. The positive (brown) and negative (blue) wires of the power supply are connected to the AC power supply, and the yellow and green cables are grounded.

2. The fan has the function of speed regulation. If the fan needs speed regulation, it can be adjusted stepless. The red +10VDC voltage output can be used to regulate the fan by voltage division.

3.FG signal output is open circuit output. If square wave output is required, it can be carried out by red +10VDC voltage, or pulled up by external power supply to obtain square wave signal with required amplitude, so as to obtain fan speed signal.

Note:

1. The fan's yellow and green two-color line must be effectively grounded before it can be powered on. High voltage is dangerous to prevent electric shock or affect operation due to ungrounded.

2. The red, yellow, blue, and white cables of the fan are not allowed to connect to the high-voltage AC power supply to prevent the fan from burning out.

3. Do not directly connect the white signal cable to the red +10VDC voltage output line or external DC power supply. When you need to obtain the square wave speed signal output, you need to connect the external resistor.

4. If the fan does not run after the fan is powered on, the speed regulating voltage may not be properly connected. Do not contact the wind turbine to debug the speed regulating power when the AC power supply is connected to the fan.

5. After the fan is powered on, it may take several seconds for the fan to start running. Do not touch the wind wheel immediately after the power is powered on or at a low speed to prevent personal injury.

6. Please read the Technical Specification carefully before using the product.