

技术规格书

SPECIFICATION

客户名称

Customer _____

产品名称

后向离心风机

Name _____

产品型号

EC092/25E3G01-B280/50S1-01

Model _____

产品版本

V0

Version _____

编制:

Edit _____

审核:

Auditing _____

批准:

Approval _____

公司名称: 杭州微光电子股份有限公司

Company Name: Hangzhou Weiguang Electronic Co.,Ltd

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总则 **General**

本规格书主要描述 EC 后向离心风机的技术数据、机械性能、电气性能、环境与试验、特性曲线、外形图、接线示意图和使用注意事项等。

执行标准:

- GB 12350--2009 《小功率电动机的安全要求》
- GB/T 21418-2008 《永磁无刷电动机系统通用技术条件》
- JB/T 10563-2006 《一般用途离心通风机技术条件》

This specification defines the general data, mechanical, electrical characteristics, environment and experiment, performance curve, Outline Drawing and precautions of the EC brushless external rotor motorized backward curved centrifugal fan and so on.

Standard:

- GB 12350-2009 《Safety requirements of small power motors》
- GB/T 21418-2008 《General specification for permanent magnet brushless motor system》
- JB/T 10563-2006 《General technical requirement for general centrifugal fan》

一. 技术数据 General Data

No.	名称 Name	参数 Parameter
1.1	最大风量 Max Air Flow	2020 m ³ /h (A 型出风侧风室 A type air outlet wind tunnel)
1.2	最大静压 Max Static Pressure	640Pa (A 型出风侧风室 A type air outlet wind tunnel)
1.3	额定转速 Rated Speed	2900 r/min
1.4	输入功率 Input Power	254W
1.5	额定电压 Rated Voltage	230VAC
1.6	工作电压 Operating Voltage	200~277 VAC
1.7	启动电压 Start Voltage	≤199VAC
1.8	额定电流 Rated Current	≤1.87A
1.9	噪 音 Noise Level	≤76dB(A)
1.10	转 向 Direction	CW (seen on rotor of motor)
1.11	寿 命 Lifetime	20,000 h (L10) (标况 standard environment)
1.12	绝缘等级 Insulation Class	F
1.13	耐 电 压 Withstand voltage	试验电压: 1500VAC 50Hz 跳闸电流: 10mA 持续时间: 60 s Voltage:1500VAC 50Hz Tripping current:10mA Time: 60 s
1.14	绝缘电阻 Insulation Resistance	试验电压: 500VDC 电阻: ≥50mΩ Voltage:500VDC Resistance: ≥50mΩ
1.15	保护功能 Electrical Protection	欠压保护 Undervoltage protection 过压保护 Overvoltage protection 过流保护 Overcurrent protection 堵转保护 Locked rotor protection 自动重启 Automatic restart capability 软启动 Soft start
1.16	调速功能 Speed Control	0~10VDC & PWM

1.17	接地电阻	Grounding Resistance	$\leq 0.1\Omega$
1.18	防护等级	IP Class	IP44
1.19	反馈信号	Signal Feedback	FG 信号: 开漏输出, 外置上拉电阻 1 个波形/转 FG sign: open-drain output, external pull-up resistor 1 pulses / R
1.20	振动要求	Vibration	$\leq 4.6\text{mm/s}$
1.21	电压输出		+10VDC
1.22	RoHS		所有原材料符合 RoHS 要求. All the material meets RoHS standard.

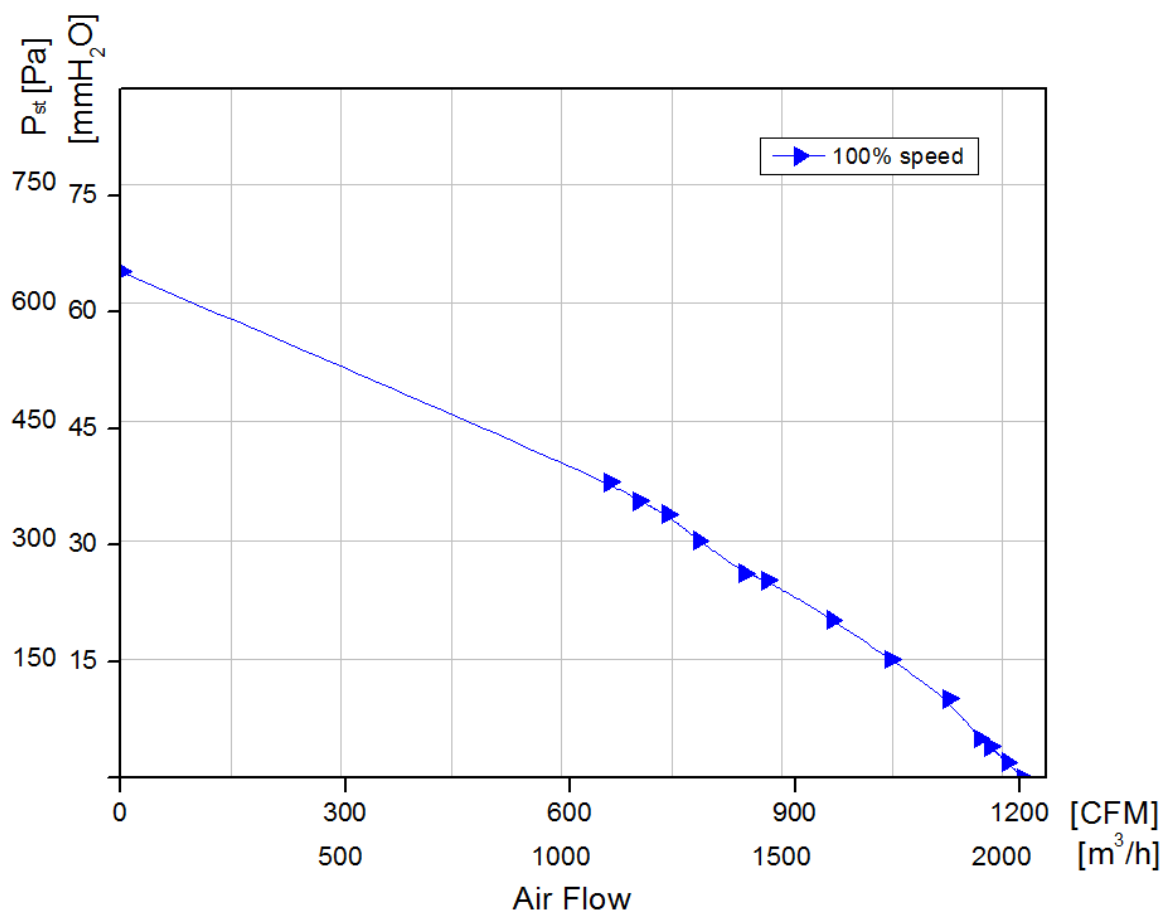
二. 机械性能 **Mechanical**

No.	名称 Name	参数 Parameter
2.1	外形尺寸 Dimension	$\Phi 281\text{mm} \times 148.5\text{mm}$ (见外形图 see dimension drawing)
2.2	叶片材料 Material of Blades	DX51
2.3	叶片数 Number of Blades	11
2.4	叶轮底盘 Impeller Plate	/
2.5	叶片颜色 Impeller Color	银白色 Silver
2.6	表面处理 Surface coat	喷塑 / 烤漆 / 电泳 Spray / Paint / electrophoresis
2.7	轴 承 Bearing	滚珠轴承 Ball bearings
2.8	电源引线 Lead Wire	3×AWG#20
2.9	控制引线 Control wire	4×AWG#20
2.10	净 重 Weight	4.6Kg
2.11	包装方式 Package	纸箱+防震材料+木制托盘。 Carton with shock- absorption material, put on pallet

三. 使用环境 **Operating Environment**

No.	名称 Name	参数 Parameter
3.1	使用环境温度 Operating Temperature	-25℃ to 60℃
3.2	储存环境温度 Storage Temperature	-40℃ to 75℃
3.3	使用环境湿度 Operating Humidity	5% to 90% RH
3.4	储存环境湿度 Storage Humidity	5% to 95% RH

四. 特性曲线 **Performance curve**



测试条件:

输入电压---额定电压(230VAC)

温 度---室温

温 度---65%RH

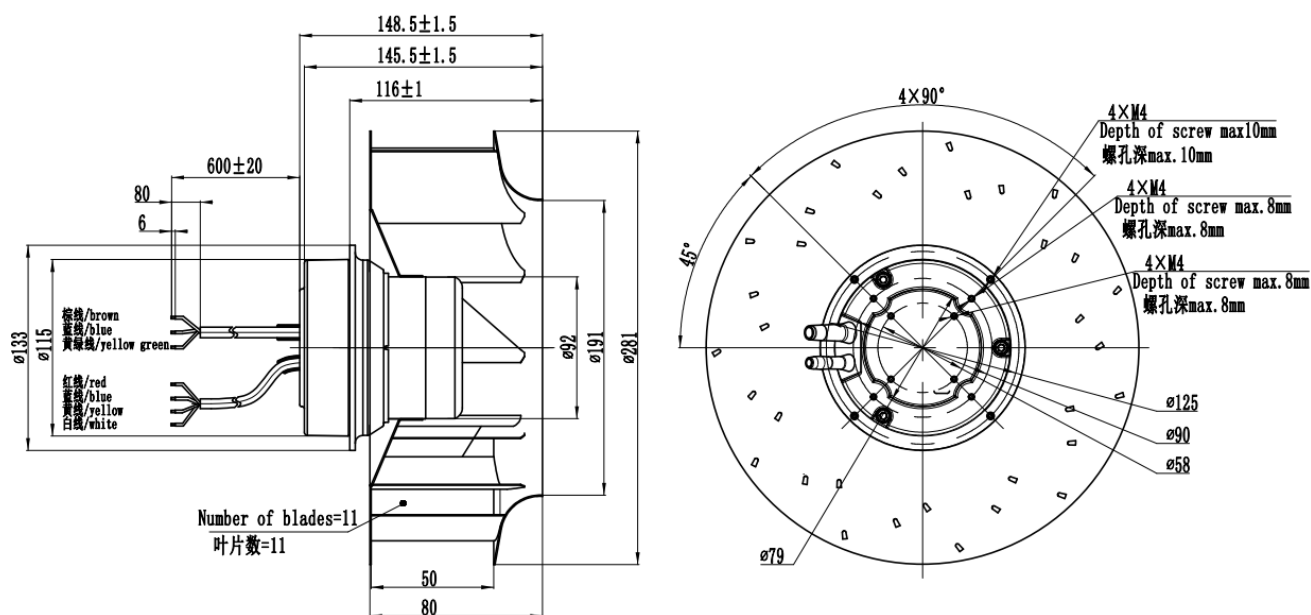
Testing Condition:

Input Voltage---230VAC

Temperature---Room temperature

Humidity---65%RH

五. 外形图 Outline Drawing



注:

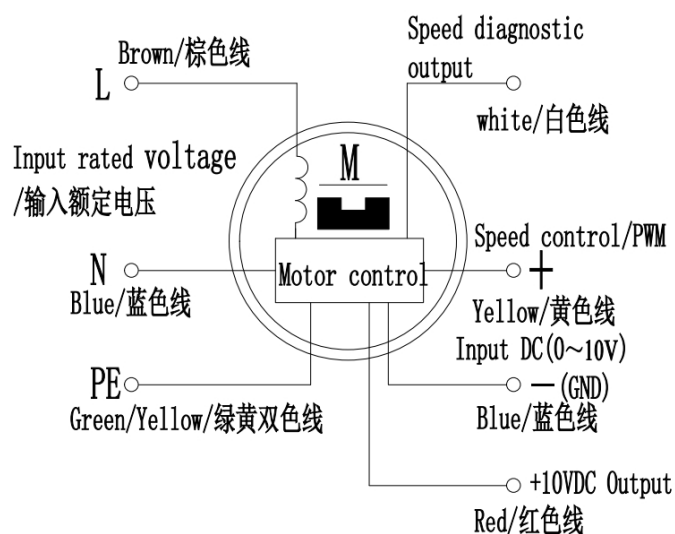
1. 电源引线: $3 \times \text{AWG}\#20$
棕色线: L
黄色线: N
黄绿色线: PE
2. 控制引线: $4 \times \text{AWG}\#20$
红色线: +10VDC 输出
黄色线: 0~10VDC/PWM
白色线: FG 速度信号输出
蓝色线: GND
3. 4XM4 螺钉, 螺纹深度最大值 6mm。
4. 配件: 无。

Note:

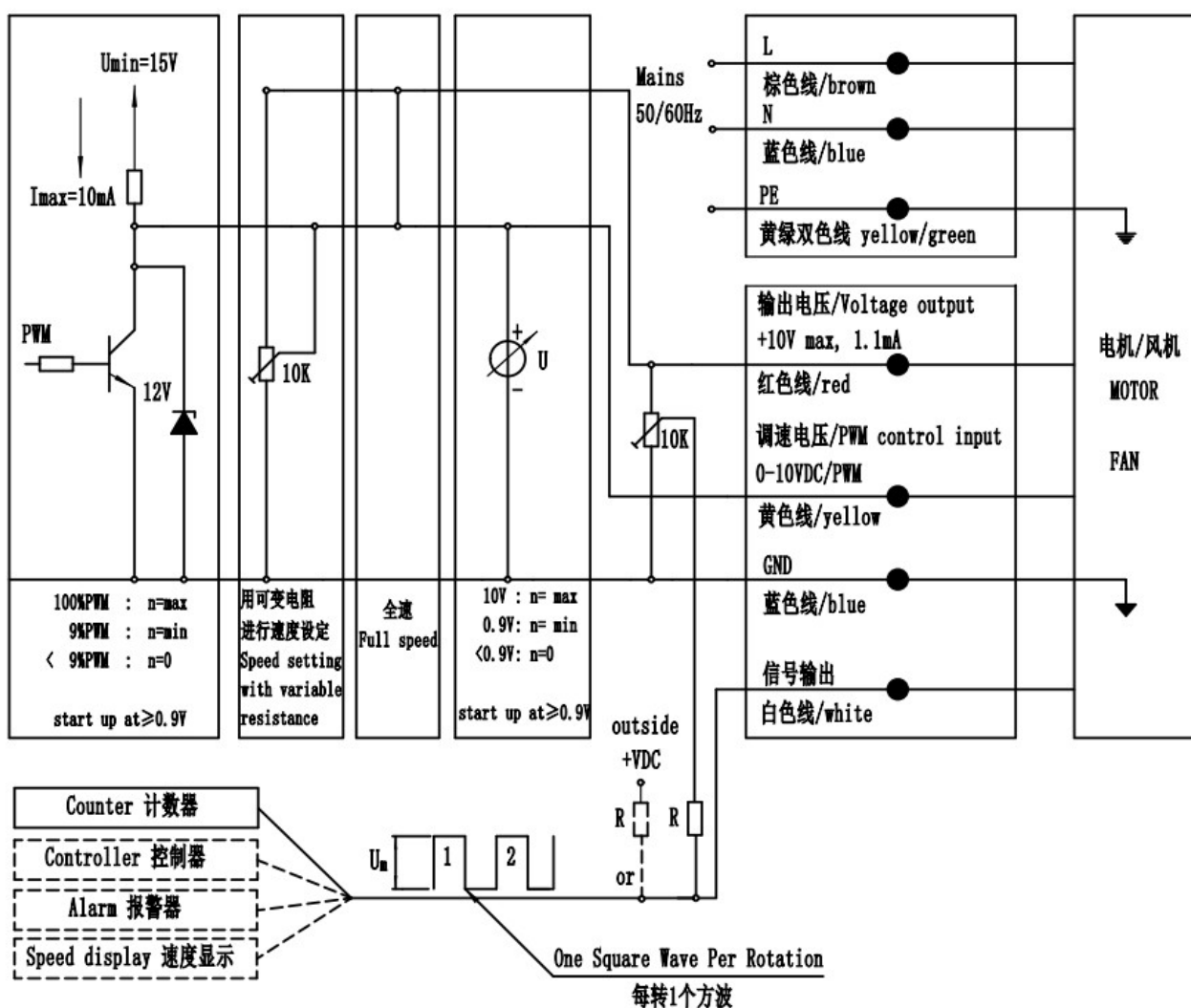
1. Lead wire: $3 \times \text{AWG}\#20$
Brown: L
Blue: N
Yellow/Green: PE
2. Control wire: $4 \times \text{AWG}\#20$
Red: +10VDC Output
Yellow: 0~10VDC/PWM
White: FG speed diagnostic output
Blue: GND
3. 4XM4 installation screws, max. depth 6mm;
4. Attachment: No.

六. 接线示意图 Connection Diagram

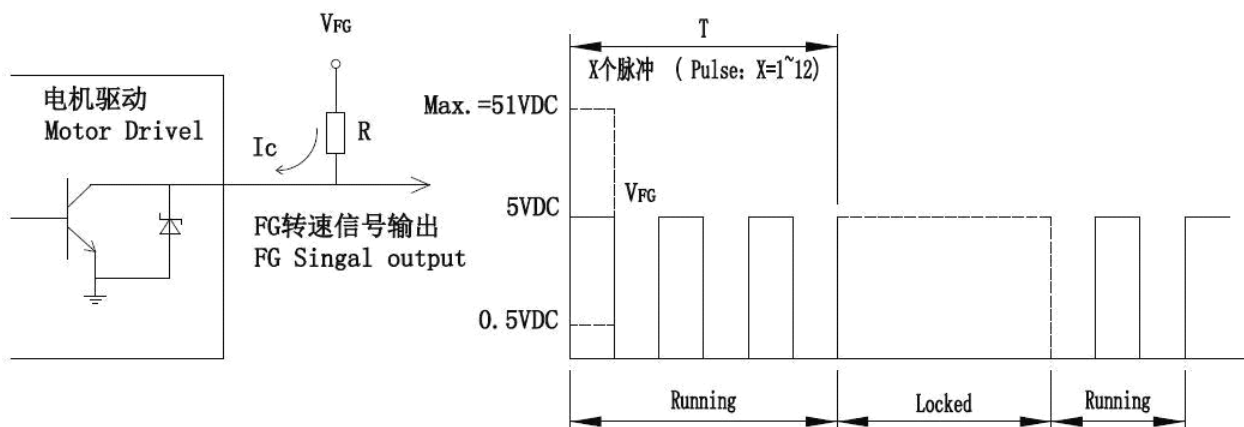
(1).电机接线图 Motor connection diagram:



(2).接口电路 Interface Circuit:

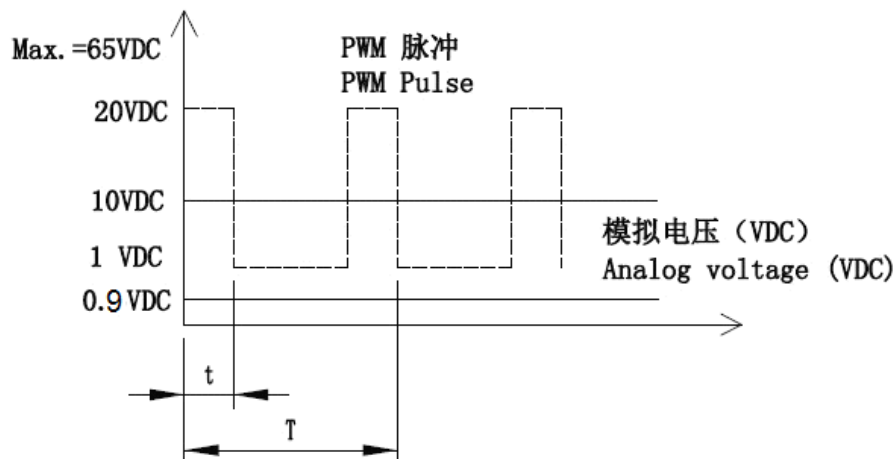


(3).FG 信号线接线示意图 FG signal connection diagram:



1. 输出类型: 开漏输出
Output type: Open Collect.
2. R设计要求:
R Design requirement:
 $R \geq V_{FG}/I_c$, $I_c=10\text{mA (Max.)}$.
常用 Normal: $V_{FG}=5\text{VDC}$, $R=1\text{k}\Omega$.
3. 最大上拉电压 V_{FG} :
The Max. pull-up voltage.
 $V_{FG}=51\text{VDC (Max.)}$.
4. 脉冲数: 每转1个.
Pulse number: 1 PPR .
5. 频率与转速计算:
Frequency and Speed calculation:
 $n=\text{RPM}$
 $T=60/n$ (s)
 $F=(1/T)*X=(n/60)*X$ (Hz)
 $n=(60*F)/X$ (r/min)

(4).速度控制信号示意图 Speed control signal diagram:



1. 速度控制信号支持 0.9~10VDC 模拟电压与 PWM 脉冲兼容。
2. 只需要全速时, 调速线 (黄色) 与 +10V 输出 (红色) 直接连接。
3. 最大调速电压支持高达 65VDC, 10VDC 以上为全速运行。
采用 PWM 调速时: 电压幅值为 10VDC, 占空比在 0~100%进行调节来实现调速。
- 1.The speed control signal of support for 0.9~10VDC
Analog voltage pulse with PWM compatible.
- 2.Only need to full speed, speed wire (Yellow) can be directly connected with +10V (Red).

3.The maximum speed of voltage support up to 65VDC,
10VDC or more is running at full speed.

When adjust the speed using PWM,The voltage amplitude is 10VDC, adjusting the duty cycle from 0 to 100% for speed adjustment.

七. 使用注意事项 **Precautions**

1. 风机黄绿双色线必须有效接地才能通电运行，高压危险，防止未接地而导致触电或影响运行。
2. 风机的红色、黄色、蓝色和白色线不允许接入高压交流电源，防止烧坏风机。
3. 白色信号线禁止直接连接红色+10VDC 电压输出线或外部直流电源，需要获取方波转速信号输出时需要外接上拉电阻，详细说明见接线示意图。
4. 风机通电后如果风机不运转，可能调速电压未连接好，禁止在通入交流主电源下接触风轮去调试调速电源，防止风机突然启动而伤手或造成其他人身伤害。
5. 风机通电后可能需要等待几秒才能启动运行，禁止通电后立即触摸风轮或在低速下触摸风轮，防止人身伤害。
6. 使用产品前请仔细阅读本《技术规格书》。

Notes:

1. The fan can be operate after the yellow and green wire of the fan connecting the ground effective, High risk, to prevent grounding caused by electric shock or not affected operation.
2. The red, yellow, blue and white lines of the fan are not allowed to access the high voltage ac power supply, to prevent burn out the fan.
3. White line prohibits direct connection red + 10 VDC or external dc power supply voltage output line.You need to connect an external resistor wen you what the Square wave speed signal output.Details see the connecting screen.
4. If the fan is not running after the power supply, may the voltage control are not connected well.In a forbidden under the main power of contact wind turbines to debugging speed control power supply, to prevent hand injury or cause other personal injury if the fan suddenly start and.
5. Fan may need to wait for a few seconds after the power supply to start running, ban after electrify immediately touch wind turbines or touch under low speed wind turbines, to prevent personal injury.
6. Please read carefully the "technical specification before use the product ".