

常州祥明智能动力股份有限公司  
产品规格书

**Changzhou Xiangming Intelligent Drive  
System Corporation Product Specification**

**Part Name:** FLH310/070A-1873C1-9

设计 夏正法 16.10.10

Designer by:

认可 \_\_\_\_\_

Confirmed by:

审核 王新杰 16.10.10

Auditor:

## 1. 电机规格 Motor model: YWD102/60-4(1873C1-9)

- 1.1 额定电压 Rated voltage: 230V
- 1.2 额定频率 Rated frequency: 50Hz
- 1.3 绝缘等级 Insulation Class: B
- 1.4 运行方式 Mode of operation: 连续工作制 continuous duty
- 1.5 极数 Pole: 4 极 poles
- 1.6 额定电容 Rated capacitor: 4  $\mu$ F/450VAC
- 1.7 旋转方向 Rotation Direction:  
从转子端看, 顺时针方向旋转 CW viewing from rotor side.
- 1.8 输入功率 Input power: 60 $\pm$ 10%W
- 1.9 额定转速 Rated speed: 1440 $\pm$ 50r/min
- 1.11 额定电流 Rated current: 0.42 $\pm$ 10%A
- 1.12 温度保护装置 Temperature protection device: BR-B2D 125 $^{\circ}$ C
- 1.13 结构型式 Construction: 外转子 External rotor
- 1.14 防护等级 IP degree: IP44
- 1.15 重量 Weight: 3.3KG
- 1.16 动平衡精度等级 Balancing degree: G2.5
- 1.17 储藏环境温度 Storage ambient temperature: -40 $^{\circ}$ C — +80 $^{\circ}$ C,  
相对湿度 relative humidity: 70%, 通风良好 with good ventilation.
- 1.18 使用寿命 Operation life:  
正常情况下大于 40000 小时 By normal operation, more than 40K hours

## 2. 电机特性 Motor characteristic

### 2.1 线圈电阻(环境温度 25 $^{\circ}$ C )

Winding resistance(ambient temperature 25 $^{\circ}$ C)

引出线颜色 Cable color	线圈电阻(欧姆) Winding resistance	容差 Tolerance
黑—兰 Black-Blue	74.3	$\pm$ 10%
兰—棕 Blue--Brown	75.7	$\pm$ 10%

### 2.2 负载特性 Load characteristic

档 位 Level	电 压 (V) Voltage	频 率 (Hz) Frequency	电 流 (A) Current	输入功率 (W) Power Input	转 速 (r/min) Speed
	230	50	0.42 $\pm$ 10%	73 $\pm$ 10%	1440 $\pm$ 50

### 3. 技术要求

#### Technical Requirements

##### 3.1 绝缘电阻 Insulation resistance

电机定子绕组在热态或温升试验后,其对机壳绝缘电阻应不低于  $100\text{M}\Omega$  ,电机湿热试验后, 绝缘电阻不低于  $10\text{M}\Omega$  。

After the motor stator and winding get heated, or after the temperature rise test, its motor housing insulation resistance is not less than  $100\text{M}\Omega$  . And motor insulation resistance is not less than  $10\text{M}\Omega$  after humidity heat test.

##### 3.2 电气强度 Electrical strength

定子绕组与机壳间外加 50Hz 近似正弦波的电压 1500V 持续 1min 或 1800V 持续 1S 无击穿闪烁现象(泄露电流小于 5mA);在潮态时,应经受 1275V,持续 1min 无击穿闪烁现象。

With a force from 50Hz, 1500V voltage similar like sine wave for a duration of 1 minute, or 1800V continuously for a second, stator winding has no disruptive spark (Current leakage less than 5mA); In the humidity environment, the motor can withstand 1275V, and no disruptive spark for a minute.

##### 3.3 匝间绝缘试验 Turn to turn test

电机定子绕组应能承受匝间绝缘耐冲击电压试验而无击穿, 试验电压(峰值)为 1800V。

Motor stator winding can withstand turn-to-turn test and Impact resistance voltage test without breakdown impact. Test voltage(peak value) is 1800V.

3.4 电机在实际冷态和热态稳定后, 施加 90%-110% 额定电压, 带实际负载应能正常起动和工作。

After the actual cold and hot state, and motor become stable, under the rated voltage 90-110%, motor is able to start correctly and operate under actual load.

##### 3.5 温升试验 Temperature rise test

在额定电压, 额定频率(环境温度不超过  $40^{\circ}\text{C}$  的条件下)带实际负载运行, 热稳定后绕阻温升(电阻法)不超过 60K。

Under rated voltage, rated frequency(ambient temperature not more than  $40^{\circ}\text{C}$ ) and with actual load, after heat state, temperature rise less than 60K

##### 3.6 电压波动特性 Voltage fluctuation characteristic

在额定频率下, 当外加电压在额定电压的  $\pm 10\%$  范围内波动时, 电机仍能正常运转, 无异常。

Under rated frequency, if the voltage fluctuate in the range of  $\pm 10\%$ , motor is still able to operate correctly.

### 3.7 噪声 Noise

风机在空载运转时距离风机水平距离 1 米时测得的 A 计权声功率级的噪声值不超过 66dB。

In no-load operation, noise level is not more than 66dB in the distance of 1 meter.

### 3.8 风轮径向跳动和端面跳动不大于 1mm

Fan radial and facial runout are not more than 1mm.

### 3.9 电机轴向间隙：0.2-1.5mm

Motor axial clearance: 0.2-1.5mm

### 3.10 外观 Aspect

各部位无划伤，脏污，锈斑；接插件牢固，无松脱；线色符合要求，铭牌清晰正确，粘贴牢固，电机转子外壳电泳漆处理

No scratch, dirty spot, rusty spot; Secure connector. Right wire color. Clean and right label, stucked securely. Motor rotor housing is well treated by electrophoresis painting.

## 4. 使用条件 Operation condition

4.1 环境温度 Ambient temperature:  $-25^{\circ}\text{C}$  —  $+60^{\circ}\text{C}$

4.2 相对湿度 Relative humidity : Less than 95%

## 5.主要零件材料

### Main component material

项 目 Item	材 料 Material
硅钢片 Silicon lamination	B50A470
定子座 Stator housing	压铸铝合金 casting aluminium
漆包线 lacquered wire	聚酯/聚酰胺酰亚胺漆包线 GP/MR-200℃ Polyester / polyamide resin coated wire GP/MR-200℃
轴 Shaft	3Cr13
引出线 Cable	UL3135 20#
轴承 Bearing	TPI 6001T2X4ZZ
叶轮材料 Impeller material	AL1060

## 6.未尽事宜依据:

All the other technical items not mentioned are in conformity with:

GB/T 5171-2002

《小功率电动机通用技术条件 General technical requirements for small power motors》

GB /T 12350-2009

《小功率电动机的安全要求 Small power motors safety requirements》

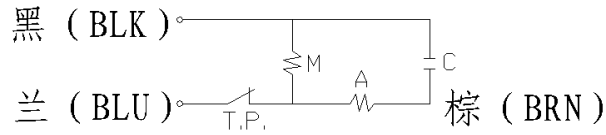
## 7、构造 Construction

1) 其他外观构造参照附加图面。

Other outer construction please refer to the attached picture:

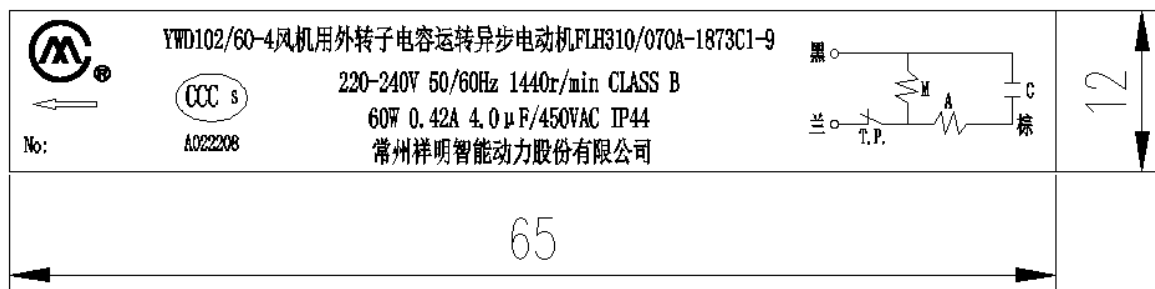
## 接线原理图

Wiring diagram



## 铭牌图纸

Nameplate/Label



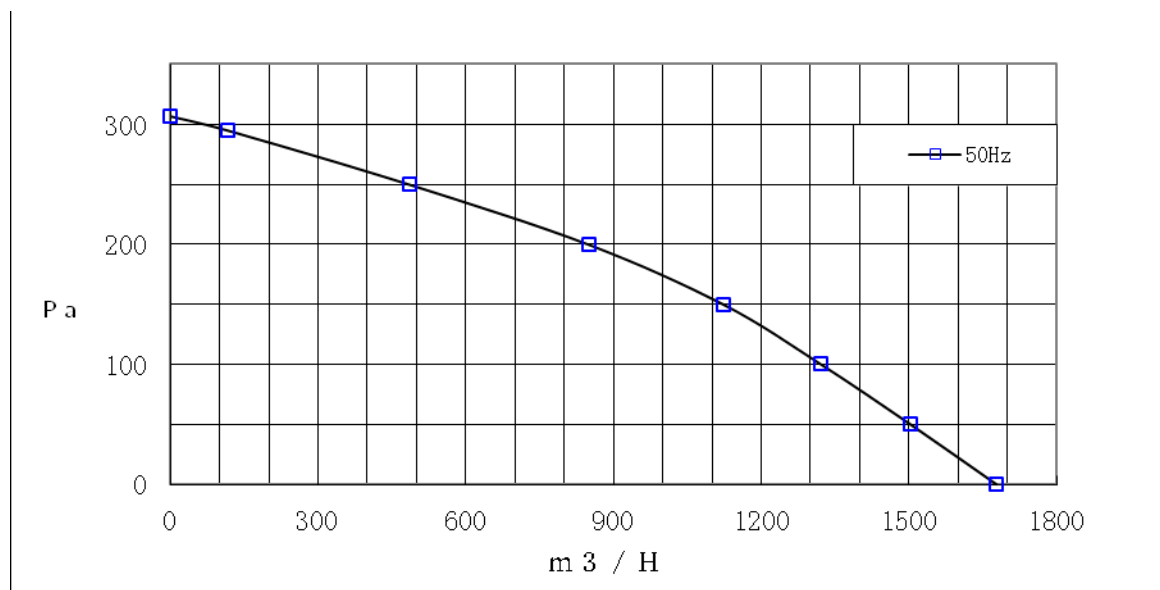
## 风量—静压曲线图

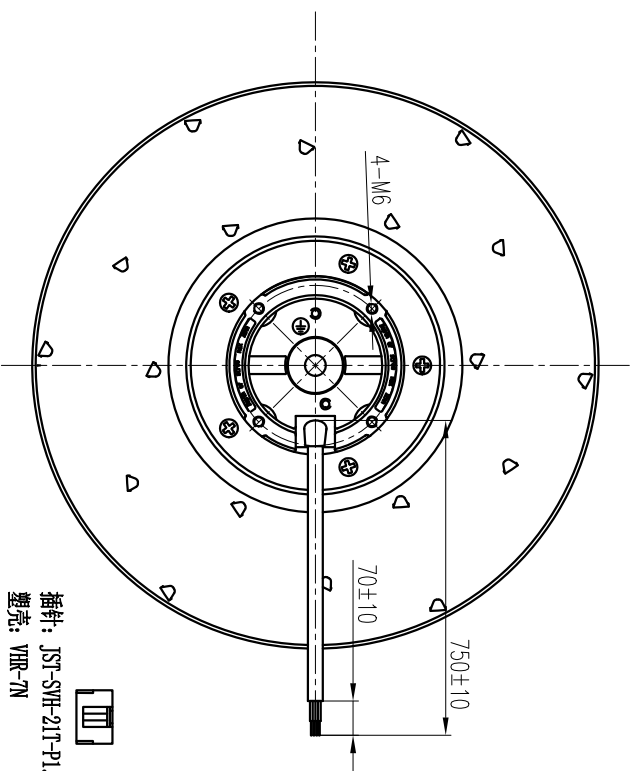
Air volume - Static pressure curve

环境温度: 25°C 大气压: 1020Hpa

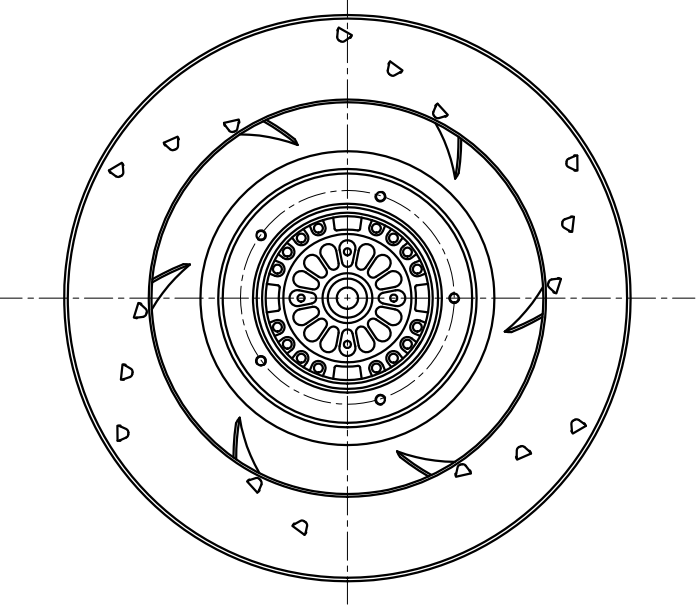
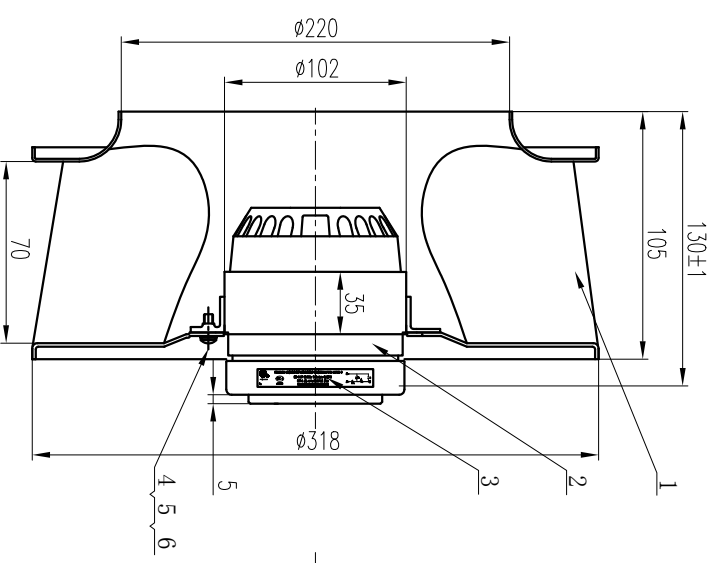
ambient temperature: 25°C

Atmospheric pressure: 1020Hpa





插针: JST-SVH-21T-P1.10  
 翅壳: VBR-7N  
 插针顺序: 1孔黄/绿、3孔兰、5孔黑、7孔棕

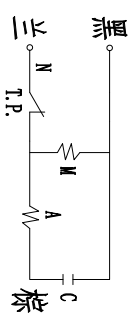


### 技术要求

1. 各工件连接牢固, 不得有松动等装配不良现象;
2. 风机运行要平稳, 不得有卡滞;
3. 风机剩余动不平衡量 $\leq 0.15$ 克;
3. 风机径向跳动和轴向跳动均 $\leq 1$ mm;
4. 风机主要性能参数如下表:

输入电压 (V)	额定容量 (μF)	输入频率 (Hz)	转速 (r/min)	输入功率 (W)	输入电流 (A)	绝缘等级	旋转方向 (出线端)
230	4	50	1440±70	73±10%	0.42±10%	B级	逆时针

### 接线原理图



序号	物料编码	图样代号	物料名称	数量	单位	规格	备注
4	211030429		螺钉	5	张	4×12(大垫片组合螺钉)M5×12	
3		CMR.807.	铭牌	1	张	进口不干胶18/10/101C-1873C1-9	
2	101020357	CMR.133.593	1873C1-7电机	1	台		
1	208010009		后侧风轮	1	只	AL1060	Φ310/070A

设计	处数	分区	更改单号	签名	日期	比例
1/1	16.10.10	16.10.10	批准			1:1
审核	1/1	16.10.10	版次			
工艺						
标准化						