产品规格书

PRODUCT SPECIFICATION

客户名称 Buyer Name	
客户料号 Buyer Part No.	
客户承认签章 Buyers Approval & Signatures	

文件编号 Spec No.		版本	A/1
品牌描述 Product Description	圆柱直流马达 Cylindrical DC Motor		
型号Part No.	VJP10-35C270M2		
送样日期Date			
设计Designed by	审核Checked by	批准Approved by	
陈满			
2023.06.05	2023.06.05	2023.06.05	

www.vybronics.com
sales@vybronics.com

规格书内容/Contents

1. 适用范围（Scope）

本文规定 VJP10-35C270M2 直流永磁电动机有关技术要求和试验方法。

(This spec specifies the related technical data and test methods of VJP10-35C270M2 DC motor.)

2. 标准使用条件 （ STANDARD OPERATING CONDITIONS ）

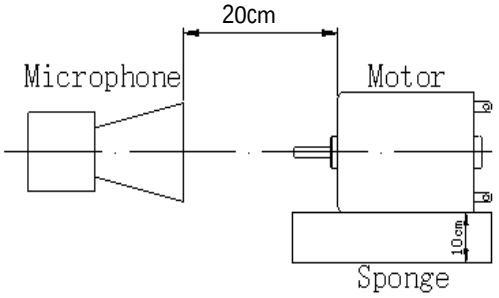
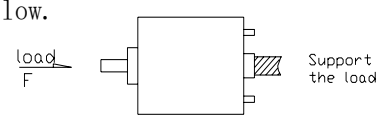
NO:	项目：ITEMS	规格：SPECIFICATIONS
2-1	额定电压 Rated Voltage	4.8 V DC CONSTANT between motor terminals 马达端子间电压.
2-2	使用电压范围 Operation Voltage	3.0 to 6.0 V DC.
2-3	额定负载 Rated Load	負載：R3.4*2.0鎢合金偏心輪 Load:φ3.4*2.0Tungsten alloy eccentric wheel
2-4	旋转方向 Rotation Direction	顺时针方向(从出轴端看) CW:View from shaft output end
2-5	马达姿势 Operation of Motor	出力轴水平 Motor shaft horizontal
2-6	使用温度范围 Operation Temperature	-20 to +70℃ .
2-7	使用湿度范围 Operating Humidity	10% to + 90%RH

3. 结构 （ CONSTRUCTION ）

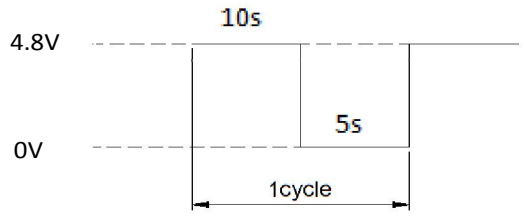
NO:	项目：Items	测试条件: Test Conditions	规格: Specification
3-1	外观 Appearance	目视 Visual	无明显刮伤，凹陷或变形 No excessive scratches,dents or Deformation.
3-2	外形尺寸 Dimension	卡尺或千分尺 Caliper or micrometer	参见附图 Conform to drawing.
3-3	轴向间隙 End Gap	百分表 dial indicator	0.05-0.25mm
3-4	重量 Weight	电子秤 Electronic scale	约5g Approx.5g.

4.电气特性（Electrical Characteristics)

标准测试状态为温度+15℃至+30℃，湿度30%至70%，如有疑义，则按温度+18℃至+22℃，湿度60%至70%RH进行测试。
In standard test, measurement is to be made at +15℃to +30℃& relative humidity 30% to 70%. If the judgment is questionable, the measurement is to be made at+18℃to+22℃ and 60% to 70% RH.

NO:	项目 Item	测定条件 Test Conditions	规格 Specification
4-1	空载转速 No Load Speed	额定电压,空载 At rated voltage,no load.	21000±10%r.p.m
4-2	负载转速 On-load Speed	额定电压,额定负载 At rated voltage,rated load.	16000±10%r.p.m
4-3	空载电流 No Load Current	额定电压,空载 At rated voltage no load.	75 mA MAX 75 mA or less
4-4	负载电流 On-load Current	额定电压,额定负载 At rated voltage,rated load.	175 mA MAX 175 mA or less
4-5	起动电压 Staring Voltage	空载 No load.	无负载状态下最大 1.2 V 1.2 V (max.) under no load.
4-7	堵转电流 Stall current	额定电压 At rated voltage.	最大0.45A 堵转不能超过3秒 The Maximum 0.45A
4-8	端子间电阻 Terminal Resistance	20℃，2R/3端子间 20℃,rotor at 2R/3 Position	15.7 Ω±1.5Ω
4-9	绝缘阻抗 Insulation Resistance	马达端子和机壳间加DC100V DC100V apply between motor casing & supply terminal	1.0MΩ MIN 1.0MΩ or more
4-10	机械噪音 Mechanical Noise	额定电压,空载状态,在离马达20cm处测试 At rated voltage,no load,The distance between microphone and the mounting plate:20cmm. 	65db MAX 背景噪音26db 65db or less. Background Noise:26db
4-11	最大轴向受力 Maximum axial load	支撑点及受力如下图所示 Direction of static load and support of load as Shown below. 	F≤5.0Kgf.(MAX)

5.信赖性、特殊试验 （ RELIABILITY & SPECIAL TEST ）

<table>
<tr><td>NO:</td><td>项目
Item</td><td>试验条件
Test conditions</td><td>规格
Specifications</td></tr>
<tr><td rowspan="5">5-1</td><td rowspan="5">寿命试验
Life Test</td><td colspan="2">马达试验条件如下,并按以下的判断标准判断其寿命.
The motor test conditions are as follows, and its service life is judged according to the following judgment criteria</td></tr>
<tr><td colspan="2"><table>
<tr><td>试验方式
Test model</td><td>负载
Load</td><td>环境条件
Environment</td><td>目标规格
Target Lift Cycle</td></tr>
<tr><td>如下
As below</td><td>1.0gf.cm</td><td>25℃±5℃
65%±20%RH</td><td>TBD个周期</td></tr>
</table></td></tr>
<tr><td colspan="2"> 
</td></tr>
<tr><td colspan="2">寿命判断标准 Life test judgement standard</td></tr>
<tr><td colspan="2">① 额定转速与初始值相比变化率在±30%以内
Rated load speed varies within ±30% from the initial.

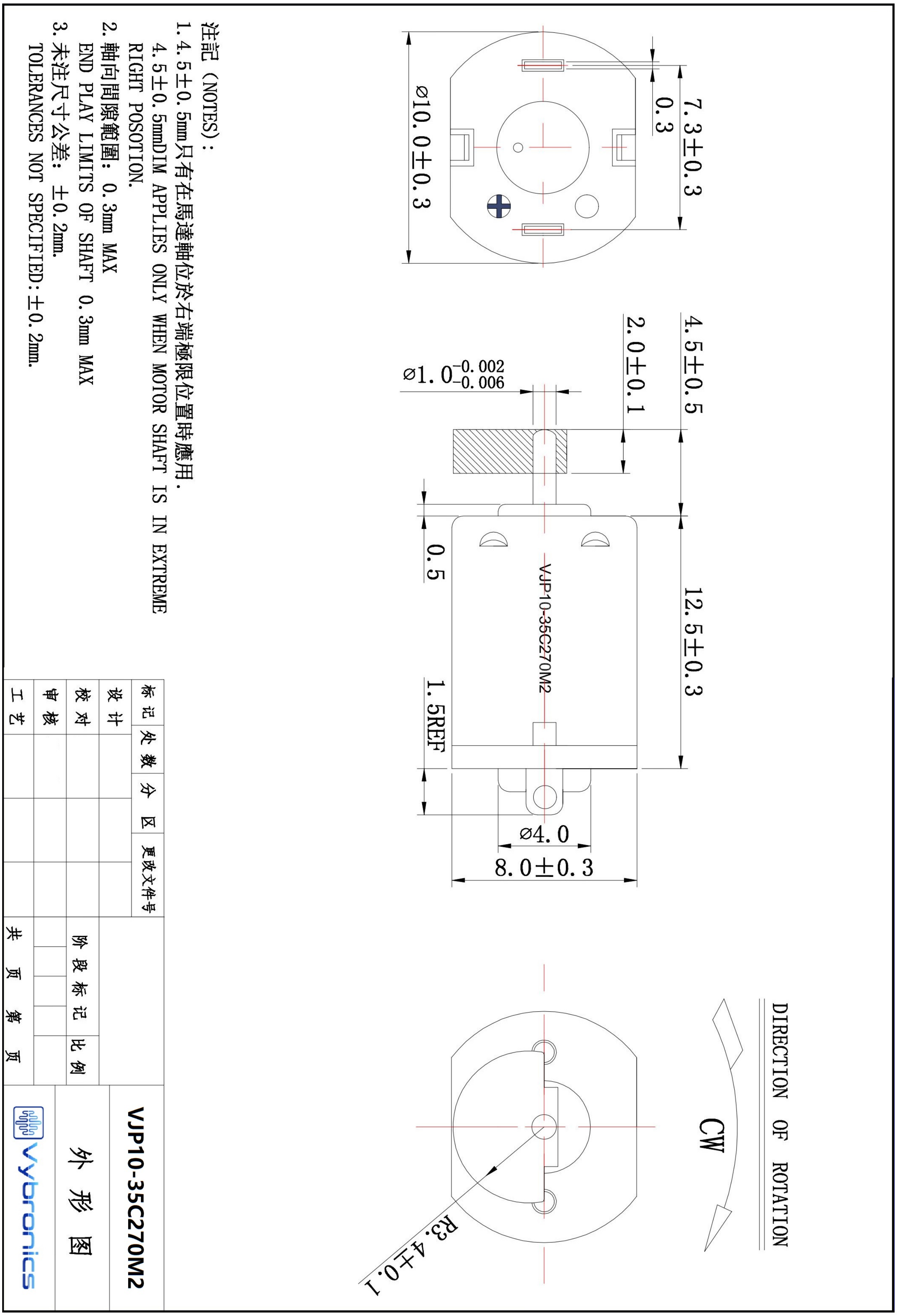
② 额定电流与初始值相比变化率在±30%以内
Rated load current varies within ±30% from the initial.</td></tr>
</table>

6. 马达使用时注意事项 (Motor General Instructions & Notes)

1. 避免有害气体（例如：硫磺、瞬干胶、矽胶等）的产生场所和环境，以防止对马达外壳、端子及其它金属零件被氧化腐蚀，特别是工作环境使用了矽胶时，矽胶的挥发容易形成SiO2造成马达换向器接点障碍，接触阻抗急剧增大，导致接触不良。
Avoid the place and environment where harmful gases (such as sulfur, instant dry adhesive, silica gel, etc.) are produced, so as to prevent the motor shell, terminals and other metal parts from being oxidized and corroded. Especially when silica gel is used in the working environment, the volatilization of silica gel is easy to form SiO2, which causes the contact obstacle of motor commutator, and the contact impedance increases sharply, resulting in poor contact.
2. 马达端子焊接时应避免压入以免造成不良现象，焊接温度应在380℃内，时间2S内，防止端盖受热变形。
The motor terminal shall not be pressed in during welding to avoid adverse phenomena. The welding temperature shall be within 380 ℃ and the time shall be within 2s to prevent the end cover from thermal deformation.
3. 装配马达时，使用接著剂时，应避免流入轴承与轴心处，防止卡死不转动。
When the motor is assembled and the adhesive is used, it should be avoided to flow into the bearing and shaft center to prevent it from being stuck and not rotating
4. 马达通电后，轴心锁住时间与施加负荷，须注意若超过规格书之条件，可能导致漆包线、电刷烧毁情形发生。
Do not stall or overload the motor,this will cause motor to be overheated and some parts(For example,wire,brush…etc.)will be damaged.
5. 压入齿轮或滚轮及其其他零件到轴上时，在另一侧，即后盖需用治具顶住支撑处，防止后盖变形与损坏并影响转子转动。 When pressing the gear or roller and other parts onto the shaft, on the other side, that is, the back cover should be held against the support with a jig to prevent the back cover from deformation and damage and
6. 马达使用时之环境温度应注意，尤其是高温高湿应避免，若超出规格条件，对马达之特性、寿命，将会有影响。
When using the motor, pay attention to the ambient temperature, especially the high temperature and high humidity. If it exceeds the specification conditions, it will affect the characteristics and service life of the motor.
7. 马达保存环境25℃±10%、湿度70%以下，马达在未开包装箱情况下，保存期为180天，并且马达品质符合制 品规格书的要求。 The storage environment of the motor is 25 ℃± 10%, and the humidity is below 70%. The storage period of the motor is 180 days without opening the packing box, and the quality of the motor meets the requirements of the product specification.
8. 使用之螺丝锁紧马达时，螺丝与孔应平行，以防止螺纹损坏，若螺丝长度过 长将对磁石造成破损，并影响转子运转。
When using the screw to lock the motor, the screw and the hole should be parallel to prevent thread damage. If the screw length is too long, it will damage the magnet and affect the rotor operation.
9. 若使用马达后有任何疑问或问题产生时，双方依承认之规格书检讨协议之。
In case of any doubt or problem after using the motor, both parties shall review the agreement according to the recognized specification.
10. 如需改善马达性能，在整体特性符合规格书内，敝司可对使用之部品、材料、治具、作业方法等作变更，但对重大变更时须知会贵司。
If it is necessary to improve the performance of the motor, our company can change the parts, materials, jigs, operation methods, etc. used within the overall characteristics in accordance with the specifications。
11. 本规格书其内容有疑问时，应由使用者纳入者双方检讨协议之。
In case of any doubt about the contents of this specification, both parties involved shall review the agreement.
12. 输入电压与马达时，工作电压不可超出规格书之电压范围，否则可能马达有烧毁之情形发生。
When inputting the voltage and motor, the working voltage shall not exceed the voltage range of the specification, otherwise the motor may burn out.
13. 紧固马达螺丝时，若使用电动起子，必须要有扭力调整器，其扭力控制在1.2kgf-cm（max）内，同时在锁紧时， 螺丝与孔必须在垂直方向受力。
When tightening the motor screws, if the electric driver is used, there must be a torque adjuster whose torque is controlled within 1.2kgf-cm (max). At the same time, when locking, the screws and holes must be
14. 当锁附螺丝时，其装配环境必须清洁干净，不能有磁性、塑胶粉末等异物，防止掉入孔内。
When attaching screws, the assembly environment must be clean and free of magnetic, plastic powder and other foreign matters to prevent falling into the hole.

以上所述之事项，若有任何疑问或未详细之处，请仅速与我方联系，我方将会乐意地协助您。
If you have any questions or have no details about the above matters, please contact us as soon as possible and we will be happy to assist you.

7. 马达外形图 (Motor Outline Drawing)



8. 修改记录 (Revision History)

修改号 Rev. No.	日期 Rev. Date	页码 Page No.	修改项目 Revised Item	更改原因 Reason
A/0	2021.11.11	/	初始规格/Preliminary spec	
A/1	2023.06.05	/	Motor spec update	