REV: A

产 品 规 格 书
(Product Specification)

客　　户: _____
(Customer)
型　　号: NFP-SXD0716BY-F7603-2750-70-3.0
(Model)
规格书编号 : MS-180706002-001
(File NO.)
日　　期: 2018/7/6
(Date)

本产品符合欧盟2005/618/EC环保要求：(The product conforms to UE 2005/618/EC.)

在您下单采购本产品之前请您阅读本规格书并在下列承认栏内签字后回传我公司
(Please return this file with your signature in order to make quick arrangement for production)

客 户 承 认 栏 CUSTOMER APPOVED
(盖章&签名)Seal & Signature

APPROVED		
承 认 Approved by	审 阅 Checked by	作 成 Prepared by

修改记录(REVISION)

序号 Serials munber	日期 Date	变更前内容 Before change coutent	版本 Version	变更后内容 After change content	版本 Version	备注 Remark

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1. 标准使用条件 STANDARD OPERATING CONDITIONS

NO:	项目：ITEMS	规格：SPECIFICATIONS
1-1	额定电压 Rated Voltage	3.0 VDC.
1-2	额定负载 Rated Load	R2.7X5.0振子（见外形图）
1-3	负载转速 On-load speed	12500±2500r.p.m.
1-4	旋转方向 Rotation Direction	CW/CCW (clockwise or counter clockwise)
1-5	马达姿势 Operation Position	全方向 Any direction
1-6	使用电压范围 Operation Voltage	2.0 to 3.6 V DC.
1-7	使用环境 Operation Conditions	-10 to +60℃ 常温. -10 to +60℃.Normal humidity.
1-8	保存环境 Storage Conditions	-0 to+80℃ 常温. -0 to+80℃ Normal humidity.

2. 构造 CONSTRUCTION

NO:	项目：Items	测试条件: Test Conditions	规格: Specification
2-1	外观 Appearance	目视 Visual	无明显刮伤，凹陷或变形 No excessive scratches,dents or Deformation.
2-2	外形尺寸 Dimension	卡尺或千分尺 Caliper or micrometer	参见附图 Conform to drawing.
2-3	重量 Weight	秤 Scale	约2.15g Approx.2.15g.
2-5	轴向间隙 Shaft End-Play	度盘式指示器 With dial gauge.	0.1-0.3mm

3. 适用范围（Scope):

本文规定SXD0716BY-F7603-2750-70-3.0 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 SXD0716BY-F7603-2750-70-3.0 DC motor.)

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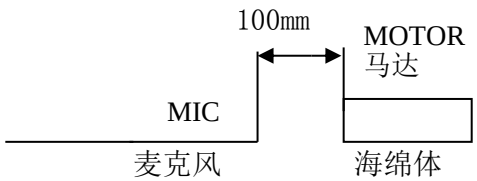
4.电气特性（Electrical Characteristics)

标准测试状态温度为20±2℃，湿度60%至70%

Standard test condition for 20±2℃ temperature,humidity 60% to 70%

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.	/ 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.	12500±2500r.p.m.
4-3	空载电流 No Load Current	额定电压,空载 At rated voltage no load.	/ mA MAX / 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.	280mA MAX 280mA or less
4-5	起动力矩 Starting Torque	额定电压,0g.cm 2点法. At rated voltage ,2 point Method i.e.0	≥1.2g.cm
4-6	起动电压 No Load Staring V	额定负载 Rated load.	1.0V MAX 1.0V or less
4-7	堵转电流 Stop Current	无负载 NO load.	0.55 A MAX 0.55 A or less
4-8	端子间电阻 Terminal Resistance	20℃，2R/3端子间 20℃,rotor at 2R/3 Position	6.8Ω±20%
4-9	绝缘电阻 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10cm处测试 (无环境噪音) At rated voltage,no load,The  	50db MAX 背景噪音28db 50db or less. Background Ndise:28db
4-11	电流波形 Current Waveform	额定电压,空载 At rated voltage,no load	无异常 No off-point

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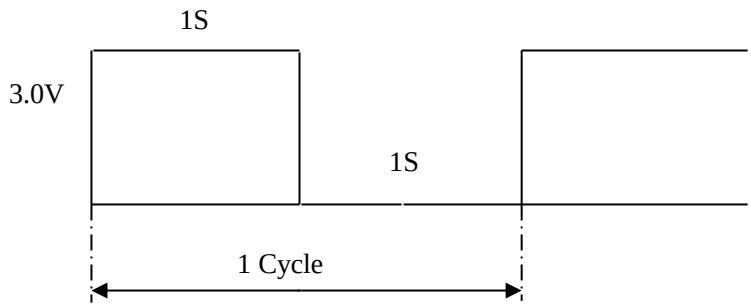
5.信赖性、特殊试验 RELIABILITY & SPECIAL TEST

<table>
<tr><th>NO:</th><th>项目
Item</th><th>试验条件
Test conditions</th><th>规格
Specifications</th></tr>
<tr><td>5-1</td><td>寿命试验
Life Test</td><td>
马达试验条件如下,并按以下的判断标准判断其寿命.
Motor test conditions are listed as below.A motor is considered as meeting lifeexpectation when either of the criteria described met.
<table>
<tr><th>姿势
Position</th><th>试验方式
Test model</th><th>负载
Load</th><th>环境条件
Environment</th><th>目标规格
Target Lift Cycle</th></tr>
<tr><td>轴水平
Shaft level</td><td>如下
As below</td><td>振子</td><td>20℃±2℃
60%~65%</td><td>5000Cycles</td></tr>
</table>


寿命判断标准 Acceptance
① 额定转速与初始值相比变化率在±60%以内.
Rated load speed varies within ±60% from the initial.
② 额定电流与初始值相比变化率在±50%以内.
Rated load current varies within ±50% from the initial.
</td><td></td></tr>
<tr><td>5-2</td><td>振动试验
Withstand Vibration Test</td><td>最小包装状态,振幅1.5mm,振频10~55HZ,上下、左右、前后三个方向各振动2小时。
Smallest packaging subjected to 1.5mm amplitude &(10/55)Hz vibration for 2h each Up-Down,Left-Right & Back-Front.</td><td rowspan="2">额定转速与初始始值相比变化率在±60%以内
Rated load speed varies within ±60% from the initial
额定电流与初始值相比变化率在+50%以内
Rated load current Varies within ±50% from the initial</td></tr>
<tr><td>5-3</td><td>跌落试验
Shock Test</td><td>最小包装状态,从100cm高处自由跌落到10mm厚的木板上,6个面各一次.
Smallest packaging dropped on wooden block of 10mm thickness from100cm height ,once for each 6 faces of the packaging</td></tr>
</table>

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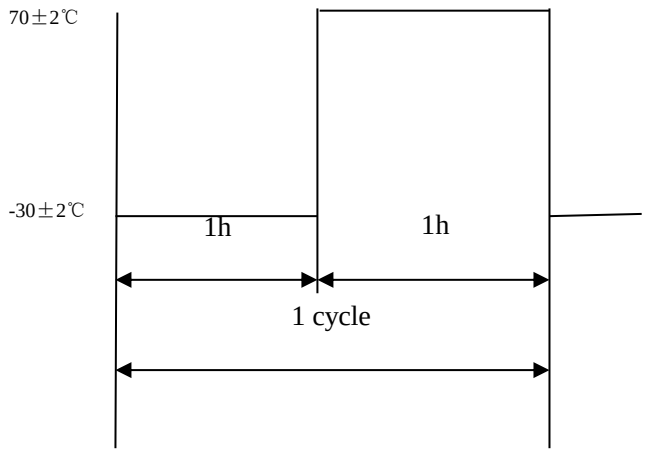
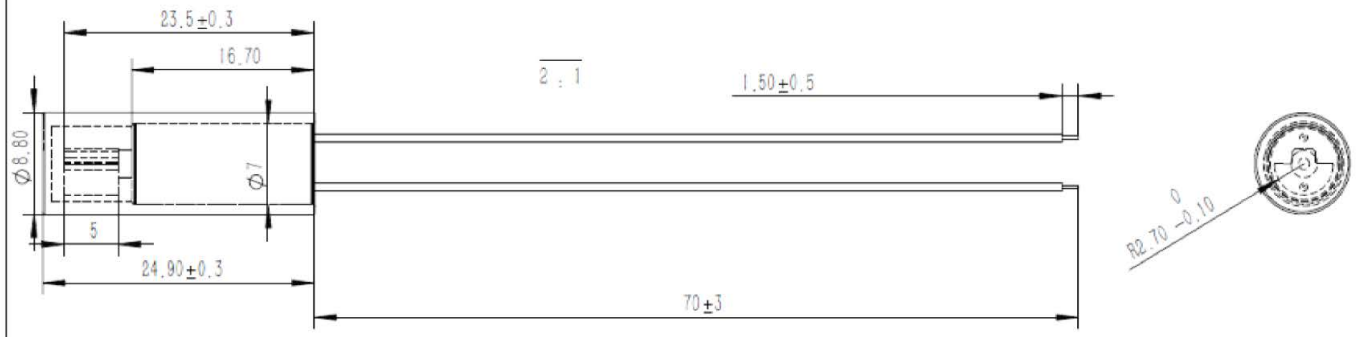
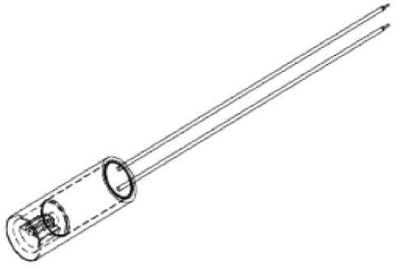
<table>
<tr><th>NO:</th><th>项目
Item</th><th>试验条件
Test conditions</th><th>规格
Specifications</th></tr>
<tr><td>5-4</td><td>环境贮存试验Environment Storage Test</td><td>马达在下列各环境条件下贮存后在常湿下放置2小时，然后进行测试
With below each temperature Measuration are taken after 2h at room temperature and normal humidity.
<table>
<tr><th>项目
Item</th><th>温度
Temp</th><th>湿度
Humidity</th><th>时间
Time</th></tr>
<tr><td>Test-1</td><td>60±2℃</td><td>90~95%</td><td>96h</td></tr>
<tr><td>Test-2</td><td>40±2℃</td><td>60~70%</td><td>96h</td></tr>
<tr><td>Test-3</td><td>-30±2℃</td><td>30±2%</td><td>96h</td></tr>
</table></td><td rowspan="2">①额定转速与初始值相比变化率在±60%以内
Rated load speed varies within ±60% from the initial
②额定电流与初始值相比变化率在±50%以内
Rated load current varies within ±50% from the initial</td></tr>
<tr><td>5-5</td><td>热冲击试验
Heat Shock</td><td>以下列模式进行热冲击试验10个循环后在常温常湿下放置2小时，然后进行测试
With below heat shock test mode Heat Shock test is conducted for 10 cycles.
Measuration are taken afrer 2h at room temperature and normal humidity.
 
</td></tr>
</table>





标记	处数	分区	更改文件号	签名	年 月 日	阶段标记	质量	比例	
设计			标准化					1:1	
校核			工艺						
主管设计			审核						
			批准			共 张 第 张	版本	替代	

零件代号
借(通)用件登记
旧底图总号
底 图 总 号
签 字
日 期

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马达使用时注意事项
Motor General Instructions & Notes

1.对马达具有腐蚀性有害气体（例如：硫磺、瞬干胶、矽胶等），产生场所、环境应避免，以防止马达外壳、端子及其它金属零件被氧化腐蚀，特别是机构、工作环境使用了矽胶，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，接触开路不良。

To motor have corrosively harmful gas(for example:sulfur yellow,do glue,silica gel,etc.wink), produce place,environment should avoid,in order to prevent motor outer cover,end son and other metal part from is it corrode to oxidize, Especially organization,working environment use silica gel,to volatilize apt to form SiO2 lead to the fact the reversing device contact obstacle of the motor silica gel,connect place impedance to increase sharply,keep in touch and open a way badly.

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350℃内，时间2S内，防止端盖受热变形。

Avoid bending or wiggling motor terminal while soldering leads to hem.also,soldering time should be short(350℃, 2s max)as possible since prolonged soldering may damage the surrounding area, especially the plastic material.

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。

Motor mounting and in cause of using adhesives,please pay attention not to flow them into bearing. Avoid dead point.

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，与其他零件与轴心时，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。

Press-fitting a gear,pully or adhesive agent etc,onto the motor output shaft,please support the shaft at the other end or its metal plate in a proper JIG, avoid influence rotor rotation.

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。

The warm humidity of environment when the motor is used should be paid attention to,especially the high temperature is high and wet,should avoid,if go beyond the specification condition,to the characteristic,life-span of the motor,there is influence.

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。

25℃ of±10% of environment,under 70% of humidity that the motors are kept,the motor is in have not opened the packing box cases,storage date is 180 days,and motor quality accords with the demands for specification book of the products.

8.使用适当之螺丝（例如：长度、螺纹等），锁附马达时，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。

Use suitable screw(for example,length,pitch etc)for motor mounting,screw and hole should straight if mounting screw length is too long,this will have a bad influence on the magnetic and rotor.

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。

If any trouble question occurs,both parties shall discuss base on this specification to the solve matters.

10.为改善马达性能，在整体特性符合规格书内，弊司可对使用之部品、材料、治具、作业方法等作变更，但对重大变更时须知会贵司。

In order to improve the performance within the scope of the specification,parts or materials, tools and factures etc.notice can the your department at but to the great change.

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。

Any questions regarding the present specifications or related matters,should be decide by consultation between the user and supplier.

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。

Input voltage into motor,do not over the voltage which is exceeding than this standard specification. Otherwise,this will cause the motor to be overheated.

13.马达螺丝锁附若使用电动起子，必须要有扭力调整器，其扭力控制在1.2kgf-cm（max）内，同时在锁附时，螺丝与孔必须在垂直方向受力。

If the screw has been fixed by auto-driver,it must has its torque-adjusted equipment and set the torque atl.2kgf-cm(max).

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 lock the screw,the equipment of production line should be kept clean and has no other magnetic or plastic powder so that it can prevent those things falling into the position 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。

For any further question or information,please don't hesitate to contact with us,We will be pleased to assist you.