

# Product Specification

Number: L-KLS23-DBM14-RF-370CA-12560

Name: DC brush motors

Customer: D02

Date: 2022-06-01

Customer Signature:



**NINGBO KLS ELECTRONIC CO; LTD**

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Compi	Check	Review	Approva
Jenny	Jack.C		

此产品规格书适用于宁波开乐亿启电子有限公司生产的小型马达

The document defines the standard specifications for the DC micro motor model which is to be delivered by NINGBO KLS ELECTRONIC CO.LTD

1) 规格书的使用 Specifications Service

领受后，被确认的规格书请于发行日起一个月内退返，若是超过一个月未退返的话，将视为已领受并已确认。

After received ,specifications which was affirmed should be untread since it was issued one mouth,or else,it will be affirmed and checked.

2) 规格书的修改 Specitications Mended

关于此规格书的修改，须经双方共同协商，若须修改，自修改过的规格书领受之日起，此规格书无效。

About specitications mended, it should be arranged. If it must edited, which was of no effect since it was mended.

3) 电机的特性或寿命存在疑问时的判定方法

Method of determining the characteristics of the motor in doubt or when the life of

若對此馬達的特性或壽命有任何疑問，其測試與判定皆以樣品為依據。

In case the motor performance and/or life questionable,tests and judgment are to be made baded on this specification.

## 规格书变更记录

Modification of Specification

产品型号 MODEL: L-KLS23-DBM14-RF-370CA-12560

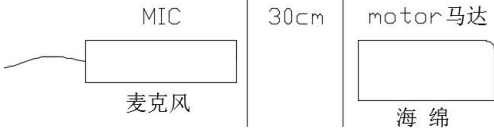

规格书编号 SPEC No:KLS20220601D02

变更记号 Modification sign	发行日期 Date	变更内容 Description
/		

# NINGBO KLS ELECTRONIC CO; LTD

产品型号 MODEL: L-KLS23-DBM14-RF-370CA-12560		产品规格书/SPECIFICATIONS	规格书编号 SPEC No : KLS20220601D02
			日 期 DATE: 2022. 06. 01
1. 标准使用状态 Standard Operating Conditions:			
1-1	额定电压 Rated voltage	12.0 V DC CONSTANT	
1-2	工作电压范围 Operating Voltage Range	10.0 V ~ 13.0 V DC CONSTANT	
1-3	旋转方向 Direction of Rotation	CCW	
1-4	定格负荷 Rated Load		
1-5	侧压 Side Perssure	马达端面算起4mm高的表面侧压50g 50g at 4mm from motor mounting surface	
1-6	使用温度,湿度范围 Temperature and humidity	-10℃～+65℃,30%～90%	
1-7	保存温度,湿度范围 Storage temperature and humidity range	-20℃～+70℃,10%～60%	
1-8	使用姿势 Operating Position	出力轴全方向 Output shaft (any direction)	
2. 测定条件 Measuring Condition			
2-1	马达姿势 Motor position	出力轴水平 Motor to be held with shaft horizontally	
2-2	电源 Power supply	可调节直流稳压电源，保证测量时无疑问 Regulated power supply which assures unquestionable measurement	
2-3	温度和湿度 Environmental Temperature and Humidity	原则上常温常湿下进行测试，如有疑问，采用JIS标准测试（20℃±2℃，65%±5%） Normal temperature and normal humidity If judgments questionable,measurement is to be made based on JIS Standard Testing Condition (20℃±2℃,65%±5%RH)	
3. 电气特性 Electrical characteristics			
3-1	无负荷电流 No load current	额定电压、无负荷状态 At rated voltage and no-load	25mA MAX
3-2	无负荷回转数 No load speed	额定电压、无负荷状态 At rated voltage and no-load	3700±10% r/min
3-3	定格负荷电流 Rated load current	额定电压、定格负荷状态 At rated voltage and load	mA MAX
3-4	定格负荷回转速 Rated load speed	额定电压、定格负荷状态 At rated voltage and load	±10% r/min
3-5	起动电压 Starting Voltage	无负荷状态 Apply voltage instantly in existing rotor position	1.5 V MAX
3-6	起动力矩 Starting Torque	两点法(0gf.cm 及3gf.cm) At rated voltage and two different load :0gf.cm and 3gf.cm	≥90g. cm
3-7	堵转电流 Stall Current	两点法(0gf.cm 及3gf.cm) At rated voltage and two different load :0gf.cm and 3gf.cm	≤0. 6A
3-8	绝缘抵抗 Insulation Resistance	接线端子与机壳间加DC 100 V Measured with Insulation resistance toster(100V )between terminals and output shaft	1.0MΩ MIN

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			日 期 DATE: 2022. 06. 01	
4. 构造及机械特性				
Mechanical characteristics				
4-1	外观 External appearance	外观尺寸应在公差范围内，外观无明显的变形或损伤，紧固件应安装牢固 As per the dimensional .No remarkable deformation or superficial defects to be observed by visual check .Fastened parts to be fixed firmly		
4-2	轴向间隙 Shaft end play		0.05~0.40mm	
4-3	轴曲 Neuraxon	距机壳端面4mm处 At 4mm from case	/	
4-4	噪音 Noise	额定电压, 空载状态, 电机可靠固定状态下, 在离马达30cm处测试 (环境噪音≦26dB) Rated voltage, no-load status, the motor reliable fixed state, 30 cm away from the motor at the test (ambient noise ≦ 26dB) <div><div>MIC  麦克风</div><div>30cm</div><div>motor马达  海 绵</div></div>		≦55dB (A)

**5, 注意事项****Precautions**

(1) 为了马达适合使用储存, 其环境不应有腐蚀性所体 (H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, CL<sub>2</sub>等), 及会发生有害气体之物质 (特别是:silicic, cyanic, formalin, phenol) 存在之场所. 另外安装的地方是否有上述事件存在, 也必须事先确认.

For proper operation, storage and operating environment should not contain corrosive gases for example, H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, CL<sub>2</sub> and etc. In addition storage environment should not have materials that emit corrosive especially from silicic cyanic, formalin or phenol group. In the mechanism or the set, existence of corrosive gases may cause the failure of the motor.

(2) 请避免存放在高、低温、高湿度及有害气体之场所, 特别是长期在库时, 更须注意。且在常温常湿中, 请勿超过六个月以上。

Do not store in the place of high temperature, low temperature high humidity and erosive gases. Especially in case of long preservation, please pay much more attention to this matter. Make arrangement to limit the storage period to 6 month or less, in normal temperature and humidity.

(3) 皮带及轮轴间之摩擦会使马达带电, 此静电放电时会产生杂讯, 须尽量避免马达本体受到带电影响。

Static electricity might be generated by friction between the pulley and the belt. When the belt discharges electrostatic accumulated. Electrical noise is generated in the motor. This might cause the motor. Semiconductor or circuit failure in the set.

(4) 马达在通电情况下, 主轴卡死或过载, 容易造成不良, 请避免使用。持续卡死或过载状态下, 马达发热而造成烧毁, 必须使用保险丝等安全装置。

In case the motor output shaft is locked or the motor is continuously overloaded while the motor is electrically conducted excessive heat might be generated and burn the motor parts. So, to add protection devices such as fuse or other protection circuit is needed.

(5) 轮轴若用螺丝固定时, 请勿使用太大的螺丝, 会造成回转不平衡。按着固定时, 接着剂不可流入轴受。压入时, 避免施以异常之压力。

If pulley is mounted by screw, do not use the screw which is too big to cause rotation unbalance. During pulley mounting, do not let adhesive glue flow into pulley and metal and abnormal stress should not give to motor.

(6) 马达及主轴间加侧压太小时, 轴受与主轴间若有间隙音, 须重新安装后确认。

When the side pressure to the motor shaft is low, clearance noise between the motor shaft and bearing will occur. So in case of these, please confirm the characteristics on actual set or unit applications.

(7) 马达安装时, 螺丝太长可能会影响马达特性, 请依外观图之记载选定安全长度。当安装面不平衡时, 也会发生旋转不良现象。

In case the mounting screw length is longer than our recommendation. Motor might be failure. Please use suitable screws to mount motor, judging dimension in the construction. Good flatness matching between the chassis and the motor should be used. In case the screw tightening surface is not flat. The motor might be jammed.

(8) 马达焊锡, 必须在短时间作业 (约3秒钟)

Solder process between motor and printed circuit board must be completed Within 3 seconds.

(9) 焊接的烙铁及皮带或输送带, 请接地。

In soldering process, soldering iron and belt conveyor must be grounded.

(10) 调整时, 请务必使用绝缘棒之起子, 注意不可加太大力量, 调整后, 不可注入固定胶。

When adjusting, we should use insulating stick clip, and avoid throwing big power. After adjusted, we should avoid injecting root glue.

(11) 马达主轴若使用负载过大时，会使得信赖性及特性降低。实装状态之有关确认项目：寿命、电气杂音、振动、回转安定性、回转数降下降、回路和马达之电气共振现象及机械共振。

In case the high inertia fan pulley or etc is attached to the motor shaft directly. These high inertia items might effect to the motor reliability or the characteristics. These should be included the comfirmation of following items. Set or unit life. Electrical noise. Vibration. Static electricity. Wow & Flutter. Drift Electric resonance between the motor and the control cicuit, mecanical resonance between the motor and the chassis.

(12) 本规格书内容之变更，须经双方协议。

Any revisions on this specification shall based on mutual discussion and greement.

(13) 满足本规格书范围内，为求性能向上，零件有时会部分变更。

In oder to continuous improve the performance within the scope of this specification. Modification of parts is needed, if necessary.

(14) 本规格书记载之项目有必要检讨时，请事前联络，未接到联络时，表示实装使用上并无不合乎要求之事，即以本公司标准为根据出货。

Any items needed to te added into this specification will be betermined based on the customer prior written request. If no information is given, the motor will be delivered based on our standard specification.

(15) 使用条件超过本规格书记载之范围时，不能加以保证。

Please take note we do not gurantee the motor operations or conditions not discribed in this specification.

(16) 问题发生时，请依本规格书记载之事项，双方协议后之解决方法实施，此时品质保证只限于马达。

When any trouble occur. Both parties shall discuss based on this specification to solve the matters. In case our gurantee is only for the motor.

