



香港天宝实业有限公司  
KINGMAX HOBBY Co., Limited

## 产品规格书

|                         |                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------|
| 产品编号:<br>ITEM NO.       | CLS0505ML                                                                           |
| 产品名称:<br>ITEM NAME:     | Digital mini servo                                                                  |
| 产品图片:<br>PRODUCT IMAGE: |  |

|                     |               |                  |              |
|---------------------|---------------|------------------|--------------|
| 制订<br>(IMPLEMENTER) | 审核<br>(CHECK) | 批准<br>(APPROVAL) | 日期<br>(DATE) |
|                     |               |                  |              |

### PROFESSIONAL SERVOS MANUFACTURER

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### 1. 使用環境條件

Apply Environmental Condition :

| No. | 項目                                  | 規格        |
|-----|-------------------------------------|-----------|
| 1-1 | 保存溫度<br>Storage Temperature Range   | -20℃~60℃  |
| 1-2 | 操作溫度<br>Operating Temperature Range | -10℃~50℃  |
| 1-3 | 操作電壓<br>Operating Voltage Range     | 5.0V~8.4V |

### 2. 測試環境

Standard Test Environment :

|     |                                   |                                                                                             |
|-----|-----------------------------------|---------------------------------------------------------------------------------------------|
| 2-1 | 測試環境<br>Standard Test Environment | 每一个检查必须是正常的温度和湿度进行测量，温度 $25 \pm 5^{\circ}\text{C}$ ，相对湿度 $65 \pm 10\%$ ，在按照本规范的标准测试条件下判断特征。 |
|-----|-----------------------------------|---------------------------------------------------------------------------------------------|

### 3. 外觀檢查

Appearance Inspection :

| No. | 項目                      | 規格                    |
|-----|-------------------------|-----------------------|
| 3-1 | 外觀尺寸<br>Outline Drawing | 35.5*15*23.6          |
| 3-2 | 外觀<br>Appearance        | 无损坏，不允许影响功能           |
| 3-3 | 壽命<br>Life Time         | >500000次/负载(sub/load) |

### 4. 電氣特性

Electrical Specification (Function of the Performance) :

| No. | Item                                   | 5.0V      | 6.0V      | 7.4V      | 8.4V      |
|-----|----------------------------------------|-----------|-----------|-----------|-----------|
| 4-1 | 空載轉速<br>Operating speed (at no load)   | 0.07S/60° | 0.06S/60° | 0.05S/60° | 0.04S/60° |
| 4-2 | 空載最大電流<br>Running current (at no load) | 250mA     | 300mA     | 400mA     | 550mA     |
| 4-3 | 堵轉扭力<br>Stall torque (at locked)       | 3.20kg.cm | 3.80kg.cm | 4.50kg.cm | 5.50kg.cm |
| 4-4 | 堵轉最大電流<br>Stall current (at locked)    | 1.9A      | 2.2A      | 2.6A      | 2.9A      |
| 4-5 | 待機電流<br>Idle current (at stopped)      | 10mA      | 10mA      | 10mA      | 10mA      |

注：項目 4-2 定义平均值时，伺服器无负荷运行

|                     |                        |         |           |
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## 5. 機 械 特 性

Mechanical Specification :

| No.  | 項目                            | 規格                |
|------|-------------------------------|-------------------|
| 5-1  | 外觀尺寸<br>Overall Dimensions    | 35.5*15*23.6mm    |
| 5-2  | 機構極限角度<br>Limit angle         | 360°              |
| 5-3  | 重量<br>Weight                  | 31±1g             |
| 5-4  | 導線規格<br>Connector wire gauge  | #22 AWG           |
| 5-5  | 導線長度<br>Connector wire length | 320 ±5 mm         |
| 5-6  | 花鍵<br>Spline                  | φ 5.90 25T        |
| 5-7  | 舵片種類<br>Horn type             | 十字，米字，圓盤，一字，      |
| 5-8  | 減速比<br>Reduction ratio        | 180:1             |
| 5-9  | 馬達類型<br>Motor                 | 空心杯/Coreless      |
| 5-10 | 角度傳感器<br>Angle sensor         | 電位器/Potentiometer |
| 5-11 | 軸承<br>Bearing                 | 2BB               |
| 5-12 | 齒輪材料<br>Gear                  | 金屬/Metal          |
| 5-13 | 外殼材料<br>Case                  | 全金屬/Full metal    |
| 5-14 | 防水<br>Waterproof              | No                |
| 5-15 | 電源正極<br>Positive pole         | 紅色/Red            |
| 5-16 | 電源負極<br>Negative electrode    | 棕色/Brown          |
| 5-17 | 信號線<br>Signal                 | 黃色/Yellow         |

Product Name

伺服器

Model No

CLS0505ML

Version

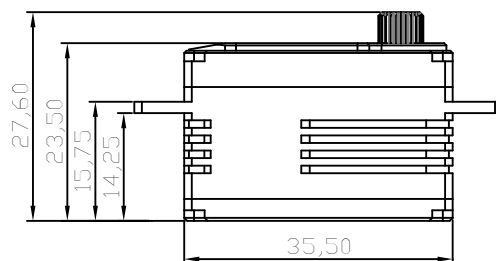
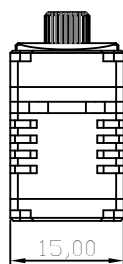
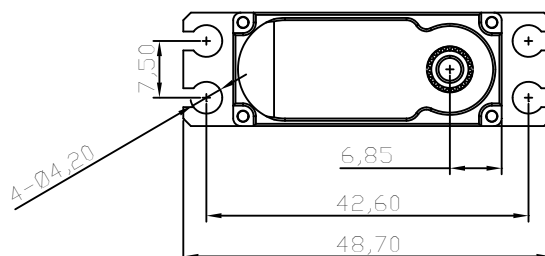
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## 6. 控制特性

Control Specification :

| No. | 项目                          | 规格                             |
|-----|-----------------------------|--------------------------------|
| 6-1 | 控制系统<br>Control system      | 改变脉冲宽度                         |
| 6-2 | 放大器種類<br>Amplifier type     | 数字控制器                          |
| 6-3 | 操作角度<br>Operating travel    | 90° (在1000→2000 $\mu$ sec)     |
| 6-4 | 中立位置<br>Neutral position    | 1500 $\mu$ sec                 |
| 6-5 | 脈波訊號虛位<br>Dead band width   | 2 $\mu$ sec                    |
| 6-6 | 旋轉方向<br>Rotating direction  | 逆时针 (在1500→2000 $\mu$ sec)     |
| 6-7 | 脈波寬度範圍<br>Pulse width range | 800→2200 $\mu$ sec             |
| 6-8 | 可作動角度範圍<br>Maximum travel   | 大约 126° (在 800→2200 $\mu$ sec) |



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