



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.       | B70S12                                                                              |
| 产品名称:<br>ITEM NAME:     | Digital standard 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

ADD: Area 39, Wei Jian 2nd Road, Chashan Industrial, Chashan Town, Dong Guan City, Guang Dong Province, China. (zip code:523382)

TEL: 0769-86866722

FAX:0769-81192252

[Http://www.kingmaxhobby.com](http://www.kingmaxhobby.com)

Email : sales@kingmaxhobby.com

### 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     | 7.4V~12V   |

### 2. 測試環境

Standard Test Environment :

|     |                                   |                                                                                             |
|-----|-----------------------------------|---------------------------------------------------------------------------------------------|
| 2-1 | 測試環境<br>Standard Test Environment | 每一個檢查必須是正常的溫度和濕度進行測量，溫度 $25 \pm 5^{\circ}\text{C}$ ，相對濕度 $65 \pm 10\%$ ，在按照本規範的標準測試條件下判斷特徵。 |
|-----|-----------------------------------|---------------------------------------------------------------------------------------------|

### 3. 外觀檢查

Appearance Inspection :

| No. | 項目                      | 規格                    |
|-----|-------------------------|-----------------------|
| 3-1 | 外觀尺寸<br>Outline Drawing | 40*20*39.6            |
| 3-2 | 外觀<br>Appearance        | 無損壞，不允許影響功能           |
| 3-3 | 壽命<br>Life Time         | >100000次/負載(sub/load) |

### 4. 電氣特性

Electrical Specification (Function of the Performance) :

| No. | Item                                  | 7.4V      | 8.4V      | 12V       |
|-----|---------------------------------------|-----------|-----------|-----------|
| 4-1 | 空載轉速<br>Operating speed(at no load)   | 0.14S/60° | 0.12S/60° | 0.09S/60° |
| 4-2 | 空載最大電流<br>Running current(at no load) | 500mA     | 600mA     | 1000mA    |
| 4-3 | 堵轉扭力<br>Stall torque(at locked)       | 46.0kg.cm | 53.0kg.cm | 70.0kg.cm |
| 4-4 | 最大工作扭矩<br>Maximum working torque      | 25.0kg.cm | 30.0kg.cm | 45.0kg.cm |
| 4-5 | 額定工作扭力<br>Rated working torque        | 14.0kg.cm | 17.0kg.cm | 30.0kg.cm |
| 4-6 | 待機電流<br>Idle current (at stopped)     | 10mA      | 10mA      | 10mA      |

|                     |                     |         |           |
|---------------------|---------------------|---------|-----------|
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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    | 40*20*39.6mm      |
| 5-2  | 機構極限角度<br>Limit angle         | 180°              |
| 5-3  | 重量<br>Weight                  | 86±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             | 一字，半一字，米字，十字，圓形   |
| 5-8  | 減速比<br>Reduction ratio        | 321:1             |
| 5-9  | 馬達類型<br>Motor                 | 无刷/Brushless      |
| 5-10 | 角度傳感器<br>Angle sensor         | 电位器/Potentiometer |
| 5-11 | 軸承<br>Bearing                 | 2BB               |
| 5-12 | 齒輪材料<br>Gear                  | 鋼齒/Steel gear     |
| 5-13 | 外殼材料<br>Case                  | 全金屬/Full metal    |
| 5-14 | 防水<br>Waterproof              | Yes               |
| 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                 | 橙色/Orange         |

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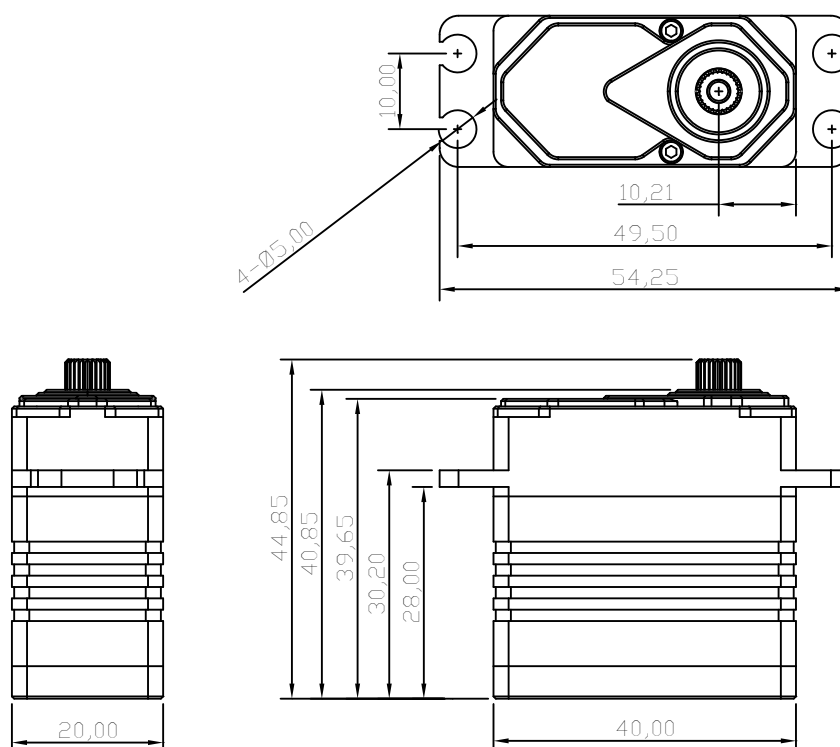
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## 6. 控制特性

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 | 500→2500 $\mu$ sec         |
| 6-8 | 可作動角度範圍<br>Maximum travel   | 大约 180°                    |



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