



HIGH PERFORMANCE DIGITAL SERVOS

**Servo Name/Number:** MG5510DS 9.98Kg.cm/0.12s Standard Size Digital Servo

**Environmental Conditions:**

|                       |              |
|-----------------------|--------------|
| Storage Temperature   | -20°C ~ 60°C |
| Operating Temperature | -10°C ~ 50°C |
| Operating Voltage     | 5.0V ~ 6.0V  |

**Test Environment:**

|                           |   |
|---------------------------|---|
| Standard Test Environment | Each check must be a normal temperature and humidity measurement, temperature degree $25 \pm 5^\circ\text{C}$ , relative humidity $65 \pm 10\%$ , in accordance with this specification judge characteristics under standard test conditions. |
|---------------------------|---|

**Visual Inspection:**

|                     |                                     |
|---------------------|-------------------------------------|
| Physical Dimensions | 40.5 x 20.2 x 40.5mm                |
| Exterior/Appearance | No damage, no influence on function |
| Lifetime            | >300,000 times/load (sub load)      |

**Electrical Specification:**

|                           | <b>5.0V</b> | <b>6.0V</b> |
|---------------------------|-------------|-------------|
| Operating Speed (No load) | 0.15s/60°   | 0.12s / 60° |
| Running Current (No load) | 550mA       | 630mA       |
| Stall Torque              | 8.89kg.cm   | 9.98kg.cm   |
| Stall Current             | 2.1A        | 2.4A        |
| Idle Current              | 10mA        | 10mA        |

**Mechanical Specification:**

|                       |                      |
|-----------------------|----------------------|
| Overall Dimensions    | 40.5 x 20.2 x 40.5mm |
| Limit Angle           | 180°                 |
| Weight                | 55.6 ±1g             |
| Connector Wire Gauge  | #22 AWG              |
| Connector Wire Length | 265 ±5 mm            |
| Spline                | Ø5.90 25T            |
| Reduction Ratio       | 200:1                |
| Motor                 | DC                   |
| Angle Sensor          | Potentiometer        |
| Bearing               | 2BB                  |
| Gear                  | Metal                |
| Case                  | Plastic              |
| Waterproof            | No                   |
| Positive Pole         | Red                  |
| Negative Electrode    | Brown                |
| Signal                | Yellow               |

**Control Specification:**

|                    |                                       |
|--------------------|---------------------------------------|
| Control System     | Change the pulse width                |
| Amplifier Type     | Digital Controller                    |
| Operating Travel   | 90° (at 1000 → 2000μsec)              |
| Neutral Position   | 1500μsec                              |
| Dead Band Width    | 2μsec                                 |
| Rotating Direction | Counterclockwise (at 1500 → 2000μsec) |
| Pulse Width Range  | 800 → 2200μsec                        |
| Maximum Travel     | Approx 150° (at 800 → 2200μsec)       |

