

INTRODUCTION

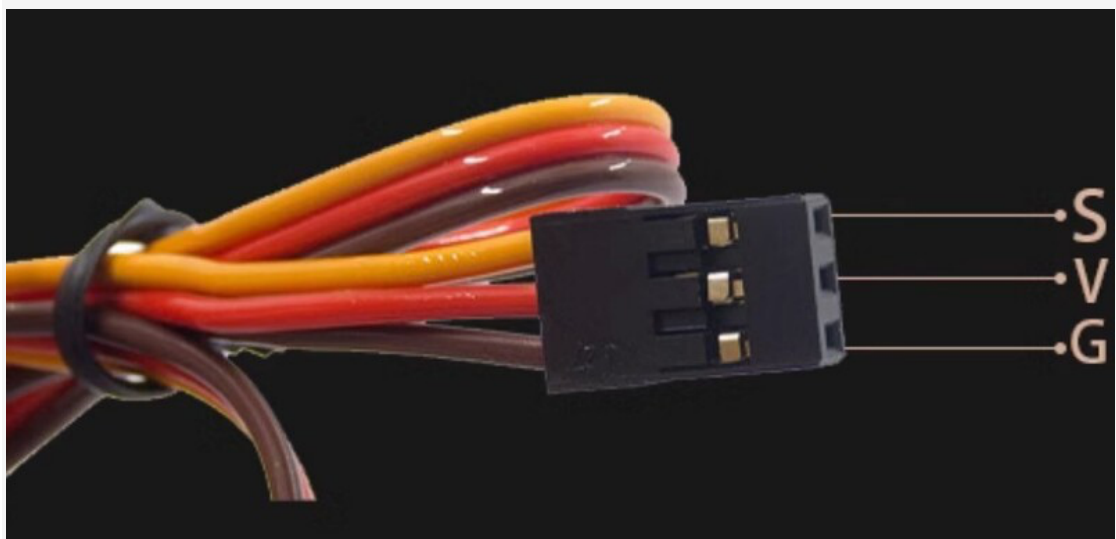
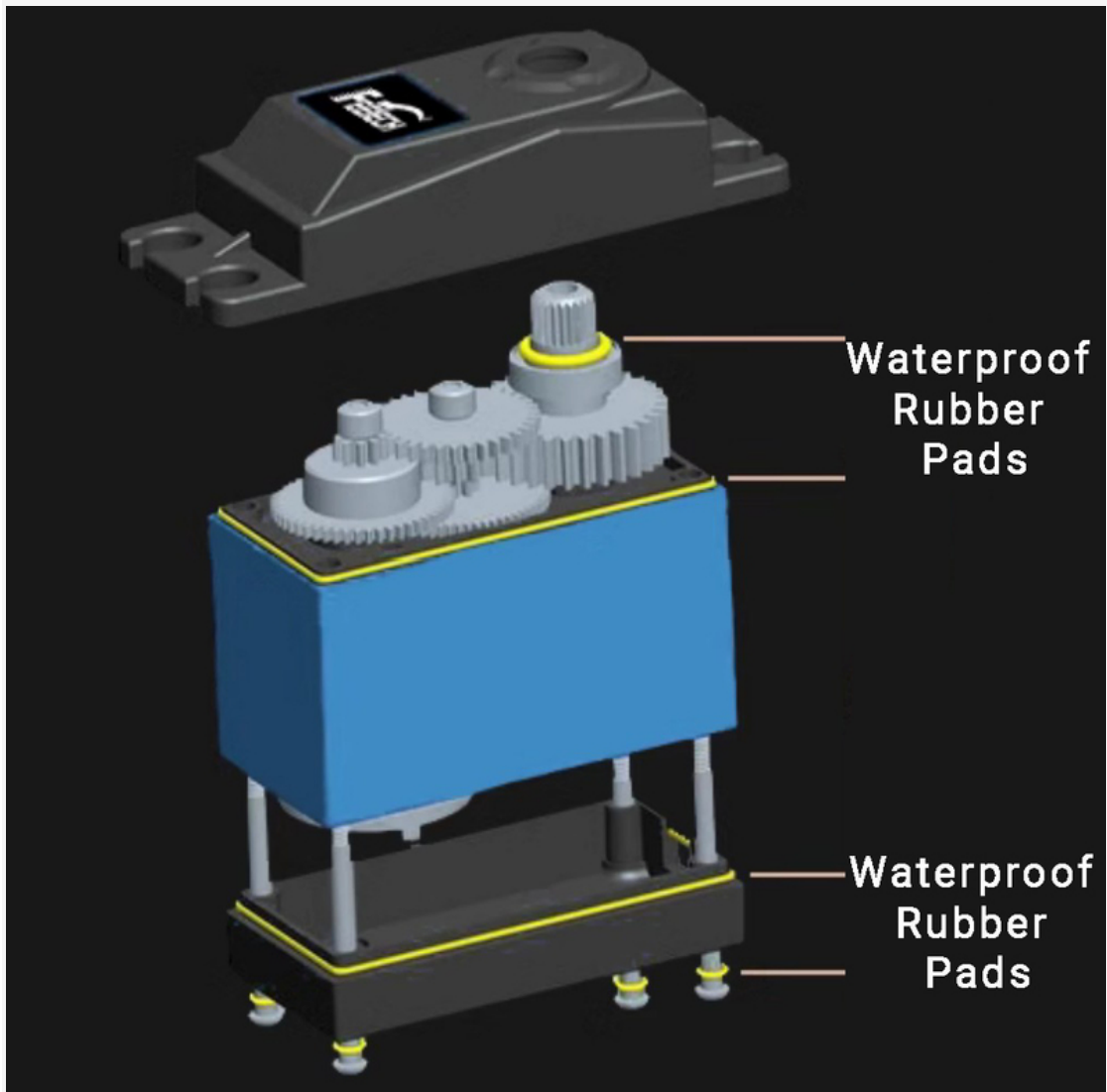
This is an extraordinary water-resistant digital servo with formidable torque, possessing a torque capacity of 20kg and a controllable angle of 180 degrees. It exhibits enhanced linear motion and features an internal configuration of copper gears, with the gear axis thickened to an optimized 2.0 center distance. The dual ball bearing design ensures impeccable performance, while the aluminum casing promotes superior heat dissipation, thereby extending the lifespan.



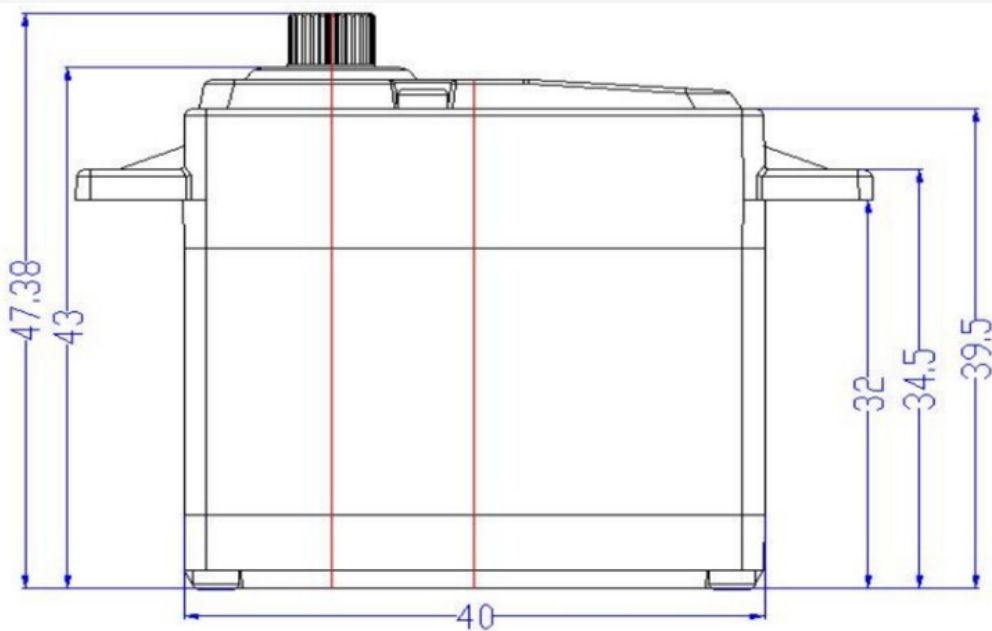
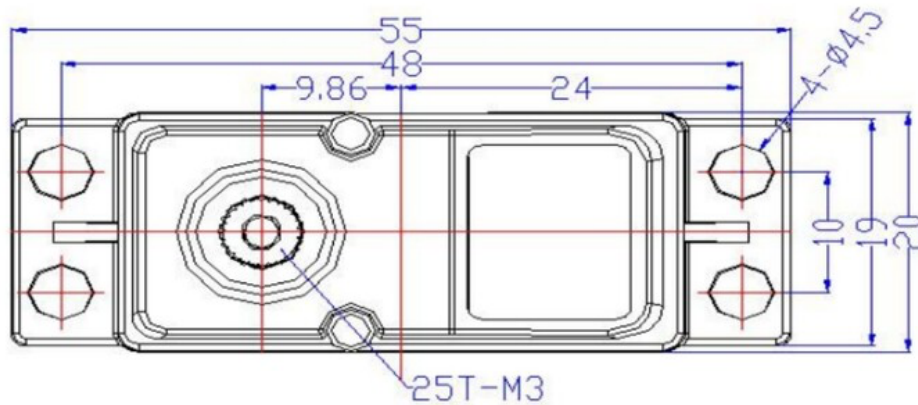
Additionally, this servo is equipped with electronic and temperature protections, ensuring a safer user experience. In the event of a servo lock-up, it automatically triggers a protective torque output when the torque exceeds the overload capacity for a continuous period of 8 seconds. Moreover, should the servo's temperature surpass 70 degrees, it ceases torque output, only to resume once the temperature drops below 70 degrees.



To enhance its water resistance, the servo's joints are fortified with waterproof gaskets, and the circuit board is coated with a waterproof varnish. Both the motor and the potentiometer are sealed with a specialized adhesive. These measures contribute to the servo's exceptional waterproof capabilities. Moreover, this servo is accompanied by a selection of different-shaped servo horns, enabling its application in a wider range of environments.



Interface Definition Diagram



Dimensional Diagram

APPLICATIONS

- Build robots
- Driving part of various automated equipment

SPECIFICATION

Electrical characteristics

- Operating Voltage: 5-8.4V
- No-Load Speed: 0.185sec/60° (54RPM) @6V, 0.151sec/60° (66RPM) @7.4V
- Operating Current: 100mA @6V, 120mA @7.4V
- Stall Torque: 16.5kg.cm/229.54oz.in @ 6V, 20kg.cm/278.23oz.in @7.4V

- Stall Current: 2.3A @6V, 3A @7.4V
- Static Current: 6mA
- Rated Load: 5.5kg.cm @6V, 6.5kg.cm @7.4V
- Rated Current: 800mA @6V, 1000mA @7.4V
- Kt Constant: 6.5kg.cm/A

Control characteristics

- Control Signal: PWM
- Angle: 180° (at 500→2500μsec)
- Angle Difference: ≤5°
- Return Difference: ≤1°
- Neutral Position: 1500μsec
- Dead Band Width: ≤4μsec
- Rotation Direction: Counterclockwise (from 1500 → 2000μsec)
- Pulse Width Range: 500→2500μsec
- Signal High Voltage: 2-5V
- Signal Low Voltage: 0-0.45V
- Signal Period: 20ms

Mechanical specifications

- Casing Material: PA+Aluminum
- Gear Material: Copper
- Bearing Type: Ball Bearing
- Output Shaft: 25T/5.9mm
- Reduction Ratio: 1/275
- Gear Backlash: ≤0.5°
- Arm Backlash: 0°
- Output Shaft Screw: M3X6

Other parameters

- Motor Noise: 45±5dB
- Servo No-Load Noise: 60±5dB
- Waterproof Rating: IP54 (splash-proof)
- Electronic Protection: 8 seconds lock-up
- Temperature Protection: >70°C
- Storage Temperature: -30°C~80°C
- Operating Temperature: -20°C~60°C

SHIPPING LIST

- Metal Waterproof Servo - 20KG 180° x1
- Metal Servo Arm x1
- Servo Horn Accessories Pack x1

