User guide for Digital Servo

All the Servos we manufactured are Digital!

Why Digital Servo:

Electronic helicopters are widespread in this era and more accurate control is needed. Therefore, standard servos with logical chip are no longer suitable. A lot of servos of different volume and weight come out in today's model market. Though they have higher rotational speeds and torque, they don't have those characteristics of digital servos':

- Higher resolution
- The tightest dead band
- Accurate positioning
- Faster control response
- Quicker acceleration
- Constant torque throughout the servos travel
- Increased holding power when stationary

High resolution—usually, we use PCM1024 receiver in helicopter to reach the higher control precision. However, most 9g-10g servo uses traditional logical chip and they can't have the resolution of 1024. The dead band of ordinary servo with logical chip is 8μs, and it is only 125 if converted into resolution. This is a great waste when investing on high quality servo. The resolution of digital servo of CORONA reaches 2μs, and if used with CORONA'S high precision dual conversion receiver together, the resolution of output signals reaches 1024, which becomes a real high resolution system.

Increased holding power when stationary—- Though traditional servo with logical chip has higher rotational speed and torque, they all have a common weakness. That is they don't have high holding power when stationary. The flight state of the helicopter is guaranteed by the accurate positioning of the servo. If the servo doesn't have a high holding power, the flight state of the helicopter will change easily. This is bad for 3D aerobatic flight.

The holding power of the digital servo stems from its high-accuracy MCU, and it has higher PWM frequency compared with the logic chip servo. The digital servo inputs more power to the electromotor to ensure the servo to keep positioning. Then, the change of the flight posture caused by environment factors will reduce.

The digital servo of CORONA also possesses higher speed of 0.09s/60° and higher torque of 2kg.cm. It is suitable for GY401 which cooperates with FUTABA. Even if the sensing of gyroscope is up to 100%, the helicopter will not tail vibration. On the micro helicopter, such as Trex 450 of align, the servo matching with GY401 seems to be too heavy. CORONA'S 9g grade servo is the most suitable.

In order to suit for the micro electronic helicopter, the digital servo of 9g grade of CORONA offers Φ1.5mm rocker specially. It can install the related screw of helicopter directly, and you needn't expand space strenuously. Still leaving long enough connection wire, you can install the servo on the helicopter freely.

Specifications of digital servo
DS-928B

1. Technical value

Control system	: +pluse width control 1500uesc neutral
Operating voltage range	: 4.8V~6.0V
Operating temperature range	: -20℃ to +60℃
Test voltage	: 4.8V
Operating speed	: 0.09sec/60°
Stall torque	: 1.9kg.cm
Standing torque	: 1.5kg.cm hold out
Idle current	: 10mA at stopped
Running current	: 200mA/60° no load
Stall current	: 960mA
Dead band width	: ≤1usec
Operating travel	: 40°/one side pulse traveling 400usec
Direction	: clock wise/pulse traveling 1500 to 1900usec
Motor type	: cored metal brush
Potentiometer type	: 2 slider/direct drive
Amplifier type	: high efficiency MCU+MOSFET
Dimensions	: 22.5x11.5x24.6mm(0.89x0.45x0.97)"
Weight	: 9g(.32oz)
Ball bearing	: single/MR85
Gear material	: heavy duty resin
Connector wire length	: 215mm(8.46in)
Connector wire stand counter	: 24
Connector wire gauge	: 28AWG

2 Features

High efficiency MCU+MOSFET
High rotational speeds and torque
3 grade cored metal motor
2 slider/direct drive
tightest dead band and high Standing torque
Φ1.5mm rocker

3 Applications

micro electronic helicopter, gyroscope hold servo, fast park flying plane, electronic micro plane, glider and mav 1/18 scale cars