

LD-1501MG Digital Servo



1. Product Introduction

When use LD-1501MG Digital Servo, signal terminal sends a PWM signal with a period of 20ms. It controls servo angle by adjusting pulse width. The pulse width is available from 500 to 2500 μ s corresponding to angle from 0°to 180°.

This servo featuring high control accuracy, excellent linearity, fast respond and strong torque is usually applicable in joint design of various bionic robots.

2. Specification Instruction

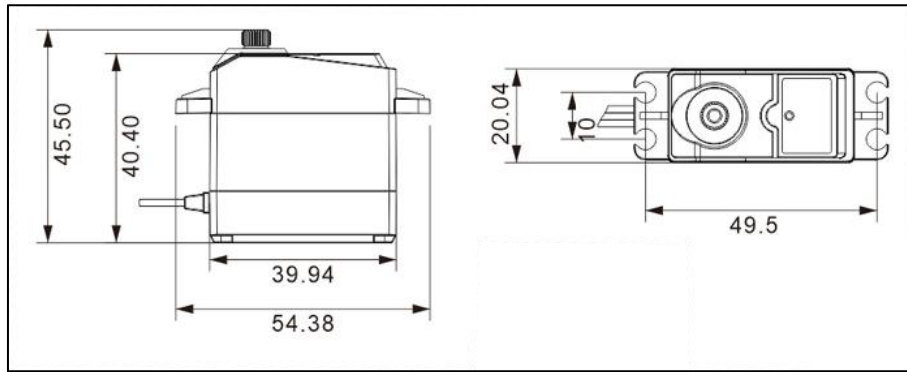
2.1 Specification

Working Voltage	DC 6-8.4V
No-load current	100mA
Stall Current	2.4~3A

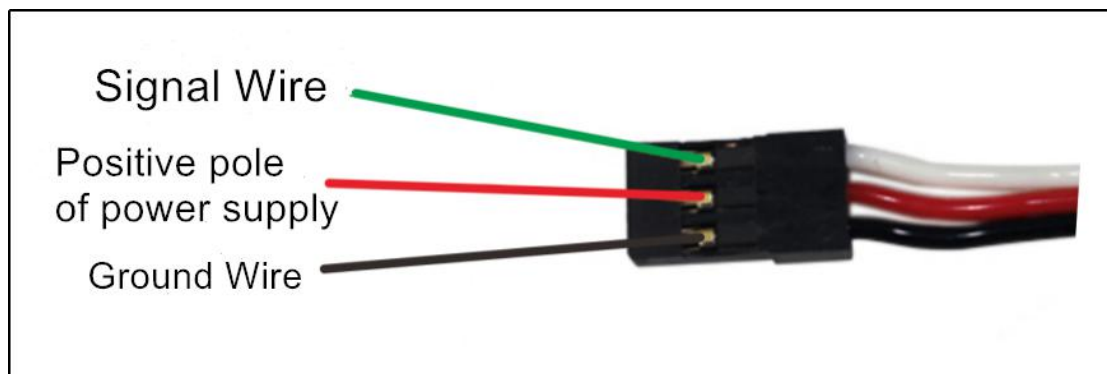
Control Method	PWM
PWM Pulse Width Range	The pulse width from 500 to 2500μs corresponds to angle from 0 to 180°
Pulse Period	20ms
Rotate Speed	0.16sec/60° (DC 7.4V)
Stall Torque	13kg.cm (DC 6V) 15kg.cm (DC 6.5V) 17kg.cm (DC 7.4V)
Rotate Range	0~180°
Servo Accuracy	0.3°
Servo Wire	30cm
Gear Material	Metal Gear
Dimension	54.38mm*20.04mm*45.5mm
Weight	61g
Application	All kinds of bionic robot joints

2.2 Servo Dimension Drawing

Unit: mm



2.3 Port Instruction



PIN	PIN Instruction
White Wire	Signal Wire
Red Wire	Positive pole of power supply
Black Wire	Ground Wire

3. Project

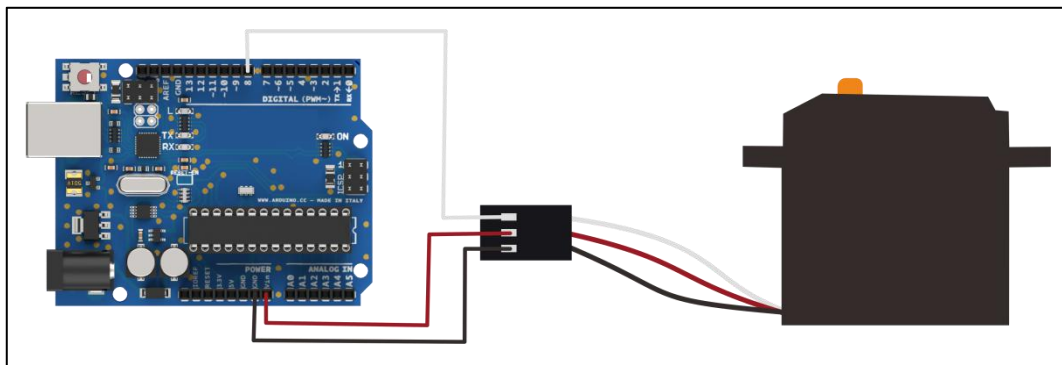
Using the sensor with UNO controller to help you get quick experience.

3.1 Preparation

- ① UNO Controller *1
- ② LD-1501MG Digital Servo *1
- ③ USB Cable *1
- ④ Male to Male Dupont line *3

3.2 Wiring diagram

Take connecting servo to UNO controller with male-to-male Dupont line as example.



3.3 Project Process

Step 1: Download and install Arduino IDE on your computer.

Step 2: Connect LD-1501MG digital servo to UNO board as the picture shown above.

Step 3: Connect UNO board to computer with USB cable. After opening Arduino IDE, please paste "3.5 Sample code" in "File/New".

Step 4: Select suitable demo board and port, then compile and upload the program.

3.4 Project Outcome

After the code is uploaded successfully, servo rotates within range from 0° to 180° .

3.5 Example Code

```
/******LD-1501MG Digital Servo Testing Program*****  
  
* Arduino Type:  Arduino UNO  
  
*****/  
  
int servopin=8;  
  
int pulsewidth;  
  
int val;  
  
void servo(int myangle)  
{  
  
pulsewidth=map(myangle,0,180,500,2500);  
  
digitalWrite(servopin,HIGH);  
  
delayMicroseconds(pulsewidth);  
  
digitalWrite(servopin,LOW);  
  
delay(20-pulsewidth/1000);  
  
}  
  
void setup()  
{  
  
pinMode(servopin,OUTPUT);  
  
}
```

```
void loop()

{

  servo(0);

  delay(1000);

  servo(180);

  delay(1000);

}
```

4. Q&A

Q1: Why servo failed to display after uploading?

A: Please check the wiring. Signal terminal of the servo need to be connected to D8 port of UNO controller.

Q2: How should we supply UNO controller power?

A: We connect black DC plug to a external power as well as supply UNO board and servo power. The power voltage of UNO controller ranges from DC 7 to 12V and the working voltage of UNO board ranges from DC 6 to 8.4V.

Therefore, the provided power voltage is required to meet two demands above so that the voltage should range from DC 7 to 8.4V.