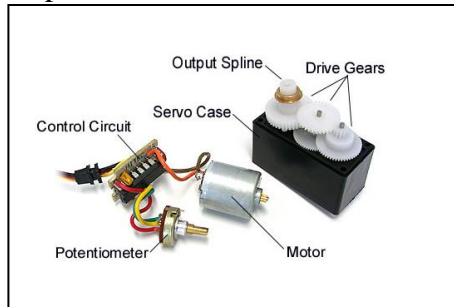


Projeto 15 Servo motores

Servo motors.

They are characterized by their momentum and their velocity.

The component parts of a servo motor are shown in the picture.



Servo motors work by applying control pulses to the control wire. They have three wires with colors red (5V), yellow (pulses), brown or black (Ground). Servos have integrated gears and a shaft that can be precisely

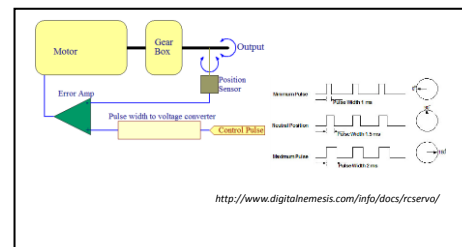
controlled.

Standard servos allow the shaft to be positioned at various angles, usually between 0 and 180 degrees. Continuous rotation servos allow the rotation of the shaft to be set to various speeds.

Servos draw considerable power, so if you need to drive more than one or two, you will need to power them from a separate supply (i.e. not the +5V pin on your Arduino).



Servo-motors.



<http://www.digitalnemesi.com/info/docs/rcservo/>

Project Servo

// Controlling a servo position using a potentiometer

// #include <Servo.h>

Servo myservo; // create servo object to control a

//servo

int potpin = 0; // analog pin used to connect the

//potentiometer

int val; // variable to read the value from the analog

//pin

void setup()

{ myservo.attach(9); // attaches the servo on

//pin 9 to the servo object

}

void loop()

{ val = analogRead(potpin);

// reads the value of the potentiometer (value between 0 and 1023)

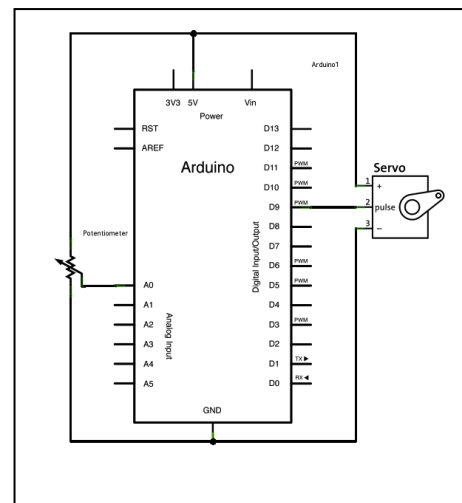
val = map(val, 0, 1023, 0, 179);

// scale it to use it with the servo (value between 0 and 180)

myservo.write(val); // sets the servo position according to the scaled value

delay(15); // waits for the servo to get there

}



Adapt the following sketch to your servo program: Read the value at A0, Print it in the Serial Monitor. Light the LED at pin 8 with light intensity proportional to the A0 value.

```

/* Map an analog value to 8 bits (0 to 255) */
void setup() {
  Serial.begin(9600);
}
void loop()
{
  int val=analogRead(A0);
  val=map(val,0,1023,0,255);
  analogWrite(8,val);
  Serial.println(val);
  delay(100);
}

```

Another program:

----XX----XX

Projeto “varredura”

In this procedure the Arduino sweeps the shaft of a servo motor back and forth across 180 degrees.

```

// Sweep
// by BARRAGAN <http://barraganstudio.com>
// This example code is in the public domain.
#include <Servo.h>
Servo myservo; // create servo object to control a servo
int pos = 0; // variable to store the servo position
void setup()
{
  myservo.attach(9); // attaches the servo on pin 9 to the
}
void loop()
{
  for(pos = 0; pos < 180; pos += 1) // goes from
    { // in steps of 1 degree
      myservo.write(pos); // tell servo to go to
      delay(15); // waits 15ms for the servo to
    }
  for(pos = 180; pos >= 1; pos -= 1) // goes from 180 degrees to 0 degrees
    { myservo.write(pos); // tell servo to go to position in variable 'pos'
      delay(15); // waits 15ms for the servo to reach the position
    }
}

```

