

Potentiometer

Overview

This lesson will show how to use a potentiometer to adjust a LED flashing frequency.

Materials

Arduino Uno x 1
Potentiometer x 1
5mm red LED x 1
220 Ohm resistor x 1
Bread board x 1
Some DuPont wires

Product description



Potentiometers are variable resistors. They are made by putting a moveable metal contact on a resistor. The contact location determines the resistance between one end of the resistor and the contact.

There are various types of potentiometer. Wire wound potentiometers, carbon film potentiometers and solid core potentiometer.

Potentiometers generally vary their resistance linearly with movement or on a log basis.

They are widely used in electronic equipment for volume controls in audio and radios.

Technical Details

Resistance: 10K Ohm;

Adjustment Type: top adjustment

Type: single Linear (Type B);

Features: knurled shaft;

Shaft diameter: 6 mm / 0.2 inch;

Shaft Length: 13 mm / 0.51 inch;

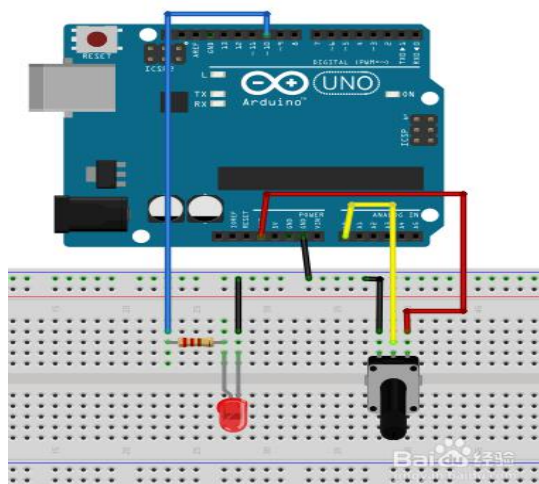
Mounting thread diameter: 7 mm / 0.3 inch;

Base Size: 16 x 7.3mm / 0.63 inch x 0.29 inch(D*h);

Total height: 29 mm / 1.2 inch

Net weight: 32G;

Wiring diagram



Sample code

```
int a=0;
void setup() {
  // put your setup code here, to run once:
  pinMode(10,OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
  for(a;a<=255;a++) //Control of the increase of PWM brightness
  {
    analogWrite(10,a);
    delay(analogRead(0)/10); //delay

  }
  for(a;a>=0;a--) //Reduction of control brightness
  {
    analogWrite(10,a);
    delay(analogRead(0)/10);

  }
}
```

Results

When you turn the knob, the frequency of the LED flashing changes.