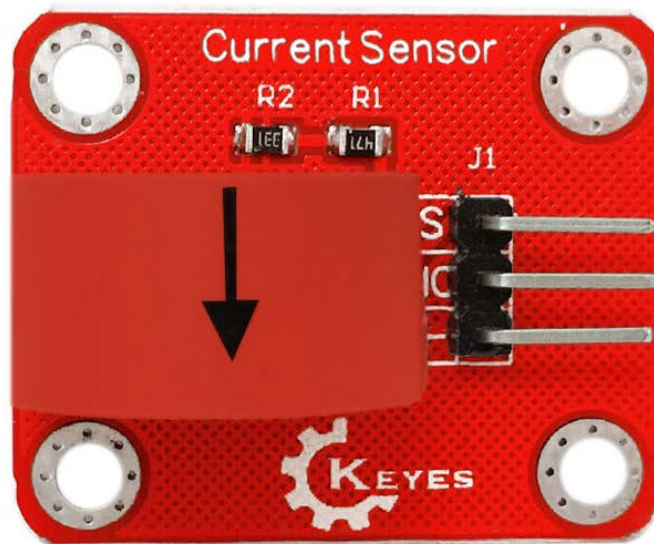


# Current Sensor



## Overview

This product consists of a current sensor TA12-200, which can convert a large amount of current into a small amount of voltage output. This product can be used for AC current detection, and the maximum detectable current is 5A. The current sensor can be applied to various single-chip controllers, especially the Arduino controller. It is easier to connect to the Arduino dedicated sensor expansion board through the 3P sensor cable, which can easily realize interactive works related to environmental perception.

## Specification:

Working voltage: 5V

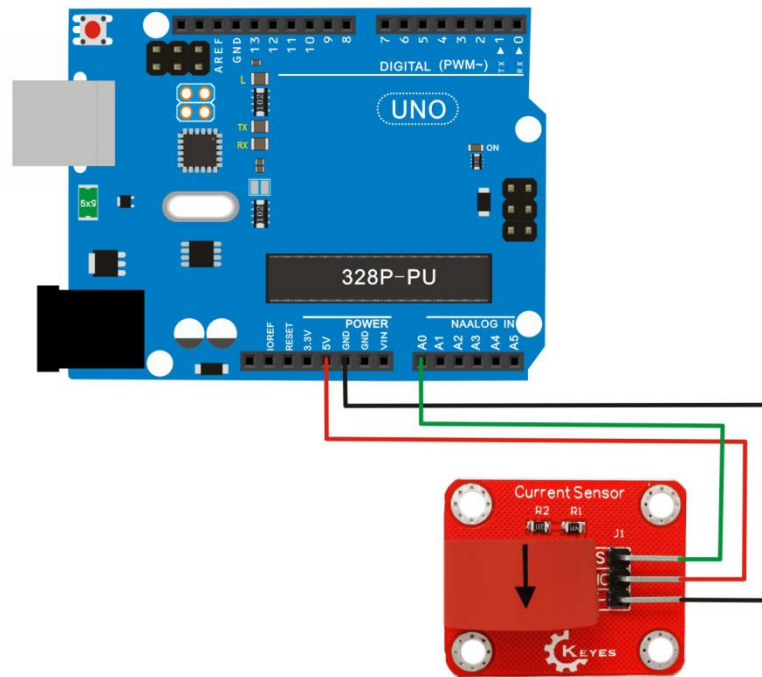
Detection current: 5A max

Working frequency 20Hz~20KHz

Data type: analog input

Flame retardant properties comply with UL94-VO

Dielectric strength 6000V AC/1min



## Test code

```
#define ELECTRICITY_SENSOR A0 // Analog input pin that sensor is attached to

float amplitude_current; //amplitude current

float effective_value; //effective current

void setup()
{
  Serial.begin(9600);

  pins_init();
}

void loop()
{
```

```

int sensor_max;

sensor_max = getMaxValue();

Serial.print("sensor_max = ");

Serial.println(sensor_max);

//the VCC on the RobotBase interface of the sensor is 5v

amplitude_current=(float)sensor_max/1024*5/800*2000000;

effective_value=amplitude_current/1.414;//minimum_current=1/1024*5/800*2000
000/1.414=8.6(mA)

                //Only for sinusoidal alternating current

Serial.println("The amplitude of the current is(in mA)");

Serial.println(amplitude_current,1);//Only one number after the decimal point

Serial.println("The effective value of the current is(in mA)");

Serial.println(effective_value,1);
}

void pins_init()

{

    pinMode(ELECTRICITY_SENSOR, INPUT);

}

/*Function: Sample for 1000ms and get the maximum value from the SIG pin*/

int getMaxValue()

{

    int sensorValue;                //value read from the sensor

    int sensorMax = 0;

    uint32_t start_time = millis();

    while((millis()-start_time) < 1000)//sample for 1000ms

    {

```

```
sensorValue = analogRead(ELECTRICITY_SENSOR);  
  
if (sensorValue > sensorMax)  
{  
    /*record the maximum sensor value*/  
    sensorMax = sensorValue;  
}  
}  
  
return sensorMax;  
}
```