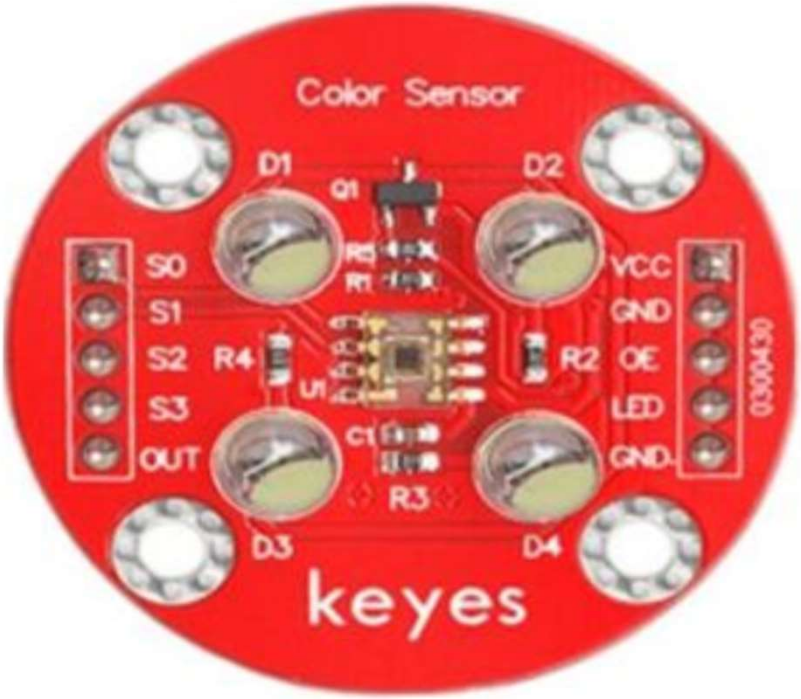
KE0074 KEYES TCS3200D/TCS230 color recognition sensor module

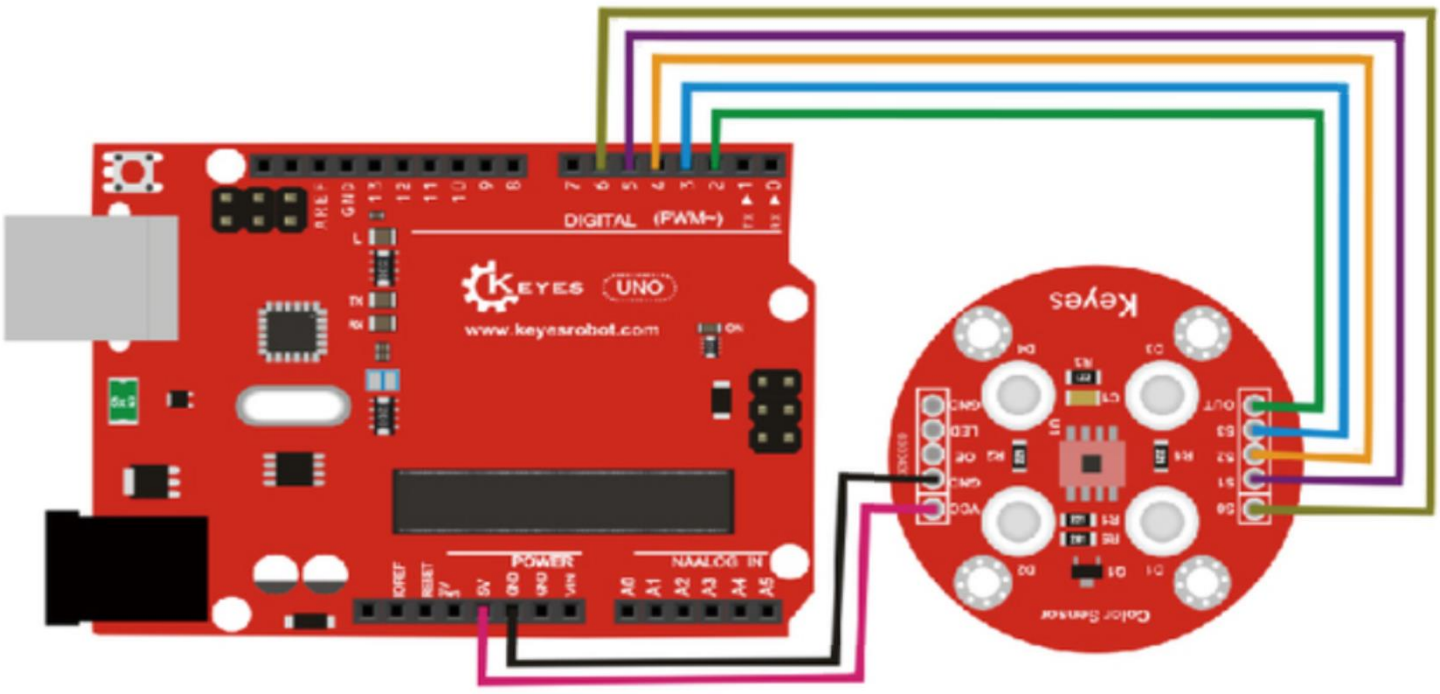
Parameters:

Working Voltage: 3.3 ~ 5VDC

NOTE: Due to lighting effects, difference in monitor's brightness/ contrast settings etc, there could be some slight differences in the color tone between the pictures and the actual item!



PINOUT Instruction:



Sample Code:

```
#include <TimerOne.h>
#define S0 6 // Please notice the Pin's define
#define S1 5
#define S2 4
#define S3 3
#define OUT 2
int g_count = 0; // count the frequecy
int g_array[3]; // store the RGB value
int g_flag = 0; // filter of RGB queue
float g_SF[3]; // save the RGB Scale factor

// Init TSC230 and setting Frequency.
void TSC_Init()
{
pinMode(S0, OUTPUT);
pinMode(S1, OUTPUT);
pinMode(S2, OUTPUT);
pinMode(S3, OUTPUT);
pinMode(OUT, INPUT);
digitalWrite(S0, LOW); // OUTPUT FREQUENCY SCALING 2%
digitalWrite(S1, HIGH);
}

// Select the filter color
void TSC_FilterColor(int Level01, int Level02)
{
if(Level01 != 0)
Level01 = HIGH;
if(Level02 != 0)
Level02 = HIGH;
digitalWrite(S2, Level01);
digitalWrite(S3, Level02);
}
void TSC_Count()
{
g_count ++ ;
}
void TSC_Callback()
{
switch(g_flag)
{
case 0:
Serial.println("->WB Start");
TSC_WB(LOW, LOW); //Filter without Red
break;
case 1:
Serial.print("->Frequency R=");

Serial.println(g_count);
g_array[0] = g_count;
TSC_WB(HIGH, HIGH); //Filter without Green
break;
case 2:
Serial.print("->Frequency G=");
```

```
Serial.println(g_count);
g_array[1] = g_count;
TSC_WB(LOW, HIGH); //Filter without Blue
break;
case 3:
Serial.print("->Frequency B=");
Serial.println(g_count);
Serial.println("->WB End");
g_array[2] = g_count;
TSC_WB(HIGH, LOW); //Clear(no filter)
break;
default:
g_count = 0;
break;
}
}
void TSC_WB(int Level0, int Level1) //White Balance
{
g_count = 0;
g_flag ++;
TSC_FilterColor(Level0, Level1);
Timer1.setPeriod(1000000); // set 1s period
}
void setup()
{
TSC_Init();
Serial.begin(9600);
Timer1.initialize(); // defaulte is 1s
Timer1.attachInterrupt(TSC_Callback);
attachInterrupt(0, TSC_Count, RISING);
delay(4000);
for(int i=0; i<3; i++)
Serial.println(g_array[i]);
g_SF[0] = 255.0/ g_array[0]; //R Scale factor
g_SF[1] = 255.0/ g_array[1] ; //G Scale factor
g_SF[2] = 255.0/ g_array[2] ; //B Scale factor
Serial.println(g_SF[0]);
Serial.println(g_SF[1]);
Serial.println(g_SF[2]);
}
void loop()
{
g_flag = 0;
for(int i=0; i<3; i++)
Serial.println(int(g_array[i] * g_SF[i]));
delay(4000);
}
```

Library File of TimerOne:

https://drive.google.com/open?id=11n685TL0tHU8duCukr29bvVpPeeHy5SE

Datasheet for TCS3200, TCS3210 http://www.mantech.co.za/Datasheets/Products/TCS3200-180210A.pdf

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