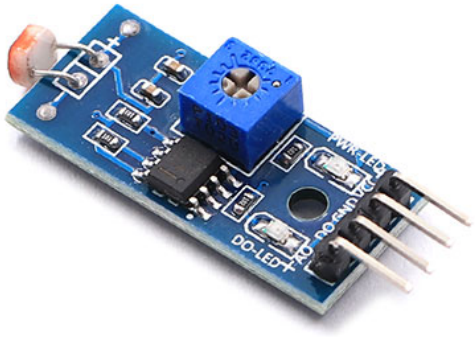
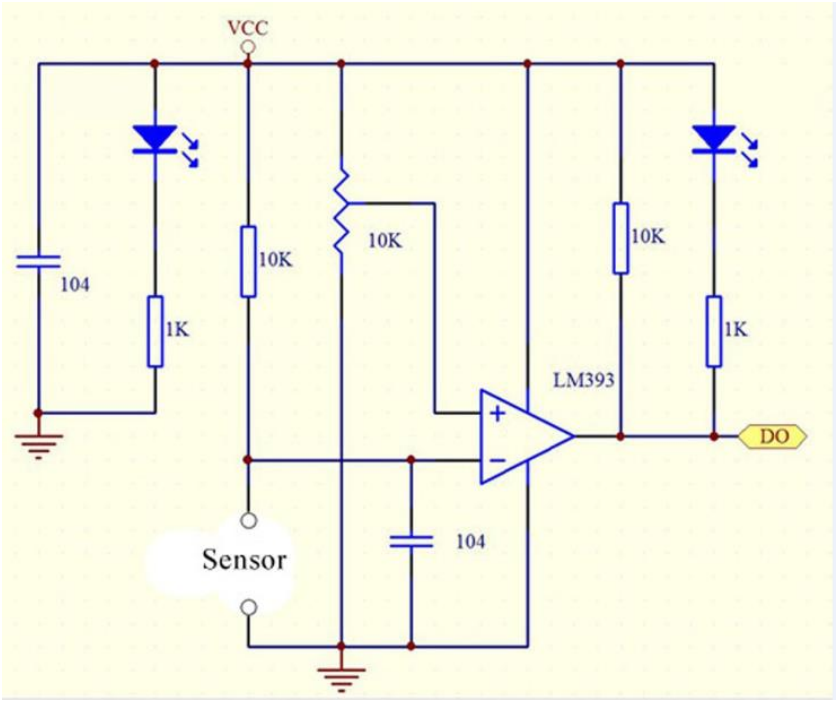
Arduino Light Sensor (Analog/Digital) User Manual



How to use:

- Photosensitive resistor module most sensitive to environmental light intensity is generally used to detect the ambient brightness and light intensity.
- Module light conditions or light intensity reach the set threshold, DO port output high, when the external ambient light intensity exceeds a set threshold, the module D0 output low;
- Digital output D0 directly connected to the MCU, and detect high or low TTL, thereby detecting ambient light intensity changes;
- Digital output module D0 can directly drive the relay module, which can be composed of a photoelectric switch;
- Analog output module AO and AD modules can be connected through the AD converter, you can get a more accurate light intensity values



This light sensor uses a Cadmium Sulphide Photoresistor as a sensor. It then amplifies the signal and outputs:
- Analog Data: The VALUE of the light (0 to 1023) with more light giving lower numbers
- Digital Data: A LOW signal when the light is brighter than the set point.

NOTE: The pin out of this brick is NOT the same as our standard 3-pin cables. Above, you will see the connections are VCC (+5v), GND, DO (Digital Output) and AO (Analog Output). Use separate wires taken from a Cable Maker strip). Or a Flat-to-Separate Cable.

This module has a dual personality. It looks at the light level falling on it's sensor and outputs that as a varying *analog* signal. Then it compares that value with the setting you make with the adjustable blue potentiometer. If the light level is higher than your set point, the *digital* output goes LOW.
It uses a LM393 Comparator chip for clean outputs.

Here is a sample Software Sketch you can cut and paste to test it. You can use it to set your setpoint:

```
/* YourDuino Electronic Brick Test:
 Light Sensor Analog + Digital AB-890202
 terry@yourduino.com */

/*-----( Declare Constants )-----*/
#define ANALOG_SENSOR_PIN  A0
#define DIGITAL_SENSOR_PIN 3
#define LEDPIN    13  // The onboard LED

/*-----( Declare Variables )-----*/
int  switch_state;  /* Holds the last digital value */
int  LightAnalogValue; /* Holds the last analog value */

void setup()   /*----( SETUP: RUNS ONCE )----*/
{
  pinMode(LEDPIN, OUTPUT);
  Serial.begin(9600);         // Enable the Serial data output
```

```
  Serial.println("YourDuino Light Sensor Test 1.10 ");

}/*--(end setup )---*/


void loop()   /*----( LOOP: RUNS CONSTANTLY )----*/

// This module is ACTIVE LOW when a reflection is seen
{

  switch_state = digitalRead(DIGITAL_SENSOR_PIN);
  if (switch_state == LOW)
  {
    digitalWrite(LEDPIN, HIGH);
    Serial.println("Digital Signal ON ");
  }
  else
  {
    digitalWrite(LEDPIN, LOW);
  }

  LightAnalogValue = analogRead(ANALOG_SENSOR_PIN);  //Read the voltage from sensor
  Serial.print("Analog Value (0 to 1023)");
  Serial.println(LightAnalogValue,DEC);      // Send result to Serial Monitor
  delay(500);

}/* --(end main loop )-- */

/* ( THE END ) */
```