Rotary Encoder

Overview

This lesson will teach you how to use Rotary Encoder module, which can calculate the number of interrupts.

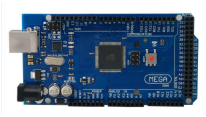
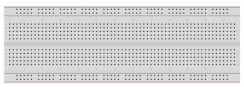
Specification

Please view "Rotary Encoder.pdf"
Path: \Public_materials\Datasheet\ Rotary Encoder.pdf

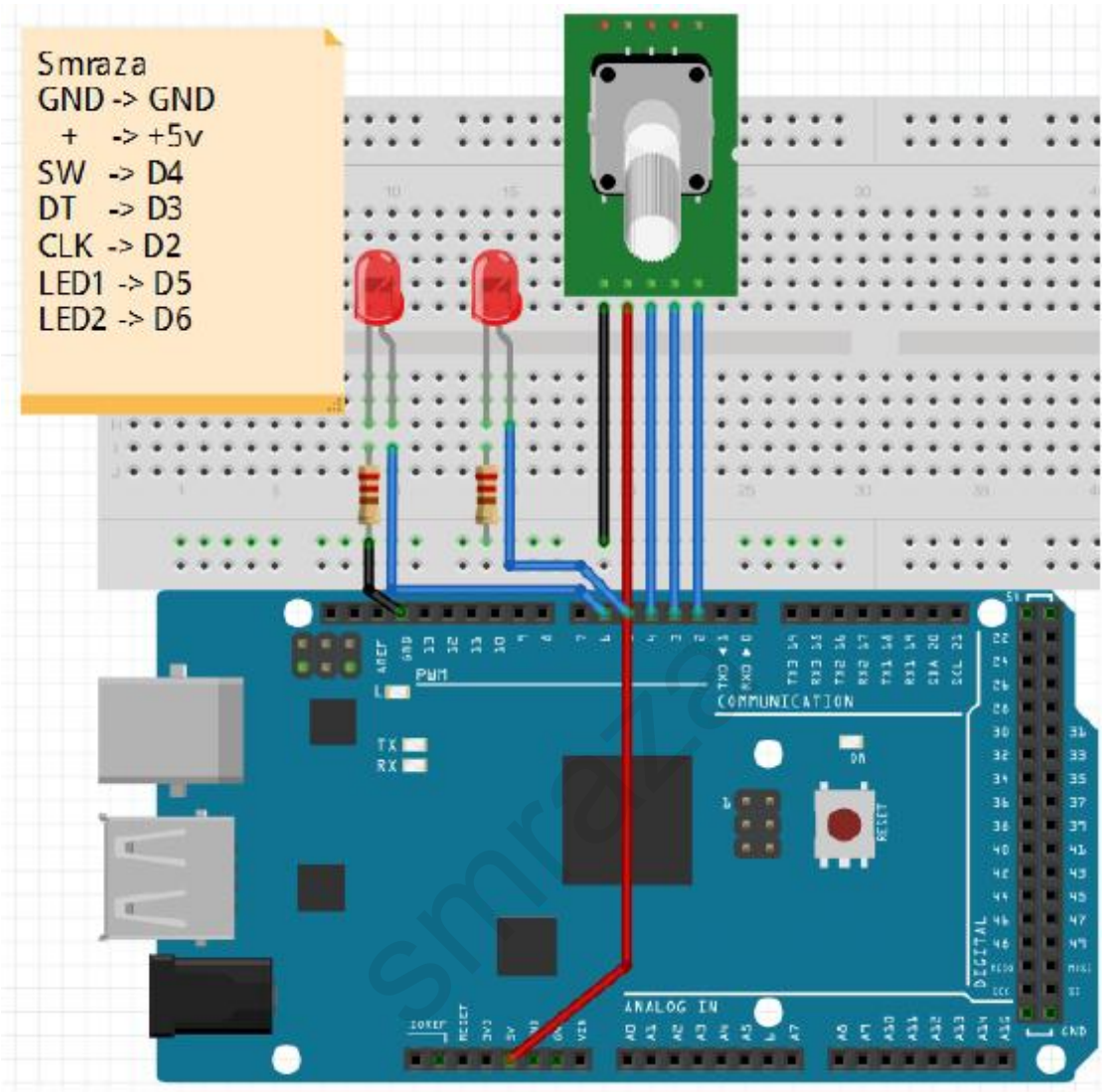
Pin definition

Rotary Encoder	MEGA2560
GND	->GND
+	->+5V
SW	->D4
DT	->D3
CLK	->D2

Hardware required

Material diagram	Material name	Number
	Rotary Encoder	1
	LED	2
	10KΩ resistor	2
	USB Cable	1
	MEGA 2560	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



Sample code

Note: sample code under the **Sample code** folder.

```
const int interrupt = 0;
int CLK = 2;
int DAT = 3;
int BUTTON = 4;
int LED1 = 5;
int LED2 = 6;
int COUNT = 0;
void setup()
{
    attachInterrupt(interrupt, RoteStateChanged, FALLING);
    pinMode(CLK, INPUT);
    digitalWrite(CLK, HIGH); // Pull High Restance
    pinMode(DAT, INPUT);
    digitalWrite(DAT, HIGH); // Pull High Restance
    pinMode(BUTTON, INPUT);
    digitalWrite(BUTTON, HIGH); // Pull High Restance
    pinMode(LED1, OUTPUT);
    pinMode(LED2, OUTPUT);
    Serial.begin(9600);
}
void loop()
{
    if (!(digitalRead(BUTTON)))
    {
        COUNT = 0;
        Serial.println("STOP COUNT = 0");
        digitalWrite(LED1, LOW);
        digitalWrite(LED2, LOW);
        delay (2000);
    }
    Serial.println(COUNT);
}

void RoteStateChanged() //When CLK FALLING READ DAT
{
    if (digitalRead(DAT)) // When DAT = HIGH IS FORWARD
    {
        COUNT++;
        digitalWrite(LED1, HIGH);
        digitalWrite(LED2, LOW);
        delay(20);
```

```
    }

    else // When DAT = LOW IS BackRote
    {
        COUNT--;
        digitalWrite(LED1, LOW);
        digitalWrite(LED2, HIGH);
        delay(20);
    }
}
/*Tips: Open the serial port monitor, you will see the total number of Statistics.
```

Language reference

Tips : click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.
attachInterrupt

Application effect

When you rotate the encoder, LED lights will be flashing alternately.