

Rotary Encoder Breakout board

Technical Manual Rev 1r0



Rotary Encoder Breakoutboard enables you to easily add incremental or decrements to you projects and with its center button that can act as confirmation button.

General Specifications:

Input Supply Voltage: +5VDC

Dimensions: 16.2mm x 37.5mm

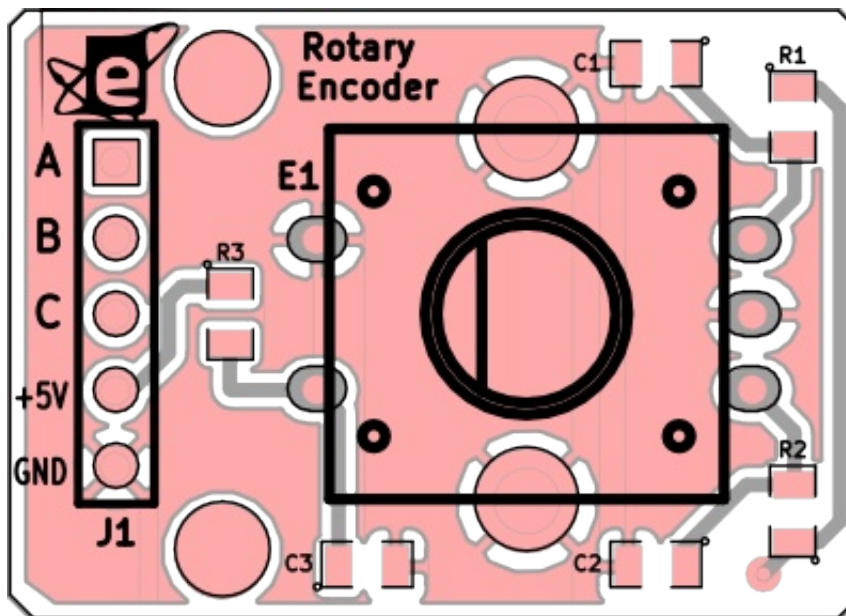


Figure 1. PCB Top Guide Layer

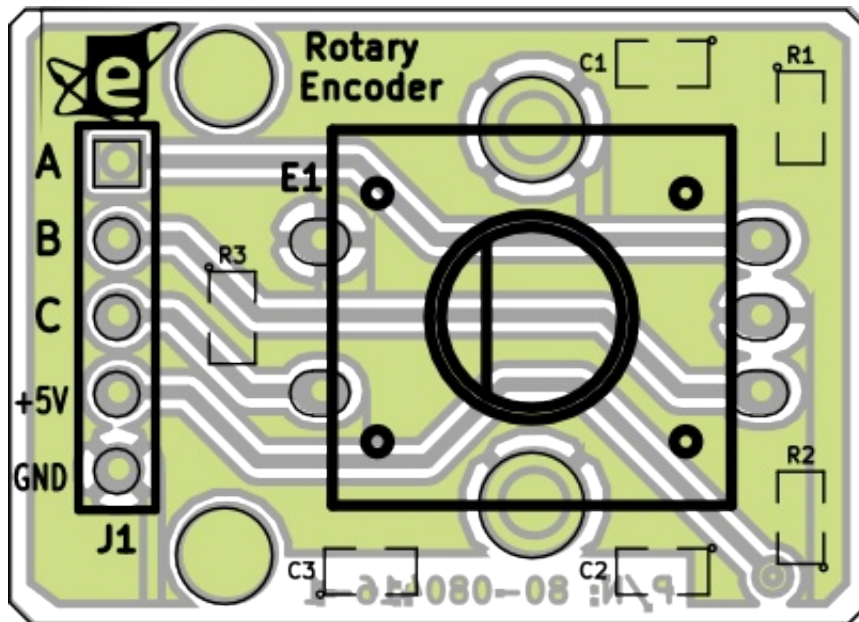


Figure 2. PCB Bottom Guide layer

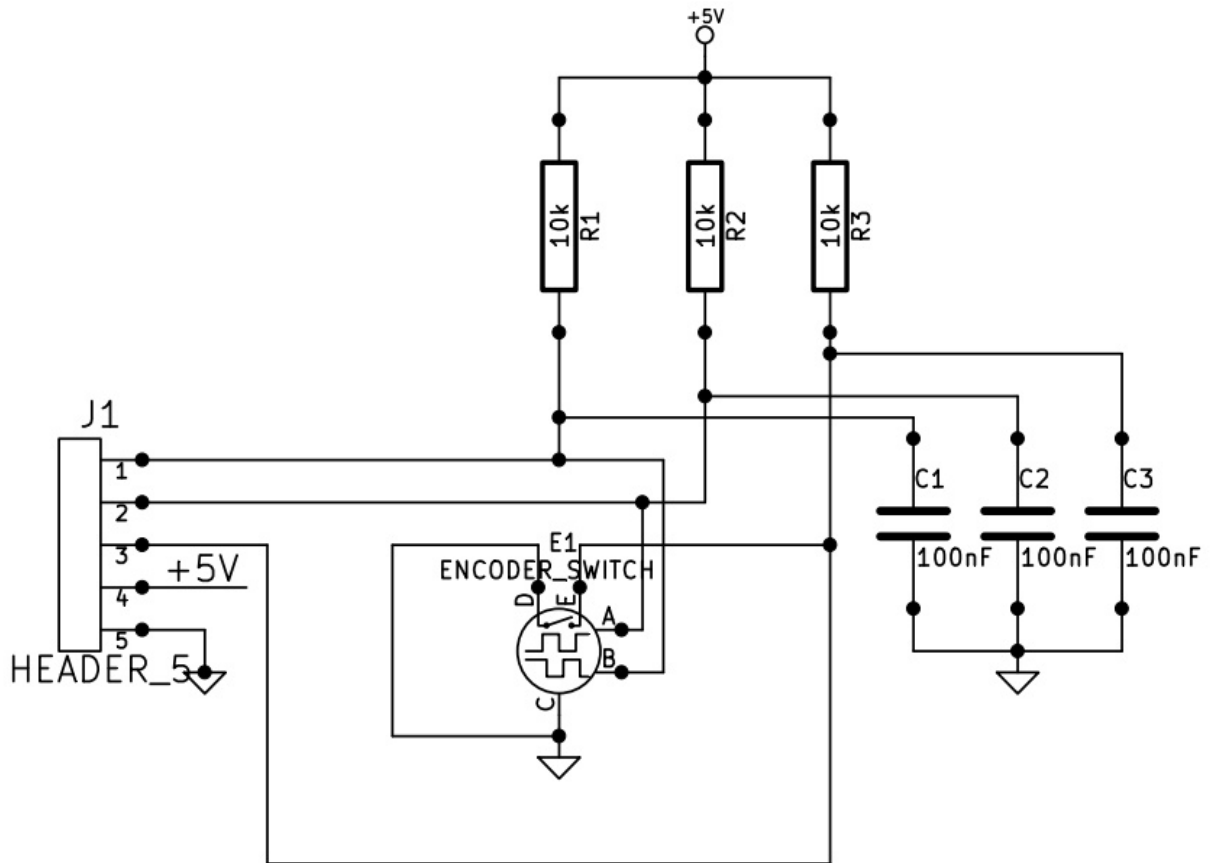


Figure 3. Schematic Diagram of Rotary Encoder Breakout board

Wiring connections

| | | |
|----------|--------|----------------|
| gizDuino | | Rotary Encoder |
| +5V | -----> | +5V |
| GND | -----> | GND |
| A | -----> | D2 |
| B | -----> | D3 |
| C | -----> | D4 (button) |

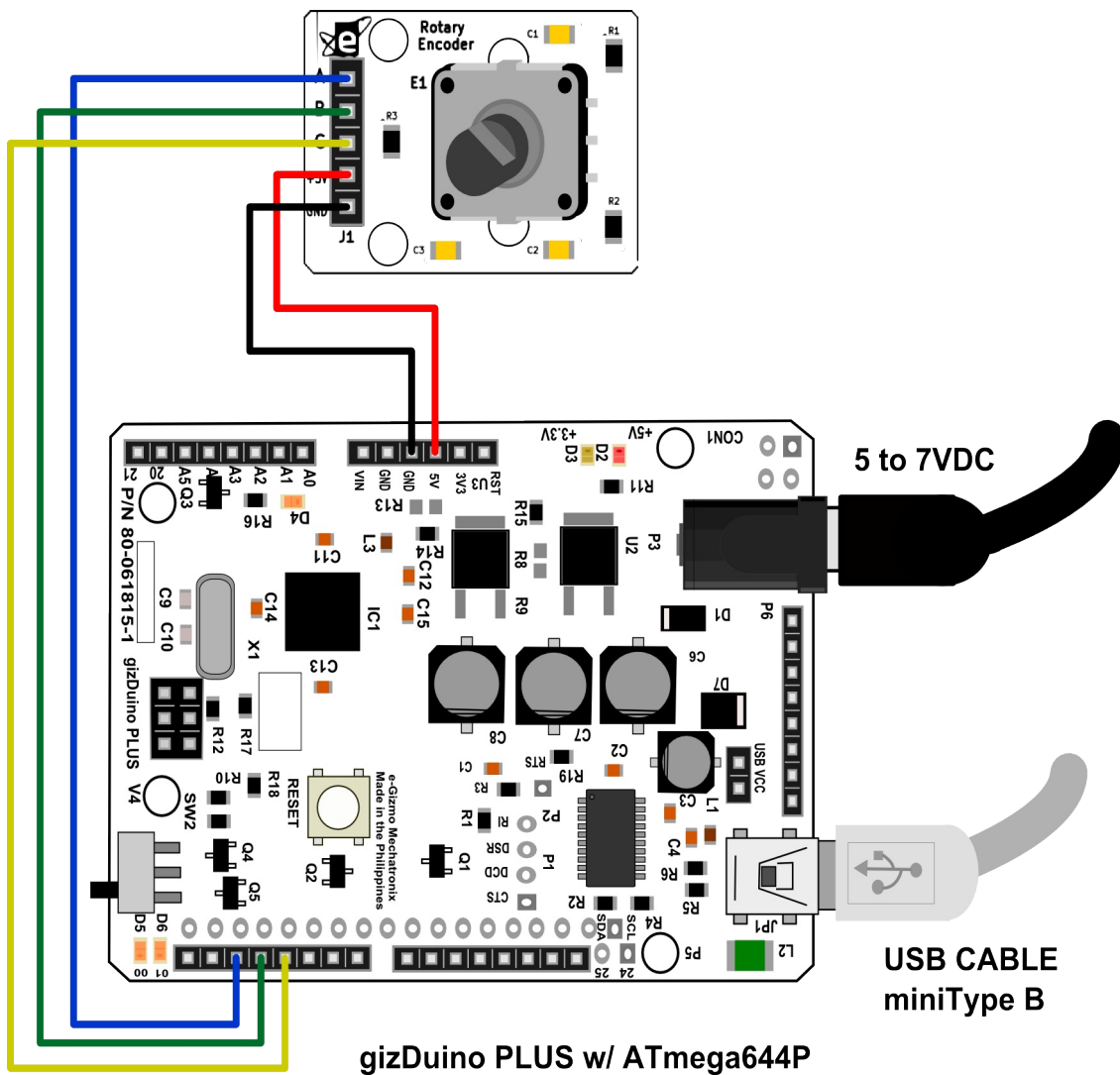


Figure 4. Sample connections

Upload this code to the gizDuino PLUS Microcontroller.
then Open the Serial Monitor.

```
/*
```

e-Gizmo Rotary Encoder Breakoutboard

This sample code gives you an incremental or decrements numerical value using Rotary Encoder Breakoutboard and it has center button that acts as confirmation button.

Modified code by
e-Gizmo Mechatronix Central
February 13, 2017

Reference:
<http://bildr.org/2012/08/rotary-encoder-arduino/>

```
*/
```

```
//these pins can not be changed 2/3 are special pins
```

```
int ENCODER_A = 2;
```

```
int ENCODER_B = 3;
```

```
int ENCODER_BUTTON = 4; //push button switch
```

```
volatile int LASTENCODED = 0;
```

```
volatile long ENCODERVALUE = 0;
```

```
long LASTENCODERVALUE = 0;
```

```
int LASTMSB = 0;
```

```
int LASTLSB = 0;
```

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

```
  pinMode(ENCODER_A, INPUT);
```

```
  pinMode(ENCODER_B, INPUT);
```

```
  pinMode(ENCODER_BUTTON, INPUT);
```

```
  digitalWrite(ENCODER_A, HIGH); //turn pullup resistor on
```

```
  digitalWrite(ENCODER_B, HIGH); //turn pullup resistor on
```

```
  digitalWrite(ENCODER_BUTTON, HIGH); //turn pullup resistor on
```

```
//call updateEncoder() when any high/low changed seen
//on interrupt 0 (pin 2), or interrupt 1 (pin 3)
attachInterrupt(0, UPDATEENCODER, CHANGE);
attachInterrupt(1, UPDATEENCODER, CHANGE);

}

void loop(){
  //Do stuff here
  if(digitalRead(ENCODER_BUTTON)){
    //button is not being pushed
    digitalWrite(13, LOW);
  }
  else{
    //button is being pushed
    digitalWrite(13,HIGH);
  }

  Serial.println(ENCODERVALUE);
  delay(1000); //just here to slow down the output, and show it will work even during a delay
}

void UPDATEENCODER(){
  int MSB = digitalRead(ENCODER_A); //MSB = most significant bit
  int LSB = digitalRead(ENCODER_B); //LSB = least significant bit

  int ENCODED = (MSB << 1) |LSB; //converting the 2 pin value to single number
  int SUM = (LASTENCODED << 2) | ENCODED; //adding it to the previous encoded value

  if(SUM == 0b1101 || SUM == 0b0100 || SUM == 0b0010 || SUM == 0b1011) ENCODERVALUE ++;
  if(SUM == 0b1110 || SUM == 0b0111 || SUM == 0b0001 || SUM == 0b1000) ENCODERVALUE --;

  LASTENCODED = ENCODED; //store this value for next time
}
```

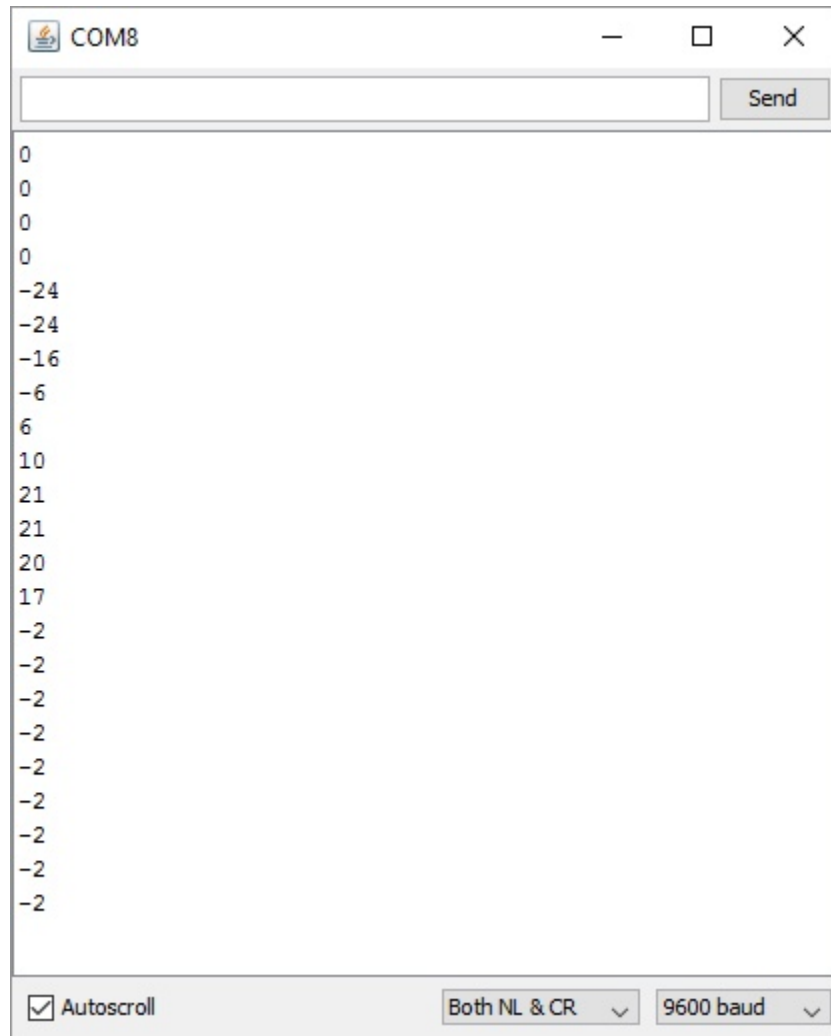


Figure 5. Serial Monitor