# ENCODEUR ROTATIF 6 MM SEN0230 - 400P/R

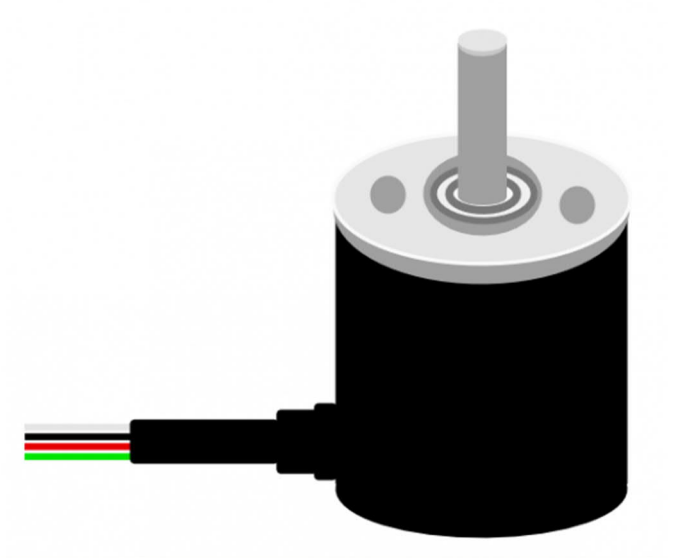

This is an industrial incremental photoelectric rotary encoder with aluminum material, metal shell and stainless steel shaft. It generates AB two-phase orthogonal pulse signal though the rotation of the grating disk and optocoupler. 400 pulses/round for each phase, and 1600 pulses/round for dual-phase 4 times output. This rotary encoder supports max 5000 r/min speed. And it can be used for speed, angle, angular velocity and other data measurement. The photoelectric rotary encoder has a NPN open collector output. It could work with Microcontroller with internal pull-up resistors directly. And it is using 750L05 voltage regulator chip, which has a DC4.8V-24V wide range power input, compatible with Arduino, STM32, PLC and other types of microcontrollers.

| | |
|---|---|
| ⚠️ | Note: NPN open collector output needs pull-up resistors for the oscilloscope display. |

## Specification

- Supply Voltage: 4.8V ~ 24v
- Encoder Body Size: Φ39× 36.5mm
- Output Shaft Diameter: Φ6 × 13mm
- Outside Shaft Platform: Φ20 × 4.85 mm
- Fixing Holes Screws: M3

# Board Overview



| Num | Label | Description |
|---|---|---|
| Red | VCC | Power + |
| Black | GND | Power - |
| White | A | Pulse A (Need pull-up Resistor) |
| Green | B | Pulse B (Need pull-up Resistor) |

# Tutorial

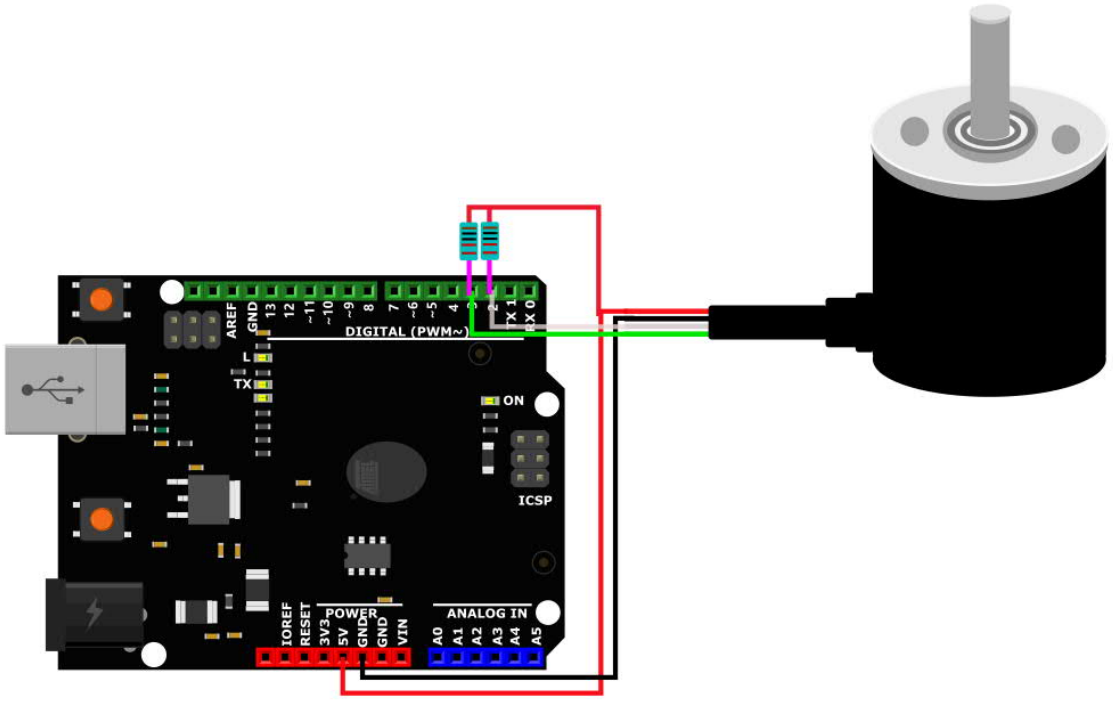
Direction & Interrupt count

## Requirements

- Hardware
    - DFRduino UNO (or similar) x 1
    - Incremental Photoelectric Rotary Encoder
    - 2x 1K Resistor
    - M-M/F-M/F-F Jumper wires

- Software
    - Arduino IDE, [Click to Download Arduino IDE from Arduino®]

## Connection Diagram




## Sample Code

```
/*!
 * @file  SEN0230.ino
 * @brief  Two phase quadrature encoder(Incremental)
 * @n  To determine motor with encode （CW OR CCW）
 * @copyright  Copyright (c) 2010 DFRobot Co.Ltd (http://www.dfrobot.com)
 * @license  The MIT License (MIT)
 * @author  Dongzi(1185787528@qq.com)
 * @version  V1.0
 * @date  2016-5-26
 */

#define  A_PHASE 2
#define  B_PHASE 3
unsigned int flagA = 0;  //Assign a value to the token bit
unsigned int flagB = 0;  //Assign a value to the token bit
/** *  */
void setup() {
  pinMode(A_PHASE, INPUT);
  pinMode(B_PHASE, INPUT);
  Serial.begin(9600);   //Serial Port Baudrate: 9600
  attachInterrupt(digitalPinToInterrupt( A_PHASE), interrupt, RISING); //Interrupt
trigger mode: RISING
}
```

```
void loop() {

  Serial.print("CCW:  ");
  Serial.println(flagA);
  Serial.print("CW: ");
  Serial.println(flagB);
  delay(1000);// Direction judgement

}
void interrupt()// Interrupt function
{ char i;
  i = digitalRead( B_PHASE);
  if (i == 1)
    flagA += 1;
  else
    flagB += 1;
}
```

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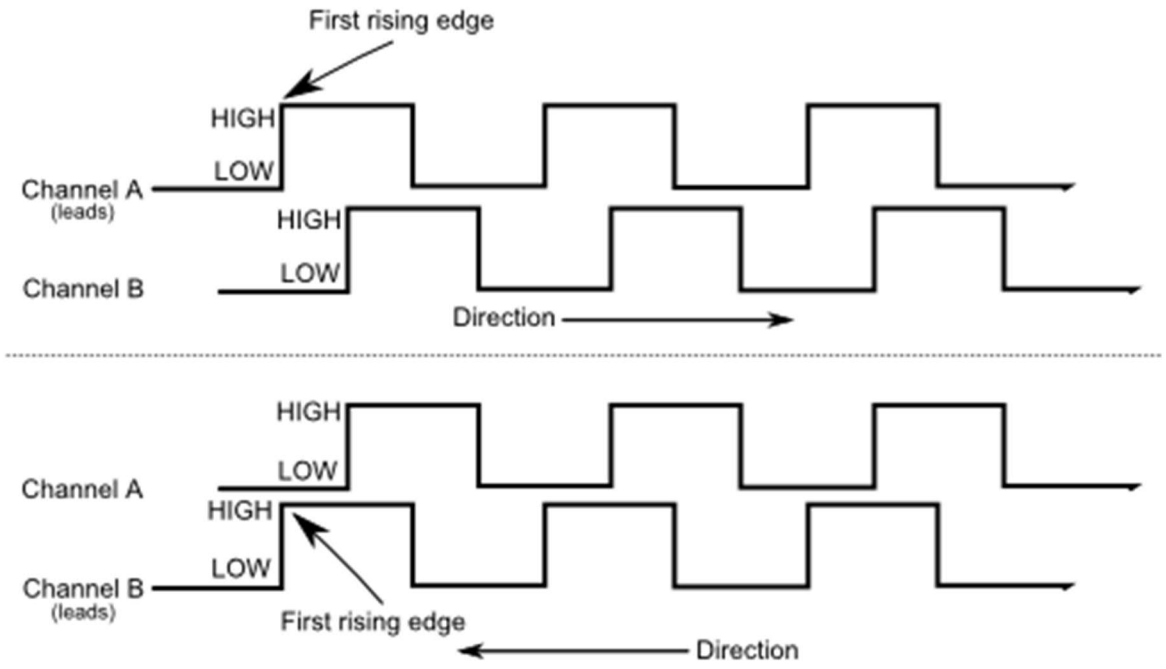
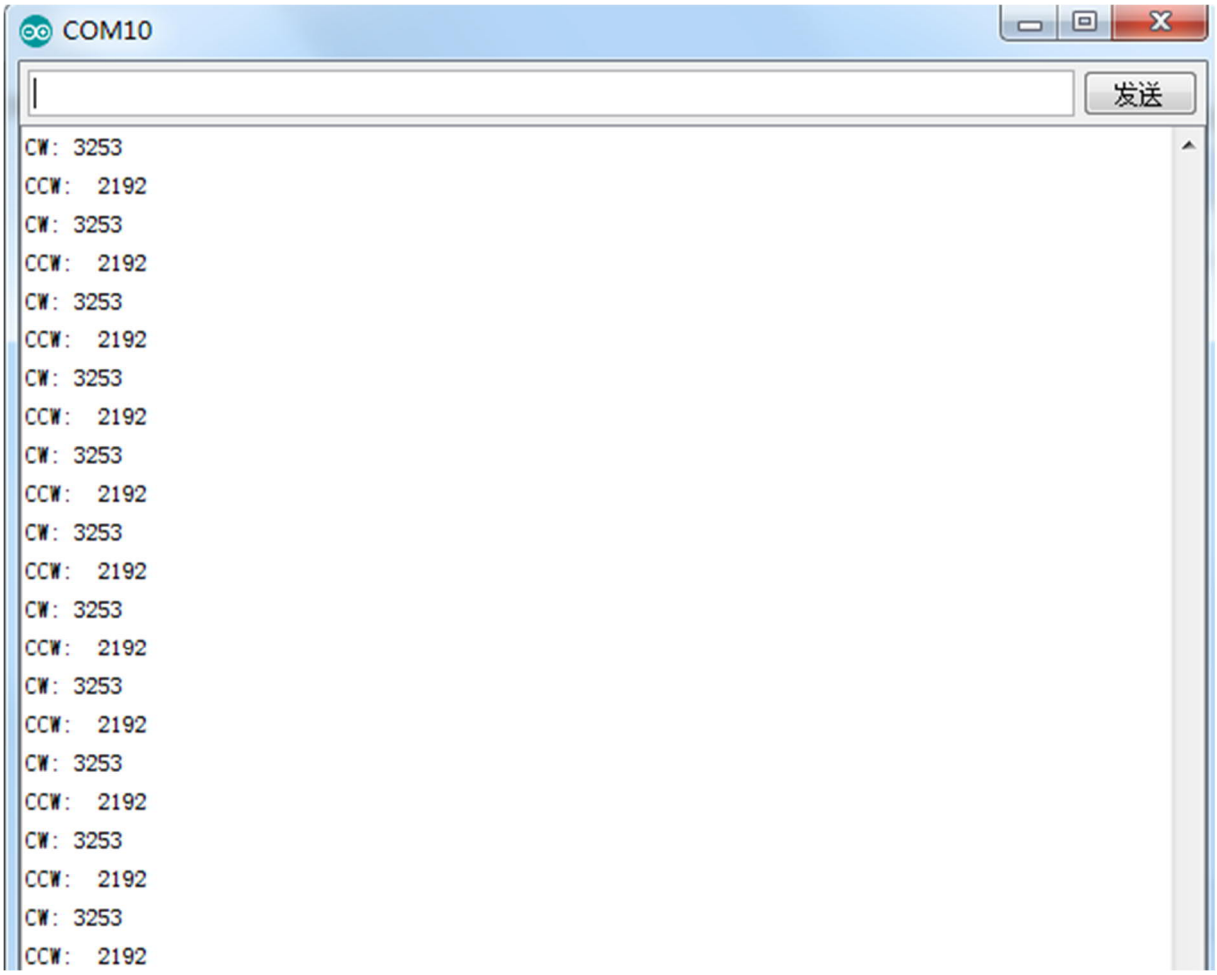
## OUTPUT




## Expected Results

Use the interruption to detect the rotation direction and count cylinder number.


COM10
发送
CW: 3253
CCW: 2192
CW: 3253
CCW: 2192
CW: 3253
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