

Grove - Mouse Encoder



Grove - Mouse Encoder is a type of mechanical incremental rotary encoder with feedback data of rotary direction and rotary speed⁽¹⁾. It features standard Grove interface that will save your lots of work in wiring and programming. Also, it is well adapted to heavy duty and a harsh environment. This product can be applied in toys, robots, and consumer input devices.

Note

The rotating speed is designed to be less 1000 rad/min(radian per minute).

Features

- Versatile for different environment.
- Well adapted for heavy duty and harsh environment.
- With detents and a nice feel.
- Standard Grove interface for easier programming and wiring.
- Accurate and reliable.

Tip

More details about Grove modules please refer to [Grove System](#)

Applications

It is versatile for different applications in harsh environment such as toys, robotics and consumer input devices.

Specifications

Item	Min.	Typical	Max.
Operating voltage(V)		3.3	5.5
Operating current(mA)		10	13
Duty(constant speed)		50%	
Phase difference(constant speed)		$\pi/4$	
Pulse per circle		12	

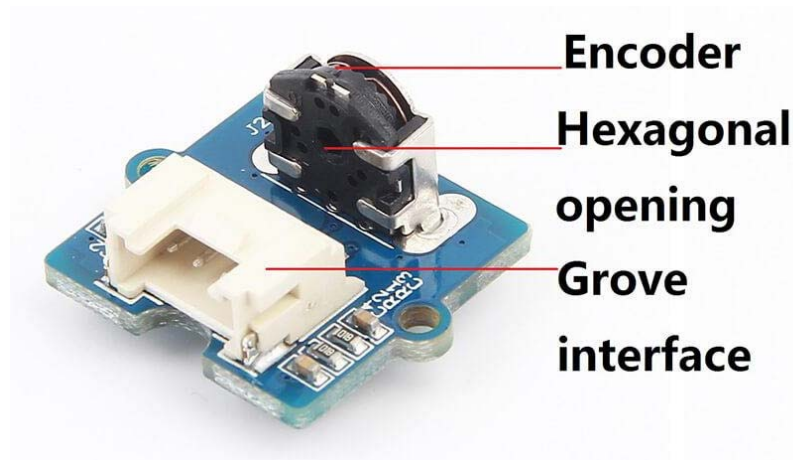
Notes

1. There is no knob included in product list. Because we think it will make this encoder more versatile for different environments.
2. You can find [dimensions](#) file in PDF format, and you can customize a knob according to the dimensions.

Tip

You can just use a suitable hexagonal screwdriver bit if you only are building a prototype for your project.

Hardware Overview



Grove interface

Connect main control board such as **Seeeduino** board with driver board.

Hexagonal opening

An opening you pass a knob through.

Parts list

Parts name	Quantity
Grove - Mouse Encoder(no knob included)	1 PC
Grove - Universal Cable	1 PC

Get started

This section will show you how to build an IDE environment for building applications with Grove - Mouse Encoder.

Refer to [Seeeduino V4.2](#)(It is exchangeable with Arduino board) for how to build a complete an IDE for your applications, or read [Arduino guide](#) if you use Arduino original board.

Notes

1. Duty circle will be bigger if the speed of rotating is slow.
2. The pulse width (PW) will not be the same if rotating speed is not constant.
3. The rotating speed is supposed to be low than 1000 rad/min or it will lead to narrow output PW or cause damage to this encoder.
4. The output voltage will be uncertain (high or low voltage) for no rotating circumstance since the position of pulse inside this encoder is not certain.

Basic demo

This demo shows how to detect position and detect direction.

Material required

- Seeeduino V4.2
- Base shield V2.0
- USB cable (type A to micro type B)

Connections

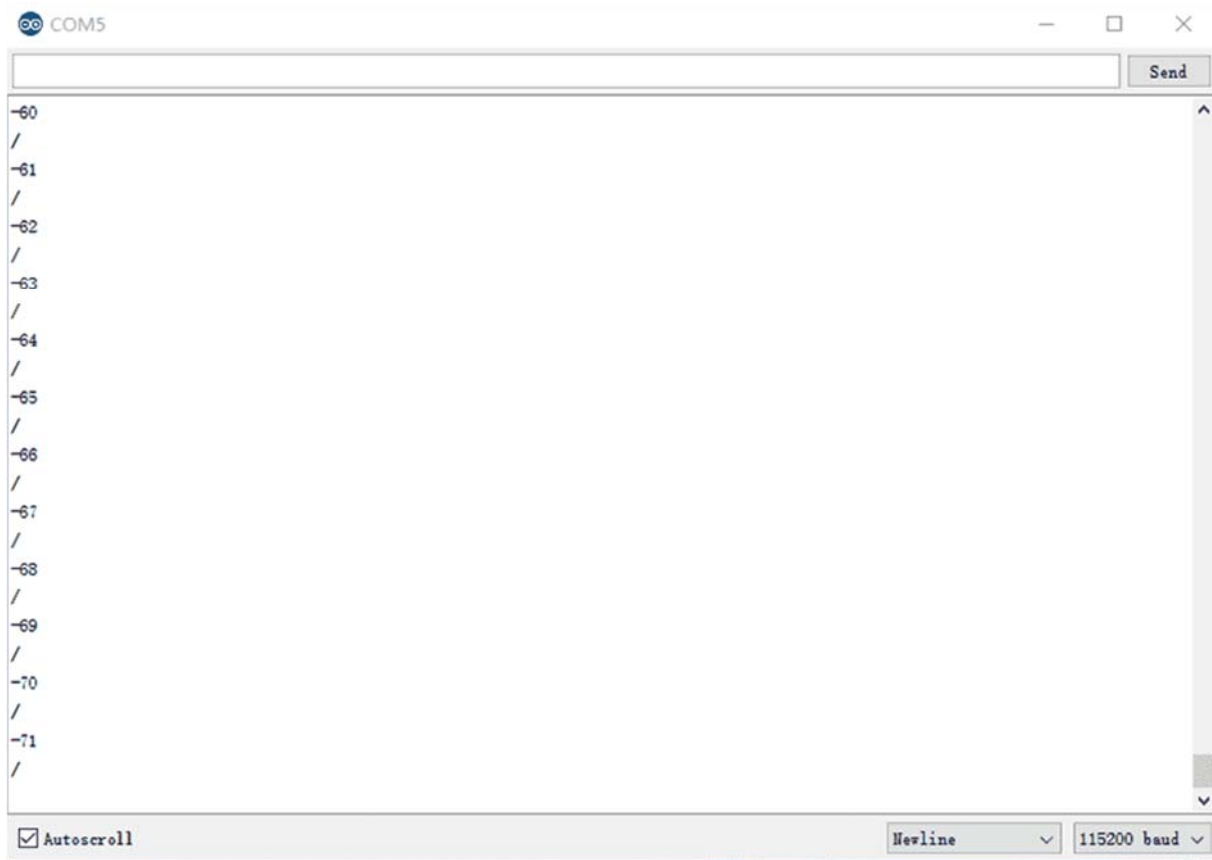
Connect materials as shown below:

Code

```
1/* Read Quadrature Encoder
2* Connect Encoder to Pins encoder0PinA, encoder0PinB, and +5V.
3*
4* Sketch by max wolf / www.meso.net
5* v. 0.1 - very basic functions - mw 20061220
6*
7*/
8
9
10int val;
11int encoder0PinA = 3;
12int encoder0PinB = 4;
13int encoder0Pos = 0;
14int encoder0PinALast = LOW;
15int n = LOW;
16
17void setup() {
18  pinMode (encoder0PinA,INPUT);
19  pinMode (encoder0PinB,INPUT);
20  Serial.begin (115200);
21}
22
23void loop() {
24  n = digitalRead(encoder0PinA);
25  if ((encoder0PinALast == LOW) && (n == HIGH)) {
26    if (digitalRead(encoder0PinB) == LOW) {
27      encoder0Pos--;
28    } else {
29      encoder0Pos++;
30    }
31    Serial.println(encoder0Pos);
32    Serial.println ("");
33  }
34  encoder0PinALast = n;
35}
```

1. Copy the code and flash it into the controller board.
2. Open monitor window.
3. Turn the screwdriver bit to left or left to see what will happen.

The output:



Resources

- [Schematic files](#)

https://raw.githubusercontent.com/SeeedDocument/Grove-Mouse_Encoder/master/res/Grove_Mouse_Encoder_v1.0_Schematic_File.zip

Tech Support

Please submit any technical issue into our [forum](#) or drop mail to techsupport@seeed.cc.

http://wiki.seeedstudio.com/Grove-Mouse_Encoder//5-24-1