Raspberry Pi - Wheel Encoder User Manual

Motor Wheel Encoder sensor module with 3 x 20cm male to male cable

Purpose:
Widely used in motor speed detection, pulse counting, position limit and so on.
Module Features:
1. the use of imported groove coupler sensor
2. the slot width 5mm.
3. the output state indicator lamp output high, output low lights.
4. with cover, high output; unobstructed, output low.
5. the comparator output signal clean waveform is good, driving ability, than 15mA.
6. Operating Voltage 3.3V-5V
7. the output format: Digital switching output (0 and 1)
8. a fixed bolt holes for easy installation
9. small plates PCB size: 3.2cm x 1.4cm
10. using a wide voltage LM393 comparator

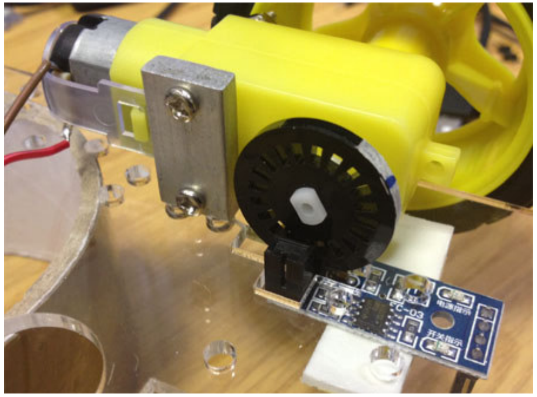
Module for use:

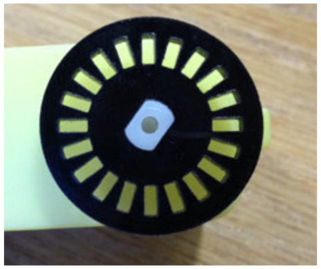
(1) module slot unobstructed, the receiver tube is turned on,

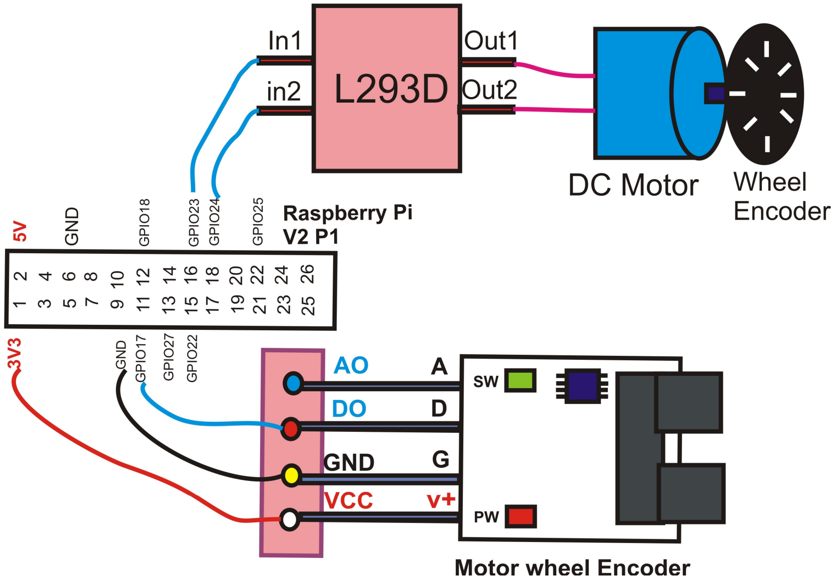
the module DO output low, cover when, DO output high.

(2) DO module can be connected to the relay, consisting limit switches and other functions, can also be connected with the active buzzer module, composed of alarm.

(1) Raspberry Pi GPIO Motor Wheel Encoder

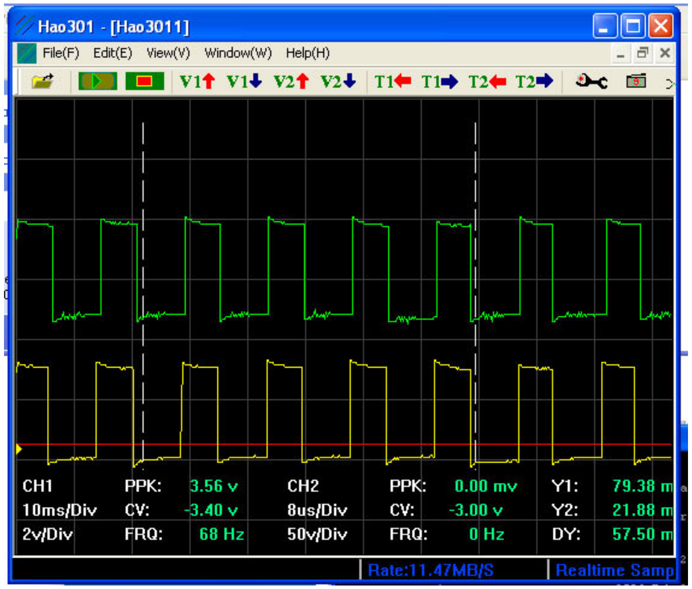






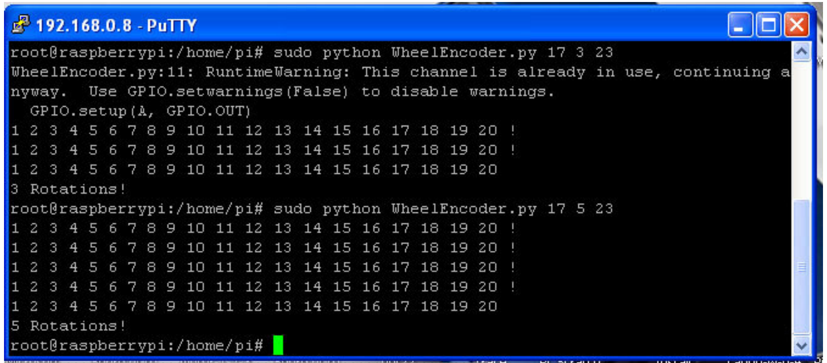
```
WheelEncoder.py   Python command
Sudo python WheelEncoder.py  17  3  23

 17  GPIO for Encoder     3  Rotation
 23  Motor connect to GPIO 23
```

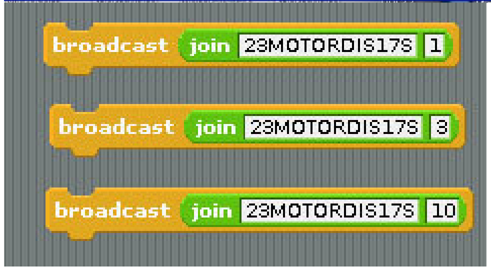

Hao301 - [Hao3011]
File(F) Edit(E) View(V) Window(W) Help(H)
V1↑ V1↓ V2↑ V2↓ T1⬅ T1➡ T2⬅ T2➡

```
CH1        PPK:   3.56 v   CH2       PPK:  0.00 mv   Y1:  79.38 m
10ms/Div   CV:   -3.40 v   8us/Div   CV:  -3.00 v    Y2:  21.88 m
2v/Div     FRQ:   68 Hz    50v/Div   FRQ:  0 Hz      DY:  57.50 m
                                     Rate:11.47MB/S  Realtime Samp
```

Python WheelEncoder.py   DEMO



```
root@raspberrypi:/home/pi# sudo python WheelEncoder.py 17 3 23
WheelEncoder.py:11: RuntimeWarning: This channel is already in use, continuing a
nyway.  Use GPIO.setwarnings(False) to disable warnings.
  GPIO.setup(A, GPIO.OUT)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
3 Rotations!
root@raspberrypi:/home/pi# sudo python WheelEncoder.py 17 5 23
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 !
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
5 Rotations!
root@raspberrypi:/home/pi#
```



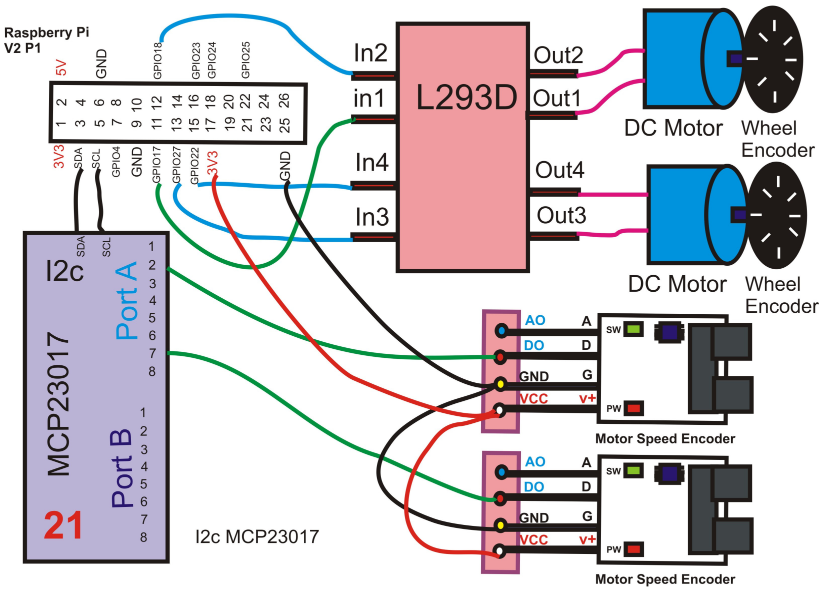
```
broadcast join 23MOTORDIS17S 1
broadcast join 23MOTORDIS17S 3
broadcast join 23MOTORDIS17S 10
```

Command “23” + “MOTORDIS” “17”+ “S” + “3”

17 GPIO for Encoder   3 Rotation

23 Motor connect to GPIO 23

(2) i2c address 21 MCP23017 16 GPIO Wheel Encoder



Command

I2MOTORDIS[Address][Bank][Encoder Pin]M[Motor Pin]R[Rotations]

I2MOTORDIS21A2M17R2

1. Address = **20 - 27**, Address for the I2C

2. DeviceBank = **A** or **B** (Bank for the encoder)

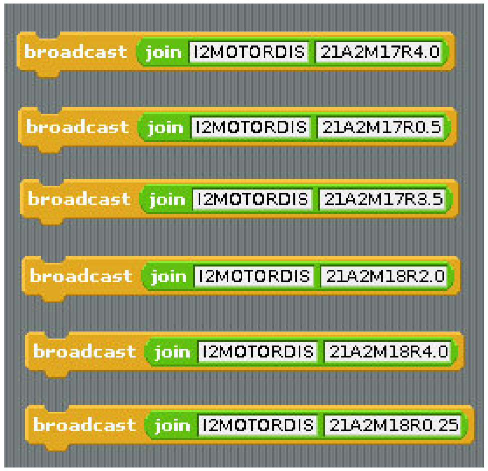
3. Encoder Pin = **1 - 8** (Pin number for the encoder)

4. Motor Pin = GPIO Pin number for the Motor

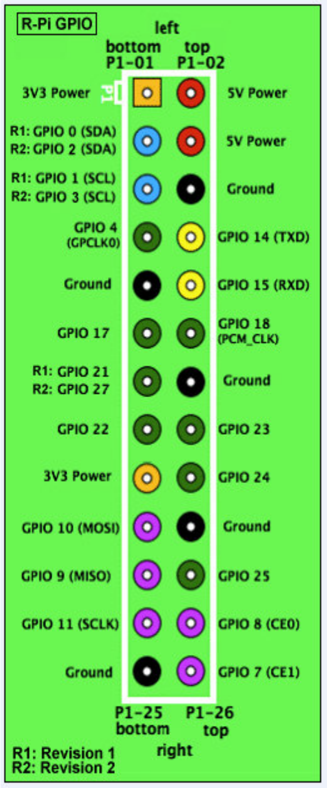
For example our Motor Board use GPIO **17** & **18** control 2 Motor forward & backward

5. Rotations = How many rotations you want the Motor to do before it stops.

Minimum input 0.2



```
broadcast join I2MOTORDIS 21A2M17R4.0
broadcast join I2MOTORDIS 21A2M17R0.5
broadcast join I2MOTORDIS 21A2M17R3.5
broadcast join I2MOTORDIS 21A2M18R2.0
broadcast join I2MOTORDIS 21A2M18R4.0
broadcast join I2MOTORDIS 21A2M18R0.25
```



R-Pi GPIO

left

	bottom P1-01	top P1-02	
3V3 Power	P1		5V Power
R1: GPIO 0 (SDA) R2: GPIO 2 (SDA)			5V Power
R1: GPIO 1 (SCL) R2: GPIO 3 (SCL)			Ground
GPIO 4 (GPCLK0)			GPIO 14 (TXD)
Ground			GPIO 15 (RXD)
GPIO 17			GPIO 18 (PCM_CLK)
R1: GPIO 21 R2: GPIO 27			Ground
GPIO 22			GPIO 23
3V3 Power			GPIO 24
GPIO 10 (MOSI)			Ground
GPIO 9 (MISO)			GPIO 25
GPIO 11 (SCLK)			GPIO 8 (CE0)
Ground			GPIO 7 (CE1)
	P1-25 bottom	P1-26 top	

right

R1: Revision 1
R2: Revision 2

http://www.pridopia.co.uk/pi-motor-encoder.html

Pi_Scratch interface software download from our web site

http://www.pridopia.co.uk/rs-pi-set-scratch.html

Package Content

1x Rs-Pi Wheel Encoder Sensor
3x 20cm male to male cable
1x manual