

Me Potentiometer



Overview

Featuring an adjustable range with the highest resistance of 10 K Ω , the Me Potentiometer module is a resistor with three terminals, and its resistance can be adjusted by rotating the knob. The module can be used to adjust rotational speed of motor, and brightness of LED lamp. Its black ID means that it has an analog signal port and needs to be connected to the port with black ID on Makeblock Orion.

Technical specifications

- Operating voltage: 5V DC
- Maximum current: 30 mA
- Rated power: 0.1 W
- Rotation angle: 280°

- Total resistance: 10 K Ω
- Signal type: analog signal (0~980)
- Module size: 51 x 24 x 22 mm (L x W x H)

Functional characteristics

- A blue LED is provided on the module, and its brightness change reflects the change of analog output value
- White area of module is the reference area to contact metal beams
- Support Arduino IDE programming, and provide a runtime library to simplify the programming
- Support mBlock GUI programming, and applicable to users of all ages
- Adopt RJ25 port for easy connection
- Provide pins to support most Arduino Baseboards

Pin definition

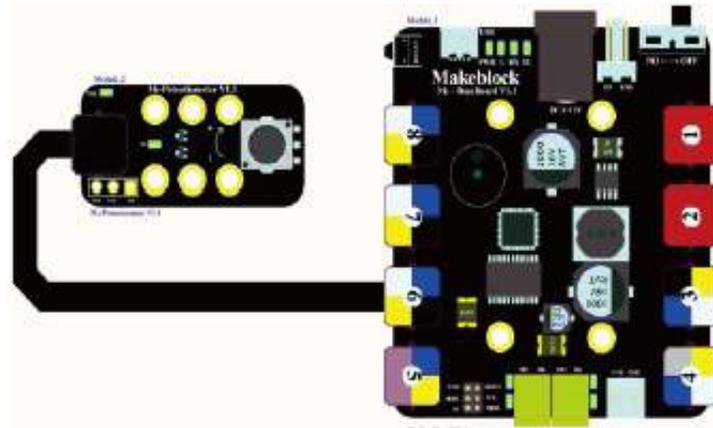
The port of Me Potentiometer has three pins, and their functions are as follows:

No.	Pin	Function
1	GND	Grounding
2	VCC	Power supply
3	AO	Analog output of potentiometer (voltage range: 0~4.8V)

Wiring mode

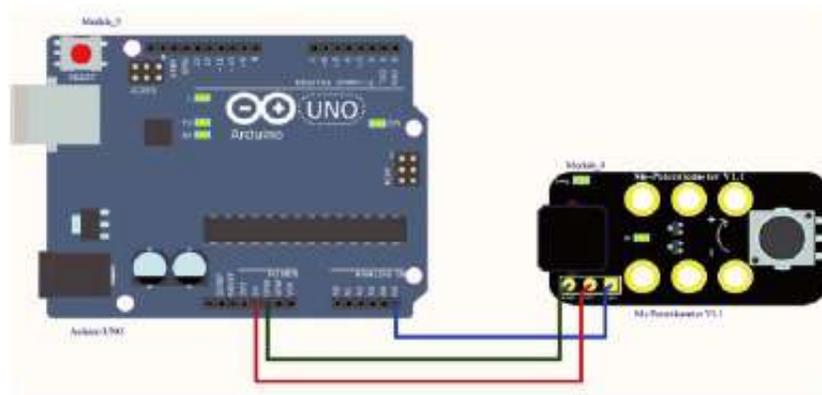
- Connecting with RJ25

Since the port of Me Potentiometer has black ID, you need to connect the port with black ID on Makeblock Orion when using RJ25 port. Taking Makeblock Orion as example, you can connect to ports No. 6, 7, and 8 as follows:



- Connecting with Dupont wire

When the Dupont wire is used to connect the module to the Arduino UNO Baseboard, its AOP pin should be connected to analog pin as follows:



Guide to programming

- Arduino programming

If you use Arduino to write a program, the library Makeblock-Library-master should be invoked to control and read the output value of Me Potentiometer.

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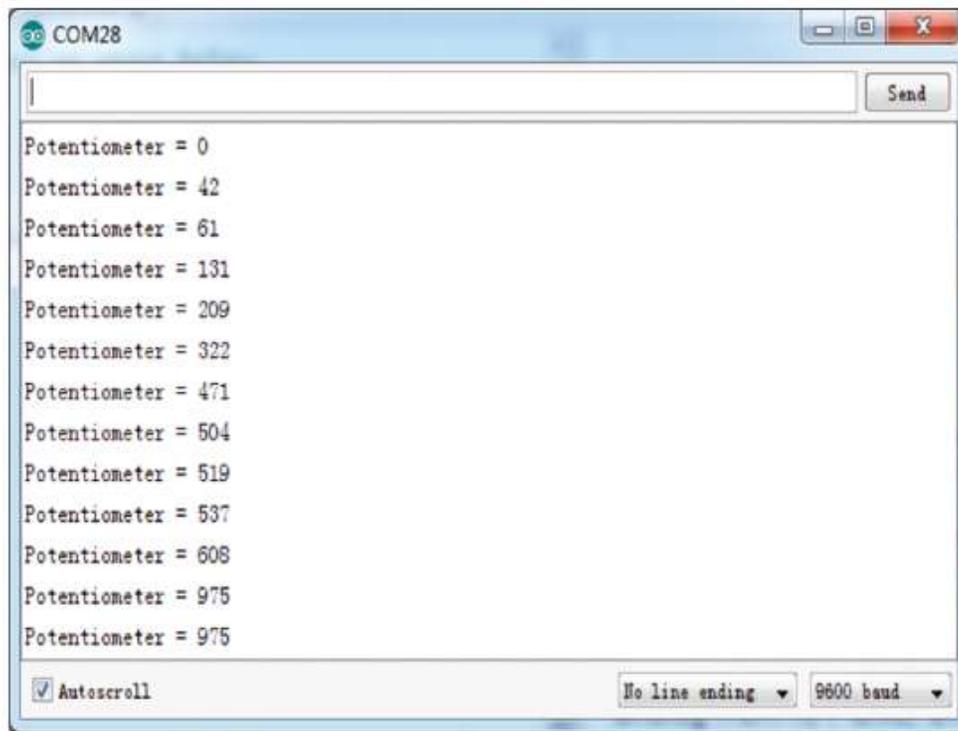
01 #include "MeOrion.h"
02 #include <Wire.h>
03 #include <SoftwareSerial.h>
04
05 MePotentiometer myPotentiometer(PORT_6);
06
07 void setup()
08 {
09     Serial.begin(9600);
10 }
11
12 void loop()
13 {
14     Serial.print("Potentiometer=");
15     Serial.println(myPotentiometer.read());
16     delay(100);
17 }

```

Me Potentiometer Function List

Function name	Function
MePotentiometer(uint8t port)	Select a port
int16_t read()	Read the output value of potentiometer (0~980)

The function of the code segment is: to read the parameter of Me Potentiometer and output the result to the serial monitor in Arduino IDE in the cycle of 100 ms. Upload the code segment to the Makeblock Orion and click the Arduino serial monitor, and then you will see the running result as follows:



The value range of potentiometer is 0~980. It decreases when you rotate the knob counterclockwise and increases when you rotate it clockwise.

• mBlock programming

Me Potentiometer supports the mBlock programming environment and its instructions are introduced as follows:

Programming description	Description
	Parameters: Select a port Equation: Return the position parameter of potentiometer (0~980)

This is an example on how to use mBlock programming to control the Me Potentiometer module. This program serves to make the panda speaking out the analog output value of Me Potentiometer and moving corresponding abscissa. Its range is 0~980. The running result is as follows:



Principle analysis

Main component of the Me Potentiometer module is a resistor with three terminals and its resistance can be adjusted according to a kind of variation. The resistor usually comprises a resistor and a moving electric brush. Based on the voltage-dividing principle of series resistors, when the electric brush moves along the resistor body, a resistance value with certain relation to the displacement of electric brush is obtained at the output end, and consequently a different voltage is output from the analog port. This module can be used with other module to build some interesting projects, for example, used with DC motor to build a speed-controllable toy car, or used with LED to build a dimmable lamp.

Schematic

