

# Moteur CC - Contrôler la vitesse avec une roue encodeuse

## Utilisation des encodeurs

[https://wiki.dfrobot.com/Micro\\_DC\\_Motor\\_with\\_Encoder-SJ01\\_SKU\\_\\_FIT0450](https://wiki.dfrobot.com/Micro_DC_Motor_with_Encoder-SJ01_SKU__FIT0450)

- Installer [Arduino PID](#) depuis le gestionnaire de bibliothèques

**PID** by Brett Beauregard

1.2.0 installed

PID controller A PID controller seeks to keep some input variable close to a desired...  
[More info](#)

1.2.0 ▼ REMOVE

```
//source Sample Code 2 https://wiki.dfrobot.com/Micro_DC_Motor_with_Encoder-SJ01_SKU__FIT0450#target_3
//The sample code for driving one way motor encoder
#include <PID_v1.h>

const byte encoder0pinA = 2; //A pin -> the interrupt pin 0
const byte encoder0pinB = 3; //B pin -> the digital pin 3
// int E_left =5; //The enabling of L298PDC motor driver board connection to the digital interface port 5
// int M_left =4; //The enabling of L298PDC motor driver board connection to the digital interface port 4
int MOTEUR_A_1 =5; //Connexion du pilote de moteur CC l9110s au port digital 5
int MOTEUR_A_2 =6; //Connexion du pilote de moteur CC l9110s au port digital 6
byte encoder0PinALast;
double duration,abs_duration;//the number of the pulses
```

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boolean Direction;//the rotation direction
boolean result;

double val_output;//Power supplied to the motor PWM value.
double Setpoint;
double Kp=0.6, Ki=5, Kd=0;
PID myPID(&abs_duration, &val_output, &Setpoint, Kp, Ki, Kd, DIRECT);

void setup()
{
    Serial.begin(9600);//Initialize the serial port
    pinMode(MOTEUR_A_1, OUTPUT);    //L298P Control port settings DC motor driver board for the
output mode
    pinMode(MOTEUR_A_2, OUTPUT);
    Setpoint =80;    //Set the output value of the PID
    myPID.SetMode(AUTOMATIC);//PID is set to automatic mode
    myPID.SetSampleTime(100);//Set PID sampling frequency is 100ms
    EncoderInit();//Initialize the module
}

void loop()
{
    advance();//Motor Forward
    abs_duration=abs(duration);
    result=myPID.Compute();//PID conversion is complete and returns 1
    if(result)
    {
        Serial.print("Pluse: ");
        Serial.println(duration);
        duration = 0; //Count clear, wait for the next count
    }

}

void EncoderInit()
{
    Direction = true;//default -> Forward
    pinMode(encoder0pinB, INPUT);
    attachInterrupt(0, wheelSpeed, CHANGE);
}

```

```

}

void wheelSpeed()
{
    int Lstate = digitalRead(encoder0pinA);
    if((encoder0PinALast == LOW) && Lstate==HIGH)
    {
        int val = digitalRead(encoder0pinB);
        if(val == LOW && Direction)
        {
            Direction = false; //Reverse
        }
        else if(val == HIGH && !Direction)
        {
            Direction = true; //Forward
        }
    }
    encoder0PinALast = Lstate;

    if(!Direction) duration++;
    else duration--;

}

void advance()//Motor Forward
{
    digitalWrite(MOTEUR_A_1, LOW);
    analogWrite(MOTEUR_A_2, val_output);
}

void back()//Motor reverse
{
    digitalWrite(MOTEUR_A_1, HIGH);
    analogWrite(MOTEUR_A_2, val_output);
}

void Stop()//Motor stops
{
    digitalWrite(MOTEUR_A_2, LOW);
}

```

# Avec la librairie Motor PID

[https://github.com/natnqweb/Motor\\_PID](https://github.com/natnqweb/Motor_PID)

## Interruptions

<https://www.best-microcontroller-projects.com/arduino-interrupt.html>

<https://forum.arduino.cc/t/solved-arduino-nano-and-interrupt-on-pin-6/1090623/3>

## Sources

[https://www.robot-maker.com/shop/blog/32\\_Utilisation-des-encodeurs.html](https://www.robot-maker.com/shop/blog/32_Utilisation-des-encodeurs.html)

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Revision #5

Created 30 May 2024 11:43:20 by admin\_idf

Updated 1 July 2025 00:39:33 by admin\_idf