Controlling maxon motor with dec 50/5 module

Maxon motor :

Red	Winding 1 (pin 1 or 2)
Black	Winding 2 (pin 3 or 4)
White	Winding 3 (pin 5 or 6)
Orange	V_hall (pin 11)
Blue	gnd (pin 14, 16)
Yellow	hall sensor 1 (pin 13)
Brown	hall sensor 2 (pin 15)
Grey	hall sensor 3 (pin 17)

Dec module 50/5 controls the motor.
Pin description of dec 50/5 module :

Pin	Description
18	Feed back pin to know at speed the motor is actually rotating
19	Status of the motor whether the motor is ready or there is any error
20 & 21	Digital input 1 and Digital input 2 to control the motor in open loop or closed loop
22	To enable or disable the motor
23	Control the rotation direction of motor
25	Set maximum current the motor can take
26	Give command to the motor

Open loop and closed loop control:

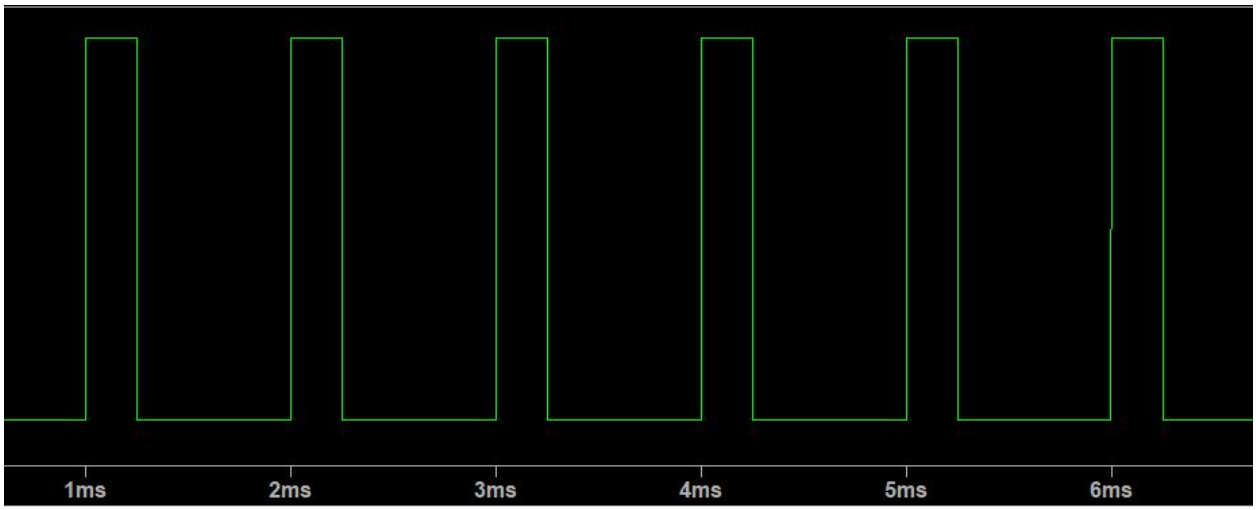
Digital input 1	Digital input 2	1 pole pair
0	0	Open loop
1	0	500-5000 rpm
0	1	500-20000 rpm
1	1	500-80000 rpm

Giving commands to motor:

Below is the signal given to the controller. Max voltage 5V and the duty cycle is set to 25%, so the mean voltage is 1.25 the set rpm can be calculated as follows.

$$n = [\{(V\,set - 0.1) \div 4.9\} \times (N max - N min)] + N min$$

Nmax and Nmin can be found from the table above
For a mean voltage of 1.25V it is 19158.163 rpm



Code:

```
int digi_1=8;//used for closed loop control
int digi_2=9;
int enable =10;
int speed_data=A9;//give PWM signal
int direction_pin=11;//use this pin to change motor rotation direction
int feedback=A8;//calculate frequency of this signal for rpm
// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  Serial.begin(9600);
   digitalWrite(digi_1,HIGH);
  digitalWrite(digi_2,HIGH);
  digitalWrite(direction_pin,LOW);
  digitalWrite(enable,HIGH);
```

```
}

// the loop function runs over and over again forever
void loop() {

 analogWrite(speed_data,50);
  int data=analogRead(feedback);

  Serial.println(data);                  // wait for a second
}
```