UROP:王裕誠(walker)
製作日期:112 年 8 月 21 號
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注意，以下為先前的 spec，但是和實作上有不小的出入，已透過邏輯分析儀測量過，還請在製作時注意相關的問題

1.文件上的 PWM 需要 20KHZ 的頻率，並且 Duty cycle 轉速越高，但實際上 Duty cycle 越高轉速越高，請在製作時要注意，可以參考韌體的 Motor_Control 相關程式

2.此專案使用 PID 系統，相關函數講解可在 https://github.com/Majid-Derhambakhsh/PID-Library 找到相關資料

Function list for 48R

date : 2015/8/5
Draw : Y.Kitamura
Nidec corporation
DSC No. : ??

【Pin assignment】

CN1 (BM05B-SRSS:JST)

No.	Signal	Function	Note
1	GND	Signal Ground	-
2	NC	-	-
3	FG *3	Rotational Speed signal	Motor Speed x 24/60 [Hz] / pull-up resistor : 47kΩ (DC5V)
4	VSP *1	PWM Signal Input	The speed of the motor changes by Duty cycle. Duty 0%=MAX. Speed, High/Low Duty : 0 - 100%, Frequency : 20kHz
5	RD *2	Motor Direction Input	Low:CCW(motor), Open:CW(motor), rotational orientation: looking from the rotor side, pull-up resistor:47kΩ (DC5V)

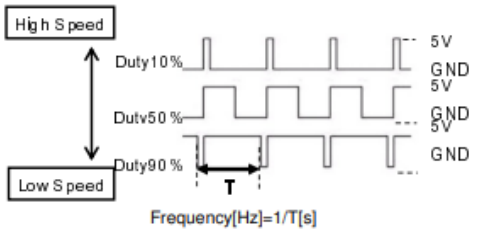
POWER

-	VM	Power supply	DC24V
-	GND	Power Ground	-

***1:PWM (Input)**

You can change the motor speed by Duty cycle.

Freq uency : 20 [kHz]
Duty : 0 ~ 100%
(Duty 0%=MAX. Speed)
Input Voltage:0~5[V]
Low level: 1.0[V] Max
High level:2.0[V] Min



Frequency[Hz]=1/T[s]

***2:RD (Input)**

This signal can switch the direction of motor rotation.
*回転方向の切り替えはモータが停止している時に行って下さい。
High,Open / Low
Input Voltage:0~5[V]
Low level: 1.0[V] Max
High level:2.0[V] Min

***3:FG (Output)**

You can check the rotational speed by connecting an oscilloscope or a pulse counter to FG terminal.
Considering 1 rotation = 24 pulses, we'll find the rotational speed by the following formula.
Rotational speed[min^-1] = Frequency[Hz] x 60 / 24(3FG)