

DC Motor Control

DC motor control is implemented in myCNC software, and it is useful for certain hardware such as the affordable THC lifters used on certain systems:



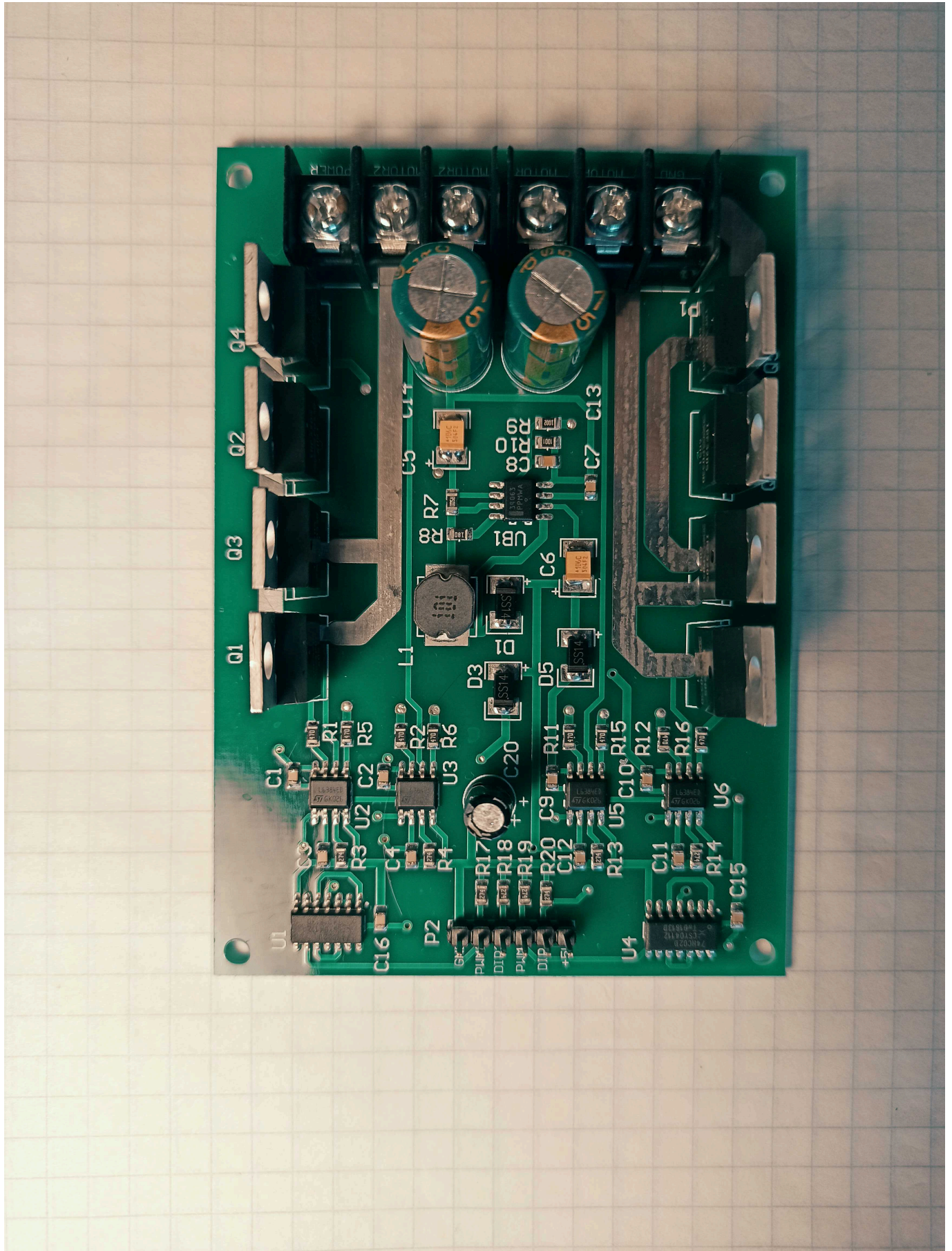
To turn on DC motor control, head into Settings → Config → Technology → THC, and enable the DC Motor Control option:

Screen	THC Small Radius (THC is OFF is radius smaller than)	5
Work Offsets	Alarm Arc Voltage Difference, V (If Difference between Measured Arc Voltage and Reference is more than given value, THC is suspended for "THC delay")	60
Parking Coordinates	Alarm Arc Voltage Rise, V (If Measured Arc Voltage Rise per 8ms is more than given value, THC is suspended for "THC delay")	30
Technology	THC start delay, s	1
Plasma Cutting	THC PI-control P ratio	<input checked="" type="checkbox"/> -500
Hypertherm Communication	THC pre-off, s	0
Gas/Oxyfuel	Accept jog while Job is running	<input checked="" type="checkbox"/>
Cutcharts	THC Jog Speed Ratio, [%]	50
THC	THC Measure 1V Step, [V]	3
Spindle	DC Motor Control	<input type="checkbox"/>
Tools	THC PID dead zone	3
ATC Pots	THC restart delay, s	0.1
Lathe	THC PI-control I ratio	-2
Multi Head	Cutting pre-off, s	0.5
Laser control	of Cutting Rate	
Tangential Knife		
Special Purpose		
Camera		
5 axes RTCP		
Panel/Pendant		

When the checkbox is enabled, the Z+ and Z- buttons send commands to turn on the DC motor instead of controlling the Z axis via pulse-dir. This is also relevant in situations where it appears that

the the pulse-dir Z axis does not move and the coordinates do not change despite pressing the buttons - it is then necessary to check whether this option has been incorrectly left enabled.

Pictured below is the DC motor driver board:



There are two control signals - direction and PWM voltage (speed) reference signal.

Gvariables used for DC control

Name	Global variable	Description
GVAR_SET_THC_PWM	8970	Set a PWM number to work with the DC motor
Value assigned to variable		
0		Disable (switch to regular pulse-dir axis)
1		Enable PWM1
2		Enable PWM2
3		Enable PWM3

Name	Global variable	Description
GVAR_SET_THC_PWM_Dir	8971	Set a DIR signal number

Name	Global variable	Description
GVAR_SET_DC_MOVE	8972	Give a Jog command, with the recorded variable being the movement speed
Value assigned to variable		
Positive value		Movement up
Negative value		Movement down
0		Stop

From:

<http://www.cnc42.com/> - myCNC Online Documentation

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Last update: **2022/06/16 13:30**

