FASTERCNC CO,. LTD.

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High quality, reliable —— DD6600T4V1

DD6600T4V1 Stepper motor driver

Product Manual（English）

DD6600T4V1 stepper moto driver

▶ 1、 Introduction

Adopting the chip manufactured by Japan Toshiba, DD6600T4V1 is a high sub-division two-phase step motor driver developed by many times' optimization, which is suitable to drive the small and medium phase(the two or four phase current lower than 4A) hybrid step motor. Comparing with other driving mode, the new style bipolar constant current chopping driving technology enables the DD6600T4V1 output higher speed and power when you use the same motor. Its sub-division feature improves the motor operating accuracy, decreases the shaking and reduces the noise.
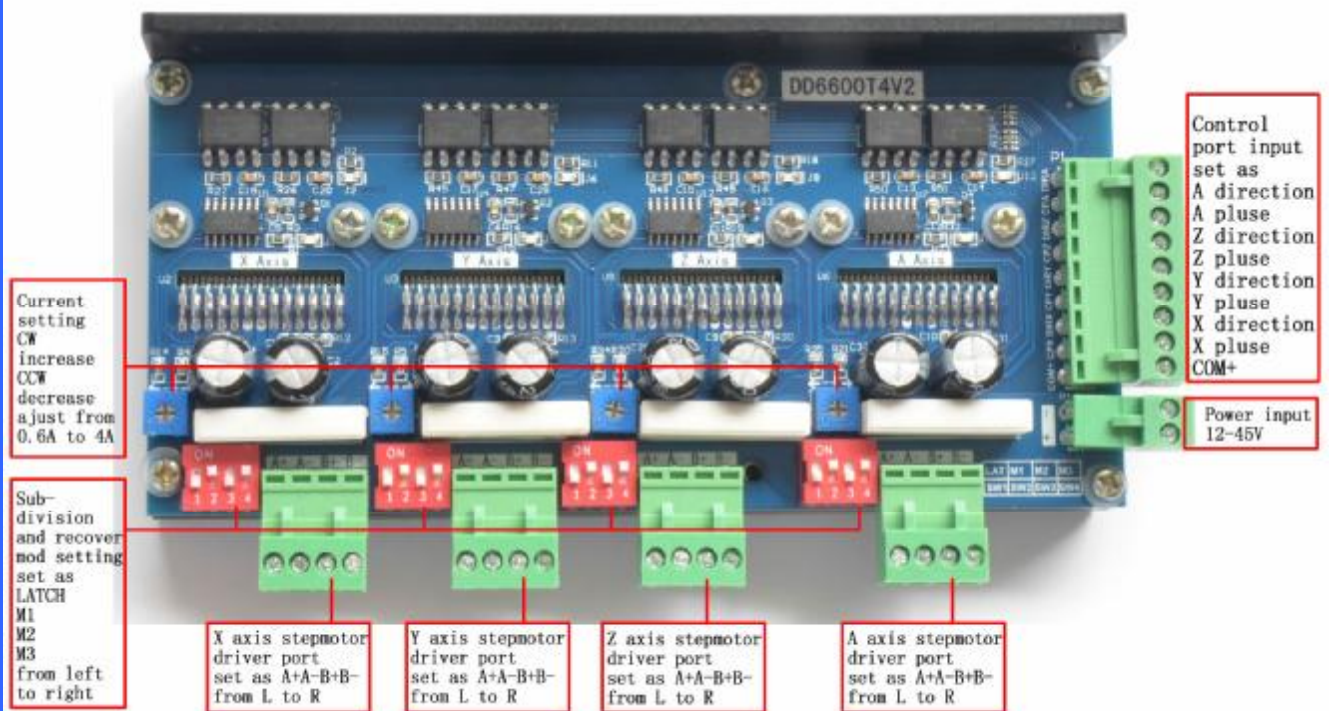
▶ 2、 Specification

■ High performance, low price

■ constant current chopping driving technology

■ Supply voltage 12~45VDC

■ high-speed optocoupler signal isolation input.

■ 20Khz chopping wave frequency

■ subdivision accuracy 1、2、4、8、16choosable

■ Input electrical signal TTL compatibility

■ Automatic current halving in rest

■ easy to assemble in terms of appearance design

■ 4 axis stepper driver out

■ Maximum driving current4A

■ Could drive any two or four-phase hybrid stepping motor with 4A phase one time .

3、application fields

It is suitable to various kinds of small or middle size of automation equipment and instrument,

like the small size engraving machine and chip mounter.

4、wire connection definition

Control port input set as A direction A pluse Z direction Z pluse Y direction Y pluse X direction X pluse COM+

Power input 12-45V

Current setting CW increase CCW decrease ajust from 0.6A to 4A

Sub-division and recover mod setting set as LATCH M1 M2 M3 from left to right

X axis stepmotor driver port set as A+A-B+B- from L to R

Y axis stepmotor driver port set as A+A-B+B- from L to R

Z axis stepmotor driver port set as A+A-B+B- from L to R

A axis stepmotor driver port set as A+A-B+B- from L to R

Control Port   define:

PORT	Function
+	Power Positive 12-45VDC
-	GND
+COM	COM(Positive of all signal)
CPX	Negative of X AXIS PULSE
DIRX	Negative of X AXIS direction
CPY	Negative of Y AXIS PULSE

DIRY	Negative of Y AXIS direction
CPZ	Negative of Z AXIS PULSE
DIRZ	Negative of Z AXIS direction
CPA	Negative of A AXIS PULSE
DIRA	Negative of A AXIS direction

Strong Voltage signal interface

signal	function
VIN+	Direct-current power12~45V input+terminal, recommend to use40V8A
GND	Direct-current power ground terminal
A+	Step motor A+phase terminal
A-	Step motor A-phase terminal
B+	Step motor B+phase terminal
B-	Step motor B-phase terminal

CAUTION: This driver do not contain the anti-plug backward circuit, thus positive-negative reversal is prohibited!   Otherwise, the driver will be damaged!

▶ 5、electrical specification

Electrical specification （T=25℃）

Description	FMD2740			
	Min. value	Typical value	Max. value	Unit
Output phase current	0.5	-	4	A
Input power source voltage	12	40	45	V
Logic input voltage	3	5	7	V
Logic input current	5	10	15	mA
Stepping motor impulse frequenc	0	-	150	KHz
Min. impulse time	1	-	-	us

▶ 6.Operating environment and parameter

Cooling type		Natural cooling or force-air cooling
Operating environment	Circumstance	Avoid the dust, oil mist and corrosive gas
	Temperature	0℃-+50℃
	Humidity	40-90%RH
	Shake	6m/s2 MAX
Storage temperature		-20℃-+65℃
Weight		250g

7、machine installation size
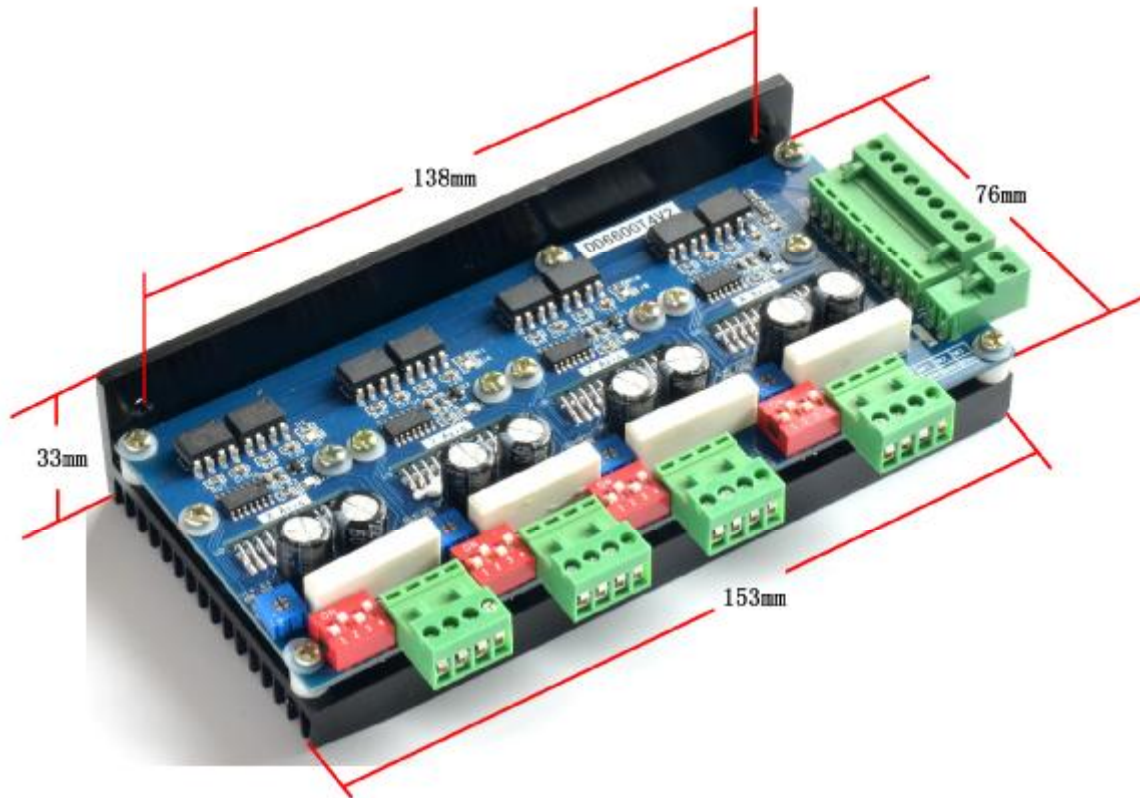
8、power supply

Machine could operate within the voltage of DC12V-45V. The common switch DC power supply and the transformer+bridge rectifier+capacitor filtering (capacitance range:2000U-5000U), both are allowable for the DD6600T4V1 driver's power supply. But the voltage wave crest shall less than 50V. It is recommended that the user adopt the 36V-40V DC power supply lest the power grid fluctuation exceeds the driver's voltage range.

Attention: 1, the polarity of the power supply mustn't be reversed.

2, Several drivers can share one power source in order to reduce the cost. But the rated power and output current of the power source shall be increased; heat dissipation shall also be noticed.

DD6600T4V1

▶ 10、 Sub-division dial switch setting

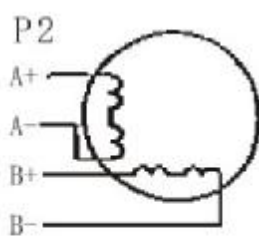| Sub-divisin multiple	Step NO./Circle(1.8° /full step)	SW3	SW2	SW1
STANDBY	0	OFF	OFF	OFF
1	200	ON	OFF	OFF
2	400	OFF	ON	OFF
2	400	ON	ON	OFF
4	800	OFF	OFF	ON
8	1600	ON	OFF	ON
16	3200	OFF	ON	ON
STANDBY	0	ON	ON	ON

▶ 11、current   dial switch setting

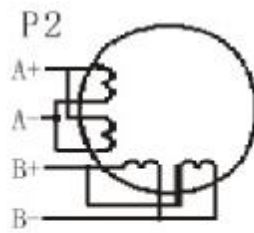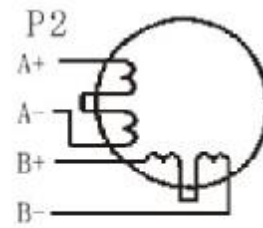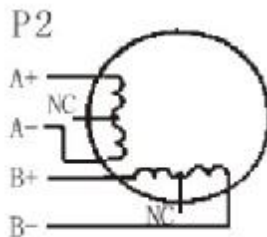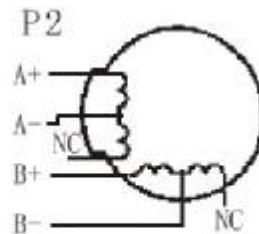Current setting CW increase CCW decrease ajust from 0.6A to 4A
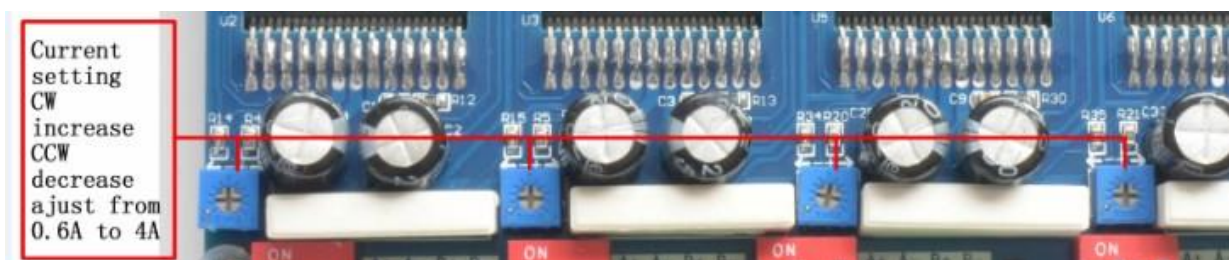
0.5 – 4A   Current   Adjut

▶ 12、the motor wiring

The DD6600T4V1 driver can drive the four and six wire or the eight wire 2/4 phase motor under the phase current of 4A. Below is the way of connection for four, six and eight wire:

P 2
A+
A−
B+
B−
4线电机

P 2
A+
A−
B+
B−
8线电机并行接法
高速性能好

P 2
A+
A−
B+
B−
8线电机串行接法
低速力矩大

P 2
A+
NC
A−
B+
B−
NC
6线电机
高力矩模式

P 2
A+
A−
NC
B+
B−
NC
6线电机
高速模式

▶ 13、the matching of drive and motor

DD6600T4V1 driver could drive the two phases and four phase motor manufactured by domestic and overseas company. It is needed to choose the suitable power supply and setting current in order to reach the satisfying effect. The height of power voltage decides the motor performance, while the electric current setting value decides the motor's output torque.

The setting of power supply voltage:
Generally speaking, the higher of the power supply voltage, the stronger of the motor high speed torque, which can avoid the breakdown in high speed. But on the other hand, if the voltage is too high, it will lead to the overvoltage protection, even damage the driver, and the machine would lead low speed shake under the high voltage.

Output electric current setting.
As to the same motor, the higher of the electric current setting value, the higher is the motor output torque, but the motor and driver also generate heat greatly under the high electric current. Therefore mostly the electricity value shall be set at warm but not too heat condition when the motor is under long term operation.

⚠️

Attention: Please run the motor 15-30 minutes after setting the electricity, if the motor temperature is too high, the electricity setting value shall be reduced. If the motor output torque is not enough after setting the motor electricity value, the heat dissipation condition shall be improved to ensure that he motor and driver temperature are not too high.

Wire between of MACH3 USB board and DD6600T4V1

序号	DD6600T4V1 input Port	DDSM Output port
	COM+	COM+
	CPX	X AXIS：CP-
	DIRX	X AXIS：DIR-
	CPY	Y AXIS：CP-
	DIRY	Y AXIS：DIR-
	CPZ	Z AXIS：CP-
	DIRZ	Z AXIS：DIR-
	CPA	A AXIS：CP-
	DIRA	A AXIS：DIR-