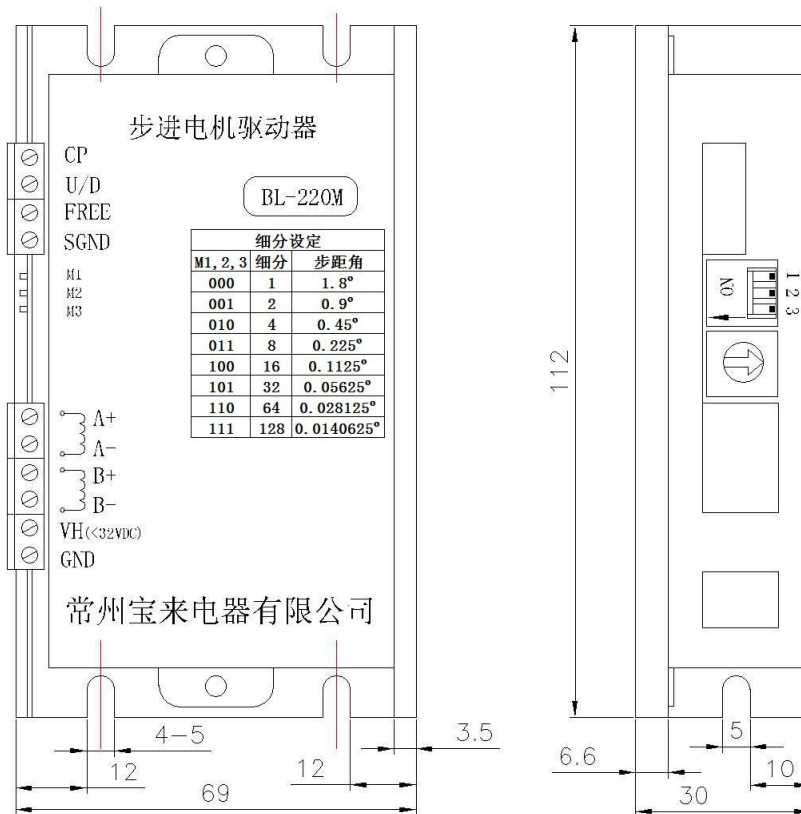


## BL-220M Stepping Motor Driver

### 1、Feature

- 1.1 This driver uses THB6128 chip and controlled by constant current.
- 1.2 Extremely low power loss, high switching efficiency.
- 1.3 Voltage of the driver is **DC12-32V**
- 1.4 Current of the driver includes **0.1—2.0A**
- 1.5 Number of subdivision can be settled as **1, 2, 4, 8, 16, 32, 64, 128** by dial switch.
- 1.6 All input signals and the radiator shell which is the power amplifier part of the photoelectric isolation is insulated with the internal of driver.

### 2、Figure Dimensions



### 3、Instructions

- 3.1 The operating voltage: **DC12~32V**
- 3.2 The phase current of driver: the phase current can be set by potentiometer. Clockwise rotation, the current increase; counter clockwise rotation, the current decreases.
- 3.3 Control the input signal: (refer to the part5)
  - (1)CP: Pulse signal input terminal. The SGND line is grounded, the amplitude is 5V, minimum pulse width should be greater than 5μS, pulse rising edge is effective. Internal limiting optical coupling isolation, optical coupling resistance is 270 Ω. The maximum current can be calculated according to the user's own pulse amplitude coupling, make current at 5 - 10mA.
  - (2)U/D: Motor direction of rotation control terminal. The SGND line is grounded,U/D=0, motor positive running; when U/D=1, motor negative running. Internal limiting optical coupling isolation, optical coupling resistance is 270 Ω.
  - (3)FREE: Offline control terminal. The SGND line is grounded, when FREE=0, motor running normally, when

FREE=1, the driver has no output current, the motor is not controlled by the control system. Internal limiting optical coupling isolation, optical coupling resistance is 270 Ω .

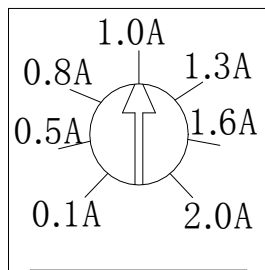
(4) SGND: The grounded line of control signal. Note this terminal must be isolated with the power grounded line (GND).

3.4 Subdivision (stepping angle) setting:

M1、M2、M3: Dial switch of M1 can set the number of subdivision of driver;

You can set the number of subdivision of driver by turning the three switch ON or OFF in order to change the stepping angle of motor.( the details please refer to part6)

4. Setting the phase current



The motor phase current is setted by the potentiometer on the driver, when the driver output current is equal to motor phase current , the motor operation effect is best. The maximum peak current of driver is 2.0A.

4.1 Motor wiring connection :

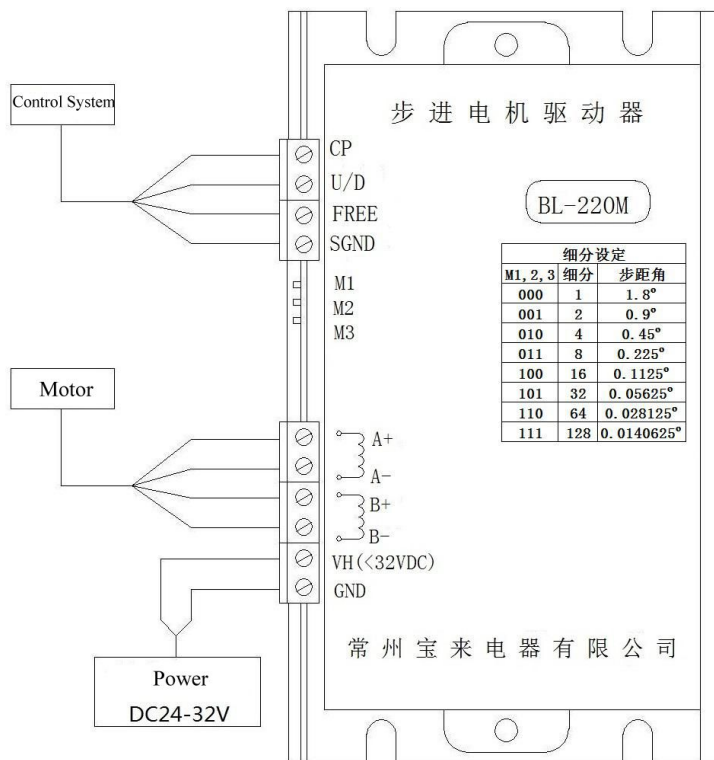
- (1)A: Connected with A phase                      (2)A-: Connected with A- phase。
- (3)B: Connected with B phase。                (4)B-: Connected with B- phase

4.2 The operating voltage connection:

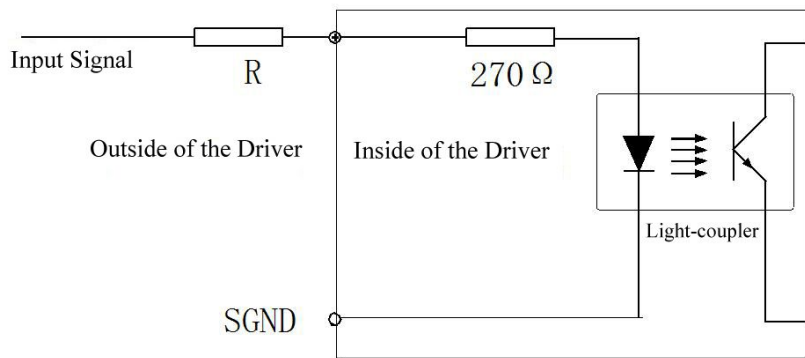
- (1)VH: Connected to the dc power anode.
- (2)GND: Connected to the dc power grounded.

4.3 Observe the operation situation of motor after power is supplied(Note : Please refer to the wiring diagram).

4.4 The Wiring Diagram



### 5、Signal Interface Circuit Diagram



Signal Interface Circuit Diagram

### 6、Subdivision Setting

The number of subdivision can be setted by dial switch. You can only set according to the following table. Please select the high subdivision if the system frequency allows. Step angle is calculated according to the following methods:

Step angle = the natural step angle of motor / NO. of Subdivision.

For example:  $1.8^\circ / 4 = 0.45^\circ$

P 1, 2, 3 ON=0, OFF=1	000	001	010	011	100	101	110	111
NO. Of subdivision	1	2	4	8	16	32	64	128

### 7、Winding Connection

Terminal A and A- are a phase winding, B and B- are another phase winding.

### 8、Matching Motor

BL-220M is suitable for the stepping motor which the size is 57mm or smaller, and all the phase current is less than or equal to 2.0A.