**HB3522 three phase digital driver**

HB3522 It is a three-phase hybrid stepping motor driver based on DSP control. It is a new generation of digital stepping motor driver composed of advanced DSP control chip and three-phase inverter drive module. The driver voltage is AC110-220V, suitable for various types of three-phase hybrid stepping motors with current below 5.0A and outer diameter of 86-110mm. The driver adopts a circuit similar to the servo control principle. This circuit can make the motor run smoothly without vibration and noise. When the motor is at high speed, the torque is much higher than that of two-phase and five phase hybrid stepping motor. The positioning accuracy can reach 60000 steps / revolution. The product is widely used in large and medium-sized CNC equipment with high resolution, such as engraving machine, medium-sized CNC machine tool, computer embroidery machine, packaging machinery and so on.

Characteristic ：

·It has 16 equal angle constant moment subdivision, with a maximum resolution of 60000 steps / revolution

·The highest reaction frequency can reach 200 KPPS

·When the step pulse stops for more than 1.5s, the coil current will be automatically reduced to half of the set current

·Photoelectric isolation signal input / output

·Drive current 1.3A/phase to 5.0A , 16 gear adjustable

·Single power input, voltage range：AC110-220V

·Phase memory function (Note: after the input stops for more than 3 seconds, the driver will automatically remember the current motor phase, power on again or the WF signal changes from low level to high level, and the driver will automatically restore the motor phase)

Current setting：

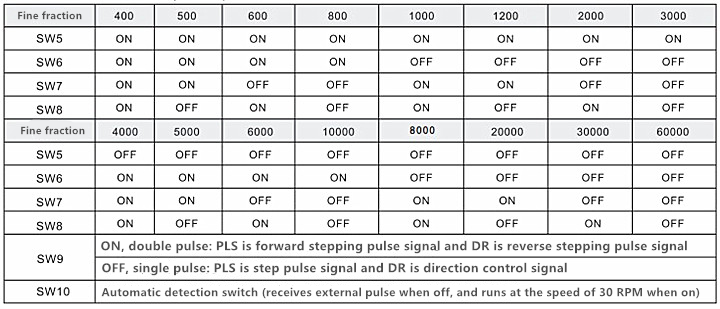
The working current of the driver is set by the SW1-SW4 terminal, and the operating current is the normal working output current setting switch (see the table below for details)



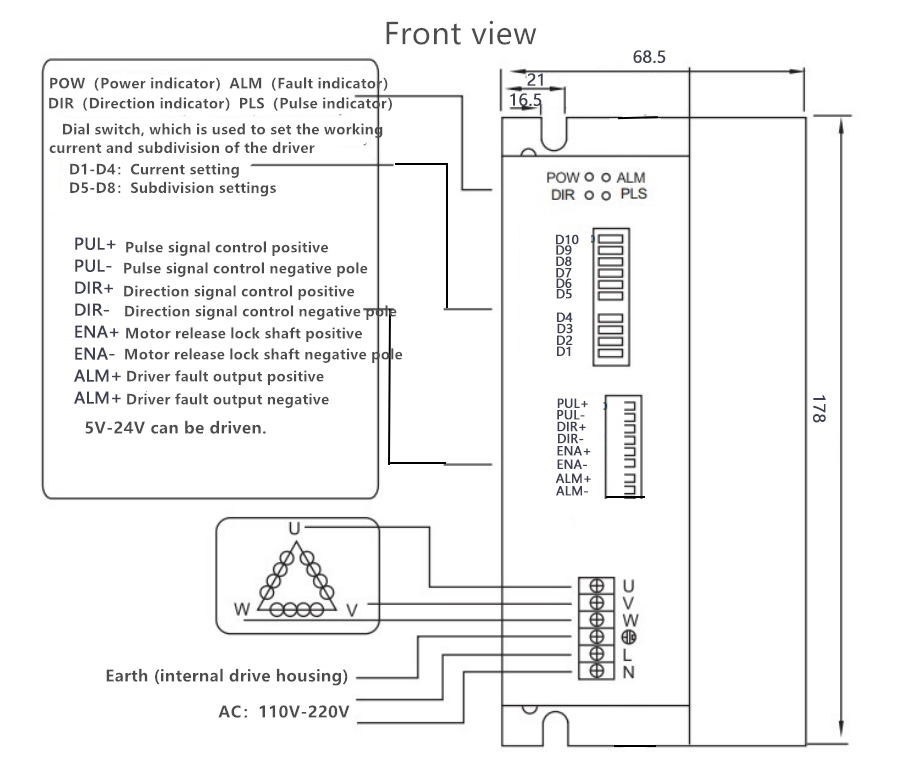
Subdivision settings

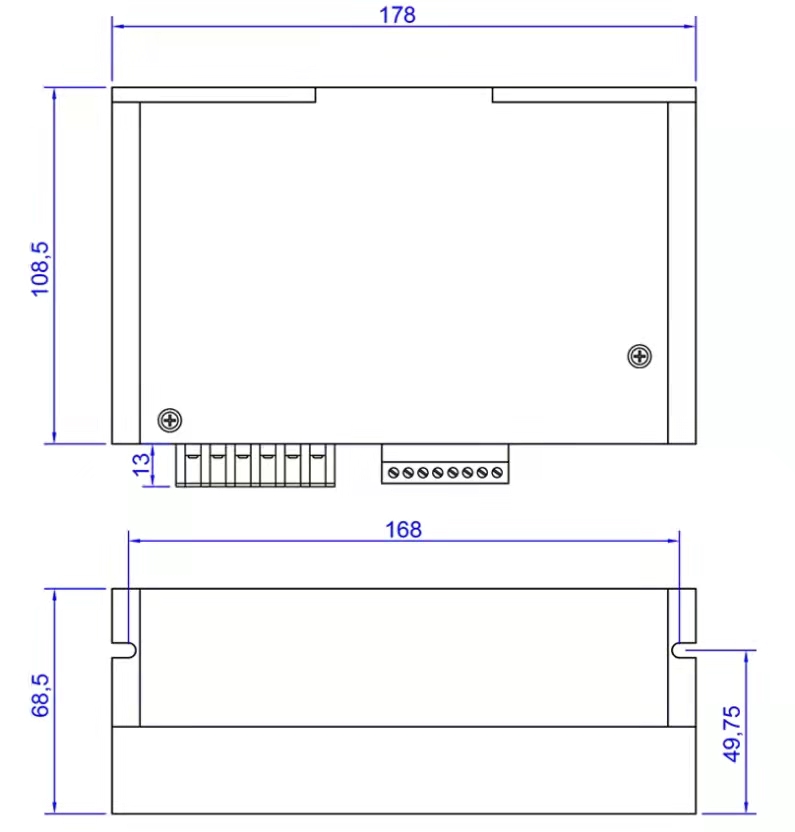
Driver subdivision is set by sw5-sw8 terminals, with a total of 16 gears. SW9 and SW10 are function settings. Attached table e.g.: fraction (pulse / revolution)

Note: sub fractions can be customized according to customer requirements!



Driver wiring and dimension diagram





Note：

1. The input voltage is 220V (+ - 10% voltage fluctuation is acceptable)；
2. The input control signal level is within the range of 5V-24V. Pay attention to the control signal voltage during wiring；
3. The falling delay of the input pulse signal is valid；
4. When the drive temperature exceeds 80 ℃, the drive stops working and the fault indicator ALM is on. Until the drive temperature drops to 50 ℃, the drive needs to be powered on again to resume working. In case of overheating protection, please install a radiator.
5. The over-current (load short circuit) fault indicator ALM is on. Please check the motor wiring and other short circuit faults. After troubleshooting, it is necessary to power on again for recovery.
6. No motor fault indicator ALM is on, please check the motor wiring, and power on again after troubleshooting.

Pin function description

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Terminal wiring | Pin number | sign | function | notes |
| Green 8-bit control terminal | 1 | PUL+ | Pulse signal control positive | 5V-24V can be driven. |
| 2 | PUL- | Pulse signal control negative pole | The falling edge is valid and the motor starts to rotate after receiving the pulse. |
| 3 | DIR+ | Direction signal control positive | 5V-24V can be driven. |
| 4 | DIR- | Direction signal control negative pole | The falling edge is valid and the received level changes the direction of the motor. |
| 5 | ENA+ | Motor release lock shaft positive | 5V-24V are valid. |
| 6 | ENA- | Motor release lock shaft negative pole | After receiving the level, the driver stops working and the motor is in a free state |
| 7 | ALM+ | Driver fault output positive | If the driver fails, the signal is valid and the output is low |
| 8 | ALM- | Driver fault input negative | Connect low level 0V |
| Black motor power terminal | 1 | U | Motor three-phase line U-phase pole |  |
| 2 | V | Motor three-phase line V-phase pole |  |
| 3 | W | Motor three-phase line W-phase pole |  |
| 4 | NC | Space |  |
| 5 | L | 220V power input terminal |  |
| 6 | N | 220V power input terminal |  |