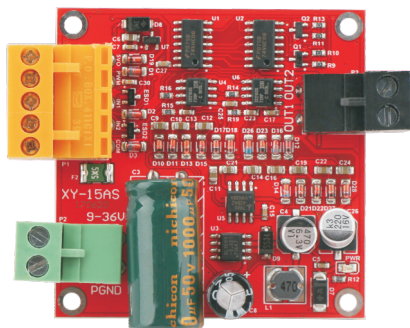


12/24/36V 15A DC Motor Drive Board Full PWM Speed



Product Highlights:

1. Industrial design, stable and reliable, with anti-static circuit, transient suppression protection, undervoltage protection, interface ESD and over-voltage protection.
2. Support 9-36V wide voltage range, the maximum sustained load current 12A (without heat sink), 15A (simple heat), 20A (thick large radiator).
3. Similar to L298 drive logic, three lines (PWM, IN1, IN2) control speed, revolution and connter revolution and brake.
4. Support full PWM, can be directly used to control the prevolution and connter revolution, PWM effective range is 0.1% ~ 100.0%.
5. Can provide 5V power supply for the microcontroller and other controllers, and it has 5V output overcurrent protection, and connect signal overvoltage protection.

Product Parameters:

1. Power supply voltage: 6V-36V (voltage is too low, large load current easily lead to damage to the module, so the circuit board labeled 9-36V.)The power must not be reversed or more than 37V, or may burn the module, it is recommended that the power Input in series 20A fuse.
2. Drives without heat sink rated current 12A, rated current 12A ~ 15A need to do simple cooling, 15A ~ 20A need to do thick heat sink. (simple cooling - such as in the module below a 1mm thick thermal insulation silicone pad, and then 5mm copper column to the module fixed to the wall)

3. Control signal interface (orange) can provide users with external 5V, microcontroller no additional power supply, the maximum supply current is 0.5A.
4. Control signal high voltage: 2.0V ~ 5.5V, compatible with 3.3V and 5V TTL level;
Control signal low voltage: 0V ~ 0.8V, 0V when floating;
Control signal voltage is 5V, the control signal current is 50uA.
5. PWM effective range: 0.1% ~ 100.0%;
PWM signal frequency range: 0 ~ 100KHz (recommend 20KHz);
PWM minimum effective pulse width: 200ns.
6. Operating temperature -25 °C ~ 80 °C.
7. Mounting hole diameter: 3mm

Control Signal Logic:

Note: 0 is low level, 1 is high level, × is any level, dangling is low.

COM for the signal ground, 5V 5V output, can provide 5V power supply for the microcontroller and other controllers; PWM pin can be external PWM, if use key to control, PWM pin should be connected with the 5V; IN1 and IN2 should be for the two-way motor positive-negative rotation and brake control signal.

IN 1	IN 2	PWM	OUT1、OUT2
0	0	×	Brake
1	1	×	Dangling
1	0	1	Full speed
0	1	1	Full speed reversal
1	0	PWM	Forward speed
0	1	PWM	Reverse speed

The Parameters for Motor Using:

(Please do a simple cooling or thick heat sink according to the motor parameters.)

1.36V rated voltage motor

300W and below rated power or below 12A rated current motor for a long time full working doesn't need cooling;

300W ~ 370W rated power or 12A ~ 15A rated current motor needs to do a simple heat dissipation;

370W ~ 500W rated power or 15A ~ 20A rated current motor need to do thick heat dissipation.

2. 24V rated voltage motor

200W and below rated power or below 12A rated current motor for a long time full working doesn't need cooling;

200W ~ 250W rated power or 12A ~ 15A rated current motor need to do a simple heat dissipation;

250W ~ 330W rated power or 15A ~ 20A rated current motor need to do thick heat dissipation.

3. 12V rated voltage motor

70W and below rated power or below 12A rated current motor for a long time full working doesn't need cooling;

70W ~ 90W rated power or 12A ~ 15A rated current motor need to do a simple heat dissipation;

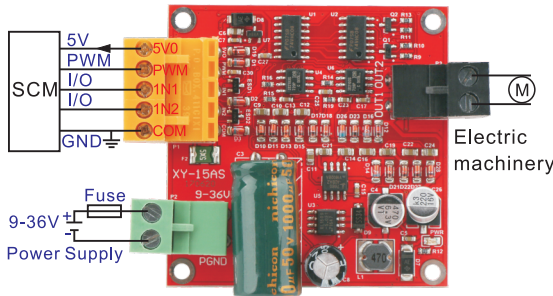
90W ~ 120W rated power or 15A ~ 20A rated current motor need to do thick heat dissipation.

(This drive is not cooling under the conditions of rated current 12A, rated current 12A ~ 15A need to do simple cooling, 15A ~ 20A need to do thick heat sink. Motor rated power is generally refers to the output power, considering the motor work loss, so calculating rated current to be considered motor efficiency, rated current = rated power / rated voltage / efficiency)

How to use it:

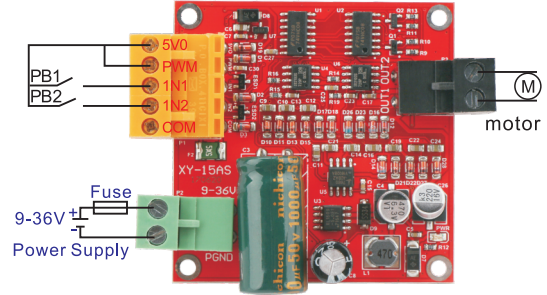
1. The wiring method of using the microcontroller to control the motor rotation

Single-chip power ground connect the drive module COM; PWM pin to the microcontroller's PWM output for speed, or directly connected to the high-level full speed operation; IN1, IN2 connect the two IO of microcontroller to control the motor revolution and connter revolution and Brakes; 5V0 can provide 5V power supply for the microcontroller.



2. The wiring method of only use the keys to control the motor revolution and connter revolution

PB1 and PB2 are two keys. When the PB1 is pressed down and PB2 is not pressed, IN1 is high level, IN2 is low level, the motor is turning; when PB2 is pressed and PB1 is not pressed, IN1 is low level, IN2 is high level, Motor reverse; when PB1 and PB2 are bounced, IN1 and IN2 are low level, the motor brake.



Precautions:

1. The drive supply voltage should be between 6-36V. If the power exceeds the rated voltage, it may burn the drive; the voltage is too low, the load current is large, may also cause the drive to burn. It is recommended to connect the 20A fuse in series at the power supply.
2. In the forward and reverse switching time is best to brake more than 0.1S and then reverse, otherwise it may damage the drive.
3. Since the control signal line is very fragile, any signal lines (orange terminals) of the control signal cannot be routed together with the wiring of the power supply or motor during use. Otherwise, the drive may be burned and difficult to be repaired.
4. When the drive is powered down, do not turn the motor quickly, or the motor's electromotive force may burn the drive. If the application requires the drive to power down when the machine should also quickly turn the motor, it is recommended in the drive motor interface string of a relay, relay coil and drive use the same power supply. In this way, when the power supply is turned off, the relay disconnects the drive from the motor.
5. The drive should be connected to the motor before it is powered on, otherwise it may burn the fuse or drive.
6. Motor interface must not be short-circuited, otherwise it may burn the fuse or drive.
7. Note that the drive does not get wet, do not let the components on the drive board short circuit, do not touch the components on the board pins and pads.
8. Please carefully read the product before use, if your error causes the module damaged or you have unauthorized replacement of the module device, no refund.