ZM-BL2215F Motor Driver

Main features

1. It can connect external speed display board to display the rotation speed; also connect to the computer to set the drive parameters;
2.Current speed double closed loop design, low speed and large torque, stable operation;
3.High torque and high speed output, the maximum speed is 10000rpm/min; (depending on the user's motor);
4.Speed adjustment mode: external connection PWM or potentiometer;
5. There are EN (enable), DIR (direction) signal control terminal;
6.It can output speed measuring pulse FG, (optical isolation, gate output);
7.With over current, over voltage, under voltage, overheating, Hall sensor phase error, motor stall and other protection functions.

Product description

ZM-BL2215F BLDC driver is the latest high-tech product of our company for high power motor. This product uses a large-scale integrated circuit to replace the original hardware design, with higher anti-interference and fast response performance. It is suitable for driving three-phase BLDC motor with or without Hall, which minimum input current of 15A or less and a power supply voltage of less than AC80V~250V (panel nominal AC80V~220V). The temperature is low when working at high currents. The products are used in a series of electrical automation control fields such as knitting equipment, medical equipment, food packaging machinery and power tools.

Electrical performance parameters

Power supply	AC70V~230V AC power supply (capacity selected according to motor power)
Input maximum current	15A (depending on the motor and rated load)
Input maximum power	3000W
Suitable motor	Suitable for motors with output power ≤ 2000W
Insulation resistance	>500MΩ (normal temperature)
Insulation strength	0.5KV at normal temperature and pressure, 1 minute

Use environment parameters

Cooling method		Natural air cooling & forced air cooling
Use environment	Occasion	Avoid dust, oil mist and corrosive gases
	Temperature	0° C～+50° C
	Humidity	<80% RH, no condensation, no frosting
	Shock	<0.5G (4.9m/s2) 10Hz-60Hz (non-continuous operation)
Storage temperature		-20℃～+65℃
Dimensions		**205x150x78mm**
Weight		About 1.5Kg

[Note] Due to the drastic changes in the temperature of the storage and transportation environment, it is easy to cause condensation or frosting. In this case, the driver should be placed for more than 12 hours. After the temperature of the driver is consistent with the ambient temperature, it can be powered on.

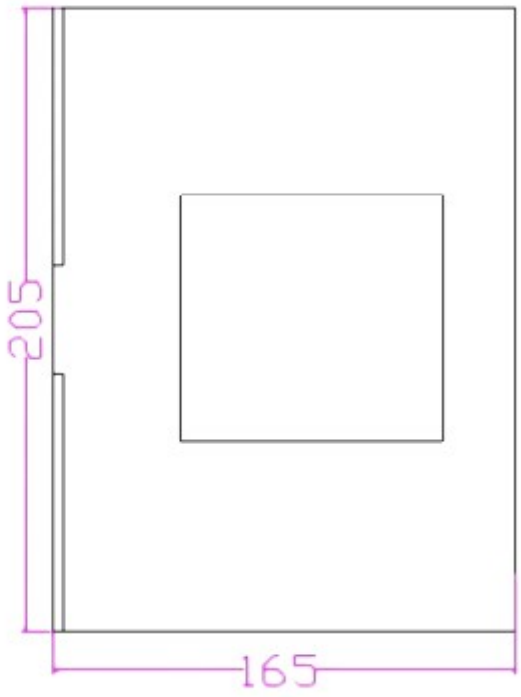
Terminal interface description

Function	Mark	Description
Indicator light	POWER	If the green power indicator is lighten, it shows that power is normal.
	ALM	If the red status indicator is slow flash, it means waiting; Quick flash means operation; It always lights meaning faults or off-line;
Control signal port	+5V1	Control signal power+(inner power output)
	VSP	External speed control signal Control way: By connecting with a potentiometer to change VSP, then it can complete 0 ~ 100% speed adjustment. The range is 0-5V
	FG	Motor speed pulse output is measuring the frequency of this signal. Then converts it into the actual motor speed.
	DIR	Rotary direction is controlled by high and low electrical level, motor forward: connected with GND1, motor reversal （anticlockwise） ;without GND1 or connected with +5V, motor forward (clockwise)
	EN	Connected EN with GND1, motor can work(online status);without connected or connected with +5V1， motor can not work(offline status and the red light keep working)
Hall control port	+5V2	+ motor's Hall power
	HU	Hall sensor signal U phase input
	HV	Hall sensor signal V phase input
	HW	Hall sensor signal W phase input
	GND2	The motor's Hall power supply
The motor and power port	U、V、W	The motor's three-phase output signal
	AC1，AC2	The input power is AC80V～250V.(boards show AC80V-220V)

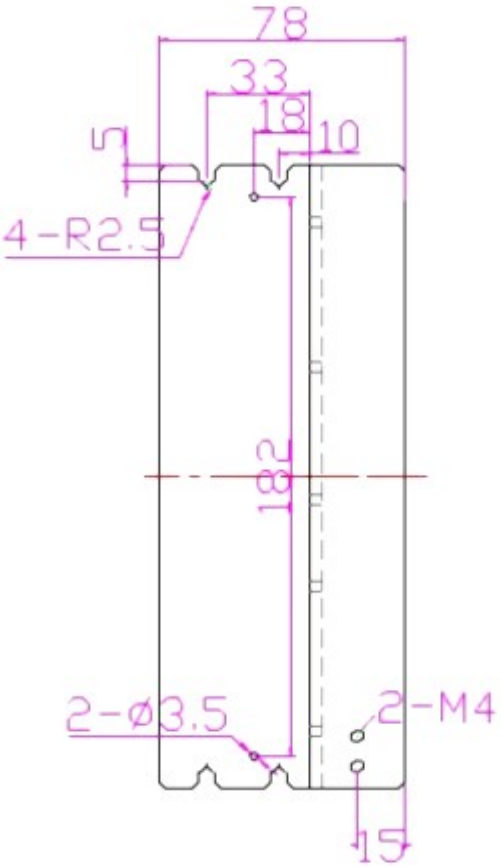
Function and method

Speed mode (VSP/PWM)	1. The external input speed: two external terminals of the external potentiometer(5K-10K) respectively connected to the driver's GND1 and +5 V1 terminal. If the regulator is connected to the VSP end, you can use an external potentiometer to adjust speed. It can also be made by the other control unit's (such as PLC, microcontroller, etc.) input analog voltage to VSP side (relative to GND1). VSP port accepts the range of DC 0V ~ +5 V and the corresponding motor speed is 0 ~ rated speed; 2. PWM speed: the PWM's positive end is connected to the VSP. The negative end connects with GND1. The frequency is 100Hz-100KHz, changing the duty cycle speed.
Start/Stop signal (EN)	By controlling high low-level of EN to control the motor's stop and run. When EN is low level, motor run; when EN is high level or non-connect ,motor stop working, red light keep working. When control motor stop by EN port, it is nature stop, and the run regular is related with overloading inertia. Power Consumption is less than or equal to 30mA. Fault Value: short circuit with EN and GND1
The motor positive and negative signal (DIR)	By controlling high low-level of DIR to control the motor's positive and reverse turn. Noticed: Swerved suddenly when motor is at high speed, to avoid the damage of motor and equipment , when DIR get the transform single , we must make motor stop running for 2s, then change the motor direction ,improve speed to the set value.
Speed signal output (FG)	The drive provides the motor speed pulse signal, which is positive proportion to the motor speed, pulse output way: RPUP 4.7k, open collector output 1. the motor speed (RPM) = F ÷ N× 60 F = actually measured frequency current on the FG foot by frequency table N = Pole logarithm , 2 pole motor, N = 2; 4 pole motor, N = 4 For example: the user selects a 4 pole motor. When the output FG signal is 200Hz, the motor speed = 200 ÷4× 60 = 3000 r / min. 2.optoelectronic isolation, gate output

Connection Diagram



Product Size (units : mm)



Note: When installing, ensure the equipment well ventilated, and check whether the cooling fan is running normally. When several drivers are used at the same time, ensure the distance between them is not less than 5cm. To ensure safety, be sure to connect the ground protection terminal of the drive to the equipment protection ground.