

SYS-SYS-BLD-70 DC Brushless Motor Driver

Overview:

SYS-BLD-70 Suitable for for low power low voltage DC brushless motors.
Speed adjustment for 70W power three-phase DC brushless motor.

Electrical parameters:

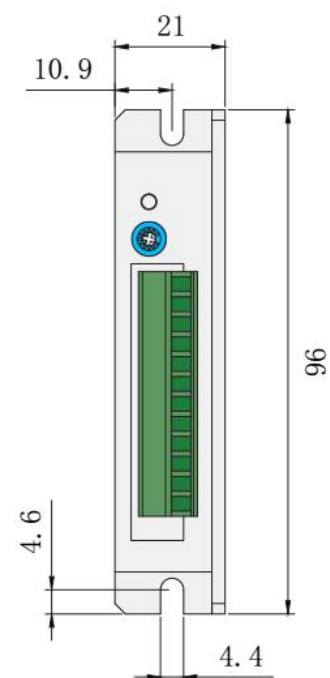
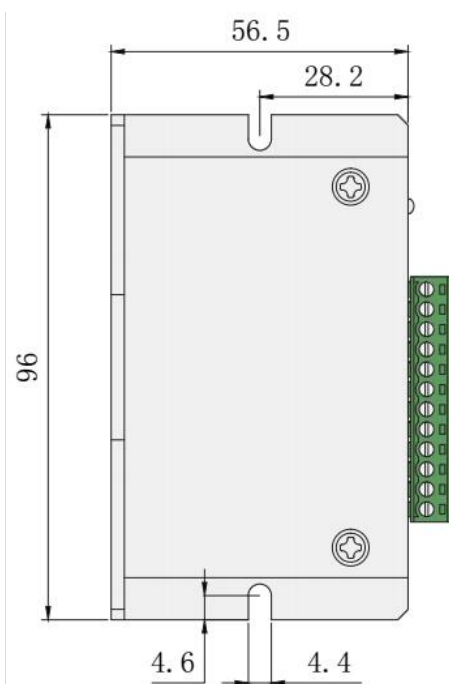
parameter	Min	Typical	Max	Unit
Input voltage	12	24	30	VDC
Output current	–	–	3	A
motor speed	0	3000	20000	RPM
Hall signal voltage	–	5	–	V
Hall drive current	–	20	–	mA
External speed potentiometer	–	10	–	K Ω



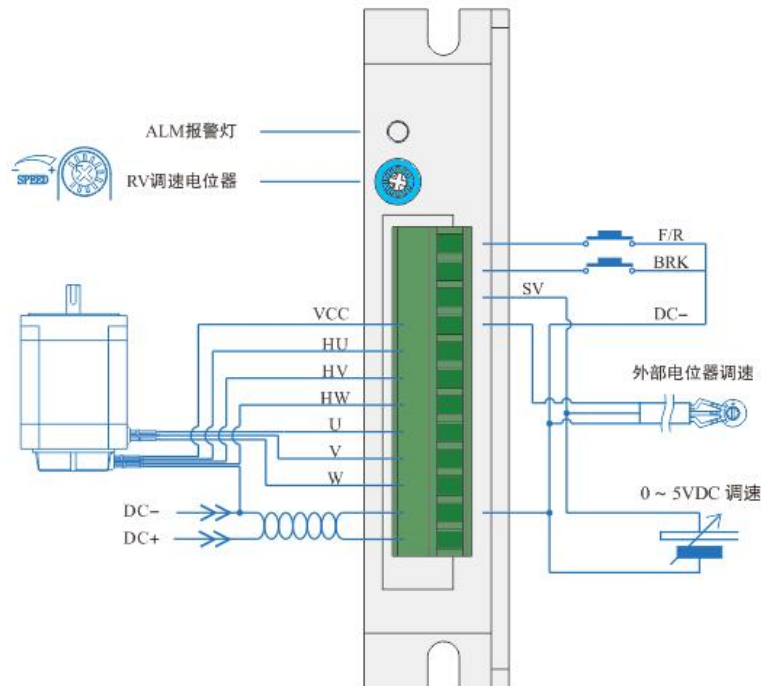
Environmental indicators:

envirnmental factor	Environmental indicators
cooling method	Natural cooling or forced cooling
Use occasion	Avoid dust, oil and corrosive gases
Operating temperature	10°C-+50°C
environment humidity	90%RH(no condensation)
humidity	5.7m/S2max
storage temperature	0°C-+50°C

Mechanical dimensions and installation drawings:



Driver interface and wiring diagram: Driver interface



Input connection

signal	Terminals	content
control signal	F/R	Motor rotates forward when floating or high level, F/R and COM short or low level motor reverse
	BRK	Brake signal control terminal, high level or port suspended motor brake stop, low level or BRK and COM short-circuit operation
	SV	① external input speed potentiometer ② external analog voltage input
	VCC	External potentiometer power port / Hall power positive
Hall signal	HU	DC brushless motor Hall signal HU
	HV	DC brushless motor Hall signal HV
	HW	DC brushless motor Hall signal HW
Motor signal	U	DC brushless motor U phase
	V	DC brushless motor V phase
	W	DC brushless motor W phase
Power connection	DC-	DC power input negative / Hall power negative
	DC+	The DC power input positive. (Voltage range: DC12-30V)

RUN:

Start and brake

The factory setting of the BRK terminal and the DC- terminal is to connect the BRK terminal to the DC- terminal. When the power is turned on, the driver SYS-BLD-70 can drive the motor to run by itself. 。 Connect or disconnect the BRK and DC-end cables to control motor operation and braking.

When the connection between the BRK terminal and the DC- terminal is connected, the motor operates.

When the connection between the BRK terminal and the DC- terminal is disconnected, the motor brakes.



Direction control

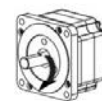
The factory setting of the F/R terminal and the COM terminal is that the F/R terminal and the COM terminal are not connected.

When the power is turned on, the motor rotates forward.

Connect or disconnect the F/R and COM terminals to control the forward and reverse rotation of the motor.

When the connection line between the F/R terminal and the COM terminal is disconnected, the motor rotates forward.

When the connection line between the F/R terminal and the COM terminal is connected, the motor is reversed.



Note: When viewed from the direction of the motor shaft, the motor shaft is clockwise for forward rotation and vice versa.

Alarm

When the motor has an overcurrent, hall input error, stall, over temperature, over voltage, etc., the driver will send an alarm signal. Fault alarm output (ALM) at this time.

The common (COM) will be turned on, causing the fault alarm output (ALM) to go low Level, while the drive stops working and the alarm light is red.

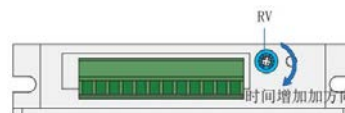
Selection and setting of speed control scheme:

Use built-in potentiometer RV speed

Rotate the built-in speed potentiometer RV clockwise, increase the motor speed.

Rotate the built-in speed potentiometer RV counterclockwise, reduce the motor speed.

Note: When you need to switch to the external SV input control speed mode, please rotate the built-in speed potentiometer RV counterclockwise to the limit position.

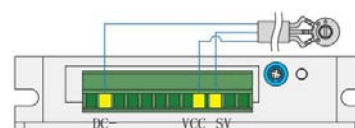


Use external potentiometer to adjust speed

When using an external potentiometer to adjust the speed, use a potentiometer with a resistance value of 10KΩ. The middle terminal of the potentiometer is connected to the SV end, and the terminals on both sides are connected to the REF+ and COM terminals, respectively.

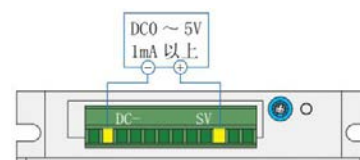
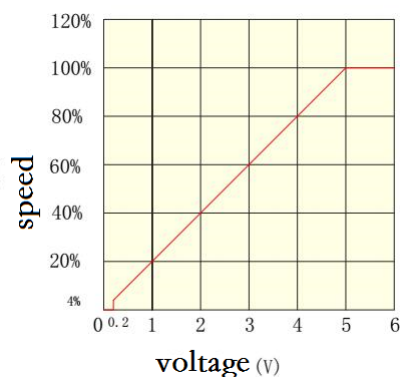
Note: ① At this time, the built-in speed potentiometer RV needs to be rotated counterclockwise to the limit position.

② Be sure to pay attention to the order in which the potentiometer leads are connected.



Use external analog signal to regulate DC0-5V

Analog signal voltage and motor speed (no load)



When the input voltage is approximately 0.2V, the motor speed is 4% of the maximum speed; when the input voltage is approximately 5V, the speed of the motor is the maximum. The maximum speed value depends on the motor specifications and the supply voltage.

Note: When switching to the external SV input control speed mode, the built-in speed potentiometer RV must be rotated counterclockwise to the limit position.