BLD-120A Brushless dc motor driver

Brief introduction

BLD 120A is designed by NIETZ and mainly for low power low voltage BLDC motor. Motors less than 70w are adaptive.

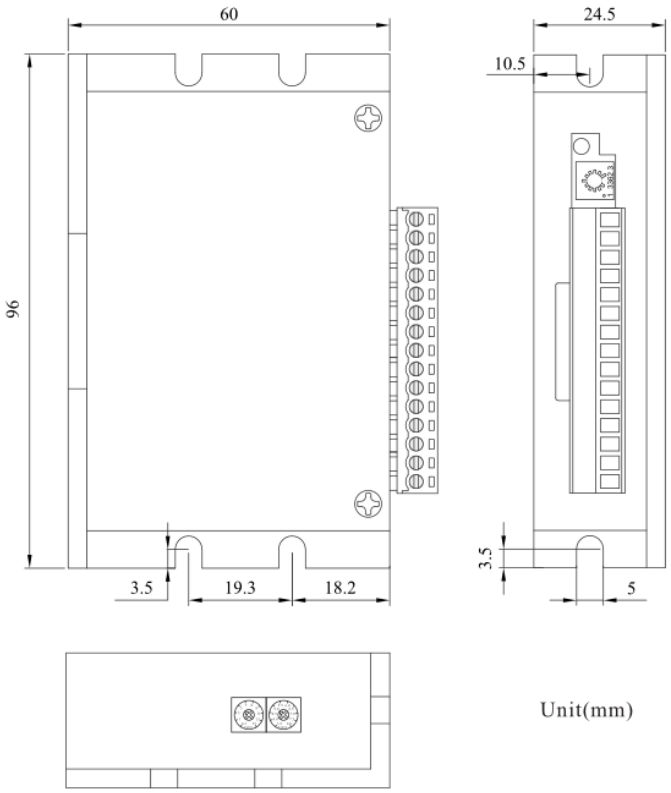
Features:

Acc/Dec time setting
Built-in RV speed setting
Max output current P-sv setting
External potentiometer speed setting
Restart
External analog signal speed setting
Alarm signal
PWM speed setting

Electrical properties and environmental indicators

Driver parameter	Min Value	Typical Value	Max Value
Voltage input DC (V)	12	24	30
Current outpu(A)	-	-	8
Motor speed range(rpm)	0	-	20000
Hall signal voltage(V)	-	-	5
Hall drive current (mA)	-	20	-
External potentiometer(KΩ)	-	10	-

Dimension (Unit: mm)



Function setting

Max output current setting

Use P-sv to set the output peak current. When load is increased suddenly, the output current will be limited by the setting value, which reduces motor speed and protects the motor. Current setting ranges: 1.6-8A. Please set as the right.
As the admissible error of real current and setting value is ±10%, to ensure safety, set current lower accordingly.


P-sv Current

ACC/DEC time setting

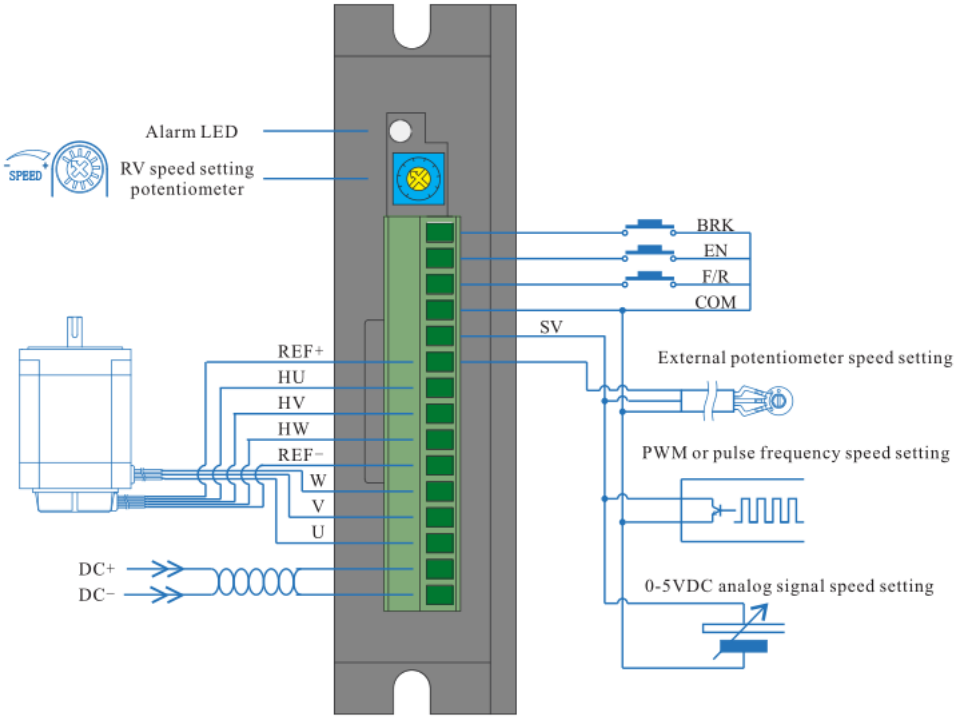
Set acceleration time and deceleration time by ACC/ DED, range is 0.3-15s. Acceleration time is time needed from 0 to rated speed. Deceleration time is time needed from rated speed to 0.


ACC/DEC

Port signal description

Signal category	Terminal	Functional Description
Control signal	BRK	Motor brake stop control signal; BRK and COM connect in default, motor brake stops when BRK and COM disconnect.
	EN	Stop signal terminal; EN connects COM, motor runs, otherwise motor stops.
	F/R	Motor direction control terminal; F/R and COM disconnect, motor will rotates clockwise, and otherwise, motor will rotate anticlockwise.
	COM	Common port(0V)
	SV	① External potentiometer speed setting input; ② External analog voltage input terminal ③ PWM speed setting input
Hall signal	REF+	Hall sensor signal power supply+
	HU	Hall sensor signal Hu
	HV	Hall sensor signal Hv
	HW	Hall sensor signal Hw
	REF-	Hall sensor signal-
Motor connection	W	Motor line W phase
	V	Motor line V phase
	V	Motor line U phase
Power connection	DC+	Power supply positive electrode (12-30VDC)
	DC-	Power supply negative electrode (Hall sensor negative electrode)

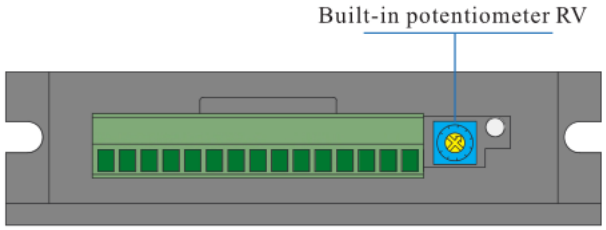
Driver interface and wiring diagram



Speed setting methods and setting

1. Speed setting via built-in potentiometer

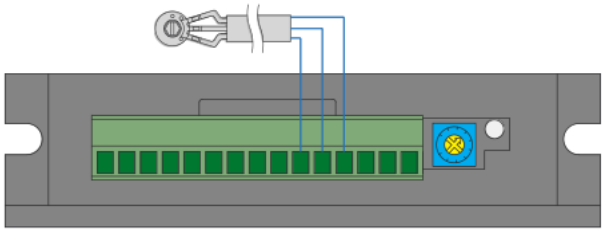
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases.



2. Speed setting via external potentiometer

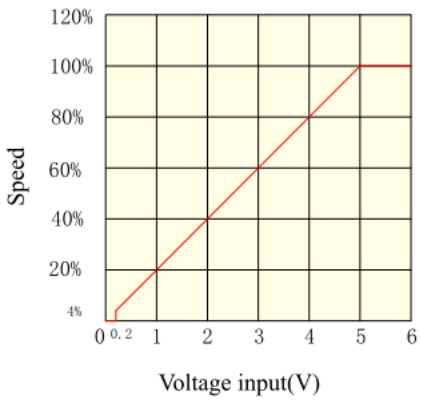
Use a suitable potentiometer with a resistance value of 10KΩ; when connect external potentiometer, the middle terminal connects to SV, the other two terminals connect to REF+ and COM.

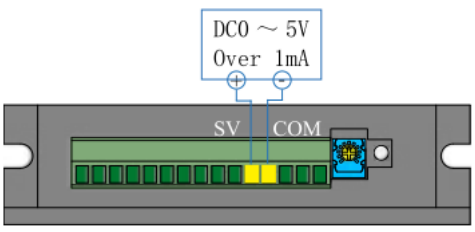
Notice: 1. RV should be rotated anticlockwise to limit position.



3. Speed setting via external analog signal 0-5V

The analog signal voltage can be 0 ～ 5VDC; when the voltage is 0.2VDC, the motor speed reaches 4% of fastest speed; when the voltage is 5 VDC, the motor speed reaches maximum value, which depends on the motor specification and power voltage.



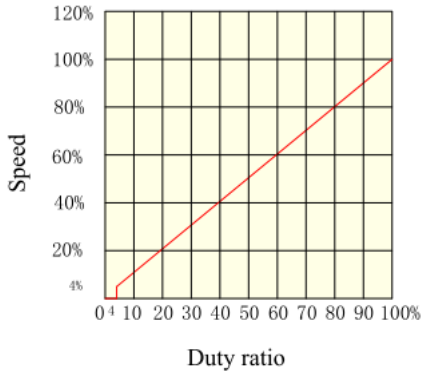


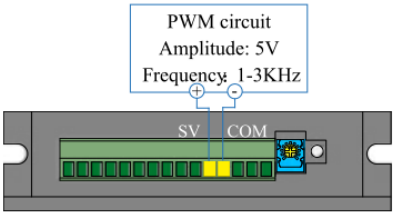
Notice RV should be rotated anticlockwise to limit position.

4. PWM Speed setting

When duty ratio of pulse is 4%, motor speed is 4% of max speed, when duty ratio is 100%, motor reaches max

speed. The max speed also depends on the motor specification and power voltage.





Notice RV should be rotated anticlockwise to limit position.