BLD -70 Brushless dc motor driver

1. Brief introduction

BLD 70 is designed by NIETZ and mainly for low power low voltage BLDC motor. Motors less than70w are adaptive.

1.1 Features

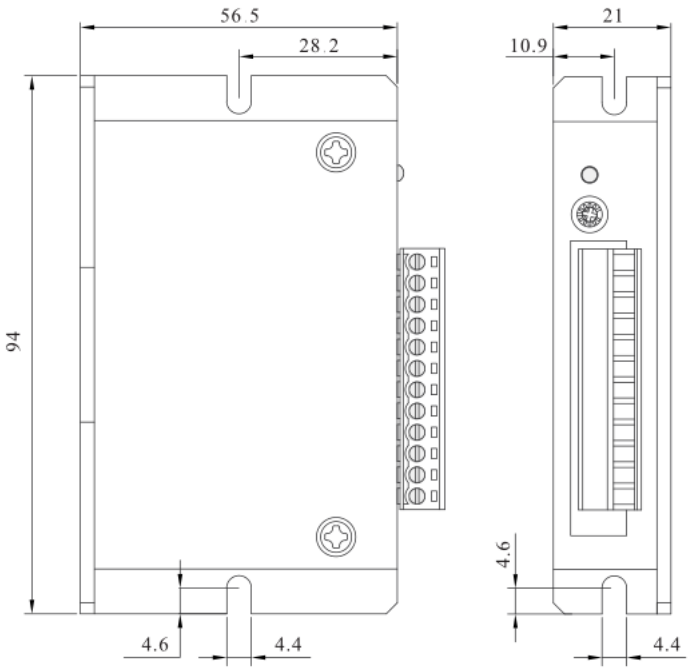
Built-in RV speed setting
Compact size
External analog signal speed setting
Strong over-current
External potentiometer speed setting
Over-temperature protection

Electrical properties and environmental indicators

Electrical properties

Driver parameter	Min Value	Typical Value	Max Value
Voltage input DC (V)	12	4	30
Current output(A)	-	-	3
Motor speed range(rpm)	0	3000	20000
Hall signal voltage(V)	-	-	5
Hall drive current(mA)	-	20	-
External potentiometer(KΩ)	-	10	-

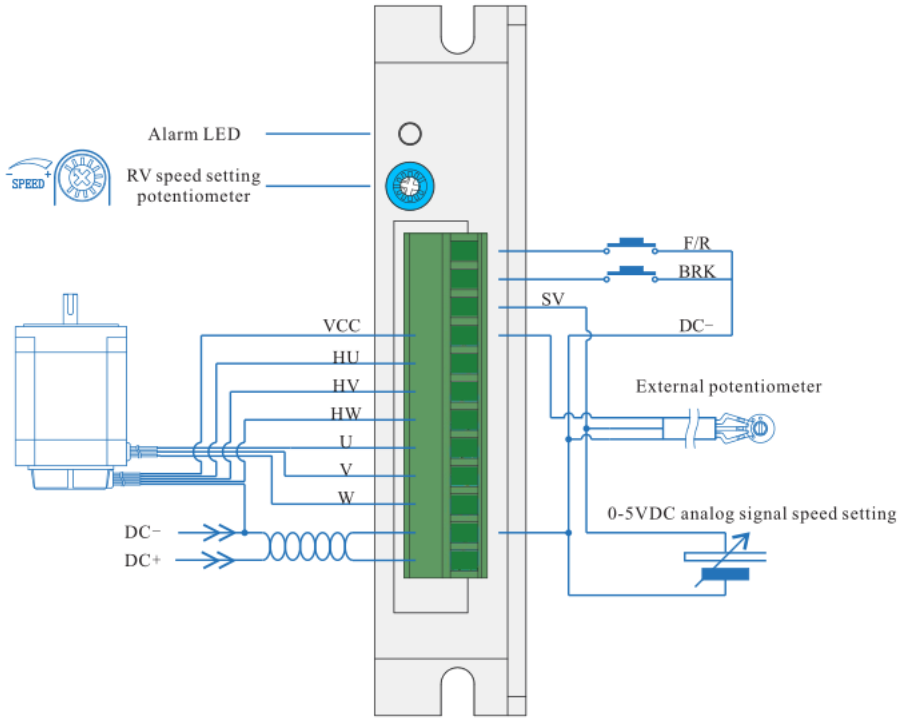
3 Dimension (Units: mm)



Unit(mm)

4 Driver interface and wiring diagram

4.1 Driver interface



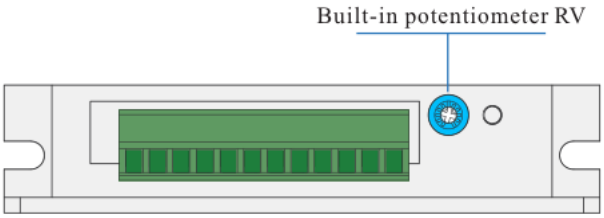
4.2 Port signal description

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

Speed setting methods and settings

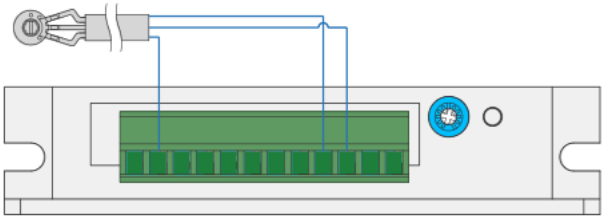
1. Speed setting via built-in potentiometer

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



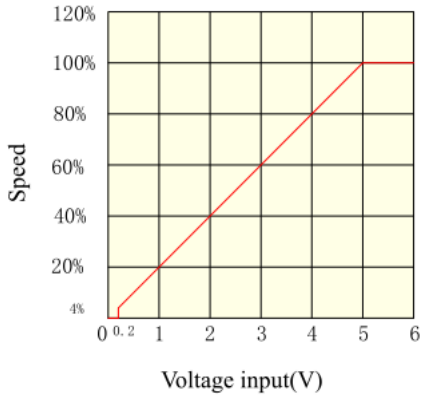
2. Speed setting via external potentiometer

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 VCC and DC-.



3. Speed setting via external analog signal

Relational graph between the analog signal voltage and the motor speed (no load)



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.