BLD−70

Brushless dc motor driver

1 Brief introduction

BLD 70 is designed by ICAN-Tech and mainly for low power low voltage BLDC motor. Motors less than 70w are adaptive.

1.1 Features

- Built-in RV speed setting
- External analog signal speed setting
- External potentiometer speed setting

- Compact size
- Strong over-current
- Over-temperature protection

2 Electrical properties and environmental indicators

2.1 Electrical properties

| Driver parameter	Min Value	Typical Value	Max Value
Voltage input DC (V)	12	24	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	-

2.2 Environmental indicators

Heat Sinking Method	Natural cooling or fan-forced cooling
Atmosphere	Avoid dust, oily mist and corrosive air
Operating Temperature	0 ～ +40℃
Ambient Humidity	90% or less (non-condensing)
Vibration Resistance	5.7m/s² maximum
Storage Temperature	0 ～ +50℃

3 Dimension (Units: mm)
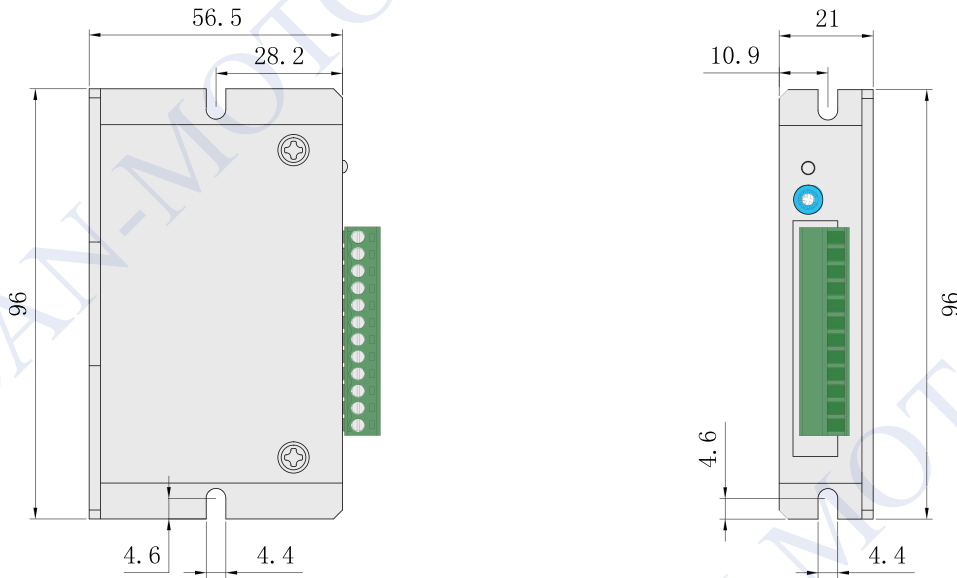
4 Driver interface and wiring diagram

4.1 Driver interface
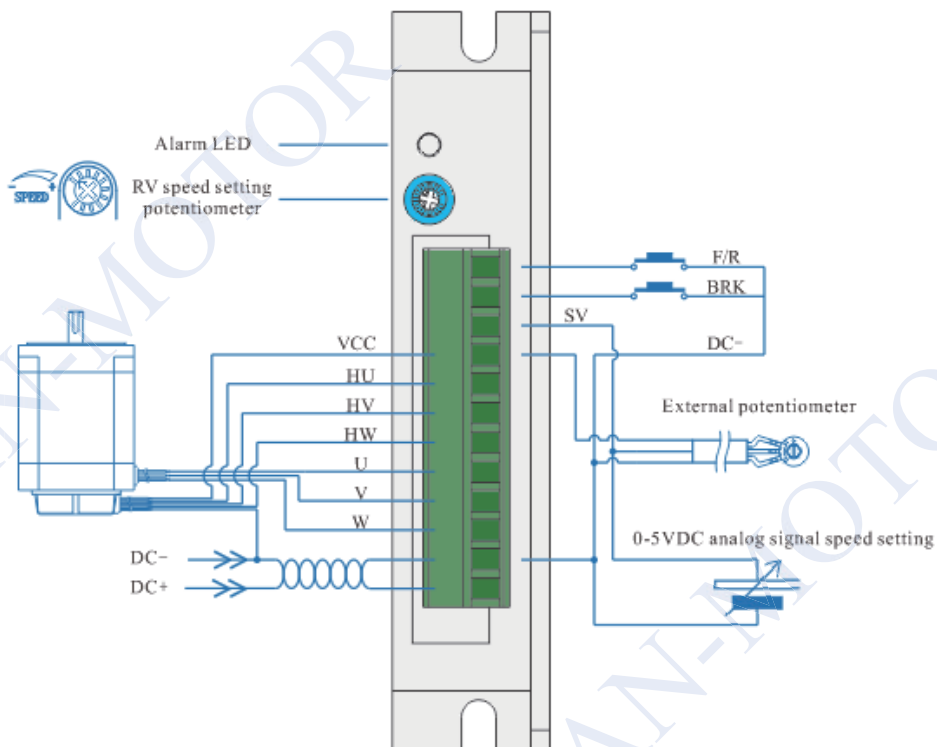
4.2 Port signal description

| 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)

5 Motor moving

5.1 Start and brake

BRK and DC- terminal is short circuit in default and the motor will rotate automatically when power is on. Motor will stop if BRK and DC- disconnect. A switch can be added between BRK and DC- to control the motor.

BRK connects DC-, motor moves

BRK disconnects DC-, motor brake stops.
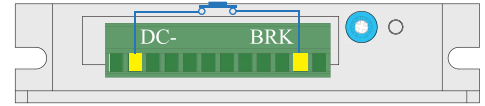
5.2 Direction control

F/R and DC- disconnect in default, when power is on, motor will start to run clockwise. To control the direction of the motor, a switch or PLC can be added between F/R and DC-.

Connect F/R and DC-, the motor will rotate anticlockwise, otherwise, the motor will rotate clockwise.

⚠️
Notice

The direction is judged from the quarter view of the axle.
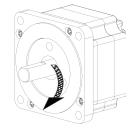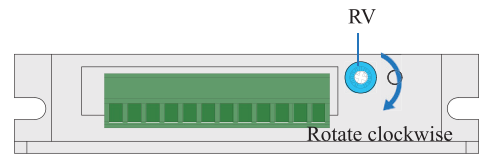
6 Speed setting methods and settings

6.1 Speed setting via built-in potentiometer

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

⚠️ **Notice** If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

RV
Rotate clockwise

6.2 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-.
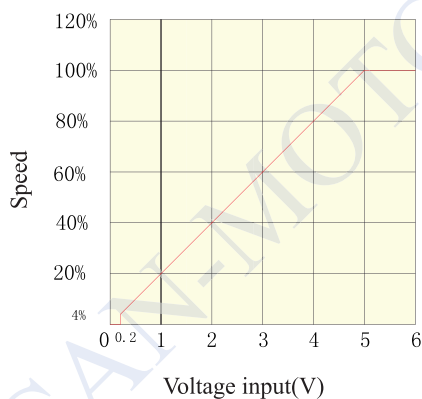
⚠️ **Notice** 1.RV should be rotated anticlockwise to limit position.
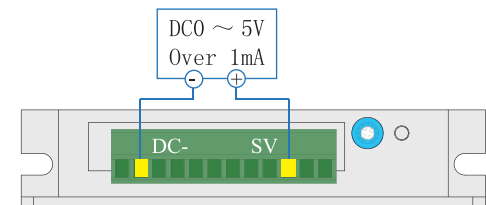2.Notice the order of connection of potentiometer.

DC-   VCC SV
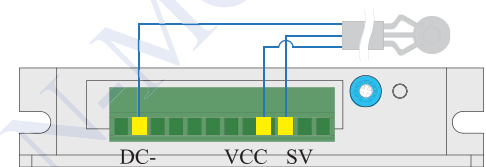
6.3 Speed setting via external analog signal

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

DC0 ～ 5V
Over 1mA

DC-   SV

⚠️ **Notice** RV should be rotated anticlockwise to limit position.

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.
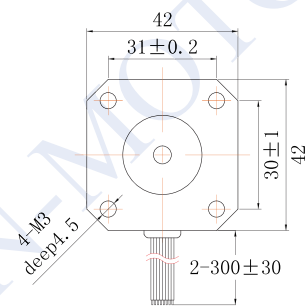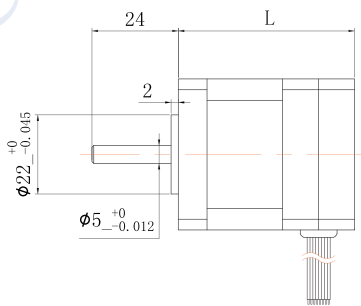
7   Matched motor

The following recommended motors are matched with BLD-70. They have stable speed, large torque, low noise and low vibration.
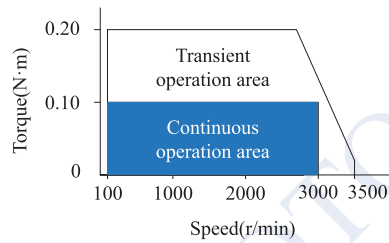
■   42*42mm square BLDC motor

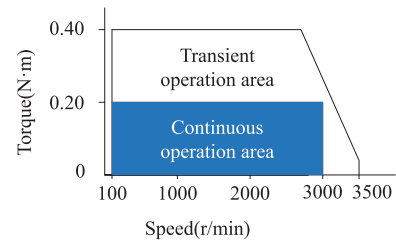| Model	output power (W)	Voltage (VDC)	Rated speed (RPM)	Rated torque (Nm)	Motor length (mm)
42BLF-0330NBB	30	24	3000	0.1	49
42BLF-0630NBB	62	24	3000	0.2	68

●   Torque curve

42BLF-0330NBB

42BLF-0630NBB

■ 57*57mm round BDLC motor

Model	output power (W)	Voltage (VDC)	Rated speed (RPM)	Rated torque (Nm)	Motor length (mm)
57BLY-0730NBB	69	24	3000	0.22	67

■ 57*57mm square BLDC motor

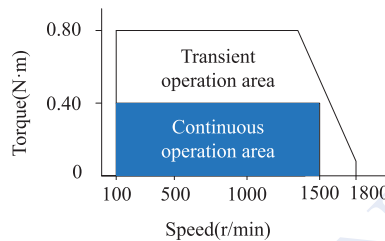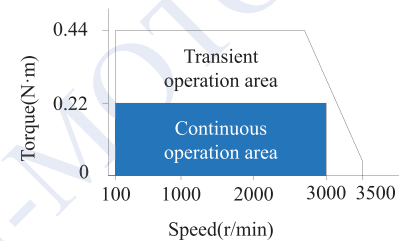| Model	output power (W)	Voltage (VDC)	Rated speed (RPM)	Rated torque (Nm)	Motor length (mm)
57BLF-0615NBB	65	24	1500	0.4	82
57BLF-0730NBB	65	24	3000	0.22	62

● Torque curve
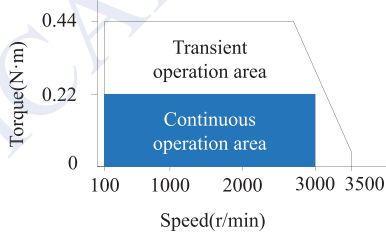
57BLY-0730NBB   57BLF-0615NBB   57BLF-0615NBB

8 After sale service

8.1 Warranty period

Dongguan ICAN Technology provides warranty for 1 year from the date of shipping.

8.2 Return policy

● After-use or man-made damage condition (etc, wrong wiring), no return.

● ICAN Technology guarantees the product quality, but product incompatibility is not in the return or maintain condition.

● Customers don't use the products under the specified electrical performance and environment indicators, no maintain condition.

● Customers change the internal parts.

8.3 Maintenance process

1 Get the maintenance permission.

2 Ship the package to the following address: 4/F, Block B, RuiLian Zhenxing Industrial Park, Wanjiang District, Dongguan City, Guangdong Province.
Tel: 86-0769-22327568

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