

# Advanced BLDC motor&drive system

- ✓ Wide speed range, flat torque
- ✓ Excellent speed stability
- ✓ Low power consumption low noise low vibration
- ✓ Low cogging torque



Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

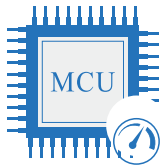
Stepper motor with reducer

## BLDC products characters

### A variety of speed adjustment modes

BLD drivers support multiple speed adjustment modes:

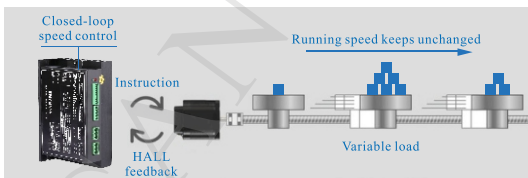
- Speed setting via PWM
- RS485 control
- Speed setting via pulse frequency
- Speed setting via built-in potentiometer RV
- Speed setting via external potentiometer
- Speed setting via external analog signal (0-5V or 0-10V)



### Open-loop and closed-loop control modes

In order to improve the stability of speed, BLD has both open-loop and closed-loop control modes.

- Open loop control (default setting) mode: It is advised to be set up in constant load application environment and motor will have good stability of speed, little rush current.
- Closed loop control mode: It is advised to be set up in variable load application environment. It uses feedback signal to bring motor a stable speed.



### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly.

Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state.

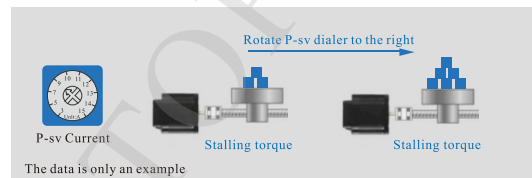
The range can be set is: 0.3s-15s.



### Stalling torque keeping

BLD drivers have stalling torque keeping character. When the motor is locked suddenly, the torque will be kept.

- Stalling torque can be set in adjustable range.
- The locked rotor torque is the shortest time behavior; it cannot be used as a system brake.



BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLD-70 BLDC Motor driver

### Product features

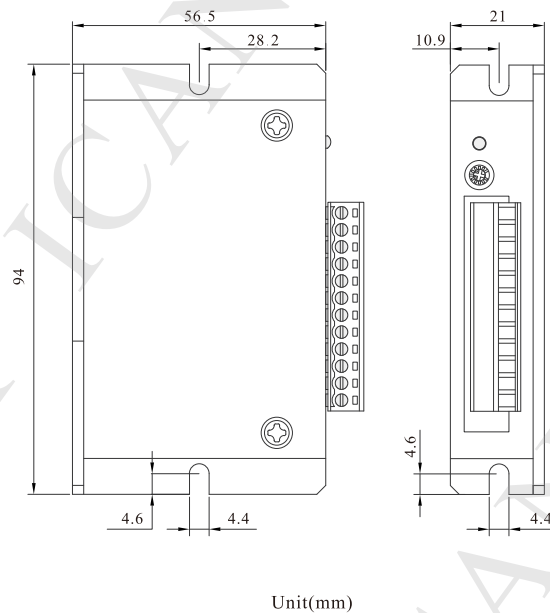
- Drive motor under 70W
- Brake and rotation function
- Strong over-current, over-temperature, Hall fault protection
- Easy operation with on board potentiometer or external potentiometer
- Speed setting via external analog
- Compact size

### Electrical Specification

| Parameters               | Min Value | Typical Value | Max Value | Unit |
|--------------------------|-----------|---------------|-----------|------|
| Power supply             | 12        | 24            | 30        | VDC  |
| Output current           | -         | -             | 3         | A    |
| Over voltage protection  | -         | -             | 30        | VDC  |
| Under voltage protection | 12        | -             | -         | VDC  |
| External potentiometer   | -         | 10K           | -         | Ω    |
| Input analog voltage     | -         | -             | 5         | VDC  |
| Speed control range      | -         | -             | 20000     | RPM  |

\*Limited by the maximum rated speed of the motor

### Machine dimension



Unit(mm)

### Functions setting

#### Brake setting

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.

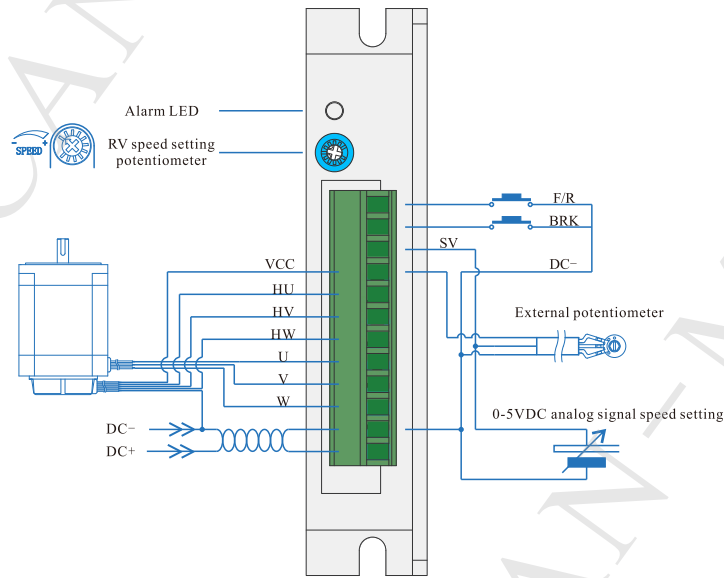
#### CW/CCW rotation setting

F/R and DC- disconnect in default, when power is on, motor will start to run clockwise when customers adjust potentiometer. 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.

### Port signal description

| CN5Terminal | Signal category  | Functional Description   |
|-------------|------------------|--|
| F/R         | Control signal   | Motor direction control terminal; F/R and DC- disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise.                                 |
| BRK         |                  | Motor brake stop control signal; BRK and DC- connect in default, motor brake stops when BRK and DC- disconnect.  |
| SV          |                  | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to VCC and DC-. |
| VCC         |                  | External potentiometer power (Hall sensor positive electrode)  |
| HU          | Hall signal      | Hall sensor signal Hu  |
| HV          |                  | Hall sensor signal Hv  |
| HW          |                  | Hall sensor signal Hw  |
| U           | Motor connection | Motor line U phase   |
| V           |                  | Motor line V phase   |
| W           |                  | Motor line W phase   |
| DC-         | Power connection | Power supply negative electrode (Hall sensor negative electrode)   |
| DC+         |                  | Power supply positive electrode (12-30VDC)   |

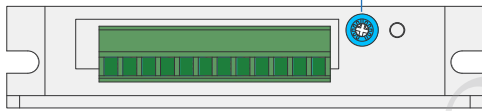
Driver interface and wiring diagram



Speed setting via built-in potentiometer

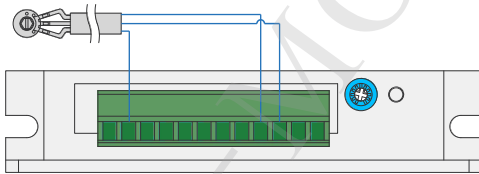
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

Built-in potentiometer RV



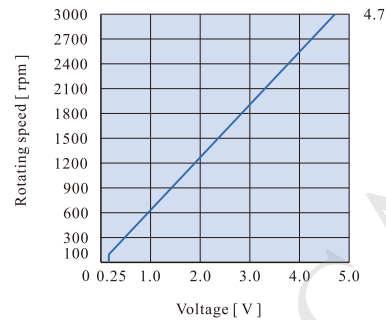
Speed setting via external potentiometer

Use a suitable potentiometer with a resistance value of 10K $\Omega$ ; when connect external potentiometer, the middle terminal connects to SV, the other two terminals connect to VCC and DC-



Speed setting via external analog signal

The analog signal voltage can be 0-5VDC; when the voltage is 0.25VDC, the motor speed reaches 5% of fastest speed; when the voltage is 4.7VDC, the motor speed reaches maximum value, which depends on the motor specification and power voltage.



Matched motor

| Motor model   | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|---------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 42BLY-0330NBB | 42mm        | 30W          | 24VDC   | 3000rpm     | 0.1Nm        | 49mm         | P37         |
| 42BLY-0630NBB | 42mm        | 62W          | 24VDC   | 3000rpm     | 0.2Nm        | 68mm         | P37         |
| 57BLY-0730NBB | 57mm        | 69W          | 24VDC   | 3000rpm     | 0.22Nm       | 67mm         | P37         |
| 57BLF-0615NBB | 57mm        | 65W          | 24VDC   | 1500rpm     | 0.4Nm        | 82mm         | P37         |
| 57BLF-0730NBB | 57mm        | 65W          | 24VDC   | 3000rpm     | 0.22Nm       | 62mm         | P37         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

Stepper motor with reducer

BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLD-120A BLDC Motor driver

### Product features

- Drive motor under 120W
- Acceleration and deceleration settings
- Power protection function (max current setting)
- Easy operation with external potentiometer
- Speed setting via external analog and PWM
- Compact size

### Electrical Specification

| Parameters               | Min Value | Typical Value | Max Value | Unit     |
|--------------------------|-----------|---------------|-----------|----------|
| Power supply             | 12        | 24            | 30        | VDC      |
| Output current           | -         | -             | 8         | A        |
| Over voltage protection  | -         | -             | 5         | V        |
| Under voltage protection | -         | 20            | -         | mA       |
| External potentiometer   | -         | 10K           | -         | $\Omega$ |
| Input analog voltage     | -         | -             | 5         | VDC      |
| Speed control range      | -         | -             | 20000     | RPM      |

\*Limited by the maximum rated speed of the motor

### Functions setting

#### Max output current setting

P-sv current setting is for protecting the driver when it runs under over-load condition via over-current alarm. The set current value should be matched with the rated current of the matched motor and real voltage used. The set range: 1.6A-8A.



P-sv Current

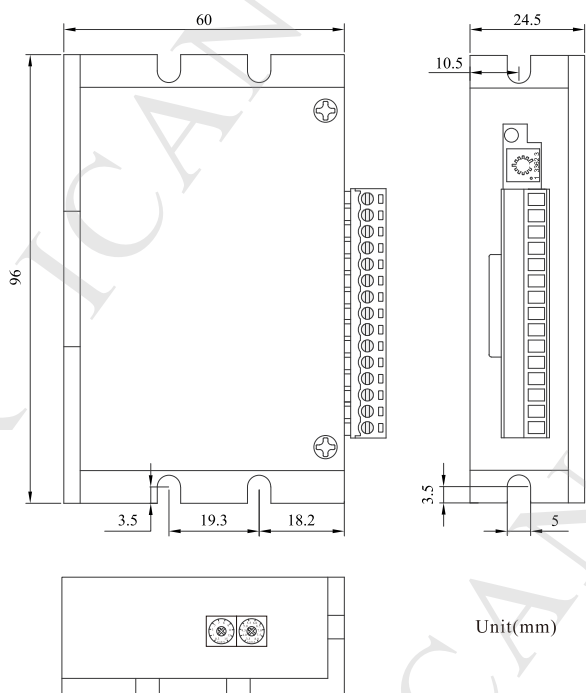
#### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly. Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state. The range can be set is: 0.3s-15s.



ACC/DEC

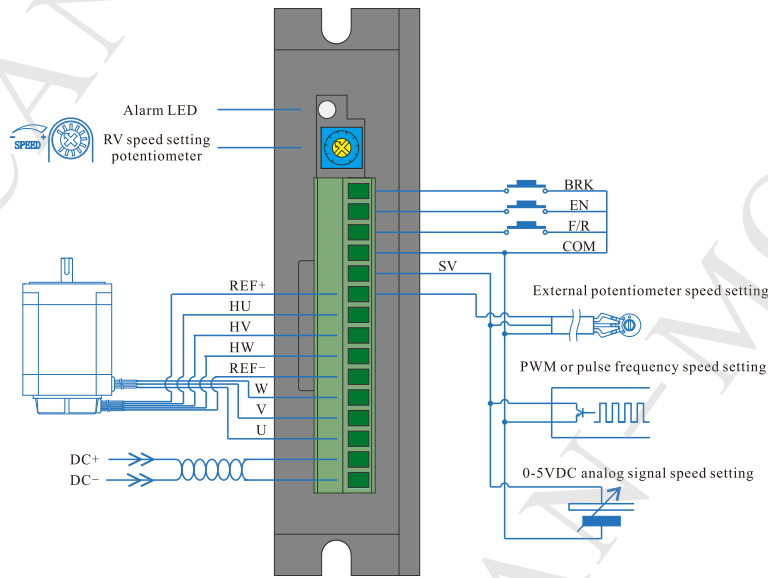
### Machine dimension



### Port signal description

| CN5Terminal | Signal category                           | Functional Description   |
|-------------|---|--|
| BRK         | Control signal                            | Motor brake stop control signal; when BRK and COM connects, motor brake stops.   |
| EN          |   | Motor stop signal port; When EN and COM disconnect, motor stops slowly while when they are connected, motor runs.  |
| F/R         |   | Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise; otherwise, motor will rotate anticlockwise.                                     |
| COM         |   | Common port(0V)  |
| SV          | Hall signal                               | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to REF and COM. |
| REF+        |   | BLDC Hall signal power positive pole   |
| HU          |   | Hall sensor signal Hu  |
| HV          |   | Hall sensor signal Hv  |
| HW          | Hall sensor signal Hw                     |  |
| REF-        | BLDC Hall signal power negative electrode |  |
| W           | Motor connection                          | Motor line W phase   |
| V           |   | Motor line V phase   |
| U           |   | Motor line U phase   |
| DC+         | Power connection                          | Power supply positive electrode (12-30VDC)   |
| DC-         |   | Power supply negative electrode (Hall sensor negative electrode)   |

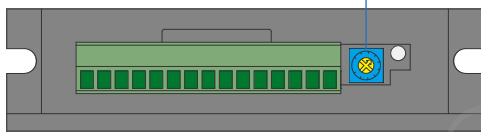
Driver interface and wiring diagram



Speed setting via built-in potentiometer

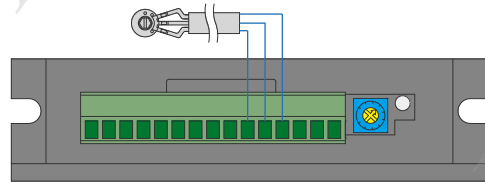
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

Built-in potentiometer RV



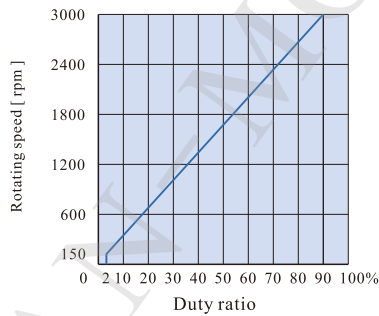
Speed setting via external potentiometer

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-



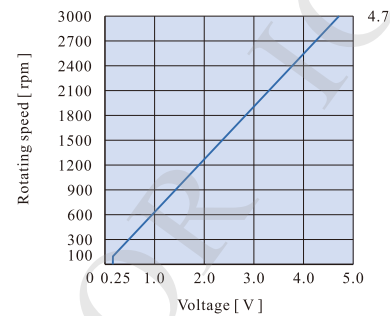
PWM speed setting mode

When customers select PWM speed setting mode, the duty ratio is advised to set as 2%-90%. When duty ratio is 2%, the motor speed reaches 5% of the fastest speed; when the duty ratio is 90%, the motor speed reaches maximum value, which depends on the motor specification and power voltage. (The pulse frequency range: 1-3KHz).



Speed setting via external analog signal

The analog signal voltage can be 0-5VDC; when the voltage is 0.25VDC, the motor speed reaches 5% of fastest speed; when the voltage is 4.7VDC, the motor speed reaches maximum value, which depends on the motor specification and power voltage.



Matched motor

| Motor model   | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|---------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 57BLY-0730NBB | 57mm        | 69W          | 24VDC   | 3000rpm     | 0.22Nm       | 67mm         | P37         |
| 57BLY-1030NBB | 57mm        | 103W         | 24VDC   | 3000rpm     | 0.33Nm       | 88mm         | P37         |
| 57BLY-1230NBB | 57mm        | 120W         | 24VDC   | 3000rpm     | 0.44Nm       | 107mm        | P37         |
| 57BLF-0615NBB | 57mm        | 65W          | 24VDC   | 1500rpm     | 0.4Nm        | 82mm         | P37         |
| 57BLF-0730NBB | 57mm        | 65W          | 24VDC   | 3000rpm     | 0.22Nm       | 62mm         | P37         |
| 57BLF-1230NBB | 57mm        | 125W         | 24VDC   | 3000rpm     | 0.4Nm        | 80mm         | P37         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

Stepper motor with reducer

BLDC series

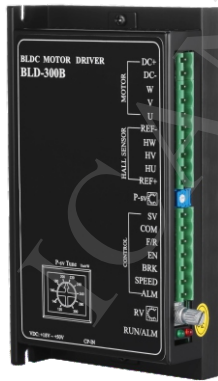
Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLD-300B BLDC Motor driver

### Product features

| Parameters               | Min Value | Typical Value | Max Value | Unit     |
|--------------------------|-----------|---------------|-----------|----------|
| Power supply             | 12        | 48            | 56        | VDC      |
| Output current           | -         | -             | 15        | A        |
| Over voltage protection  | -         | -             | 5         | V        |
| Under voltage protection | 12        | -             | -         | mA       |
| External potentiometer   | -         | 10K           | -         | $\Omega$ |
| Input analog voltage     | -         | -             | 5         | VDC      |
| Speed control range      | -         | -             | 20000     | RPM      |

\*Limited by the maximum rated speed of the motor

### Functions setting

#### Motor pole pair selection

In order to match different motors, customers have choices for pole pair selection via SW1.  
SW1=OFF, 4 pole pairs (default)  
SW1=ON, 2 pole pairs



#### PID closed loop selection

In order to improve the stability of speed when in variable load application environment, customers are advised to select closed loop mode via SW2.  
SW2=OFF, open loop (default); SW2=ON, closed loop.



#### Max output current setting

P-sv current setting is for protecting the driver when it runs under over-load condition via over-current alarm. The set current value should be matched with the rated current of the matched motor and real voltage used. The set range: 3A-15A.



P-sv Current

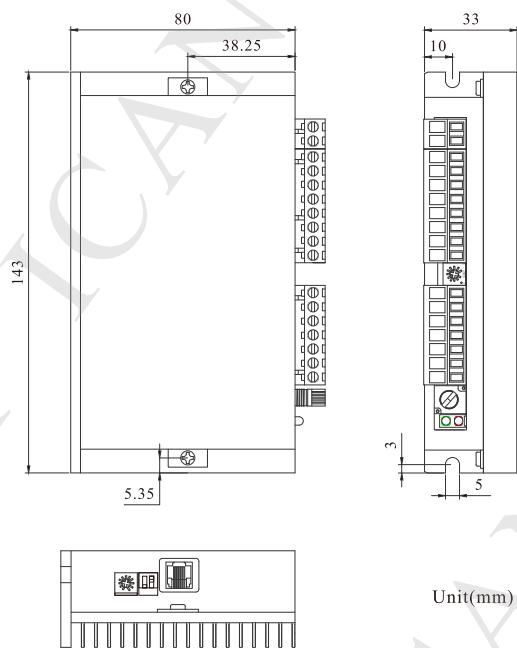
#### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly. Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state. The range can be set is: 0.3s-15s.



ACC/DEC

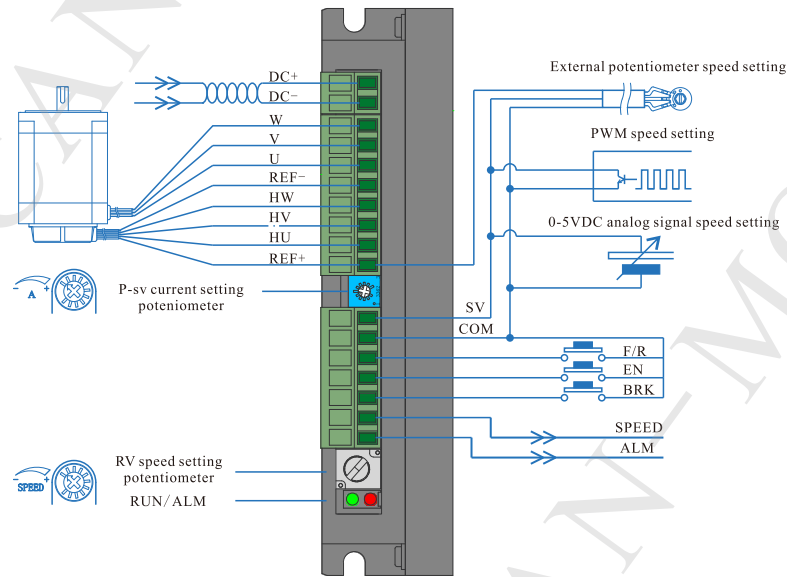
### Machine dimension



### Port signal description

| CN5Terminal | Signal category  | Functional Description   |
|-------------|------------------|--|
| DC+         | Power connection | Power supply positive electrode (12-30VDC)   |
| DC-         |                  | Power supply negative electrode (Hall sensor negative electrode)   |
| W           | Motor connection | Motor line W phase   |
| V           |                  | Motor line V phase   |
| U           |                  | Motor line U phase   |
| REF+        | Hall signal      | BLDC Hall signal power positive pole   |
| HW          |                  | Hall sensor signal Hw  |
| HV          |                  | Hall sensor signal Hv  |
| HU          |                  | Hall sensor signal Hu  |
| REF-        |                  | BLDC Hall signal power negative electrode  |
| SV          | Control signal   | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to REF and COM. |
| COM         |                  | Common port(0V)  |
| F/R         |                  | Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise; otherwise, motor will rotate anticlockwise.                                     |
| EN          |                  | Motor stop signal port; When EN and COM disconnect, motor stops slowly while when they are connected, motor runs.  |
| BRK         |                  | Motor brake stop control signal; BRK and DC- connect in default, motor brake stops when BRK and DC- disconnect.  |
| SPEED       | Output signal    | Speed signal output port. Pulse frequency is corresponding to the rotating speed   |
| ALM         |                  | Alarm signal output port. When fault occurs, the voltage changes to 0V from 5V.  |

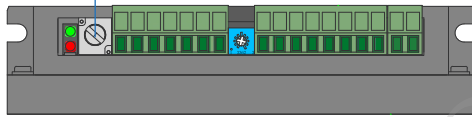
Driver interface and wiring diagram



Speed setting via built-in potentiometer

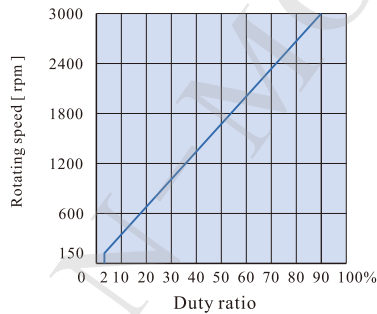
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

Built-in potentiometer RV



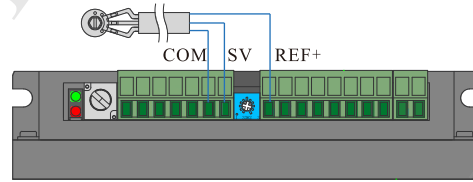
PWM speed setting mode

When customers select PWM speed setting mode, the duty ratio is advised to set as 2%-90%. When duty ratio is 2%, the motor speed reaches 5% of the fastest speed; when the duty ratio is 90%, the motor speed reaches maximum value, which depends on the motor specification and power voltage. (The pulse frequency range: 1-3KHz).



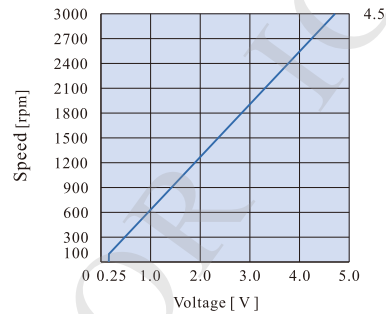
Speed setting via external potentiometer

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-.



Speed setting via external analog signal

The analog signal voltage can be 0-5VDC; when the voltage is 0.25VDC, the motor speed reaches 5% of fastest speed; when the voltage is 4.7VDC, the motor speed reaches maximum value, which depends on the motor specification and power voltage.



Matched motor

| Motor model   | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|---------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 57BLY-1030NBB | 57mm        | 103W         | 24VDC   | 3000rpm     | 0.33Nm       | 88mm         | P37         |
| 57BLY-1230NBB | 57mm        | 120W         | 24VDC   | 3000rpm     | 0.44Nm       | 106mm        | P37         |
| 57BLF-1230NBB | 57mm        | 120W         | 24VDC   | 3000rpm     | 0.4Nm        | 80mm         | P37         |
| 57BLF-1830NBB | 57mm        | 180W         | 24VDC   | 3000rpm     | 0.6Nm        | 101mm        | P37         |
| 60BLF-1630NBB | 60mm        | 160W         | 24VDC   | 3000rpm     | 0.5Nm        | 100mm        | P38         |
| 60BLF-2430NBB | 60mm        | 240W         | 24VDC   | 3000rpm     | 0.75Nm       | 120mm        | P38         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

Stepper motor with reducer

BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLD-750 BLDC Motor driver

### Product features

| Parameters               | Min Value | Typical Value | Max Value | Unit     |
|--------------------------|-----------|---------------|-----------|----------|
| Power supply             | 18        | 48            | 52        | VDC      |
| Output current           | -         | -             | 25        | A        |
| Over voltage protection  | -         | -             | 5         | V        |
| Under voltage protection | 12        | -             | -         | mA       |
| External potentiometer   | -         | 10K           | -         | $\Omega$ |
| Input analog voltage     | -         | -             | 5         | VDC      |
| Speed control range      | -         | -             | 20000     | RPM      |

\*Limited by the maximum rated speed of the motor

### Functions setting

#### PID closed loop selection

In order to improve the stability of speed when in variable load application environment, customers are advised to select closed loop mode via SW1. SW1=OFF, open loop (default); SW1=ON, closed loop.



#### Motor pole pair selection

In order to match different motors, customers have choices for pole pair selection via SW2. SW2=OFF, 4 pole pairs (default) SW2=ON, 2 pole pairs



#### Max output current setting

P-sv current setting is for protecting the driver when it runs under over-load condition via over-current alarm. The set current value should be matched with the rated current of the matched motor and real voltage used. The set range: 4A-25A.



P-sv Current

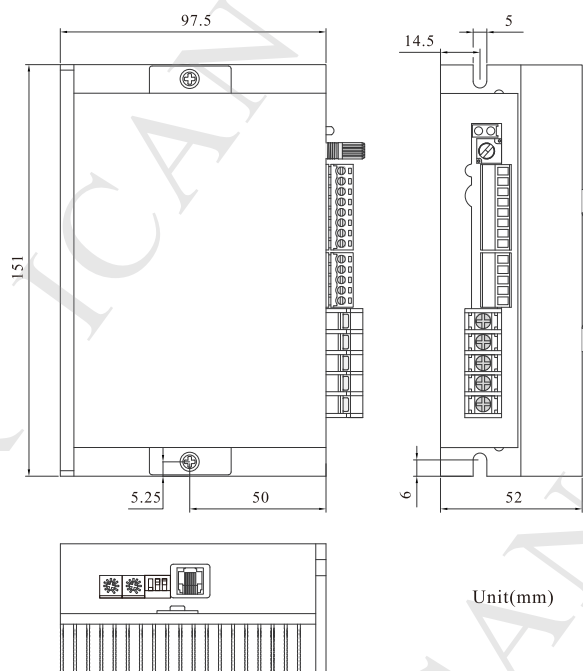
#### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly. Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state. The range can be set is: 0.3s-15s.



ACC/DEC

### Machine dimension

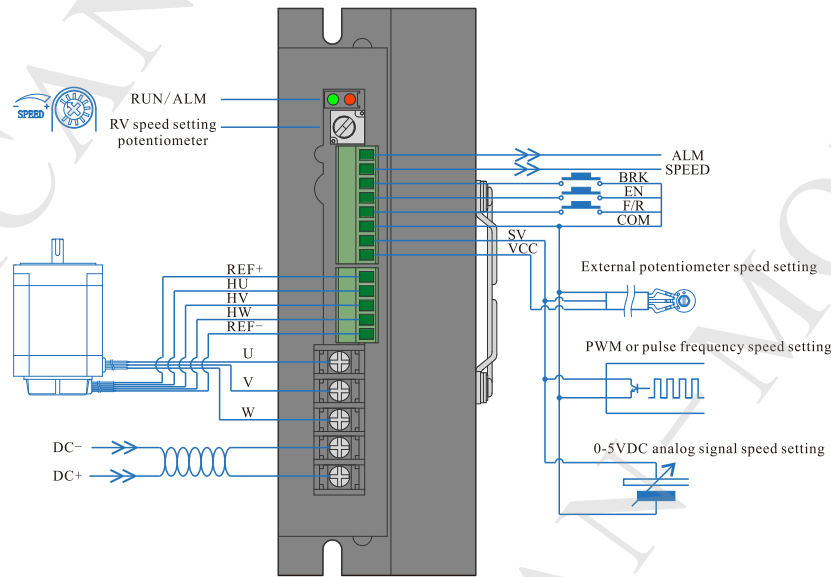


### Port signal description

| CN5Terminal | Signal category  | Functional Description   |
|-------------|------------------|--|
| ALM         | Output signal    | Alarm signal output port. When fault occurs, the voltage changes to 0V from 5V.  |
| SPEED       |                  | Speed signal output port. Pulse frequency is corresponding to the rotating speed   |
| BRK         | Control signal   | Motor brake stop control signal; BRK and DC- connect in default, motor brake stops when BRK and DC- disconnect.  |
| EN          |                  | Motor stop signal port; When EN and COM disconnect, motor stops slowly while when they are connected, motor runs.  |
| F/R         |                  | Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise; otherwise, motor will rotate anticlockwise.                                     |
| COM         |                  | Common port(0V)  |
| SV          |                  | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to VCC and COM. |
| VCC         | Hall signal      | External potentiometer power port  |
| REF+        |                  | BLDC Hall signal power positive pole   |
| HU          |                  | Hall sensor signal Hu  |
| HV          |                  | Hall sensor signal Hv  |
| HW          |                  | Hall sensor signal Hw  |
| REF-        | Motor connection | BLDC Hall signal power negative electrode  |
| U           |                  | Motor line U phase   |
| V           |                  | Motor line V phase   |
| W           |                  | Motor line W phase   |
| DC-         | Power connection | Power supply negative electrode (Hall sensor negative electrode)   |
| DC+         |                  | Power supply positive electrode (18-52VDC)   |

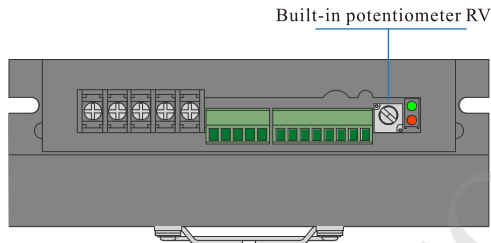


Driver interface and wiring diagram



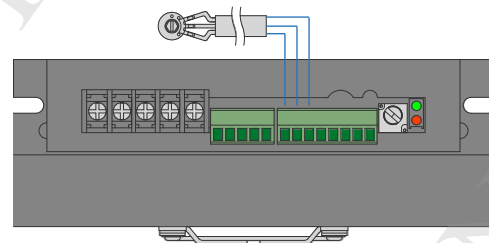
Speed setting via built-in potentiometer

Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.



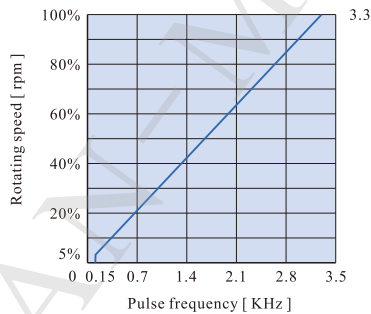
Speed setting via external potentiometer

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



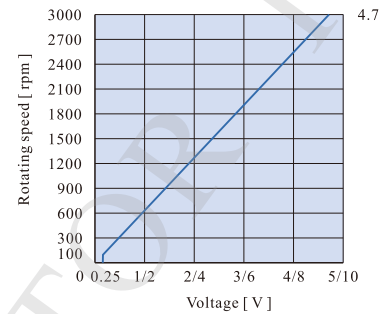
Speed setting via pulse frequency

When selecting this mode, set SW3=ON. The pulse frequency can be 150-4KHz; when the pulse frequency is 150Hz, the motor speed reaches 5% of fastest speed; when the pulse frequency is 4KHz, the motor speed reaches maximum value, which depends on the motor specification and source voltage.



Speed setting via analog voltage

When selecting this mode, set SW3=OFF. The analog signal voltage can be 0-5VDC; when the voltage is 0.25VDC, the motor speed reaches 5% of fastest speed; when the voltage is 4.7VDC, the motor speed reaches maximum value, which depends on the motor specification and source voltage.



Matched motor

| Motor model   | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|---------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 60BLF-1630NBB | 60mm        | 160W         | 24VDC   | 3000rpm     | 0.5Nm        | 100mm        | P38         |
| 60BLF-2430LBB | 60mm        | 240W         | 48VDC   | 3000rpm     | 0.75Nm       | 120mm        | P38         |
| 70BLF-3230LBB | 70mm        | 320W         | 48VDC   | 3000rpm     | 1.0Nm        | 120mm        | P38         |
| 86BLF-2230LBB | 86mm        | 220W         | 48VDC   | 3000rpm     | 0.7Nm        | 82mm         | P39         |
| 86BLF-4430LBB | 86mm        | 440W         | 48VDC   | 3000rpm     | 1.4Nm        | 109mm        | P39         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

Stepper motor with reducer

BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLDH-350 BLDC Motor driver

### Product features

| Parameters               | Min Value | Typical Value | Max Value | Unit |
|--------------------------|-----------|---------------|-----------|------|
| Power supply             | 180       | 220           | 265       | VAC  |
| Output current           | -         | -             | 4         | A    |
| Over voltage protection  | -         | -             | 5.5       | V    |
| Under voltage protection | 12        | -             | -         | mA   |
| External potentiometer   | -         | 10K           | -         | Ω    |
| Input analog voltage     | -         | -             | 5         | VDC  |
| Speed control range      | -         | -             | 20000     | RPM  |

\*Limited by the maximum rated speed of the motor

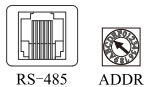
### Functions setting

#### Speed setting modes selection

| Speed setting modes                                | SW1 | SW2 |
|--|-----|-----|
| Built-in potentiometer RV                          | OFF | OFF |
| External potentiometer/<br>External analog voltage | ON  | OFF |
| PWM  | OFF | ON  |
| Pulse frequency                                    | ON  | ON  |

#### RS-485 communication port

Driver parameter and instructions setting can be finished by upper computer via RS-485. Customer can set communication via ADDR.



#### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly. Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state. The range can be set is: 0.3s-15s.



ACC/DEC

#### Motor pole pair selection

Pole pair can be set as 2, 4 and 5 via SW5-SW6; the default setting is 4 poles. The setting can also be done by upper computer via RS-485.



SW5 6

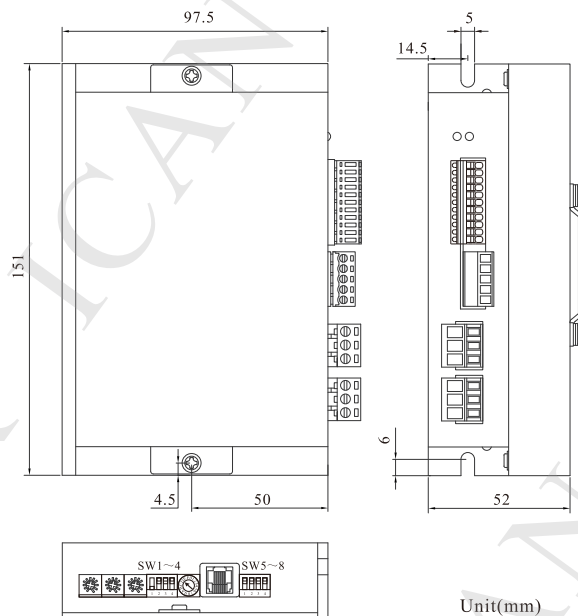
#### PID closed loop selection

SW7, open/closed loop selection; SW7=OFF closed loop, SW7=ON open loop  
SW8, closed loop modes selection; SW8=OFF speed closed loop; SW8=ON speed and current closed loop.



SW7 8

### Machine dimension

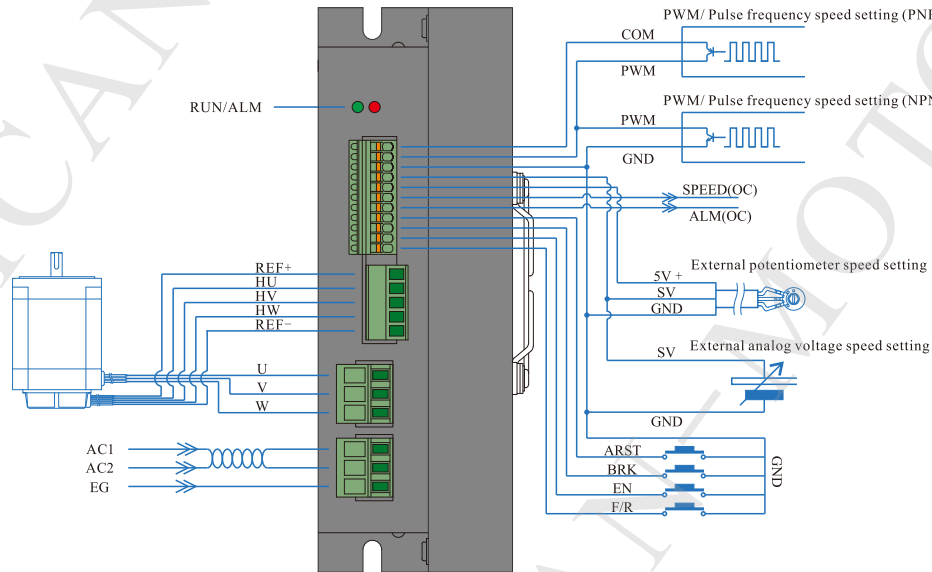


Unit(mm)

### Port signal description

| CN5Terminal | Signal category  | Functional Description   |
|-------------|--|--|
| COM         | Control signal   | Source power common port (PLC 24V output port)   |
| PWM         |  | Pulse frequency/PWM speed setting signal input. SW1 and SW2 are for modes selection.   |
| GND         |  | Control signal grounding screw (common port)   |
| SV          |  | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to +5V and GND. |
| 5V+         |  | Built-in 5V voltage port, potentiometer can be connected to it for speeding setting.   |
| SPEED       |  | Speed signal output port(open-drain output). The output is pulse frequency corresponding to the rotating speed   |
| ALM         |  | Alarm signal output port(open-drain output). When fault occurs, the voltage changes from high to low voltage.  |
| ARST        |  | Alarm reset port. If ARST connects with GND, fault alarm will be cleared.  |
| BRK         |  | Motor brake stop control port; BRK and GND connect in default, motor brake stops when BRK and GND disconnect.  |
| EN          |  | Motor stop signal port; When EN and GND disconnect, motor stops slowly while when they connect, motor runs.  |
| F/R         | Motor direction control terminal; F/R and GND disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise. |  |
| REF+        | Motor connection   | BLDC Hall signal power positive pole   |
| HU、HV、HW    |  | Hall sensor signal HU、HV、HW  |
| REF-        |  | BLDC Hall signal power negative electrode  |
| U、V、W       | Power connection   | Motor line U、V、W phase   |
| AC1         |  | Power supply+ (180-265VAC)   |
| AC2         |  | Power supply-  |
| EG          |  | Grounding screw  |

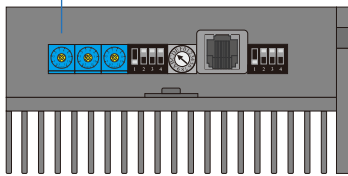
## Driver interface and wiring diagram



### Speed setting via built-in potentiometer

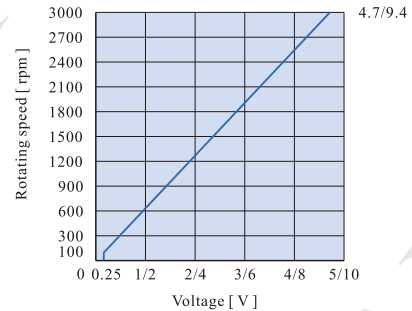
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

Built-in potentiometer RV



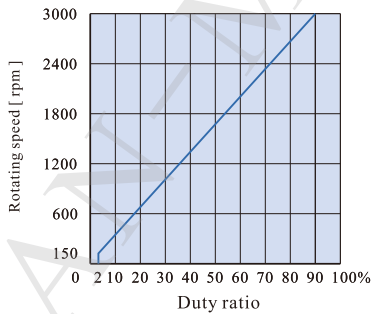
### Speed setting via external analog signal

Set SW1=ON and SW2=OFF to select analog voltage speed setting mode. The analog signal voltage can be 0.25-4.7VDC or 0.25-9.4VDC.



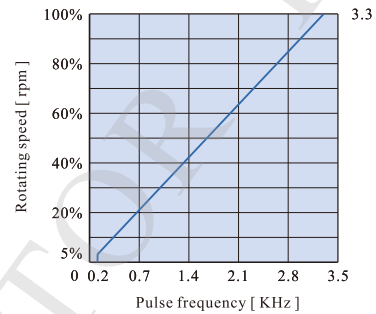
### PWM speed setting mode

When customers select PWM speed setting mode, the duty ratio is advised to set as 2%-90%. When duty ratio is 2%, the motor speed reaches 5% of the fastest speed; when the duty ratio is 90%, the motor speed reaches maximum value, which depends on the motor specification and power voltage. (The pulse frequency range: 1-3KHz).



### Speed setting via pulse frequency

The pulse frequency can be 200-3.3KHz; when the pulse frequency is 200Hz, the motor speed reaches 5% of fastest speed; when the pulse frequency is 3.3KHz, the motor speed reaches maximum value, which depends on the motor specification and source voltage.



## Matched motor

| Motor model   | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|---------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 80BLF-2515HBB | 80mm        | 250W         | 310VDC  | 1500rpm     | 1.6Nm        | 118mm        | P38         |
| 80BLF-2530HBB | 80mm        | 250W         | 310VDC  | 3000rpm     | 0.8Nm        | 132mm        | P38         |
| 86BLF-2230HBB | 86mm        | 220W         | 310VDC  | 3000rpm     | 0.7Nm        | 82mm         | P39         |
| 86BLF-3315HBB | 86mm        | 330W         | 310VDC  | 1500rpm     | 2.1Nm        | 152mm        | P39         |
| 86BLF-3330HBB | 86mm        | 330W         | 310VDC  | 3000rpm     | 1.05Nm       | 96mm         | P39         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3 phase stepper motor

Stepper motor with reducer

BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection



## BLDH-750 BLDC Motor driver

### Product features

| Parameters               | Min Value | Typical Value | Max Value | Unit |
|--------------------------|-----------|---------------|-----------|------|
| Power supply             | 180       | 220           | 265       | VAC  |
| Output current           | -         | -             | 8         | A    |
| Over voltage protection  | -         | -             | 5.5       | V    |
| Under voltage protection | 12        | -             | -         | mA   |
| External potentiometer   | -         | 10K           | -         | Ω    |
| Input analog voltage     | -         | -             | 5         | VDC  |
| Speed control range      | -         | -             | 20000     | RPM  |

\*Limited by the maximum rated speed of the motor

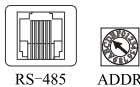
### Functions setting

#### Speed setting modes selection

| Speed setting modes                                | SW1 | SW2 |
|--|-----|-----|
| Built-in potentiometer RV                          | OFF | OFF |
| External potentiometer/<br>External analog voltage | ON  | OFF |
| PWM  | OFF | ON  |
| Pulse frequency                                    | ON  | ON  |

#### RS-485 communication port

Driver parameter and instructions setting can be finished by upper computer via RS-485. Customer can set communication via ADDR.



#### Acceleration and deceleration settings

This potentiometer can be used for adjusting acceleration and deceleration time directly. Acceleration is the time the motor needs from stationary state to rated speed state; Deceleration time is the time the motor needs from rated speed state to stationary state. The range can be set is: 0.3s-15s.



#### Motor pole pair selection

Pole pair can be set as 2, 4 and 5 via SW5-SW6; the default setting is 4 poles. The setting can also be done by upper computer via RS-485.

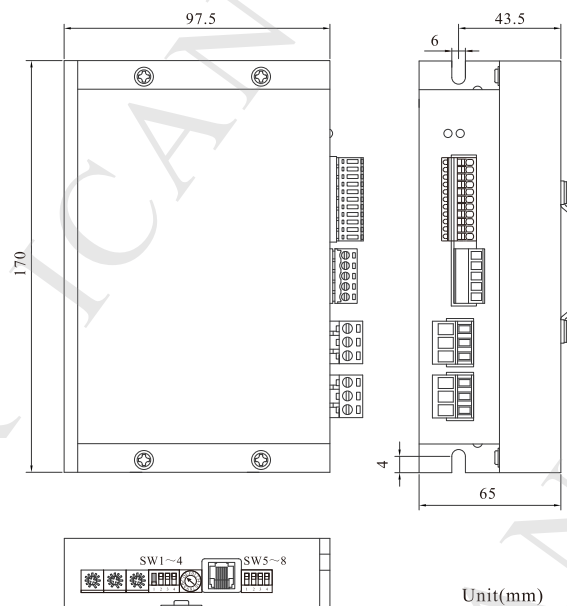


#### PID closed loop selection

SW7, open/closed loop selection; SW7=OFF closed loop, SW7=ON open loop  
SW8, closed loop modes selection; SW8=OFF speed closed loop; SW8=ON speed and current closed loop.



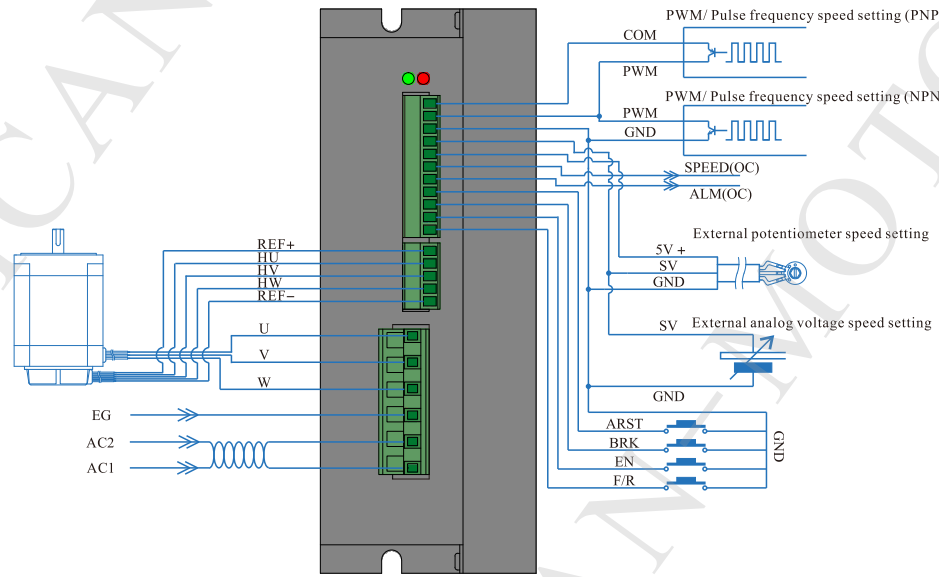
### Machine dimension



### Port signal description

| CN5Terminal | Signal category  | Functional Description   |
|-------------|--|--|
| COM         | Control signal   | Source power common port (PLC 24V output port)   |
| PWM         |  | Pulse frequency/PWM speed setting signal input. SW1 and SW2 are for modes selection.   |
| GND         |  | Control signal grounding screw (common port)   |
| SV          |  | External speed setting signal input terminal; when connecting external potentiometer, the middle terminal connects SV, the other two terminals connect to +5V and GND. |
| 5V+         |  | Built-in 5V voltage port, potentiometer can be connected to it for speeding setting.   |
| SPEED       |  | Speed signal output port (open-drain output). The output is pulse frequency corresponding to the rotating speed  |
| ALM         |  | Alarm signal output port (open-drain output). When fault occurs, the voltage changes from high to low voltage.   |
| ARST        |  | Alarm reset port. If ARST connects with GND, fault alarm will be clear.  |
| BRK         |  | Motor brake stop control port; BRK and GND connect in default, motor brake stops when BRK and GND disconnect.  |
| EN          |  | Motor stop signal port; When EN and GND disconnect, motor stops slowly while when they connect, motor runs.  |
| F/R         | Motor direction control terminal; F/R and GND disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise. |  |
| REF+        | Motor connection   | BLDC Hall signal power positive pole   |
| HU、HV、HW    |  | Hall sensor signal HU、HV、HW  |
| REF-        |  | BLDC Hall signal power negative electrode  |
| U、V、W       |  | Motor line U、V、W phase   |
| AC1         | Power connection   | Power supply+ (180-265VAC)   |
| AC2         |  | Power supply-  |
| EG          |  | Grounding screw  |

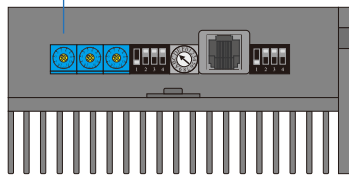
Driver interface and wiring diagram



Speed setting via built-in potentiometer

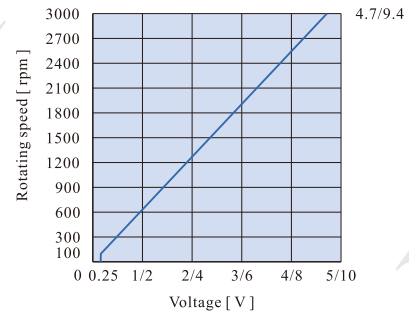
Motor speed increases when RV knobs is rotated clockwise, when anticlockwise, motor speed decreases. If customers use other speed setting modes, RV should be rotated anticlockwise to limit position.

Built-in potentiometer RV



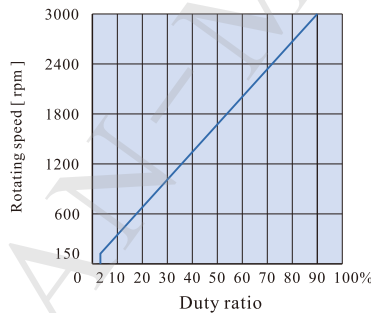
Speed setting via external analog signal

Set SW1=ON and SW2=OFF to select analog voltage speed setting mode. The analog signal voltage can be 0.25-4.7VDC or 0.25-9.4VDC.



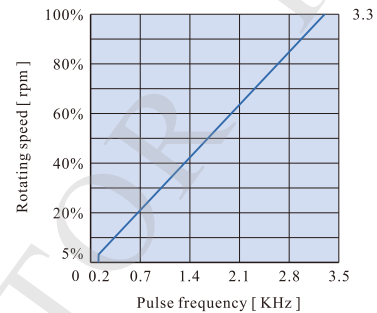
PWM speed setting mode

When customers select PWM speed setting mode, the duty ratio is advised to set as 2%-90%. When duty ratio is 2%, the motor speed reaches 5% of the fastest speed; when the duty ratio is 90%, the motor speed reaches maximum value, which depends on the motor specification and power voltage. (The pulse frequency range: 1-3KHz).



Speed setting via pulse frequency

The pulse frequency can be 200-3.3KHz; when the pulse frequency is 200Hz, the motor speed reaches 5% of fastest speed; when the pulse frequency is 3.3KHz, the motor speed reaches maximum value, which depends on the motor specification and source voltage.



Matched motor

| Motor model    | Flange size | Output power | Voltage | Rated speed | Rated Torque | Motor length | Detail page |
|----------------|-------------|--------------|---------|-------------|--------------|--------------|-------------|
| 80BLF-5030HBB  | 80mm        | 500W         | 310VDC  | 3000rpm     | 1.6Nm        | 145mm        | P38         |
| 80BLF-7530HBB  | 80mm        | 750W         | 310VDC  | 3000rpm     | 2.5Nm        | 150mm        | P38         |
| 86BLF-4030HBB  | 86mm        | 400W         | 310VDC  | 3000rpm     | 1.4Nm        | 112mm        | P39         |
| 86BLF-5030HBB  | 86mm        | 500W         | 310VDC  | 3000rpm     | 1.6Nm        | 125mm        | P39         |
| 110BLF-6020HBB | 110mm       | 630W         | 310VDC  | 2000rpm     | 3.0Nm        | 138mm        | P39         |

Stepper products series

2 phase stepper driver

3 phase stepper driver

2 phase stepper motor

3phase stepper motor

Stepper motor with reducer

BLDC series

Low voltage BLDC driver

High voltage BLDC driver

BLDC motor

Geared BLDC motor

Products selection