Low voltage
BLDC motor driver

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	–	Ω
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

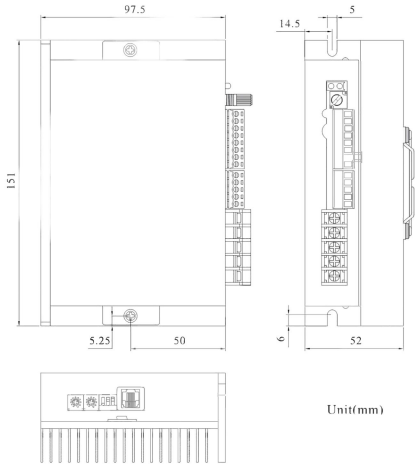
Max output current setting

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.

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.

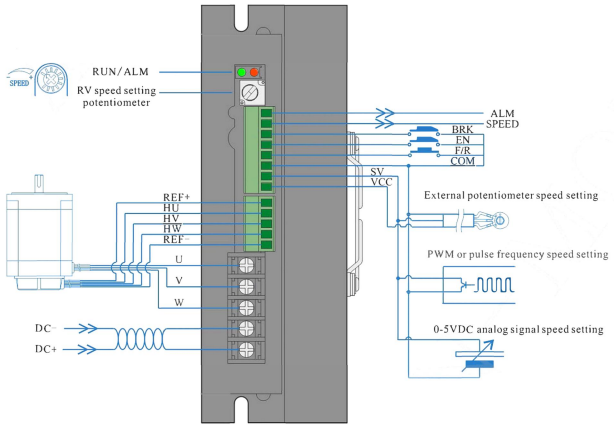
Machine dimension



Port signal description

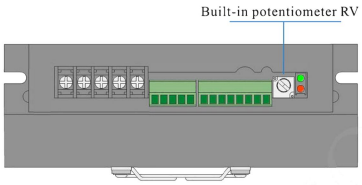
CN5Terminal	Signal category	Functional Description
ALM	Output signal	Alarm signal output port. When fault occurs, the voltage changes to 0V from 5V.
SPEED		Speed signal output port. Pulse frequency is corresponding to the rotating speed
BRK	Control signal	Motor brake stop control signal; BRK and DC- 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 rotates 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		External potentiometer power port
REF+	Hall signal	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
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 (18-52VDC)

Driver interface and wiring diagram



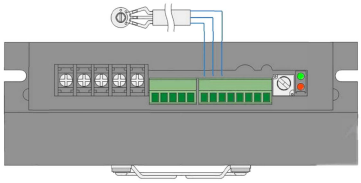
Speed setting via built-in potentiometer

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.



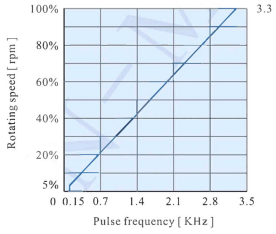
Speed setting via external potentiometer

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.



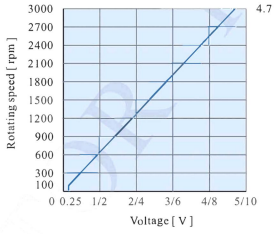
Speed setting via pulse frequency

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

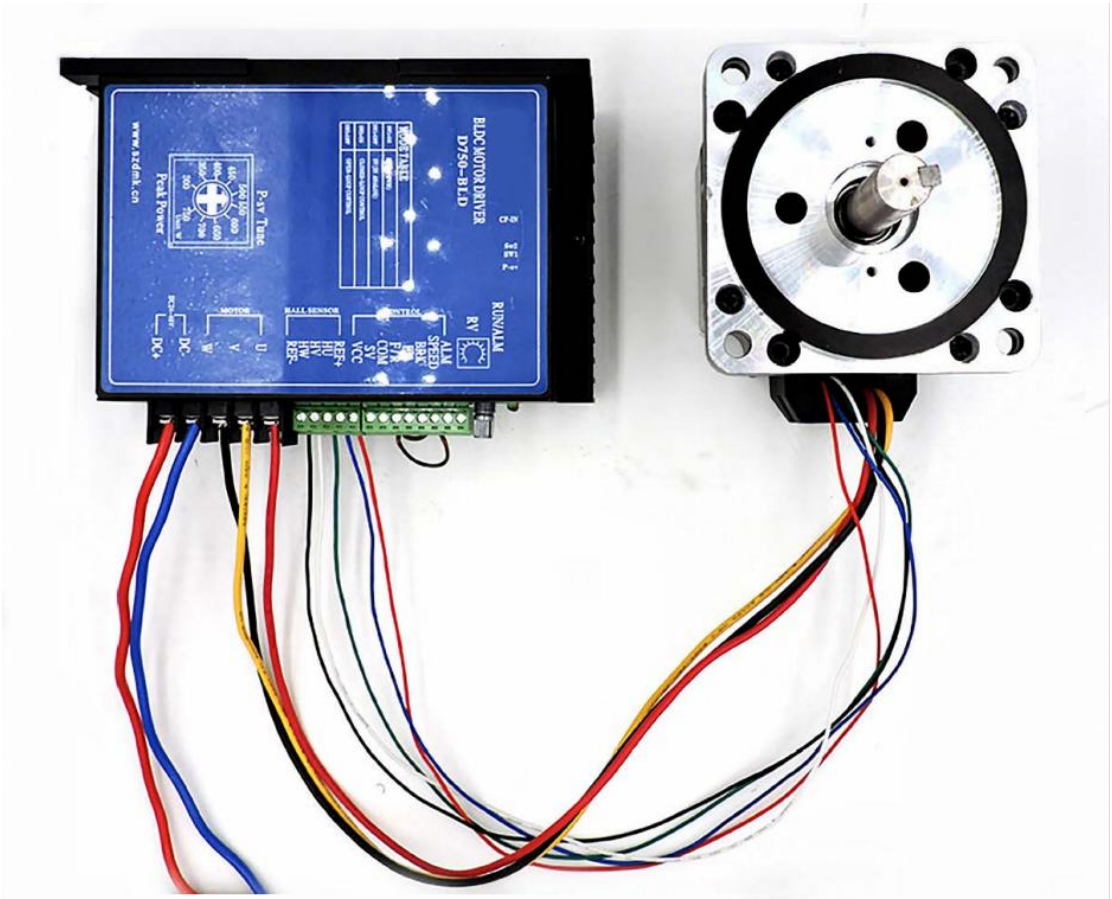
When selecting this mode, set SW3=OFF. The analog signal voltage can be 0-5VDC; when the voltage is 0.25VDC, the motor speed reaches 5% of fastest speed; when the voltage is 4.7VDC, the motor speed reaches maximum value, which depends on the motor specification and source voltage.



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


BLDC MOTOR DRIVER
D750-BLD
RUN/ALM
RV
ALM
SPEED
BRK
EN
F/R
COM
5V
VCC
CONTROL
REF+
HU
HV
HW
REF-
HALL SENSOR
U
V
W
DC-
DC+
MOTOR
Peak Power
P-ST Tune
Wire 1: COM & EN
Wire 2: COM &BRK


BLDC MOTOR DRIVER
D750-BLD
RUN/ALM
RV
ALM
SPEED
BRAKE
FG
COM
5V
VCC
REF+
HU
HV
HW
REF-
HALL SENSOR
MOTOR
U
V
W
DC-
DC+
P-pv Tune
Peak Power
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