



## Drive for BLD60 digital brushless motor Quick installation manual for motors from the GREEN catalog



### MANUFACTURER INFORMATION

THIS DOCUMENT AND ANY ASSOCIATED DATA CONTAIN RESTRICTED INFORMATION THAT IS PROPERTY OF THE MANUFACTURER AND MAY NOT BE DISCLOSED OR DUPLICATED FOR OTHERS EXCEPT AS AUTHORIZED BY THE MANUFACTURER. INFORMATION CONTAINED IN THIS PUBLICATION MAY BE SUPERSEDED BY UPDATES. IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR APPLICATION MEETS WITH YOUR SPECIFICATIONS.



## Summary

---

BLD30 Digital BLDC motor driver is a closed-loop speed controller, which uses IGBT and MOS power, uses the Hall signal of the DC brushless motor to perform double-loop speed control, and has a PID speed regulator in the control link. The system control is stable and reliable.

It can always reach the maximum torque at low speed, and the speed control range is 150 to 4000rpm. The driver use the protocol Modbus RS485 RTU to communicate in a network.

## Features

---

- PID speed, current double loop regulator
- 20KHZ chopper frequency
- Electrical stop to ensure the quickly action
- Fault alarm function with Over voltage, Under voltage, Over current, Over temperature, and Hall signal illegal.

## 1. Product Characterist

---

<b>Input voltage</b>	24VDC-36VDC-48VDC
<b>Continuous output current</b>	50A
<b>Nominal output power</b>	1500W
<b>Peak output current</b>	75A

## Hall Signal Terminal

---

No.	Name	Description
1	<b>GND</b>	Hall sensor Negative
2	<b>HA</b>	Hall sensor A H1 phase
3	<b>HB</b>	Hall sensor B H2 phase
4	<b>HC</b>	Hall sensor C H3 phase
5	<b>+5V</b>	Hall sensor Positive

## Motor Connection Terminal

---

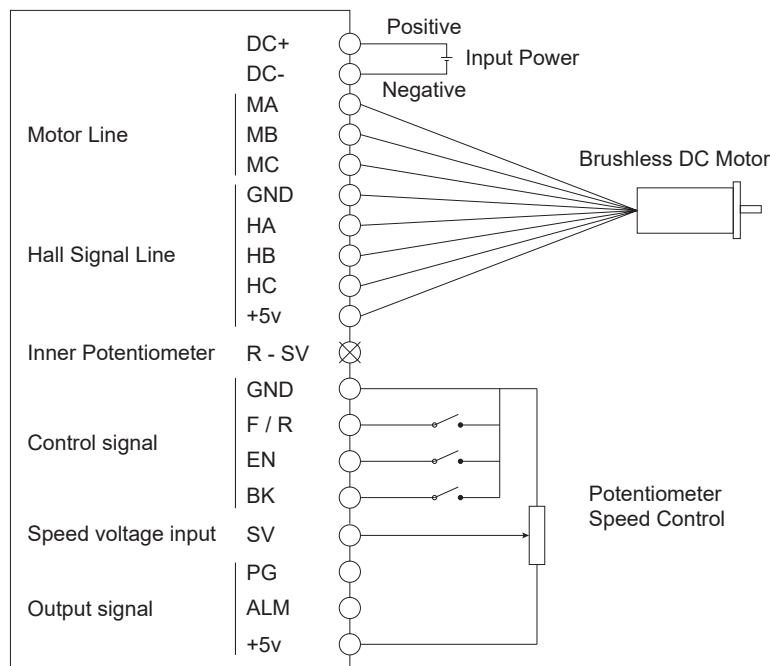
No.	Name	Description
1	<b>DC+</b>	VDC
2	<b>DC-</b>	GND
3	<b>FG</b>	Ground wire
4	<b>MA(U)</b>	Winding U phase (A)
5	<b>MB(V)</b>	Winding V phase (B)
6	<b>MC(W)</b>	Winding W phase (C)



## 2. Control Sign

No.	Terminal Name	Description
1	<b>GND</b>	Signal ground
2	<b>F/R</b>	CW / CCW terminal
3	<b>EN</b>	Stop / Start terminal
4	<b>BK</b>	Brake terminal
5	<b>SV</b>	Analogy signal input terminal
6	<b>PG</b>	Speed output terminal
7	<b>ALM</b>	Alarm output terminal
8	<b>+5V</b>	+5V power output terminal

## Connection Diagram of motor and driver

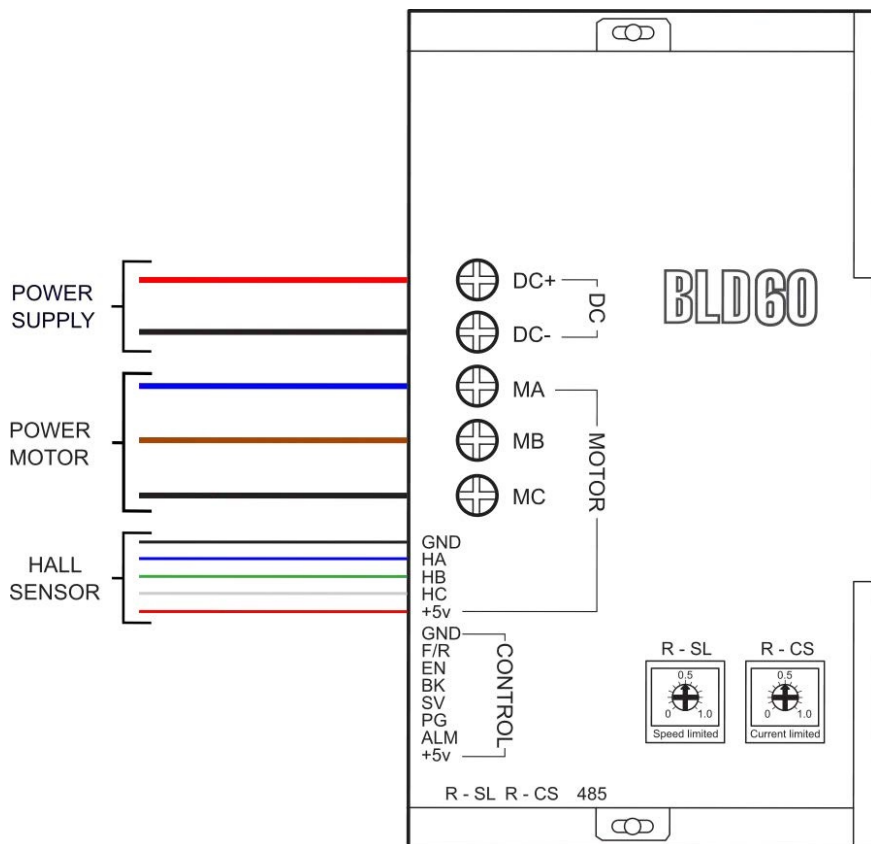


### Gestione comandi NPN:

- F/R; direction of rotation of the motor
- EN; closed contact enables motor control
- SV; analog input for external motor control 0-5V
- BK; motor torque stop



## Connections for motors: BL070.24B – BL070.240 – BL070.480 – BL070.48B – BL140.480 – BL210.480 – BL210.48B

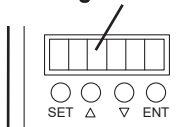


### 5. Display and keyboa

#### Display and Keyboard Operation:

- “SET”: start / Stop (backspace)
- “Δ” : “+”, Plus 1
- “X” : “-”, Minus 1
- “ENT” : “ENTER” (Recall setting parameter)

#### LED Digital



#### 5.1 Protect mode

While Motor operates abnormally, display will show Errx

- (1) Err-01: motor stall
- (2) Err-02: over current
- (3) Err-04: hall fault
- (4) Err-05: motor stall and hall fault
- (5) Err-08: under-voltage
- (6) Err-10: over-voltage
- (7) Err-20: peak current alarm
- (8) Err-40: temperature alarm



## Operating Parameter

Function Code	Function Name	Range di utilizzo	Unit	Default Value
P000	Control mode	40 External port mode		40
P001	Pair of pole			04
P002	Rated Speed	1~65535	rpm	3000
P003	Display mode	00: speed display 80: current display		00
P004	No sense starting torque	1~255		16
P005	Reserved to Transtecno			
P006	Acceleration time	1~255	0.1 s	0
P007	Deceleration time	1~255	0.1 s	0
P008	Current setting	1~255		23 *
P009	Reserved to Transtecno			
P010	Panel speed setting	0~65535	rpm	2000
P011	Brake force	0-1023		1023
P012	Site address	0~250		1
P013	Reserved to Transtecno			
P014	Reserved to Transtecno			
P015	Reserved to Transtecno			
P016	Reserved to Transtecno			

Parameter P008 represents the current value which, if exceeded for 1s / 2s, causes the motor to stop. Follow the parameters in the table.

### Rated current – P008

Motor	Motor rated current	Motor rated torque	Parameter P008
BL070.240	13.0 A	0.70 Nm	07
BL070.24B	13.0 A	0.70 Nm	07
BL070.480	6.5 A	0.70 Nm	03
BL070.48B	6.5 A	0.70 Nm	03
BL140.480	13.0 A	1.4 Nm	07
BL210.480	18.7 A	2.1 Nm	09
BL210.48E	18.7 A	2.1 Nm	09