BLD70B直流无刷电机驱动器

BLD70B BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



简介

BLD70B直流无刷电机驱动器是针对10W~70W低压直流无刷电机的高性能、低成本无刷驱动器。该直流无刷驱动器还可扩展支持Modbus通讯协议，为用户在实际应用中提供更多灵活的选择。

特点

- 同时具有内置电位器RV调速控制和外部模拟量调速控制
- 支持12V~24V电压范围内工作
- 支持-20°C~+55°C的环境工作温度范围
- 速度开闭环可选，闭环控制时保证在额定功率下，带载时速度不掉
- 支持额定功率在10W~70W范围的无刷电机的驱动
- 5秒的堵转等待时间
- BRK外部输入信号不断电复位报警
- 支持扩展Modbus通讯协议，适合用户使用触摸屏或PC控制（需联系业务咨询相关内容，标准品无此功能）
- 支持扩展输出功率可调（需联系业务咨询相关内容，标准品无此功能）

电气性能及环境指标

电气指标

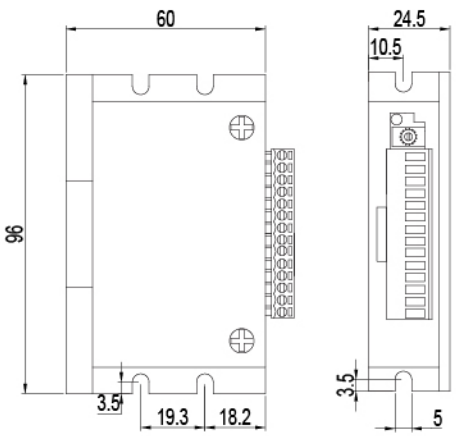
驱动器参数	最小值	典型值	最大值
输入电压 DC (V)	12	24	30
母线电流 (A)	2	4.2	4.5
适用电机转速 (RPM)	100①	-	-

①闭环控制时电机转速最小值要求驱动器设置极对数和电机极对数一致；开环控制时，此值与电机本身设计有关，不一定是表格中的值；因使用场景千差万别，无刷电机做工也有差异，电机建议最低工作转速不低于200RPM。

环境指标

环境因素	环境指标
冷却方式	自然冷却或强制冷却
使用场合	避免粉尘，油雾及腐蚀性气体
使用温度	-20°C~+55°C
存储温度	-30°C~+70°C

机械尺寸图 单位mm



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驱动器接口和接线

信号	端子	内容
电源输入	GND	直流电源输入负极
	24V	直流电源输入12V~24V
电机连接	U	直流无刷电机U相
	V	直流无刷电机V相
	W	直流无刷电机W相
霍尔信号	GND	直流无刷电机霍尔信号接地线
	HW	直流无刷电机霍尔信号HW
	HV	直流无刷电机霍尔信号HV
	HU	直流无刷电机霍尔信号HU
	+5V	直流无刷电机霍尔信号电源线
控制信号	SV	1)外接调速电位器 2)外部模拟信号输入 3)PWM脉冲信号调速
	BRK	BRK端与GND端断开时电机运行，短接时电机刹车停止
	F/R	F/R端与GND端断开时电机正转，短接时电机反转
	GND	接地线
	NC	备用端口（输入信号）

状态指示·异常处理

状态指示

当电机出现过压、霍尔信号错误、堵转、过温等情况的时候，驱动器便发出报警信号，与此同时驱动器停止工作。

报警指示	状态说明
绿灯有规律闪烁	输出功率已达到P-SV设定值（标准品设定值固定为70W）
红灯闪烁5次	驱动器接收不到霍尔信号或者接收到错误的霍尔信号
红灯闪烁8次	电机堵转或者驱动电路异常
红灯闪烁9-15次	主控芯片外围电路异常

绿灯闪烁时，表示驱动器开始限流工作，不影响正常使用。

异常处理

出现上表异常时，应先对驱动器发出复位命令，让报警信号消除，如果报警信号不能消除，再按下表进行处理。复位命令指的是以下三个之一，可让驱动器去除报警。

◆内部电位器和外部模拟量调速调到0

◆BRK闭合后再断开

◆重新上电

注意如果内部电位器和外部电位器同时调到0，或者BRK与GND短接，此时有故障时，驱动器不会报警。

报警指示	异常处理
红灯闪烁5次	请检查电机接线是否牢靠并确保电机未损坏
红灯闪烁8次	请确定电机负载是否过大并且电机未损坏， 如不是请换另一台同款驱动器实验
红灯闪烁9-15次	返厂维修

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PRODUCT INTRODUCTION

BLD70B BLDC motor driver is a high-performance brushless driver for 10W to 70W BLDC motor. The driver can also be extended to support Modbus communication protocol, providing users with more flexible choices in practical applications.

FEATURES

- 4 speed regulation modes
- Open loop and closed loop modes are optional
- Torque holding function when motor locked
- Working voltage 12V~24V
- -20°C~+55°C operating temperature range
- Support output power adjustable (Standard version doesn't have this function, if needed, please contact us)
- Support Modbus communication protocol (Extended functionality)

ELECTRICAL PROPERTIES AND ENVIRONMENTAL INDICATORS

ELECTRICAL PROPERTIES

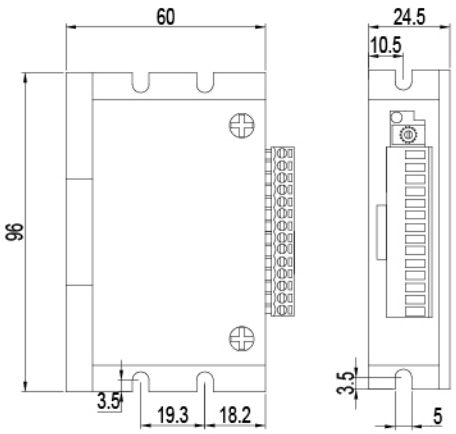
Driver parameter	Minimum	Typical Value	Maximum
Input Voltage DC (V)	12	24	30
Peak Current (A)	2	4.2	4.5
Rotate Speed (RPM)	100 [1]	-	-

[1] During closed-loop mode, the number of motor poles setting value should be the same with the actual poles of the motor. During open-loop mode, the value is related to the design of the motor itself. It is recommended that the minimum operating speed of the motor is not less than 200 RPM.

ENVIRONMENTAL INDICATORS

Environmental Factors	Environmental Specifications
Heat Sinking Method	Natural cooling or forced cooling
Occasions	avoid dust, oil and corrosive gases
Operating Temperature	-20°C~+55°C
Storage Temperature	-30°C~+70°C

DIMENSION (UNIT: mm)



BLD70B直流无刷电机驱动器

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DRIVER INTERFACE AND WIRING

Signal	Terminal	Function
Power supply	GND	Power supply -
	24V	Power supply +12V~24V
Motor lines	U	Motor line U phase
	V	Motor line V phase
	W	Motor line W phase
Hall Signal	GND	Hall sensor signal ground electrode
	HW	Hall sensor signal HW
	HV	Hall sensor signal HV
	HU	Hall sensor signal HU
	+5V	Hall sensor signal power supply+
Control Signal	SV	1>External potentiometer 2>External analog signal input 3>PWM pulse signal speed regulation
	BRK	BRK and GND disconnect, the motor runs, otherwise motor brakes to stop
	F/R	F/R disconnected with GND, motor rotates CW, otherwise motor rotates CCW
	GND	Ground
	NC	Reserved port (input signal)

STATUS INDICATOR & ISSUE HANDLING

ALM ALARM SIGNAL OUTPUT

When over-voltage, Hall signal error, locked rotor, over temperature, etc., the driver will send out an alarm signal, and the driver will stop working at the same time.

LED error display	Status statements
Green LED flashes	The output power has reached the set value of P-SV 70w. But the drive can work properly.
Red LED flashes 5 times	Driver cannot receive the Hall signal or receives the wrong Hall signal
Red LED flashes 8 times	The motor is blocked, or the driver circuit is abnormal
Red LED flashes 9-15 times	The circuit of main control chip problem

When the Green LED flashes, it indicates that the driver starts current-limiting operation, which does not affect normal use.

TROUBLE SHOOTING

Send a reset signal as one of the following steps to the driver when the above abnormality occurs:

- Adjust the internal potentiometer and external analog speed to 0
- Connect BRK and GND, then disconnect
- Power on again

If above doesn't help, please check the following.

LED error display	Trouble shooting
Red LED flashes 5 times	Check the wire connection especially hall wires
Red LED flashes 8 times	Confirm whether the motor load is too large and the motor is not damaged. If not, please replace it with another driver of the same model.
Red LED flashes 9-15 times	Repair

BLD-120A直流无刷电机驱动器

BLD-120A BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



简介

BLD-120A经过设计，主要用于小功率、低压直流无刷电机，适用于120W以下的电机。

特点

- ●可驱动小于120W无刷电机
- ●可使用PWM调速
- ●可进行加减速时间设定
- ●可使用外部电位器调速
- ●可使用外部模拟电压调速
- ●尺寸小巧，易于安装
- ●拥有功率保护功能（最大电流设定）

电气性能及环境指标

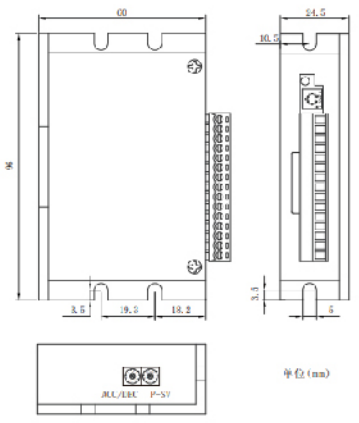
电气指标

驱动器参数	最小值	典型值	最大值	单位
输入电压	12	24	30	VDC
输出电流	-	-	8	A
霍尔信号电压	-	-	5	V
霍尔驱动电流	-	20	-	mA
外接电位器	-	10	-	kΩ
输入模拟量电压	0.25	-	5	VDC
速度控制范围	100	3000	20000	RPM

环境指标

环境因素	环境指标
散热方式	自然冷却或强制风冷
使用环境	避免粉尘、油雾及腐蚀性气体
工作温度	0~+40°C
环境湿度	90%及以下（无凝露）
抗振能力	最大5.7m/s²
存储温度	0~+50°C

机械尺寸图 单位mm



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驱动器接口和接线

信号	端子	内容
控制信号	BRK	电机快速刹车信号端口，BRK端口与COM端口断开电机为正常运行，短接闭合为快速刹车。
	EN	停止信号控制端，EN端口与COM端口断开为电机缓慢停止，短接闭合为正常运行。
	F/R	电机转动方向控制端口，F/R端口与COM端口断开电机为顺时针转动，短接闭合为逆时针转动。
	COM	公共端口（0V参考电平）
	SV	调速信号输入端口，外部电位器调速时中间引出端连接此处，两侧分别接REF+与COM端口
霍尔信号	REF+	直流无刷电机霍尔信号电源线
	HU	直流无刷电机霍尔信号HU
	HV	直流无刷电机霍尔信号HV
	HW	直流无刷电机霍尔信号HW
	REF-	直流无刷电机霍尔信号接地线
电机连接	W	直流无刷电机W相
	V	直流无刷电机V相
	U	直流无刷电机U相
电源连接	DC+	直流电源输入正极（电压范围：12～30VDC）
	DC-	直流电源输入负极

状态指示·异常处理

报警指示	状态说明	原因	对策
红灯闪烁2次	过压报警	1.输入电压超过额定电压 2.负载惯量大且快速启停	1.更换稳定的电源在驱动器额定的电压范围内（<33V） 2.调节ACC/DEC增加加减速时间
红灯闪烁3次	功率管过流报警	输出电流超过功率管的额定电流	1.检查负载是否超过电机的额定功率 2.更换功率更大的电机和驱动
红灯闪烁4次	过流报警	输出电流超过驱动器的设置电流	1.检查P-sv设置是否在电机额定功率范围内 2.调节ACC/DEC增加加减速时间
红灯闪烁5次	欠压报警	输入电压低于驱动器设置的最低电压	1.更换电源在额定的电压范围（最低电压10V） 2.检查电源功率是否满足大于电机功率1.5倍条件
红灯闪烁6次	霍尔报警	驱动器检测不到电机霍尔信号或检测到的霍尔信号有误	1.检查电机接线是否正确且连接牢固 2.电机线不宜过长一般不超过5米 3.受到干扰建议用屏蔽线
红灯闪烁7次	堵转报警	1.电机线接线错误 2.电机力矩不足	1.按电机接线图纸接线 2.检查P-sv功率设置是否与电机匹配 3.调节ACC/DEC增加加减速时间 4.更换功率更大电机和驱动
红灯闪烁8次	两种以上报警	有两种以上的报警	按以上对策逐一排查

BLD-120A直流无刷电机驱动器

BLD-120A BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



PRODUCT INTRODUCTION

BLD-120A is designed and mainly for low power low voltage BLDC motor. Motors less are adaptive than 120W.

FEATURES

- Acc/Dec time setting
- Max output current P-sv setting
- Restart
- Alarm signal
- Built-in RV speed setting
- External potentiometer speed setting
- External analog signal speod setting
- PWM speed setting

ELECTRICAL PROPERTIES AND ENVIRONMENTAL INDICATORS

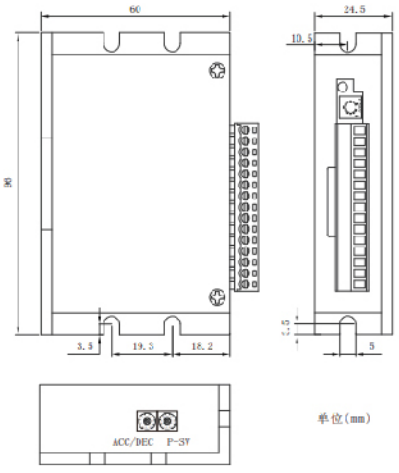
ELECTRICAL PROPERTIES

Driver parameter	Minimum	Typical Value	Maximum
Voltage input DC (V)	12	24	30
Current output (A)	-	-	8
Motor speed range (RPM)	100	3000	20000
Hall signal voltage (V)	-	-	5
Hall drive current (mA)	-	20	-
External potentiometer (kΩ)	-	10	-

ENVIRONMENTAL INDICATORS

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

DIMENSION (UNIT: mm)



BLD-120A直流无刷电机驱动器

BLD-120A BRUSHLESS DC MOTOR DRIVER

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DRIVER INTERFACE AND WIRING

Signal	Terminal	Function
Control signal	BRK	Motor brake stop control signal; BRK and COM connect in default, motor brake stops when BRK and COM disconnect.
	EN	Stop signal terminal; EN connects COM, motor runs, otherwise motor stops.
	F/R	Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise.
	COM	Common port (0V)
	SV	①External potentiometer speed setting input; ②External analog voltage input terminal; ③PWM speed setting input
Hall signal	REF+	Hall sensor signal power supply+
	HU	Hall sensor signal HU
	HV	Hall sensor signal HV
	HW	Hall sensor signal HW
	REF-	Hall sensor signal-
Motor connection	W	Motor line W phase
	V	Motor line V phase
	U	Motor line U phase
Power connection	DC+	Power supply positive electrode (12-30VDC)
	DC-	Power supply negative electrode (Hall sensor negative electrode)

STATUS INDICATOR & ISSUE HANDLING

LED error display	Status statements	Solution
Red LED flashes twice	Over voltage	Check the bus voltage
Red LED flashes three times	Tube over current	Ensure model selection is right
Red LED flashes four times	Over current	Check P-sv setting and motor parameter
Red LED flashes five times	Low voltage	Increase the acceleration time Check power voltage, and ensure power supply is 1.5 times of motor power
Red LED flashes six times	Hall error	Ensure motor connection is well
Red LED flashes seven times	Locked-rotor	Check if motor is overload
Red LED flashes eight times	Over two errors	Hall error or locked-rotor. When speed setting is not available, set P-sv to max value.

BLD-300B直流无刷电机驱动器

BLD-300B BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



简介

BLD-300B主要适配48V、440W以下或24V、300W以下的直流无刷电机。

特点

- ●加减速时间设置
- ●极对数选择
- ●开/闭环控制
- ●最大输出电流P-sv设置
- ●重启
- ●报警指示
- ●内置电位器调速设置
- ●外接电位器调速设置
- ●外部模拟信号调速设置
- ●PWM调速设置

电气性能及环境指标

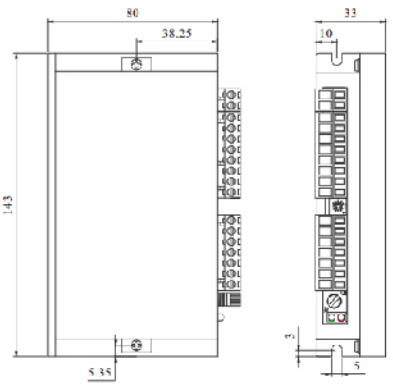
电气指标

驱动器参数	最小值	典型值	最大值	单位
输入电压	18	48	56	VDC
输出电流	-	-	15	A
霍尔信号电压	-	-	5	V
霍尔驱动电流	12	-	-	mA
外接电位器	-	10	-	kΩ
输入模拟量电压	0.25	-	5	VDC
速度控制范围	100	3000	20000	RPM

环境指标

环境因素	环境指标
散热方式	自然冷却或强制风冷
使用环境	避免粉尘、油雾及腐蚀性气体
工作温度	0~+40°C
环境湿度	90%及以下（无凝露）
抗振能力	最大5.7m/s²
存储温度	0~+50°C

机械尺寸图 单位mm



BLD-300B直流无刷电机驱动器

BLD-300B BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

驱动器接口和接线

信号	端子	内容
电源连接	DC+	直流电源接入正极（电压范围：18～56VDC）
	DC-	直流电源接入负极
电机连接	W	直流无刷电机W相
	V	直流无刷电机V相
	U	直流无刷电机U相
霍尔信号	REF+	直流无刷电机霍尔信号电源线
	HW	直流无刷电机霍尔信号HW
	HV	直流无刷电机霍尔信号HV
	HU	直流无刷电机霍尔信号HU
	REF-	直流无刷电机霍尔信号接地线
控制信号	SV	调速信号输入端口，外部电位器调速时中间引出端连接此处，两侧分别接REF+与COM端口
	COM	公共端口（0V参考电平）
	F/R	电机转动方向控制端口，F/R端口与COM端口断开电机为顺时针转动，短接闭合为逆时针转动
	EN	停止信号控制端，EN端口与COM端口断开为电机缓慢停止，短接闭合为正常运行
	BRK	电机快速刹车信号端口，BRK端口与COM端口断开电机为正常运行，短接闭合为快速刹车
输出信号	SPEED	与电机的运行转速相应，输出相对应的脉冲频率。利用SPEED-OUT可以计算出电机的转速。
	ALM	报警信号输出端口，正常为5V出现故障时电平为0V

状态指示·异常处理

报警指示	状态说明	原因	对策
红灯闪烁2次	过压报警	1.输入电压超过额定电压 2.负载惯量大且快速启停	1.更换稳定的电源在驱动器额定的电压范围内（<60V） 2.调节ACC/DEC增加加减速时间
红灯闪烁3次	功率管过流报警	输出电流超过功率管的额定电流	1.检查负载是否超过电机的额定功率 2.更换功率更大的电机和驱动
红灯闪烁4次	过流报警	输出电流超过驱动器的设置电流	1.检查P-sv设置是否在电机额定功率范围内 2.调节ACC/DEC增加加减速时间
红灯闪烁5次	欠压报警	输入电压低于驱动器设置的最低电压	1.更换电源在额定的电压范围（最低电压13.4V） 2.检查电源功率是否满足大于电机功率1.5倍条件
红灯闪烁6次	霍尔报警	驱动器检测不到电机霍尔信号或检测到的霍尔信号有误	1.检查电机接线是否正确且连接牢固 2.电机线不宜过长一般不超过5米 3.受到干扰建议用屏蔽线
红灯闪烁7次	堵转报警	1.电机线接线错误 2.电机力矩不足	1.按电机接线图纸接线 2.检查P-sv功率设置是否与电机匹配 3.调节ACC/DEC增加加减速时间 4.更换功率更大电机和驱动
红灯闪烁8次	两种以上报警	有两种以上的报警	按以上对策逐一排查

BLD-300B直流无刷电机驱动器

BLD-300B BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



PRODUCT INTRODUCTION

BLD-300B is designed and mainly for BLDC motors of 48V less 440W or 24V less 300W.

FEATURES

- Acc/Dec time setting
- Pole-pairs selection
- Open/closed loop control
- Max output current P-sv setting
- Restart
- Built-in RV speed setting
- External potentiometer speed setting
- External analog signal speed setting
- PWM speed setting

ELECTRICAL PROPERTIES AND ENVIRONMENTAL INDICATORS

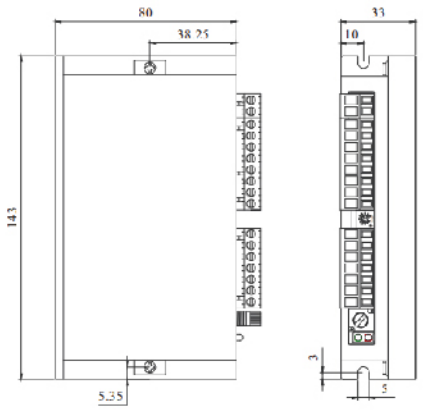
ELECTRICAL PROPERTIES

Driver parameter	Minimum	Typical Value	Maximum
Voltage input DC (V)	18	48	56
Current output (A)	-	-	15
Motor speed range (RPM)	100	3000	20000
Hall signal voltage (V)	-	-	5
Hall drive current (mA)	12	-	-
External potentiometer (kΩ)	-	10	-

ENVIRONMENTAL INDICATORS

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

DIMENSION (UNIT: mm)



BLD-300B直流无刷电机驱动器

BLD-300B BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

DRIVER INTERFACE AND WIRING

Signal	Terminal	Function
Power connection	DC+	Power supply positive electrode (18-56VDC)
	DC-	Power supply negative electrode
Motor connection	W	Motor line W phase
	V	Motor line V phase
	U	Motor line U phase
Hall signa	REF+	Hall sensor signal-
	HW	Hall sensor signal HW
	HV	Hall sensor signal HV
	HU	Hall sensor signal HU
	REF-	Hall sensor signal power supply+
Control signal	SV	①External potentiometer speed setting input; ②External analog voltage input terminal; ③PWM speed setting input
	COM	Common port (0V)
	F/R	Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise.
	EN	Stop signal terminal; EN connects COM, motor runs, otherwise motor stops.
	BRK	Motor brake stop control signal; BRK and COM connect in default, motor brake stops when BRK and COM disconnect.
Output signal	SPEED	Output pulse frequency corresponded with running speed. Speed can be figured out according: N(RPM)=(F/P)×60/3 F: Output pulse frequency P: Motor pole pairs N: Motor speed
	ALM	Motor or driver fault signal output. It is 5V in normal situation and 0V when fault occurs.

STATUS INDICATOR & ISSUE HANDLING

LED error display	Status statements	Solution
Red LED flashes twice	Over voltage	Check the bus voltage
Red LED flashes three times	Tube over current	Ensure model selection is right
Red LED flashes four times	Over current	Check P-sv setting and motor parameter
Red LED flashes five times	Low voltage	Increase the acceleration time Check power voltage, and ensure power supply is 1.5 times of motor power
Red LED flashes six times	Hall error	Ensure motor connection is well
Red LED flashes seven times	Locked-rotor	Check if motor is overload
Red LED flashes eight times	Over two errors	Hall error or locked-rotor. When speed setting is not available, set P-sv to max value.

BLD-750直流无刷电机驱动器

BLD-750 BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



简介

BLD-750专为48V、750W以下直流无刷电机设计。采用DSP控制技术，具备高扭矩、低振动、低噪音、闭环控制以及多种调速模式等特性。

特点

- ●加/减速时间设定
- ●电机级数选择
- ●开/闭环控制
- ●最大电流输出设定
- ●电机堵转力矩保持
- ●重启
- ●各种报警指示
- ●内置电位器RV调速控制
- ●外接电位器调速控制
- ●外部模拟信号调速
- ●脉冲频率调速控制

电气性能及环境指标

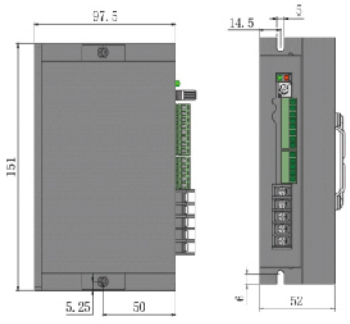
电气指标

驱动器参数	最小值	典型值	最大值
输入电压 DC (V)	18	48	52
输出电流 (A)	-	-	25
适用电机转速 (RPM)	0	-	20000
霍尔信号电压 (V)	-	-	5
霍尔驱动电流 (mA)	-	20	-
外接调速电位器 (kΩ)	-	10	-

环境指标

环境因素	环境指标
冷却方式	自然冷却或强制冷却
使用场合	避免粉尘、油雾及腐蚀性气体
工作环境温度	0~+40°C
最高环境湿度	90%及以下（无凝露）
存储温度	0~+50°C
最大振动	5.7m/s²

机械尺寸图 单位mm



BLD-750直流无刷电机驱动器

BLD-750 BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

驱动器接口和接线

信号	端子	内容
输出信号	ALM	电机或驱动控制故障信号输出信号，正常为5V，出现故障时电平为0V。
	SPEED	与电机的运行转速相应，输出相对应的脉冲频率。利用SPEED-OUT可以计算出电机的转速。
控制信号	BRK	BRK端与COM端断开或高电平输入时电机刹车停止，短接或低电平输入时电机运行。
	EN	EN端与COM端断开或高电平输入时电机缓慢停止，短接或低电平输入时电机运行。
	F/R	F/R端与COM端断开或高电平输入时电机正转，短接或低电平输入时电机反转。
	COM	公共端口（0V参考电平）
	SV	①外接调速电位器；②外部模拟信号调速输入；③脉冲频率输入
	VCC	外部电位器接口
霍尔信号	REF+	直流无刷电机霍尔信号电源线
	HU	直流无刷电机霍尔信号HU
	HV	直流无刷电机霍尔信号HV
	HW	直流无刷电机霍尔信号HW
	REF-	直流无刷电机霍尔信号接地线
电机连接	U	直流无刷电机U相
	V	直流无刷电机V相
	W	直流无刷电机W相
电源输入	DC-	直流电源输入负极
	DC+	直流电源输入正极（电压范围DC18～52V）

状态指示·异常处理

报警指示	状态说明	对策
红灯闪烁2次	过压报警	请检验母线电压
红灯闪烁3次	功率管过流报警	确定选型是否正确
红灯闪烁4次	过流报警	检查P-sv设置，校对电机参数。或增加加速时间
红灯闪烁5次	欠压报警	检查电源电压，同时检查电源功率是否满足大于电机功率1.5倍的条件
红灯闪烁6次	霍尔报警	请检查检测电机接线是否牢靠
红灯闪烁7次	堵转报警	请确定电机负载是否过大
红灯闪烁8次	两种以上报警	常见状况主要为霍尔或堵转报警。当电机无法调速时，请将P-sv调至最大值

BLD-750直流无刷电机驱动器

BLD-750 BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



PRODUCT INTRODUCTION

BLD-750 is designed and mainly for BLDC motors of 48V less 750W. With DSP controlling technology, it has features of high torque, low vibration, low noise, closed loop control and rich speed control modes.

FEATURES

- Acc/Dec time setting
- Pole-pairs selection
- Open/closed loop control
- Max output current P-sv setting
- Restart
- Alarm indication
- Built-in RV speed setting
- External potentiometer speed setting
- External analog signal speed setting
- PWM speed setting

ELECTRICAL PROPERTIES AND ENVIRONMENTAL INDICATORS

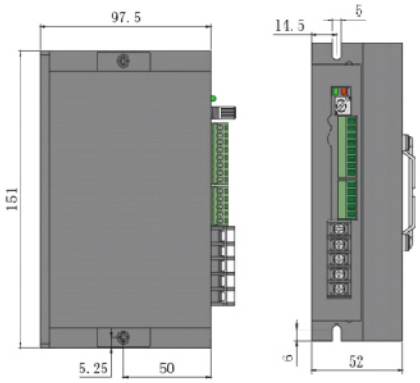
ELECTRICAL PROPERTIES

Driver parameter	Minimum	Typical Value	Maximum
Voltage input DC (V)	18	48	52
Current output (A)	-	-	25
Motor speed range (RPM)	-	-	20000
Hall signal voltage (V)	-	-	5
Hall drive current (mA)	-	20	-
External potentiometer (kΩ)	-	10	-

ENVIRONMENTAL INDICATORS

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

DIMENSION (UNIT: mm)



BLD-750直流无刷电机驱动器

BLD-750 BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

DRIVER INTERFACE AND WIRING

Signal	Terminal	Function
Output signal	ALM	Motor or driver fault signal output. It is 5V in normal situation and 0V when fault occurs.
	SPEED	Output pulse frequency corresponded with running speed. Speed can be figured out according: N(RPM)=(F/P)×60/3 F: Output pulse frequency P: Motor pole pairs N: Motor speed
Control signal	BRK	Motor brake stop control signal; BRK and COM connect in default, motor brake stops when BRK and COM disconnect.
	EN	Stop signal terminal; EN connects COM, motor runs, otherwise motor stops.
	F/R	Motor direction control terminal; F/R and COM disconnect, motor will rotate clockwise, and otherwise, motor will rotate anticlockwise.
	COM	Common port (0V)
	SV	①External potentiometer speed setting input; ②External analog voltage input terminal; ③PWM speed setting input
	VCC	External power source
Hall signal	REF+	Hall sensor signal power supply+
	HU	Hall sensor signal HU
	HV	Hall sensor signal HV
	HW	Hall sensor signal HW
	REF-	Hall sensor signal-
Motor connection	U	Motor line U phase
	V	Motor line V phase
	W	Motor line W phase
Power connection	DC-	Power supply negative electrode
	DC+	Power supply positive electrode (18-52VDC)

STATUS INDICATOR & ISSUE HANDLING

LED error display	Status statements	Solution
Red LED flashes twice	Over voltage	Check the bus voltage
Red LED flashes three times	Tube over current	Ensure model selection is right
Red LED flashes four times	Over current	Check P-sv setting and motor parameter
Red LED flashes five times	Low voltage	Increase the acceleration time Check power voltage, and ensure power supply is 1.5 times of motor power
Red LED flashes six times	Hall error	Ensure motor connection is well
Red LED flashes seven times	Locked-rotor	Check if motor is overload
Red LED flashes eight times	Over two errors	Hall error or locked-rotor. When speed setting is not available, set P-sv to max value.

BLDH750R直流无刷电机驱动器

BLDH750R BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



简介

BLDH750R直流无刷电机驱动器是一款高压750W内直流无刷电机的高性能、低成本无刷驱动器。该直流无刷驱动器支持Modbus通讯协议，为用户在实际应用中提供更多灵活的选择。

特点

- 支持Modbus通讯协议，适合用户使用触摸屏或PC控制
- 同时具有内置电位器RV调速控制、外部模拟量调速控制、外部电位器调速控制、PWM、频率调速
- 支持100V~250VAC电压范围内工作
- 支持-30°C~+55°C的环境工作温度范围
- 开、闭环可选速度控制
- 支持额定功率750W的无刷电机的驱动
- 3秒的堵转等待时间

电气性能及环境指标

电气指标

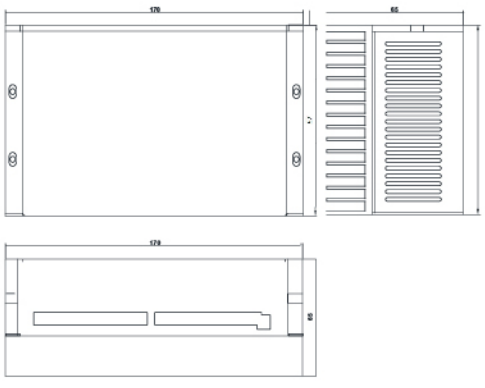
驱动器参数	最小值	典型值	最大值
输入电压 AC (V)	100	220	250
相线电流峰值 (A)	-	-	9
适用电机转速 (RPM)	100①	-	-

①最小值要求驱动器极对数和电机极对数一致

环境指标

环境因素	环境指标
冷却方式	自然冷却或强制冷却
使用场合	避免粉尘、油雾及腐蚀性气体
使用温度	-30°C~+55°C
存储温度	-35°C~+70°C

机械尺寸图 单位mm



BLDH750R直流无刷电机驱动器

BLDH750R BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

驱动器接口和接线

信号	端子	内容
电源输入	E	交流电源地线
	L	交流电源输入
	N	交流电源输入
电机连接	U	直流无刷电机U相
	V	直流无刷电机V相
	W	直流无刷电机W相
霍尔信号	GND	直流无刷电机霍尔信号接地线
	HW	直流无刷电机霍尔信号HW
	HV	直流无刷电机霍尔信号HV
	HU	直流无刷电机霍尔信号HU
	+5V	直流无刷电机霍尔信号电源线
控制信号	SPEED	转速以频率形式输出
	COM	公共端口
	EN	EN端与COM端短接时电机运行，断开时电机自由停止
	+5V	5V电源
	SV	①外接调速电位器 ②外部模拟信号输入，0~5V输入
	ALM	正常为高阻输出，出现故障时输出低电平
	PWM/F	PWM/F频率调速接口，最大5V信号输入，通过SW4选择
	BRK	BRK端与COM端断开时电机运行，短接时电机刹车停止
	F/R	F/R端与COM端断开时电机正转，短接时电机反转

状态指示·异常处理

状态指示

当电机出现过压、霍尔信号错误、堵转、过温等情况时，驱动器会发出报警信号并停止工作。

报警指示	状态说明
红灯连续快速闪烁，电机不停	提示正在限流
红灯闪烁 3次，电机停转	整流桥输出电源电压超过 395V
红灯闪烁 4次，电机停转	整流桥输出电源电压低于 90V
红灯闪烁 5次，电机停转	驱动器接收不到霍尔信号或者接收到错误的霍尔信号
红灯闪烁 6次，电机停转	电机堵转或者驱动电路异常
红灯闪烁 7次，电机停转	板上器件异常

异常处理

出现上表异常时，应先对驱动器发出复位命令，让报警信号消除，如果报警信号不能消除，再按下表进行处理。复位命令指的是以下指令之一：

◆所有调速信号（内部电位器、外部模拟量、PWM和频率F）都调到零；

◆将驱动板上的BRK端口信号与GND再短接一次；

◆重新上电；

报警指示	异常处理
红灯连续快速闪烁，电机不停	无需处理
红灯闪烁3次	请检测电源电压
红灯闪烁4次	请检测电源电压
红灯闪烁5次	请检查电机接线是否牢靠并确保电机未损坏
红灯闪烁6次	请确定电机负载是否过大并且电机未损坏，如不是请换另一台同款驱动器实验
红灯闪烁7次	将调速调为0，重新上电，如还有问题，更换驱动器

BLDH750R直流无刷电机驱动器

BLDH750R BRUSHLESS DC MOTOR DRIVER

ZZMOTOR



PRODUCT INTRODUCTION

BLDH750R is designed with high-performance and low-cost which used for high voltage brushless DC motors less 750W. It supports Modbus communication protocol, and also provides more flexible choices for users among actual practice.

FEATURES

- Support Modbus communication protocol, can be controlled by touch screen or PC
- Built-in RV speed setting
- External potentiometer speed setting
- External analog signal speed setting
- Pulse frequency and PWM speed setting
- Support l00V~250VAC voltage range
- Support -30°C~+55°C temperature range of working environment
- Open/closed loop control
- Works for 750W or lower power of BLDC motor
- 3 seconds waiting time for locked-rotor

ELECTRICAL PROPERTIES AND ENVIRONMENTAL INDICATORS

ELECTRICAL PROPERTIES

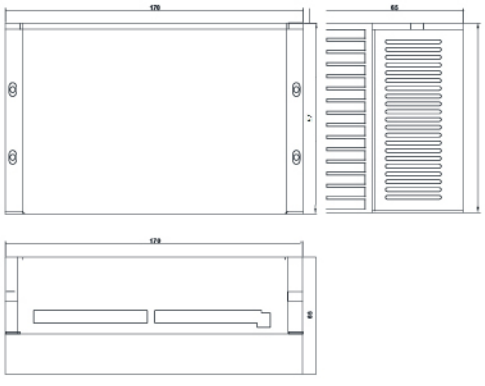
Driver parameter	Minimum	Typical Value	Maximum
Input voltage AC (V)	100	220	250
Phase Current Peak (A)	-	-	9
Motor rotate speed (RPM)	100①	-	-

①Under closed loop, the minimum speed of the motor is 100 only if the pole number is set on the driver correctly.

ENVIRONMENTAL INDICATORS

Environmental Factors	Environmental Specifications
Heat Sinking Method	Natural cooling or fan-forced cooling
Atmosphere	Avoid dust, oily mist and corrosive air
Operating Temperature	-30°C~+55°C
Storage Temperature	-35°C~+70°C

DIMENSION (UNIT: mm)



BLDH750R直流无刷电机驱动器

BLDH750R BRUSHLESS DC MOTOR DRIVER

ZZMOTOR

DRIVER INTERFACE AND WIRING

Signal	Terminal	Function
Power supply	E	AC Power supply ground electrode
	L	AC Power supply input
	N	AC Power supply input
Motor lines	U	Motor line U phase
	V	Motor line V phase
	W	Motor line W phase
Hall Signal	GND	Hall signal ground electrode
	HW	Hall sensor signal HW
	HV	Hall sensor signal HV
	HU	Hall sensor signal HU
	+5V	Hall sensor signal power supply+
Control Signal	SPEED	Rotate speed output in form of frequency
	COM	Common port
	EN	EN and COM connect, motor runs; EN and COM disconnect, motor stops.
	+5V	5V power supply
	SV	1.External potentiometer speed setting input; 2.External analog signal input, 0~5V input.
	ALM	Fault output; normal: high level; fault: low level
	PWM/F	PWM or pulse frequency speed setting input terminal (chosen by SW4). The largest input voltage is 5VDC.
	BRK	Motor brake stop signal; BRK and COM disconnect, motor runs; BRK and COM connect, motor stops and then braking.
	F/R	Motor direction control terminal; F/R and COM disconnect, motor rotates clockwise; F/R and COM connect, motor rotates anticlockwise.

STATUS INDICATOR & ISSUE HANDLING

STATUS INDICATOR

When appearing locked-rotor, Hall fault, over-temperature and over voltage, driver will give an alarm signal and stop working.

Alarm indicator	Status statements
The red light flashes continuously and rapidly, and the motor doesn't stop	Normal, driver is limiting current
The red light flashes 3 times, and the motor stops	Over voltage
The red light flashes 4 times, and the motor stops	Under voltage
The red light flashes 5 times, and the motor stops	Hall fault
The red light flashes 6 times, and the motor stops	Motor locked-rotor or driving circuit abnormal
The red light flashes 7 times, and the motor stops	Components on circuit board abnormal

TROUBLE SHOOTING

When any of abnormal indicator in above table occurs, a reset command should be issued to driver to clear the alarm signal off. If the alarm signal still exists, then proceed as below table.

*The reset command refers to one of the following commands:

- Adjust all speed setting signals to 0, including built-in potentiometer, external analog signal, PWM and pulse frequency;
- BRK connects to GND again;
- Power-on again;

Alarm indicator	Trouble shooting
The red light flashes continuously and rapidly, and the motor doesn't stop	No need to deal with
The red light flashes 3 times, and the motor stops	Check to make sure power supply voltage is normal
The red light flashes 4 times, and the motor stops	Check to make sure power supply voltage is normal
The red light flashes 5 times, and the motor stops	Check motor connecting wire is stable and ensure motor is not damaged
The red light flashes 6 times, and the motor stops	Check if the load is too heavy and the motor is damaged, if not, please change another same type driver to test
The red light flashes 7 times, and the motor stops	Adjust all speed setting signals to 0, power-on again, if still any problem, please change another driver