

2-Quadrant BLDC Driver With Fixed Parameters

NO	Model	Temp range (°C)	Voltage range (VDC)	I-pk (A)	I-con (A)	60°/120° Hall sensor	PWM f(kHz)	PI Close loop of speed	SV Ramp time (S)	SV Range (V)	LV /OV	Alm	PG	Heat sink
1	BLSD2405DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	5	2.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
2	BLSD2410DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	10	5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
3	BLSD2415DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	15	7.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
4	BLSD24020DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	20	10	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
5	BLSD2425DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	25	12.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
6	BLSD2430DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	17~32	30	15	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
7	BLSD3605DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	5	2.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
8	BLSD3610DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	10	5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
9	BLSD3615DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	15	7.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
10	BLSD3620DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	20	10	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
11	BLSD3625DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	25	12.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
12	BLSD3630DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	27~45	30	15	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	√
13	BLSD4805DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	37~55	5	2.5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X
14	BLSD4810DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	37~55	10	5	√	15	√	0.1~1.0	0~5	√	√	24p @8-pole	X

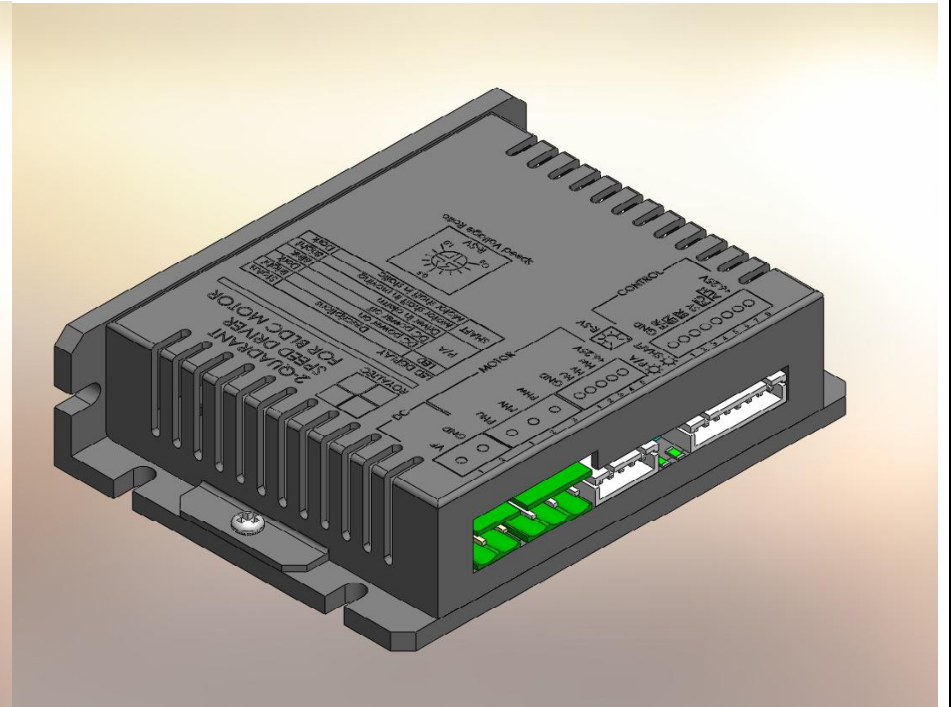
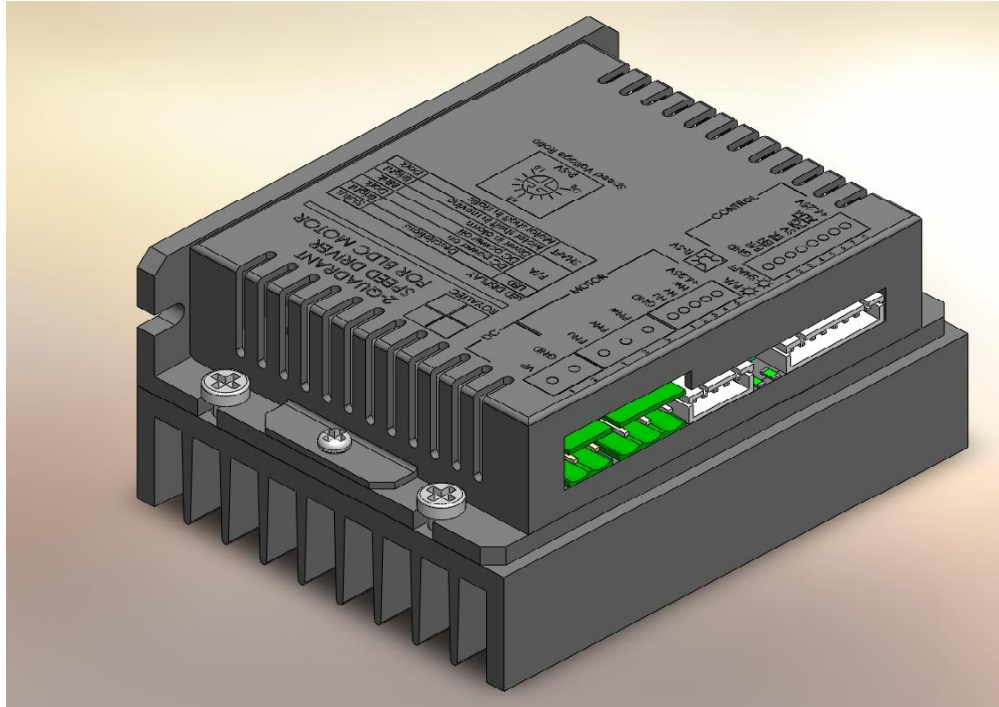
15	BLSD4815DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	37~55	15	7.5	✓	15	✓	0.1~1.0	0~5	✓	✓	24p @8-pole	✓
16	BLSD4820DC-2Q-S-X-XXX-XX	-10~+50 -40~+85	37~55	20	10	✓	15	✓	0.1~1.0	0~5	✓	✓	24p @8-pole	✓

BLSD 24 05 DC - 2Q - S - 8 - 040 - 0.5 - T A

BLDC speed driver-----A=60° Hall sensors, None=120° Hall sensors
 Rated voltage (VDC)-----T=-40~+85 °C, None=-10~+50 °C
 Peak current limit (A)-----SV ramp RC time (S)
 DC power input-----Max speed range (rpm/100)
 2-quadrant control mode-----Pole number of motor
 Simple fixed parameters-----

With heat sink

Without heat sink



Typical Connections

Note:

1. Control signals:

- F/R-----H or Open=Forward
 L or Close=Reverse
- EN-----H or Open=Disable
 L or Close=Enable
- BK-----H or Open=Running
 L or Close=Brake
- SV-----0-5V speed reference (112K input resistance)
- PG-----Speed pulse output (OC)
- ALM---Alarm output (OC)

2. Hall sensors cable can not be tied together with windings cable.

3. Alarm conditions:

- a. Hall sensor signals are not correct.
- b. LV or OV for 2-3S.
- c. Over temperature for the control chip.
- d. Over load for 6s continuously.
- e. It can be reset by Turn-Off-On DC Power or Disable the driver once.

4. LED indicator:

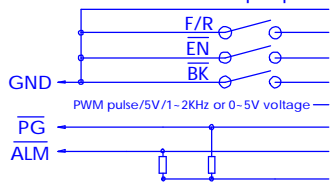
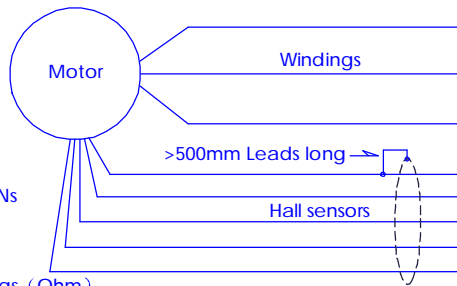
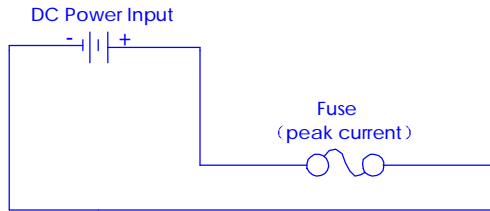
- P/A-----Bright=Driver is OK
 Blink=Driver is in alarm
- SHAFT----Bright=Motor shaft is moving
 Dark=Motor shaft is in static

5. Braking operation:

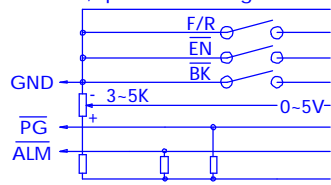
The motor speed must be less than the safe brake speed N_s when you brake the motor.
 For Y windings, $N_s = \sqrt{3} \times I_p \times R_L \times N / (2 \times V_p)$
 For Δ windings, $N_s = I_p \times R_L \times N / (2 \times \sqrt{3} \times V_p)$
 I_p =Peak current (A), R_L =Line to line resistance of windings (Ohm),
 N =No-load speed (rpm), V_p =Rated voltage (V), N_s =Safe brake speed (rpm)

6. Peak current selection:

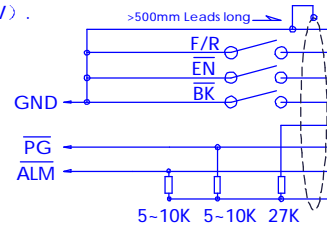
$I_p \geq 2 \times I_r$ or $I_p \geq 4 \times P_o / V_p$, I_p is peak current of driver (A), I_r is rated current of motor (A),
 P_o is rated output power of motor (W), V_p is rated voltage of driver (V).



The R-SV pot must be turned to right.



The R-SV pot must be turned to right.



Use PWM pulse or SV voltage to control speed

Use additional pot to control speed

Use R-SV pot to control speed

