

(RoHS) RoHS-Compliant

Brushless DC Motor and Driver Package

BLF Series

200W (1/4HP) / 400W (1/2HP)

Introducing 200-Watt and 400-Watt high-output type motor drivers for the BLF Series brushless DC motor, which features a maximum motor speed of 4000 r/min and digital settings and display. The motor drivers are equipped with a digital operator and offers wide-ranging functions to meet the increasingly diverse needs of manufacturers.



Product Line

Combination Type (Pre-assembled Gearmotor)
The combination type (pre-assembled gearmotor) comes with the motor and its dedicated gearhead already assembled. This simplifies installation in equipment. Motors and gearheads are also available separately so they can be on hand to make changes or repair.

Combination Type

Be sure to purchase connection cables.

Output Power	Voltage	Model	Gear Ratio	Motor/Driver Combination		
				Motor Model	Gearhead Model	Driver Model
200W (1/4HP)	Single-Phase 100–120 VAC	BLF6200A -□	5, 10, 15, 20, 30, 50, 100, 200	BLFM6200-GFS	GFS6G□	BLFD200A2
	Single-Phase 200–240 VAC	BLF6200C -□				BLFD200C2
	Three-Phase 200–240 VAC	BLF6200S -□				BLFD200S2
400W (1/2HP)	Three-Phase 200–240 VAC	BLF6400S -□		BLFM6400-GFS		BLFD400S2

● Enter the gear ratio in the box (□) within the model name.

Pinion Shaft Type

Be sure to purchase connection cables.

Output Power	Voltage	Model	Motor/Driver Combination	
			Motor Model	Driver Model
200W (1/4HP)	Single-Phase 100–120 VAC	BLF6200A-GFS	BLFM6200-GFS	BLFD200A2
	Single-Phase 200–240 VAC	BLF6200C-GFS		BLFD200C2
	Three-Phase 200–240 VAC	BLF6200S-GFS		BLFD200S2
400W (1/2HP)	Three-Phase 200–240 VAC	BLF6400S-GFS	BLFM6400-GFS	BLFD400S2

Gearheads

Parallel Shaft Gearhead

Model	Gear Ratio
GFS6G □	5, 10, 15, 20, 30, 50, 100, 200

● Enter the gear ratio in the box (□) within the model name.

Round Shaft Type

Be sure to purchase connection cables.

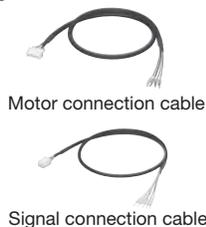
Output Power	Voltage	Model	Motor/Driver Combination	
			Motor Model	Driver Model
200W (1/4HP)	Single-Phase 100–120 VAC	BLF6200A-A	BLFM6200-A	BLFD200A2
	Single-Phase 200–240 VAC	BLF6200C-A		BLFD200C2
	Three-Phase 200–240 VAC	BLF6200S-A		BLFD200S2
400W (1/2HP)	Three-Phase 200–240 VAC	BLF6400S-A	BLFM6400-A	BLFD400S2

Connection Cables (Sold Separately)

Cable Set

The optional cable set consists of two cables including a motor connection cable and a signal connection cable.

Length	Model
1 m (3.3 ft.)	CC01BLF
2 m (6.6 ft.)	CC02BLF
3 m (9.8 ft.)	CC03BLF
5 m (16.4 ft.)	CC05BLF
7 m (23.0 ft.)	CC07BLF
10 m (32.8 ft.)	CC10BLF
15 m (49.2 ft.)	CC15BLF
20 m (65.6 ft.)	CC20BLF



● The **BLF** Series requires two dedicated cables, one for the motor and the other for signals, for connection between the motor and driver. These connection cables are not supplied with the **BLF** Series, so be sure to purchase an optional connection cable set.



For the following information, please refer to the full product brochure.

- Features
- System Configuration
- Connection diagrams
- Timing chart*
- I/O signal circuits*
- Operating methods*

* For the 200-Watt and 400-Watt motor drivers, the input resistance within the driver is 3.3 kΩ. The name for “DEC-STOP” input is “STOP-MODE”.

Specifications

● 200W, 400W (RoHS)

Motor :  / Driver : 

Model	Combination Type - Parallel Shaft Gearhead		BLF6200A-□	BLF6200C-□	BLF6200S-□	BLF6400S-□
	Round Shaft Type		BLF6200A-A	BLF6200C-A	BLF6200S-A	BLF6400S-A
Rated Output Power (Continuous)	W (HP)		200 (1/4)		400 (1/2)	
Power Source	Rated Voltage	V	Single-Phase 100-120	Single-Phase 200-240	Three-Phase 200-240	Three-Phase 200-240
	Voltage Tolerance		±10%			
	Rated Frequency	Hz	50/60 ±5%			
	Rated Input Current	A	4.7	2.8	1.7	2.8
	Maximum Input Current	A	8.8	5.1	3.4	5.6
Rated Torque	N·m (oz·in)		0.65 (92)		1.3 (184)	
Starting Torque	N·m (oz·in)		1.15 (163)		1.8 (250)	
Rated Speed	r/min		3000			
Speed Control Range	r/min		80~4000			
Permissible Load Inertia	J kg·m ² (oz·in ²)		8.75 × 10 ⁻⁴ (48)		15 × 10 ⁻⁴ (82)	
Rotor Inertia	J kg·m ² (oz·in ²)		0.61 × 10 ⁻⁴ (3.3)		0.66 × 10 ⁻⁴ (3.6)	
Speed Regulation*1 (Using the digital operator)	Load		±0.2% maximum (0~Rated torque, at rated speed, at rated voltage, at normal ambient temperature)			
	Voltage		±0.2% maximum (Rated voltage ±10%, at rated speed, with no load, at normal ambient temperature)			
	Temperature		±0.2% maximum (0~+50°C [+32°F~+122°F], at rated speed, with no load, at rated voltage)			
Temperature Rise	Motor		50°C (90°F) or less in the windings, and 40°C (72°F) or less in the frame ² , as measured by the thermocouple method after continuous operation under normal ambient temperature and humidity.			
	Driver		50°C (90°F) or less in the heat radiation plate, as measured by the thermocouple method after continuous operation under normal ambient temperature and humidity.			

*1 Speed regulation values vary depending on the speed setting method.

Setting from internal speed potentiometer; external speed potentiometer, external DC voltage: Load: ±0.5% max., Voltage: ±0.5% max., Temperature: ±0.5% max.

*2 For round shaft types, please attach to the heat radiation plate (material: aluminum) of the following sizes to maintain a maximum motor case temperature of 90°C (194°F).

BLF6200A-□: 200mm x 200mm (7.87in. X 7.87in.) 5mm (0.20 in.) thick

BLF6400S-A: 250mm x 250mm (9.84in. X 9.84 in.) 6mm (0.24 in.) thick

● Enter the gear ratio in the box (□) within the model name.

Gearmotor – Torque Table

Unit=Upper values: N·m/Lower values: lb·in

Model	Gear Ratio	Speed Range	5	10	15	20	30	50	100	200
			80r/min	16	8	5.3	4	2.7	1.6	0.8
BLF6200■-□	80~3000r/min	3000r/min	600	300	200	150	100	60	30	15
		4000r/min	800	400	267	200	133	80	40	20
		4000r/min	2.9	5.9	8.8	11.7	16.8	28	52.7	70
BLF6400S-□	80~3000r/min	25	52	77	103	148	240	460	610	
		17.7	36	53	71	102	171	320	550	
	4000r/min	2.0	4.1	6.1	8.1	11.6	19.4	36.5	63	
		5.9	11.7	17.6	23.4	33.5	55.9	70	70	
	4000r/min	52	103	155	200	290	490	610	610	
		4.3	8.6	12.8	17.1	24.5	40.9	63	63	
		38	76	113	151	210	360	550	550	

● Enter the letter representing the voltage (A, C or S) in the box (■) within the model name.

Enter the gear ratio in the box (□) within the model name.

● A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.

Permissible Overhung Load and Permissible Thrust Load

● Combination Type – Parallel Shaft Gearhead

Model	Gear Ratio	Permissible Overhung Load				Permissible Thrust Load		
		10mm (0.39in.) from shaft end		20mm (0.79in.) from shaft end		N	lb.	
		N	lb.	N	lb.			
BLF6200■-□ BLF6400S-□	5, 10, 15, 20	80~3000r/min	550	123	800	180	200	45
		4000r/min	500	112	700	157		
	30, 50	80~3000r/min	1000	220	1250	280	300	67
		4000r/min	900	200	1100	240		
	100, 200	80~3000r/min	1400	310	1700	380	400	90
		4000r/min	1200	270	1400	310		

● Enter the letter representing the voltage (A, C or S) in the box (■) within the model name.

Enter the gear ratio in the box (□) within the model name.

● Round Shaft Type

Model	Permissible Overhung Load				Permissible Thrust Load
	10mm (0.39in.) from shaft end		20mm (0.79in.) from shaft end		
	N	lb.	N	lb.	
BLF6200■-A BLF6400S-A	197	44	221	49	The permissible thrust load shall be no greater than half the motor mass.

● Enter the letter representing the voltage (A, C or S) in the box (■) within the model name.

■ Permissible Load Inertia J for Combination Type

● Combination Type – Parallel Shaft Gearhead

Unit=Upper values: $\times 10^{-4}$ kg·m² /Lower values : oz·in²

Model \ Gear Ratio	5	10	15	20	30	50	100	200
BLF6200 ■-□	37.5	150	338	600	1350	3750	3750	3750
BLF6400S -□	210	820	1850	3300	7400	21000	21000	21000

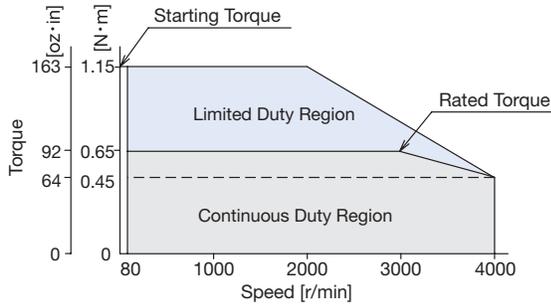
- Enter the letter representing the voltage (**A**, **C** or **S**) in the box (■) within the model name.
Enter the gear ratio in the box (□) within the model name.

■ Speed – Torque Characteristics

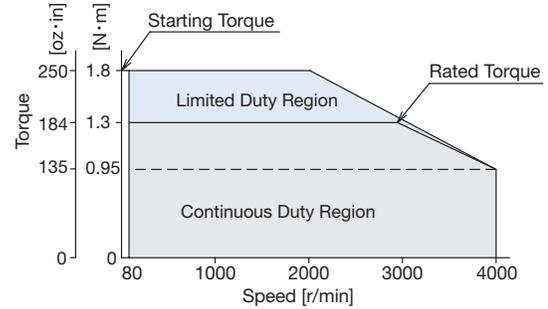
Continuous Duty Region: Continuous operation is possible in this region.

Limited Duty Region: This region is used primarily when accelerating. When a load that exceeds the rated torque is applied continuously for approximately 5 seconds, overload protection is activated and the motor comes to stop.

BLF6200■-□
BLF6200■-A



BLF6400S-□
BLF6400S-A



- The characteristics shown above are applicable for the motors only.
- Enter the letter representing the voltage (A, C or S) in the box (■) within the model name.
Enter the gear ratio in the box (□) within the model name.

■ Dimensions Unit = mm (in.)

Mounting screws are included with the combination type.

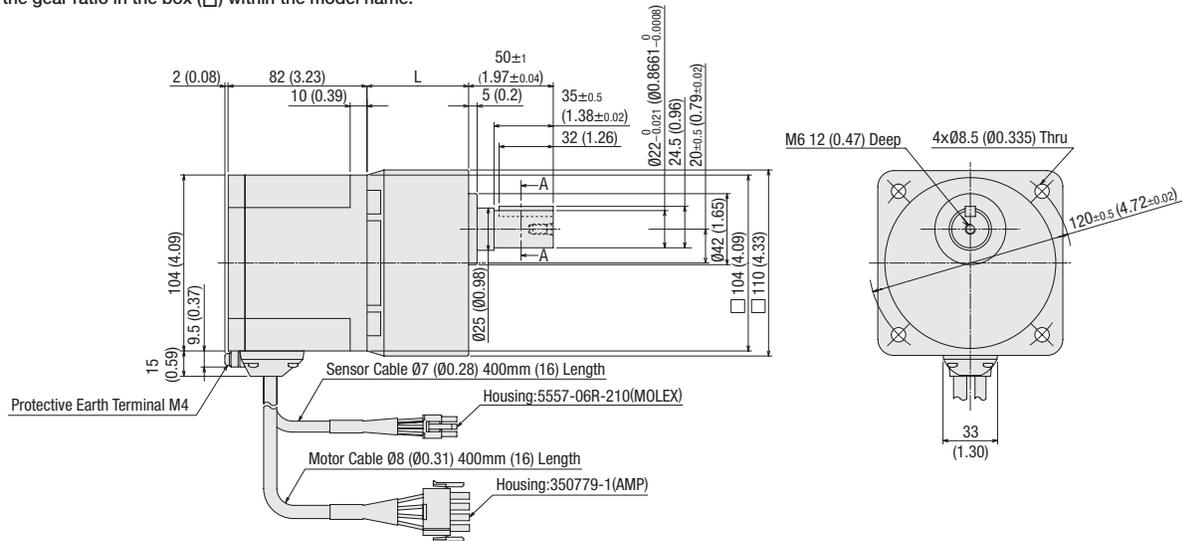
● 200W, 400W

Motor/Parallel Shaft Gearhead

Model	Motor Model	Gearhead Model	Gear Ratio	L	CAD
BLF6200A -□	BLFM6200-GFS	GFS6G□	5~20	60 (2.36)	A652A
BLF6200C -□			30, 50	72 (2.83)	A652B
BLF6200S -□			100, 200	86 (3.39)	A652C

Mass (including gearhead): 5.4kg (11.9lb.)

- Enter the gear ratio in the box (□) within the model name.



◇ Key and Key Slot (The key is included with the gearhead.)

