

# BLM Series Brushless DC Servo Motors (25W-180W)

Leadshine's BLM series of brushless DC servo motors offer high performance in cost-effective packages. The series boasts rated speeds of 3000 RPM and come standard with 1000-line differential encoders (A, B) and Hall sensors (U, V, W).

When driven by Leadshine's ACS series servo motor drivers the BLM and 57BL series motors meet application requirements from as low as 1 RPM to as high as 4000 RPM. They offer AC-servo-like performance including high reliability, high speed, high precision, low motor noise and low levels of motor heating.

The BLM series is flange mount and has been designed to be compatible with NEMA23 stepping motors. The 57BL series features a compact, screw-mount body.



BLM57025

BLM57050

BLM57090

BLM57130

BLM57180

57BL180

### Part Number

BLM

Brushless DC servo motor

57

Flange size  
57: 57 mm  
...

025

Rated power  
025: 25W  
050: 50W  
...  
180: 180W

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□

Custom-built or Special Model Number  
Blank: Standard  
...

\* The 57BL180 is a screw mounted model and the above scheme does not apply.

### General Specifications

Winding connection:  $\Delta$  (Delta connection)

Hall Sensor: 120°

Pole Pairs (-): 2

Phase: 3

Shaft Radial Play: 0.025 mm

Shaft Axial Play: 0.025 mm@460g

Allowable radial load: 75 N@20mm from the flange

Allowable axial load: 15 N

Isolation Level: Class B

Isolation Strength: 500 VDC for one minute

Isolation Resistance: 100 M ohms

### Motor Wires

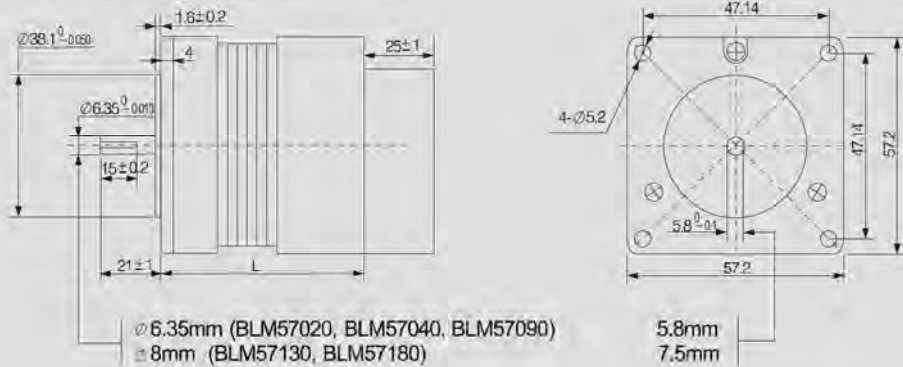
No.	Colour	Wire Size	Name	Description	No.	Colour	Wire Size	Name	Description
1	Red		Vcc	Power Input of Hall (+5V)	5	Black	UL 1007 26 AWG	GND	Power GND of Hall
2	Blue	UL 1007 26	HALL A	Hall Sensor A	6	Brown	UL 1007 20 AWG	PHASE A	Motor Coil, Phase A
3	Green	AWG	HALL B	Hall Sensor B	7	Blue		PHASE B	Motor Coil, Phase B
4	White		HALL C	Hall Sensor C	8	Black		PHASE C	Motor Coil, Phase C

### Electrical Specifications

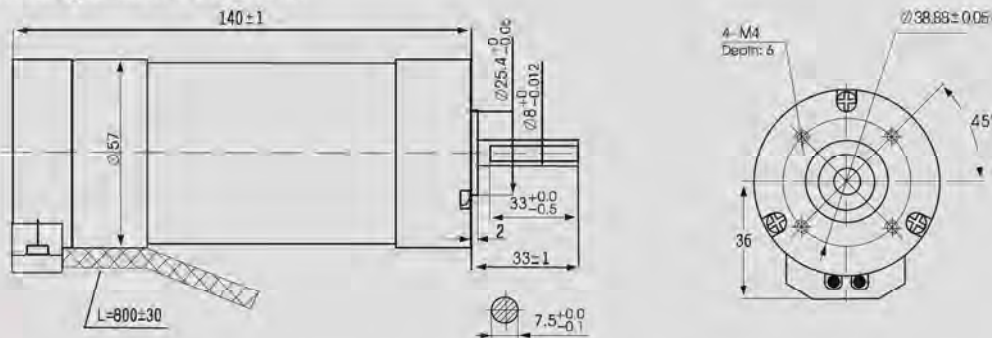
No.	Parameters	BLM57025	BLM57050	BLM57090	BLM57130	BLM57180	57BL180
1	Rated Voltage (VDC)	24	24	36	36	36	36
2	Rated Power (W)	25	50	90	130	180	180
3	Rated Torque (N.M)	0.08	0.16	0.29	0.41	0.57	0.57
4	Peak Torque (N.M)	0.24	0.48	0.87	1.23	1.71	1.71
5	Rated Speed (RPM)	3000	3000	3000	3000	3000	3000
6	Rated Current (A)	1.6	3	3.45	5.3	6.7	7
7	Peak Current (A)	4.8	9	10.35	15.9	20	20.5
8	Torque Const. (N.M/A)	0.05	0.053	0.084	0.078	0.085	0.089
9	Back EMF Const. (V/RPM)	5.2	5.55	8.8	8.2	8.9	9.3
10	Resistance (ohms)	1.73	0.88	1.35	0.63	0.9	0.53
11	Inductance (mH)	3.36	2.2	4.1	2.17	2	1.55
12	Inertia ( $\text{kgm}^2 \times 10^{-5}$ )	0.03	0.075	0.119	0.173	0.23	0.23
13	Motor Length (mm)	45	55	75	95	115	122
14	Mass (Kg)	0.25	0.5	0.75	1	1.25	1.25

### Mechanical Specifications (Unit:mm 1 inch = 25.4 mm)

(a). Mechanical specification of the BLM57xxx series motors.



(b). Mechanical specification of the 57BL180.



**Note:**

The thread depth for the M4 mounting holes on the face of the 57BL180 is 6.0 mm. Do not screw more than 6.0 mm as this will cause damage to the motor.

### Matching Drives

Model	Matching Drives
BLM57025	ACS306, ACS606
BLM57050	ACS306, ACS606
BLM57090	ACS306, ACS606
BLM57130	ACS306, ACS606
BLM57180	ACS606
57BL180	ACS606

BLM Series  
 57BL180