

BLF60 Series - Brushless DC Motors



FEATURES

- 60mm Frame Size BLDC Motors
- Long Life and Highly Reliable
- Cost-Effective Replacement for Brush DC Motors
- Hall Sensor Feedback
- Available in Two Different Stack Lengths
- CE Certified and RoHS Compliant



DESCRIPTION

The powerful BLF60 Series are square-bodied 60mm frame size Brushless DC Motors. These Square-bodied motors include an aluminum square-mounting flange to allow for easy installation, Class F insulation for higher temperature operation, and rated torqued up to 180 oz-in.

SPECIFICATIONS

Model #	Frame Size (mm)	Rated Voltage (VDC)	Rated Speed (RPM)	Rated Power (W)	Rated Torque (oz-in)	Line to Line Resistance (ohms)	Line to Line Inductance (mH)	Torque Constant (oz-in/A)	Back EMF Voltage (V/kRPM)	Rotor Inertia (oz-in-sec ²)	Weight (lb)	"L" Length (mm)
BLF60S-020-24V-3000	60	24	3000	200	90.6	0.25	0.4	7.6	4.0	0.00297	2.64	90
BLF60D-020-24V-3000	60	24	3000	200	90.6	0.25	0.4	7.6	4.0	0.00297	2.64	90
BLF60S-020-36V-3000	60	36	3000	200	90.6	0.55	1.1	11.5	6.0	0.00297	2.64	90
BLF60S-020-48V-3000	60	48	3000	200	90.6	0.90	1.8	15.3	8.1	0.00297	2.64	90
BLF60D-020-48V-3000	60	48	3000	200	90.6	0.90	1.8	15.3	8.1	0.00297	2.64	90
BLF60S-020-48V-14400	60	48	14400	200	19.8	0.06	0.1	3.9	2.1	0.00297	2.71	100
BLF60D-020-48V-14400	60	48	14400	200	19.8	0.08	0.1	3.9	2.1	0.00297	2.71	100
BLF60S-020-170V-3000	60	170	3000	200	90.6	10.5	22.5	53.5	28.6	0.00297	2.64	90
BLF60D-020-170V-3000	60	170	3000	200	90.6	10.5	22.5	53.5	28.6	0.00297	2.64	90
BLF60S-040-24V-3000	60	24	3000	400	180	0.10	0.2	7.6	4.0	0.00609	3.08	115
BLF60D-040-24V-3000	60	24	3000	400	180	0.10	0.2	7.6	4.0	0.00609	3.08	115
BLF60D-040-36V-3000	60	36	3000	400	180	0.23	0.5	2.7	6.0	0.00609	3.08	115
BLF60S-040-48V-3000	60	48	3000	400	180	0.37	0.9	15.6	8.1	0.00609	3.08	115
BLF60D-040-48V-3000	60	48	3000	400	180	0.37	0.9	15.6	8.1	0.00609	3.08	115
BLF60S-040-170V-3000	60	170	3000	400	180	4.90	9.7	52.4	28.6	0.00609	3.08	115
BLF60D-040-170V-3000	60	170	3000	400	180	4.90	9.7	52.4	28.6	0.00609	3.08	115

Note: The 6th character "S" denotes a single shaft or "D" for double shaft.

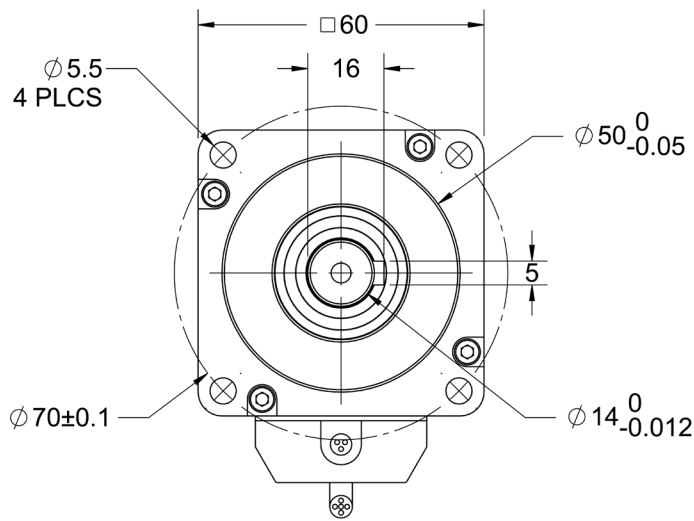
Shaft Axial Force:	33 lbs
Shaft Radial Force:	88 lbs, 25mm from end of shaft
Shaft Axial Play:	0.08mm with 1 lb
Shaft Radial Play:	0.02mm with 1 lb
Winding Type:	Delta Connected, 8 Pole
Hall Angle:	120 Degree Electrical Angle
Operation Temp:	-20~75°C, 85% Humidity
Storage Temp:	-20~85°C, 85% Humidity
Insulation Class Resistance:	Class F (155°C)
Insulation Resistance:	>= 100M Ohm, 500VDC
Dielectric Strength:	1800VAC, 1 sec
IP Rating:	IP40

Hall Sensor Specifications

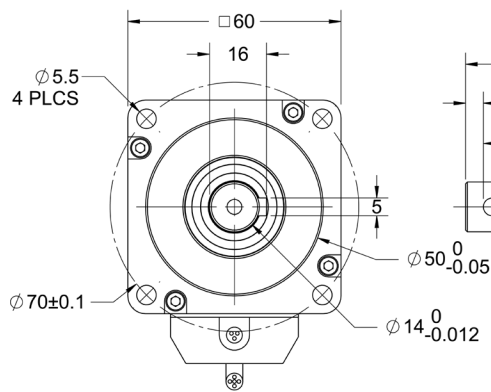
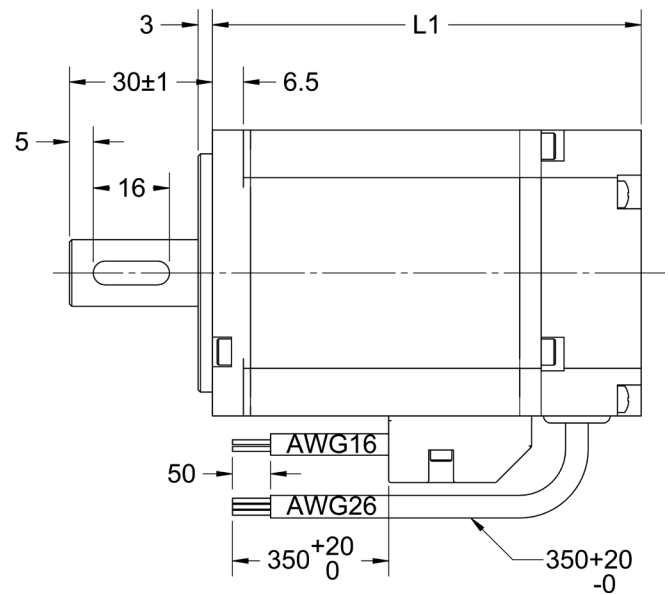
Supply Voltage:	4.5VDC to 28VDC
Current, I_{off} :	10mA max
Current, I_{on} :	11.3mA max
Rated Sinking Current:	20mA
Saturation Voltage:	0.4VDC max @ 25°C
Output Leakage Current:	10µA
Output Switching Time @ 25°C	
Rise, 10% to 90%	1.5µs
Fall, 90% to 10%	1.5µs
Output Type:	Open Collector

L011992

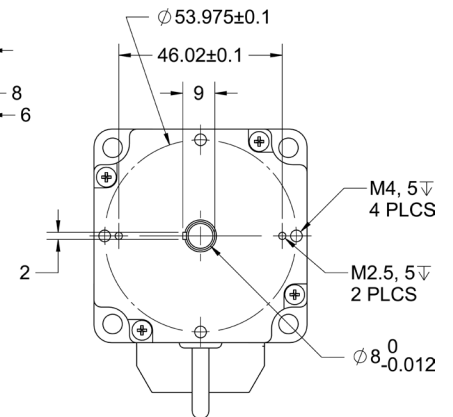
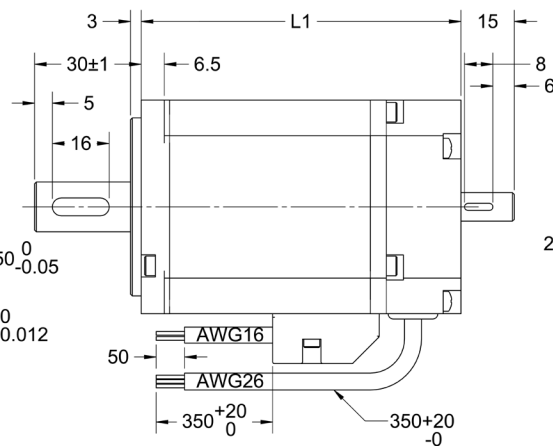
DIMENSIONS



Units are in mm



Units are in mm



WIRING INFORMATION

Motor Phase		
Color	Function	AWG
Yellow	Phase A	16
Red	Phase B	16
Black	Phase C	16

***BLF60x-040-24V-3000
AWG=14

Hall Sensors		
Color	Function	AWG
Red	Vcc +5V	26
Black	Hall Gnd	26
Blue	Hall A	26
Green	Hall B	26
White	Hall C	26

