

Brushless DC Motors

Outside Rotor Fractional Horsepower

TYPICAL APPLICATIONS

- Medical equipment (pumps, blowers, others)
- HVAC systems (air handling equipment)
- Industrial automation
- Scanners
- Office automation equipment

FEATURES

- Compact lengths - from 1.1" to 1.8"
- Continuous torques from 4.0 to 8.2 oz-in
- Low cost bonded ferrite magnets
- Safe, arcless operation
- High speed capabilities – up to 16,000 rpm
- 4 pole motors standard
- Options include electronic drives, encoders, Hall effect or sensorless feedback
- Available as a parts-set or a complete housed motor

BENEFITS

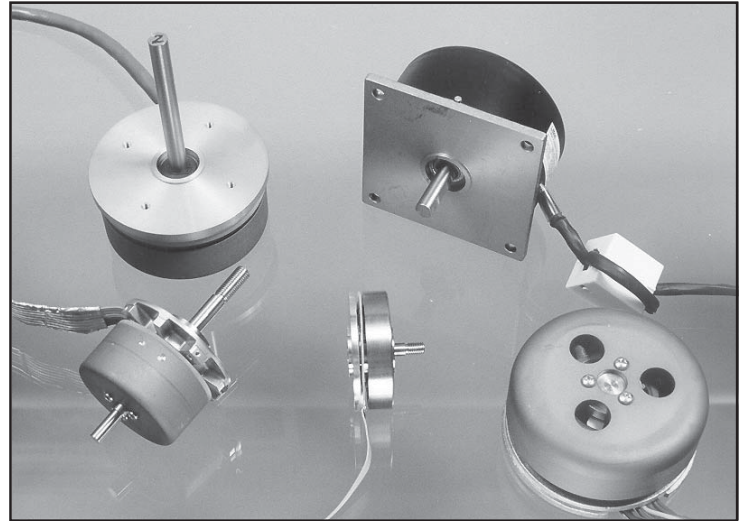
- Operate over a wide range of speeds - not limited to AC frequency
- Extremely quiet operation with long life capability
- Precise, variable speed control
- Motor life is not limited to brush or commutator life
- Efficient operation without losses associated with brushes and commutation or armature induction

ENCODERS

High resolution, high reliability, and state-of-the-art technology in a small package:

- Bidirectional incremental code
- Up to 1024 cycles standard
- Up to 3 channels: A, B, and index
- TTL / CMOS compatible
- Other configurations and resolutions available

BOF16 Series



Quiet, Brushless Motors

BOF 16 motors provide smooth, efficient operation at high speeds. The brushless design ensures low audible noise and long life. Utilizing bonded ferrite magnets, these brushless motors provide excellent performance and value demonstrated by their low cost to high torque ratio. They are available in two lengths with a variety of options, including custom windings to achieve different speed/torque operating points, electronic drives, encoders, and Hall effect or sensorless feedback.

In some applications, motors with an outside rotor enjoy several advantages over their counterparts with inside rotors. Motors with outside rotors perform especially well in applications with significant torque oscillation. Also, BOF outside rotor motors have relatively low profile dimensions for height so they can easily fit in an envelope that is wider than it is tall - such as some medical equipment or industrial machines.

We've designed thousands of DC motors, so if our BOF series doesn't meet your needs, call us to talk about your specifications. One of our other designs may meet your needs, or our engineering department can design a motor to meet your specific requirement.

BOF16 SPECIFICATIONS - Continuous Stall Torque 4.3 - 8.6 oz-in (0.0304 - 0.0607 Nm) Peak Torque 19 - 39 oz-in (0.1342 - 0.2754 Nm)

Part Number*		BOF16-11AA- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		BOF16-18AA- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Winding Code**		01	02	01	02
L = Length	inches	1.6		1.8	
	millimeters	40.64		45.72	
Terminal Voltage	volts DC (nom)	12.0	24.0	12.0	24.0
Peak Torque	oz-in (max)	19.0	18.0	38.0	39.0
	Nm (max)	0.1342	0.1271	0.2683	0.2754
Continuous Stall Torque	oz-in (max)	4.3	4.2	8.5	8.6
	Nm (max)	0.0304	0.0297	0.0600	0.0607
Rated Speed	RPM	7432.0	6789.0	4903.0	5100.0
	rad/sec	778	711	513	534
Rated Torque	oz-in (max)	4.1	4.0	8.1	8.2
	Nm (max)	0.0290	0.0282	0.0572	0.0579
Rated Current	Amps	3.26	1.50	4.11	2.12
Rated Power	watts	23.0	20.0	29.0	31.0
Torque Sensitivity	oz-in/amp +/-10%	1.59	3.38	2.42	4.75
	Nm/amp +/-10%	0.0112	0.0239	0.0171	0.0335
Back EMF	volts/KRPM +/-10%	1.18	2.50	1.79	3.51
	volts/rad/sec	0.0112	0.0238	0.0171	0.0335
Terminal Resistance	ohms +/-10%	0.97	4.45	0.77	2.88
Terminal Inductance	mH +/-30%	0.36	1.61	0.42	1.61
Motor Constant	oz-in/sq.rt.watt	1.61	1.60	2.76	2.80
	Nm/sq.rt.watt	0.01140	0.01131	0.01947	0.01977
Rotor Inertia	(oz-in-sec ²) x 10 ⁻³	2.00	2.00	3.90	3.90
	g-cm ²	141.1	141.1	275.2	275.2
Weight	oz	6.96	6.96	9.00	9.00
	gm	197.7	197.7	255.6	255.6
# of Poles		4.0	4.0	4.0	4.0
Timing		120°	120°	120°	120°
Mech. Time Constant	ms	108.6	110.2	72.6	70.5
Elect. Time Constant	ms	0.37	.036	0.55	0.56
Thermal Resistivity	°C/watt	6.3	6.6	5.3	5.3

Notes:

- Motor mounted to a 4" x 4" x 1/4" aluminum plate, still air.
- Maximum winding temperature of 155°C.
- Typical electrical specifications at 25°C.
- Motor Terminal Voltages are representative only; motors may be operated at voltages other than those listed in the table. For assistance please contact our applications engineer.

*Many other custom mechanical options are available – consult factory.

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Select your options below and place their code in its corresponding block as shown on page 52.

<input type="checkbox"/> TERMINATION	<input type="checkbox"/> FEEDBACK OPTIONS	<input type="checkbox"/> OTHER OPTIONS
L – Leads (std)	H – Hall Effect (std)	D – Drive
C – Connector	R – Resolver	E – Encoder
M – MS connector	S – Sensorless	G – Gearhead

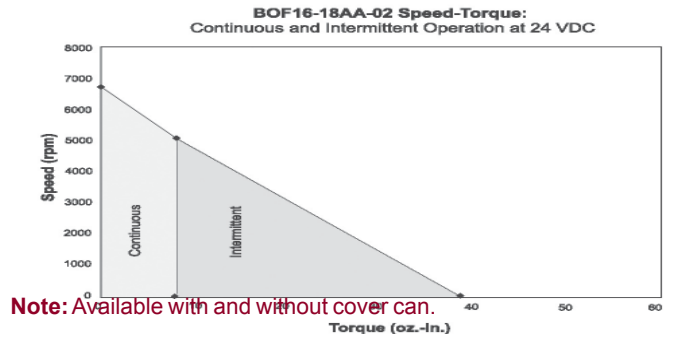
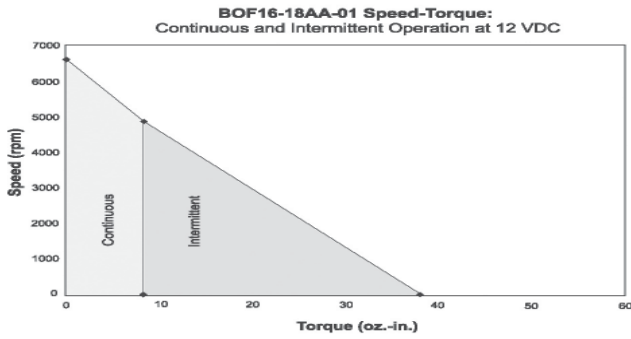
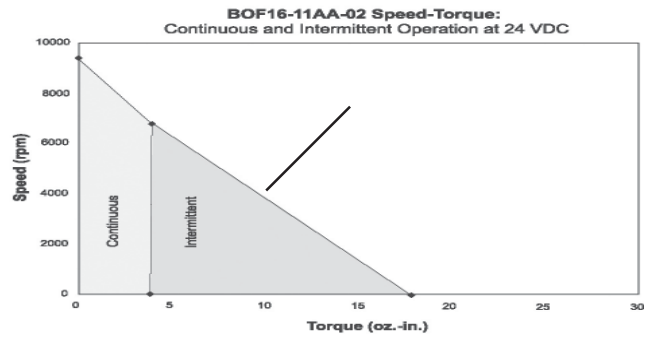
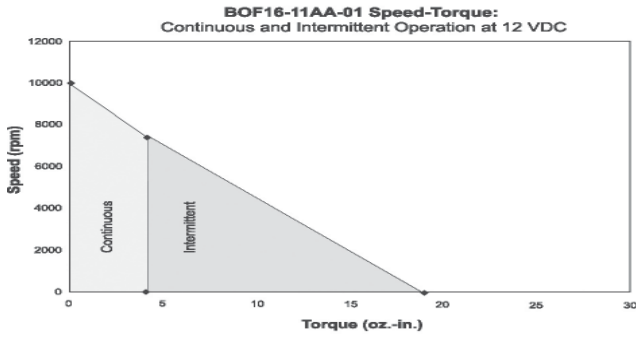
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Brushless Motors

BOF16 Typical Outline Drawing



Note: Available with and without cover can.

BOF16 Performance Curves

