

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

- Length - 2.0"
- Continuous torques from 58.0 to 76.0 oz-in
- Bonded neodymium magnets
- Safe, arcless operation
- High speed capabilities – up to 6,700 rpm
- 4 and 8 pole designs
- Options include electronic drives, encoders, Hall effect or sensorless feedback
- Available as a parts set or a complete housed motor

BENEFITS

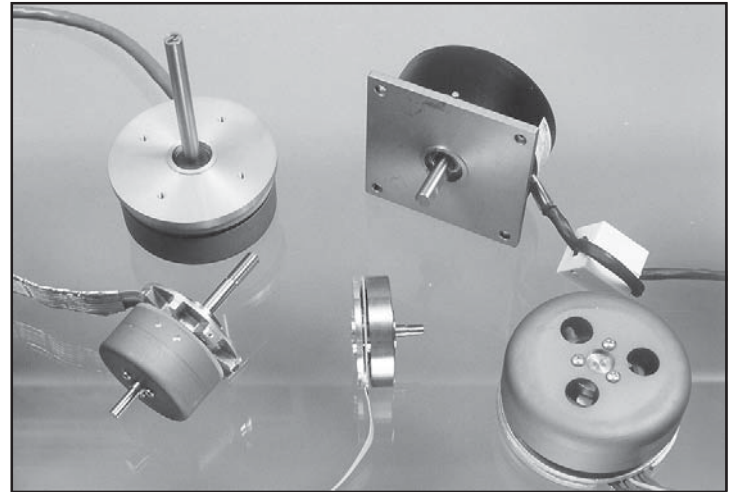
- Operate over a wide range of speeds - not limited to AC frequency
- Extremely quiet operation with long life capability
- Precise, variable speed control
- Motor life is not limited to brush or commutator life
- Efficient operation without losses associated with brushes and commutation or armature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

BON35 Series



Quiet, Brushless Motors

BON 35 motors provide smooth, efficient operation at high speeds. The brushless design ensures low audible noise and long life. Utilizing bonded neodymium magnets, these brushless motors provide excellent performance and value demonstrated by their low cost to high torque ratio. Available with a variety of options, including custom windings to achieve different speed/torque operating points, electronic drives, encoders, and Hall effect or sensorless feedback.

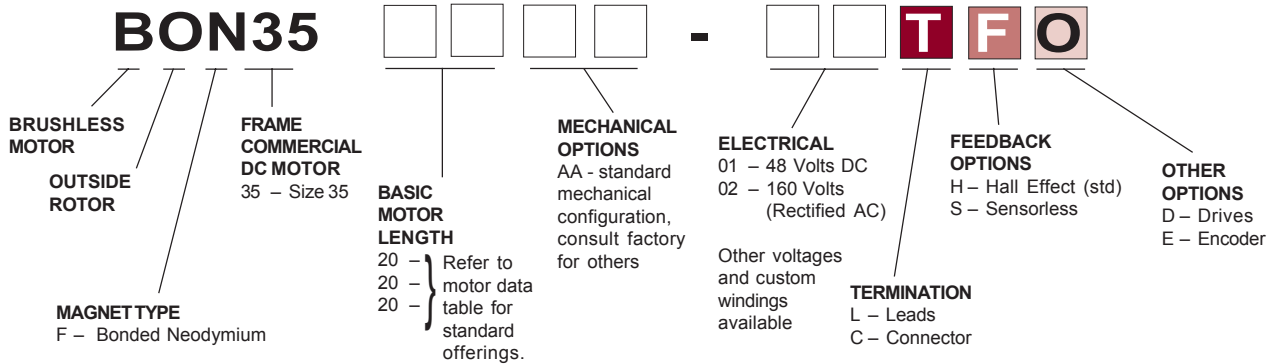
In some applications, motors with an outside rotor enjoy several advantages over their counterparts with inside rotors. Motors with outside rotors perform especially well in applications with significant torque oscillation. Also, BON outside rotor motors have relatively low profile dimensions for height 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 BON 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.

Brushless Motors

SPECIFICATION AND NUMBERING SYSTEM

Part Numbering System Guide



Conversion Table

FROM	TO	MULTIPLY BY
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Length		
inches	cm	2.540
feet	cm	30.48
cm	inches	.3937
cm	feet	3.281 x 10 ⁻²

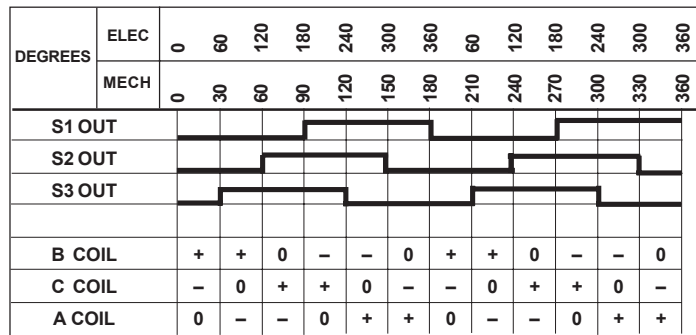
Mass		
oz	g	28.35
lb	g	453.6
g	oz	3.527 x 10 ⁻²
lb	oz	16.0
g	lb	2.205 x 10 ⁻³
oz	lb	6.250 x 10 ⁻²

Torque		
oz-in	g-cm	72.01
lb-ft	g-cm	1.383 x 10 ⁴
g-cm	oz-in	1.389 x 10 ⁻²
lb-ft	oz-in	192.0
g-cm	lb-ft	7.233 x 10 ⁻⁵
oz-in	lb-ft	5.208 x 10 ⁻³

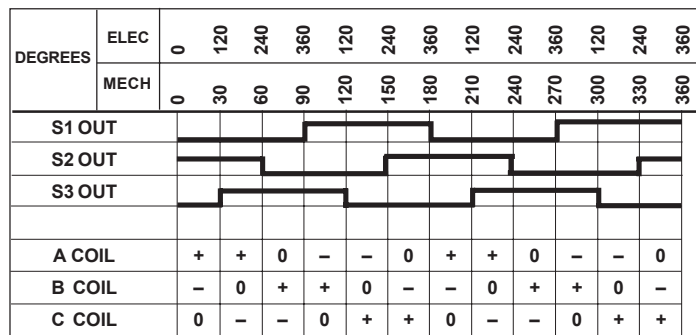
Rotation		
rpm	degrees/sec	6.0
rad/sec	degrees/sec	57.30
degrees/sec	rpm	.1667
rad/sec	rpm	9.549
degrees/sec	rad/sec	1.745 x 10 ⁻²
rpm	rad/sec	.1047

Moment Of Inertia		
oz-in ²	g-cm ²	182.9
lb-ft ²	g-cm ²	4.214 x 10 ⁵
g-cm ²	oz-in ²	5.467 x 10 ⁻³
lb-ft ²	oz-in ²	2.304 x 10 ³
g-cm ²	lb-ft ²	2.373 x 10 ⁻⁶
oz-in ²	lb-ft ²	4.340 x 10 ⁻⁴
oz-in-sec ²	g-cm ²	7.062 x 10 ⁴

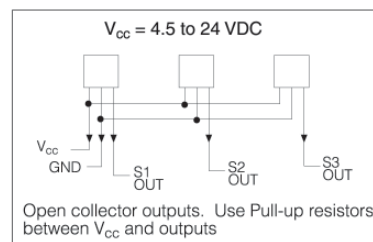
Timing Diagram CCW Shaft Rotation - 4 Poles



Timing Diagram CCW Shaft Rotation - 8 Poles



Hall Effect Switches



Termination Table

PIN NUMBER	FUNCTION	COLOR
3	A	BLUE
2	B	PURPLE
1	C	GRAY
6	S1	ORANGE
5	S2	YELLOW
4	S3	GREEN
7	V _{cc}	RED
8	GROUND	BROWN

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BON35 Performance Curves

