

The **NUTEC BSM series** of brushless servo motors have been custom engineered to offer higher performance in a smaller envelope and at a lower cost than standard off-the-shelf brushless servo motors. Powerful four pole (NEMA 17 and NEMA 23 size motors) and six pole (NEMA 34 size motors) with rare earth magnets and skewed windings to reduce cogging, and class 3 ABEC bearings provide high

speed, high torque, long life, and very smooth low speed operation, features required in complex servo systems.

Designed for encoder controlled commutation, the **BSM series** brushless motors can easily be configured with dual feedback loops providing the greatest possible control over speed and position.

Additional features include IP65 sealing against environmental conditions, high-flex cables, and an optional fail-safe brake to protect the system in case of a power failure.

Brushless servo motors are a class of servo motors that operate by using electronic commutation rather than electromechanical commutation as used in brush-type motors. Brushless motors have a permanent magnet rotor and the wound stator is on the outside allowing for greater heat dissipation. As electronic commutation is a function of rotor position there are no brushes to wear out, limiting speed, causing electrical noise, and create contamination.

For the highest positioning performance in precision applications, **NUTEC** utilizes sinusoidal commutation and recommends the [MICROMATIC-5](#) integrated brushless servo control system.

Distinct advantages of brushless servomotors over brush-type servomotors are:

- Higher speeds
- Longer life
- Cleaner operation
- Less heating
- Higher duty cycles

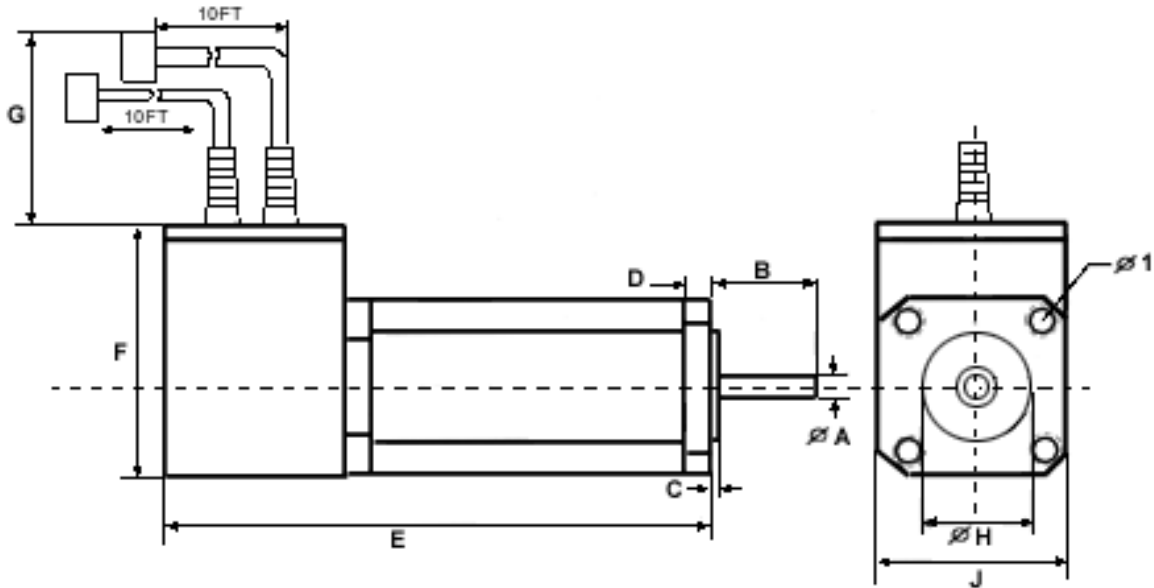
- Rare earth Neodymium-boron - iron magnets
- Peak torque to 846 oz-in.
- IP65 sealing
- High-flex cables
- Protection from overheating
- Optional encoder
- Optional fail-safe brake


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Specifications
Ordering Info

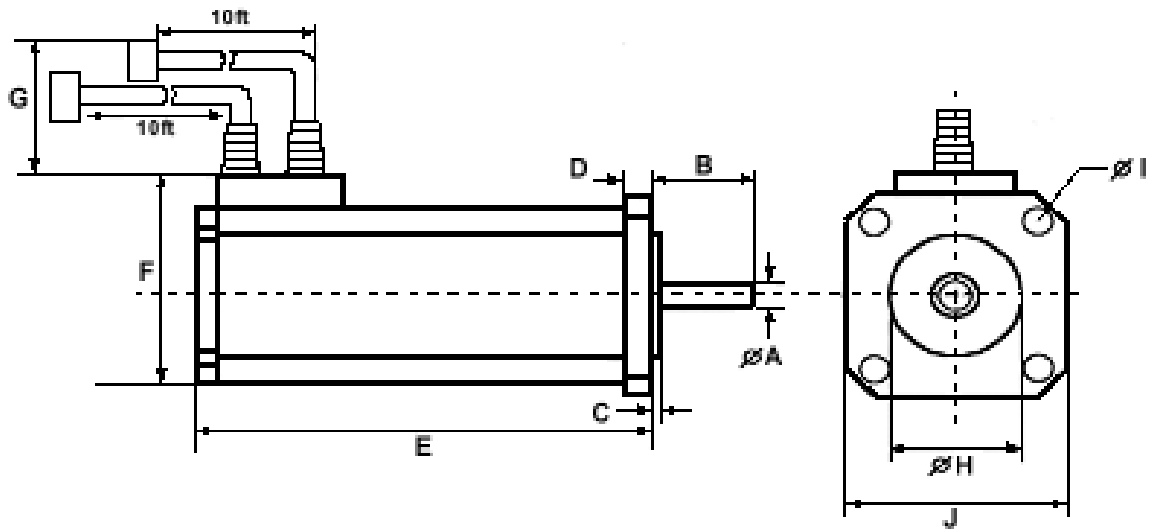
Model	BSM17-25-000	BSM23-45-000	BSM23-75-000	BSM34-200-000
Motor Frame Size	#17 NEMA	#23 NEMA	#23 NEMA	#34 NEMA
Motor Power	63 Watts	100 Watts	200 Watts	700 Watts
Continuous Stall Torque	25 oz·in	45 oz·in	80 oz·in	288 oz·in
Peak Torque	75 oz·in	135 oz·in	240 oz·in	864 oz·in
Continuous Current	1.7 Amps	3.5 Amps	1.8 Amps	7 Amps
Peak Current	4.8 Amps	10 Amps	5.5 Amps	20 Amps
Torque Constant (K_T)	0.97 lb·in/A	0.8 lb·in/A	2.7 lb·in/A	2.6 lb·in/A
DC Resistance (R_A)	4.4 Ω	9.7 Ω	31 Ω	1.35 Ω
Inductance	1.8 mH	5.8 mH	23.5 mH	4.8 mH
Back EMF	6.4V/1000RPM	8V/1000RPM	28V/1000RPM	23V/1000RPM
Maximum Speed	2500 RPM			
Motor Only Max. Speed	5200 RPM	5000 RPM		
Bus Voltage	160VDC			
Cable Length	10 ft			
Motor Connector	DB 15 Male			
Encoder Connector	DB 25 Male			

Rotary Encoder Data
BSM...-250

Encoder Lines	2500/rev
Encoder Counts	10000/rev
Home Index	1 per rev
Max. RPM	2500 RPM
Supply Voltage	+5VDC regulated \pm 5%
Output	4 Channel TTL Square Wave



BSM17-25-000		
	inch	mm
ØA	.25	6.35
B	.0984 ⁺⁰ _{-.03}	24.9 ⁺⁰ _{-.7}
C	.10	2.54
D	.281	7.1
E	5.42	137.7
F	2.55	64.8
G	2.36	60
ØH	1.00 - .998	25.4 - 25.3
ØI		M3
J	1.575	40.0



	BSM23-45-000		BSM23-75-000		BSM34-200-000	
	inch	mm	inch	mm	inch	mm
ØA	.375	9.525	.375	9.525	.500	12.7
B	.820 ⁺⁰ _{-.04}	20.83 ⁺⁰ _{-.01}	.820 ⁺⁰ _{-.04}	20.83 ⁺⁰ _{-.01}	.820 ⁺⁰ _{-.04}	20.83 ⁺⁰ _{-.01}
C	.060	1.5	.060	1.5	.060	1.5
D	.281	7.1	.281	7.1	0.44	11.2
E	4.51	114.5	5.0	127	7.24	183.9
F	2.5	63.5	2.5	63.5	3.9	99
G	2.36	60	2.36	60	2.5	63.5
ØH	1.5 - 1.499	38.1 - 38	1.5 - 1.499	38.1 - 38	2.877 - 2.876	73.1 - 73
ØI	.202	5.1	.202	5.1	.223	5.66
J	2.25	57.2	2.25	57.2	3.31	84.1

Where BSM Brushless Servo Motors are Used:

Nutec Model Number

Product	BSM17-25	BSM23-45	BSM23-75	BSM34-200
FD-10				X
TL-6			X	X
TML		X	X	
RT2	X			
RT3	X	X		
RT5		X	X	
MTC 100	X	X		
MS 200	X	X		
MS 150	X	X		
ES 200	X			



How To Order

Use the selection box in the right hand column to specify the desired motor, selected from the list model, then complete the contact information at the bottom of the page. Click on the "Submit" button when done.

MODEL

BSM17-25	25 oz-in
BSM23-45	45 oz-in
BSM23-75	75 oz-in
BSM34-200	200 oz-in

ENCODERS

-000	No encoder
-250	250 line rotary encoder

OPTIONS and ACCESSORIES

-BAK	Fail-safe brake
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MODEL DESIGNATION

BSM

MODEL

ENCODER

OPTIONS & ACCESSORIES