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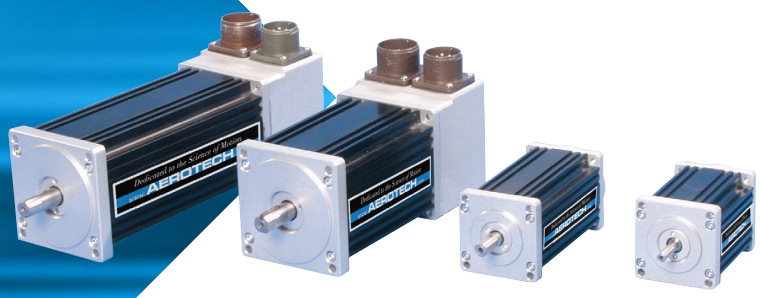
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Find the *Aerotech BMS60-A-D25/E1000H* at our website: ***Click HERE***

ROTARY MOTORS **BMS SERIES**



Aerotech's BMS series brushless, slotless servomotors represent the ultimate in high-performance rotary motors. Available in standard NEMA frame sizes, these motors utilize a slotless rotor design for superior velocity smoothness and control.

Featuring rare-earth magnets and a high pole-count rotor, the BMS series provides maximum torque and acceleration in a small package. Custom mechanical or electrical variations of the BMS can be engineered with minimal lead time.

Smoother than DC Motors

The BMS series motors can replace standard brushless or brush-type motors when superior velocity smoothness and control are required. DC brush-type motors have been popular in applications such as machine tool and scanning because of their smooth low-speed control. The BMS motors provide superior smoothness and have higher acceleration capability than a DC brush motor. Higher acceleration results in higher machine throughput and performance.

High Performance Design

The BMS series is unlike conventional brushless servomotors because it incorporates a totally slotless stator design that provides the ultimate in smooth velocity control. These motors are designed for applications requiring superior torque and stability performance. The unique design of the BMS series motors provides a closer inertia match with mechanical systems than comparable models. This means better stability and easier tuning.

Ultra-High Encoder Resolution

The BMS series motors can be equipped with a variety of encoder resolution options for any application. In addition to the standard RS-422 line driver output, an optional amplified sine-wave encoder can be used to provide ultra-high resolution. Aerotech offers encoder multipliers as an option for drives connected to the A3200 system, as well as external multiplier boxes. Resolutions as high as 1,000,000 counts per revolution are achievable.

PRODUCT HIGHLIGHTS

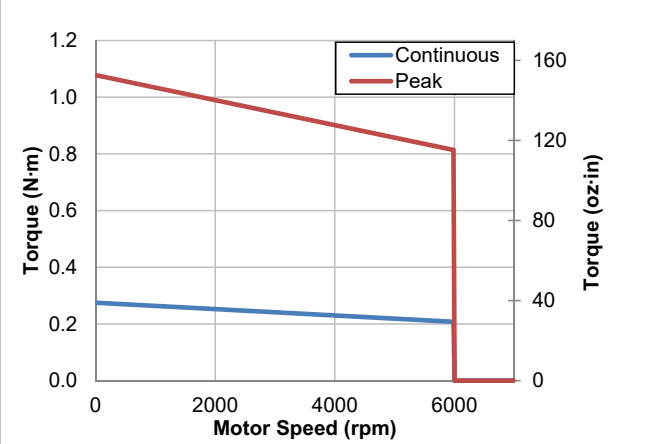
- Slotless, brushless stator design provides zero-cogging torque for unsurpassed velocity control
- Smoother velocity than with standard DC brush-type motors with the advantage of reliable brushless technology
- Standard NEMA frame sizes
- Ultra-high resolution capability with amplified sine-wave encoder and multiplier
- Follows the 2011/65/EU RoHS 2 Directive

BMS Series **Specifications**

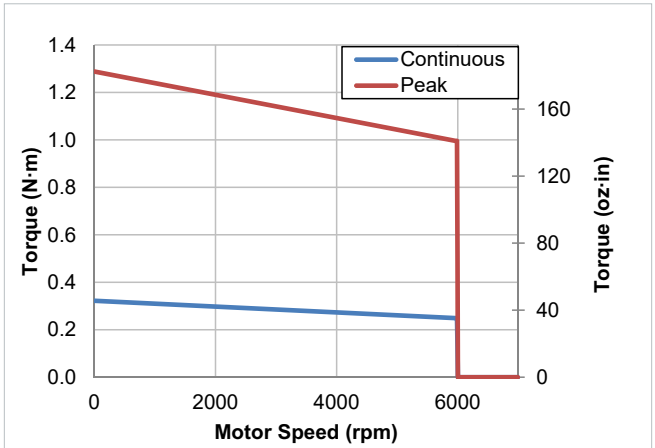
Model	Units	BMS35	BMS60	BMS100	BMS280	BMS465
Winding Designation		-A				
Performance Specifications[1,2]						
Stall Torque, Continuous[3]	N·m	0.27	0.33	0.56	1.60	2.86
	oz·in	38.0	46.2	80.0	227.0	404.8
Peak Torque[4]	N·m	1.07	1.31	2.26	6.41	11.43
	oz·in	152.0	184.9	320.0	908.0	1619.2
Rated Speed	rpm	4000	4000	3000	3000	2000
Rated Power Output, Continuous	W	96.0	116.1	133	381	457
Electrical Specifications[2]						
BEMF Constant (Line-Line, Max)	V_{pk}/krpm	12.9	19.0	40.0	57.0	79.0
Continuous Current, Stall[3]	A_{pk}	2.5	2.3	2.1	3.8	4.9
	A_{rms}	1.7	1.6	1.5	2.7	3.5
Peak Current, Stall[4]	A_{pk}	9.8	9.2	8.4	15.2	19.6
	A_{rms}	6.9	6.5	5.9	10.7	13.9
Torque Constant[5,6]	N·m/A_{pk}	0.11	0.14	0.27	0.42	0.58
	oz·in/A_{pk}	15.5	20.1	38.1	59.7	82.6
	N·m/A_{rms}	0.15	0.20	0.38	0.60	0.82
	oz·in/A_{rms}	21.9	28.4	53.9	84.5	116.8
Motor Constant[3,5]	N·m/√W	0.046	0.050	0.076	0.179	0.280
	oz·in/√W	6.52	7.02	10.74	25.34	39.70
Resistance, 25°C, (Line-Line)	Ω	5.8	8.4	12.9	5.7	4.4
Inductance (Line-Line)	mH	1.70	1.30	2.40	1.10	0.87
Maximum Bus Voltage	VDC	80	340			
Thermal Resistance	°C/W	2.21	1.73	1.35	0.93	0.72
Number of Poles	P	8			14	
Mechanical Specifications						
Frame Size	NEMA	17	23		34	
Motor Weight	kg	0.6	1.1	1.5	3.6	5.0
	lb	1.3	2.4	3.3	7.9	11.0
Rotor Moment of Inertia	kg·m^2	1.96×10^{-5}		3.71×10^{-5}	4.66×10^{-4}	9.28×10^{-4}
	oz·in·s^2	0.00028		0.0053	0.0660	0.1314
Max. Radial Load	N	45	89		178	
	lb	10	20		40	
Max. Axial Load	N	45	89			
	lb	10	20			
Standards		2011/65/EU RoHS 2 Directive				

1 Performance is dependent upon heat sink configuration, system cooling conditions, and ambient temperature.
2 All performance and electrical specifications ±10%.
3 Values shown @ 75°C rise above a 25°C ambient temperature, with housed motor mounted to a 250 mm x 250 mm x 6 mm aluminum heat sink.
4 Peak torque assumes correct rms current; consult Aerotech.
5 Torque constant and motor constant specified at stall.
6 All Aerotech amplifiers are rated A_{pk}; use torque constant in N·m/A_{pk} when sizing.

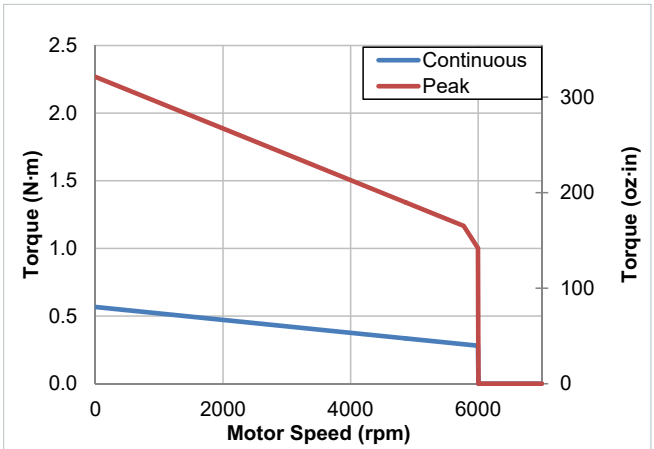
BMS Series **Motor Performance**



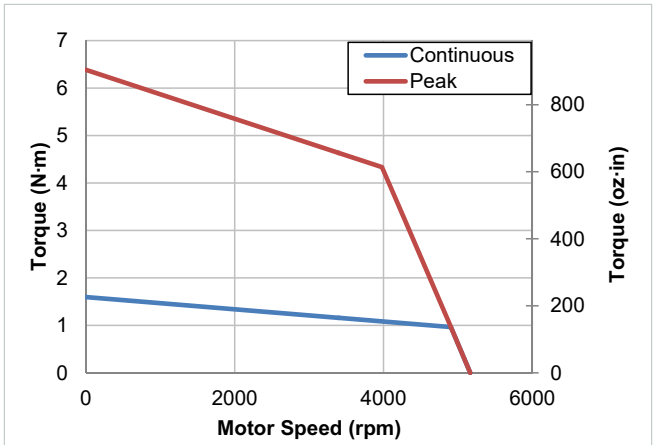
BMS35 Torque vs. Speed



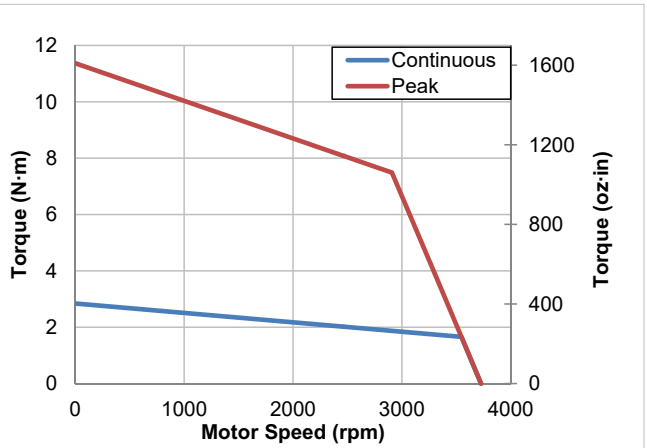
BMS60 Torque vs. Speed



BMS100 Torque vs. Speed



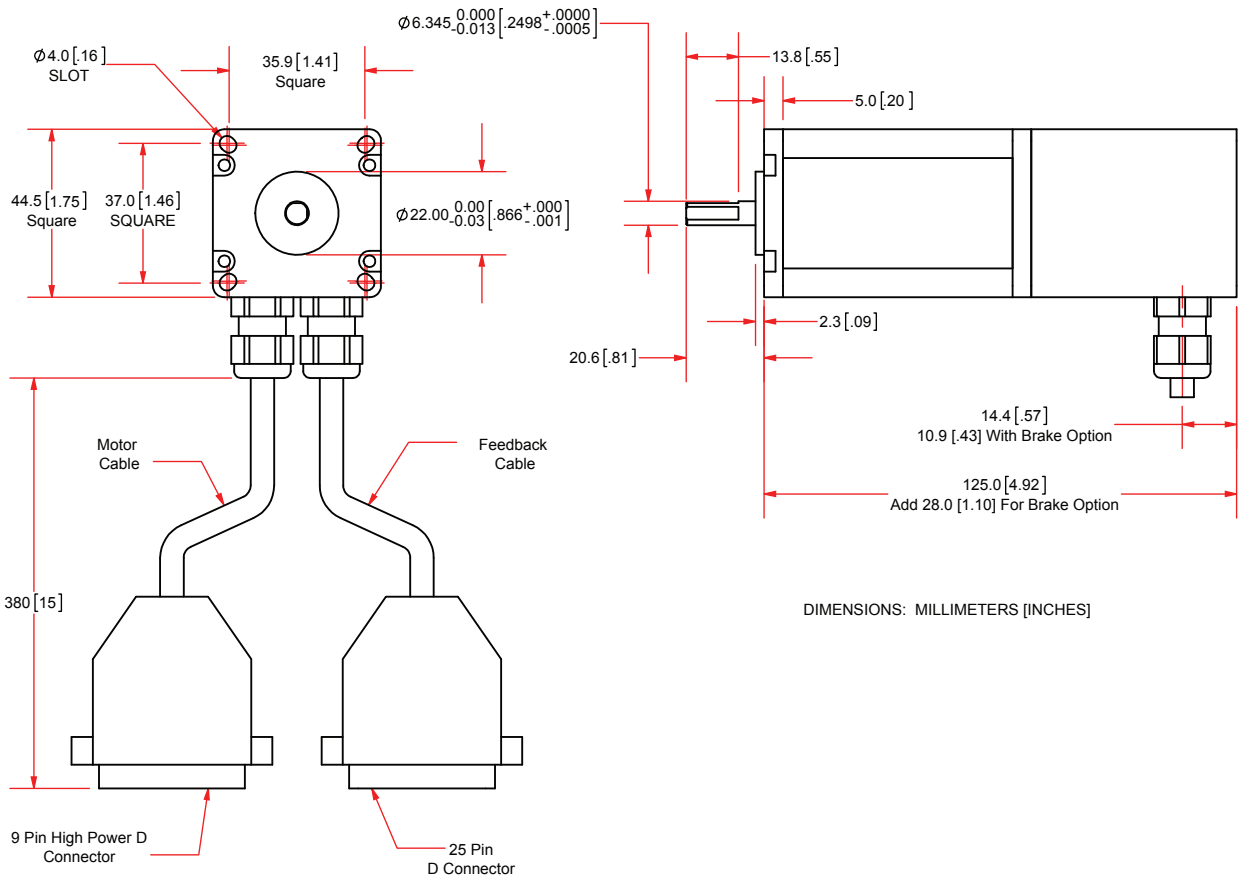
BMS280 Torque vs. Speed



BMS465 Torque vs. Speed

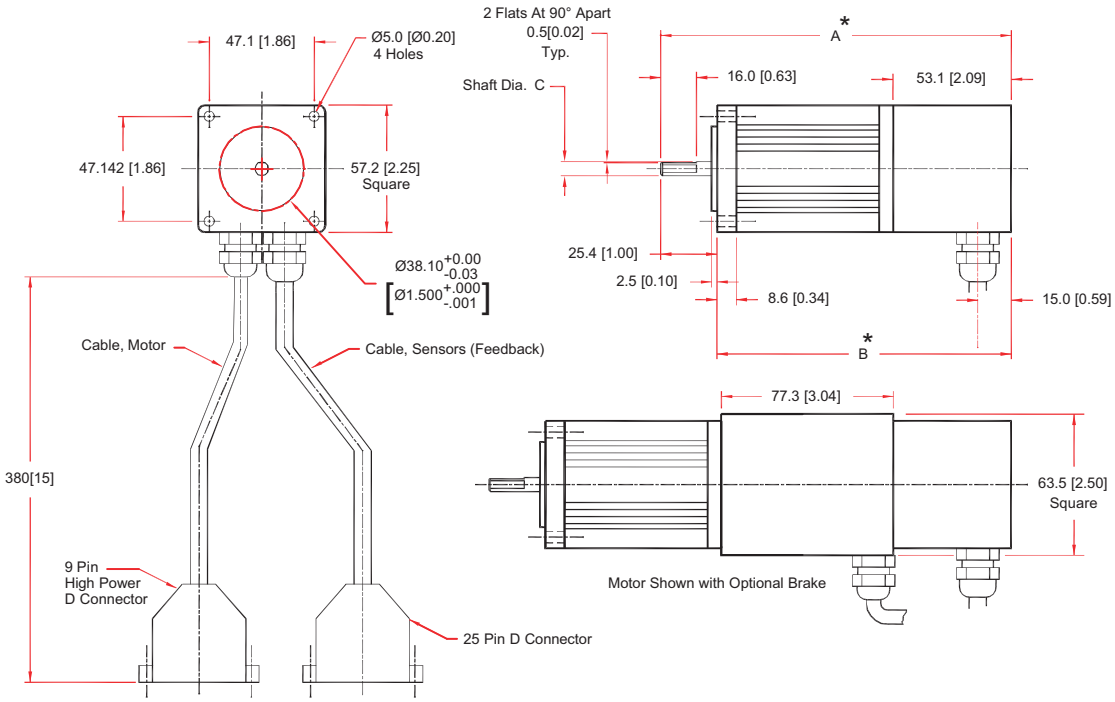
BMS Series **Dimensions**

NEMA 17 (BMS35)



BMS Series **Dimensions**

NEMA 23 (BMS60, BMS100)

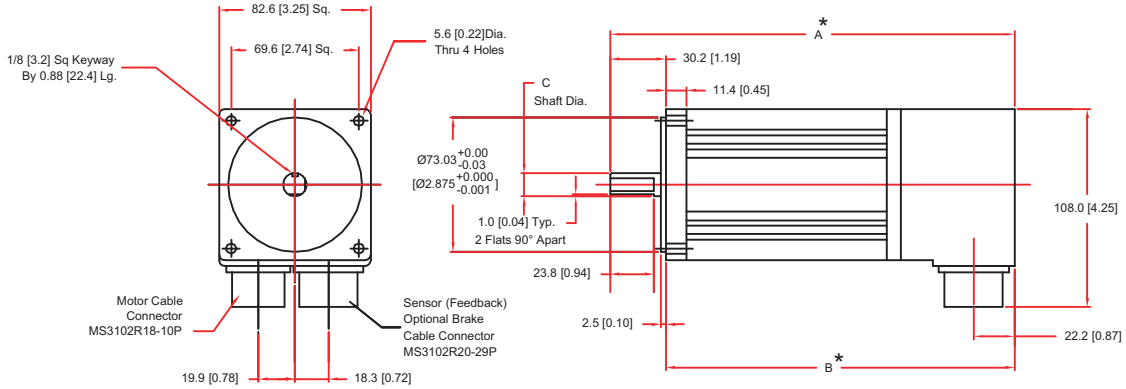


Dimensions - millimeters [inches]

Motor Model No.	A *	B *	C
BMS60	157.5 / 6.20"	132.1 / 5.20"	Ø 6,345 / 0.2498" +0.000, -0.013 / +0.0000", -0.0005"
BMS100	187.9 / 7.40"	162.6 / 6.40"	Ø 9,517 / 0.3747" +0.000, -0.013 / +0.0000", -0.0005"

* Add 77.3 [3.04 IN.] To Length For Optional Brake.

NEMA 34 (BMS280, BMS465)



Dimensions - millimeters [inches]

Motor Model No.	A *	B *	C
BMS280	220.3 / 8.67"	190.0 / 7.48"	Ø 12.69 / 0.4997" +0.000, -0.013 / +0.0000", -0.0005"
BMS465	275.1 / 10.83"	244.9 / 9.64"	Ø 12.69 / 0.4997" +0.000, -0.013 / +0.0000", -0.0005"

* Add 55.6[2.19 IN.] To Length For Optional Brake.

BMS Series **Ordering Information**

NEMA Brushless Slotless Rotary Servomotor

BMS35	NEMA17 brushless slotless rotary servomotor
BMS60	NEMA23 brushless slotless rotary servomotor
BMS100	NEMA23 brushless slotless rotary servomotor
BMS280	NEMA34 brushless slotless rotary servomotor
BMS465	NEMA34 brushless slotless rotary servomotor

Motor Winding (Required)

-A	Motor winding
-B	Motor winding; not available for BMS35

Connectors (Required)

-MS	Integral cable w/MS connector for Fbk and Mtr; not available for BMS35
-D25	Integral cable w/D25 Fbk and 4D Mtr; not available for BMS280 or BMS465
-D25-9D	Integral cable w/D25 Fbk, 4D Mtr, and 9D Limit; not available for BMS280 or BMS465
-D25-FLB	Integral cable w/D25 Fbk, Fly Leads for Mtr, and 9D Limit; not available for BMS280 or BMS465
-D25-5DU	Integral cable w/D25 Fbk, 5D Mtr, and 9D Limit; not available for BMS280 or BMS465
-D25-9D-CMS	Integral cable w/D25 Fbk, 4D Mtr, and 9D Limit - CMS only; not available for BMS280 or BMS465
-D25-4TS	Integral cable w/D25 Fbk, 4TS Mtr, and 9D Limit; not available for BMS280 or BMS465

Feedback (Required)

-E1000H	1000 lines/rev TTL incremental encoder w/Hall tracks
-E2000H	2000 lines/rev TTL incremental encoder w/Hall tracks
-E2500H	2500 lines/rev TTL incremental encoder w/Hall tracks; not available for BMS35
-E5000H	5000 lines/rev TTL incremental encoder w/Hall tracks
-E1000ASH	1000 lines/rev 1 Vpp incremental encoder w/Hall tracks

Brake (Optional)

-BK	Holding brake

Cable Type (Optional)

-HF	High flex cable; not available for BMS280 or BMS465

Cable Length (dm; Optional)

-xx	Cable length in decimeters (3.8 dm is default)

Note: Not available for BMS280 or BMS465.

Vacuum Preparation (Optional)

-VAC6	Vacuum preparation to 10^{-6} Torr

Accessories (Optional)

MC-HPD25-M	Connector; HPD motor power mate
MC-DB25-F	Connector; DB25 motor feedback mate
MCM-3	Connector; MS motor power mate
MCF-3	Connector; MS motor feedback mate

Note: Accessories are ordered as separate line items.

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