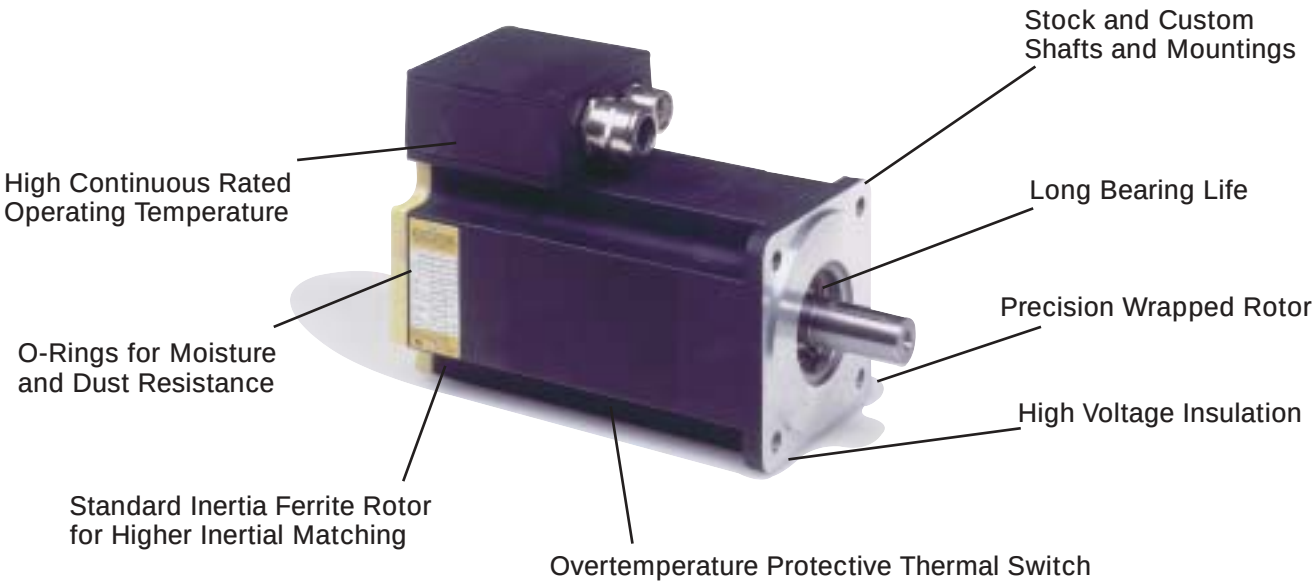
Brushless Servo Motors B Series

The BSM B Series of servo motors provide higher inertia in a very economical package. These motors have a time-proven reliable ferrite magnetic design, which are used in typical applications needing higher inertial matching. All B-Series include a rugged feedback device as standard.

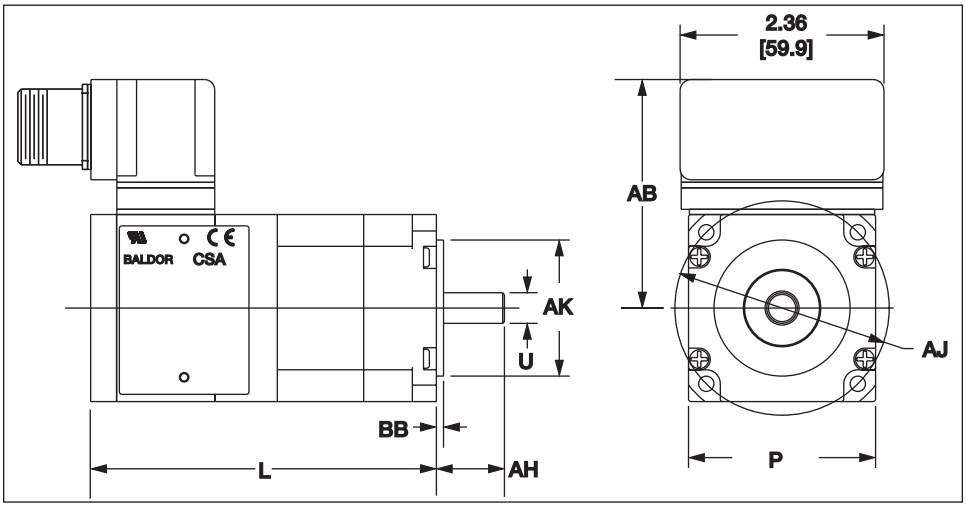


- Torque Range
  BSM80 14 lb-in(1.6Nm) - 27 lb-in(3Nm)
  BSM90 20 lb-in(2.3Nm) - 57 lb-in(6.5Nm)
  BSM100 56 lb-in(6.4Nm) - 177 lb-in(20Nm)
- Inertia Range
  0.0031 lb-in-s^2 - (3.51 Kg-cm^2)
  to 0.0066 lb-in-s^2 - (75.2 Kg-cm^2)
- Higher rotor inertia – for matching heavier machine inertial loads.
- Optional forced air cooling – to extend torque capability for additional motor performance.
- Rugged design for rugged environments – quality in the design.
- Windings potted for additional voltage protection – for improved reliability and improved heat transfer.
- Design interchangeable with A and N series – versatility for machine designs.
- Rugged industrial construction – quality in the design.
- Time proven reliable ferrite magnetic design – very economical package design.
- Popular mounting dimensions
- UL/CSA/CE – proven designs, proven quality.
- Optional holding brakes – for design versatility.

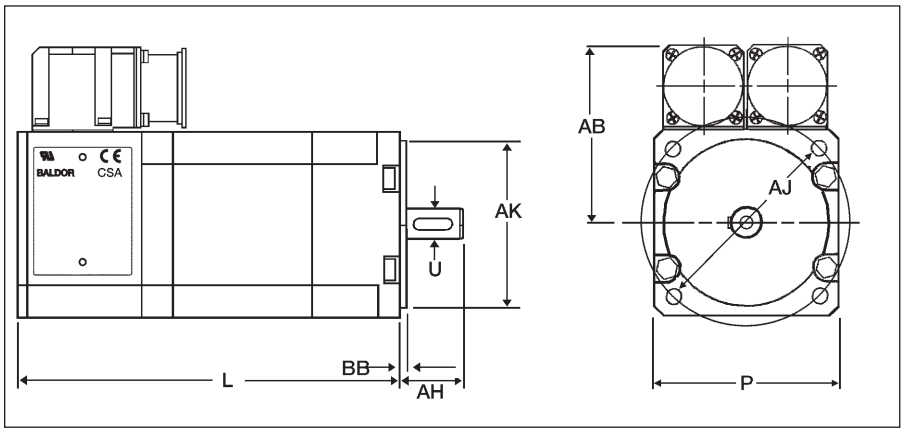
Brushless Servo Motors

Dimensions – IEC Mounting

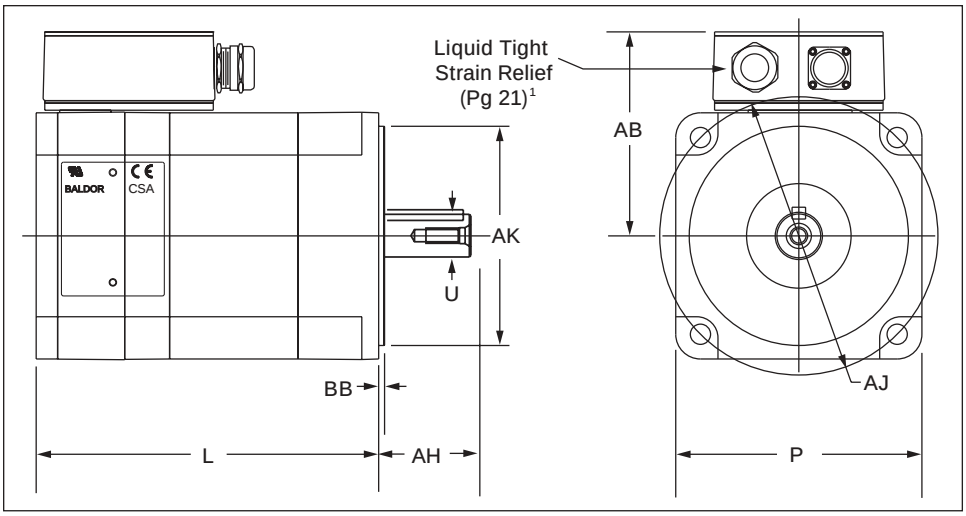
BSM 50 Series



BSM 63/80 Series



BSM 90/100 Series



NOTE: Pg 21 Strain Relief is used on all BSM90/100 Series rated for 20 amps.
Motors rated for greater than 20 amps use Pg 29 (ASR24661) and adaptor (ASR24662)

Brushless Servo Motors

Dimensions – IEC Mounting (inches [mm])

Motor Code	P	L	AB	U	AH	KEY	AJ	AK	BB
50A/N-1	2.2 [55]	4 [102]	2.65 [67]	0.35 [9j6]	0.78 [20]	–	4.5 mm	1.5 [40j6]	0.098 [2.5]
50A/N-2	2.2 [55]	5 [127]	2.65 [67]	0.35 [9j6]	0.78 [20]	–	Thru Hole	1.5 [40j6]	0.098 [2.5]
50A/N-3	2.2 [55]	6 [153]	2.65 [67]	0.35 [9j6]	0.78 [20]	–	63 B.C.	1.5 [40j6]	0.098 [2.5]
63A/N-1	2.6 [67]	4.56 [116]	2.6 [65]	0.43 [11j6]	0.9 [23]	4x4x12	5.6 mm	2.3 [60j6]	0.098 [2.5]
63A/N-2	2.6 [67]	5.56 [141]	2.6 [65]	0.43 [11j6]	0.9 [23]	4x4x12	Thru Hole	2.3 [60j6]	0.098 [2.5]
63A/N-3	2.6 [67]	6.56 [167]	2.6 [65]	0.43 [11j6]	0.9 [23]	4x4x12	75 mm B.C.	2.3 [60j6]	0.098 [2.5]
80A/N-1	3.5 [89]	5.93 [151]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	6.6 mm	3.2 [80j6]	0.118 [3.0]
80A/N-2	3.5 [89]	7.18 [183]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	Thru Hole	3.2 [80j6]	0.118 [3.0]
80A/N-3	3.5 [89]	8.43 [214]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	100 mm B.C.	3.2 [80j6]	0.118 [3.0]
90A/N-1	4.7 [120]	7 [177]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x40	10mm	4.3 [110j6]	0.098 [2.5]
90A/N-2	4.7 [120]	9 [228]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x40	Thru Hole	4.3 [110j6]	0.098 [2.5]
90A/N-3	4.7 [120]	11 [279]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x40	130 mm B.C.	4.3 [110j6]	0.098 [2.5]
100A/N-1	5.7 [146]	8 [203]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x40	12 mm	5.1 [130j6]	0.157 [4.0]
100A/N-2	5.7 [146]	10 [254]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x40	Thru Hole	5.1 [130j6]	0.157 [4.0]
100A/N-3	5.7 [146]	12 [305]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x40	165 mm B.C.	5.1 [130j6]	0.157 [4.0]
100A/N-4	5.7 [146]	14 [356]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x40		5.1 [130j6]	0.157 [4.0]
80B-1	3.5 [89]	7.18 [183]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	6.6 mm	3.1 [80j6]	0.118 [3.0]
80B-2	3.5 [89]	8.68 [220]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	Thru Hole	3.1 [80j6]	0.118 [3.0]
80B-3	3.5 [89]	10.18 [258]	2.9 [75]	0.74 [19j6]	1.5 [40]	6x6x24	100 mm B. C.	3.1 [80j6]	0.118 [3.0]
90B-1	4.7 [120]	7.11 [181]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x28	10 mm	4.3 [110j6]	0.137 [3.5]
90B-2	4.7 [120]	9.36 [238]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x28	Thru Hole	4.3 [110j6]	0.137 [3.5]
90B-3	4.7 [120]	11.61 [295]	4.3 [108]	0.94 [24j6]	1.9 [50]	8x7x28	130 mm B. C.	4.3 [110j6]	0.137 [3.5]
100B-1	5.7 [146]	7.75 [197]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x41	12 mm	5.1 [130j6]	0.157 [4.0]
100B-2	5.7 [146]	10.75 [273]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x41	Thru Hole	5.1 [130j6]	0.157 [4.0]
100B-3	5.7 [146]	13.75 [349]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x41	165 mm B. C.	5.1 [130j6]	0.157 [4.0]
100B-4	5.7 [146]	15 [381]	4.8 [121]	1.1 [28j6]	2.3 [60]	8x7x41		5.1 [130j6]	0.157 [4.0]

NOTES:
1) Standard configuration: All motors supplied with commutation resolver, square mounting flange.
2) BSM 50/63/80 has two (2) threaded connectors (metric style) for resolver and motor terminations.
3) BSM 90/100 has one (1) threaded connector (metric style) for resolver, termination of motor lead wires on terminal block.
4) Order mating connectors as separate items.
5) The motors have a threaded hole on the shaft end.
   The BSM63 series is M4 x 0.7 threads (11mm deep)
   The BSM80 series is M6 x 1.0 threads (17 mm deep)
   The BSM 90 series is M6 x 1.0 threads (17mm deep)
   The BSM100 series is M10 x 1.5 threads (23 mm deep)
6) Dimensions above are for reference only.
   Detailed engineering drawings available upon request.

Flange Adapter Kits

Order Number	Description
2R-BSM63	Kit for BSM63A to convert to old equivalent 2R mounting (Thickness = 0.411)
3R-BSM80	Kit for BSM80A to convert to old equivalent 3R mounting (Thickness = 0.431)
4R-BSM90	Kit for BSM90A to convert to old equivalent 4R mounting (Thickness = 0.772)
56-BSM90	Kit for BSM90 to convert to 56 mounting (Thickness = 0.822)
6R-BSM100	Kit for BSM100A to convert to old equivalent 6R mounting (Thickness = 0.472)

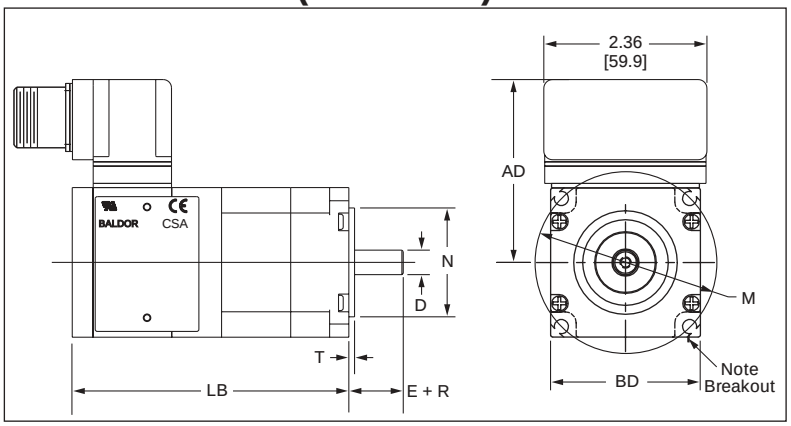
NOTE: The standard shaft extension will be reduced by the thickness of the above kit adapter flange. If desired, a custom motor may be ordered with shaft length appropriate for mounting.

Brushless Servo Motors

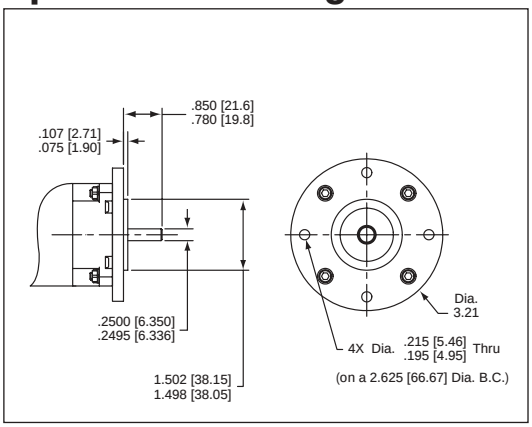
Dimensions – NEMA Mounting

Dimensions are for reference only. Detailed engineering drawings available upon request.

BSM 50 Series (NEMA 23)

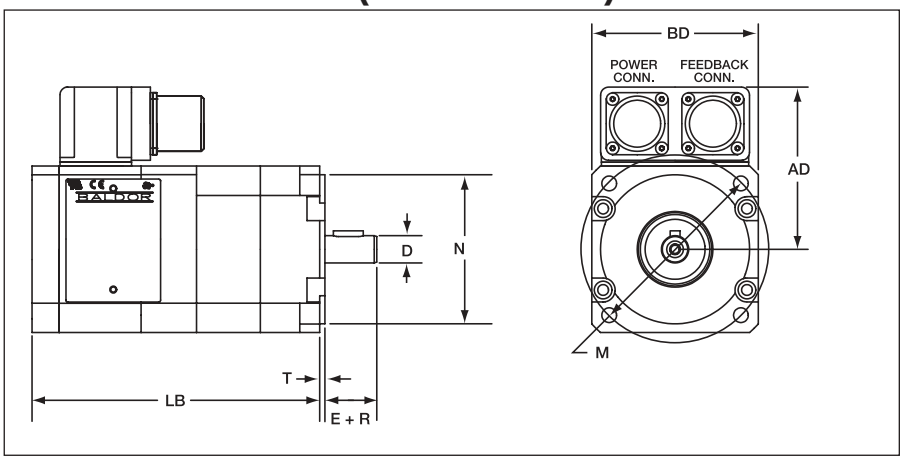


Optional Mounting Available

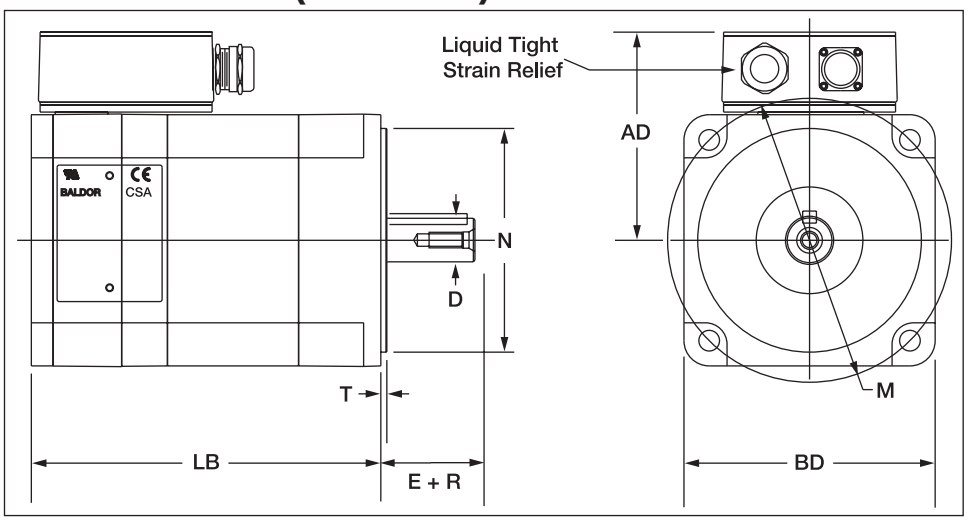


NOTE: The standard BSM50 Series has as standard no keyway.

BSM 63/80 Series (NEMA 34/42)



BSM 90 Series (NEMA 56)



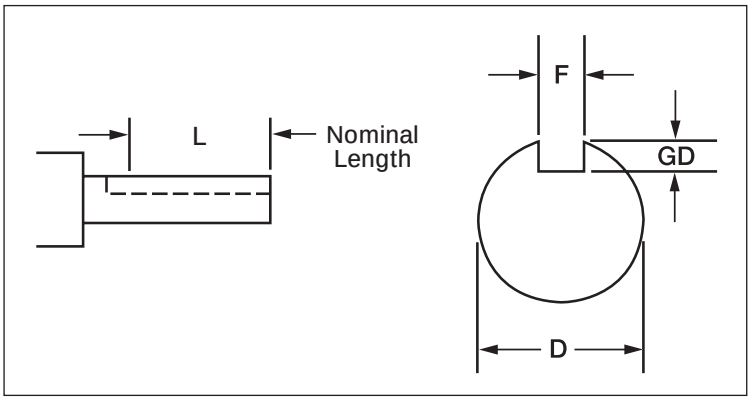
Brushless Servo Motors

Dimensions – NEMA (inches [mm])

NEMA Code	Motor Code	BD	LB	AD	D	E + R	KEY GDxFxL	M	N	T
23	50N-1	2.2 [55]	4 [102]	2.65 [67]	0.25 [6.3]	0.812 [20]	–	0.2 in.	1.5 [38]	0.10 [2.5]
	50N-2	2.2 [55]	5 [127]	2.65 [67]	0.25 [6.3]	0.812 [20]	–	Thru Hole	1.5 [38]	0.10 [2.5]
	50N-3	2.2 [55]	6 [153]	2.65 [67]	0.25 [6.3]	0.812 [20]	–	2.625 B.C.	1.5 [38]	0.10 [2.5]
34	63N-1	2.6 [67]	4.58 [116]	2.6 [65]	0.375 [9.5]	1.25 [31]	0.1875 x	0.22 in.	2.875 [73]	0.10 [2.5]
	63N-2	2.6 [67]	5.56 [141]	2.6 [65]	0.375 [9.5]	1.25 [31]	0.1875 x	Thru Hole	2.875 [73]	0.10 [2.5]
	63N-3	2.6 [67]	6.56 [167]	2.6 [65]	0.375 [9.5]	1.25 [31]	1.5	3.875 B.C.	2.875 [73]	0.10 [2.5]
42	80N-1	3.5 [89]	5.93 [151]	2.9 [75]	0.625 [15]	2.063 [52]	0.1875 x	0.28 in.	2.187 [55]	0.10 [2.5]
	80N-2	3.5 [89]	7.18 [183]	2.9 [75]	0.625 [15]	2.063 [52]	0.1875 x	Thru Hole	2.187 [55]	0.10 [2.5]
	80N-3	3.5 [89]	8.43 [215]	2.9 [75]	0.625 [15]	2.063 [52]	1.5	4.95 B.C.	2.187 [55]	0.10 [2.5]
56	90N-1	4.7 [120]	7 [177]	4.3 [108]	0.625 [15]	2.063 [52]	0.1875 x	0.4 in.	4.5 [114]	0.13 [3.3]
	90N-2	4.7 [120]	9 [228]	4.3 [108]	0.625 [15]	2.063 [52]	0.1875 x	Thru Hole	4.5 [114]	0.13 [3.3]
	90N-3	4.7 [120]	11 [279]	4.3 [108]	0.625 [15]	2.063 [52]	1.5	5.875 B.C.	4.5 [114]	0.13 [3.3]
42	80B-1	3.5 [89]	7.18 [183]	2.9 [75]	0.625 [15]	2.063 [52]	0.1875 x	0.28 in.	2.187 [55]	0.10 [2.5]
	80B-2	3.5 [89]	8.68 [220]	2.9 [75]	0.625 [15]	2.063 [52]	0.1875 x	Thru Hole	2.187 [55]	0.10 [2.5]
	80B-3	3.5 [89]	10.18 [258]	2.9 [75]	0.625 [15]	2.063 [52]	6x6x24	4.95 B. C.	2.187 [55]	0.10 [2.5]
56	90B-1	4.7 [120]	7.11 [181]	4.3 [108]	0.625 [15]	2.062 [52]	0.1875 x	0.4 in.	4.5 [114]	0.13 [3.3]
	90B-2	4.7 [120]	9.36 [238]	4.3 [108]	0.625 [15]	2.062 [52]	0.1875 x	Thru Hole	4.5 [114]	0.13 [3.3]
	90B-3	4.7 [120]	11.61 [295]	4.3 [108]	0.625 [15]	2.062 [52]	8x7x28	5.875 B. C.	4.5 [114]	0.13 [3.3]

NOTE: 1) Standard configuration: All motors supplied with commutation resolver, NEMA mounting.
2) BSM 50/63/80 has two (2) threaded connectors for resolver and motor terminations.
3) BSM 90 has one (1) threaded connector for resolver, termination of motor lead wires on terminal block.
4) Order mating connectors as separate items.
5) Dimensions above are for reference only.
Detailed engineering drawings available upon request.
6) Motor Identification/Optional Specifying Information MUST include the Code of "N" designating NEMA dimensions, i.e. "NBSM".

NEMA Key Configuration

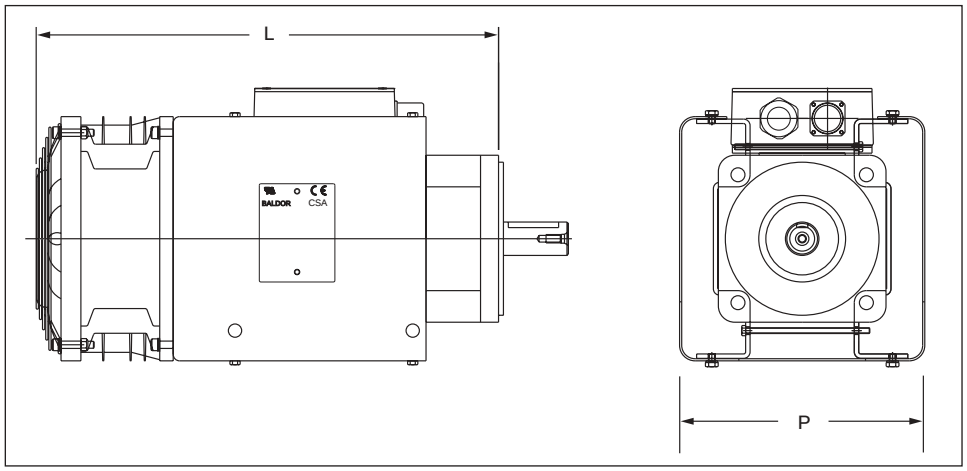


Brushless Servo Motors

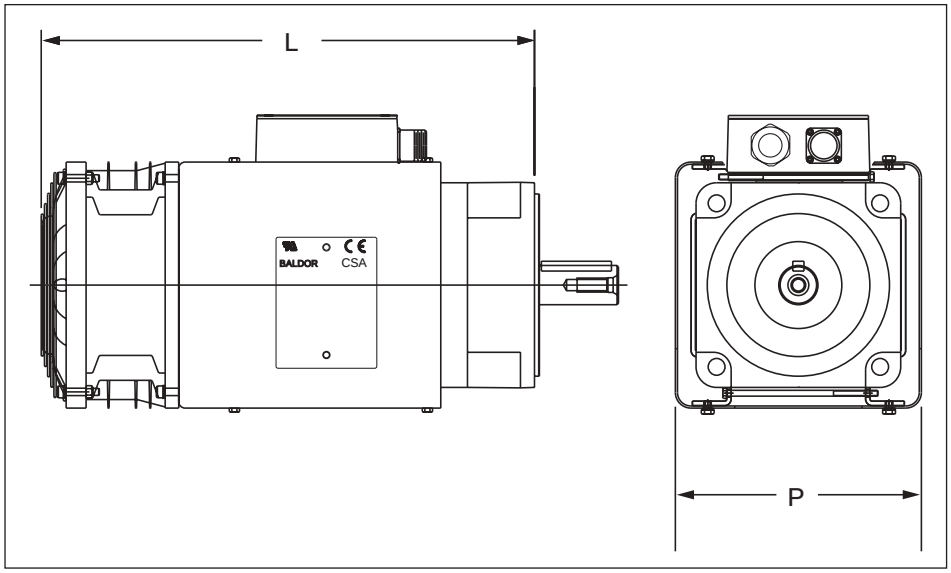
BSM Series with Blower Cooling Option

To order blower option refer to “Option Specifying Information”. Specify option “Z” under the “Accessory Option” code.

BSM 90 Series



BSM 100 Series



Dimensions (inches [mm])

Motor Code	P	L	Blower Kit for Motor		Blower Kit for Motor/Brake	
			115VAC	230VAC	115VAC	230VAC
BSM90A/N-2	6.91 [176]	15 [382]	BSM90FN2-1	BSM90FN2-2	BSM90FN3-1	BSM90FN3-2
BSM90A/N-3	6.91 [176]	17 [433]	BSM90FN3-1	BSM90FN3-2	BSM90FN4-1	BSM90FN4-2
BSM100A/N-3	6.91 [176]	17.1 [434]	BSM100FN3-1	BSM100FN3-2	BSM100FN5-1	BSM100FN5-6
BSM100A/N-4	6.91 [176]	19.1 [485]	BSM100FN4-1	BSM100FN4-2	BSM100FN6-1	BSM100FN6-2
BSM90B-2	6.91 [176]	15.4 [392]	BSM90FN2-1	BSM90FN2-2	BSM90FN3-1	BSM90FN3-2
BSM90B-3	6.91 [176]	17.6 [448]	BSM90FN3-1	BSM90FN3-2	BSM90FN4-1	BSM90FN4-2
BSM100B-3	6.91 [176]	19.1 [485]	BSM100FN4-1	BSM100FN4-2	BSM100FN6-1	BSM100FN6-2
BSM100B-4	6.91 [176]	20.35 [517]	BSM100FN4-1	BSM100FN4-2	BSM100FN6-1	BSM100FN6-2

NOTE: All blowers are single phase.

Brushless Servo Motors

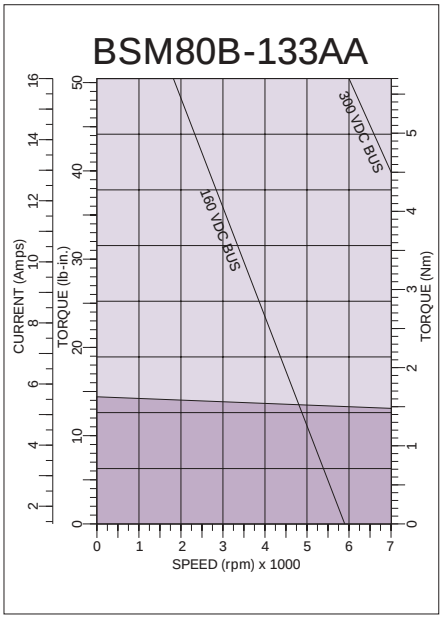
Brake Data

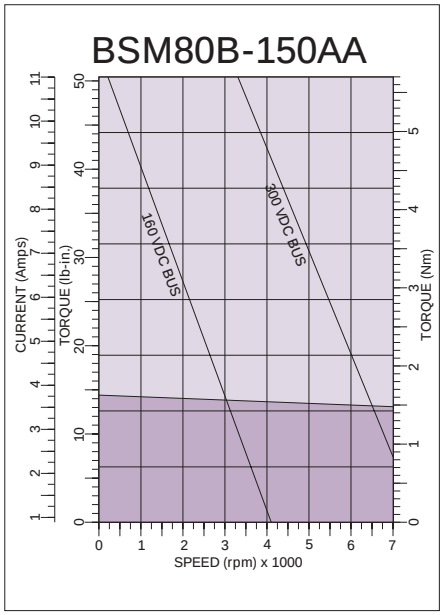
Motor Code	Brake Holding Torque (lb-in/N-m)	Watts	Brake Voltage	Brake Current (Amps)	Brake Times (msec)	
					Pull-In	Pull-out (With Diode)
BSM50A/N-1	13/1.4	10.1	24	0.4	18.6	55
BSM50A/N-2	13/1.4	10.1	24	0.4	18.6	55
BSM50A/N-3	13/1.4	10.1	24	0.4	18.6	55
BSM63A/N-1	18/2	11.9	24	0.5	33.5	33.8
BSM63A/N-2	18/2	11.9	24	0.5	33.5	33.8
BSM63A/N-3	18/2	11.9	24	0.5	33.5	33.8
BSM80A/N-1	30/3.3	19.7	24	0.8	34.5	79.3
BSM80A/N-2	30/3.3	19.7	24	0.8	34.5	79.3
BSM80A/N-3	40/4.5	19.7	24	0.8	34.5	79.3
BSM90A/N-1	77/8.7	22.5	24	0.9	64.1	73.6
BSM90A/N-2	140/15.8	22.5	24	0.9	64.1	73.6
BSM90A/N-3	140/15.8	22.5	24	0.9	64.1	73.6
BSM100A/N-1	200/22.5	31.4	24	1.3	83.9	188
BSM100A/N-2	200/22.5	31.4	24	1.3	83.9	188
BSM100A/N-3	350/39.5	33.7	24	1.4	157.3	220
BSM100A/N-4	350/39.5	33.7	24	1.4	157.3	220
BSM80B-1	30/3.3	19.7	24	0.8	34.5	79.3
BSM80B-2	30/3.3	19.7	24	0.8	34.5	79.3
BSM80B-3	30/3.3	19.7	24	0.8	34.5	79.3
BSM90B-1	77/8.7	22.5	24	0.9	64.1	73.6
BSM90B-2	77/8.7	22.5	24	0.9	64.1	73.6
BSM90B-3	77/8.7	22.5	24	0.9	64.1	73.6
BSM100B-1	200/22.5	31.4	24	1.3	83.9	188
BSM100B-2	200/22.5	31.4	24	1.3	83.9	188
BSM100B-3	200/22.5	31.4	24	1.3	83.9	188
BSM100B-4	200/22.5	31.4	24	1.3	83.9	188

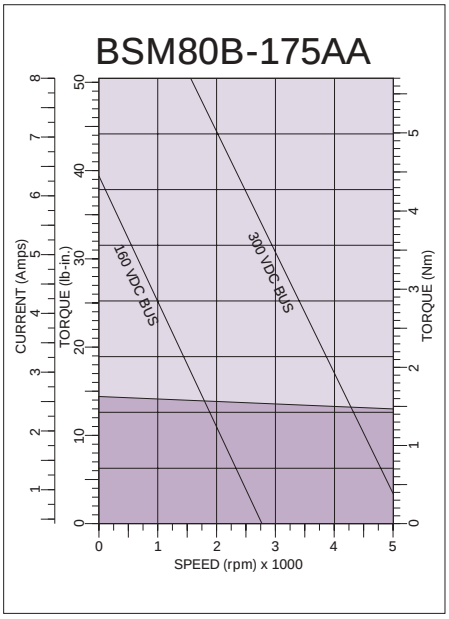
Motor Code	Brake Inertia		Brake Length Adder	Motor & Brake Weight	
	($lb\text{-}in\text{-}s^2$)	($Kgcm^2$)	(in/mm)	lbs	kg
BSM50A/N-1	0.0000200	0.021	1.36/35	3.2	1.45
BSM50A/N-2	0.0000200	0.021	1.36.35	4.2	1.9
BSM50A/N-3	0.0000200	0.021	1.36/35	5.2	2.36
BSM63A/N-1	0.000025	0.019	1.14/29	4.9	2.22
BSM63A/N-2	0.000025	0.019	1.14/29	6.2	2.81
BSM63A/N-3	0.000025	0.019	1.14/29	8.5	3.86
BSM80A/N-1	0.000120	0.111	1.07/28	9	4.09
BSM80A/N-2	0.000120	0.111	1.07/28	12	5.45
BSM80A/N-3	0.000120	0.111	1.07/28	15	6.81
BSM90A/N-1	0.000190	0.132	3.14/80	26	11.8
BSM90A/N-2	0.000190	0.132	3.14/80	36	16.4
BSM90A/N-3	0.000190	0.132	3.14/80	46	20.9
BSM100A/N-1	0.001000	1.15	1.61/41	44	20
BSM100A/N-2	0.001000	1.15	1.61/41	58	26.3
BSM100A/N-3	0.002200	2.53	1.61/41	73	33.2
BSM100A/N-4	0.002200	2.53	1.61/41	86	39.1
BSM80B-1	0.000120	0.111	1.07/28	11	5
BSM80B-2	0.000120	0.111	1.07/28	16	7.2
BSM80B-3	0.000120	0.111	1.07/28	21	9.5
BSM90B-1	0.000190	0.132	3.14/80	27	12.3
BSM90B-2	0.000190	0.132	3.14/80	38	17.3
BSM90B-3	0.000190	0.132	3.14/80	49	22.3
BSM100B-1	0.001000	1.15	1.61/41	42	19
BSM100B-2	0.001000	1.15	1.61/41	61	27.7
BSM100B-3	0.001000	1.15	1.61/41	80	36.4
BSM100B-4	0.001000	1.15	1.61/41	92	42

NOTE: All standard brakes used on Baldor BSM motors are 24VDC. The application needs to provide this voltage to release the brake. The brake is a safety brake only, and not intended to be used to constantly decelerate loads. Special consideration should be taken when mounting brake/encoder motors in vertical position. Contact Baldor for details.

BSM B-Series Performance Curves

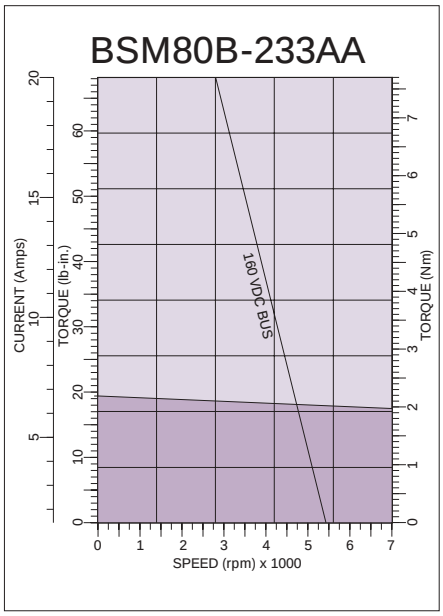


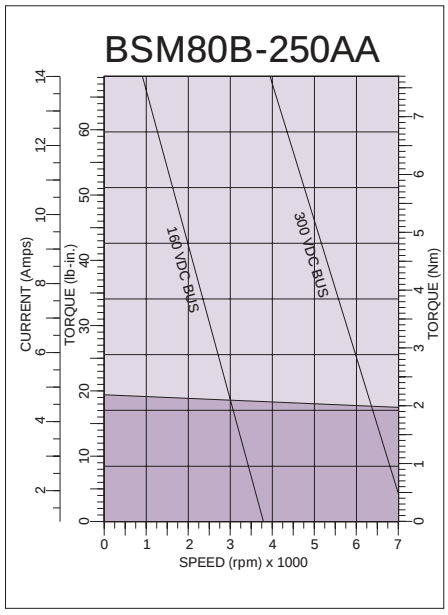


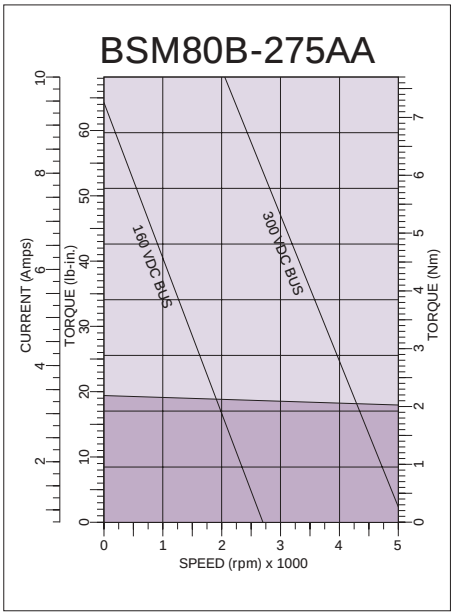


Catalog Number		BSM80B-133AA	BSM80B-150AA	BSM80B-175AA
General				
Continuous Stall Torque	lb-in	14.4	14.4	14.4
	N-m	1.63	1.63	1.63
Continuous Current	amps	5.52	3.78	2.59
Peak Torque	lb-in	50.45	50.45	50.45
	N-m	5.70	5.70	5.70
Peak Current	amps	16	11	8
Mechanical Time Constant	msec	6.6	6.6	6.1
Electrical Time Constant	msec	3.2	3.1	3.4
Rated Speed	rpm	6000	6000	4000
Rated Voltage	volts	200	300	300
Electrical				
Torque Constant	lb-in/amp	3.07	4.47	6.54
	N-m/amp	0.347	0.506	0.739
Voltage Constant	V_{pk}/krpm	29.6	43.2	63.2
	V_{rms}/krpm	21.0	30.6	44.7
Resistance	ohms	1.9	4.0	7.8
Inductance	mH	6.24	12.73	26.77
Mechanical				
Inertia	lb-in-s^2	0.00031	0.00031	0.00031
	Kg-cm^2	3.502	3.502	3.502
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	9/4.1	9/4.1	9/4.1

BSM B-Series Performance Curves

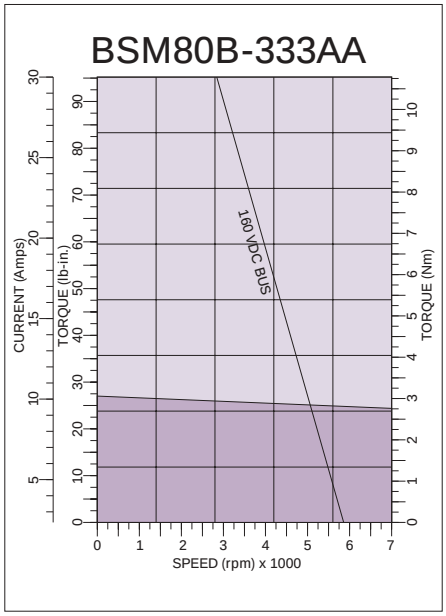


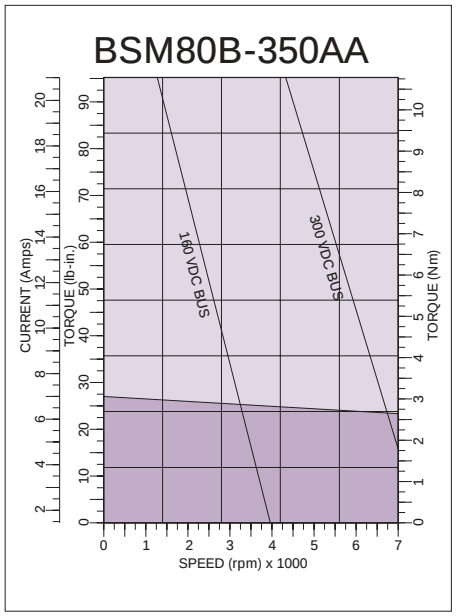


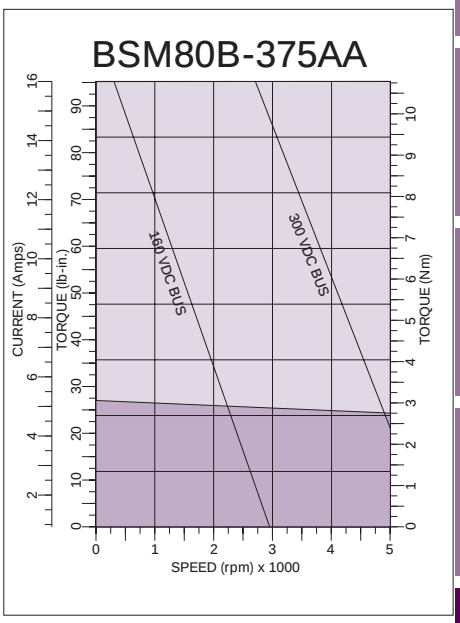


Catalog Number		BSM80B-233AA	BSM80B-250AA	BSM80B-275AA
General				
Continuous Stall Torque	lb-in	19.4	19.4	19.4
	N-m	2.20	2.20	2.20
Continuous Current	amps	6.74	4.78	3.38
Peak Torque	lb-in	68.15	68.15	68.15
	N-m	7.70	7.70	7.70
Peak Current	amps	20	14	10
Mechanical Time Constant	msec	4.4	5.4	5.2
Electrical Time Constant	msec	3.9	3.0	3.7
Rated Speed	rpm	6000	6000	4000
Rated Voltage	volts	200	300	300
Electrical				
Torque Constant	lb-in/amp	3.39	4.78	6.76
	N-m/amp	0.384	0.542	0.764
Voltage Constant	V_{pk}/krpm	32.8	46.2	65.3
	V_{rms}/krpm	23.24	32.7	46.2
Resistance	ohms	1.0	2.5	4.88
Inductance	mH	3.91	7.66	17.93
Mechanical				
Inertia	lb-in-s^2	0.0050	0.0050	0.0050
	Kg-cm^2	5.649	5.649	5.649
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	14/6.4	14/6.4	14/6.4

BSM B-Series Performance Curves

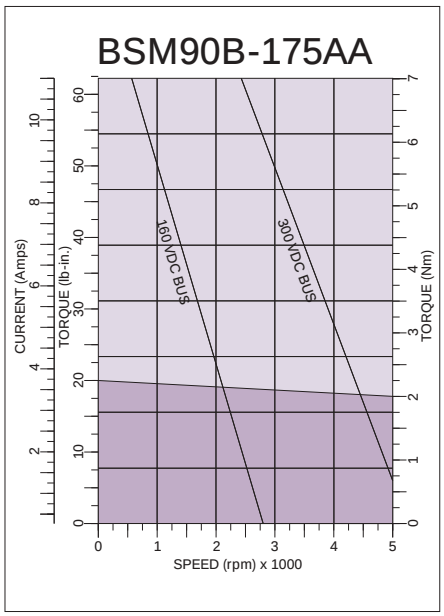


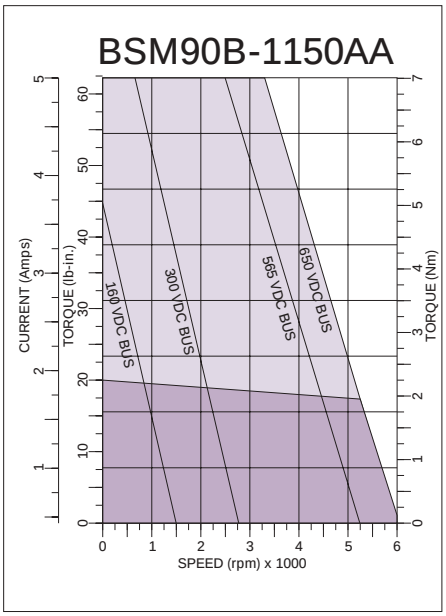


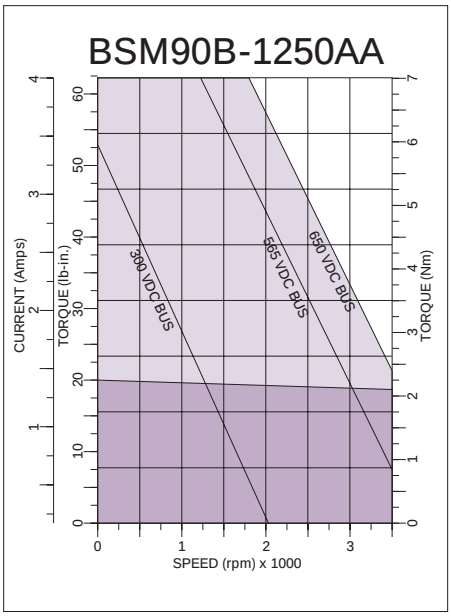


Catalog Number		BSM80B-333AA	BSM80B-350AA	BSM80B-375AA
General				
Continuous Stall Torque	lb-in	27	27	27
	N-m	3.08	3.08	3.08
Continuous Current	amps	10.2	7.0	5.2
Peak Torque	lb-in	95.41	95.41	95.41
	N-m	10.78	10.78	10.78
Peak Current	amps	30	21	16
Mechanical Time Constant	msec	4.6	4.7	4.6
Electrical Time Constant	msec	3.9	3.7	3.4
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.13	4.56	6.12
	N-m/amp	0.354	0.516	0.692
Voltage Constant	V_{pk}/krpm	30.2	44.1	59.1
	V_{rms}/krpm	21.4	31.2	41.86
Resistance	ohms	0.7	1.5	2.7
Inductance	mH	2.73	5.57	9.41
Mechanical				
Inertia	lb-in-s^2	0.0068	0.0068	0.0068
	Kg-cm^2	7.682	7.682	7.682
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	19/8.6	19/8.6	19/8.6

BSM B-Series Performance Curves

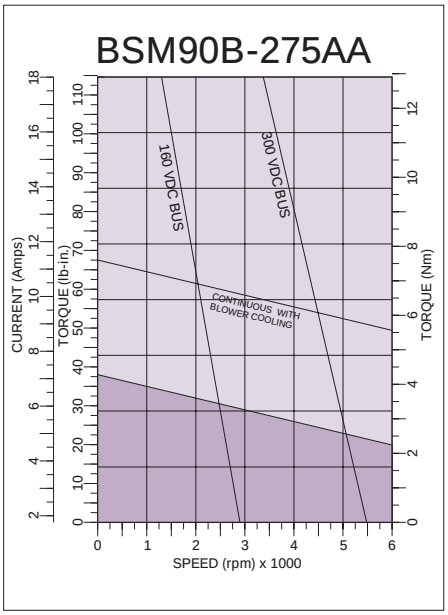


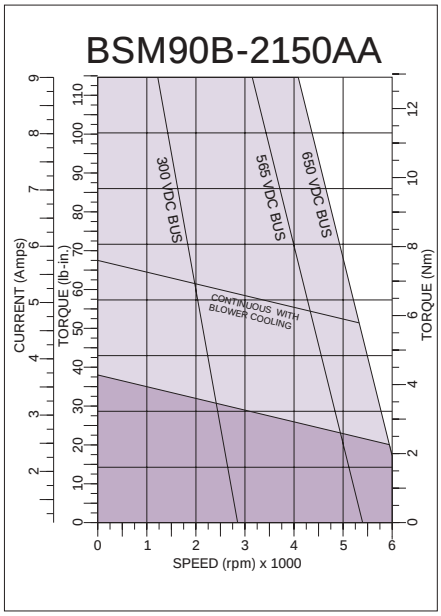


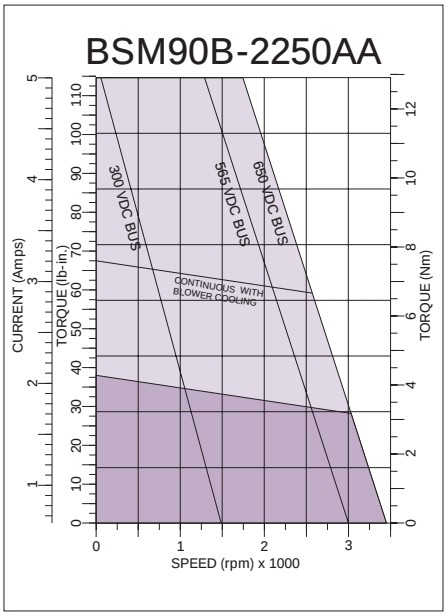


Catalog Number		BSM90B-175AA	BSM90B-1150AA	BSM90B-1250AA
General				
Continuous Stall Torque	lb-in	20	20	20
	N-m	2.35	2.35	2.35
Continuous Current	amps	3.7	1.9	1.4
Peak Torque	lb-in	62.4	62.4	62.4
	N-m	7.05	7.05	7.05
Peak Current	amps	11	5	4
Mechanical Time Constant	msec	3.1	2.9	2.6
Electrical Time Constant	msec	3.7	3.8	4.3
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.58	12.29	17.02
	N-m/amp	0.744	1.389	1.92
Voltage Constant	V_{pk}/krpm	63.6	118.7	164.4
	V_{rms}/krpm	45.0	84	116.3
Resistance	ohms	3.81	12.79	28.58
Inductance	mH	14.19	49.45	92.56
Mechanical				
Inertia	lb-in-s^2	0.0040	0.0040	0.0040
	Kg-cm^2	4.519	4.519	4.519
Maximum Speed	rpm	6000	6000	4600
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	19/8.6	19/8.6	19/8.6

BSM B-Series Performance Curves



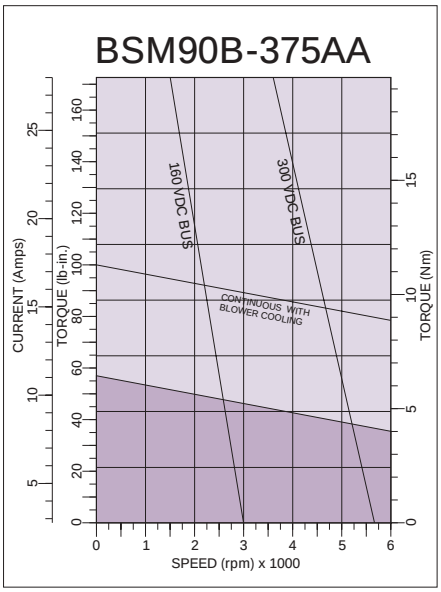


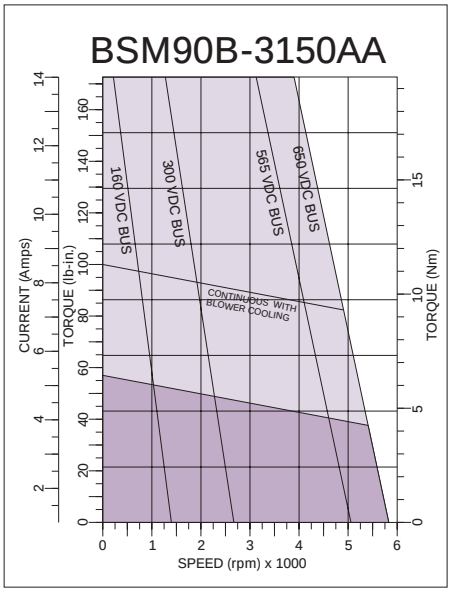


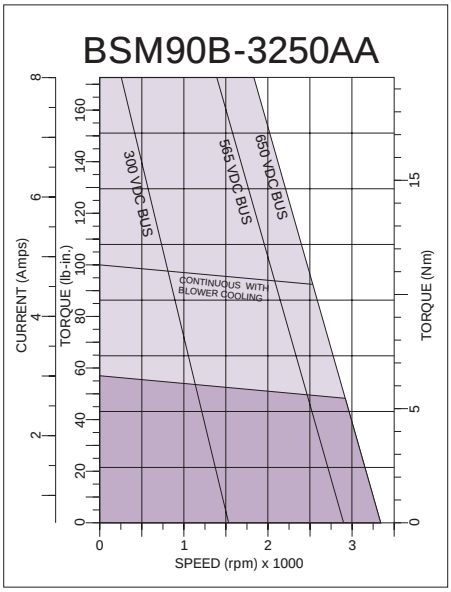
Catalog Number		BSM90B-275AA	BSM90B-2150AA	BSM90B-2250AA
General				
Continuous Stall Torque	lb-in	38	38	38
	N-m	4.30	4.30	4.30
Continuous Current	amps	7.14	3.71	2.08
Peak Torque	lb-in	114.6	114.2	114.2
	N-m	12.95	12.90	12.90
Peak Current	amps	18	9	5
Mechanical Time Constant	msec	2.2	2.2	2.4
Electrical Time Constant	msec	4.4	4.8	3.8
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.27	12.05	21.47
	N-m/amp	0.709	1.362	2.427
Voltage Constant	V_{pk}/krpm	60.5	116.3	207.4
	V_{rms}/krpm	42.87	82.34	146.76
Resistance	ohms	1.26	4.6	16.1
Inductance	mH	5.28	22.36	62.06
Mechanical				
Inertia	lb-in-s^2	0.0079	0.0079	0.0079
	Kg-cm^2	8.925	8.925	8.925
Maximum Speed	rpm	6000	6000	3600
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	30/13.6	30/13.6	30/13.6

NOTE: A blower cooling option is available which will increase the motor's continuous stall torque by another 80%. Peak torque remains unchanged.

BSM B-Series Performance Curves



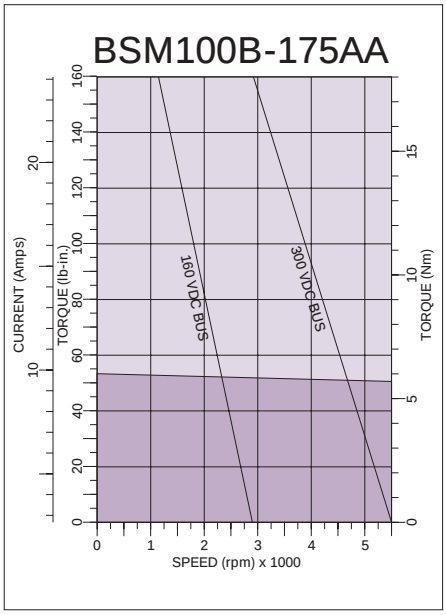


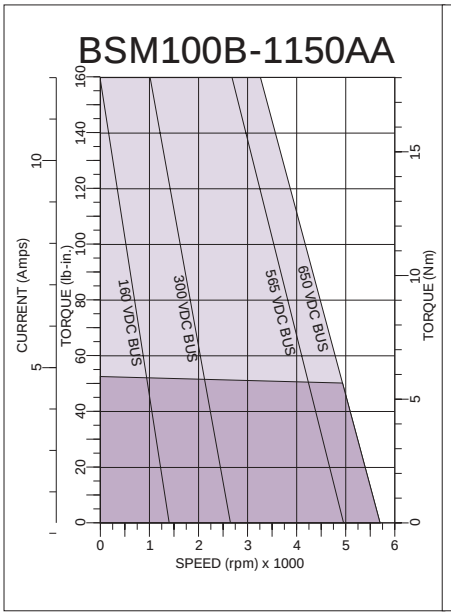


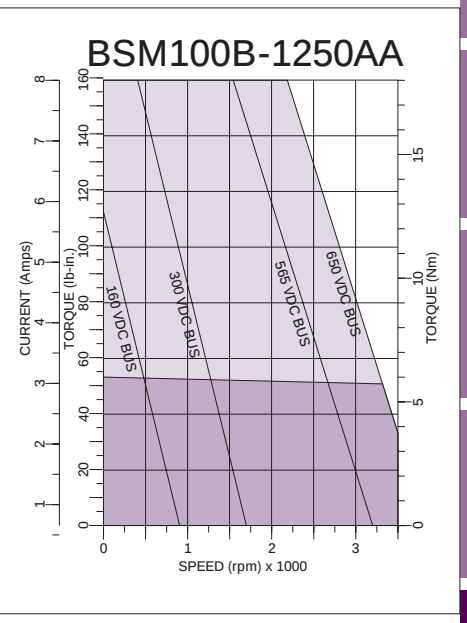
Catalog Number		BSM90B-375AA	BSM90B-3150AA	BSM90B-3250AA
General				
Continuous Stall Torque	lb-in	57	57	57
	N-m	6.5	6.5	6.5
Continuous Current	amps	11.1	5.3	3.0
Peak Torque	lb-in	172.6	172.6	172.6
	N-m	19.5	19.5	19.5
Peak Current	amps	28	14	8
Mechanical Time Constant	msec	1.7	1.8	2.0
Electrical Time Constant	msec	5.6	5.5	4.9
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.08	12.74	22.3
	N-m/amp	0.688	1.44	2.525
Voltage Constant	V_{pk}/krpm	58.8	123.0	215.7
	V_{rms}/krpm	41.61	87.08	152.6
Resistance	ohms	0.682	2.87	9.4
Inductance	mH	3.38	15.5	46.7
Mechanical				
Inertia	lb-in-s^2	0.0117	0.0117	0.0117
	Kg-cm^2	13.219	13.219	13.219
Maximum Speed	rpm	6000	6000	3600
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	30/13.6	30/13.6	30/13.6

NOTE: A blower cooling option is available which will increase the motor's continuous stall torque by another 80%. Peak torque remains unchanged.

BSM B-Series Performance Curves

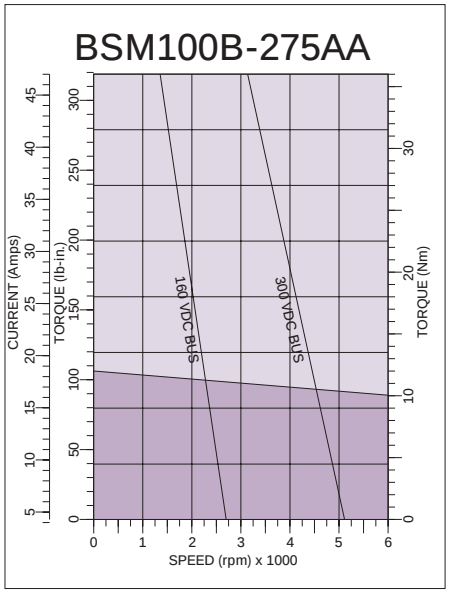


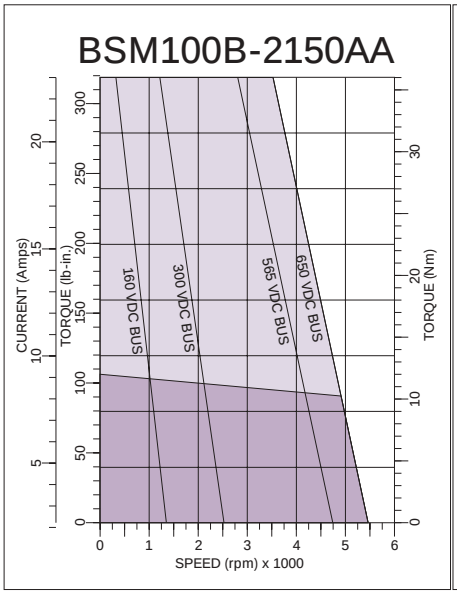


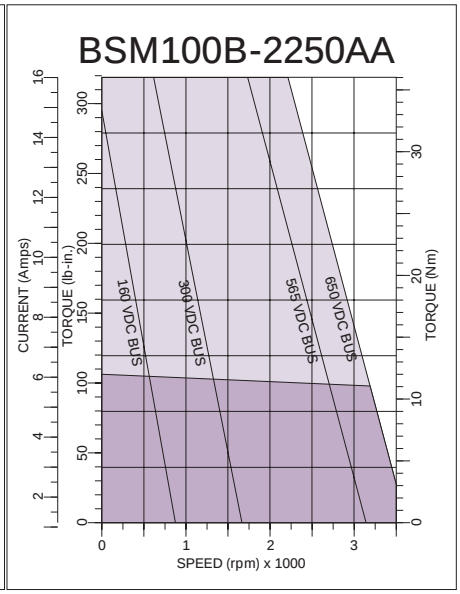


Catalog Number		BSM100B-175AA	BSM100B-1150AA	BSM100B-1250AA
General				
Continuous Stall Torque	lb-in	52.5	52.5	52.5
	N-m	5.93	5.93	5.93
Continuous Current	amps	9.8	4.78	3.1
Peak Torque	lb-in	159.3	159.3	159.3
	N-m	18	18	18
Peak Current	amps	24	12	8
Mechanical Time Constant	msec	5.6	5.5	5.2
Electrical Time Constant	msec	6.0	5.8	5.8
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.37	13.05	20.16
	N-m/amp	0.72	1.475	2.279
Voltage Constant	V_{pk}/krpm	61.5	125.9	194.8
	V_{rms}/krpm	43.53	89.15	137.81
Resistance	ohms	0.937	3.93	8.45
Inductance	mH	5.44	21.77	48.99
Mechanical				
Inertia	lb-in-s^2	0.0188	0.0188	0.0188
	Kg-cm^2	21.241	21.241	21.241
Maximum Speed	rpm	6000	6000	3850
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	33/15	33/15	33/15

BSM B-Series Performance Curves

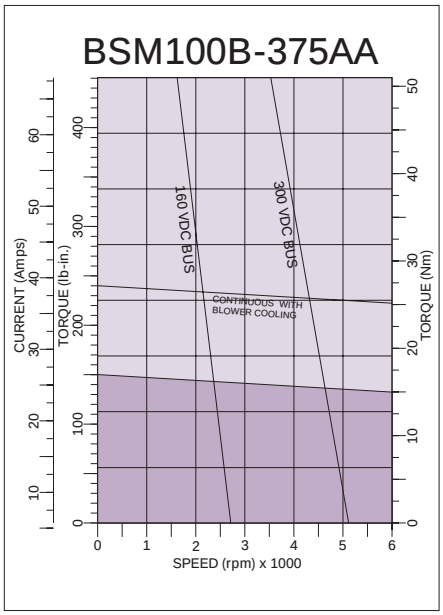


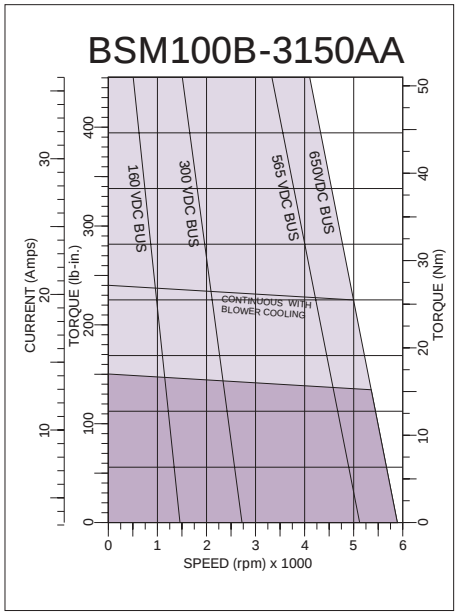


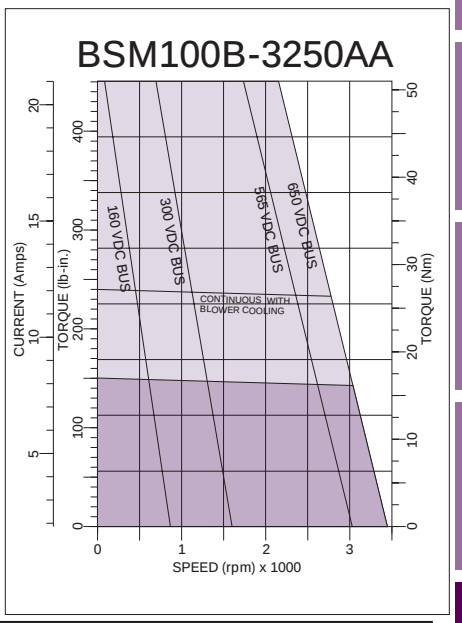


Catalog Number		BSM100B-275AA	BSM100B-2150AA	BSM100B-2250AA
General				
Continuous Stall Torque	lb-in	106	106	106
	N-m	12	12	12
Continuous Current	amps	18.57	9.16	6.08
Peak Torque	lb-in	318.6	318.6	318.6
	N-m	36	36	36
Peak Current	amps	47	23	16
Mechanical Time Constant	msec	3.4	3.8	3.8
Electrical Time Constant	msec	8.7	8.2	7.5
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.72	13.64	20.54
	N-m/amp	0.76	1.542	2.322
Voltage Constant	V_{pk}/krpm	54.4	131.7	198.5
	V_{rms}/krpm	45.94	93.22	140.41
Resistance	ohms	0.38	1.459	3.242
Inductance	mH	2.61	11.57	24.10
Mechanical				
Inertia	lb-in-s^2	0.0386	0.0386	0.0386
	Kg-cm^2	43.612	43.612	43.612
Maximum Speed	rpm	6000	5700	3800
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	52/23.6	52/23.6	52/23.6

BSM B-Series Performance Curves



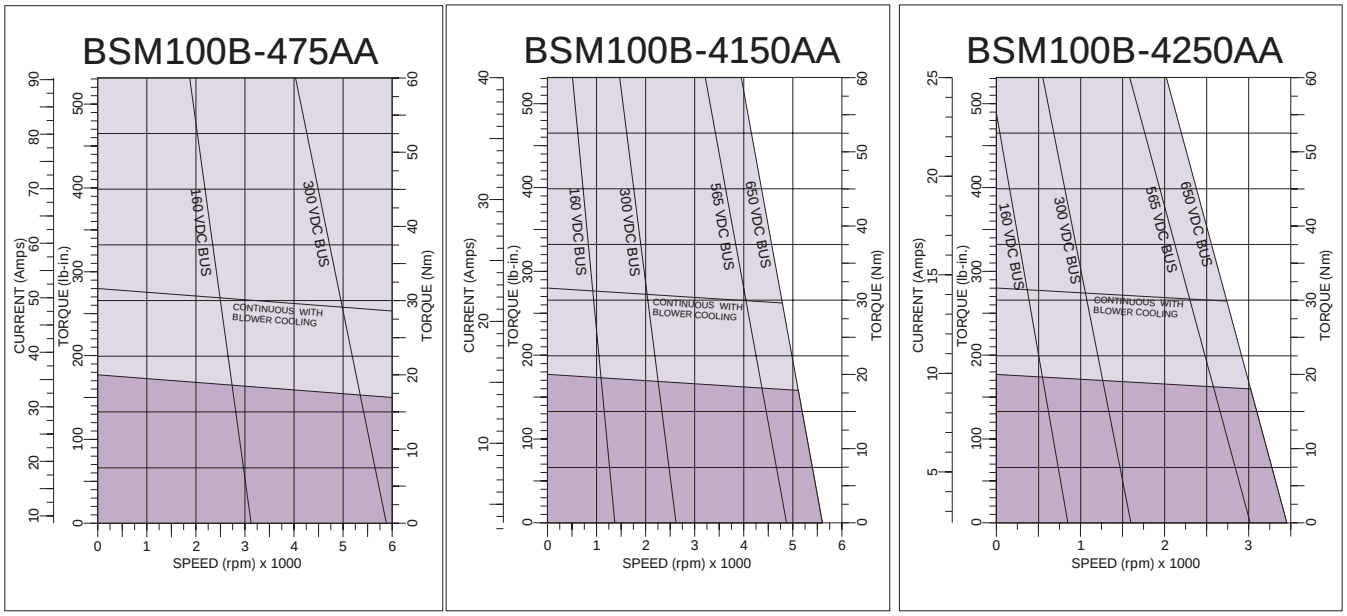




Catalog Number		BSM100B-375AA	BSM100B-3150AA	BSM100B-3250AA
General				
Continuous Stall Torque	lb-in	150	150	150
	N-m	17	17	17
Continuous Current	amps	26.48	14.06	8.23
Peak Torque	lb-in	451	451	451
	N-m	51	51	51
Peak Current	amps	68	36	21
Mechanical Time Constant	msec	3.6	3.6	3.3
Electrical Time Constant	msec	7.6	7.5	9.7
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.68	12.58	21.49
	N-m/amp	0.7552	1.421	2.429
Voltage Constant	V_{pk}/krpm	62.6	121.8	207.5
	V_{rms}/krpm	45.66	85.96	146.85
Resistance	ohms	0.2	0.8	2.0
Inductance	mH	1.53	6.04	19.5
Mechanical				
Inertia	lb-in-s^2	0.0584	0.0584	0.0584
	Kg-cm^2	65.983	65.983	65.983
Maximum Speed	rpm	6000	5700	3800
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	71/32.3	71/32.3	71/32.3

NOTE: A blower cooling option is available which will increase the motor's continuous stall torque by another 60%. Peak torque remains unchanged.

BSM B-Series Performance Curves



Catalog Number		BSM100B-475AA	BSM100B-4150AA	BSM100B-4250AA
General				
Continuous Stall Torque	lb-in	177	177	177
	N-m	20	20	20
Continuous Current	amps	35.66	15.80	9.64
Peak Torque	lb-in	531	531	531
	N-m	60	60	60
Peak Current	amps	91	40	25
Mechanical Time Constant	msec	3.2	3.5	3.9
Electrical Time Constant	msec	7.9	8.5	9.1
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	5.84	13.17	21.6
	N-m/amp	0.66	1.488	2.41
Voltage Constant	V_{pk}/krpm	57.2	123.1	205.3
	V_{rms}/krpm	39.89	90.01	147.60
Resistance	ohms	0.1412	0.67	2.07
Inductance	mH	1.03	5.58	18.27
Mechanical				
Inertia	lb-in-s^2	0.0666	0.0666	0.0666
	Kg-cm^2	75.248	75.248	75.248
Maximum Speed	rpm	6000	5900	3700
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	79/36	79/36	79/36

NOTE: A blower cooling option is available which will increase the motor's continuous stall torque by another 60%. Peak torque remains unchanged.