

Brushless Servo Motors N-Series

The BSM N Series provides low inertia and high torque desired for excellent performance response. This series is a rugged, durable design with Neodymium Iron Boron magnetics. Motor characteristics have been designed to be the same as Baldor's A Series, however, in a more economical package.



- Torque Range
 - BSM50 3.9 lb-in(0.45Nm) - 12 lb-in(1.36Nm)
 - BSM63 6.1 lb-in(0.7Nm) - 16.9 lb-in (1.91Nm)
 - BSM80 13.8 lb-in(1.5Nm) - 38 lb-in(4.3Nm)
 - BSM90 53 lb-in(6Nm) - 117 lb-in(13.3Nm)
 - BSM100 123 lb-in(14Nm) - 354 lb-in(40Nm)
- Inertia Range
 - 0.00006 lb-in-s² - (0.06 Kg-cm²)
 - to 0.0349 lb-in-s² - (39.4 Kg-cm²)
- Cooling kits available – to get more performance and extend torque range.
- Environmentally rugged – for reliability and long life.
- Winding potted for high voltage protection and for improved reliability and improved heat transfer.
- Heavy duty continuous operation – for dependability and assurance that it will always perform.
- High acceleration capability – to move faster, to get the job done faster.
- Rugged industrial construction – quality in the design.
- High torque to inertia ratio – enables your machine to produce more parts per hour.
- Neodymium iron boron magnetic design – for rapid positioning capability.
- UL/CSA/CE – proven designs, proven quality.
- Optional holding brakes – for design versatility

Overview

Software

Motion Controls

AC Controls

AC Motors

DC Controls

DC Motors

Linear Motors

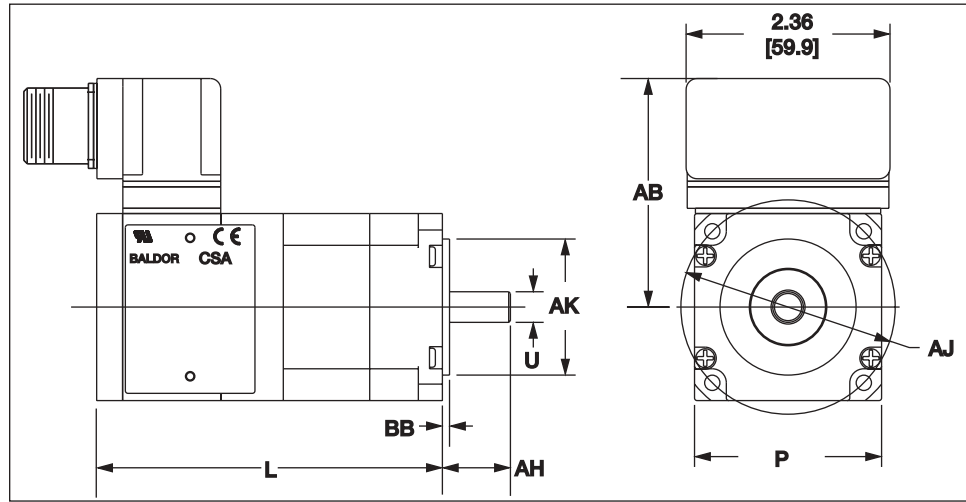
Linear Stages

Engineering Information

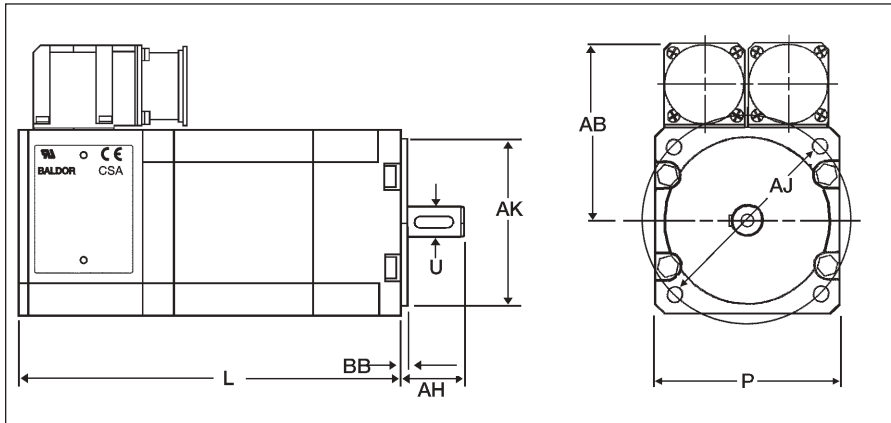
Brushless Servo Motors

Dimensions - IEC Mounting

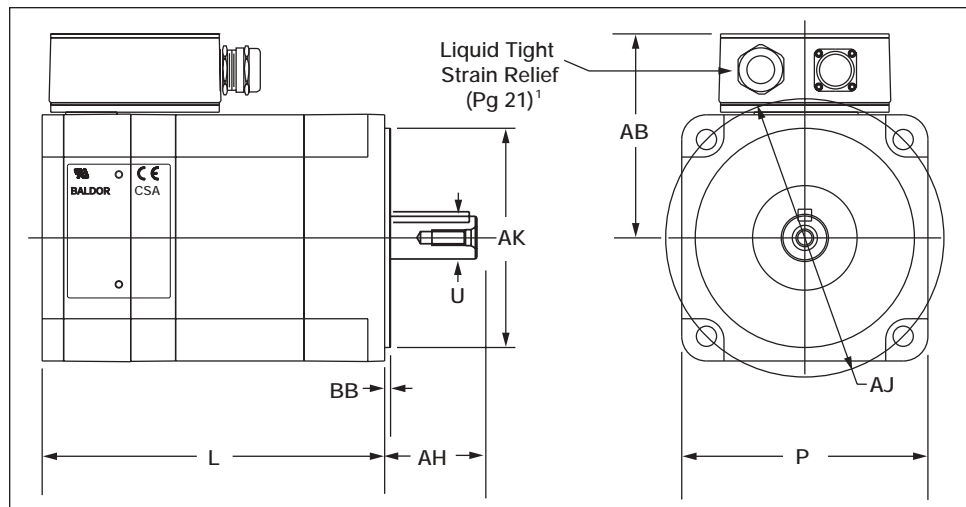
BSM 50 Series



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

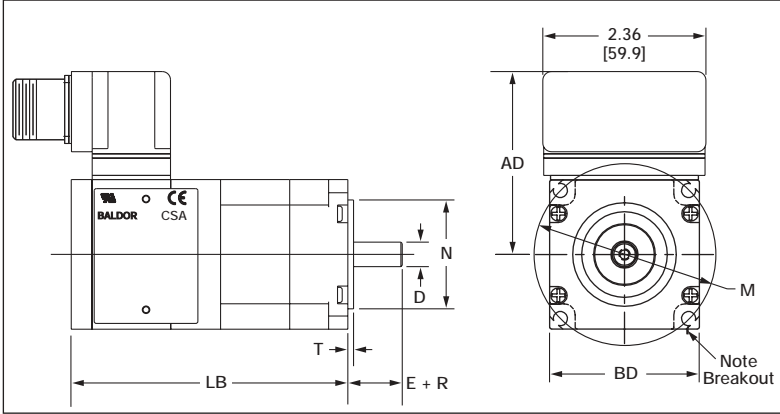
NOTE: The standard shaft extension will be reduced by the thickness of the above kit adapter flange. If desired, a custom motor may be ordered with shaft length appropriate for mounting.

Brushless Servo Motors

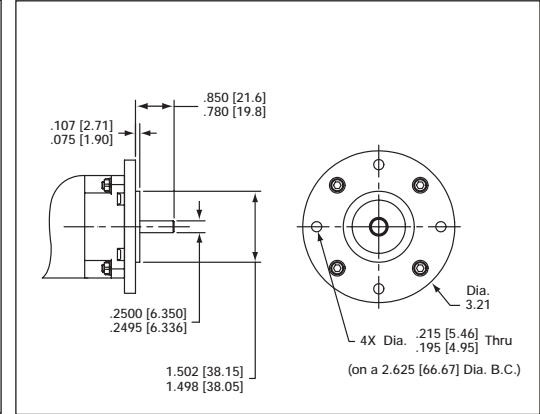
Dimensions - NEMA Mounting

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

BSM 50 Series (NEMA 23)

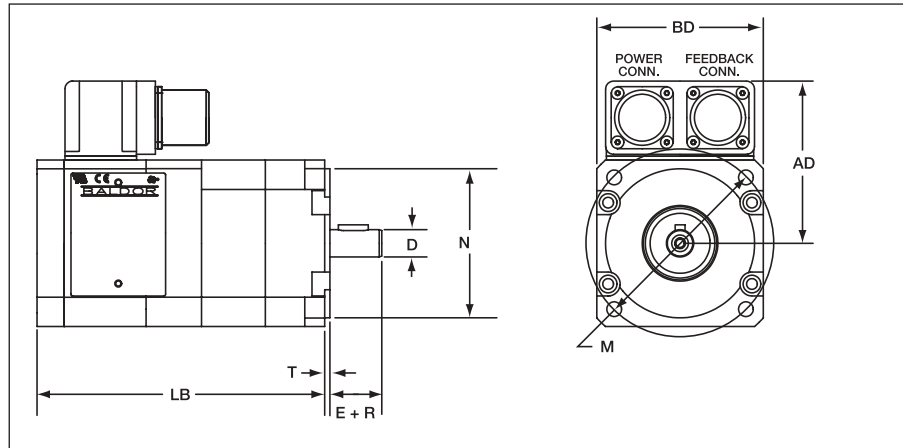


Optional Mounting Available

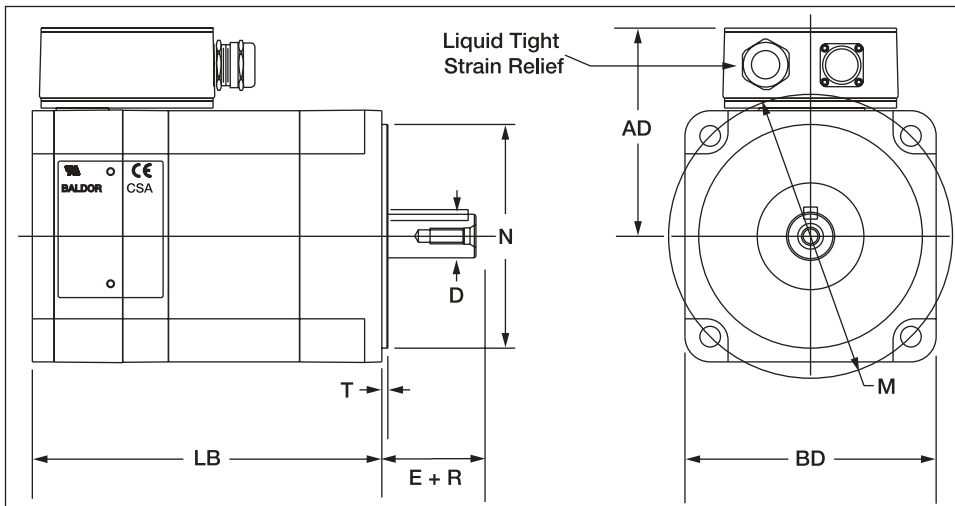


NOTE: The standard BSM50 Series has as standard no keyway.

BSM 63/80 Series (NEMA 34/42)



BSM 90 Series (NEMA 56)



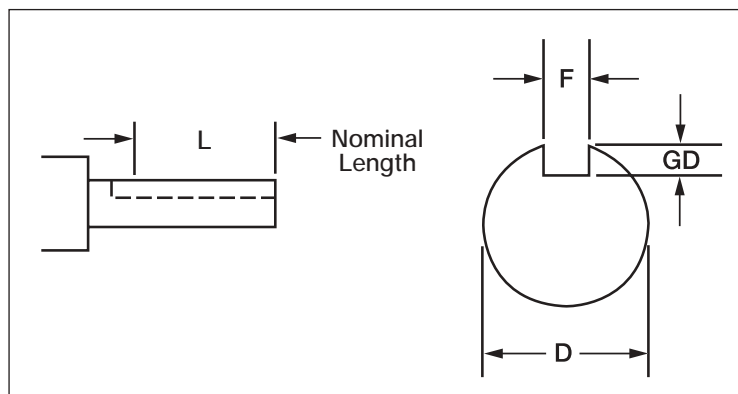
Brushless Servo Motors

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

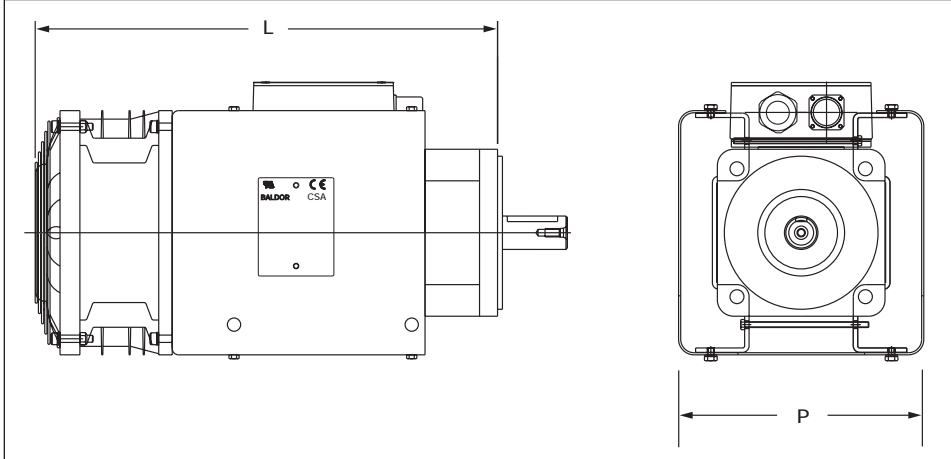


Brushless Servo Motors

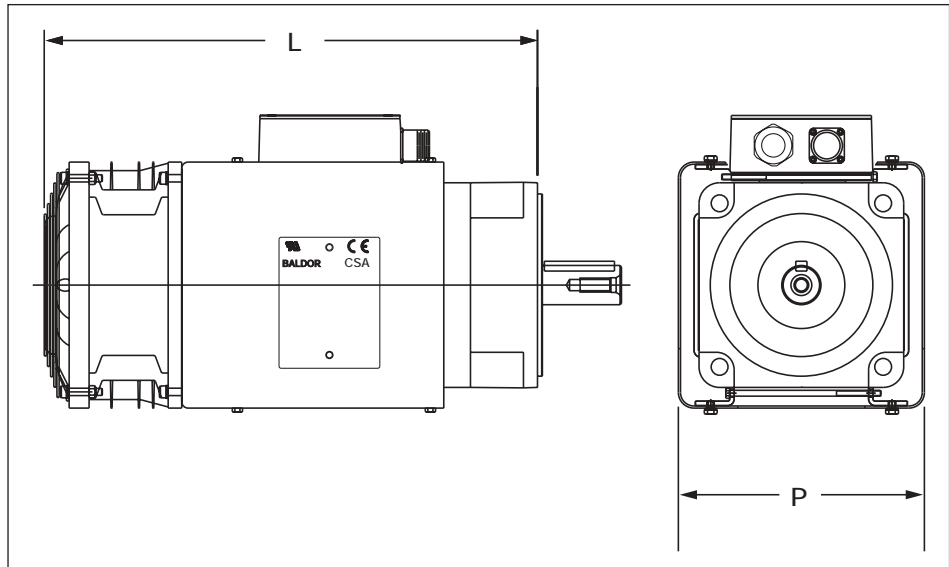
BSM Series with Blower Cooling Option

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-in-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.

Overview

Software

Motion Controls

AC Controls

AC Motors

DC Controls

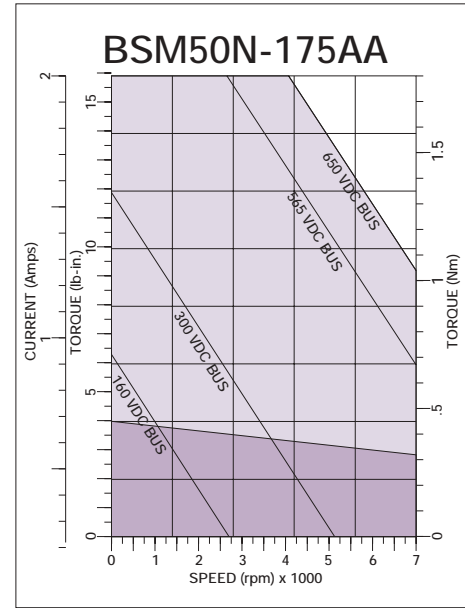
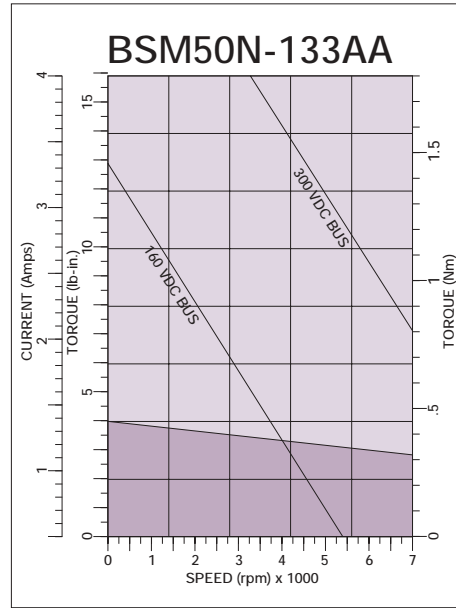
DC Motors

Linear Motors

Linear Stages

Engineering Information

BSM N-Series Performance Curves



Catalog Number		BSM50N-133AA	BSM50N-175AA
General			
Continuous Stall Torque	lb-in	3.9	3.9
	N-m	0.45	0.45
Continuous Current	amps	1.38	0.69
Peak Torque	lb-in	15.9	15.9
	N-m	1.80	1.80
Peak Current	amps	4.0	2
Mechanical Time Constant	msec	0.5	0.5
Electrical Time Constant	msec	0.16	0.3
Rated Speed	rpm	4000	4000
Rated Voltage	volts	160	300
Electrical			
Torque Constant	lb-in/amp	3.36	6.63
	N-m/amp	0.38	0.75
Voltage Constant	V _{pk} /krpm	32.3	64.9
	V _{rms} /krpm	22.9	45.9
Resistance	ohms	12.3	50.18
Inductance	mH	19.9	68
Mechanical			
Inertia	lb-in-s ²	0.00006	0.00006
	Kg-cm ²	0.0677	0.0677
Maximum Speed	rpm	7000	7000
Number of Motor Poles		4	4
Resolver Speed		1	1
Weight	lbs/Kg	2.4/1.1	2.4/1.1

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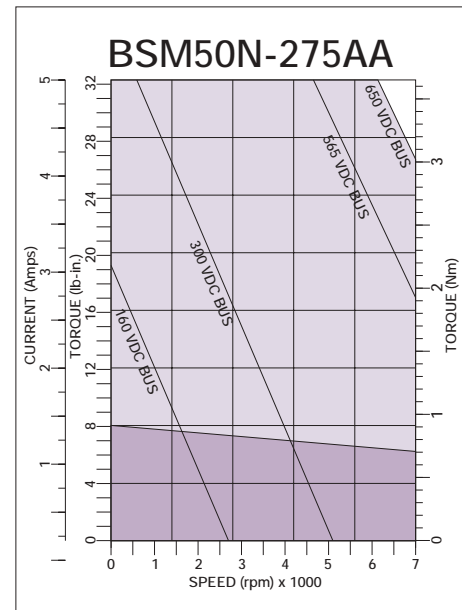
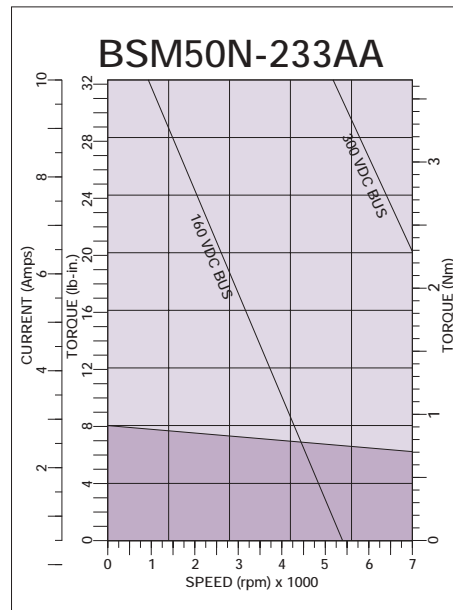
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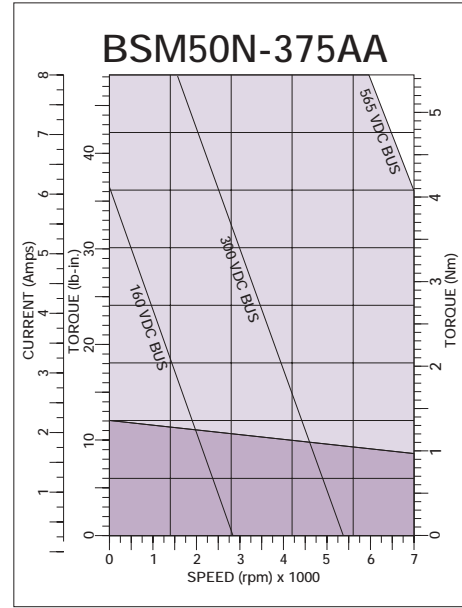
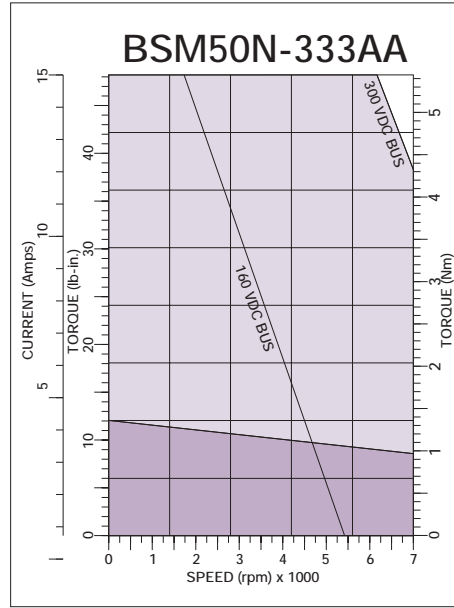
BSM N-Series Performance Curves



Catalog Number		BSM50N-233AA	BSM50N-275AA
General			
Continuous Stall Torque	lb-in	8	8
	N-m	0.91	0.91
Continuous Current	amps	2.87	1.40
Peak Torque	lb-in	32.3	32
	N-m	3.65	3.65
Peak Current	amps	10	5
Mechanical Time Constant	msec	0.34	0.35
Electrical Time Constant	msec	2.1	2.1
Rated Speed	rpm	4000	2000
Rated Voltage	volts	160	160
Electrical			
Torque Constant	lb-in/amp	3.36	6.63
	N-m/amp	0.38	0.75
Voltage Constant	V _{pk} /krpm	32.3	64.9
	V _{rms} /krpm	22.9	45.9
Resistance	ohms	4.07	16.2
Inductance	mH	8.9	35.1
Mechanical			
Inertia	lb-in-s ²	0.00011	0.00011
	Kg-cm ²	0.124	0.124
Maximum Speed	rpm	7000	7000
Number of Motor Poles		4	4
Resolver Speed		1	1
Weight	lbs/Kg	3.4/1.6	3.4/1.6

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BSM N-Series Performance Curves



Catalog Number		BSM50N-333AA	BSM50N-375AA
General			
Continuous Stall Torque	lb-in	12	12
	N-m	1.36	1.36
Continuous Current	amps	4.3	2.2
Peak Torque	lb-in	48.15	48.15
	N-m	5.44	5.44
Peak Current	amps	15	8
Mechanical Time Constant	msec	0.29	0.29
Electrical Time Constant	msec	1.9	1.8
Rated Speed	rpm	4000	4000
Rated Voltage	volts	160	300
Electrical			
Torque Constant	lb-in/amp	3.31	6.38
	N-m/amp	0.375	0.722
Voltage Constant	V _{pk} /krpm	31.9	61.6
	V _{rms} /krpm	22.6	43.6
Resistance	ohms	2.2	8.25
Inductance	mH	4.2	15.16
Mechanical			
Inertia	lb-in-s ²	0.00016	0.00016
	Kg-cm ²	0.18	0.18
Maximum Speed	rpm	7000	7000
Number of Motor Poles		4	4
Resolver Speed		1	1
Weight	lbs/Kg	4.4/2	4.4/2

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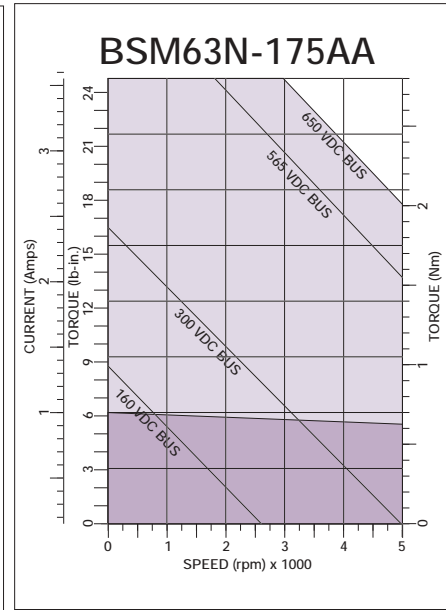
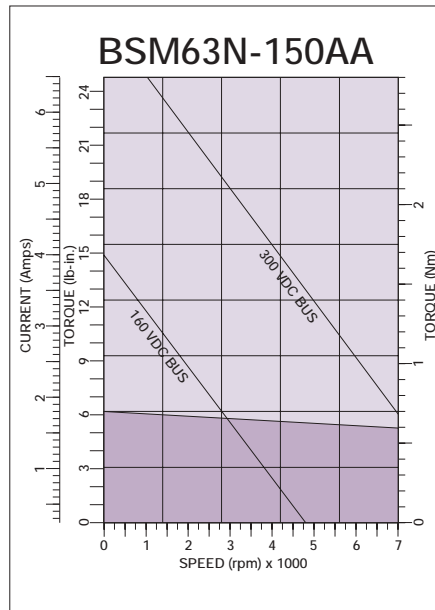
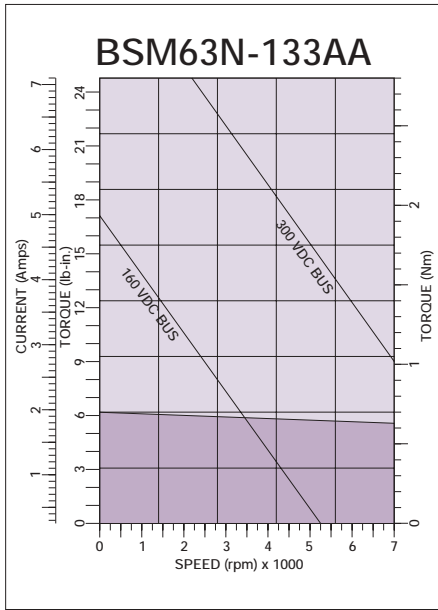
DC Motors

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BSM N-Series Performance Curves



Catalog Number		BSM63N-133AA	BSM63N-150AA	BSM63N-175AA
General				
Continuous Stall Torque	lb-in	6.8	6.8	6.8
	N-m	0.77	0.77	0.77
Continuous Current	amps	2.17	1.98	1.08
Peak Torque	lb-in	27.25	27.25	27.25
	N-m	3.08	3.08	3.08
Peak Current	amps	7.82	7.14	3.91
Mechanical Time Constant	msec	1.2	1.3	1.2
Electrical Time Constant	msec	1.3	1.4	1.4
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.48	3.81	6.96
	N-m/amp	0.394	0.431	0.787
Voltage Constant	V _{pk} /krpm	33.65	36.82	67.30
	V _{rms} /krpm	23.80	26.04	47.60
Resistance	ohms	9.4	12.1	37.4
Inductance	mH	12.77	17.20	53.63
Mechanical				
Inertia	lb-in-s ²	0.00018	0.00018	0.00018
	Kg-cm ²	0.2031	0.2031	0.2031
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	3.7/1.68	3.7/1.68	3.7/1.68

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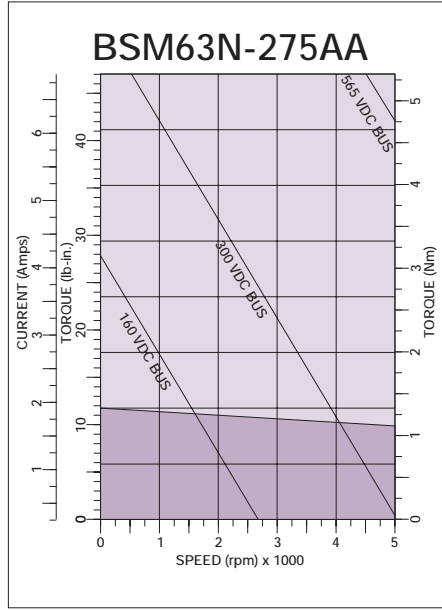
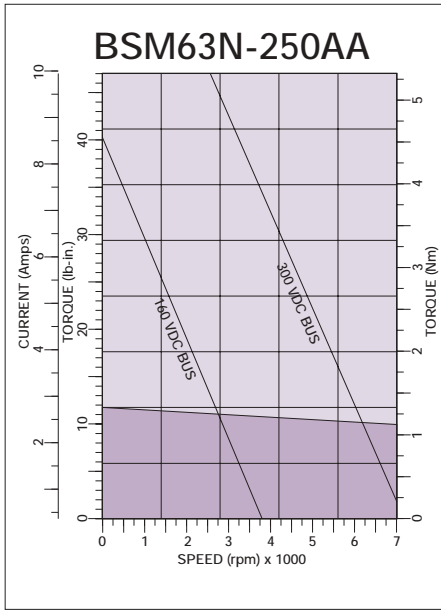
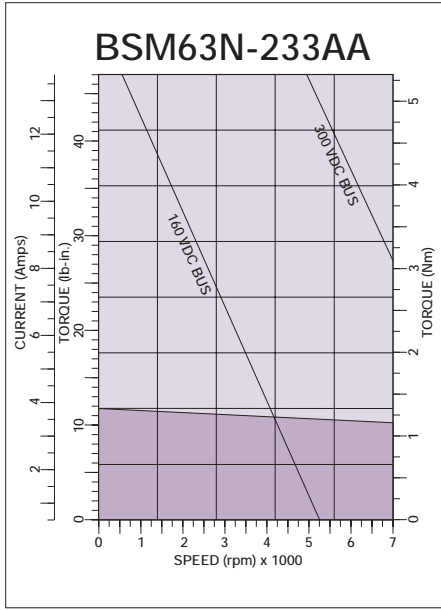
DC Controls

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Linear Motors

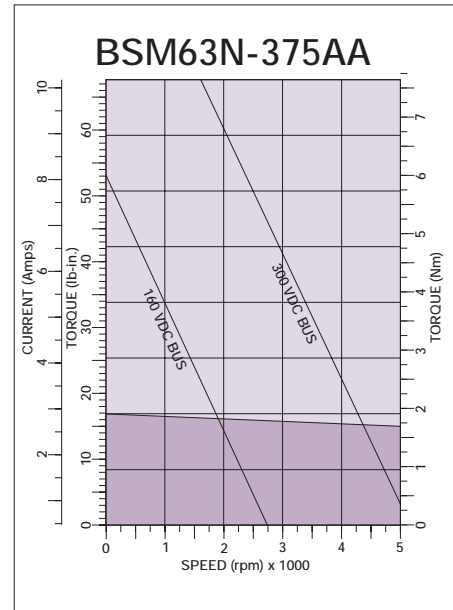
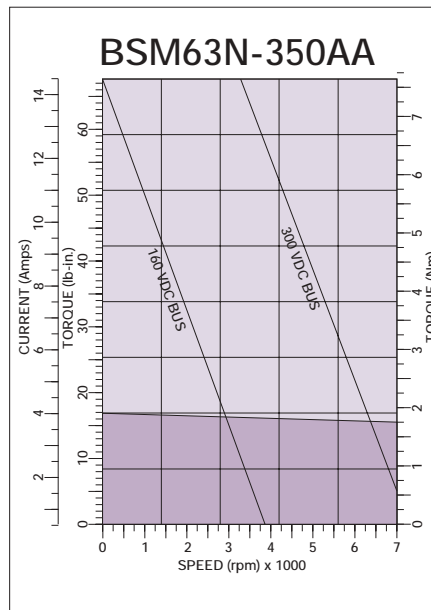
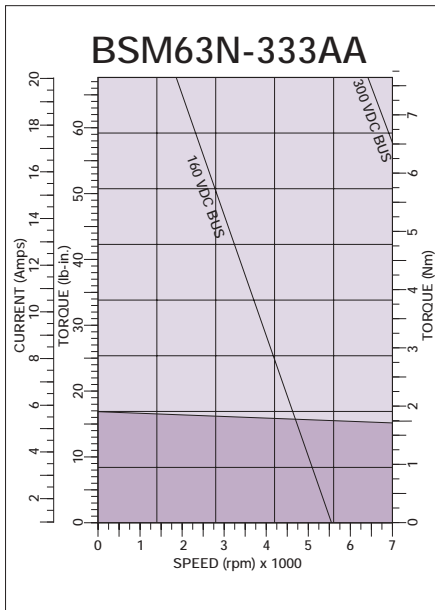
Linear Stages

Engineering Information



Catalog Number		BSM63N-233AA	BSM63N-250AA	BSM63N-275AA
General				
Continuous Stall Torque	lb-in	13	13	13
	N-m	1.47	1.47	1.47
Continuous Current	amps	4.23	3.05	2.11
Peak Torque	lb-in	52.04	52.04	52.04
	N-m	5.88	5.88	5.88
Peak Current	amps	15.23	10.99	7.61
Mechanical Time Constant	msec	0.79	0.75	0.74
Electrical Time Constant	msec	1.5	2.0	2.1
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.41	4.73	6.84
	N-m/amp	0.386	0.535	0.773
Voltage Constant	V _{pk} /krpm	33.0	45.71	66.0
	V _{rms} /krpm	23.35	32.33	46.71
Resistance	ohms	3.1	5.6	11.6
Inductance	mH	4.75	11.57	24.77
Mechanical				
Inertia	lb-in-s ²	0.00034	0.00034	0.00034
	Kg-cm ²	0.384	0.384	0.384
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	5/2.3	5/2.3	5/2.3

BSM N-Series Performance Curves



Catalog Number		BSM63N-333AA	BSM63N-350AA	BSM63N-375AA
General				
Continuous Stall Torque	lb-in	18.5	18.5	18.5
	N-m	2.09	2.09	2.09
Continuous Current	amps	6.26	4.4	3.09
Peak Torque	lb-in	73.99	73.99	73.99
	N-m	8.36	15.86	11.15
Peak Current	amps	22.53	14.49	10.19
Mechanical Time Constant	msec	0.61	0.66	0.59
Electrical Time Constant	msec	1.9	1.78	2.3
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.28	4.66	6.63
	N-m/amp	0.371	0.527	0.750
Voltage Constant	V _{pk} /krpm	31.74	45.07	64.13
	V _{rms} /krpm	22.45	31.88	45.36
Resistance	ohms	1.5	3.28	5.92
Inductance	mH	2.85	5.87	13.67
Mechanical				
Inertia	lb-in-s ²	0.00050	0.00050	0.00050
	Kg-cm ²	0.564	0.564	0.564
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	6.3/2.9	6.3/2.9	6.3/2.9

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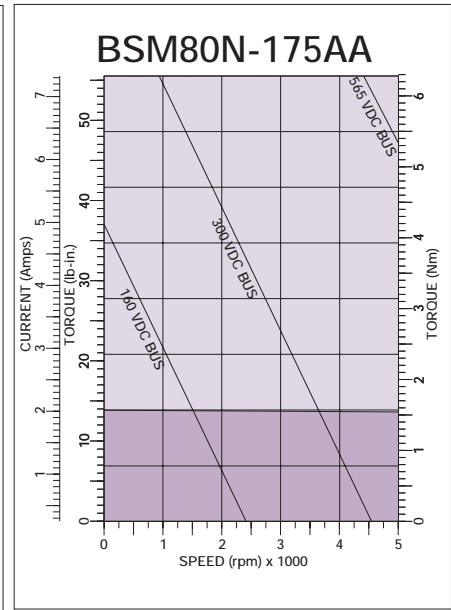
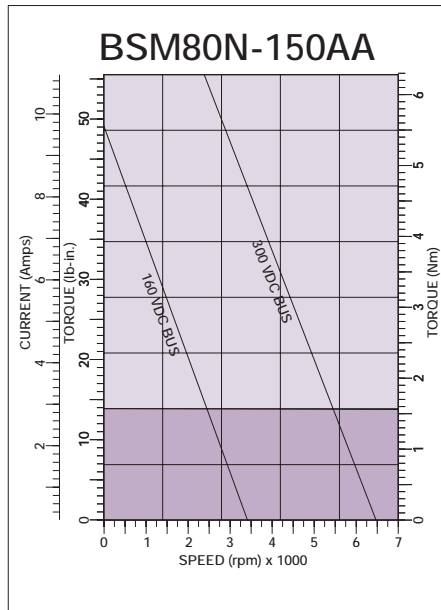
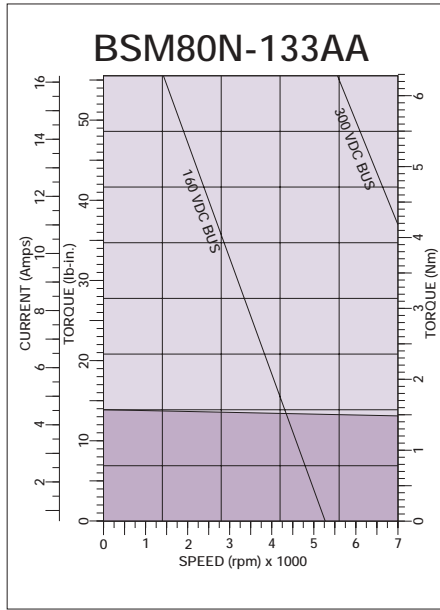
DC Controls

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Linear Motors

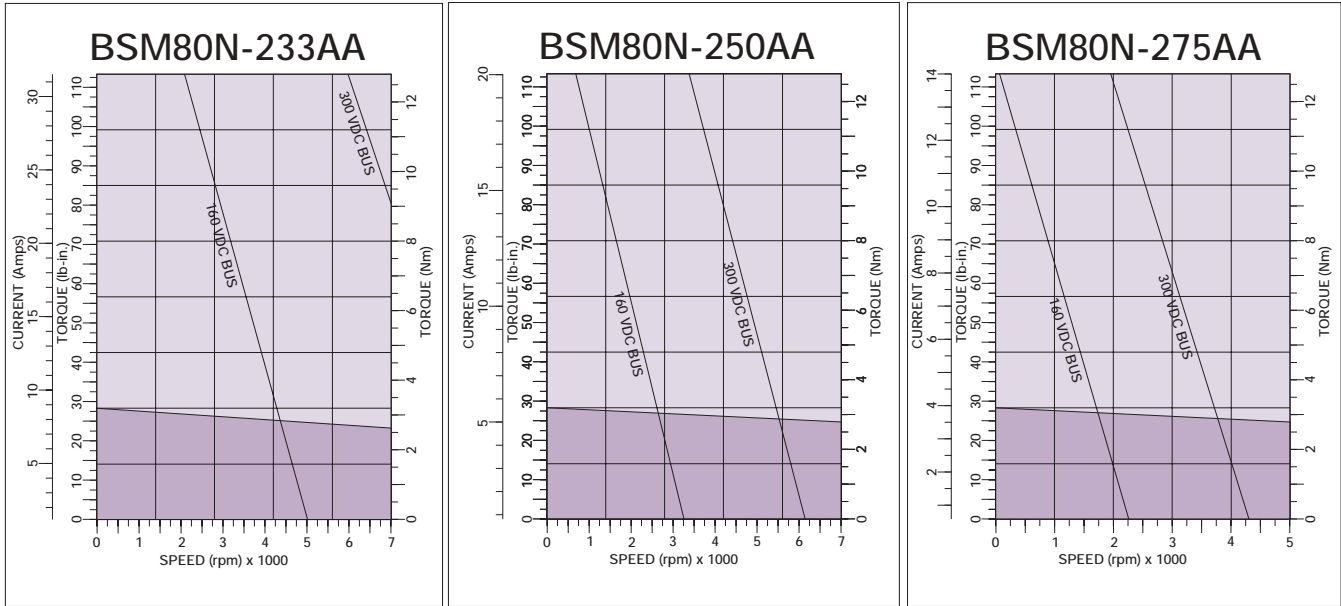
Linear Stages

Engineering Information



Catalog Number		BSM80N-133AA	BSM80N-150AA	BSM80N-175AA
General				
Continuous Stall Torque	lb-in	14.6	14.6	14.6
	N-m	1.65	1.65	1.65
Continuous Current	amps	4.74	3.05	2.14
Peak Torque	lb-in	58.41	58.41	58.41
	N-m	6.6	6.6	6.6
Peak Current	amps	17.1	11.0	7.69
Mechanical Time Constant	msec	1.2	1.2	1.2
Electrical Time Constant	msec	2.4	2.7	2.9
Rated Speed	rpm	6000	6000	4000
Rated Voltage	volts	200	300	300
Electrical				
Torque Constant	lb-in/amp	3.4	5.3	7.5
	N-m/amp	0.386	0.6	0.85
Voltage Constant	V _{pk} /krpm	29.6	51.3	73.3
	V _{rms} /krpm	21	36.3	51.8
Resistance	ohms	2.1	5.1	9.53
Inductance	mH	5.2	13.97	28.0
Mechanical				
Inertia	lb-in-s ²	0.00081	0.00081	0.00081
	Kg-cm ²	0.915	0.915	0.915
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	7/3.2	7/3.2	7/3.2

BSM N-Series Performance Curves



Catalog Number		BSM80N-233AA	BSM80N-250AA	BSM80N-275AA
General				
Continuous Stall Torque	lb-in	28.3	28.3	28.3
	N-m	3.2	3.2	3.2
Continuous Current	amps	8.76	5.61	3.93
Peak Torque	lb-in	113.28	113.28	113.28
	N-m	12.8	12.8	12.8
Peak Current	amps	31.5	20.2	14
Mechanical Time Constant	msec	0.86	0.77	0.67
Electrical Time Constant	msec	3.4	2.9	3.9
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.59	5.6	8.0
	N-m/amp	0.406	0.633	0.904
Voltage Constant	V _{pk} /krpm	34.7	54.1	77.3
	V _{rms} /krpm	24.6	38.29	54.7
Resistance	ohms	0.832	0.81	3.2
Inductance	mH	2.73	5.30	12.73
Mechanical				
Inertia	lb-in-s ²	0.00152	0.00152	0.00152
	Kg-cm ²	1.717	1.717	1.717
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	10/4.6	10/4.6	10/4.6

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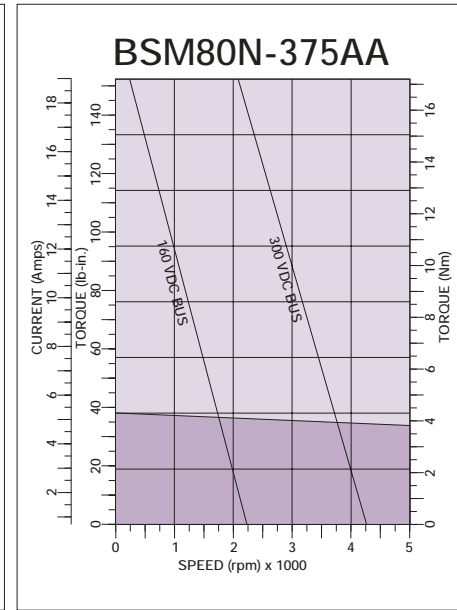
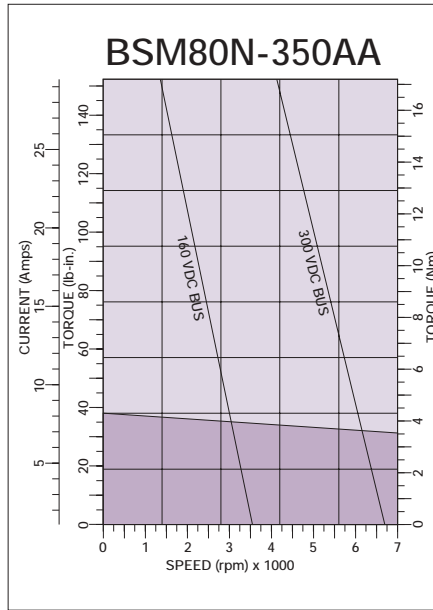
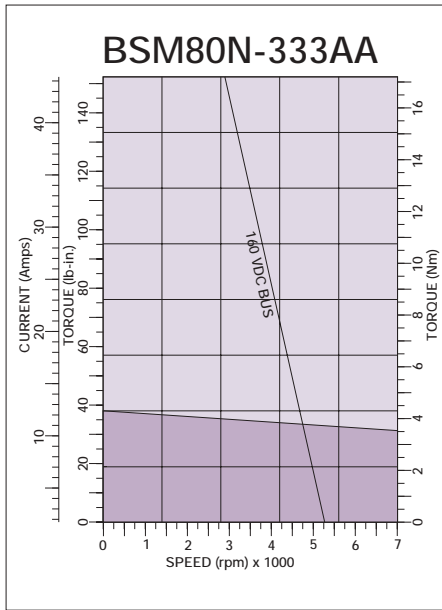
DC Controls

DC Motors

Linear Motors

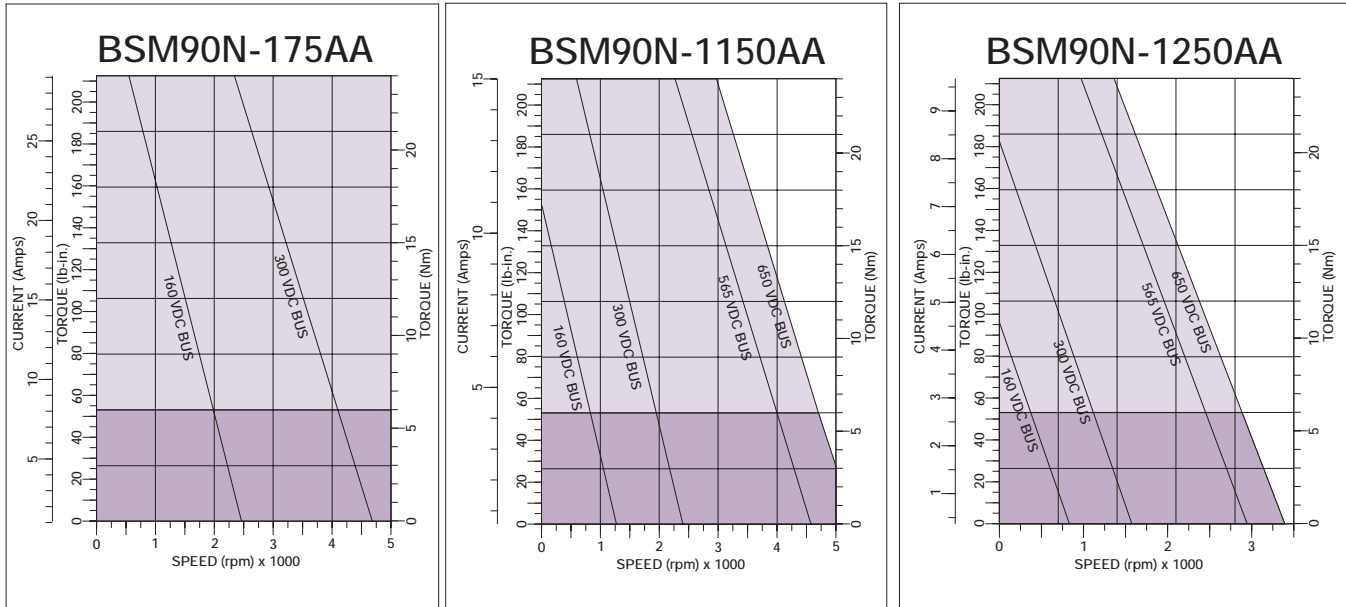
Linear Stages

Engineering Information



Catalog Number		BSM80N-333AA	BSM80N-350AA	BSM80N-375AA
General				
Continuous Stall Torque	lb-in	40	40	40
	N-m	4.52	4.52	4.52
Continuous Current	amps	12.98	8.61	5.54
Peak Torque	lb-in	160	160	160
	N-m	18.08	18.08	18.08
Peak Current	amps	46.71	31.01	19.96
Mechanical Time Constant	msec	0.72	0.69	0.69
Electrical Time Constant	msec	4.2	4.4	4.2
Rated Speed	rpm	6000	4000	4000
Rated Voltage	volts	200	200	300
Electrical				
Torque Constant	lb-in/amp	3.42	5.15	8.01
	N-m/amp	0.387	0.583	0.906
Voltage Constant	V _{pk} /krpm	33.2	49.7	77.4
	V _{rms} /krpm	23.41	35.2	54.7
Resistance	ohms	0.433	0.935	2.22
Inductance	mH	1.70	4.00	9.30
Mechanical				
Inertia	lb-in-s ²	0.00223	0.00223	0.00223
	Kg-cm ²	2.519	2.519	2.519
Maximum Speed	rpm	7000	7000	7000
Number of Motor Poles		4	4	4
Resolver Speed		1	1	1
Weight	lbs/Kg	13/6	13/6	13/6

BSM N-Series Performance Curves



Catalog Number		BSM90N-175AA	BSM90N-1150AA	BSM90N-1250AA
General				
Continuous Stall Torque	lb-in	53	53	53
	N-m	6	6	6
Continuous Current	amps	8.07	4.16	2.69
Peak Torque	lb-in	212.41	212.41	212.41
	N-m	24	24	24
Peak Current	amps	29.05	15	9.68
Mechanical Time Constant	msec	0.61	0.57	0.59
Electrical Time Constant	msec	3.3	4.0	4.0
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	7.31	14.16	21.93
	N-m/amp	0.826	1.60	2.47
Voltage Constant	V _{pk} /krpm	70.64	136.86	211.94
	V _{rms} /krpm	49.96	96.79	149.89
Resistance	ohms	1.24	4.33	10.66
Inductance	mH	4.15	17.6	43.50
Mechanical				
Inertia	lb-in-s ²	0.0030	0.0030	0.0030
	Kg-cm ²	3.389	3.389	3.389
Maximum Speed	rpm	6000	6000	4000
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	18/8.2	18/8.2	18/8.2

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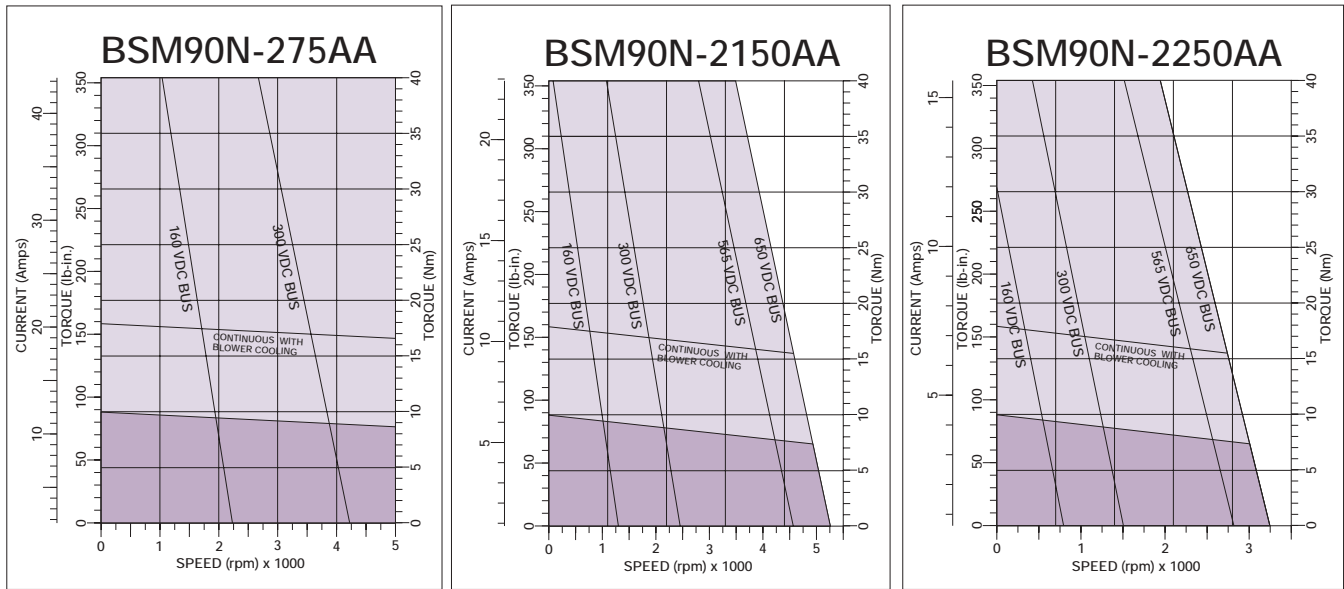
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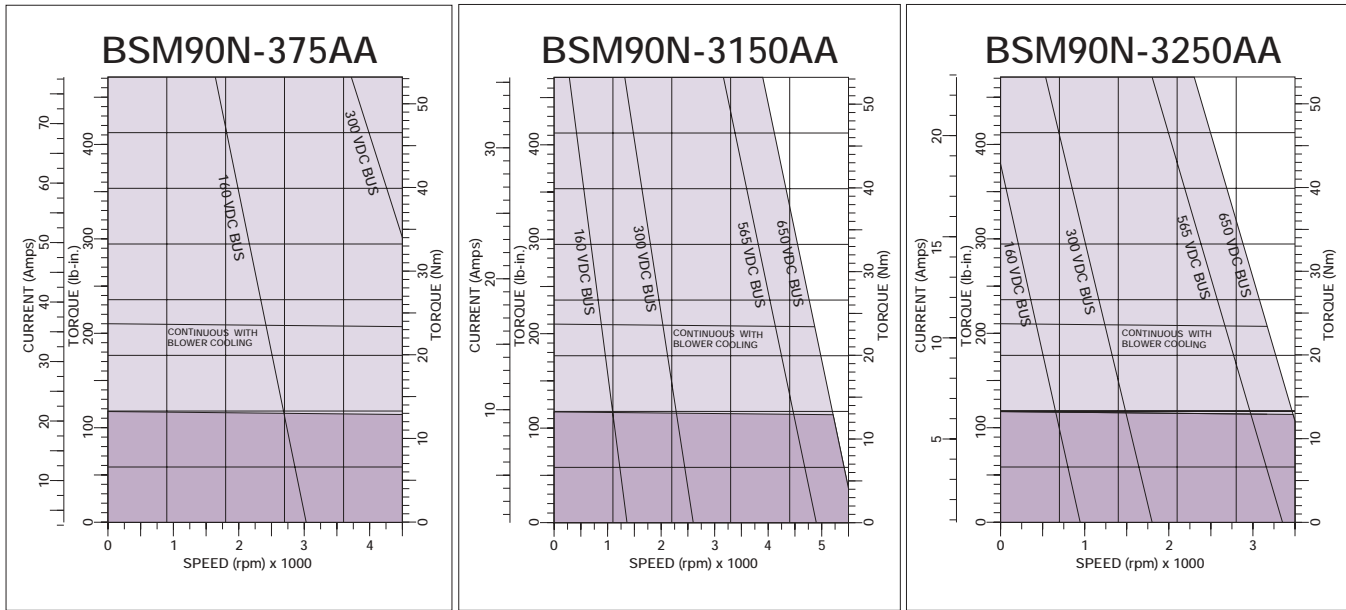
Engineering Information



Catalog Number		BSM90N-275AA	BSM90N-2150AA	BSM90N-2250AA
General				
Continuous Stall Torque	lb-in	88	88	88
	N-m	10	10	10
Continuous Current	amps	12.01	6.36	4.33
Peak Torque	lb-in	354	354	354
	N-m	40	40	40
Peak Current	amps	43.29	22.90	15.58
Mechanical Time Constant	msec	0.38	0.39	0.39
Electrical Time Constant	msec	5.0	5.4	5.7
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	8.17	15.45	22.72
	N-m/amp	0.924	1.745	2.568
Voltage Constant	V _{pk} /krpm	79.01	149.60	219.52
	V _{rms} /krpm	55.88	105.80	155.25
Resistance	ohms	0.523	0.917	3.94
Inductance	mH	2.66	10.5	22.5
Mechanical				
Inertia	lb-in-s ²	0.0056	0.0056	0.0056
	Kg-cm ²	6.327	6.327	6.327
Maximum Speed	rpm	6000	5700	4000
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	28/12.7	28/12.7	28/12.7

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

BSM N-Series Performance Curves



Catalog Number		BSM90N-375AA	BSM90N-3150AA	BSM90N-3250AA
General				
Continuous Stall Torque	lb-in	117	117	117
	N-m	13.3	13.3	13.3
Continuous Current	amps	19.6	8.92	5.77
Peak Torque	lb-in	471	471	471
	N-m	53.2	53.2	53.2
Peak Current	amps	70.73	32.14	20.79
Mechanical Time Constant	msec	0.4	0.4	0.4
Electrical Time Constant	msec	5.0	5.4	5.5
Rated Speed	rpm	4000	2000	1200
Rated Voltage	volts	300	300	300
Electrical				
Torque Constant	lb-in/amp	6.05	13.31	20.58
	N-m/amp	0.684	1.505	2.326
Voltage Constant	$V_{pk}/krpm$	58.45	264.41	198.87
	$V_{rms}/krpm$	41.34	90.97	140.65
Resistance	ohms	0.2075	1.02	2.39
Inductance	mH	1.257	5.53	13.18
Mechanical				
Inertia	lb-in-s ²	0.0082	0.0082	0.0082
	Kg-cm ²	9.264	9.264	9.264
Maximum Speed	rpm	6000	5800	4000
Number of Motor Poles		8	8	8
Resolver Speed		1	1	1
Weight	lbs/Kg	38/17.3	38/17.3	38/17.3

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

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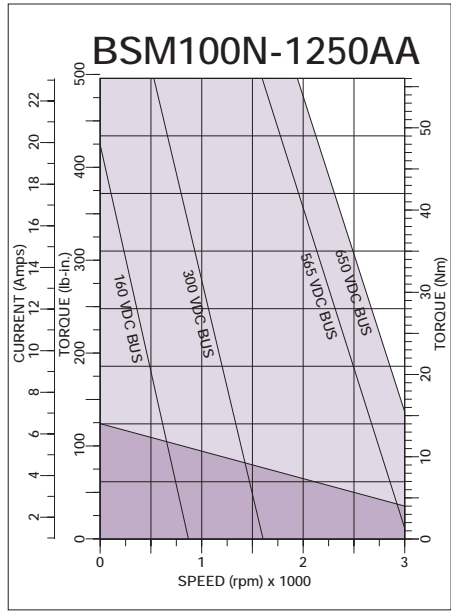
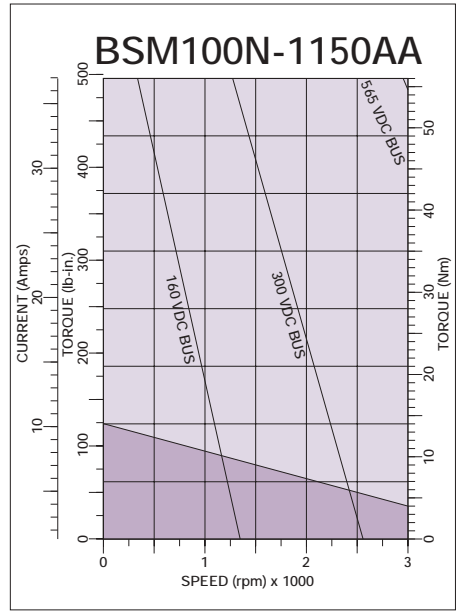
DC Controls

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Linear Motors

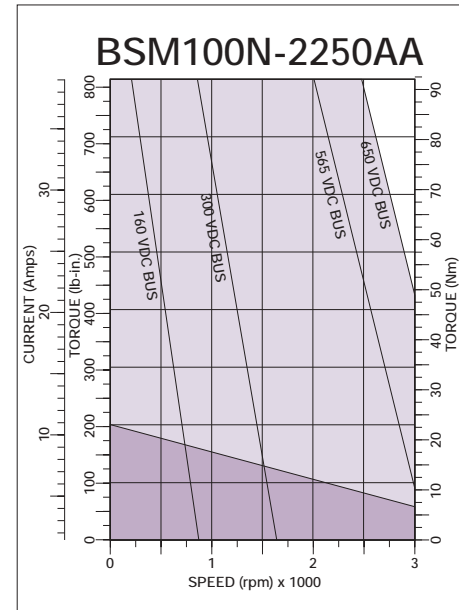
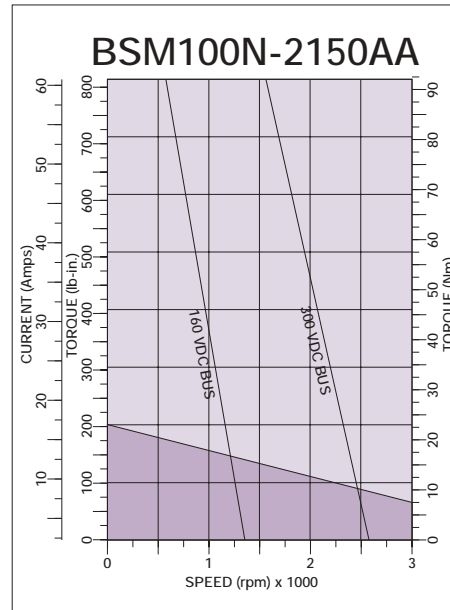
Linear Stages

Engineering Information



Catalog Number		BSM100N-1150AA	BSM100N-1250AA
General			
Continuous Stall Torque	lb-in	123.9	123.9
	N-m	14.0	14.0
Continuous Current	amps	10.26	6.41
Peak Torque	lb-in	495.6	495.6
	N-m	56.0	56.0
Peak Current	amps	36.95	23.09
Mechanical Time Constant	msec	0.54	0.54
Electrical Time Constant	msec	7.2	7.4
Rated Speed	rpm	2000	1200
Rated Voltage	volts	300	300
Electrical			
Torque Constant	lb-in/amp	13.41	21.46
	N-m/amp	1.515	2.425
Voltage Constant	V _{pk} /krpm	129.12	207.27
	V _{rms} /krpm	91.32	146.59
Resistance	ohms	0.9156	2.363
Inductance	mH	6.68	17.566
Mechanical			
Inertia	lb-in-s ²	0.0120	0.0120
	Kg-cm ²	13.558	13.558
Maximum Speed	rpm	3000	3000
Number of Motor Poles		8	8
Resolver Speed		1	1
Weight	lbs/Kg	35/16	35/16

BSM N-Series Performance Curves



Catalog Number		BSM100N-2150AA	BSM100N-2250AA
General			
Continuous Stall Torque	lb-in	203.5	203.5
	N-m	23.0	23.0
Continuous Current	amps	16.87	10.85
Peak Torque	lb-in	814.2	814.2
	N-m	92.0	92.0
Peak Current	amps	60.73	39.05
Mechanical Time Constant	msec	0.39	0.36
Electrical Time Constant	msec	8.2	9.4
Rated Speed	rpm	2000	1200
Rated Voltage	volts	300	300
Electrical			
Torque Constant	lb-in/amp	13.4	21.85
	N-m/amp	1.515	2.356
Voltage Constant	V _{pk} /krpm	129.46	201.42
	V _{rms} /krpm	91.56	142.45
Resistance	ohms	0.4021	0.879
Inductance	mH	3.33	8.35
Mechanical			
Inertia	lb-in-s ²	0.0196	0.0196
	Kg-cm ²	22.145	22.145
Maximum Speed	rpm	3000	3000
Number of Motor Poles		8	8
Resolver Speed		1	1
Weight	lbs/Kg	49/22.3	49/22.3

Overview

Software

Motion Controls

AC Controls

AC Motors

DC Controls

DC Motors

Linear Motors

Linear Stages

Engineering Information

BSM N-Series Performance Curves

Overview

Software

Motion Controls

AC Controls

AC Motors

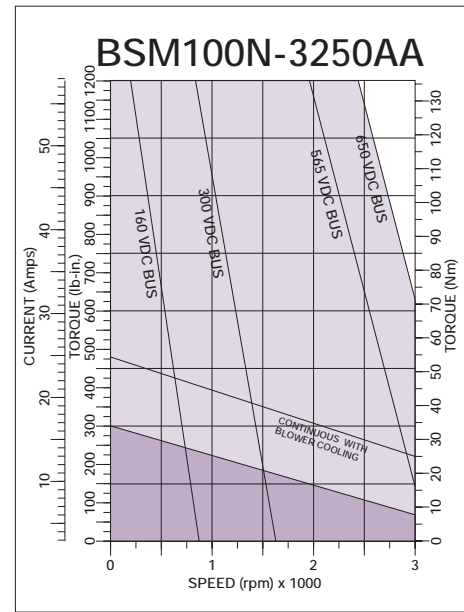
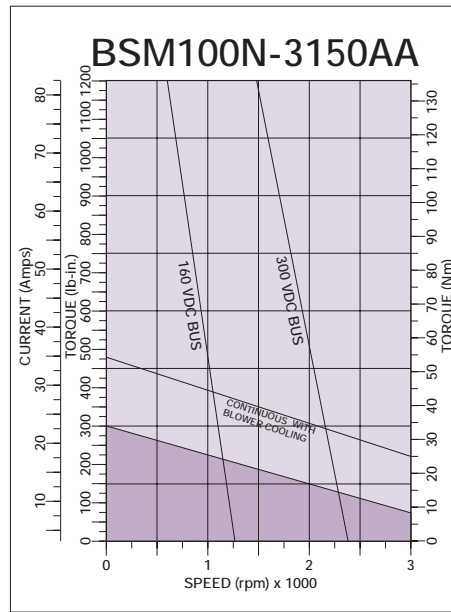
DC Controls

DC Motors

Linear Motors

Linear Stages

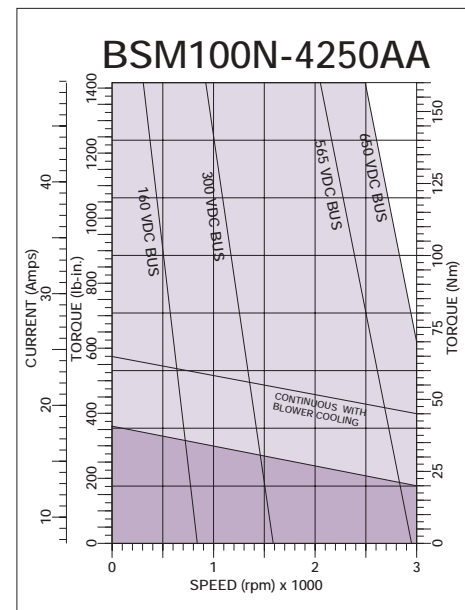
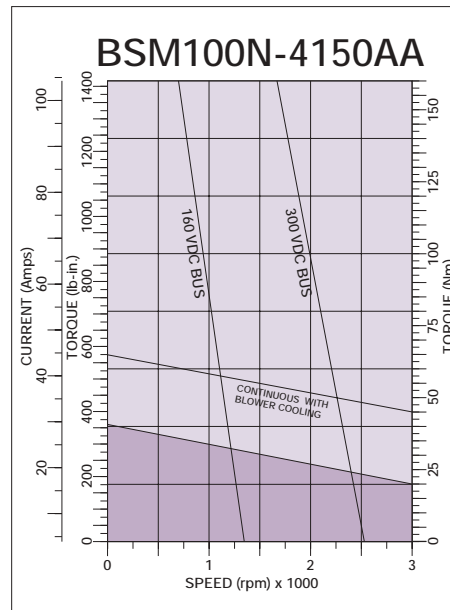
Engineering Information



Catalog Number		BSM100N-3150AA	BSM100N-3250AA
General			
Continuous Stall Torque	lb-in	300	300
	N-m	34.0	34.0
Continuous Current	amps	22.91	16.03
Peak Torque	lb-in	1203.16	1203.6
	N-m	136.0	136.0
Peak Current	amps	82.47	57.73
Mechanical Time Constant	msec	0.28	0.35
Electrical Time Constant	msec	10.9	9.7
Rated Speed	rpm	2000	1200
Rated Voltage	volts	300	300
Electrical			
Torque Constant	lb-in/amp	14.59	20.85
	N-m/amp	1.649	2.356
Voltage Constant	V _{pk} /krpm	140.96	201.38
	V _{rms} /krpm	99.69	142.42
Resistance	ohms	0.25	0.61
Inductance	mH	2.74	5.96
Mechanical			
Inertia	lb-in-s ²	0.0273	0.0273
	Kg-cm ²	30.844	30.844
Maximum Speed	rpm	3000	3000
Number of Motor Poles		8	8
Resolver Speed		1	1
Weight	lbs/Kg	63/28.6	63/28.6

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

BSM N-Series Performance Curves



Catalog Number	BSM100N-4150AA		BSM100N-4250AA	
General				
Continuous Stall Torque	lb-in	354	354	
	N-m	40.0	40.0	
Continuous Current	amps	28.95	18.09	
Peak Torque	lb-in	1416.0	1416.0	
	N-m	160.0	160.0	
Peak Current	amps	104.23	48.84	
Mechanical Time Constant	msec	0.31	0.28	
Electrical Time Constant	msec	10.3	11.5	
Rated Speed	rpm	2000	1200	
Rated Voltage	volts	300	300	
Electrical				
Torque Constant	lb-in/amp	13.58	21.74	
	N-m/amp	1.535	2.457	
Voltage Constant	$V_{pk}/krpm$	131.26	210.02	
	$V_{rms}/krpm$	92.83	148.53	
Resistance	ohms	0.18	0.42	
Inductance	mH	1.867	4.86	
Mechanical				
Inertia	lb-in-s ²	0.0349	0.0349	
	Kg-cm ²	39.431	39.431	
Maximum Speed	rpm	3000	3000	
Number of Motor Poles		8	8	
Resolver Speed		1	1	
Weight	lbs/Kg	77/35	77/35	

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

Overview

Software

Motion Controls

AC Controls

AC Motors

DC Controls

DC Motors

Linear Motors

Linear Stages

Engineering Information