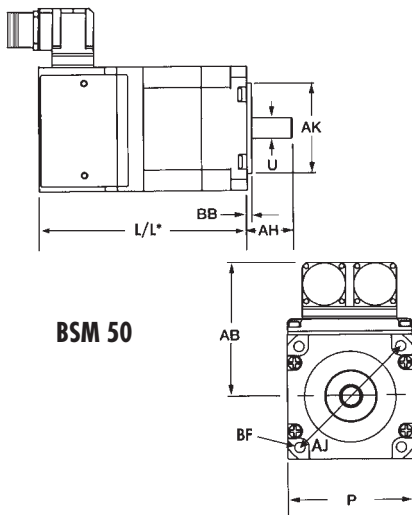


Brushless ac Servo Motors

BALDOR
MOTORS AND DRIVES

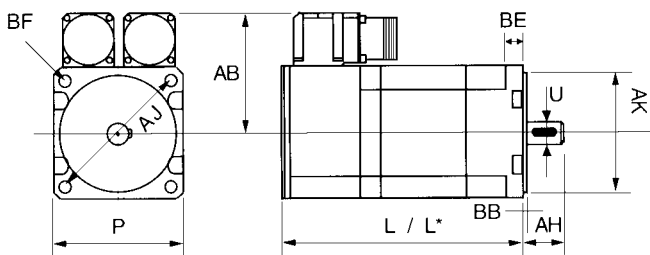
Dimension Specifications for 'BSM' Brushless Servo Motors



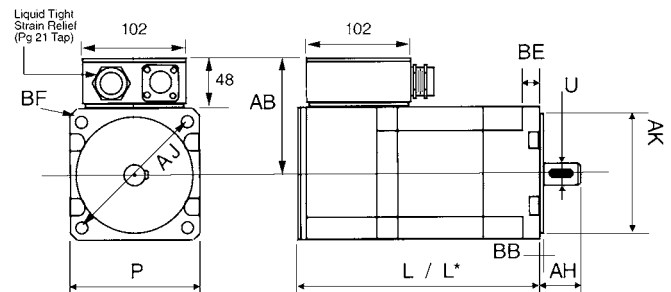
Catalogue N°	P	AK	AJ	BB	BF	BE	L	L*	AB	U	AH	Key	Tap	Wt. kg
BSM50A/N-1	55	40	63	2.5	4.5		102	137	67	9	20	—		1.1
BSM50A/N-2	55	40	63	2.5	4.5		127	162	67	9	20	—		1.6
BSM50A/N-3	55	40	63	2.5	4.5		153	188	67	9	20	—		2.0
BSM63A/N-1	67	60	75	2.5	5.6	8.0	116	145	65	11	23	4x4x12	M4x10	1.5
BSM63A/N-2	67	60	75	2.5	5.6	8.0	141	201	65	11	23	4x4x12	M4x10	2.2
BSM63A/N-3	67	60	75	2.5	5.6	8.0	167	227	65	11	23	4x4x12	M4x10	2.9
BSM80A/N-1	89	80	100	3.0	6.6	8.6	151	178	75	19	40	6x6x24	M6x16	3.6
BSM80A/N-2	89	80	100	3.0	6.6	8.6	183	242	75	19	40	6x6x24	M6x16	4.9
BSM80A/N-3	89	80	100	3.0	6.6	8.6	215	274	75	19	40	6x6x24	M6x16	6.3
BSM80B-1	89	80	100	3.0	6.6	8.6	183	210	75	19	40	6x6x24	M6x16	4.5
BSM80B-2	89	80	100	3.0	6.6	8.6	220	281	75	19	40	6x6x24	M6x16	6.0
BSM80B-3	89	80	100	3.0	6.6	8.6	258	319	75	19	40	6x6x24	M6x16	7.7
BSM80C-2	89	80	100	3	6.6	8.6	169	n/a	75	19	40	6x6x24	M6x16	4.5
BSM80C-3	89	80	100	3	6.6	8.6	195	n/a	75	19	40	6x6x24	M6x16	6.0
BSM90A/N-1	120	110	130	3.5	10.0	12.0	178	258	108	24	50	8x7x35	M8x16	8.0
BSM90A/N-2	120	110	130	3.5	10.0	12.0	228	308	108	24	50	8x7x35	M8x16	13.0
BSM90A/N-3	120	110	130	3.5	10.0	12.0	279	359	108	24	50	8x7x35	M8x16	17.0
BSM90B-1	120	110	130	3.5	10.0	12.0	181	261	108	24	50	8x7x35	M8x16	7.9
BSM90B-2	120	110	130	3.5	10.0	12.0	238	318	108	24	50	8x7x35	M8x16	11.8
BSM90B-3	120	110	130	3.5	10.0	12.0	295	375	108	24	50	8x7x35	M8x16	15.7
BSM90C-2	120	110	130	3.50	10	12	203	n/a	108	24	50	8x7x35	M8x16	7.9
BSM90C-3	120	110	130	3.50	10	12	241	n/a	108	24	50	8x7x35	M8x16	11.8
BSM100A/N-1	146	130	165	4.0	12.0	15.0	203	244	121	28	60	8x7x50	M10x20	16.0
BSM100A/N-2	146	130	165	4.0	12.0	15.0	254	295	121	28	60	8x7x50	M10x20	22.0
BSM100A/N-3	146	130	165	4.0	12.0	15.0	305	346	121	28	60	8x7x50	M10x20	28.0
BSM100A/N-4	146	130	165	4.0	12.0	15.0	356	396	121	28	60	8x7x50	M10x20	34.0
BSM100B-1	146	130	165	4.0	12.0	15.0	197	238	121	28	60	8x7x50	M10x20	13.4
BSM100B-2	146	130	165	4.0	12.0	15.0	273	314	121	28	60	8x7x50	M10x20	20.5
BSM100B-3	146	130	165	4.0	12.0	15.0	349	390	121	28	60	8x7x50	M10x20	27.6
BSM100B-4	146	130	165	4.0	12.0	15.0	381	422	121	28	60	8x7x50	M10x20	34.7

Dimensions in mm. L* = with Brake Option. All dimensions are approximate only and subject to constant change. Please confirm current specifications with Baldor.

BSM 63/80



BSM 90/100



How to utilise the Motor 'Torque Constant'

The adjacent formulae and explanation will assist in motor/servodriver selection by utilising the 'Torque Constant' value.

The 'Torque Constant' can be used to determine the 'Minimum Continuous Input Amps' required by a motor so that it can produce its 'Rated Continuous Torque'.

The 'Torque Constant' can be used to determine the 'Peak Torque' available from a motor, given the available peak torque from a servodriver.

The 'Torque Constant' is a figure which can be used to determine either –

1. The minimum continuous input amps required by the motor to enable the motor to achieve the full nominal continuous torque value given in our tables.

e.g. – Motor Model BSM80A-350 can develop a continuous stall torque = 4.52 Nm
And has a Motor Torque Constant of = 0.51 Nm/amp.

To achieve rated torque, the minimum continuous input amps can be determined using the following formula –

$$\text{Minimum Cont. Motor Input Amps} = \frac{\text{Stall Torque}}{\text{Torque Constant}} = \frac{4.52}{0.51} = 8.86 \text{ amps}$$

or

2. The PEAK TORQUE that the motor can develop is dependant on the PEAK AMPS available from the drive.

e.g. – Motor Model BSM80A-350 has a Torque Constant of – 0.51 Nm/amp – and if the available peak input amps = 20.0 amps, then the available peak motor torque can be determined using the following formula –

$$\begin{aligned} \text{Available Peak Motor Torque (Nm)} &= (\text{Peak Amps from Amplifier}) \times (\text{Torque Constant}) \\ &= 20.0 \times 0.51 \\ &= 10.2 \text{ Nm} \end{aligned}$$

NOTE – Of course the motor cannot provide continuous torque values greater than the rated torque value given in our tables, even when a high input amperage is available.