

Motors and Adjustable Speed Drives



Boston Gear's Ratiotrol controllers, companion motors and other Boston power transmission products combine to provide one of the most extensive systems available today.

Utilizing the latest electronic developments, these components have been designed to provide maximum capacity and flexibility in horsepower ratings, performance and available options.

They are readily adapted to existing machinery as well as being ideally suited for incorporation in original equipment. Choose from a variety of AC or DC motors and controllers.

This catalog provides complete descriptions, charts and instructions for selecting a variety of systems

For a complete listing of Boston Gear Electrical Products, refer to the Electrical Products Catalog.

using stock components. However, if your application needs cannot be readily solved with this selection, contact a Boston Gear customer service representative or your local Boston Gear distributor for an even wider variety of components.

Boston Gear's application engineers are readily available to assist with the initial planning and application analysis and specification of components. Combinations of options, interfacing with equipment external to the drives and proper selection of reducers and other auxiliary components are typical of the possibilities available to satisfy the most complex applications.

NOTE: All performance specifications listed in this catalog are based on steady state operating conditions; i.e. ambient temperature, line voltage, motor frame temperature, etc.

Section Contents

PRODUCT DESCRIPTIONS	325
NUMBERING SYSTEM	326
QUICK SELECTION CHART	327-328
AC DRIPPROOF & TOTALLY ENCLOSED MOTORS.....	329
DC TOTALLY ENCLOSED MOTORS	332
MOTOR DIMENSIONS.....	330-331 and 333
BOST-KLEEN SPEED REDUCERS / MOTORS.....	334
MOTOR CONTROLLERS	335-337

NEMA C-Face Motors

Catalog Numbering System

AC MOTORS

HP	VOLTAGE	ENCL.	SUFFIX	MANUFACTURER	SERIES DESIGNATION	VOLTAGE	HP	ENCLOSURE	MANUFACTURER
A - 1/20	R - 115/230-1-60	T - TENV	B - BRAKE	B = BALDOR	PM - PERMANENT	9 - 90VDC	16 - 1/6	T, AT - TENV	B=BALDOR
AA - 1/12	S - 115-1-60	TF - TEFC	35 - 3450 RPM	W = WEG	MAGNET	18 - 180VDC	25 - 1/4	TF,ATF - TEFC	Blank = Boston Gear
C - 1/6	T - 230-1-60		11 - 1150 RPM				33 - 1/3		
D - 1/4	U - 230/460-3-60						50 - 1/2		
E - 1/3	Y - 575-3-60						75 - 3/4		
F - 1/2							100 - 1		
G - 3/4							150 - 1-1/2		
H - 1							200 - 2		
J - 1-1/2							300 - 3		
K - 2							500 - 5		
L - 3									
M - 5									
N - 7-1/2									
P - 10									
R - 15									
S - 20									

PM MOTORS

Letters after dash indicate manufacturer:
 B = Baldor
 W = WEG
 Blank = Boston Gear

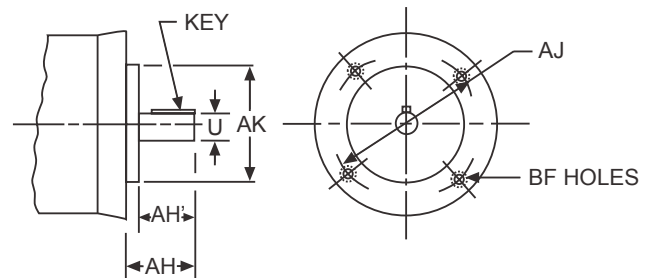
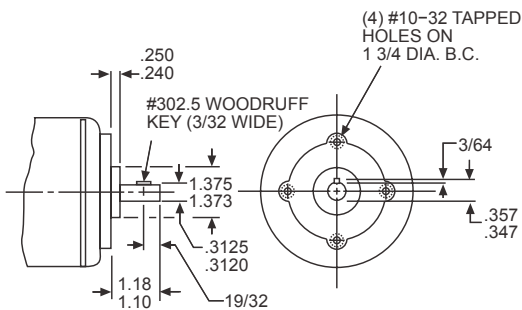
CATALOG NUMBER EXAMPLE: FUTF-W
 1/2 HP, 230/460-3-60, TEFC, BOSTON GEAR

CATALOG NUMBER EXAMPLE: PM916AT-B
 PERMANENT MAGNET, 90VDC, 1/6 HP, TENV, BALDOR

NEMA Motor Bolt Circle Dimensions

(SPECIAL) END MOUNTED

ALL LISTED NEMA FRAMES



ALL DIMENSIONS IN INCHES

BORE CODE	NEMA MTG.	U	AK	MAX. AH	MAX. AH'	KEY		AJ	BF
						SQ.	LG.		
B4	42CZ	.5000 .4995	3.000 2.997	1 5/16	—	1/8	3/4	3 3/4	1/4-20
B5	56C	.6250 .6245	4.500 4.497	2 5/32	—	3/16	1 3/8	5 7/8	3/8-16
B7	182C	.8750 .8745	4.500	2 5/32	—	3/16	1 3/8	5 7/8	3/8-16
	184C		4.497						
	143TC 145TC								
B9	213C	1.1250 1.1245	8.500	—	2 25/32	1/4	1 3/4	7 1/4	1/2-13
	215C		8.497						
	182TC 184TC								
B11	254UC	1.3750 1.3745	8.500	—	3 17/32	5/16	2 3/8	7 1/4	1/2-13
	256UC		8.497						
	213TC								
	215TC								
B13	254TC	1.6250	8.500	—	3 13/16	3/8	2 7/8	7 1/4	1/2-13
	256TC	1.6240	8.497						

Flanged reducers are designed for use with motors having NEMA "C" face and shaft dimensions as shown. AH and AH' must not be exceeded.

Adjustable Speed Control Systems - Quick Selection Chart

HP (MOTOR)	RATIOTROL CONTROLLERS		RPM † (RANGE)	TORQUE (MAXIMUM) (LB. IN.)	FLANGED REDUCERS**	MOTORS	
	DC †					AC †	DC †
1/6	RBA2S		350-12	27	F710-5	ACUT* CUTF	APM916 PM916
			175-6	53	F710-10		
			117-4	77	F710-15		
			88-3	98	F710-20		
			70-2.5	117	F713-25		
			58-2	132	F713-30		
				139	F710-30		
			44-1.5	128	F710-40		
				178	F713-40		
			35-1.2	120	F710-50		
210	F715-50						
29-1	223	F718-60					
1/4	RBA2S		350-12	41	F710-5	ADUFT* DUFT	APM925 PM925
			175-6	80	F710-10		
			117-4	116	F710-15		
			88-3	130	F710-20		
				148	F713-20		
			70-2.5	175	F713-25		
			58-2	208	F713-30		
			44-1.5	266	F715-40		
			35-1.2	315	F715-50		
			29-1	335	F718-60		
1/3	RBA2S		350-12	55	F710-5	AEUTF* EUTF	APM933* PM933
			175-6	107	F710-10		
			117-4	155	F713-15		
			88-3	197	F713-20		
			70-2.5	234	F713-25		
			58-2	277	F715-30		
			44-1.5	355	F715-40		
			35-1.2	420	F718-50		
			29-1	440	F718-60		
			1/2	RBA2S			
175-6	160	F713-10					
117-4	232	F713-15					
88-3	295	F715-20					
70-2.5	350	F715-25					
58-2	416	F718-30					
44-1.5	533	F721-40					
35-1.2	630	F721-50					
29-1	670	F721-60					
3/4	RBA2S					350-12	123
			175-6	240	F715-10		
			117-4	348	F715-15		
			88-3	443	F718-20		
			70-2.5	526	F721-25		

* NEMA 42CZ Frame Motors.

** For Flanged Reducer w/coupling specify RF Model.

† Speed range shown demonstrates a 30 to 1 speed range which is typical when using a single phase DC Controller and Permanent Magnet Motor. Consult your Boston Gear distributor for your particular application.



Adjustable Speed Control Systems - Quick Selection Chart

HP (MOTOR)	RATIOTROL CONTROLLERS		RPM † (RANGE)	TORQUE (MAXIMUM) (LB. IN.)	FLANGED REDUCERS**	MOTORS	
	DC †					AC †	DC †
3/4 (CONT.)	RBA2S		58-2	624	F721-30	GUTF	PM975
			44-1.5	800	F724-40		
			35-1.2	945	F724-50		
			29-1	1004	F726-60		
1	RBA2S		350-12	165	F713-5	HUTF	PM9100
			175-6	320	F718-10		
			117-4	422	F718-15		
			88-3	590	F721-20		
			70-2.5	702	F721-25		
			58-2	832	F724-30		
			44-1.5	1066	F726-40		
			35-1.2	1260	F726-50		
29-1	1340	F730-60					
1-1/2	RBA2S		350-12	256	F715-5	JUTF	PM18150
			175-6	460	F718-10		
			117-4	646	F721-15		
			88-3	886	F724-20		
			70-2.5	1056	F724-25		
			58-2	1247	F726-30		
			44-1.5	1598	F730-40		
			35-1.2	1890	F732-50		
29-1	2009	F732-60					
2	RBA2S		350-12	328	F718-5	KUTF	PM18200
			175-6	640	F721-10		
			117-4	929	F724-15		
			88-3	1180	F726-20		
			70-2.5	1440	F730-25		
			58-2	1663	F732-30		
			44-1.5	2131	F732-40		
			35-1.2	2520	F732-50F		
29-1	2678	F738-60					
3	VES3S		350-12	491	F724-5	LUTF	PM18300
			175-6	960	F726-10		
			117-4	1393	F730-15		
			88-3	1771	F730-20		
			70-2.5	2150	F732-25F		
			58-2	2495	F732-30F		
			44-1.5	3196	F738-40		
			35-1.2	4016	F738-50F		
29-1	4020	RF752-60					
5	VES5S		175-6	1602	F732-10	MUTF	PM18500
			117-4	2230	F732-15F		
			88-3	2952	F738-20		
			58-2	4180	RF752-30		
			44-1.5	5328	RF752-40		
			35-1.2	6300	RF752-50F		
29-1	7392	RF760-60F					

** For Flanged Reducer w/coupling specify RF Model.

† Speed range shown demonstrates a 30 to 1 speed range which is typical when using a single phase DC Controller and Permanent Magnet Motor. Consult your Boston Gear distributor for your particular application.

AC Motors Totally Enclosed and Open Dripproof

@ 1750 RPM Input

ORDER BY CATALOG NUMBER OR ITEM CODE

HP	NEMA MTG.	BORE CODE †	TOTALLY ENCLOSED*						OPEN DRIPPROOF			
			115/230-1-60		208-230/460-3-60		575-3-60		115/230-1-60		208-230/460-3-60	
			CATALOG NUMBER	ITEM CODE	CATALOG NUMBER	ITEM CODE	CATALOG NUMBER	ITEM CODE	CATALOG NUMBER	ITEM CODE	CATALOG NUMBER	ITEM CODE
1/20	SP	—	AST-B**	65403	—	—	—	—	—	—	—	—
1/12	SP	—	AAST-B**	65402	—	—	—	—	—	—	—	—
1/6	42CZ	B4	ACRT-W	65320	ACUT-W	65368	—	—	—	—	—	—
	42CZ	B4	ACRTF-B	69725	ACUT-B	69728	—	—	—	—	—	—
	56C	B5	CRTF-W	65316	CUTF-W	65371	—	—	CR-W	65221	CU-W	65237
	56C	B5	CRT-B	85775	CUT-B	85776	—	—	CR-B	85773	CU-B	85774
1/4	42CZ	B4	ADRT-W	65325	ADUT-W	65374	—	—	—	—	—	—
	42CZ	B4	ADRTF-B	69726	ADUTF-B	69729	—	—	—	—	—	—
	56C	B5	DRTF-W	65326	DUTF-W	65380	—	—	DR-W	65222	DU-W	65238
			DRTF-B	66199	DUTF-B	66205	DYTF-B	66208	DR-B	66109	DU-B	66115
DSTF-B**			66202	—	—	—	—	DS-B**	66112	—	—	
1/3	42CZ	B4	AERT-W	65346	AEUT-W	65381	—	—	—	—	—	—
	56C	B5	AERTF-B	69727	AEUTF-B	69730	—	—	—	—	—	—
	56C	B5	ERTF-W	65348	EUTF-W	65383	EYTF-W	65454	ER-W	65223	EU-W	65239
1/2	56C	B5	ERTF-B	66211	EUTF-B	66214	EYTF-B	66217	ER-B	66121	EU-B	66124
			FRTF-W	65350	FUTF-W	65404	FYTF-W	65455	FR-W	65224	FU-W	65241
3/4	56C	B5	FRTF-B	66219	FUTF-B	66223	FYTF-B	66226	FR-B	66130	FU-B	66133
			GRTF-W	65351	GUTF-W	65405	GYTF-W	65457	—	—	GU-W	65243
1	56C	B5	GRTF-B	66228	GUTF-B	66231	GYTF-B	66831	GR-B	66139	GU-B	66142
			HRTF-5/8-W	65354	HUTF-5/8-W	65406	—	—	—	—	HU-5/8-W	65246
	143TC	B7	HRTF-5/8-B	19178	HUTF-5/8-B	50428	HYTF-5/8-B	19179	HR-5/8-B	19183	HU-5/8-B	50427
1-1/2	56C	B5	—	—	HUTF-W	65412	HYTF-W	65460	—	—	HU-W	65249
			—	—	HUTF-B	66237	HYTF-B	66240	HR-B	66145	HU-B	66148
	145TC	B7	—	—	JUTF-5/8-W	65407	—	—	—	—	—	—
2	56C	B5	—	—	JUTF-5/8-B	19784	—	—	—	—	—	—
			—	—	KUTF-5/8-W	65440	—	—	—	—	—	—
	145TC	B7	—	—	KUTF-5/8-B	19785	—	—	—	—	—	—
3	182TC	B9	—	—	KUTF-W	65445	—	—	—	—	KU-W	65256
			—	—	KUTF-B	66252	KYTF-B	66255	—	—	KU-B	66163
5	184TC	B9	—	—	LUTF-W	65446	—	—	—	—	LU-W	65257
			—	—	LUTF-B	66258	LYTF-B	66260	—	—	LU-B	66166
7-1/2	213TC	B11	—	—	MUTF-W	65448	—	—	—	—	MU-W	65258
			—	—	MUTF-B	66262	MYTF-B	66264	—	—	MU-B	66170
10	215TC	B11	—	—	NUTF-B	66266	—	—	—	—	—	—
15	254TC	B13	—	—	PUTF-B	66270	—	—	—	—	—	—
20	256TC	B13	—	—	RUTF-B	66274	—	—	—	—	—	—
			—	—	SUTF-B	66278	—	—	—	—	—	—

* T = TENV – Totally Enclosed, Non-ventilated.

** 115 Volt only.

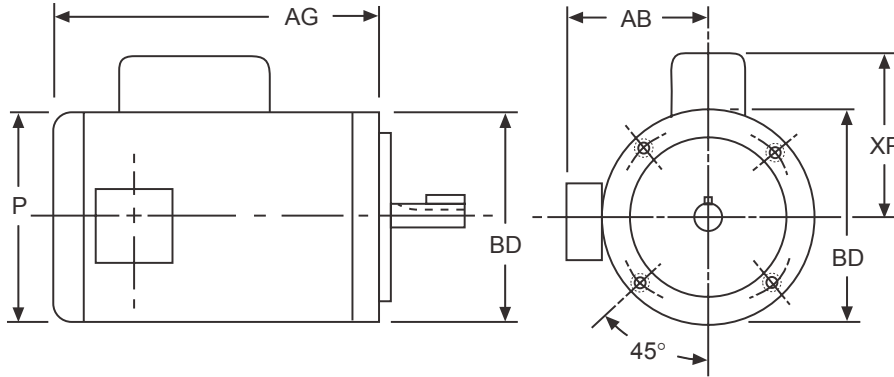
TF = TEFC – Totally Enclosed, Fan Cooled.

† See Page 326 for Bore Code explanation.

Letters after dash indicate manufacturer — W = WEG.; B = Baldor

FOR DIMENSIONS OF THESE MOTORS, SEE PAGES 330 AND 331
 FOR OTHER AVAILABLE MOTORS, CONSULT FACTORY OR REFER TO
 BOSTON GEAR'S COMPLETE ELECTRICAL PRODUCTS CATALOG.

AC Open Dripproof Motor Dimensions

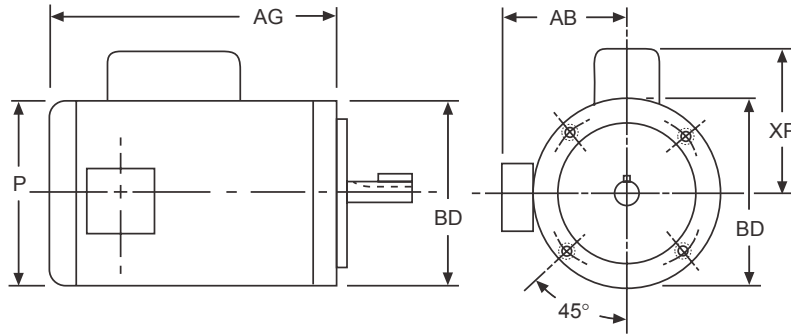


ALL DIMENSIONS IN INCHES

HP	NEMA MTG.	BORE CODE	-W (WEG) MOTORS							HP	NEMA MTG.	BORE CODE	-B (BALDOR) MOTORS						
			CATALOG NUMBER	ITEM CODE	AB	AG	BD	XP	P				CATALOG NUMBER	ITEM CODE	AB	AG	BD	XP	P
1/20	SPL	—	—	—	—	—	—	—	—	1/20	SPL	SPL	AST-B	65403	—	7.62	4.51	—	4.62
1/12	SPL	—	—	—	—	—	—	—	—	1/12	SPL	SPL	AAST-B	80994	—	7.62	4.51	—	4.62
1/6	56C	B5	CR-W	65221	—	7.58	5.75	3.80	5.71	1/6	56C	B5	CR-B	85773	4.41	8.04	5.87	4.34	5.69
	56C	B5	CU-W	65237	—	8.25	6.54	—	6.54		56C	B5	CU-B	85774	4.41	8.04	5.87	—	5.69
1/4	56C	B5	DR-W	65222	—	7.58	5.75	3.80	5.75	1/4	56C	B5	DR-B	66109	4.41	8.04	5.87	4.34	5.69
	56C	B5	DS-W	65220	—	7.58	5.75	3.80	5.75		56C	B5	DS-B	66112	4.41	8.04	5.87	4.34	5.69
	56C	B5	DU-W	65238	—	8.25	6.54	—	6.54		56C	B5	DU-B	66115	4.41	8.04	5.87	—	5.69
1/3	56C	B5	ER-W	65223	—	8.49	5.75	3.80	5.75	1/3	56C	B5	ER-B	66121	4.41	8.04	5.87	4.34	5.69
	56C	B5	EU-W	65239	—	8.25	6.54	—	6.54		56C	B5	EU-B	66124	4.41	8.04	5.87	—	5.69
1/2	56C	B5	FR-W	65224	—	8.49	5.75	3.80	5.75	1/2	56C	B5	FR-B	66130	4.41	8.29	5.87	4.34	5.69
	56C	B5	FU-W	65241	—	8.25	6.54	—	6.54		56C	B5	FU-B	66133	4.41	8.29	5.87	—	5.69
3/4	56C	B5	GR-W	65228	—	—	—	—	—	3/4	56C	B5	GR-B	66139	4.41	9.53	5.87	5.02	5.69
	56C	B5	GU-W	65243	—	9.04	6.54	—	6.54		56C	B5	GU-B	66142	4.41	8.67	5.87	—	5.69
1	56C	B5	—	—	—	—	—	—	—	1	56C	B5	HR-5/8-B	19183	5.09	10.00	6.50	5.49	5.69
	—	—	HU-5/8-W	65246	—	9.04	6.54	—	6.54		56C	B5	HU-5/8-B	50427	5.06	9.54	5.87	—	5.69
	143TC	B7	—	—	—	—	—	—	—		143TC	B7	HR-B	66145	5.09	10.00	6.50	5.49	6.62
	—	—	—	—	—	—	—	—	—		143TC	B7	HU-B	66148	5.12	9.00	6.50	—	6.62
1-1/2	145TC	B7	—	—	—	—	—	—	—	1-1/2	145TC	B7	JR-B	66154	5.09	10.00	6.50	5.49	6.62
	—	—	—	—	—	—	—	—	—		145TC	B7	JU-B	66157	5.09	9.00	6.50	—	6.62
2	145TC	B7	—	—	—	—	—	—	—	2	145TC	B7	KU-B	66163	5.09	10.00	6.50	—	6.62
3	182TC	B9	—	—	—	—	—	—	—	3	182TC	B9	LU-B	66166	5.88	10.75	6.50	—	7.88

Note: See Page 326 for mounting and shaft dimensions.

AC Totally Enclosed Motor Dimensions



ALL DIMENSIONS IN INCHES

HP	NEMA MTG.	BORE CODE	WEG MOTORS							-B (BALDOR) MOTORS						
			CATALOG NUMBER	ITEM CODE	AB	AG	BD	XP	P	CATALOG NUMBER	ITEM CODE	AB	AG	BD	XP	P
1/6	56C	B5	CRTF-W	65316	5.43	9.04	6.54	4.13	7.32	CRTF-B	85777	4.90	9.29	5.81	4.41	6.19
	56C	B5	CUTF-W	65371	5.43	9.04	6.54	—	7.32	CUTF-B	85778	4.90	9.29	5.81	—	6.19
1/4	56C	B5	DRTF-W	65326	5.43	9.04	6.54	4.13	7.32	DRTF-B	66199	5.18	9.29	5.81	4.41	6.19
	56C	B5	—	—	—	—	—	—	—	DSTF-B	66202	4.51	9.29	5.81	4.41	6.19
	56C	B5	DUTF-W	65380	5.43	9.04	6.54	—	7.32	DUTF-B	66205	4.51	9.32	5.81	4.41	6.19
	56C	B5	—	—	—	—	—	—	—	DYTF-B	66208	4.53	9.29	5.81	—	6.19
1/3	56C	B5	ERTF-W	65348	5.43	9.04	6.54	4.13	7.32	ERTF-B	66211	4.51	9.32	5.81	4.41	6.19
	56C	B5	EUTF-W	65383	5.43	9.04	6.54	—	7.32	EUTF-B	66214	4.51	9.32	5.81	—	6.19
	56C	B5	EYTF-W	65454	5.43	9.04	6.54	—	7.32	EYTF-B	66217	4.51	9.32	5.81	—	6.19
1/2	56C	B5	FRTF-W	65350	5.43	9.04	6.54	4.13	7.32	FRTF-B	66219	4.51	9.94	5.81	4.41	6.19
	56C	B5	FUTF-W	65404	5.43	9.04	6.54	—	7.32	FUTF-B	66223	4.51	9.32	5.81	—	6.19
	56C	B5	FYTF-W	65455	5.43	9.04	6.54	—	7.32	FYTF-B	66226	4.51	9.32	5.81	—	6.19
3/4	56C	B5	GRTF-W	65351	5.43	9.04	6.54	4.13	7.32	GRTF-B	66228	4.51	11.29	5.81	5.08	6.19
	56C	B5	GUTF-W	65405	5.43	9.04	6.54	—	7.32	GUTF-B	66231	4.51	9.32	5.81	—	6.19
	56C	B5	GYTF-W	65457	5.43	9.04	6.54	—	7.32	GYTF-B	66831	5.22	10.19	6.50	—	7.19
1	56C	B5	HRTF-5/8-W	65354	5.43	10.22	6.54	—	7.32	HRTF-5/8-B	19178	4.90	11.29	5.81	5.56	6.19
	56C	B5	HUTF-5/8-W	65406	5.43	10.22	6.54	—	7.32	HUTF-5/8-B	50428	5.22	10.19	6.50	—	7.19
	56C	B5	—	—	—	—	—	—	—	HYTF-5/8-B	19179	5.22	10.19	6.50	—	7.19
	143TC	B7	—	—	—	—	—	—	—	HRTF-B	66234	5.22	11.19	6.50	5.56	7.19
	143TC	B7	HUTF-W	65412	5.43	10.95	6.54	—	7.32	HUTF-B	66237	4.51	10.80	5.81	—	6.19
1-1/2	143TC	B7	—	—	—	—	—	—	—	HYTF-B	66240	5.22	10.19	6.50	—	7.19
	56C	B5	JUTF-5/8-W	65407	5.43	10.22	6.54	—	7.32	JUTF-5/8-B	19784	5.22	10.19	6.50	—	7.19
	145TC	B7	—	—	—	—	—	—	—	JRTF-B	66243	5.22	12.06	6.50	5.56	7.19
	145TC	B7	JUTF-W	65437	5.43	10.95	6.54	—	7.32	JUTF-B	66246	5.22	10.19	6.50	—	7.19
2	145TC	B7	JYTF-W	65475	5.43	10.95	6.54	—	7.32	JYTF-B	66249	5.22	10.19	6.50	—	7.19
	56C	B5	KUTF-5/8-W	65440	5.43	11.40	6.54	—	7.32	—	—	—	—	—	—	—
	145TC	B7	KUTF-W	65445	5.43	12.13	6.54	—	7.32	KUTF-B	66252	5.22	11.19	6.50	—	7.19
3	145TC	B7	—	—	—	—	—	—	—	KYTF-B	66255	5.22	11.19	6.50	—	7.19
	182TC	B9	LUTF-W	65446	6.61	13.24	8.88	—	8.75	LUTF-B	66258	6.00	12.31	8.86	—	8.49
5	182TC	B9	—	—	—	—	—	—	—	LYTF-B	66260	6.00	12.31	8.86	—	8.49
	184TC	B9	MUTF-W	65448	6.61	13.24	8.88	—	8.75	MUTF-B	66262	6.00	13.68	8.86	—	8.49
7-1/2	213TC	B11	—	—	—	—	—	—	—	NUTF-B	66266	7.45	15.28	9.04	—	10.34
10	215TC	B11	—	—	—	—	—	—	—	PUTF-B	66270	7.45	16.41	9.04	—	10.34
15	254TC	B13	—	—	—	—	—	—	—	RUTF-B	66274	9.22	16.32	9.10	—	10.28

Note: See page 326 for mounting and shaft dimensions.

T = Totally-enclosed, non-ventilated.

TF = Totally-enclosed, fan cooled.

Quick Selection Guide – DC NEMA C-Face Motors

Permanent Magnet Totally Enclosed 1750 RPM Motors

ORDER BY CATALOG NUMBER OR ITEM CODE

HP	NEMA MTG.	BORE CODE †	CATALOG NUMBER*	ITEM CODE
1/6	56C	B5	PM916AT-B	19120
			PM916T	59476
1/4	56C	B5	PM925AT-B	19121
			PM925T	59478
1/3	56C	B5	PM933AT-B	19122
			PM933T	59480
1/2	56C	B5	PM950AT-B	19123
			PM950TF	59481
			PM1850TF-B	19186
			PM1850TF	59482

* AT, T = TENV – Totally Enclosed, Non-ventilated.

TF = TEFC – Totally Enclosed, Fan Cooled.

† See Page 326 for Bore Code explanation.

PM9-90 VDC (Armature Voltage)

PM18-180 VDC (Armature Voltage)

Letters after dash indicate manufacturer – B = Baldor
Blank = Boston Gear

ORDER BY CATALOG NUMBER OR ITEM CODE

HP	NEMA MTG.	BORE CODE †	CATALOG NUMBER*	ITEM CODE
3/4	56C	B5	PM975TF-B	69853
			PM975TF	59483
			PM1875TF-B	69866
			PM1875TF	59484
1	56C	B5	PM9100TF-5/8-B	50421
			PM9100TF-5/8	59486
			PM18100TF-5/8-B	50424
			PM18100TF-5/8	59488
	56CZ	B7	PM9100TF-B	69867
			PM9100TF	59485
			PM18100TF-B	69869
			PM18100TF	59487
1-1/2	56CZ	B7	PM18150TF-B	69870
	140TC	B7	PM18150TF	59489
2	56CZ	B7	PM18200TF-B	68783
	140TC	B7	PM18200TF	59490
3	184TC	B9	PM18300TF-B	69411
5	1810ATC	B9	PM18500TF-B	69412

ENCLOSURES—Most applications can utilize open dripproof motors; other enclosures are listed. For information purposes, the various enclosures are defined below.

OPEN, DRIPPROOF—Same as open, except the construction of motor prevents the entrance of drops of liquid or particles falling on the motor at any angle not greater than 15 degrees from vertical.

TOTALLY-ENCLOSED—A motor so constructed as to prevent free exchange of air between the inside and outside of the motor case, but not air-tight.

TOTALLY-ENCLOSED, NON-VENTILATED (TENV)—A totally-enclosed motor with openings closed and of sufficient size and mass to permit the necessary heat dissipation to eliminate the need for external cooling.

TOTALLY-ENCLOSED, FAN-COOLED (TEFC)—Basically a TENV motor which has an external fan to blow cooling air over the motor. The additional cooling eliminates the necessity of a more costly oversized TENV motor. NOTE: TENV and TEFC construction are equal in all respects regarding application, temperature capabilities and performance.

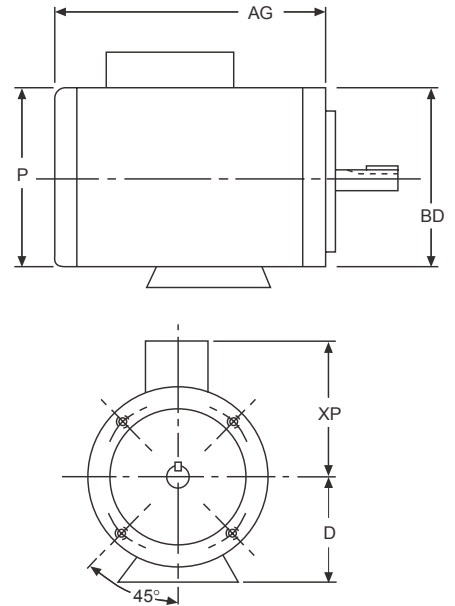
FOR DIMENSIONS OF THESE MOTORS, SEE PAGE 333.
FOR OTHER AVAILABLE MOTORS, CONSULT FACTORY.

DC Permanent Magnet Motor Dimensions

ALL DIMENSIONS IN INCHES

HP	NEMA MTG.	BORE CODE	CATALOG NUMBER	AG	BD	XP	P	D
1/6	56C	B5	PM916T	7.13	6.50	4.47	4.87	3.50
1/4	56C	B5	PM925T	7.66	6.50	4.47	4.87	3.50
1/3	56C	B5	PM933T	8.13	6.50	4.47	4.87	3.50
1/2	56C	B5	PM950TF	9.75	6.50	4.47	4.87	3.50
	56C	B5	PM1850TF	9.75	6.50	4.47	4.87	3.50
3/4	56C	B5	PM975TF	12.25	6.50	4.47	4.87	3.50
	56C	B5	PM1875TF	11.75	6.50	4.47	4.87	3.50
1	56CZ	B7	PM9100TF	14.25	6.50	4.87	5.61	3.50
	56C	B5	PM9100TF-5/8	14.25	6.50	4.87	5.61	3.50
	56CZ	B7	PM18100TF	13.25	6.50	4.87	5.61	3.50
	56C	B5	PM18100TF-5/8	13.25	6.50	4.87	5.61	3.50
1-1/2	140TC	B7	PM18150TF	16.21	6.50	5.31	6.50	3.50
2	140TC	B7	PM18200TF	17.21	6.50	5.31	6.50	3.50

Note: See page 326 for mounting and shaft dimensions.



ALL DIMENSIONS IN INCHES

HP	NEMA MTG.	BORE CODE	-B (BALDOR) MOTORS					
			CATALOG NUMBER	AG	BD	XP	P	D
1/6	56C	B5	PM916AT-B	8.25	6.50	4.56	4.69	3.50
1/4	56C	B5	PM925AT-B	9.19	6.50	4.56	4.69	3.50
1/3	56C	B5	PM933AT-B	10.13	6.50	4.56	4.69	3.50
1/2	56C	B5	PM950AT-B	11.88	6.50	4.56	4.69	3.50
	56C	B5	PM1850TF-B	10.56	6.63	4.00	4.87	3.50
3/4	56C	B5	PM975TF-B	11.69	6.63	4.00	5.81	3.50
	56C	B5	PM1875TF-B					
1	56CZ	B7	PM9100TF-B	12.57	6.63	4.00	5.81	3.50
	56C	B5	PM9100TF-5/8-B					
	56CZ	B7	PM18100TF-B					
	56C	B5	PM18100TF-5/8-B					
1-1/2	56CZ	B7	PM18150TF-B	15.06	6.63	4.25	6.50	3.50
2	56CZ	B7	PM18200TF-B	16.06	6.63	4.25	6.50	3.50
3	184TC	B9	PM18300TF-B	21.46	9.00	6.06	7.88	4.50
5	1810ATC	B9	PM18500TF-B	25.46	9.00	6.06	7.88	4.50

AC Bost-Kleen Washdown Duty Motors

White Bost-Kleen Motors

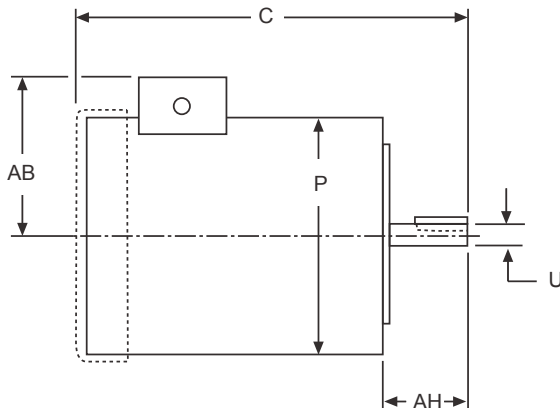
- AC Motors 1/2 - 5 HP
- DC Motors 1/4 - 3/4 HP
- Durable White Epoxy Finish
- Gasketed Thru Bolts
- Weep Holes
- NEMA C-Face Mounting
- BISSC certified



Designed for food processing and other corrosive applications where the motor is constantly exposed to an environment requiring high pressure washdown to maintain cleanliness.

WHITE BISSC CERTIFIED MOTORS	HP	CATALOG NUMBER	ITEM CODE	NEMA MOUNTING	ENCLOSURE
AC MOTORS 230/460 VAC 3 PHASE 60 HZ	1/2	FUT-WB-B	69105	56C	TENV
	3/4	GUT-WB-B	69106	56C	TENV
	1	HUT-5/8-WB-B	69123	56C	TENV
	1	HUT -WB-B	69107	143TC	TENV
	1-1/2	JUTF-WB-B	69110	145TC	TEFC
	2	KUTF-WB-B	69111	145TC	TEFC
	3	LUTF-WB-B	69112	182TC	TEFC
	5	MUTF-WB-B	69113	184TC	TEFC

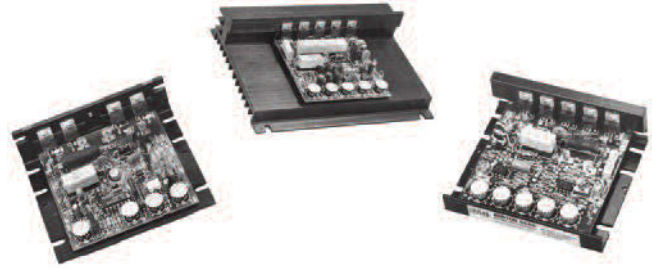
Dimensions



HP	CATALOG NUMBER	U +.0000 -.0005	C	AH	P	AB
1/2	FUT-WB-B	.6250	11.06	2.06	6.62	5.25
3/4	GUT-WB-B	.6250	12.12	2.06	6.62	5.25
1	HUT-5/8-WB-B	.6250	12.12	2.06	6.62	5.25
1	HUT-WB-B	.8750	12.12	2.13	6.62	5.25
1-1/2	JUTF-WB-B	.8750	12.38	2.13	6.62	5.25
2	KUTF-WB-B	.8750	13.38	2.13	6.62	5.25
3	LUTF-WB-B	1.1250	15.18	2.63	7.88	5.88
5	MUTF-WB-B	1.1250	16.56	2.63	7.88	5.88

DCX® Series – Chassis

DC Motor Speed Controller 1/12 to 3 Horsepower



Boston Gear has developed the DCX Series DC motor speed controllers and options for use by both the OEM and user. They have been designed to provide the performance and reliability you expect from Boston Gear in a compact, low cost controller.

DCX Series drives consist of three chassis controllers with ratings up to 3 horsepower, single and dual voltages, tachometer feedback and inhibit circuits.

Design Criteria

These controllers are designed for proper performance and high reliability when operated within the following parameters.

- Line Voltage 115 or 230 VAC ± 10%
- Line Frequency 50 or 60 Hz ± 2 Hz
- Output Power
 - 115 VAC input Armature 0-90VDC
 - Field 100 VDC
 - 230 VAC input Armature 0-180 VDC
 - Field 200 VDC
- Tachometer Feedback Signal 50 or 100 VDC/1000 RPM
- Service Factor 1.0
- Duty Continuous
- Overload Capacity 150% for 1 Minute
- Ambient Temperature 0-50°C (32°-122°F)
- Altitude 3300 Ft (1000 Meters) Maximum

ORDER BY CATALOG NUMBER OR ITEM CODE

HORSEPOWER RANGE (2)		CATALOG NUMBER (1)	ITEM CODE	FUNCTION (3)
115 VAC	230 VAC			
1/12-1/2	1/2 - 1	DCX202C	65985	Run-Stop
1/12-1 1/2	1/2-3	DCX302C	65986	Run-Stop

Notes: (1) DCX Units are furnished with a potentiometer rated 5K ohms, 1/2 watt for separate mounting.

(2) Units may be easily recalibrated for any standard rating within the range of the product using trimpots.

Performance Characteristics

Controlled Speed Range 0 to Base Speed
Speed Regulation:

REGULATION METHOD	VARIABLE				SPEED RANGE
	LOAD CHANGE 95%	LINE VOLTAGE ±10%	FIELD HEATING COLD/NORMAL	TEMP. ±10°C	
Standard Voltage Feedback with IR Compensation	2%	±1%	5-12%	±2%	30:1
Optional Speed Tachometer Feedback (1)	1%	±1%	0.2%	±2%	100:1

(1) Unidirectional Models Only

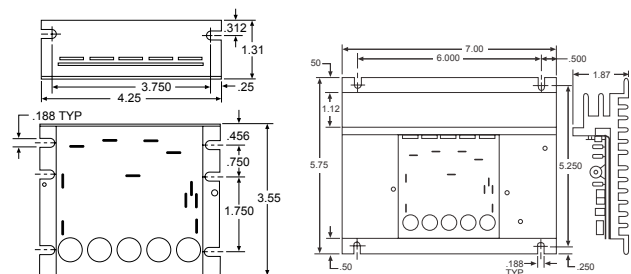
Efficiency (Rated Speed, Rated Load)

Controller 99%
Controller With Motor 85%

Power Factor (Rated Speed, Rated load) 87%

Adjustments

Acceleration/Deceleration 0.8-10 Seconds
Minimum Speed 0-40% of Base Speed
Maximum Speed 60-100% of Base Speed
IR (Load) Compensation 0-100% of Rated Load
Current Limit 0-150% of Full Load



DCX202C

DCX302C

Refer to Electrical Products Catalog for additional models and configurations.

Beta II Series

Single Phase
Adjustable Speed
DC Motor Controllers
1/6 to 3 Horsepower

Design Criteria

These controllers are designed for proper performance and high reliability when operated within the following parameters.

- Line Voltage (Single Phase) 115 or 230 VAC \pm 10%
- Line Frequency 50 or 60 Hz \pm 2 Hz
- Output Power
 - 115 VAC input Armature0-90VDC
Field50 or 100 VDC
 - 230 VAC input Armature0-180 VDC
Field100 or 200 VDC
- Tachometer Feedback Signal.....7-100 VDC/1000 RPM
- Service Factor1.0
- DutyContinuous
- Overload Capacity150% for 1 Minute
- Ambient Temperature (Chassis)0-55°C (32-131°F)
(Enclosed)0-40°C (32-104°F)
- Altitude (Standard)3300 Ft (1000 Meters) Maximum

ORDER BY CATALOG NUMBER OR ITEM CODE

Horsepower Range		Catalog Number	Item Code
115 VAC	230 VAC		
Open Chassis, Run/Stop (Remote)			
1/6 - 1	1/2 - 2	RBA2	64801
1/6 - 1 1/2	1/2 - 3	RBA3	64865
NEMA 3, 4, 12 Enclosed, Run/Stop/Jog (Integral)			
1/6 - 1	1/2 - 2	RBA2S	64814
NEMA 3, 4, 12 Enclosed, Run/Stop/Jog, Forward/Reverse (Integral)			
1/6 - 1	1/2 - 2	RBA2MR	64863

Refer to Electrical Products Catalog for additional models and configurations.



Performance Characteristics

Controlled Speed Range0 to Base Speed
Speed Regulation:

REGULATION METHOD	VARIABLES				SPEED RANGE
	LOAD CHANGE 95%	LINE VOLTAGE \pm 10%	FIELD HEATING COLD/ NORMAL	TEMP. \pm 10°C	
Standard Voltage Feedback with IR Compensation	2%	\pm 1%	5-12%	\pm 2%	50:1
Tachometer Feedback with SPYDCTACH	0.5%	\pm 1%	0.2%	\pm 2%	200:1

Efficiency (Rated Speed, Rated Load)

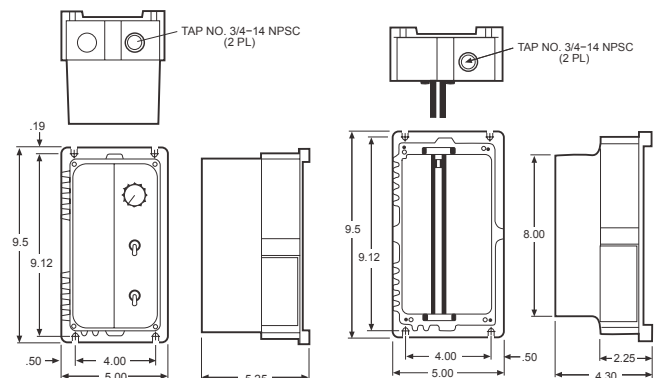
Controller 99%
Controller With Motor 85%

Power Factor (Rated Speed, Rated Load) 87%

Adjustments

Acceleration Time 0.2-40 Seconds
Deceleration Time 0.2-40 Seconds
Minimum Speed 0-40% of Base Speed
Maximum Speed 50-100% of Base Speed
IR (Load) Compensation 0-100% of Rated Load
Current Limit 0-150% of Full Load

Dimensions



VEplus Series

Single Phase
Adjustable Speed
DC Motor Controllers
1/6 to 5 Horsepower



Design Criteria

These controllers are designed for proper performance and high reliability when operated within the following parameters.

- Line Voltage (Single Phase) 115 or 230 VAC \pm 10%
- Line Frequency50 or 60 Hz \pm 2 Hz
- Output Power
 - 115 VAC input Armature0-90VDC
 - Field50 or 100 VDC
 - 230 VAC input Armature0-180 VDC
 - Field 100 or 200 VDC
- Tachometer Feedback Signal7-100 VDC/1000 RPM
- Service Factor1.0
- DutyContinuous
- Overload Capacity150% for 1 Minute
- Ambient Temperature (Chassis)0-55°C (32-131°F)
- Ambient Temperature (Enclosed)0-40°C (32-104°F)
- Altitude (Standard)3300 Ft (1000 Meters) Maximum

Performance Characteristics

Controlled Speed Range0 to Base Speed
Speed Regulation:

REGULATION METHOD	VARIABLES				SPEED RANGE
	LOAD CHANGE 95%	LINE VOLTAGE \pm 10%	FIELD HEATING COLD/ NORMAL	TEMP. \pm 10°C	
Voltage Feedback with IR Compensation	2%	\pm 1%	5-12%	\pm 2%	50:1
Tach Feedback (1)	0.5%	\pm 1%	0.2%	\pm 2%	200:1

(1) Unidirectional Models Only

ORDER BY CATALOG NUMBER OR ITEM CODE

HORSEPOWER RANGE		CATALOG NUMBER	ITEM CODE
115 VAC	230 VAC		
Open Chassis, Run/Stop (Remote)			
1/6 - 1 1/2	1/2 - 3	VES3	64883
1/6 - 2	1/2 - 5	VES5	64890
NEMA 3, 4, 12 Enclosed, Run/Stop/Jog (Integral)			
1/6 - 1 1/2	1/2 - 3	VES3S	64886
1/6 - 2	1/2 - 5	VES5S	64893
NEMA 3, 4, 12 Enclosed, Run/Stop/Jog Forward/Reverse (Integral)			
1/6 - 1 1/2	1/2 - 3	VES3MR	64889
1/6 - 2	1/2 - 5	VES5MR	64896

Refer to Electrical Products Catalog for additional models and configurations.

Efficiency (Rated Speed, Rated Load)

Controller 99%
Controller With Motor 85%

Power Factor (Rated Speed, Rated Load) 87%

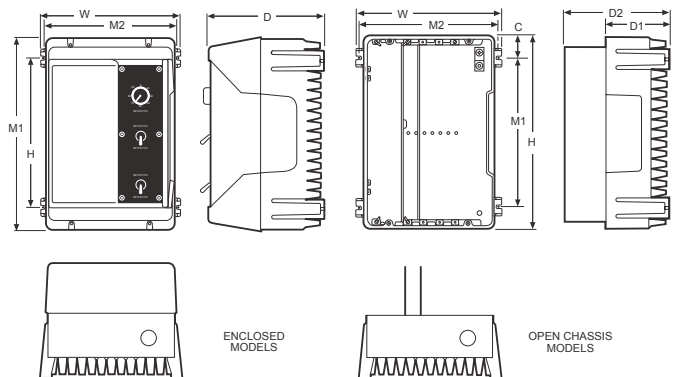
Adjustments

Acceleration Time 0.2-30 Seconds
Deceleration Time 0.2-30 Seconds
Minimum Speed 0-40% of Base Speed
Maximum Speed 50-100% of Base Speed
IR (Load) Compensation 0-100% of Rated Load
Current Limit 0-150% of Full Load

Dimensions

	H	W	D	D1	D2	M1	M2	C	WEIGHT	
									Chassis	Enclosed
VES3	12.1	9.0	7.3	4.1	5.6	9.3	8.6	1.3	9.0	11.4
VES5	12.1	9.0	9.0	4.1	6.9	9.3	8.6	1.3	9.5	13.0

Note: VES5 enclosed models are supplied with a fan assembly.



Notes

Q

