

- Totally Enclosed, Non-Ventilated (IP40)
- Class F insulation, Class B rating
- Skewed armature for smooth low speed operation
- High starting torque and self-braking
- Oversized magnets resist demagnetization, stabilized to common strength for consistent performance
- Locked bearing minimizes endplay
- Models with accessory shafts are ideal for mounting encoders or brakes
- See Page 36 for accessories
- See pages 45 and 46 for reference dimensions

PMDC Type 24A | 1/50-1/7 HP



Type 24A

Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Wdg. Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ²	24V Winding		130V Winding			
												Accy Shaft	No Accy Shaft	Base ¹		Flange	
														No Accy Shaft	Accy Shaft	No Accy Shaft	Accy Shaft
2500	8	1.2	1/50		8.3	6.1	5.7	6.7	0.003	25	24A0BEPM	4440	0040	—	—		
2500	8	0.22	1/50		42	31	176	220	0.003		24A0BEPM	—	—	—	4439	0039	
2500	16	1.8	1/29		10	7.5	2.5	3.6	0.005		24A2BEPM	4445	0045	—	—	—	
2500	14	0.3	1/29	1.0	55	41	84	133	0.005		24A2BEPM	—	—	0042	4441	0041	
2500	22	2.6	1/17		9.2	6.8	2	6.7	0.007		24A4BEPM	4444	0044	—	—	—	
2500	24	0.48	1/17		55	40	5	84	0.007		24A4BEPM	—	—	—	0047	0043	
11,500	12	1.1	1/7		14	10	3.15	4.5	0.007		24A4BEPM	—	—	0049 ²	—	—	

¹ Models 0042 and 0049 ship with a factory installed base mounting kit.

² Model 0049 rated V is 115VDC.

PMDC Type 33A | 1/16-1/3 HP



Type 33A

Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Winding Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ²	24V Winding		130V Winding	
												Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
2500	50	5.5	1/8		10.2	7.5	0.66	1.9	0.031	55	33A3BEPM	6424	6024	—	—
	95	9.2	1/4	1.0	11.1	8.2	0.29	0.98	0.043		33A5BEPM	—	6021	—	—
	134	12	1/3		11.5	8.5	0.31	0.59	0.075		33A7BEPM	6422	6022	—	—
90/130 V Class F Temperature Rating															
1725 / 2500	36/50	.78 / 1.0	1/16 / 1/8		56	42	22	0.57	0.031	55	33A3BEPM	—	—	6434	6034
	73/95	1.4 / 1.8	1/8 / 1/4	1.4 / 1.0	60	44	11	0.28	0.043		33A5BEPM	—	—	6435	6035
	97/134	1.8 / 2.4	1/6 / 1/3		66	49	8.8	0.18	0.075		33A7BEPM	—	—	—	6037
130V, Class B Temperature Rating															
2500	34	.71	1/12		54	40	23	67	0.031	55	33A3BEPM	—	—	—	6016
	50	.91	1/8	1.0	57	42	13	41	0.043		33A5BEPM	—	—	—	6020

PMDC Type 42A | 1/4-1/2 HP



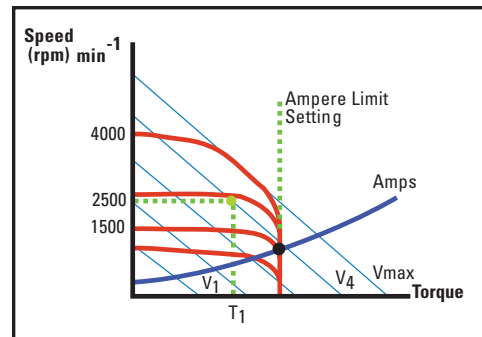
Type 42A

Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Winding Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ³	24V Winding		130V Winding	
												Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
2500	101	8.8	1/4		12	9.2	0.27	0.64	0.082	90	42A5BEPM	4421	4021	—	—
	101	1.8	1/4	1.0	60	44	5.5	20	0.082		42A5BEPM	—	—	4435	4035
	135	12	1/3		12	9	0.16	0.45	0.12		42A7BEPM	4422	4022	—	—
	135	2.3	1/3		64	47	4.2	17	0.12		42A7BEPM	—	—	4437	4037
NEMA 42CZ Face Mount, Class F Temperature Rating															
2500	150	15	1/3		11	8	0.18	0.61	0.082	90	42A5BEPM	4800	4601	—	—
	150	2.7	1/3	1.0	60	45	3.2	—	0.082		42A5BEPM	—	—	4430	4031
	180	19	1/2		11.5	8.5	0.12	0.54	0.12		42A7BEPM	4802	4603	—	—
	180	3.3	1/2		57	42	2.7	—	0.12		42A7BEPM	—	—	4432	4033

³ The fifth digit of the product type changes from "B" to "F" for accessory ready models.

Speed Regulation of Permanent Magnet DC Motors

In a PMDC motor, speed is proportional to voltage and torque is proportional to current. When voltage is held constant, the amount that speed drops due to increasing torque is called "speed regulation." The thin blue lines illustrate motor performance without the aid of a regulating electronic control. The heavy red lines illustrate performance from a control with "excellent" (1-3%) speed regulation.



- Quiet operation, low electromagnetic interference (EMI)
- No brush maintenance or contamination from brush dust
- 60° Commutation Angle
- Wire harness differs between 24V and 130V models. Check online CAD drawings for details.
- See Page 36 for accessories
- See page 45 for reference dimensions

Brushless DC—Type 22B | 1/16-1/5 HP

Speed (rpm)	Rated Torque (oz-in.)	HP	Torque Constant (oz-in./A)	Voltage Constant (V/krpm)	Winding		Rotor Inertia (oz-in.-sec. ²)	Radial Load (lb.)	Product Type ¹	Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
					Res. (Ohms)	Induct. (mH)				24V		130V	
2500	25	1/16	8.4	5.8	1.2	2.1	0.0036	25	22B2BEBL	3602	3502	—	—
2500	25	1/16	47	35	40	70	0.0036		22B2BEBL	—	—	—	3302
2500	50	1/8	9	6.7	0.52	1.1	0.0072		22B4BEBL	3604	3504	—	—
2500	50	1/8	63	37	15	40	0.0072		22B4BEBL	—	—	3404	3304
10,000	20	1/5	14	9.8	4.8	10	0.0072		22B4BEBL	—	—	—	3314



Type 22B

Brushless DC—Type 34B | 1/5-3/8 HP

Speed (rpm)	Rated Torque (oz-in.)	HP	Torque Constant (oz-in./A)	Voltage Constant (V/krpm)	Winding		Rotor Inertia (oz-in.-sec. ²)	Radial Load (lb.)	Product Type ¹	Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
					Res. (Ohms)	Induct. (mH)				24V		130V	
2500	81	1/5	8.8	6.6	0.3	0.54	0.0115	42	34B3BEBL	3600	3500	—	—
2500	81	1/5	51	38	9.2	24	0.0115		34B3BEBL	—	—	3406	3306
2500	101	1/4	9.0	6.7	0.17	0.40	0.0154		34B4BEBL	—	3507	—	—
2500	101	1/4	51	38	5.8	14	0.0154		34B4BEBL	—	—	—	3307
2500	151	3/8	9.0	6.7	0.099	0.246	0.0215		34B6BEBL	3609	3509	—	—
2500	151	3/8	57	42	3.4	11	0.0215		34B6BEBL	—	—	3409	3309
10,000	33	1/3	14.5	10.7	1.7	4.6	0.0154		34B4BEBL	—	—	—	3317



Type 34B

INTEGRAMotor BLDC—Type 22B | 1/16-1/4 HP

Motor Output		Torque Constant (oz-in./A)	Voltage Constant (V/krpm)	Winding		Rotor Inertia (oz-in.-sec. ²)	Control Input			Product Type	Model Number		
Speed Range (rpm)	Torque (oz-in.)			Res. (Ohms)	Induct. (mH)		HP	Volts (VDC)	Continuous Amps		Type SR Analog Interface	Type FV Digital Interface ²	
Type SR	Type FV												
22B INTEGRAMotor													
200-2500	75-2500	25	47	35	40	70	0.004	1/16	24	3.3	22B2BEBL/**	3802	3702
		50	50	37	15	40	0.007	1/8			22B4BEBL/**	3804	3704
34B INTEGRAMotor													
—	60-2500	100	9.6	7.1	0.18	0.43	0.0154	1/4	24	12	34B4FEBL/FV	—	3708



Type 22B/SR and 22B/FV INTEGRAMotor



Type 34B/FV INTEGRAMotor

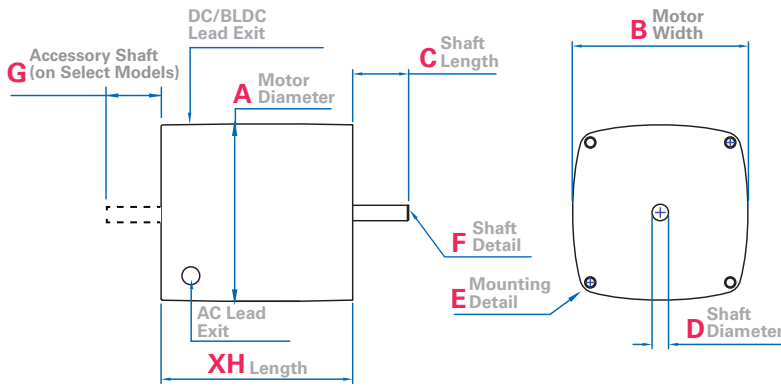
¹ The fifth character of the product type changes from "B" to "F" for accessory ready models.

² Type FV INTEGRAMotors require a PWM signal from a motion controller or PLC to operate.

** INTEGRAMotor can be ordered with either analog (/SR) or digital (/FV) interface option

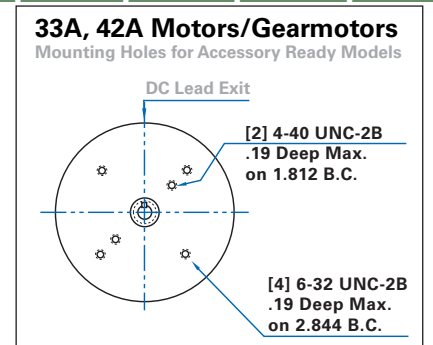
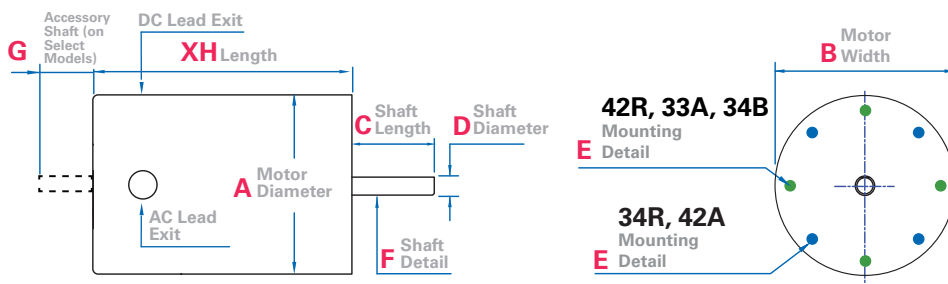
Flange mount shown

Dimensions (in inches) are for reference only. For CAD drawings and specs, visit bodine-electric.com.



Motor Type K-2, 30R, 22B, pages 21-22, 25

	Product Type	Weight (lbs.)	XH Length	A Diameter Square	B Width	C Shaft Length	D Shaft Diameter	E Mounting Detail	F Shaft Detail	G Acc'y Shaft	Lead/Cord Length (in.)
K-2	K2-23	1.6	1.827	2.38	2.38	.62	.188	[4] 8-32 UNC-2B x .18 Deep Max. on 2.687 B.C.	Flat	No	12
	K2-24	1.9	2.20								
	K2-26	2.2	2.50								
K-2 Torque Motor	Model 0621	2.2	2.484								
30R	30R2	4.75	3.665	3.34	3.34	1.06	.313	[4]10-32 UNF-2B x .32 deep Max. on 3.75 B.C.	Flat	Yes	12
	30R4	6.2	4.200								
30R Torque Motor	Model 5625	4.75	3.665								
22B	22B2	2.5	3.610	2.378	2.378	.94	.375	[4] 8-32 UNC-2B x .35 Deep Max. on 2.625 B.C.	Flat	Yes	12 or 24
	22B4	3.5	4.570								
22B INTEGRA	22B2	2.5	4.719	2.93	2.93					No	None
	22B4	3.5	5.679								

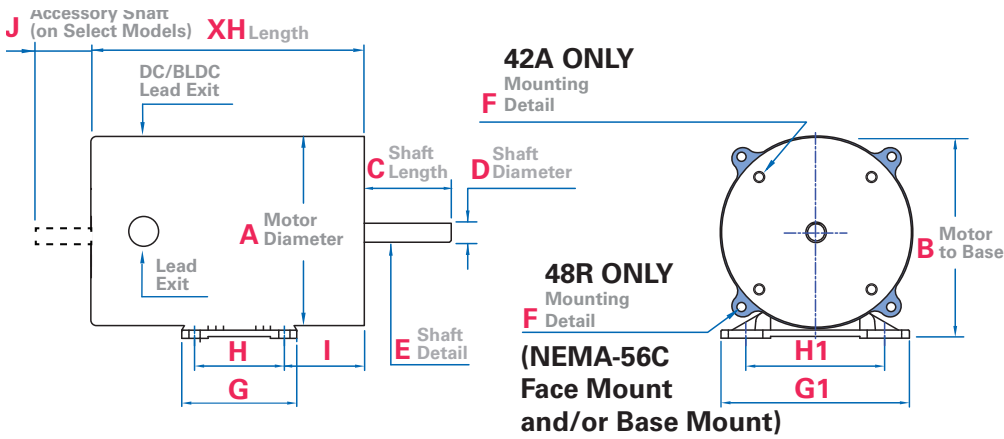


Motor Type 34R, 42R, 33A, 42A, 34B, pages 21-25 (Face Mount)

	Product Type	Weight (lbs.)	XH Length	A Diameter	B Width (PMDC)	C Shaft Length	D Shaft Diameter	E Mounting Detail	F Shaft Detail	G Acc'y Shaft	Lead/Cord Length (in.)
34R	34R4	7.0	5.69	4.02	—	1.25	.375	[4] 1/4-20 UNC-2B x .31 Min. Deep on 2.75 B.C.	Flat	No	12
	34R6	9.0	6.69								
42R	42R3	7.75	5.616	4.73	—	1.38	.375	[4] 1/4-20 UNC-2B x .31 Min. Deep on 3.75 B.C.	Flat	No	12
	42R5	11.0	6.679								
	42R6	13.0	7.116			1.125					
33A	33A3	5.1	5.140	3.39	3.75	1.48	.375	[4] 10-32 UNF-2B x .25 Min. Deep on 2.75 B.C.	Flat	Yes	24
	33A5	6.28	6.200	3.39	3.75	1.48	.500				
	33A7	7.45	7.401								
42A NEMA 42C	42A5	11.3	6.656	4.26	4.25	1.62	.500	[4] 1/4-20 UNC-2B x .31 Min. Deep on 3.75 B.C.	Flat	Yes	24
	42A7	14.5	7.781			1.31			Flat/Key		
42A NEMA 42CZ	42A5	11.3	6.656								
	42A7	14.5	7.781								
34B	34B3	6.0	4.043	4.02	—	1.625	.500	[4] 1/4-20 UNC-2B x .31 Min. Deep on 2.75 B.C.	Flat	Yes	12 or 24
	34B4	7.0	4.543								
	34B6	9.0	5.543								

Only the first four characters of the product type are relevant to dimensions

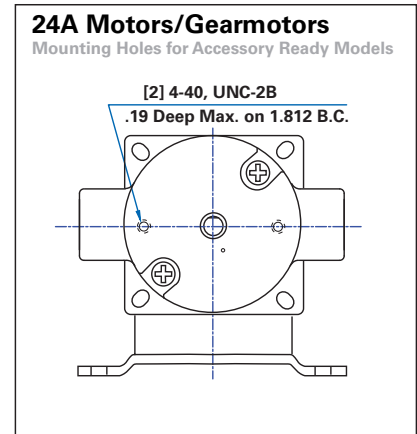
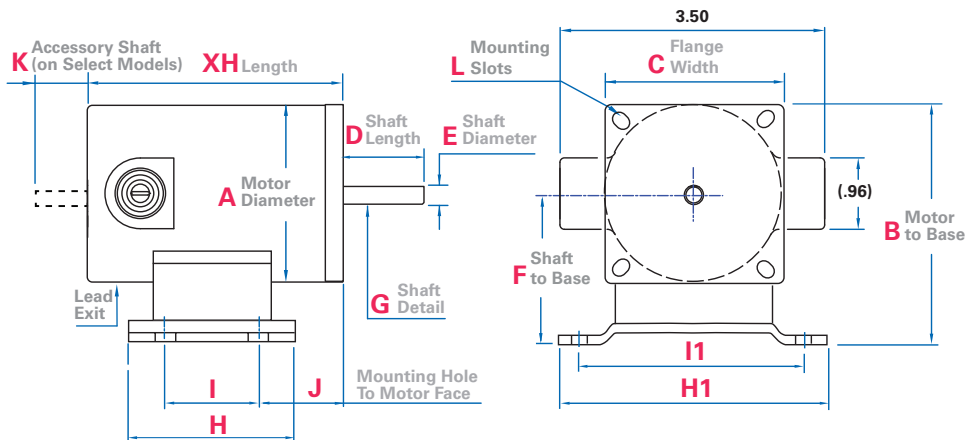
42R | 48R Motor Dimensions



Motor Type 42R, 48R, 42A, pages 21, 23-24 (Base Mount)

	Product Type	Weight (lbs.)	XH Length	A Diameter	B Motor to Base	C Shaft Length	D Shaft Diameter	E Shaft Detail	Face Mount Detail	G Base Length	G1 Base Width	H Mtg. Hole Length	H1 Mtg. Hole Width	I Base Mtg. to Face	J Acc'y Shaft	Lead/Cord Length (in.)
42R	42R3	7.8	5.616	4.73	4.999	1.38	.375	Flat	Base mount 42R motors have no face mounting holes	2.88	4.75	2.25	3.50	1.572	None	12
	42R5	11	6.679													
	42R6	13	7.116													
42R Torque Motor	Model 2628	12.5	6.201	4.62	4.93	1.31	.375	Flat	[4] 1/4-20 UNC-2B x .31 Max. Deep on 3.75 B.C.	2.88	4.75	2.25	3.50	1.569	1.56	12
48R	48R5	17.0	7.329	5.90	5.85	2.06	.625	Key	[4] 3/8-16 UNC-2B x .50 Max. Deep on 5.875 B.C.	3.50	5.75	2.75	4.25	1.446	None	12
	48R6	20.0	7.797													
48R Torque Motor	Model 0632	20.5	6.676	5.73	5.85	2.06	.625	Key	[4] 3/8-16 UNC-2B x .50 Max. Deep on 5.875 B.C.	3.50	5.75	2.75	4.25	1.446	2.00	12
42A	42A5	11.3	6.656	4.26	4.77	1.62	.500	Flat	[4] 1/4-20 UNC-2B x .31 Max. Deep on 3.75 B.C.	2.88	4.75	2.25	3.50	1.471	1.28	24
	42A7	14.5	7.781													

24A Motor Dimensions



Motor Type 24A, page 24 (Base/Flange Mount)

	Product Type	Wt. (lbs.)	XH Length	A Dia-meter	B Motor to Base	C Flange Width	D Shaft Length	E Shaft Diameter	F Shaft to Base	G Shaft Detail	H Base Length	H1 Base Width	I Base Mounting Hole Length	I1 Base Mounting Hole Width	J Mounting Hole to Motor Face	K Acc'y Shaft	L Mounting Slots	Lead/Cord Length (in.)
24A	24A0	2.0	3.240	2.42	3.185	2.41	.94	0.312	1.98	Flat	2.25	3.62	1.25	3.00	.625	Yes	0.181W x 0.257L on 2.764 B.C.	24
	24A2	2.5	3.870												1.62			
	24A4	3.0	4.620												1.81			

Only the first four characters of the product type are relevant to dimensions