

Kinetix Rotary Motion Specifications

Kinetix VP, MP-Series, Kinetix 6000M, TL-Series, HPK-Series, RDD-Series

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This document provides catalog numbers and product specifications, including performance, environmental, certifications, load force, and dimension drawings for Allen-Bradley® rotary motors.

Use this publication in conjunction with the Kinetix® Motion Control Selection Guide, publication [GMC-SG001](#), to help make decisions on the motion control products best suited for your system requirements.

Servo Drive Compatibility

Servo Drive Family	Low-inertia Rotary Motors				Food Grade	Stainless Steel	Integrated Drive-Motor	Medium Inertia	Direct Drive	Asynchronous
	Bulletin VPL	Bulletin MPL	Bulletin TLY	Bulletin TL	Bulletin MPF	Bulletin MPS	Bulletin MDF	Bulletin MPM	Bulletin RDB	HPK-Series
Kinetix 5500	X	—	—	—	—	—	—	—	—	—
Kinetix 6500	—	X	—	—	X	X	—	X	X	—
Kinetix 6200	—	X	—	—	X	X	X	X	X	—
Kinetix 6000	—	X	X (TLY-Axxxx-H)	—	X	X	X	X	X	—
Kinetix 300/350	—	X	X	—	X	X	—	X	—	—
Kinetix 3	—	—	X	X (TL-Axxxx-B)	—	—	—	—	—	—
Kinetix 2000	—	X	X	—	X	X	—	X	—	—
Kinetix 7000	—	X	—	—	—	—	—	X	X	X
Ultra™ 3000	—	X	X (TLY-Axxxx-H)	—	X	X	—	X	—	—



Kinetix VP Low Inertia Motors



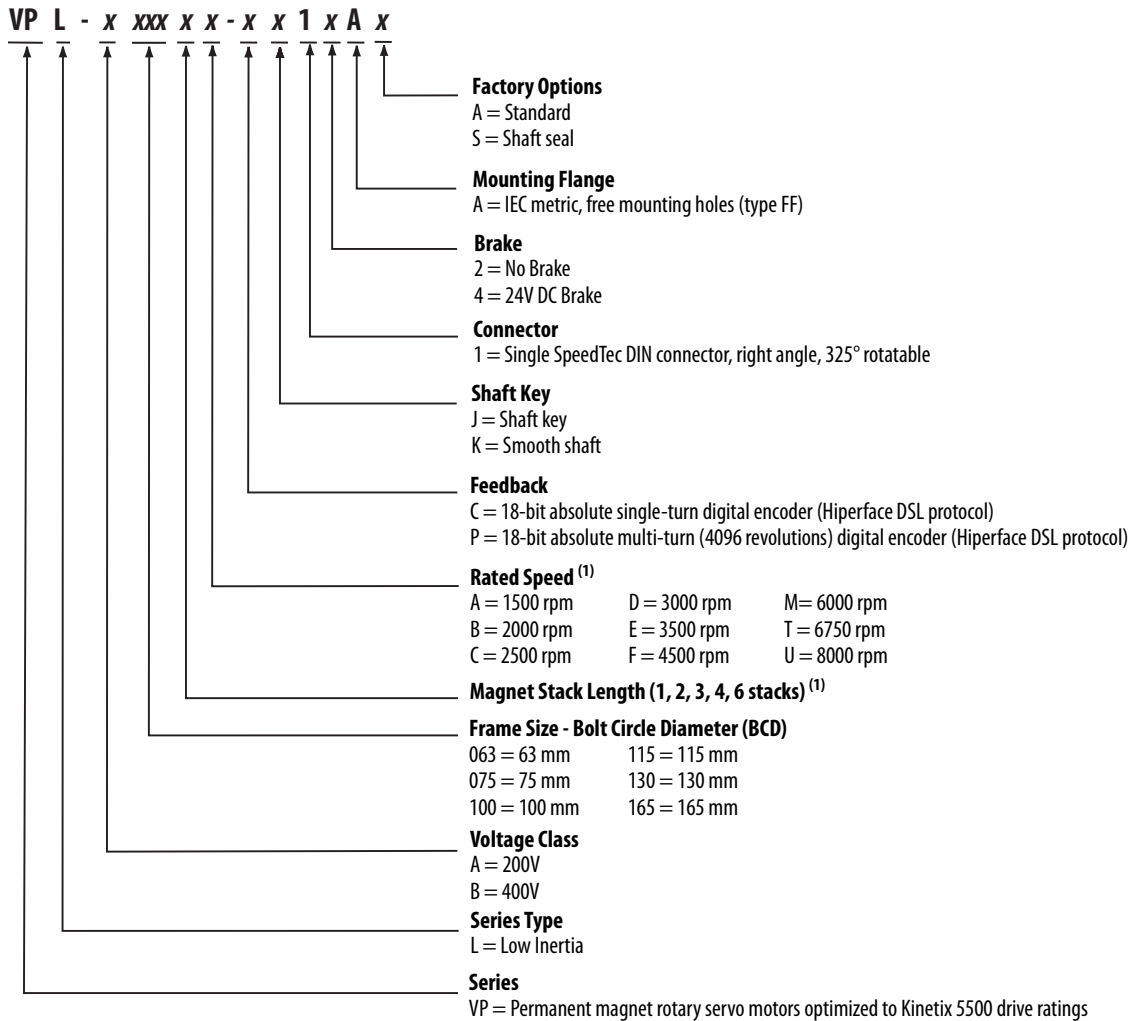
Kinetix VP low-inertia (Bulletin VPL) servo motors are available with winding options matched to Kinetix 5500 drive ratings. Optimized system sizing lowers system cost and improves energy efficiency. The digital feedback device provides real-time motor performance information to the control system and the single-cable design between motor and drive simplifies installation. Bulletin VPL motors are based on proven MP-Series™ technology for dynamic performance, increased reliability, and leverages high volume production.

Kinetix VP Low Inertia Motor Features

Attribute	Value
Main characteristics	• Developed to match Kinetix 5500 drive ratings for optimized system sizing • Single-cable, technology • High torque to size ratio • Low rotor inertia
Features	• 200V and 400V-class windings • High-energy rare-earth magnets • Shaft end threaded hole • SpeedTec DIN connector, rotates 180° • Standard IEC 72-1 mounting dimensions
Motor type	Brushless AC synchronous servo motors
Environmental rating	• IP50 minimum, without shaft seal (standard) • IP66 with optional shaft seal and use of environmentally sealed cable connectors
Certifications	Bulletin VPL rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	0.46...33 N·m (4...292 lb·in)
Peak stall torque	1.33...79 N·m (12...702 lb·in)
Rated speed	Up to 8000 rpm
Motor rated output	0.19...5.55 kW (0.25...7.44 Hp)
Compatible servo drives	Kinetix 5500
Typical applications	• Packaging • Converting • Material handling • Electronic assembly • Automotive • Metal forming

Catalog Numbers - Kinetix VP Low Inertia Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Not all combinations are available. Only the configurations for rated speed and magnet stack length, as listed in Kinetix VP Low Inertia Motor (200V-class) Performance Specifications on [page 6](#) and Kinetix VP Low Inertia Motor (400V-class) Performance Specifications on [page 7](#), are available. Use Motion Analyzer software to size and select motors for your application.

Kinetix VP Single Cable Technology

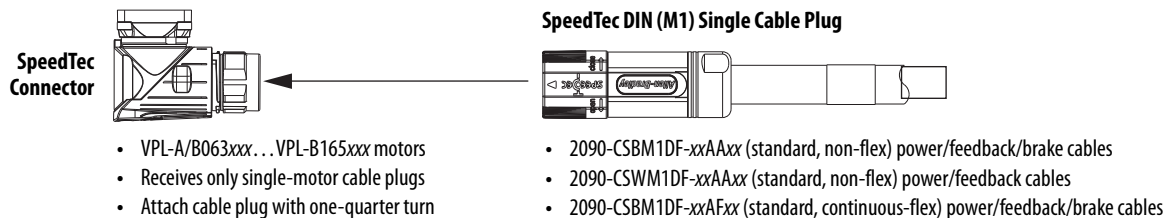
Kinetix VP low-inertia motors are available with high performance encoders with a choice of single-turn (-C) or multi-turn (-P) high resolution feedback:

- Motor connectivity reduced to a single connector and cable
 - Single cable eliminates hardware and wire terminations
 - Purely digital two-wire communication integrated into the motor power cable
 - Bulletin 2090 cables available in standard lengths up to 50 m (164 ft)
- Up to 260 thousand counts per revolution (choice of single-turn or multi-turn) for smooth performance
 - Single-turn encoder provides high-resolution absolute position feedback within one turn
 - Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns (electromechanical design does not require a battery)

IMPORTANT Due to the unique characteristics of single-cable technology, designed for and tested with Kinetix 5500 drives and Kinetix VP motors, building your own cables or using third-party cable is not an option.

Motor Connector/Cable Compatibility

Kinetix VP (Bulletin VPL) motors are equipped with SpeedTec DIN connectors.



For 2090-Series single motor cable specifications, refer to Kinetix Motion Accessories Technical Data, publication [GMC-TD004](#).

Kinetix VP Low Inertia Motor Options

Kinetix VP low-inertia motors are available with these configurable options:

- Single-turn or multi-turn encoder.
- 24V DC brake.
- Shaft seal kits are available, as are replacement kits for field installation. Shaft seals are made of nitrile and kits include a lubricant to reduce wear.
- Choice of keyed or keyless shaft.

Motor Shaft Seal Kits Combinations and Dimensions

Motor Cat. No.	Shaft Seal Kit Cat. No.	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
VPL-A063xx and VPL-B063xx	VPL-SSN-F063075	12 (0.47)	28 (1.10)	7 (0.28)
VPL-A075xx and VPL-B075xx				
VPL-A100xx and VPL-B100xx	MPL-SSN-A3B3	17 (0.67)	47 (1.85)	7 (0.28)
VPL-A115xx and VPL-B115xx	MPL-SSN-A4B4	20 (0.79)	52 (2.05)	7 (0.28)
VPL-A130xx and VPL-B130xx	MPL-SSN-A5B5	25 (0.98)	62 (2.44)	7 (0.28)
VPL-B165xx	MPL-SSN-F165	30 (1.18)	72 (2.83)	8 (0.31)

Technical Specifications - Kinetix VP Low Inertia Motors

Kinetix VP Low Inertia Motor (200V-class) Performance Specifications

Motor Cat. No.	Base Speed, max rpm	Rated Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW (Hp)	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, ⁽¹⁾ approx kg (lb)
VPL-A0631E	2500	4500	0.46 (4.0)	1.33 (12.0)	0.19 (0.25)	4500	9.40E-06 (0.000083)	1.04 (2.30)
VPL-A0631M	5000	7200	0.46 (4.0)	1.33 (12.0)	0.28 (0.38)	7200		
VPL-A0632F	3700	4800	0.93 (8.0)	2.69 (24.0)	0.39 (0.52)	4800	1.70E-05 (0.00015)	1.36 (3.0)
VPL-A0633C	1900	3000	1.27 (11.0)	4.09 (36.0)	0.37 (0.50)	3000	2.47E-05 (0.00022)	1.68 (3.70)
VPL-A0633F	3000	4500	1.27 (11.0)	4.09 (36.0)	0.44 (0.59)	4500		
VPL-A0751E	3100	4800	1.01 (9.0)	2.27 (20.0)	0.50 (0.67)	4800	1.36E-05 (0.00012)	1.48 (3.26)
VPL-A0752C	1700	3300	1.61 (14.0)	4.39 (39.0)	0.49 (0.66)	3300	2.50E-05 (0.00022)	2.03 (4.47)
VPL-A0752E	3100	4800	1.61 (14.0)	4.39 (39.0)	0.66 (0.88)	4800		
VPL-A0753C	1600	3300	2.16 (19.0)	7.02 (62.0)	0.59 (0.79)	3300	3.65E-05 (0.00032)	2.59 (5.70)
VPL-A0753E	2900	4600	2.28 (20.0)	7.35 (65.0)	0.80 (1.07)	4600		
VPL-A1001C	1650	2800	1.93 (17.0)	3.78 (33.0)	0.56 (0.75)	2800	4.4E-05 (0.00039)	2.63 (5.80)
VPL-A1001M	4000	6500	1.95 (17.0)	3.78 (33.0)	1.29 (1.73)	6500		
VPL-A1002C	1650	3000	3.39 (30.0)	7.82 (69.0)	1.03 (1.38)	3000	7.8E-05 (0.00069)	4.52 (9.95)
VPL-A1002F	2750	5000	3.26 (29.0)	7.82 (69.0)	1.60 (2.14)	5000		
VPL-A1003C	1350	2250	4.18 (37.0)	11.15 (99.0)	0.87 (1.17)	2250	1.2E-04 (0.0010)	4.45 (9.80)
VPL-A1003E	2250	3750	4.18 (37.0)	11.15 (99.0)	1.31 (1.76)	3750		
VPL-A1003F	3250	5500	4.18 (37.0)	11.15 (99.0)	1.90 (2.55)	5500		
VPL-A1152B	1200	2150	5.10 (45.0)	13.12 (116)	1.02 (1.37)	2150	2.6E-04 (0.0023)	4.43 (9.75)
VPL-A1152E	2000	3300	5.08 (45.0)	13.12 (116)	1.47 (1.97)	3300		
VPL-A1152F	3250	5000	4.70 (42.0)	13.12 (116)	2.16 (2.90)	5000		
VPL-A1153C	1350	2300	6.55 (58.0)	20.33 (180)	1.35 (1.81)	2300	3.8E-04 (0.0033)	6.01 (13.23)
VPL-A1303B	1150	1950	8.80 (78.0)	20.72 (183)	1.61 (2.16)	1950	4.0E-04 (0.0035)	7.54 (16.60)
VPL-A1303F	2800	4000	7.75 (69.0)	20.72 (183)	2.50 (3.35)	4000		
VPL-A1304A	975	1600	10.29 (91.0)	28.45 (252)	1.55 (2.08)	1600	5.2E-04 (0.0046)	9.10 (20.05)
VPL-A1304D	2000	3000	10.20 (90.0)	27.10 (240)	2.60 (3.50)	3000		
VPL-A1306C	1350	2000	13.38 (118)	34.62 (306)	2.13 (2.86)	2000	7.8E-04 (0.0069)	12.21 (26.90)

(1) Refer to Kinetix VP Low Inertia Motor Brake Specifications on [page 8](#) for brake rotor inertia and brake motor weight.

Kinetix VP Low Inertia Motor (400V-class) Performance Specifications

Motor Cat. No.	Base Speed, max rpm	Rated Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW (Hp)	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, ⁽¹⁾ approx kg (lb)
VPL-B0631T	5800	8000	0.46 (4.0)	1.33 (12.0)	0.31 (0.42)	8000	9.40E-06 (0.000083)	1.04 (2.30)
VPL-B0631U	8000	8000	0.46 (4.0)	1.33 (12.0)	0.31 (0.42)	8000		
VPL-B0632F	2800	4600	0.93 (8.0)	2.69 (24.0)	0.37 (0.50)	4600	1.70E-05 (0.00015)	1.36 (3.00)
VPL-B0632T	8000	8000	0.93 (8.0)	2.69 (24.0)	0.54 (0.72)	8000		
VPL-B0633M	5200	6700	1.27 (11.0)	4.09 (36.0)	0.57 (0.76)	6500	2.47E-05 (0.00022)	1.68 (3.70)
VPL-B0633T	7800	8000	1.27 (11.0)	4.09 (36.0)	0.57 (0.76)	6500		
VPL-B0751M	7200	8000	1.01 (9.0)	2.27 (20.0)	0.54 (0.72)	8000	1.36E-05 (0.00012)	1.48 (3.26)
VPL-B0752E	3100	4900	1.61 (14.0)	4.39 (39.0)	0.67 (0.90)	4900	2.50E-05 (0.00022)	2.03 (4.47)
VPL-B0752F	4800	7000	1.61 (14.0)	4.39 (39.0)	0.80 (1.07)	7000		
VPL-B0752M	7000	8000	1.61 (14.0)	4.39 (39.0)	0.81 (1.09)	8000		
VPL-B0753E	2800	4500	2.28 (20.0)	7.35 (65.0)	0.81 (1.09)	4500	3.65E-05 (0.00032)	2.59 (5.70)
VPL-B0753F	4200	6600	2.16 (19.0)	7.02 (62.0)	0.65 (0.87)	4500		
VPL-B0753M	6600	8000	2.28 (20.0)	7.35 (65.0)	0.82 (1.10)	6000		
VPL-B1001M	3500	6000	1.93 (17.0)	3.78 (33.0)	1.14 (1.53)	6000	4.4E-05 (0.00039)	2.63 (5.80)
VPL-B1002E	2200	3300	3.39 (30.0)	7.82 (69.0)	1.12 (1.50)	3300	7.8E-05 (0.00069)	3.56 (7.85)
VPL-B1002M	4000	6000	3.39 (30.0)	7.82 (69.0)	1.86 (2.49)	6000		
VPL-B1003C	1450	2500	4.18 (37.0)	11.15 (99.0)	0.96 (1.29)	2500	1.2E-04 (0.0010)	4.45 (9.80)
VPL-B1003F	3000	4750	4.18 (37.0)	11.15 (99.0)	1.65 (2.21)	4750		
VPL-B1003T	5500	7000	4.18 (37.0)	11.15 (99.0)	1.77 (2.37)	7000		
VPL-B1152C	1300	2250	5.10 (45.0)	13.12 (116)	1.06 (1.42)	2250	2.6E-04 (0.0023)	5.43 (11.95)
VPL-B1152F	3000	4500	5.10 (45.0)	13.12 (116)	1.40 (1.88)	4000		
VPL-B1152T	4750	6500	5.08 (45.0)	13.12 (116)	2.29 (3.07)	6500		
VPL-B1153E	2100	3200	6.55 (58.0)	20.33 (180)	1.75 (2.35)	3200	3.8E-04 (0.0033)	6.01 (13.23)
VPL-B1153F	3500	5000	6.55 (58.0)	20.33 (180)	2.30 (3.08)	5000		
VPL-B1303C	1500	2250	8.80 (78.0)	20.72 (183)	1.83 (2.45)	2250	4.0E-04 (0.0035)	7.54 (16.60)
VPL-B1303F	2900	4000	8.80 (78.0)	20.72 (183)	2.82 (3.78)	4000		
VPL-B1304C	1400	2150	10.29 (91.0)	28.45 (252)	1.75 (2.35)	2150	5.2E-04 (0.0046)	9.10 (20.05)
VPL-B1304E	2300	3500	10.29 (91.0)	28.45 (252)	2.82 (3.78)	3500		
VPL-B1306C	1650	2500	13.38 (118)	34.62 (306)	2.46 (3.30)	2500	7.8E-04 (0.0069)	12.21 (26.9)
VPL-B1306F	3000	4250	13.38 (118)	34.62 (306)	2.95 (3.95)	4250		
VPL-B1651C	1650	2750	11.50 (102)	22.45 (199)	2.32 (3.11)	2750	7.83E-04 (0.0069)	15.30 (33.70)
VPL-B1651F	3000	4750	11.43 (101)	22.45 (199)	4.38 (5.87)	4750		
VPL-B1652C	1650	2700	19.40 (172)	48.60 (430)	4.18 (5.60)	2700	1.47E-03 (0.013)	17.80 (39.24)
VPL-B1653C	1400	2300	25.76 (228)	66.70 (590)	4.38 (5.87)	2300	2.13E-03 (0.019)	20.66 (45.50)
VPL-B1654B	1130	1850	32.97 (292)	79.30 (702)	5.55 (7.44)	1850	2.89E-03 (0.025)	25.65 (56.55)

(1) Refer to MP-Series Low Inertia Motor Brake Specifications on [page 30](#) for brake rotor inertia and brake motor weight.

Kinetix VP Low Inertia Motor Brake Specifications

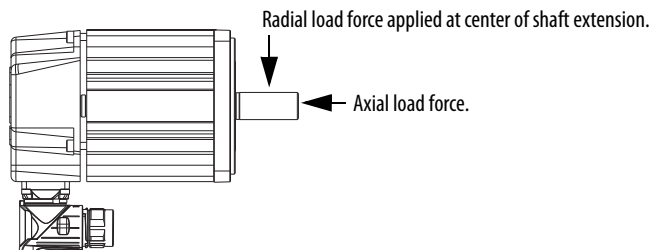
Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time		Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage ⁽¹⁾ ms		
VPL-A/B0631	30	1.50 (13)	0.297...0.363	38	25	1.18E-05 (0.00010)	1.36 (3.0)
VPL-A/B0632						1.94E-05 (0.00017)	1.70 (3.74)
VPL-A/B0633						2.71E-05 (0.00024)	2.02 (4.45)
VPL-A/B0751		3.0 (27)	0.567...0.693	66	42	1.82E-05 (0.00016)	2.06 (4.54)
VPL-A/B0752						2.97E-05 (0.00026)	2.62 (5.77)
VPL-A/B0753						4.12E-05 (0.00036)	3.18 (7.0)
VPL-A/B1001	30	4.18 (37)	0.45...0.55	90	65	5.9E-05 (0.00052)	3.26 (7.19)
VPL-A/B1002						9.3E-05 (0.00082)	4.20 (9.24)
VPL-A/B1003						1.35E-04 (0.0012)	5.08 (11.19)
VPL-A/B1152		6.55 (58)	0.621...0.759	90	95	2.89E-04 (0.0025)	5.30 (11.67)
VPL-A/B1153						4.09E-04 (0.0036)	6.88 (15.15)
VPL-A/B1303		14.10 (125)	0.738...0.902	125	120	4.33E-04 (0.0038)	8.64 (19.03)
VPL-A/B1304						5.53E-04 (0.0049)	10.21 (22.48)
VPL-A/B1306						8.13E-04 (0.0072)	13.32 (29.33)
VPL-B1651		32.0 (283)	1.053...1.287	140	120	8.45E-04 (0.0075)	17.15 (37.78)
VPL-B1652						1.53E-03 (0.013)	19.65 (43.32)
VPL-B1653						2.19E-03 (0.019)	22.51 (49.58)
VPL-B1654						2.95E-03 (0.026)	27.50 (60.63)

(1) By using diode and zener diode as arc suppression device in external control circuit.

Kinetix VP Low Inertia Motor Load Force Ratings

Bulletin VPL motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L₁₀ bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

VPL-xxxx-xxxxAx Load Forces



Kinetix VP Low Inertia Motors (063...075 frame size)

Radial Load Force Ratings (maximum) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	26.7	—	—	20.8 *	18.5	—	—	16.2	—	—	—	—	—	—
VPL-A0631M	7200	—	—	23.3	—	19.7	—	—	—	16.7 *	—	—	—	—	13.8	—
VPL-A0632F	4800	—	28.9	25.2	—	—	21.0 *	—	—	—	17.1 *	—	—	—	—	—
VPL-A0633C	3000	38.1	30.3	27.4 *	—	—	21.0	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	33.3	26.4	—	—	20.6 *	—	—	—	—	15.7 *	—	—	—	—	—
VPL-A0752C	3300	36.1	28.6	25.9 *	—	—	—	19.2 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	36.1	28.6	—	—	21.8 *	—	—	—	—	17.0 *	—	—	—	—	—
VPL-A0753C	3300	37.8	30.0	27.5 *	—	—	—	20.2 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	37.8	30.0	—	—	23.3 *	—	—	—	—	18.0 *	—	—	—	—	—
VPL-B0631T	8000	—	—	23.3	—	—	18.5	—	—	—	—	14.9 *	—	—	—	13.3
VPL-B0631U	8000	—	—	23.3	—	—	18.5	—	—	—	15.6	—	—	—	—	13.3
VPL-B0632F	4800	—	28.9	25.2	—	—	21.0 *	—	—	—	17.1 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	22.9	—	—	—	18.2	—	—	—	15.6 *	—	—	14.4
VPL-B0633F	4900	—	30.3	26.4	—	22.3	—	—	—	—	17.8 *	—	—	—	—	—
VPL-B0633M	6900	—	30.3	—	24.0	—	—	—	19.2 *	—	—	—	—	15.9 *	—	—
VPL-B0633T	8000	—	—	26.4	—	—	21.0	—	—	—	—	16.8 *	—	—	—	15.1
VPL-B0751M	8000	—	—	23.1	—	—	18.3	—	—	—	15.7 *	—	—	—	—	13.2
VPL-B0752E	4800	36.1	28.6	—	—	22.0 *	—	—	—	—	17.0 *	—	—	—	—	—
VPL-B0752F	7000	—	28.6	—	22.7	—	—	19.3 *	—	—	—	—	—	15.0	—	—
VPL-B0752M	8000	—	—	25.0	—	—	20.8	—	—	—	16.8 *	—	—	—	—	14.3
VPL-B0753E	4500	37.8	30.0	—	23.8	—	—	—	—	18.2	—	—	—	—	—	—
VPL-B0753F	6500	—	30.0	—	23.8	—	—	20.6 *	—	—	—	—	16.1	—	—	—
VPL-B0753M	8000	—	—	26.2	—	—	19.8	—	—	—	18.0 *	—	—	—	—	15.0

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (maximum radial load) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	22.3	—	—	16.1 *	13.8	—	—	11.6	—	—	—	—	—	—
VPL-A0631M	7200	—	—	18.7	—	15.0	—	—	—	12.1 *	—	—	—	—	9.5 *	—
VPL-A0632F	4800	—	23.5	19.7	—	—	15.5 *	—	—	—	11.9 *	—	—	—	—	—
VPL-A0633C	3000	32.7	24.2	21.3 *	—	—	15.0	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	30.0	22.2	—	—	16.1 *	—	—	—	—	11.2 *	—	—	—	—	—
VPL-A0752C	3300	31.5	23.3	20.5 *	—	—	—	13.9 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	31.5	23.3	—	—	16.4 *	—	—	—	—	11.8 *	—	—	—	—	—
VPL-A0753C	3300	32.5	24.1	21.5 *	—	—	—	14.3 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	32.5	24.1	—	—	17.3 *	—	—	—	—	12.4 *	—	—	—	—	—
VPL-B0631T	8000	—	—	18.7	—	—	13.8	—	—	—	—	10.5 *	—	—	—	9.0
VPL-B0631U	8000	—	—	18.7	—	—	13.8	—	—	—	11.1	—	—	—	—	9.0
VPL-B0632F	4800	—	23.5	19.7	—	—	15.5 *	—	—	—	11.9 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	17.4	—	—	—	12.9	—	—	—	10.6	—	—	9.5
VPL-B0633F	4900	—	24.2	20.3	—	16.3	—	—	—	—	12.1 *	—	—	—	—	—
VPL-B0633M	6900	—	24.2	—	17.9	—	—	—	13.4 *	—	—	—	—	10.5 *	—	—
VPL-B0633T	8000	—	—	20.3	—	—	15.0	—	—	—	—	11.3 *	—	—	—	9.8
VPL-B0751M	8000	—	—	18.6	—	—	13.8	—	—	—	11.2 *	—	—	—	—	9.0
VPL-B0752E	4800	31.5	23.3	—	—	16.6 *	—	—	—	—	11.8 *	—	—	—	—	—
VPL-B0752F	7000	—	23.3	—	17.3	—	—	14.0 *	—	—	—	—	—	10.0	—	—
VPL-B0752M	8000	—	—	19.6	—	—	14.5	—	—	—	11.7 *	—	—	—	—	9.5
VPL-B0753E	4500	32.5	24.1	—	17.8	—	—	—	—	12.5	—	—	—	—	—	—
VPL-B0753F	6500	—	24.1	—	17.8	—	—	14.7 *	—	—	—	—	10.7	—	—	—
VPL-B0753M	8000	—	—	20.2	—	—	14.9	—	—	—	12.4 *	—	—	—	—	9.8

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (zero radial load) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	27.5	—	—	19.9 *	17.1	—	—	14.3	—	—	—	—	—	—
VPL-A0631M	7200	—	—	23.0	—	18.5	—	—	—	14.9 *	—	—	—	—	11.7 *	—
VPL-A0632F	4800	—	27.5	23.0	—	—	18.1 *	—	—	—	13.9 *	—	—	—	—	—
VPL-A0633C	3000	37.1	27.5	24.1 *	—	—	17.1	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	37.1	27.5	—	—	19.9 *	—	—	—	—	13.9 *	—	—	—	—	—
VPL-A0752C	3300	37.1	27.5	24.1 *	—	—	—	16.4 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	37.1	27.5	—	—	19.3 *	—	—	—	—	13.9 *	—	—	—	—	—
VPL-A0753C	3300	37.1	27.5	24.5 *	—	—	—	16.4 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	37.1	27.5	—	—	19.7 *	—	—	—	—	14.2 *	—	—	—	—	—
VPL-B0631T	8000	—	—	23.0	—	—	17.1	—	—	—	—	12.9 *	—	—	—	11.1
VPL-B0631U	8000	—	—	23.0	—	—	17.1	—	—	—	13.7	—	—	—	—	11.1
VPL-B0632F	4800	—	27.5	23.0	—	—	18.1 *	—	—	—	13.9 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	20.3	—	—	—	15.1	—	—	—	12.4 *	—	—	11.1
VPL-B0633F	4900	—	27.5	23.0	—	18.5	—	—	—	—	13.8 *	—	—	—	—	—
VPL-B0633M	6900	—	27.5	—	20.3	—	—	—	15.2 *	—	—	—	—	11.9 *	—	—
VPL-B0633T	8000	—	—	23.0	—	—	17.1	—	—	—	—	12.8 *	—	—	—	11.1
VPL-B0751M	8000	—	—	23.0	—	—	17.1	—	—	—	13.9 *	—	—	—	—	11.1
VPL-B0752E	4800	37.1	27.5	—	—	19.5 *	—	—	—	—	13.9 *	—	—	—	—	—
VPL-B0752F	7000	—	27.5	—	20.3	—	—	16.5 *	—	—	—	—	—	11.8	—	—
VPL-B0752M	8000	—	—	23.0	—	—	17.1	—	—	—	13.8 *	—	—	—	—	11.1
VPL-B0753E	4500	37.1	27.5	—	20.3	—	—	—	—	14.3	—	—	—	—	—	—
VPL-B0753F	6500	—	27.5	—	20.3	—	—	16.8 *	—	—	—	—	12.2	—	—	—
VPL-B0753M	8000	—	—	23.0	—	—	17.1	—	—	—	14.2 *	—	—	—	—	11.1

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Radial Load Force Ratings (maximum) for Brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	29.2	—	—	22.8 *	20.3	—	—	17.7	—	—	—	—	—	—
VPL-A0631M	7200	—	—	25.5	—	21.5	—	—	—	18.3 *	—	—	—	—	15.1 *	—
VPL-A0632F	4800	—	30.5	26.6	—	—	22.2 *	—	—	—	18.1 *	—	—	—	—	—
VPL-A0633C	3000	39.5	31.4	28.4 *	—	—	21.8	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	36.5	29.0	—	—	22.6 *	—	—	—	—	17.2 *	—	—	—	—	—
VPL-A0752C	3300	38.1	30.3	27.4	—	—	—	20.3 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	38.1	30.3	—	—	23.1 *	—	—	—	—	17.9 *	—	—	—	—	—
VPL-A0753C	3300	39.2	31.2	28.5 *	—	—	—	20.9 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	39.2	31.2	—	—	24.1 *	—	—	—	—	18.7 *	—	—	—	—	—
VPL-B0631T	8000	—	—	25.5	—	—	20.3	—	—	—	—	16.4 *	—	—	—	14.6
VPL-B0631U	8000	—	—	25.5	—	—	20.3	—	—	—	17.1	—	—	—	—	14.6
VPL-B0632F	4800	—	30.5	26.6	—	—	22.2 *	—	—	—	18.1 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	24.2	—	—	—	19.2	—	—	—	16.5 *	—	—	15.3
VPL-B0633F	4900	—	31.4	27.4	—	23.1	—	—	—	—	18.5 *	—	—	—	—	—
VPL-B0633M	6900	—	31.4	—	24.9	—	—	—	19.9 *	—	—	—	—	16.5 *	—	—
VPL-B0633T	8000	—	—	27.4	—	—	21.8	—	—	—	—	17.5 *	—	—	—	15.7
VPL-B0751M	8000	—	—	25.3	—	—	20.1	—	—	—	17.2 *	—	—	—	—	14.5

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (maximum radial load) for Brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	23.7	—	—	17.2 *	14.7	—	—	12.3	—	—	—	—	—	—
VPL-A0631M	7200	—	—	19.9	—	15.9	—	—	—	12.8	—	—	—	—	10.0 *	—
VPL-A0632F	4800	—	24.3	20.4	—	—	16.1 *	—	—	—	12.3 *	—	—	—	—	—
VPL-A0633C	3000	33.5	24.8	21.8 *	—	—	15.4	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	31.8	23.5	—	—	17.1 *	—	—	—	—	11.9 *	—	—	—	—	—
VPL-A0752C	3300	32.7	24.2	21.3 *	—	—	—	14.4 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	32.7	24.2	—	—	17.0 *	—	—	—	—	12.3 *	—	—	—	—	—
VPL-A0753C	3300	33.4	24.7	22.0 *	—	—	—	14.7 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	33.4	24.7	—	—	17.7 *	—	—	—	—	12.7 *	—	—	—	—	—
VPL-B0631T	8000	—	—	19.9	—	—	14.7	—	—	—	—	11.1 *	—	—	—	9.6
VPL-B0631U	8000	—	—	19.9	—	—	14.7	—	—	—	11.8	—	—	—	—	9.6
VPL-B0632F	4800	—	24.3	20.4	—	—	16.1 *	—	—	—	12.3 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	18.0	—	—	—	13.3	—	—	—	11.0 *	—	—	9.9
VPL-B0633F	4900	—	24.8	20.8	—	16.7	—	—	—	—	12.4 *	—	—	—	—	—
VPL-B0633M	6900	—	24.8	—	18.4	—	—	—	13.7 *	—	—	—	—	10.7 *	—	—
VPL-B0633T	8000	—	—	20.8	—	—	15.4	—	—	—	—	11.6 *	—	—	—	10.1
VPL-B0751M	8000	—	—	19.7	—	—	14.6	—	—	—	11.9 *	—	—	—	—	9.5

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (zero radial load) for Brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	6000 kgf	6500 kgf	7000 kgf	7500 kgf	8000 kgf
VPL-A0631E	4500	—	27.5	—	—	19.9 *	17.1	—	—	14.3	—	—	—	—	—	—
VPL-A0631M	7200	—	—	23.0	—	18.5	—	—	—	14.9 *	—	—	—	—	11.7 *	—
VPL-A0632F	4800	—	27.5	23.0	—	—	18.1 *	—	—	—	13.9 *	—	—	—	—	—
VPL-A0633C	3000	37.1	27.5	24.1	—	—	17.1	—	—	—	—	—	—	—	—	—
VPL-A0751E	4800	37.1	27.5	—	—	19.9 *	—	—	—	—	13.9 *	—	—	—	—	—
VPL-A0752C	3300	37.1	27.5	24.1 *	—	—	—	16.4 *	—	—	—	—	—	—	—	—
VPL-A0752E	4800	37.1	27.5	—	—	19.3 *	—	—	—	—	13.9 *	—	—	—	—	—
VPL-A0753C	3300	37.1	27.5	24.5 *	—	—	—	16.4 *	—	—	—	—	—	—	—	—
VPL-A0753E	4600	37.1	27.5	—	—	19.7 *	—	—	—	—	14.2 *	—	—	—	—	—
VPL-B0631T	8000	—	—	23.0	—	—	17.1	—	—	—	—	12.9 *	—	—	—	11.1
VPL-B0631U	8000	—	—	23.0	—	—	17.1	—	—	—	13.7	—	—	—	—	11.1
VPL-B0632F	4800	—	27.5	23.0	—	—	18.1 *	—	—	—	13.9 *	—	—	—	—	—
VPL-B0632T	8000	—	—	—	20.3	—	—	—	15.1	—	—	—	12.4 *	—	—	11.1
VPL-B0633F	4900	—	27.5	23.0	—	18.5	—	—	—	—	13.8 *	—	—	—	—	—
VPL-B0633M	6900	—	27.5	—	20.3	—	—	—	15.2 *	—	—	—	—	11.9 *	—	—
VPL-B0633T	8000	—	—	23.0	—	—	17.1	—	—	—	—	12.8 *	—	—	—	11.1
VPL-B0751M	8000	—	—	23.0	—	—	17.1	—	—	—	13.9 *	—	—	—	—	11.1

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Kinetix VP Low Inertia Motors (100...165 frame size)

Radial Load Force Ratings (maximum) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	79.1	—	62.8	—	49.8	—	44.6 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	54.9	—	46.3	—	—	—	38.0	—	—	—	33.6	—
VPL-A1002C	3000	87.9	—	69.7	—	55.4	—	48.4	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	69.7	60.9	—	—	48.4	—	—	—	40.8	—	—	—	—
VPL-A1003C	2250	93.6	—	74.3	64.9	—	56.7 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	93.6	—	74.3	—	59.0	—	—	—	47.8 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	64.9	—	54.8	—	—	46.8	—	—	42.1	—	—	—
VPL-A1152B	2150	98.8	—	78.4	68.5	—	60.8 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	98.8	—	78.4	—	62.2	—	—	52.7 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	78.4	—	62.2	—	54.4	—	—	—	45.9	—	—	—	—
VPL-A1153C	2300	106.4	—	84.5	73.8	—	64.0 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	132.9	—	105.5	92.2	84.4 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	105.5	—	83.7	—	73.1	—	66.5	—	—	—	—	—	—
VPL-A1304A	1600	140.2	122.5	112.2 *	—	95.2 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	140.2	—	111.3	—	88.3	—	77.2	—	—	—	—	—	—	—	—
VPL-A1306C	2000	150.0	—	128.3 *	107.7 *	94.5	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	49.8	—	43.5	—	39.6	—	—	—	34.6	—	—
VPL-B1002E	3300	87.9	—	69.7	—	55.4	—	—	46.8 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	60.9	—	—	48.4	—	—	42.2	—	—	38.4	—	—
VPL-B1003C	2500	93.6	—	74.3	64.9	—	54.8	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	74.3	64.9	—	—	51.5	—	—	—	44.2 *	—	—	—	—
VPL-B1003T	7000	—	—	—	64.9	—	54.8	—	—	—	45.0	—	—	—	—	38.9
VPL-B1152C	2250	98.8	—	78.4	68.5	—	59.8 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	78.4	—	62.2	—	54.4	—	—	47.5	—	—	—	—	—
VPL-B1152T	6500	—	—	—	68.5	—	57.8	—	—	49.4	—	—	—	—	42.0	—
VPL-B1153E	3200	106.4	—	84.5	—	67.0	—	—	57.3 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	84.5	—	67.0	—	58.6	—	—	—	49.4	—	—	—	—
VPL-B1303C	2250	132.9	—	105.5	92.2	—	80.5 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	105.5	—	83.7	—	74.0 *	—	66.5	—	—	—	—	—	—
VPL-B1304C	2150	140.2	—	111.3	99.5 *	—	86.2 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	111.3	97.2	—	84.3 *	—	73.3	—	—	—	—	—	—	—
VPL-B1306C	2500	150.0	—	119.1	—	100.8 *	87.7	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	119.0	—	94.5	—	82.6	—	—	73.5 *	—	—	—	—	—
VPL-B1651C	2750	161.3	—	128.0	—	108.3 *	—	91.4 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	128.0	—	101.6	—	88.7	—	—	—	76.1 *	—	—	—	—
VPL-B1652C	2700	180.7	—	143.4	125.3	—	—	103.0 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	192.4	—	152.7	136.5 *	—	115.7 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	200.1	174.8	—	152.5 *	129.4 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (maximum radial load) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	25.0	—	19.0	—	10.0	—	10.0 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	15.0	—	12.0	—	—	—	9.0	—	—	—	8.0	—
VPL-A1002C	3000	30.0	—	22.0	—	16.0	—	13.0	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	22.0	18.0	—	—	13.0	—	—	—	11.0	—	—	—	—
VPL-A1003C	2250	33.0	—	24.0	20.0	—	17.0 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	33.0	—	24.0	—	18.0	—	—	—	13.0 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	20.0	—	16.0	—	—	13.0	—	—	11.0	—	—	—
VPL-A1152B	2150	44.0	—	32.0	27.0	—	23.0 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	44.0	—	32.0	—	24.0	—	—	15.0 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	32.0	—	24.0	—	20.0	—	—	—	16.0	—	—	—	—
VPL-A1153C	2300	48.0	—	35.0	29.0	—	24.0 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	39.0	—	29.0	24.0	22.0 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	29.0	—	21.0	—	18.0	—	16.0	—	—	—	—	—	—
VPL-A1304A	1600	43.0	36.0	32.0 *	—	26.0 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	43.0	—	32.0	—	23.0	—	20.0	—	—	—	—	—	—	—	—
VPL-A1306C	2000	48.0	—	39.0 *	31.0 *	26.0	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	14.0	—	11.0	—	10.0	—	—	—	8.0	—	—
VPL-B1002E	3300	30.0	—	22.0	—	16.0	—	—	13.0 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	18.0	—	—	13.0	—	—	11.0	—	—	10.0	—	—
VPL-B1003C	2500	33.0	—	24.0	20.0	—	16.0	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	24.0	20.0	—	—	15.0	—	—	—	12.0 *	—	—	—	—
VPL-B1003T	7000	—	—	—	20.0	—	16.0	—	—	—	12.0	—	—	—	—	10.0
VPL-B1152C	2250	44.0	—	32.0	27.0	—	22.0 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	32.0	—	24.0	—	20.0	—	—	17.0	—	—	—	—	—
VPL-B1152T	6500	—	—	—	27.0	—	21.0	—	—	17.0	—	—	—	—	14.0	—
VPL-B1153E	3200	48.0	—	35.0	—	26.0	—	—	21.0 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	35.0	—	26.0	—	22.0	—	—	—	17.0	—	—	—	—
VPL-B1303C	2250	39.0	—	29.0	—	24.0	20.0 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	29.0	—	21.0	—	18.0 *	—	16.0	—	—	—	—	—	—
VPL-B1304C	2150	43.0	—	32.0	27.0 *	—	23.0 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	32.0	27.0	—	22.0 *	—	18.0	—	—	—	—	—	—	—
VPL-B1306C	2500	48.0	—	36.0	—	29.0 *	24.0	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	36.0	—	26.0	—	22.0	—	—	19.0 *	—	—	—	—	—
VPL-B1651C	2750	48.0	—	35.0	—	28.0 *	—	23.0 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	35.0	—	26.0	—	22.0	—	—	—	18.0 *	—	—	—	—
VPL-B1652C	2700	58.0	—	43.0	36.0	—	—	27.0 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	64.0	—	47.0	41.0 *	—	33.0 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	68.0	—	57.0	48.0 *	38.0 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (zero radial load) for Non-brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	49.4	—	36.5	—	27.0	—	23.4 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	30.6	—	24.5	—	—	—	19.0	—	—	—	16.2	—
VPL-A1002C	3000	49.4	—	36.5	—	27.0	—	22.7	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	36.5	30.6	—	—	22.7	—	—	—	18.2	—	—	—	—
VPL-A1003C	2250	49.4	—	36.5	30.6	—	25.7 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	49.4	—	36.5	—	27.0	—	—	—	20.6 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	30.6	—	24.5	—	—	20.0	—	—	17.4	—	—	—
VPL-A1152B	2150	68.3	—	50.5	42.4	—	36.0 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	68.3	—	50.5	—	37.4	—	—	30.1 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	50.5	—	37.4	—	31.4	—	—	—	25.1	—	—	—	—
VPL-A1153C	2300	68.3	—	50.5	42.4	—	35.2 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	68.3	—	50.5	42.4	37.8 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	50.5	—	37.4	—	31.4	—	27.7	—	—	—	—	—	—
VPL-A1304A	1600	68.3	57.2	51.1 *	—	41.2 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	68.3	—	50.5	—	37.4	—	31.4	—	—	—	—	—	—	—	—
VPL-A1306C	2000	68.3	—	55.7 *	44.3 *	37.4	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	27.0	—	22.7	—	20.0	—	—	—	16.8	—	—
VPL-B1002E	3300	49.4	—	36.5	—	27.0	—	—	21.8 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	30.6	—	—	22.7	—	—	19.0	—	—	16.8	—	—
VPL-B1003C	2500	49.4	—	36.5	30.6	—	24.5	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	36.5	30.6	—	—	22.7	—	—	—	18.6 *	—	—	—	—
VPL-B1003T	7000	—	—	—	30.6	—	24.5	—	—	—	19.0	—	—	—	—	15.7
VPL-B1152C	2250	68.3	—	50.5	42.4	—	35.5 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	50.5	—	37.4	—	31.4	—	—	26.3	—	—	—	—	—
VPL-B1152T	6500	—	—	—	42.4	—	33.9	—	—	27.7	—	—	—	—	22.4	—
VPL-B1153E	3200	68.3	—	50.5	—	37.4	—	—	30.5 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	50.5	—	37.4	—	31.4	—	—	—	25.1	—	—	—	—
VPL-B1303C	2250	68.3	—	50.5	42.3	—	35.5 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	50.5	—	37.4	—	31.8 *	—	27.7	—	—	—	—	—	—
VPL-B1304C	2150	68.3	—	50.5	43.6 *	—	36.2 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	50.5	42.4	—	35.2 *	—	29.3	—	—	—	—	—	—	—
VPL-B1306C	2500	68.3	—	50.5	—	40.6 *	33.9	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	50.5	—	37.4	—	31.4	—	—	27.0 *	—	—	—	—	—
VPL-B1651C	2750	90.1	—	66.7	—	53.7 *	—	43.0 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	66.7	—	49.4	—	41.4	—	—	—	33.9 *	—	—	—	—
VPL-B1652C	2700	90.1	—	66.7	55.9	—	—	43.3 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	90.1	—	66.7	57.6 *	—	46.4 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	90.1	75.6	—	63.2 *	51.1 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Radial Load Force Ratings (maximum) for Brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	90.2	—	71.6	—	56.8	—	50.8 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	62.5	—	52.7	—	—	—	43.4	—	—	—	38.4	—
VPL-A1002C	3000	95.3	—	75.6	—	60.0	—	52.4	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	75.6	66.1	—	—	52.4	—	—	—	44.2	—	—	—	—
VPL-A1003C	2250	99.0	—	78.5	68.6	—	59.9 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	99.0	—	78.5	—	62.3	—	—	—	50.6 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	68.6	—	57.9	—	—	49.5	—	—	44.5	—	—	—
VPL-A1152B	2150	111.3	—	88.4	77.2	—	68.5 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	111.3	—	88.4	—	70.1	—	—	59.4 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	88.4	—	70.1	—	61.3	—	—	—	51.7	—	—	—	—
VPL-A1153C	2300	115.4	—	91.6	80.0	—	69.4 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	145.3	—	115.3	100.7	92.3 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	115.3	—	91.5	—	80.0	—	72.7	—	—	—	—	—	—
VPL-A1304A	1600	149.7	130.8	119.8 *	—	101.6 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	149.5	—	118.6	—	94.2	—	82.3	—	—	—	—	—	—	—	—
VPL-A1306C	2000	156.0	—	133.4 *	112.1 *	98.3	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	56.8	—	49.6	—	45.1	—	—	—	39.4	—	—
VPL-B1002E	3300	95.3	—	75.6	—	60.0	—	—	50.8 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	66.1	—	—	52.4	—	—	45.8	—	—	41.6	—	—
VPL-B1003C	2500	99.0	—	78.5	68.6	—	57.9	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	78.5	68.6	—	—	54.5	—	—	—	46.7 *	—	—	—	—
VPL-B1003T	7000	—	—	—	68.6	—	57.9	—	—	—	47.6	—	—	—	—	41.1
VPL-B1152C	2250	111.3	—	88.4	77.2	—	67.4 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	88.4	—	70.1	—	61.3	—	—	53.5	—	—	—	—	—
VPL-B1152T	6500	—	—	—	77.2	—	65.1	—	—	55.7	—	—	—	—	47.4	—
VPL-B1153E	3200	115.4	—	91.6	—	72.7	—	—	62.2 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	91.6	—	72.7	—	63.5	—	—	—	53.6	—	—	—	—
VPL-B1303C	2250	145.3	—	115.3	100.7	—	88.0 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	115.3	—	91.5	—	80.9 *	—	72.7	—	—	—	—	—	—
VPL-B1304C	2150	149.7	—	118.8	106.2 *	—	92.0 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	118.8	103.8	—	90.0 *	—	78.2	—	—	—	—	—	—	—
VPL-B1306C	2500	156.0	—	123.8	—	104.8 *	91.2	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	123.8	—	98.3	—	85.9	—	—	76.5 *	—	—	—	—	—
VPL-B1651C	2750	180.9	—	143.6	—	121.5 *	—	102.5 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	143.6	—	114.0	—	99.6	—	—	—	85.4 *	—	—	—	—
VPL-B1652C	2700	192.5	—	152.8	133.5	—	—	109.7 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	200.2	—	158.9	142.1 *	—	120.4 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	205.7	179.7	—	156.8 *	133.0 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (maximum radial load) for Brake Motors

Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	31.0	—	23.0	—	17.0	—	14.0 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	19.0	—	15.0	—	—	—	12.0	—	—	—	10.0	—
VPL-A1002C	3000	34.0	—	25.0	—	18.0	—	15.0	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	25.0	21.0	—	—	15.0	—	—	—	12.0	—	—	—	—
VPL-A1003C	2250	36.0	—	26.0	22.0	—	18.0 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	36.0	—	26.0	—	19.0	—	—	—	15.0 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	22.0	—	18.0	—	—	14.0	—	—	12.0	—	—	—
VPL-A1152B	2150	50.0	—	37.0	31.0	—	26.0 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	51.0	—	37.0	—	27.0	—	—	22.0 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	37.0	—	27.0	—	23.0	—	—	—	18.0	—	—	—	—
VPL-A1153C	2300	53.0	—	39.0	32.0	—	27.0 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	46.0	—	34.0	28.0	25.0 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	34.0	—	25.0	—	21.0	—	18.0	—	—	—	—	—	—
VPL-A1304A	1600	48.0	40.0	36.0 *	—	29.0 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	48.0	—	36.0	—	26.0	—	22.0	—	—	—	—	—	—	—	—
VPL-A1306C	2000	52.0	—	42.0 *	33.3 *	28.0	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	17.0	—	14.0	—	12.0	—	—	—	10.0	—	—
VPL-B1002E	3300	34.0	—	25.0	—	18.0	—	—	15.0 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	21.0	—	—	15.0	—	—	13.0	—	—	11.0	—	—
VPL-B1003C	2500	36.0	—	26.0	22.0	—	18.0	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	26.0	22.0	—	—	16.0	—	—	—	13.0 *	—	—	—	—
VPL-B1003T	7000	—	—	—	22.0	—	18.0	—	—	—	13.0	—	—	—	—	11.0
VPL-B1152C	2250	51.0	—	37.0	31.0	—	26.0 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	37.0	—	27.0	—	23.0	—	—	19.0	—	—	—	—	—
VPL-B1152T	6500	—	—	—	31.0	—	25.0	—	—	20.0	—	—	—	—	16.0	—
VPL-B1153E	3200	53.0	—	39.0	—	29.0	—	—	23.0 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	39.0	—	29.0	—	24.0	—	—	—	19.0	—	—	—	—
VPL-B1303C	2250	46.0	—	34.0	28.0	—	24.0 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	34.0	—	25.0	—	21.0 *	—	18.0	—	—	—	—	—	—
VPL-B1304C	2150	48.0	—	36.0	31.0 *	—	25.0 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	36.0	30.0	—	25.0 *	—	20.0	—	—	—	—	—	—	—
VPL-B1306C	2500	52.0	—	38.0	—	31.0 *	25.0	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	38.0	—	28.0	—	24.0	—	—	20.0 *	—	—	—	—	—
VPL-B1651C	2750	58.0	—	43.0	—	34.0 *	—	27.0 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	43.0	—	31.0	—	26.0	—	—	—	21.0 *	—	—	—	—
VPL-B1652C	2700	64.0	—	47.0	39.0	—	—	30.0 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	68.0	—	50.0	43.0 *	—	35.0 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	71.0	59.0	—	50.0 *	40.0 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Axial Load Force Ratings (zero radial load) for Brake Motors

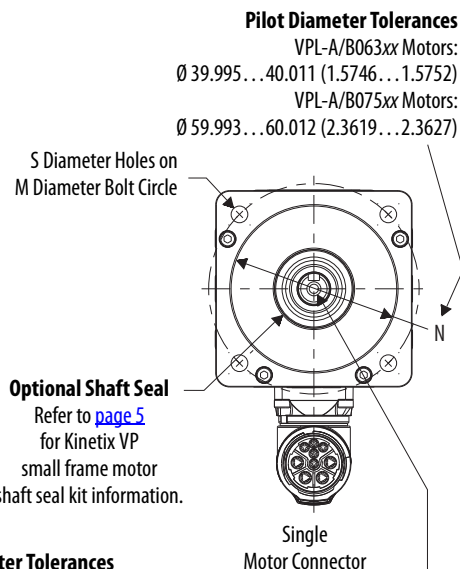
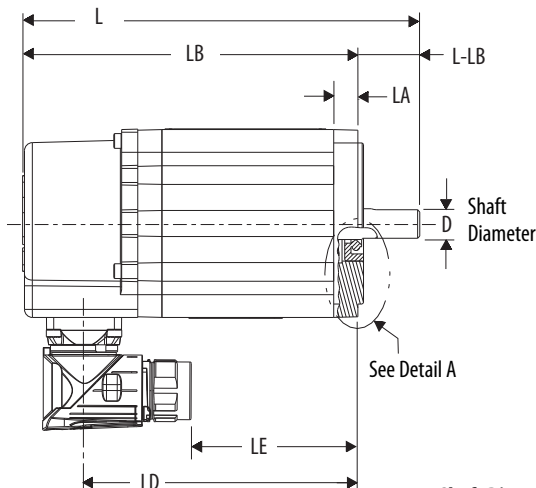
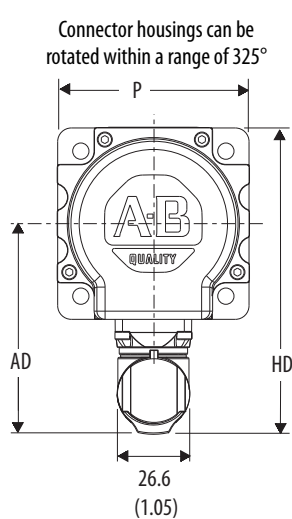
Motor Cat. No. ⁽¹⁾	Rated Speed, max rpm	RPM														
		500 kgf	750 kgf	1000 kgf	1500 kgf	2000 kgf	2500 kgf	3000 kgf	3500 kgf	4000 kgf	4500 kgf	5000 kgf	5500 kgf	6000 kgf	6500 kgf	7000 kgf
VPL-A1001C	2800	49.4	—	36.5	—	27.0	—	23.4 *	—	—	—	—	—	—	—	—
VPL-A1001M	6500	—	—	—	30.6	—	24.5	—	—	—	19.0	—	—	—	16.2	—
VPL-A1002C	3000	49.4	—	36.5	—	27.0	—	22.7	—	—	—	—	—	—	—	—
VPL-A1002F	5000	—	—	36.5	30.6	—	—	22.7	—	—	—	18.2	—	—	—	—
VPL-A1003C	2250	49.4	—	36.5	30.6	—	25.7 *	—	—	—	—	—	—	—	—	—
VPL-A1003E	3750	49.4	—	36.5	—	27.0	—	—	—	20.6 *	—	—	—	—	—	—
VPL-A1003F	5500	—	—	—	30.6	—	24.5	—	—	20.0	—	—	17.4	—	—	—
VPL-A1152B	2150	68.3	—	50.5	42.4	—	36.2 *	—	—	—	—	—	—	—	—	—
VPL-A1152E	3300	68.3	—	50.5	—	37.4	—	—	30.1 *	—	—	—	—	—	—	—
VPL-A1152F	5000	—	—	50.5	—	37.4	—	31.4	—	—	—	25.1	—	—	—	—
VPL-A1153C	2300	68.3	—	50.5	42.4	—	35.2 *	—	—	—	—	—	—	—	—	—
VPL-A1303B	1950	68.3	—	50.5	42.4	37.8 *	—	—	—	—	—	—	—	—	—	—
VPL-A1303E	4000	—	—	50.5	—	37.4	—	31.4	—	27.7	—	—	—	—	—	—
VPL-A1304A	1600	68.3	57.2	51.1 *	—	41.2 *	—	—	—	—	—	—	—	—	—	—
VPL-A1304D	3000	68.3	—	50.5	—	37.4	—	31.4	—	—	—	—	—	—	—	—
VPL-A1306C	2000	68.3	—	55.7 *	44.3	37.4	—	—	—	—	—	—	—	—	—	—
VPL-B1001M	6000	—	—	—	—	27.0	—	22.7	—	20.0	—	—	—	16.8	—	—
VPL-B1002E	3300	49.4	—	36.5	—	27.0	—	—	21.8 *	—	—	—	—	—	—	—
VPL-B1002M	6000	—	—	—	30.6	—	—	22.7	—	—	19.0	—	—	16.8	—	—
VPL-B1003C	2500	49.4	—	36.5	30.6	—	24.5	—	—	—	—	—	—	—	—	—
VPL-B1003F	4750	—	—	36.5	30.6	—	—	22.7	—	—	—	18.6 *	—	—	—	—
VPL-B1003T	7000	—	—	—	30.6	—	24.5	—	—	—	19.0	—	—	—	—	15.7
VPL-B1152C	2250	68.3	—	50.5	42.4	—	35.5 *	—	—	—	—	—	—	—	—	—
VPL-B1152F	4500	—	—	50.5	—	37.4	—	31.4	—	—	26.3	—	—	—	—	—
VPL-B1152T	6500	—	—	—	42.4	—	33.9	—	—	27.7	—	—	—	—	22.4	—
VPL-B1153E	3200	68.3	—	50.5	—	37.4	—	—	30.5 *	—	—	—	—	—	—	—
VPL-B1153F	5000	—	—	50.5	—	37.4	—	31.4	—	—	—	25.1	—	—	—	—
VPL-B1303C	2250	68.3	—	50.5	42.4	—	35.5 *	—	—	—	—	—	—	—	—	—
VPL-B1303F	4000	—	—	50.5	—	37.4	—	31.8 *	—	27.7	—	—	—	—	—	—
VPL-B1304C	2150	68.3	—	50.5	43.6 *	—	36.2 *	—	—	—	—	—	—	—	—	—
VPL-B1304E	3500	—	—	50.5	42.4	—	35.2 *	—	29.3	—	—	—	—	—	—	—
VPL-B1306C	2500	68.3	—	50.5	—	40.6 *	33.9	—	—	—	—	—	—	—	—	—
VPL-B1306F	4250	—	—	50.5	—	37.4	—	31.4	—	—	27.0 *	—	—	—	—	—
VPL-B1651C	2750	90.1	—	66.7	—	53.7	—	43.0 *	—	—	—	—	—	—	—	—
VPL-B1651F	4750	—	—	66.7	—	49.4	—	41.4	—	—	—	33.9 *	—	—	—	—
VPL-B1652C	2700	90.1	—	66.7	55.9	—	—	43.3 *	—	—	—	—	—	—	—	—
VPL-B1653C	2300	90.1	—	66.7	57.6 *	—	46.4 *	—	—	—	—	—	—	—	—	—
VPL-B1654B	1850	90.1	75.6	—	63.2 *	51.1 *	—	—	—	—	—	—	—	—	—	—

(1) 1.0 kgf = 2.2 lbf or 9.8 N. An asterisk (*) indicates a load rating measured at an rpm value that is less than the value listed for that column.

Dimensions - Kinetix VP Low Inertia Motors

VPL-A/B063xx and VPL-A/B075xx Motor Dimensions

Dimensions are in mm (in.)



Pilot Diameter Tolerances

VPL-A/B063xx Motors:

Ø 39.995...40.011 (1.5746...1.5752)

VPL-A/B075xx Motors:

Ø 59.993...60.012 (2.3619...2.3627)

Shaft Diameter Tolerances

VPL-A/B063xx Motors:

Ø 8.998...9.007 (0.3543...0.3546)

VPL-A/B075xx Motors:

Ø 10.997...11.008 (0.4330...0.4334)

Shaft End Threaded Hole

VPL-A/B063xx Motors:

Thread - M3 x 0.5-6H

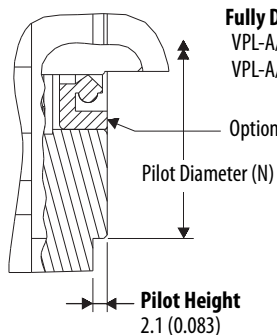
Thread Depth - 9.0 (0.35)

VPL-A/B075xx Motors:

Thread - M4 x 0.7-6H

Thread Depth - 10.0 (0.39)

Detail A



Fully Developed Keyway Length

VPL-A/B063xx Motors: 14.0 (0.551)

VPL-A/B075xx Motors: 16.0 (0.630)

Shaft Detail with Key

Key Supplied

VPL-A/B063xx = 3_(+0, -0.025) x 3_(+0, -0.025) x 13 Key

VPL-A/B075xx = 4_(+0, -0.030) x 4_(+0, -0.030) x 15 Key

Shaft, Pilot, and Keyway Tolerances	VPL-A/B063xx	VPL-A/B075xx
Shaft Runout (T.I.R.)	0.030 (0.0012)	0.035 (0.0014)
Pilot Eccentricity (T.I.R.)	0.08 (0.0031)	0.08 (0.0031)
Max Face Runout (T.I.R.)	0.08 (0.0031)	0.08 (0.0031)
Keyway Depth (GE)	1.80...1.90 (0.071...0.075)	2.50...2.60 (0.098...0.102)
Keyway Width (F)	2.971...2.996 (0.117...0.118)	3.970...4.000 (0.156...0.158)

VPL-A/B063xx and VPL-A/B075xx Motor Dimensions

Motor Cat. No.	AD mm (in.)	HD mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽⁴⁾ mm (in.)	M mm (in.)	S ⁽³⁾ mm (in.)	N ⁽⁴⁾ mm (in.)	P mm (in.)	G ⁽⁴⁾ mm (in.)	F ⁽⁴⁾ mm (in.)
VPL-A/B0631	69.5 (2.74)	97.0 (3.82)	9.0 (0.35)	100.2 (3.94)	60.3 (2.37)	143.1 (5.63)	123.1 (4.85)	20.0 (0.787)	9.0 (0.354)	63.0 (2.480)	5.80 (0.234)	40.0 (1.575)	55.0 (2.17)	1.90 (0.075)	3.0 (0.118)
VPL-A/B0632				125.2 (4.93)	85.3 (3.36)	168.1 (6.61)	148.1 (5.83)								
VPL-A/B0633				150.2 (5.91)	110.3 (4.34)	193.1 (7.59)	173.1 (6.81)								
VPL-A/B0751	77.0 (3.03)	112.0 (4.41)	9.0 (0.35)	102.0 (4.02)	62.1 (2.44)	147.9 (5.82)	124.9 (4.92)	23.0 (0.906)	11.0 (0.433)	75.0 (2.953)	5.80 (0.234)	60.0 (2.362)	70.0 (2.76)	2.60 (0.102)	4.0 (0.157)
VPL-A/B0752				127.0 (5.00)	87.1 (3.43)	172.9 (6.80)	149.9 (5.90)								
VPL-A/B0753				152.0 (5.98)	112.1 (4.41)	197.9 (7.79)	174.9 (6.89)								

(1) If ordering an VPL-A/B063xx or VPL-A/B075xx motor with brake, add 30.6 mm (1.20 in.) to dimension L, LB, LE, and LD.

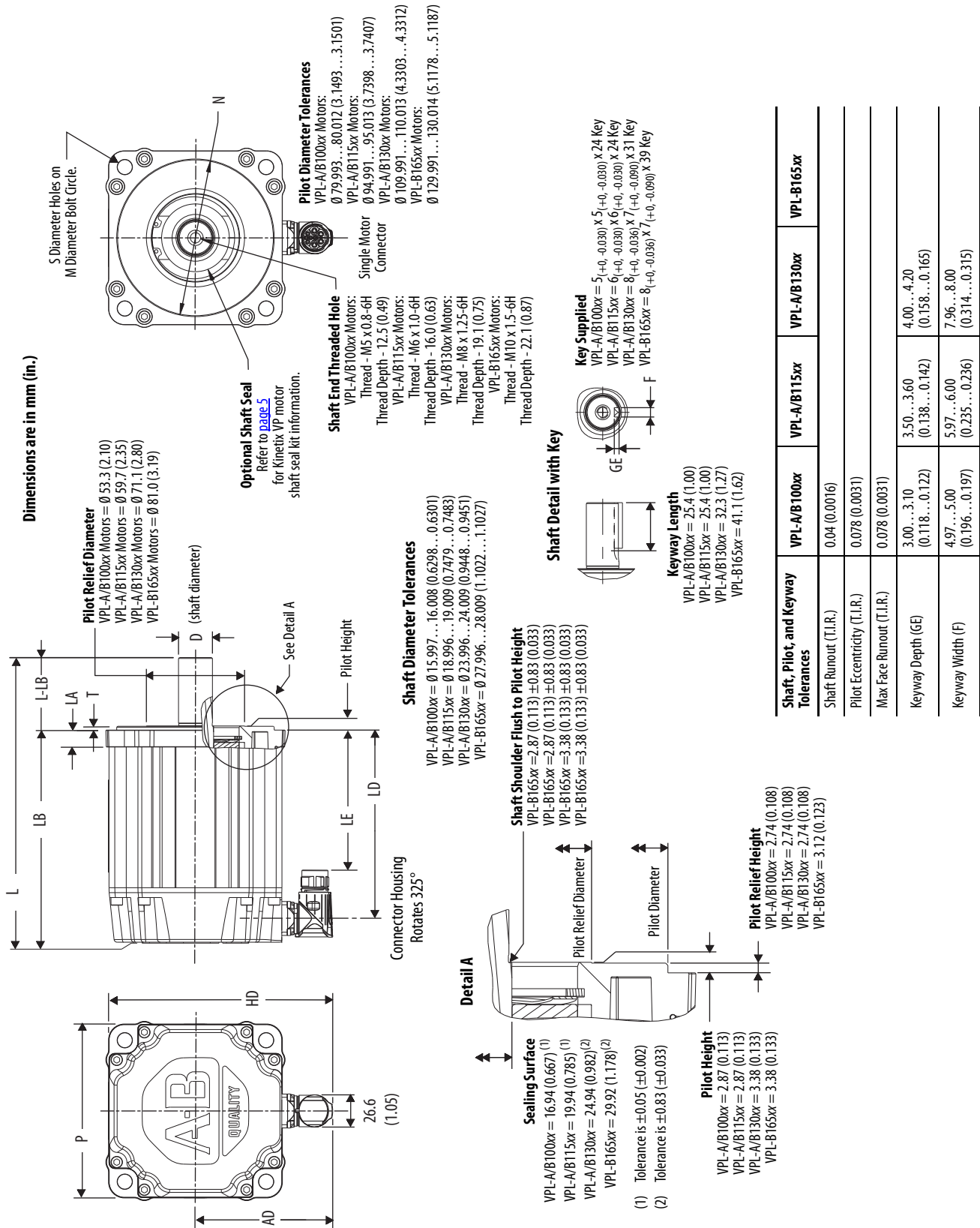
(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) Tolerance for this dimension is $+0.3$, -0.0 mm (± 0.006 in.).

(4) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 20](#).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

VPL-A/B100xx, VPL-A/B115xx, VPL-A/B130xx, and VPL-B165xx Motor Dimensions (M23 SpeedTec DIN connectors)



VPL-A/B100xx, VPL-A/B115xx, VPL-A/B130xx, and VPL-B165xx Motor Dimensions (M23 SpeedTec DIN connectors)

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽³⁾ mm (in.)	M mm (in.)	S mm (in.)	N ⁽³⁾ mm (in.)	P mm (in.)	GE ⁽³⁾ mm (in.)	F ⁽³⁾ mm (in.)
VPL-A/B1001					108.7 (4.28)	68.9 (2.71)	169.8 (6.68)	129.8 (5.11)								
VPL-A/B1002	86.5 (3.40)	131.2 (5.17)	2.74 (0.108)	9.90 (0.39)	134.1 (5.28)	94.3 (3.71)	195.2 (7.68)	155.2 (6.11)	40.0 (1.575)	16.0 (0.630)	100.0 (3.937)	7.00 ⁽⁴⁾ (0.283)	80.0 (3.15)	89.4 (3.52)	3.0 (0.118)	5.0 (0.197)
VPL-A/B1003					159.5 (6.28)	119.7 (4.71)	220.6 (8.68)	180.6 (7.11)								
VPL-A/B1152					130.6 (5.14)	90.7 (3.57)	191.5 (7.54)	151.6 (5.97)								
VPL-A/B1153	90.8 (3.58)	140.0 (5.51)	2.74 (0.108)	10.16 (0.40)	156.0 (6.14)	116.1 (4.57)	216.9 (8.54)	177.0 (6.97)	40.0 (1.575)	19.0 (0.748)	115.0 (4.528)	10.00 ⁽⁴⁾ (0.401)	95.0 (3.74)	98.3 (3.87)	3.5 (0.138)	6.0 (0.236)
VPL-A/B1303					159.3 (6.27)	119.4 (4.70)	230.2 (9.06)	180.3 (7.10)								
VPL-A/B1304	98.6 (3.88)	155.4 (6.12)	2.74 (0.108)	12.19 (0.48)	184.7 (7.27)	144.8 (5.70)	255.6 (10.06)	205.7 (8.10)	50.0 (1.969)	24.0 (0.945)	130.0 (5.118)	10.00 ⁽⁴⁾ (0.401)	110.0 (4.331)	113.7 (4.48)	4.0 (0.158)	8.0 (0.315)
VPL-A/B1306					210.1 (8.27)	170.2 (6.70)	281.0 (11.06)	231.1 (9.10)								
VPL-B1651					155.4 (6.12)	115.6 (4.55)	235.5 (9.27)	175.6 (6.92)								
VPL-B1652					206.2 (8.12)	166.4 (6.55)	286.3 (11.27)	226.4 (8.92)								
VPL-B1653	113.3 (4.46)	185.0 (7.28)	3.12 (0.123)	14.0 (0.55)	257.0 (10.12)	217.2 (8.55)	337.1 (13.27)	277.2 (10.92)	60.0 (2.362)	28.0 (1.102)	165.0 (6.496)	12.00 ⁽⁵⁾ (0.481)	130.0 (5.118)	143.5 (5.65)	4.0 (0.158)	8.0 (0.315)
VPL-B1654					307.8 (12.12)	268.0 (10.55)	387.9 (15.27)	328.0 (12.92)								

(1) If ordering a VPL-A/B100xx-xxx4xx motor with brake, add 34.5 mm (1.36 in.) to dimensions L, LB, LE, and LD.

If ordering a VPL-A/B115xx-xxx4xx motor with brake, add 48.5 mm (1.91 in.) to dimensions L, LB, LE, and LD.

If ordering a VPL-A/B130xx-xxx4xx motor with brake, add 48.5 mm (1.91 in.) to dimensions L, LB, LE, and LD.

If ordering a VPL-B165xx-xxx4xx motor with brake, add 51.5 mm (2.03 in.) to dimensions L, LB, LE, and LD.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).(3) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 22](#).(4) Tolerance for this dimension is ± 0.36 , -0.0 mm (± 0.007 in.).(5) Tolerance for this dimension is ± 0.43 , -0.0 mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series Low Inertia Motors



MP-Series low-inertia (Bulletin MPL), high output brushless servo motors use innovative design characteristics to reduce motor size while delivering significantly higher torque. These compact and highly-dynamic brushless servo motors are designed by Allen-Bradley to meet the demanding requirements of high performance motion systems.

MP-Series Low Inertia Motor Features

Attribute	Value
Main characteristics	• High torque to size ratio • Smart Motor Technology • Low rotor inertia
Features	• 200V and 400V-class windings • High-energy rare-earth magnets • Shaft end threaded hole • DIN connectors, rotates 180° • Standard IEC 72-1 mounting dimensions
Motor type	Brushless AC synchronous servo motors
Environmental rating	• IP50 minimum, without shaft seal (standard). • IP66 with optional shaft seal and use of environmentally sealed cable connectors.
Certifications	Bulletin MPL rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	0.26 ... 163 N·m (2.3 ... 1440 lb·in)
Peak stall torque	0.74 ... 278 N·m (6.6 ... 2460 lb·in)
Speed	Up to 8000 rpm
Motor rated output	0.16 ... 18.6 kW
Compatible servo drives	• Kinetix 6200/6500 • Kinetix 6000 • Kinetix 300/350 • Kinetix 2000 • Kinetix 7000 • Ultra3000
Typical applications	• Packaging • Converting • Material handling • Electronic assembly • Automotive • Metal forming

Catalog Numbers - MP-Series Low Inertia Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.

MP

L

-

x

xx

xx

x

x

7

x

A

A

Factory Options

A = Standard

Mounting Flange

A = IEC metric, free mounting holes (type FF)

Brake

2 = No Brake

4 = 24V DC Brake

Connectors

7 = Circular (SpeedTec) DIN connector, right angle, 180° rotatable ⁽⁷⁾

Enclosure/Shaft Key/Shaft Seal

J = Shaft key/No shaft seal

K = No shaft key/No shaft seal ⁽³⁾

Feedback

V = Multi-turn, 128 sin/cos, absolute encoder (Hiperface protocol) ⁽¹⁾

M = Multi-turn, 1024 sin/cos, absolute encoder (Hiperface protocol) ⁽²⁾

E = Single-turn, 128 sin/cos, absolute encoder (Hiperface protocol) ⁽¹⁾

S = Single-turn, 1024 sin/cos, absolute encoder (Hiperface protocol) ⁽²⁾

H = 2000 lines/revolution, incremental encoder ⁽⁴⁾

R = Resolver ⁽⁵⁾

Rated Speed ⁽⁶⁾

B = 1000 rpm

C = 1500 rpm

D = 2000 rpm

F = 3000 rpm

H = 3500 rpm

J = 3750 rpm

K = 4000 rpm

P = 5000 rpm

T = 6000 rpm

U = 7000 rpm

V = 8000 rpm

Magnet Stack Length ⁽⁶⁾

10 = 25.4 mm (1.0 in.)

20 = 50.8 mm (2.0 in.)

30 = 76.2 mm (3.0 in.)

40 = 101.6 mm (4.0 in.)

50 = 127.0 mm (5.0 in.)

60 = 152.4 mm (6.0 in.)

70 = 177.8 mm (7.0 in.)

80 = 203.2 mm (8.0 in.)

Frame Size

15 = 63 mm

2 = 75 mm

3 = 100 mm

4 = 115 mm

45 = 130 mm

5 = 165 mm

6 = 215 mm

8 = 265 mm

9 = 300 mm

Voltage Class

A = 200V

B = 400V

Series Type

L = Low Inertia

Series

MP = Premium permanent magnet rotary servo motor

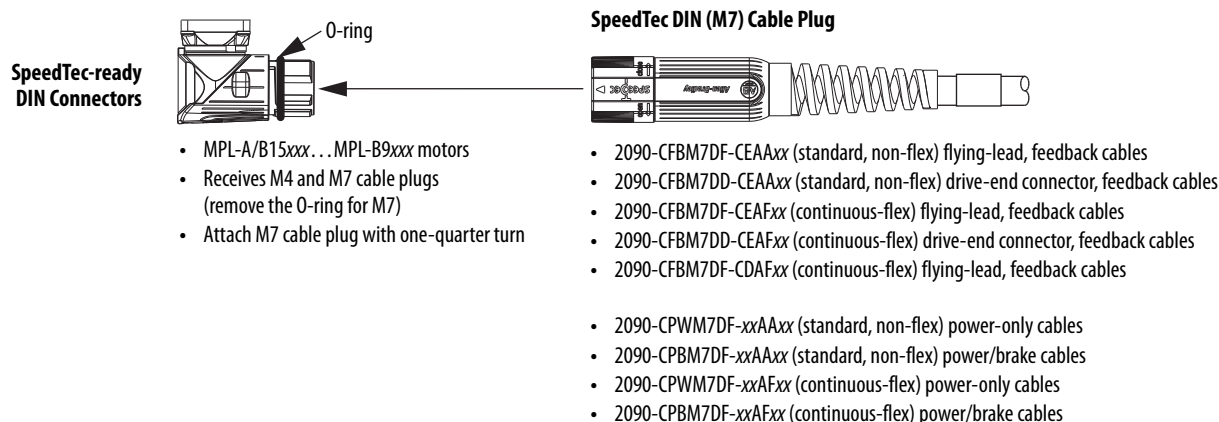
MP-Series Low Inertia Motor High Resolution Encoders

MP-Series low-inertia motors are available with high performance encoders with a choice of single-turn (-E, -S) or multi-turn (-V, -M) high resolution feedback:

- Up to 2 million counts per revolution (-M and -S) for smooth performance (MPL-A/B3xx, MPL-A/B4xx, MPL-A/B45xx, MPL-A/B5xx, MPL-B6xx, MPL-B8xx, and MPL-B9xx motors).
- Up to 260 thousand counts per revolution (-E and -V) for smooth performance (MPL-A/B15xx and MPL-A/B2xx motors).
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns. The electromechanical design does not require a battery.

Motor Connector/Cable Compatibility

MP-Series (Bulletin MPL) motors are equipped with SpeedTec-ready DIN connectors.



For information on transitioning your Bulletin MPL motor installation from bayonet cables to circular DIN cables, refer to Kinetix Motion Accessories Technical Data, publication [GMC-TD004](#).

MP-Series Low Inertia Motor Options

MP-Series low-inertia motors are available with these options:

- 24V DC brake.
- Shaft seal kit available for field installation. Shaft seals are made of nitrile. Kits include a lubricant to reduce wear.
- Optional keyless shaft available in limited frame sizes with extended lead times (MPL-A/B3xx, MPL-A/B4xx, MPL-A/B45xx, and MPL-A/B5xx motors).

Motor Shaft Seal Kit Combinations and Dimensions

Motor Cat. No.	Shaft Seal Cat. No.	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
MPL-A15xx and MPL-B15xx	MPL-SSN-F63F75	12 (0.47)	24 (0.95)	7 (0.28)
MPL-A2xx and MPL-B2xx				
MPL-A3xx and MPL-B3xx	MPL-SSN-A3B3	17 (0.67)	47 (1.85)	7 (0.28)
MPL-A4xx and MPL-B4xx	MPL-SSN-A4B4	20 (0.79)	52 (2.05)	7 (0.28)
MPL-A45xx and MPL-B45xx	MPL-SSN-A5B5	25 (0.98)	62 (2.44)	7 (0.28)
MPL-A520 and MPL-B520 MPL-A540 and MPL-B540 MPL-A560 and MPL-B560	MPL-SSN-F165	30 (1.18)	72 (2.83)	8 (0.31)
MPL-B580	MPL-SSN-F165-32MM	35 (1.38)	72 (2.83)	8 (0.31)
MPL-B6xx	MPL-SSN-A6B6	40 (1.57)	90 (3.54)	8 (0.31)
MPL-B8xx	MPL-SSN-A8B8	45 (1.77)	75 (2.95)	8 (0.31)
MPL-B9xx	MPL-SSN-A9B9	52 (2.05)	72 (2.83)	8 (0.31)

Technical Specifications - MP-Series Low Inertia Motors

MP-Series Low Inertia Motor (200V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPL-A1510V	8000	0.26 (2.3)	0.77 (6.8)	0.16	8000	0.0000074 (0.000065)	1.0 (2.2)
MPL-A1520U	7000	0.49 (4.3)	1.58 (14)	0.27	7000	0.000013 (0.00012)	1.2 (2.6)
MPL-A1530U	7000	0.90 (8.0)	2.80 (25)	0.39	7000	0.000023 (0.00020)	1.6 (3.4)
MPL-A210V	8000	0.55 (4.9)	1.50 (13.5)	0.37	8000	0.000015 (0.00013)	1.4 (3.1)
MPL-A220T	6000	1.61 (14.2)	4.74 (42)	0.62	6000	0.000039 (0.00035)	2.0 (4.4)
MPL-A230P	5000	2.10 (18.6)	8.20 (73)	0.86	5000	0.000063 (0.00056)	2.6 (5.7)
MPL-A310P	5000	1.58 (14)	3.61 (32)	0.73	4750	0.000044 (0.00039)	2.7 (5.8)
MPL-A310F	3000	1.58 (14)	3.61 (32)	0.46	3000		
MPL-A320P	5000	3.05 (27)	7.91 (70)	1.3	4750	0.000078 (0.00069)	3.7 (8.0)
MPL-A320H	3500	3.05 (27)	7.91 (70)	1.0	3350		
MPL-A330P	5000	4.18 (37)	11.1 (98)	1.8	5000	0.00012 (0.0010)	4.6 (10)
MPL-A420P	5000	4.74 (42)	10.2 (90)	2.0	5000	0.00026 (0.0023)	4.3 (9.4)
MPL-A430P	5000	5.99 (53)	19.8 (175)	2.2	5000	0.00038 (0.0033)	5.5 (12)
MPL-A430H	3500	6.21 (55)	19.8 (175)	1.8	3500		
MPL-A4530K	4000	8.13 (72)	20.3 (180)	2.5	4000	0.00040 (0.0036)	7.3 (16)
MPL-A4530F	2800	8.36 (74)	20.3 (180)	1.9	2800		
MPL-A4540C	1500	10.2 (90)	27.1 (240)	1.5	1500	0.00052 (0.0046)	8.6 (19)
MPL-A4540F	3000	10.2 (90)	27.1 (240)	2.6	3000		
MPL-A4560F	3000	14.1 (125)	34.4 (305)	3.0	3000	0.00078 (0.0067)	11.82 (26)
MPL-A520K	4000	10.7 (95)	24.3 (215)	3.5	3500	0.000783 (0.0069)	9.8 (21.5)
MPL-A540K	4000	19.4 (172)	48.6 (430)	5.5	4000	0.00147 (0.013)	15.0 (33)
MPL-A560F	3000	26.8 (237)	61.0 (540)	5.3	3000	0.00213 (0.019)	20.2 (44.5)

(1) Refer to MP-Series Low Inertia Motor Brake Specifications on [page 30](#) for brake rotor inertia and brake motor weight.

MP-Series Low Inertia Motor (400V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPL-B1510V	8000	0.26 (2.3)	0.77 (6.8)	0.16	8000	0.0000074 (0.000065)	1.0 (2.2)
MPL-B1520U	7000	0.49 (4.3)	1.58 (14)	0.27	7000	0.000013 (0.00012)	1.2 (2.6)
MPL-B1530U	7000	0.90 (8.0)	2.80 (25)	0.39	7000	0.000023 (0.00020)	1.6 (3.4)
MPL-B210V	8000	0.55 (4.9)	1.50 (13.5)	0.37	8000	0.000015 (0.00013)	1.4 (3.1)
MPL-B220T	6000	1.61 (14.2)	4.74 (42)	0.62	6000	0.000039 (0.00035)	2.0 (4.4)
MPL-B230P	5000	2.10 (18.6)	8.20 (73)	0.86	5000	0.000063 (0.00056)	2.6 (5.7)
MPL-B310P	5000	1.58 (14)	3.61 (32)	0.77	5000	0.000044 (0.00039) ⁽²⁾	2.7 (5.8)
MPL-B320P	5000	3.05 (27)	7.91 (70)	1.5	5000	0.000078 (0.00069) ⁽²⁾	3.7 (8.0)
MPL-B330P	5000	4.18 (37)	11.1 (98)	1.8	5000	0.00012 (0.0010) ⁽²⁾	4.6 (10)
MPL-B420P	5000	4.74 (42)	13.5 (120)	1.9	5000	0.00026 (0.0023) ⁽²⁾	4.3 (9.4)
MPL-B430P	5000	6.55 (58)	19.8 (175)	2.2	5000	0.00038 (0.0033) ⁽²⁾	5.5 (12)
MPL-B4530F	3000	8.25 (73)	20.3 (180)	2.1	3000	0.00040 (0.0036) ⁽²⁾	7.3 (16)
MPL-B4530K	4000	8.25 (73)	20.3 (180)	2.6	4000		
MPL-B4540F	3000	10.2 (90)	27.1 (240)	2.6	3000	0.00052 (0.0046) ⁽²⁾	8.6 (19)
MPL-B4560F	3000	14.1 (125)	34.4 (305)	3.2	3000	0.00078 (0.0067) ⁽²⁾	11.82 (26)
MPL-B520K	4000	10.7 (95)	23.2 (205)	3.5	3500	0.000783 (0.0069)	9.8 (21.5)
MPL-B540D	2000	19.4 (172)	41.0 (362)	3.4	2000	0.00147 (0.013)	15 (33)
MPL-B540K	4000	19.4 (172)	48.6 (430)	5.4	4000	0.00147 (0.013)	
MPL-B560F	3000	26.8 (237)	67.8 (600)	5.5	3000	0.00213 (0.019)	20.2 (44.5)
MPL-B580F	3000	34.0 (301)	87.0 (770)	7.1	3000	0.00289 (0.023)	25.4 (56)
MPL-B580J	3800	34.0 (301)	81.0 (716)	7.9	3800		
MPL-B640F	3000	36.7 (325)	72.3 (640)	6.11	2000	0.004 (0.0354)	26.8 (59)
MPL-B660F	3000	48.0 (425)	101.1 (895)	6.15	2000	0.0058 (0.051)	35.0 (77)
MPL-B680D	2000	62.8 (556)	154.2 (1365)	9.3	2000	0.00775 (0.0685)	40.4 (89)
MPL-B680F	3000	60.0 (531)	108.5 (960)	7.5	2000		
MPL-B680H	3500	60.0 (531)	146.9 (1300)	7.5	2000		
MPL-B860D	2000	83.0 (735)	152.5 (1350)	12.5	2000	0.0169 (0.150)	57.3 (126)
MPL-B880C	1500	110.0 (973)	203 (1800)	12.6	1500	0.0224 (0.198)	72.7 (160)
MPL-B880D	2000	110.0 (973)	147 (1300)	12.6	2000		
MPL-B960B	1200	130.0 (1150)	231 (2050)	12.7	1200	0.0273 (0.242)	76.0 (167)
MPL-B960C	1500	124.3 (1100)	226 (2000)	14.8	1500		
MPL-B960D	2000	124.3 (1100)	226 (2000)	15.0	2000		
MPL-B980B	1000	162.7 (1440)	278 (2460)	15.2	1000	0.0354 (0.313)	94.5 (208)
MPL-B980C	1500	158.2 (1400)	271 (2400)	16.8	1500		
MPL-B980D	2000	158.2 (1400)	260 (2300)	18.6	2000		
MPL-B980E	2750	141.0 (1250)	237 (2100)	13.0	1500		

(1) Refer to MP-Series Low Inertia Motor Brake Specifications on [page 30](#) for brake rotor inertia and brake motor weight.

(2) Rotor inertia can vary slightly depending on feedback.

MP-Series Low Inertia Motor Brake Specifications

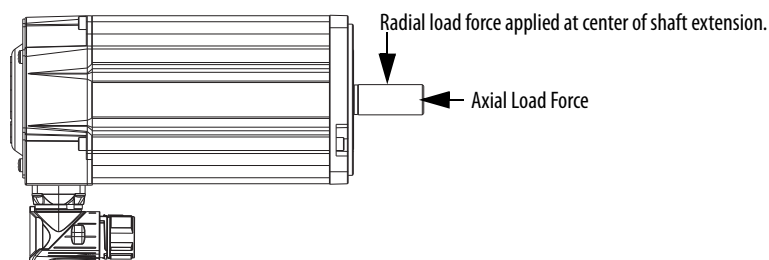
Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time			Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage (by using external arc suppression device)			
					MOV ms	Diode ms		
MPL-A/B1510V	0	0.9 (8.0)	0.43...0.53	23	9	18	0.0000099 (0.000088)	1.2 (2.6)
MPL-A/B1520U							0.000015 (0.00013)	1.4 (3.1)
MPL-A/B1530U							0.000026 (0.00023)	1.8 (3.9)
MPL-A/B210V		4.5 (40)	0.46...0.56	58	20	42	0.000033 (0.00029)	1.8 (4.0)
MPL-A/B220T							0.000057 (0.00050)	2.4 (5.4)
MPL-A/B230P							0.000082 (0.00073)	3.0 (6.7)
MPL-A/B310	45	4.18 (37)	0.45...0.55	50	20	110	0.000057 (0.00050)	3.7 (8)
MPL-A/B320							0.000092 (0.00081)	4.6 (10)
MPL-A/B330							0.00013 (0.0011)	5.6 (12.4)
MPL-A/B420	37	10.2 (90)	0.576...0.704	110	25	160	0.00030 (0.0027)	6.0 (13.2)
MPL-A/B430							0.00042 (0.0038)	7.3 (16)
MPL-A/B4530							0.00044 (0.0039)	9.1 (20)
MPL-A/B4540							0.00056 (0.0050)	11.0 (24)
MPL-A/B4560							0.00084 (0.0072)	15.1 (33.2)
MPL-A/B520	25	28.3 (250)	1.05...1.28	70	50	250	0.000897 (0.0079)	12.38 (27.25)
MPL-A/B540							0.00157 (0.0139)	17.6 (38.75)
MPL-A/B560							0.00227 (0.020)	22.8 (50.1)
MPL-B580							0.0030 (0.026)	29.0 (63.8)
MPL-B640	25	70.0 (619)	1.91...2.19	200	120	900	0.00438 (0.03863)	37.27 (82.0)
MPL-B660							0.00628 (0.0555)	42.95 (94.5)
MPL-B680							0.0079 (0.0698)	50.8 (112.0)
MPL-B860		106.0 (938)	2.05...2.50	250	200	1000	0.0177 (0.1570)	72.7 (160)
MPL-B880							0.0232 (0.205)	87.7 (193)
MPL-B960		153.0 (1350)	3.85...4.70	300	200	1200	0.0290 (0.256)	89.5 (197)
MPL-B980							0.0378 (0.334)	116.5 (256)

MP-Series Low Inertia Motor Load Force Ratings

Bulletin MPL motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L₁₀ bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)	7000 rpm kg (lb)	8000 rpm kg (lb)
MPL-A/B1510	—	24 (52)	19 (41)	—	—	15 (33)	—	—	—	12 (26)
MPL-A/B1520	—	25 (56)	20 (45)	—	—	16 (36)	—	—	14 (30)	—
MPL-A/B1530	—	28 (62)	22 (49)	—	—	18 (39)	—	—	15 (33)	—
MPL-A/B210	—	24 (52)	19 (41)	—	—	15 (33)	—	—	—	12 (26)
MPL-A/B220	—	27 (59)	21 (47)	—	18 (39)	—	—	15 (33)	—	—
MPL-A/B230	—	29 (64)	23 (51)	—	19 (42)	—	17 (37)	—	—	—
MPL-A/B310	78 (172)	62 (137)	49 (108)	—	40 (88)	—	36 (79)	—	—	—
MPL-A/B320	87 (192)	69 (152)	55 (121)	—	45 (99)	—	40 (88)	—	—	—
MPL-A/B330	—	74 (163)	59 (130)	—	49 (108)	—	43 (95)	—	—	—
MPL-A/B420	—	78 (172)	62 (137)	—	51 (112)	—	45 (99)	—	—	—
MPL-A/B430	106 (234)	84 (185)	67 (148)	—	55 (121)	—	49 (108)	—	—	—
MPL-A/B4530	133 (293)	105 (232)	84 (185)	73 (161)	—	66 (146)	—	—	—	—
MPL-A4540C	140 (309)	112 (245)	96 (211)	—	—	—	—	—	—	—
MPL-A/B4540	140 (309)	111 (245)	89 (196)	77 (170)	—	—	—	—	—	—
MPL-A/B4560	—	151 (332)	119 (263)	95 (209)	—	—	—	—	—	—
MPL-A/B520	—	127 (280)	100 (222)	88 (194)	—	80 (176)	—	—	—	—
MPL-A/B540	—	143 (316)	114 (251)	99 (219)	—	90 (199)	—	—	—	—
MPL-A/B560	—	153 (338)	121 (268)	106 (234)	—	—	—	—	—	—
MPL-B580	—	153 (338)	121 (268)	106 (234)	—	—	—	—	—	—
MPL-B640	253 (557)	200 (442)	159 (351)	139 (307)	—	—	—	—	—	—
MPL-B660	275 (607)	219 (482)	173 (382)	151 (334)	—	—	—	—	—	—
MPL-B680	291 (641)	230 (508)	183 (404)	160 (353)	—	—	—	—	—	—
MPL-B860	347 (764)	276 (607)	219 (481)	—	—	—	—	—	—	—
MPL-B880	368 (810)	292 (643)	231 (510)	—	—	—	—	—	—	—
MPL-B960	466 (1028)	370 (816)	323 (713)	—	—	—	—	—	—	—
MPL-B980	494 (1089)	392 (864)	352 (775)	—	—	—	—	—	—	—

MPL-xxxx-xxxxAA Load Forces**Axial Load Force Ratings (maximum radial load)**

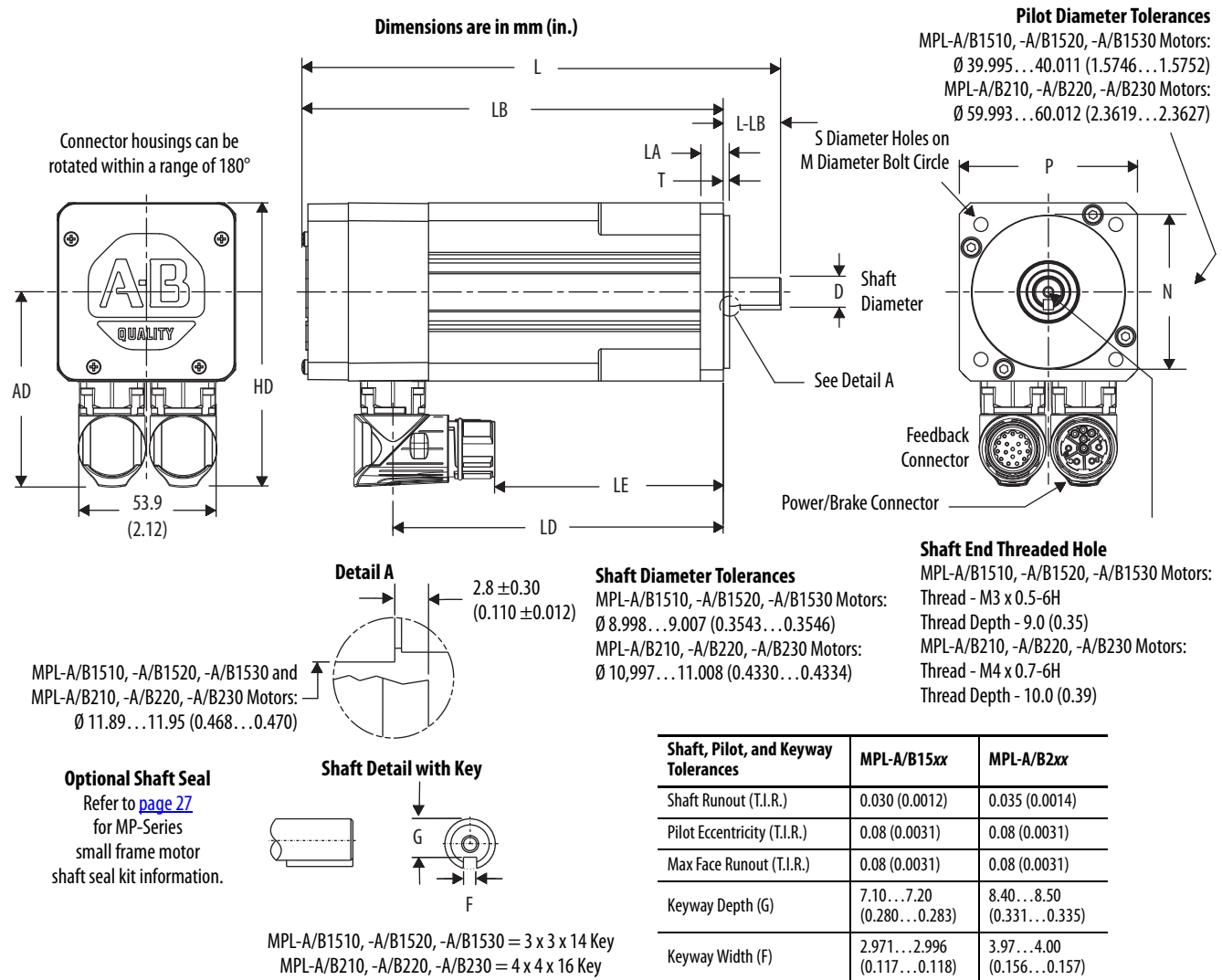
Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)	7000 rpm kg (lb)	8000 rpm kg (lb)
MPL-A/B1510	—	15 (33)	10 (22)	—	—	7 (15)	—	—	—	5 (11)
MPL-A/B1520	—	14 (31)	10 (22)	—	—	6 (13)	—	—	4 (9)	—
MPL-A/B1530	—	13 (29)	9 (20)	—	—	6 (13)	—	—	4 (8)	—
MPL-A/B210	—	15 (33)	10 (22)	—	—	7 (15)	—	—	—	5 (11)
MPL-A/B220	—	14 (30)	9 (20)	—	7 (15)	—	—	5 (11)	—	—
MPL-A/B230	—	13 (28)	9 (19)	—	6 (13)	—	5 (11)	—	—	—
MPL-A/B310	30 (66)	23 (51)	16 (35)	—	13 (29)	—	11 (24)	—	—	—
MPL-A/B320	34 (75)	25 (55)	19 (42)	—	15 (33)	—	13 (29)	—	—	—
MPL-A/B330	—	27 (60)	20 (44)	—	16 (35)	—	13 (29)	—	—	—
MPL-A/B420	—	36 (79)	27 (60)	—	21 (46)	—	18 (40)	—	—	—
MPL-A/B430	52 (115)	39 (86)	29 (64)	—	22 (49)	—	19 (42)	—	—	—
MPL-A/B4530	45 (99)	34 (75)	25 (55)	21 (46)	—	19 (42)	—	—	—	—
MPL-A4540C	31 (68)	37 (81)	49 (108)	—	—	—	—	—	—	—
MPL-A/B4540	49 (108)	36 (79)	27 (60)	22 (49)	—	—	—	—	—	—
MPL-A/B4560	—	53 (117)	40 (88)	30 (65)	—	—	—	—	—	—
MPL-A/B520	—	42 (94)	30 (68)	26 (58)	—	22 (50)	—	—	—	—
MPL-A/B540	—	48 (107)	35 (79)	30 (66)	—	26 (58)	—	—	—	—
MPL-A/B560	—	52 (115)	43 (95)	32 (71)	—	—	—	—	—	—
MPL-B580	—	52 (115)	43 (95)	32 (71)	—	—	—	—	—	—
MPL-B640	89 (197)	66 (146)	48 (107)	41 (90)	—	—	—	—	—	—
MPL-B660	98 (217)	72 (159)	53 (118)	45 (99)	—	—	—	—	—	—
MPL-B680	104 (230)	77 (169)	34 (125)	47 (104)	—	—	—	—	—	—
MPL-B860	145 (320)	107 (237)	79 (175)	—	—	—	—	—	—	—
MPL-B880	153 (338)	113 (250)	84 (185)	—	—	—	—	—	—	—
MPL-B960	142 (314)	105 (232)	88 (194)	—	—	—	—	—	—	—
MPL-B980	153 (338)	113 (249)	94 (207)	—	—	—	—	—	—	—

Axial Load Force Ratings (zero radial load)

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)	7000 rpm kg (lb)	8000 rpm kg (lb)
MPL-A/B1510	—	24 (53)	17 (37)	—	—	12 (26)	—	—	—	8 (18)
MPL-A/B1520	—	24 (53)	17 (37)	—	—	12 (26)	—	—	9 (19)	—
MPL-A/B1530	—	24 (53)	17 (37)	—	—	12 (26)	—	—	9 (19)	—
MPL-A/B210	—	24 (53)	17 (37)	—	—	12 (26)	—	—	—	8 (18)
MPL-A/B220	—	24 (53)	17 (37)	—	13 (28)	—	—	10 (22)	—	—
MPL-A/B230	—	24 (53)	17 (37)	—	13 (28)	—	10 (22)	—	—	—
MPL-A/B310	49 (108)	36 (79)	27 (60)	—	21 (46)	—	18 (40)	—	—	—
MPL-A/B320	49 (108)	36 (79)	27 (60)	—	21 (46)	—	18 (40)	—	—	—
MPL-A/B330	—	36 (79)	27 (60)	—	21 (46)	—	18 (40)	—	—	—
MPL-A/B420	—	51 (112)	38 (84)	—	30 (66)	—	25 (55)	—	—	—
MPL-A/B430	69 (152)	51 (112)	38 (84)	—	30 (66)	—	25 (55)	—	—	—
MPL-A/B4530	69 (152)	51 (112)	38 (84)	31 (68)	—	28 (62)	—	—	—	—
MPL-A4540C	68 (150)	51 (112)	43 (95)	—	—	—	—	—	—	—
MPL-A/B4540	69 (152)	51 (112)	38 (84)	31 (68)	—	—	—	—	—	—
MPL-A/B4560	—	69 (152)	51 (112)	38 (84)	—	—	—	—	—	—
MPL-A/B520	—	67 (149)	49 (109)	41 (92)	—	36 (81)	—	—	—	—
MPL-A/B540	—	67 (149)	49 (109)	41 (92)	—	36 (81)	—	—	—	—
MPL-A/B560	—	67 (149)	49 (109)	41 (92)	—	—	—	—	—	—
MPL-B580	—	67 (149)	49 (109)	41 (92)	—	—	—	—	—	—
MPL-B640	136 (300)	99 (219)	74 (163)	62 (137)	—	—	—	—	—	—
MPL-B660	136 (300)	99 (219)	74 (163)	62 (137)	—	—	—	—	—	—
MPL-B680	136 (300)	99 (219)	74 (163)	62 (137)	—	—	—	—	—	—
MPL-B860	201 (443)	147 (323)	110 (242)	—	—	—	—	—	—	—
MPL-B880	201 (443)	147 (323)	110 (242)	—	—	—	—	—	—	—
MPL-B960	215 (473)	159 (350)	133 (293)	—	—	—	—	—	—	—
MPL-B980	215 (473)	159 (350)	133 (293)	—	—	—	—	—	—	—

Dimensions - MP-Series Low Inertia Motors

MPL-A/B15xx and MPL-A/B2xx Motor Dimensions (SpeedTec DIN connectors)



MPL-A/B15xx and MPL-A/B2xx Motor Dimensions (SpeedTec DIN connectors)

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽³⁾ mm (in.)	M mm (in.)	S ⁽⁴⁾ mm (in.)	N ⁽³⁾ mm (in.)	P mm (in.)	G ⁽³⁾ mm (in.)	F ⁽³⁾ mm (in.)
MPL-A/B1510	68.9 (2.71)	96.4 (3.80)	2.50 (0.098)	9.0 (0.35)	78.3 (3.08)	37.8 (1.49)	133.2 (5.25)	113.5 (4.47)	19.7 (0.776)	9.0 (0.35)	63.0 (2.480)	5.80 (0.228)	40.0 (1.57)	55.0 (2.17)	7.2 (0.283)	3.0 (0.118)
MPL-A/B1520					91.3 (3.60)	50.9 (2.00)	146.2 (5.76)	126.5 (4.98)								
MPL-A/B1530					116.3 (4.58)	76.7 (2.98)	171.2 (6.74)	151.5 (5.96)								
MPL-A/B210	76.2 (3.00)	111.2 (4.38)	2.50 (0.098)	9.0 (0.35)	78.6 (3.09)	38.4 (1.51)	137.3 (5.40)	114.6 (4.51)	22.7 (0.894)	11.0 (0.43)	75.0 (2.953)	5.80 (0.228)	60.0 (2.36)	70.0 (2.76)	8.5 (0.335)	4.0 (0.157)
MPL-A/B220					104.1 (4.10)	63.9 (2.52)	162.8 (6.41)	140.1 (5.52)								
MPL-A/B230					129.6 (5.10)	89.4 (3.52)	188.3 (7.41)	165.6 (6.52)								

(1) If ordering an MPL-A/B1510, MPL-A/B1520, or MPL-A/B1530 motor with brake, add 36.1 mm (1.421 in.) to dimension L and LB, and add 33.4 mm (1.32 in.) to LD and LE.

If ordering an MPL-A/B210, A/B220, or A/B230 motor with brake, add 39.0 mm (1.535 in.) to dimension L and LB, and add 24.7 mm (0.97 in.) to LD and LE.

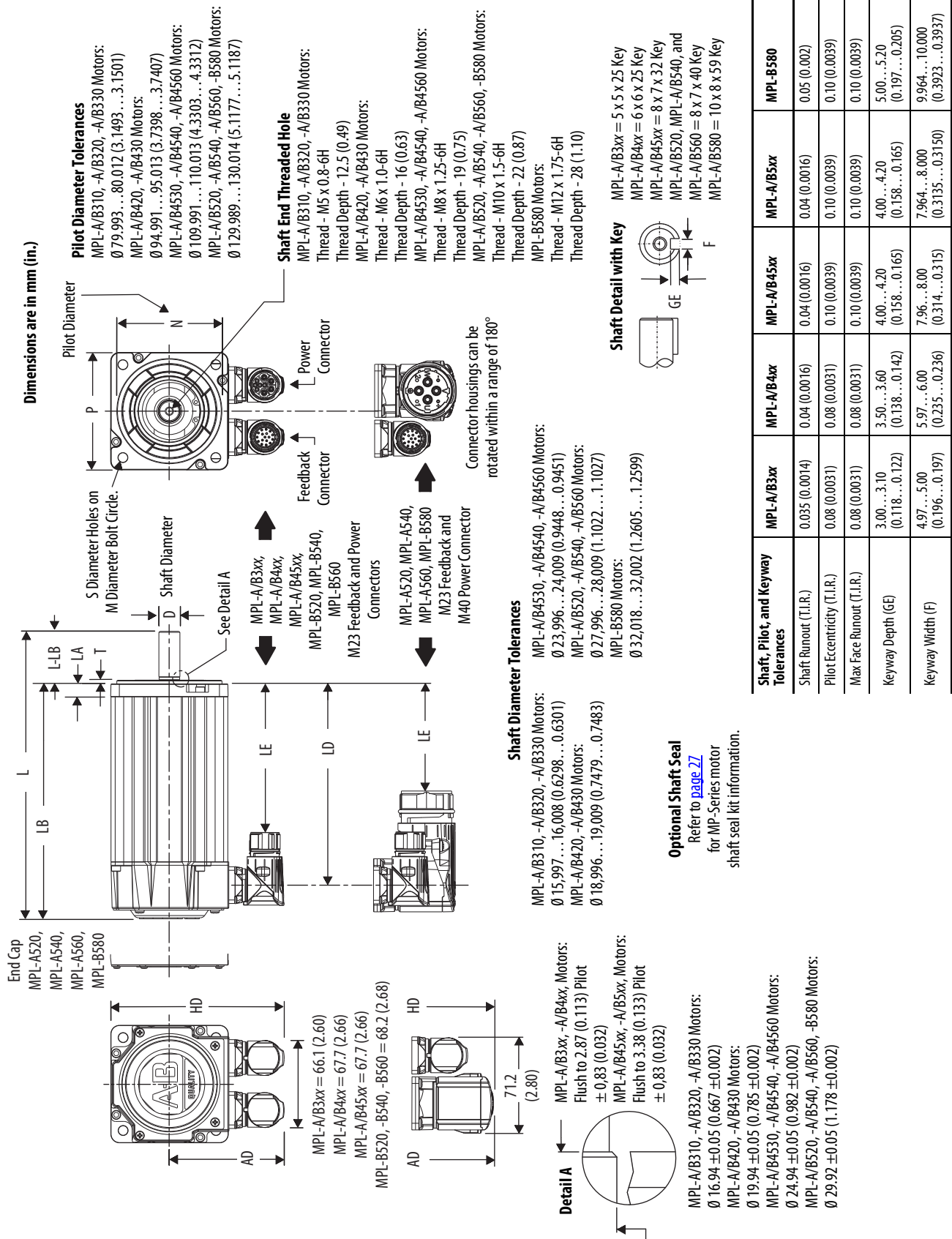
(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 34](#).

(4) Tolerance for this dimension is $+0.3$ mm ($+0.012$ in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPL-A/B3xx, MPL-A/B4xx, MPL-A/B45xx, MPL-A/B5xx Motor Dimensions (SpeedTec DIN connectors)



MPL-A/B3xx, MPL-A/B4xx, MPL-A/B45xx, MPL-A/B5xx Motor Dimensions (SpeedTec DIN connectors)

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽³⁾ mm (in.)	M mm (in.)	S ⁽⁴⁾ mm (in.)	N ⁽³⁾ mm (in.)	P mm (in.)	GE ⁽³⁾ mm (in.)	F ⁽³⁾ mm (in.)
MPL-A/B310					102.0 (4.03)	62.0 (2.45)	168.0 (6.62)	128.0 (5.04)								
MPL-A/B320	87.2 (3.44)	132.0 (5.20)	2.74 (0.108)	9.90 (0.39)	128.0 (5.03)	88.0 (3.45)	193.0 (7.62)	153.0 (6.04)	40.0 (1.58)	16.0 (0.629)	100.0 (3.937)	7.0 (0.283)	80.0 (3.15)	89.4 (3.52)	3.0 (0.118)	5.0 (0.197)
MPL-A/B330					153.0 (6.03)	113.0 (4.45)	219.0 (8.62)	179.0 (7.04)								
MPL-A/B420	90.9 (3.58)	140.1 (5.52)	2.74 (0.108)	10.16 (0.40)	124.0 (4.89)	84.0 (3.31)	190.0 (7.48)	150.0 (5.90)	40.0 (1.58)	19.0 (0.748)	115.0 (4.528)	10.0 (0.401)	95.0 (3.74)	98.3 (3.87)	3.5 (0.138)	6.0 (0.236)
MPL-A/B430					150.0 (5.89)	110.0 (4.31)	215.0 (8.48)	175.0 (6.90)								
MPL-A/B4530					153.0 (6.02)	113.0 (4.44)	229.0 (9.0)	179.0 (7.03)								
MPL-A/B4540	98.6 (3.88)	155.4 (6.12)	2.74 (0.108)	12.19 (0.48)	178.0 (7.02)	138.0 (5.44)	254.0 (10.0)	204.0 (8.03)	50.0 (1.97)	24.0 (0.945)	130.0 (5.118)	10.0 (0.401)	110.0 (4.331)	113.7 (4.48)	4.0 (0.158)	8.0 (0.315)
MPL-A/B4560					229.0 (9.02)	189.0 (7.44)	305.0 (12.0)	255.0 (10.03)								
MPL-A520					151.0 (5.95)	80.0 (3.15)	236.0 (9.28)	176.0 (6.92)								
MPL-A540	136.4 (5.37)	208.1 (8.19)	3.12 (0.123)	14.0 (0.55)	202.0 (7.95)	131.0 (5.15)	287.0 (11.28)	227.0 (8.92)	60.0 (2.362)	28.0 (1.102)	165.0 (6.496)	12.0 (0.481)	130.0 (5.118)	143.5 (5.65)	4.0 (0.158)	8.0 (0.315)
MPL-A560					253.0 (9.95)	182.0 (7.15)	337.0 (13.28)	277.0 (10.92)								
MPL-B520					149.0 (5.88)	109.0 (4.30)	236.0 (9.28)	176.0 (6.92)								
MPL-B540	113.4 (4.47)	185.2 (7.29)	3.12 (0.123)	14.0 (0.55)	200.0 (7.88)	160.0 (6.30)	287.0 (11.28)	227.0 (8.92)	60.0 (2.38)	28.0 (1.102)	165.0 (6.496)	12.0 (0.481)	130.0 (5.118)	143.5 (5.65)	4.0 (0.158)	8.0 (0.315)
MPL-B560					251.0 (9.88)	211.0 (8.30)	337.0 (13.28)	277.0 (10.92)								
MPL-B580	136.4 (5.37)	208.1 (8.19)	3.12 (0.123)	14.0 (0.55)	304.0 (11.95)	232.0 (9.15)	408.0 (16.07)	328.0 (12.92)	80.0 (3.15)	32.0 (1.260)					5.0 (0.198)	10.0 (0.393)

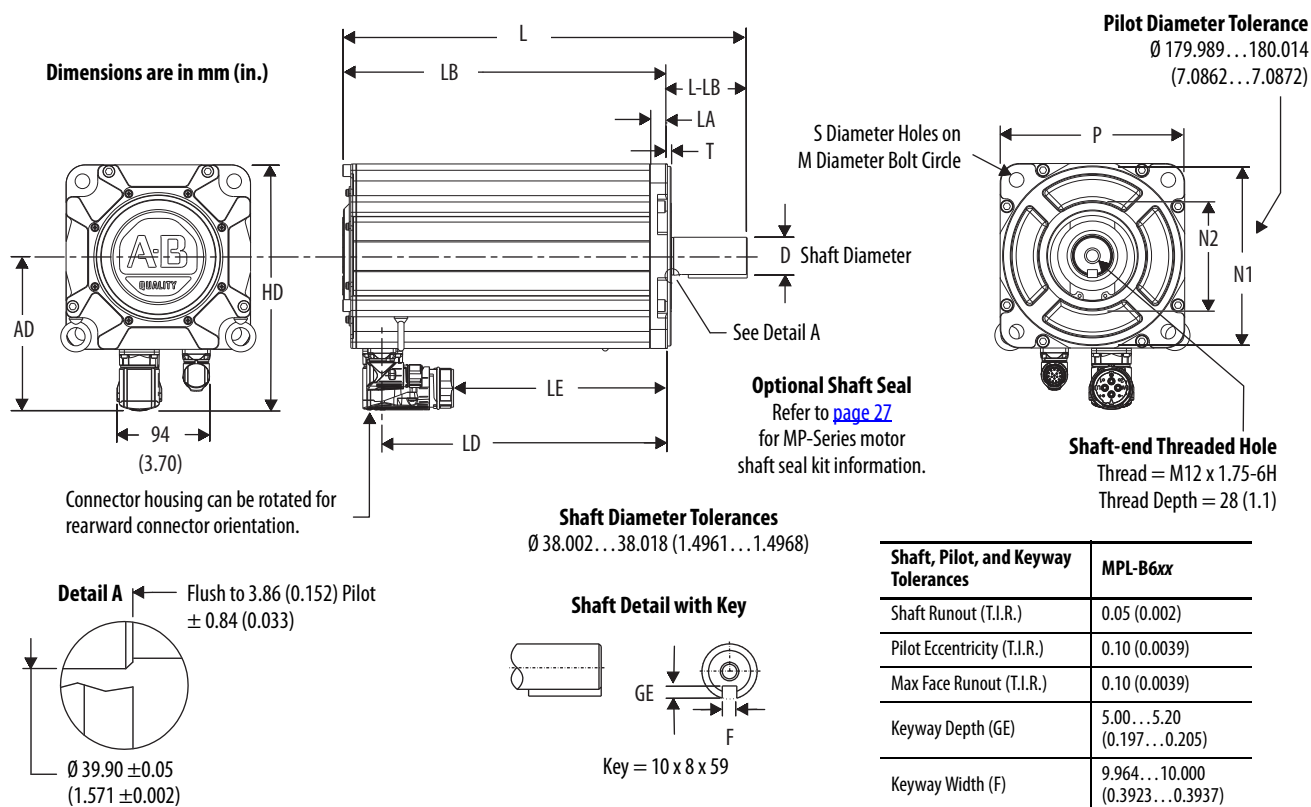
(1) If ordering an MPL-A/B310, MPL-A/B320, or MPL-A/B330 motor with brake, add 35.0 mm (1.38 in.) to dimensions L, LB, LE, and LD.

(2) If ordering an MPL-A/B420, MPL-A/B430, MPL-A/B4530, MPL-A/B4540, or MPL-A/B4560 motor with brake, add 48.0 mm (1.89 in.) to dimensions L, LB, LE, and LD.

(3) If ordering an MPL-A/B520, MPL-A/B540, MPL-A/B560, or MPL-B580 motor with brake, add 52.0 mm (2.03 in.) to dimensions L, LB, LE, and LD.

(4) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).(5) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 36](#).(6) Tolerance for this dimension is ± 0.36 mm (± 0.007 in.) on MPL-A/B3xx, MPL-A/B4xx, MPL-A/B45xx, and ± 0.43 mm (± 0.008 in.) on MPL-A/B5xx.

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPL-B6xx Motor Dimensions (SpeedTec DIN connectors)

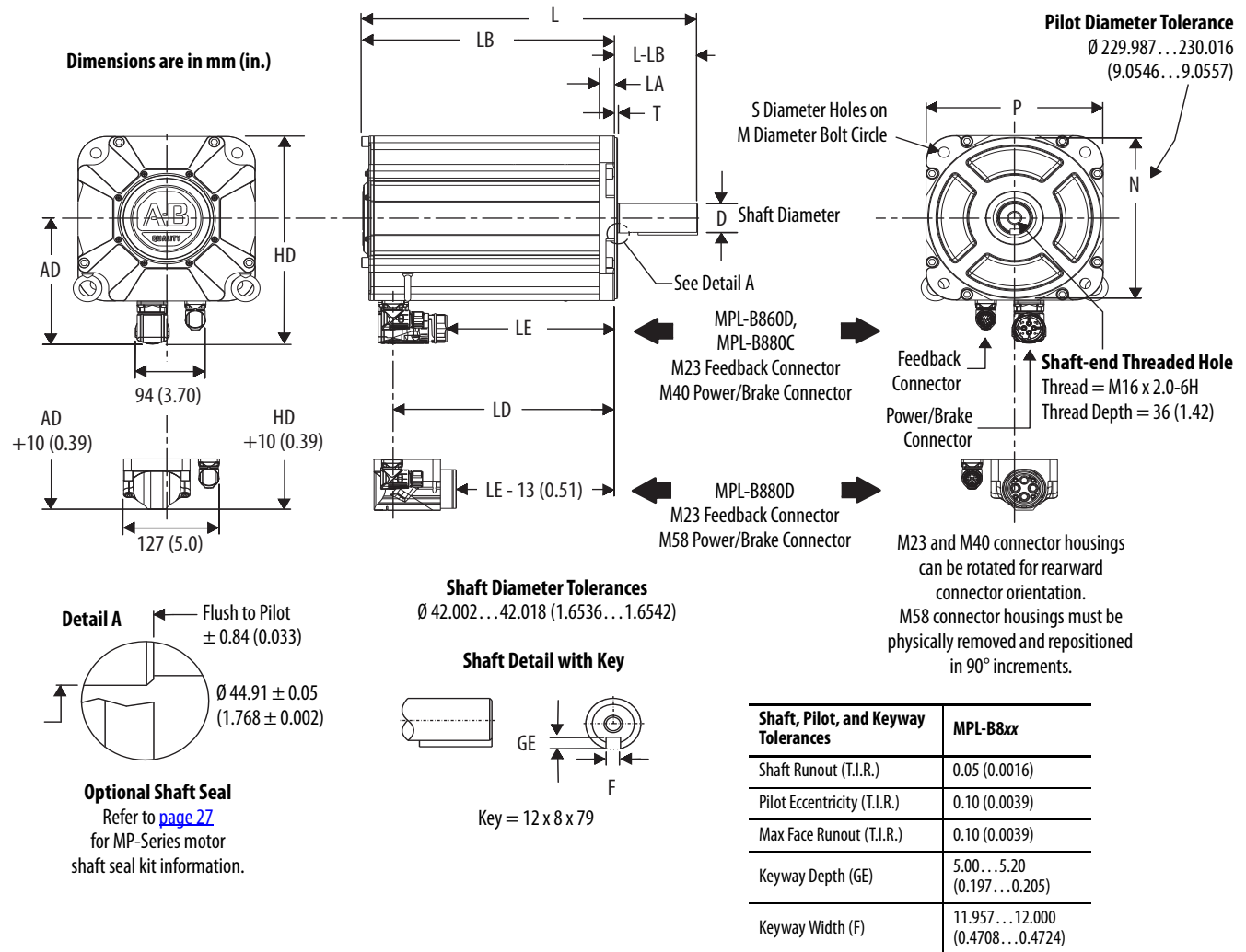
Motor Cat. No.	AD	HD	T	LA	LD ⁽¹⁾	LE ⁽¹⁾	L ⁽¹⁾	LB ⁽¹⁾	L-LB ⁽²⁾	D	M	S ⁽³⁾	N	P	GE	F
mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
MPL-																
B640					184.0 (7.23)	113.0 (4.43)	304.0 (11.96)	224.0 (8.83)								
B660	154.0 (6.06)	246.5 (9.70)	3.73 (0.147)	17.8 (0.70)	234.0 (9.23)	163.0 (6.43)	355.0 (13.96)	275.0 (10.83)	80.0 (3.15)	38.0 (1.5)	215.0 (8.465)	14.50 (0.579)	180.0 (7.09)	184.9 (7.28)	5.0 (0.197)	10.0 (0.394)
B680					285.0 (11.23)	214.0 (8.43)	405.0 (15.96)	325.0 (12.83)								

(1) If ordering an MPL-B640, MPL-B660, or MPL-B680 motor with brake, add 89 mm (3.5 in.) to dimensions LD, LE, L, and LB.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) Tolerance for this dimension is ± 0.215 mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPL-B8xx Motor Dimensions (SpeedTec DIN connectors)

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D mm (in.)
MPL-B860	179 (7.05)	297 (11.67)	3.86 (0.152)	20.3 (0.80)	243 (9.55)	171 (6.75)	394 (15.53)	284 (11.20)	110 (4.33)	42.0 (1.654)
MPL-B880					293 (11.55)	222 (8.75)	445 (17.53)	335 (13.20)		

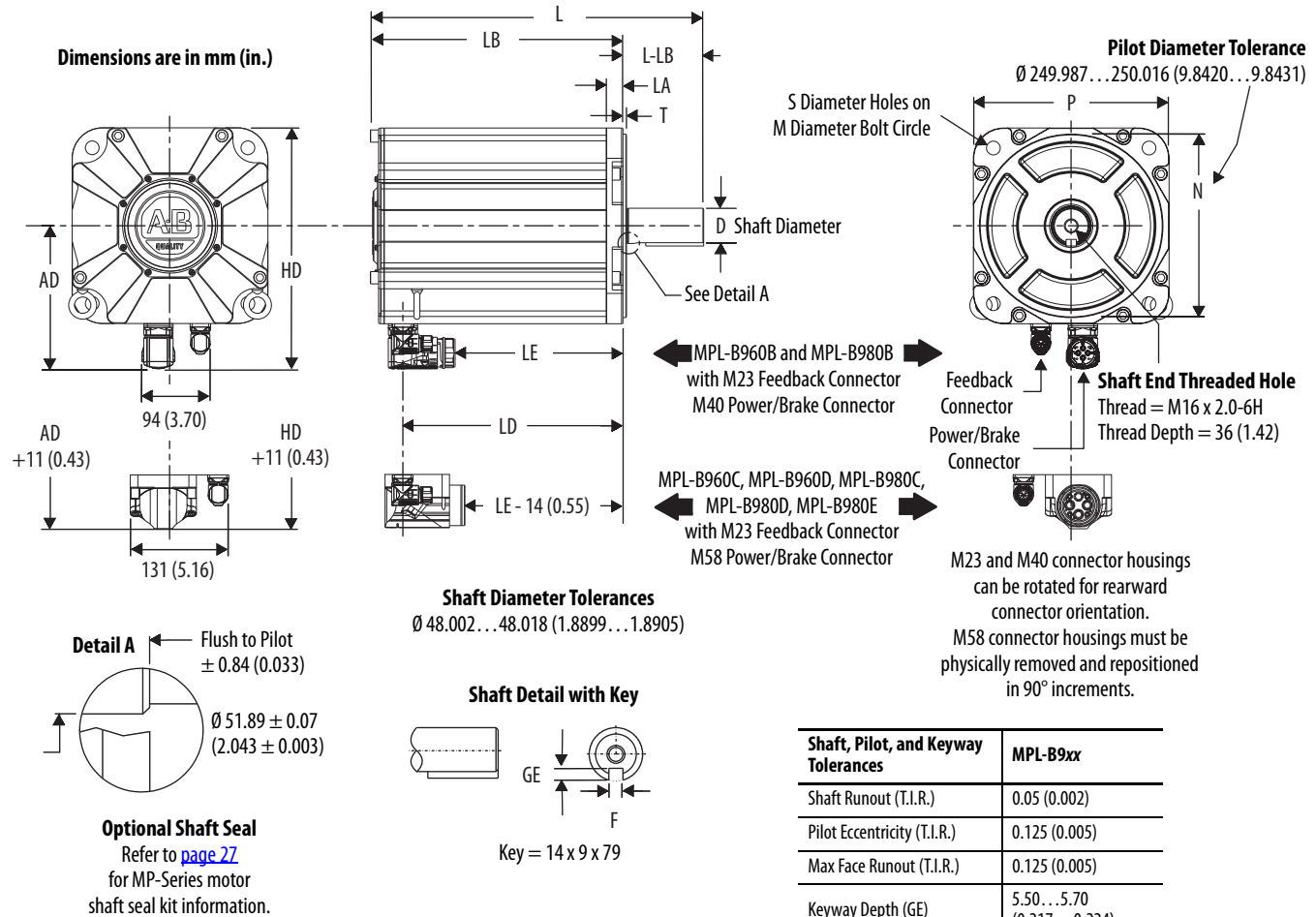
(1) If ordering an MPL-B860 or MPL-B880 motor with brake, add 108 mm (4.24 in.) to dimensions LD, LE, L, and LB.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

Motor Cat. No.	M mm (in.)	S ⁽¹⁾ mm (in.)	N mm (in.)	P mm (in.)	GE mm (in.)	F mm (in.)
MPL-B860	265 (10.43)	14.50 (0.579)	230 (9.055)	235 (9.25)	5.0 (0.197)	12.0 (0.4724)
MPL-B880						

(1) Tolerance for this dimension is ± 0.43 mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPL-B9xx Motor Dimensions (SpeedTec DIN connectors)

Shaft, Pilot, and Keyway Tolerances	MPL-B9xx
Shaft Runout (T.I.R.)	0.05 (0.002)
Pilot Eccentricity (T.I.R.)	0.125 (0.005)
Max Face Runout (T.I.R.)	0.125 (0.005)
Keyway Depth (GE)	5.50...5.70 (0.217...0.224)
Keyway Width (F)	13.957...14.000 (0.5495...0.5512)

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D mm (in.)
MPL-B960	195 (7.68)	328 (12.92)	4.88 (0.192)	22.9 (0.90)	249 (9.80)	178 (7.0)	403 (15.87)	293 (11.55)	110 (4.33)	48.0 (1.89)
MPL-B980					300 (11.80)	229 (9.0)	454 (17.87)	344 (13.55)		

(1) If ordering an MPL-B960 or MPL-B980 motor with brake, add 127 mm (5.0 in.) to dimensions LD, LE, L, and LB.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

Motor Cat. No.	M mm (in.)	S ⁽¹⁾ mm (in.)	N mm (in.)	P mm (in.)	GE mm (in.)	F mm (in.)
MPL-B960	300 (11.81)	18.50 (0.738)	250 (9.84)	267 (10.50)	5.50 (0.217)	14.0 (0.5512)
MPL-B980						

(1) Tolerance for this dimension is ± 0.52 mm (± 0.010 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series Medium Inertia Motors



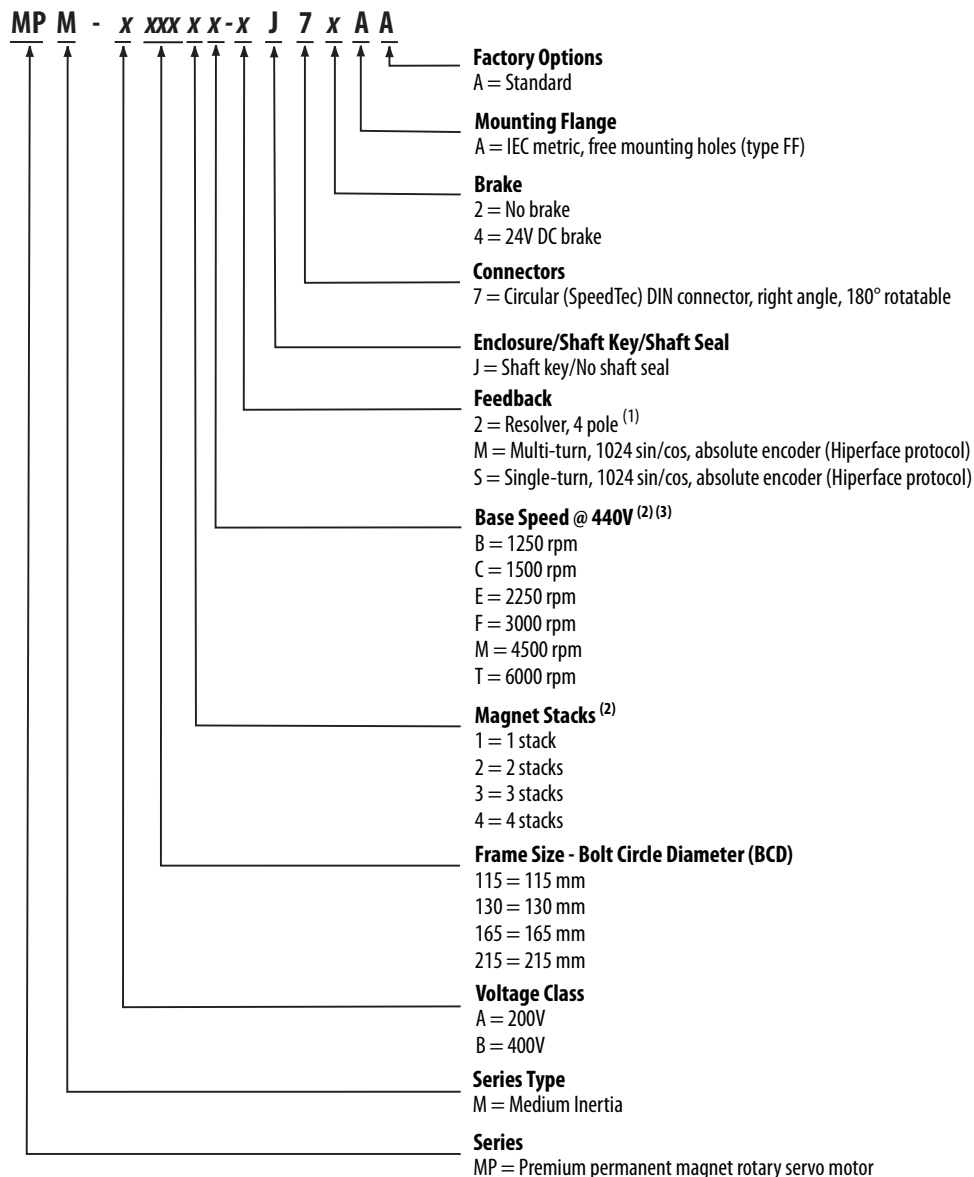
The MP-Series (Bulletin MPM) medium-inertia servo motors offer a compact, power dense, feature-rich solution for applications with heavier loads and greater inertia. Leveraging the proven MP-Series motor technology and quality standards, these new servo motors are ideal for users with print, converting, web handling, automotive, and other applications requiring more power in a smaller package.

MP-Series Medium Inertia Motor Features

Attribute	Value
Main characteristics	• High torque to size ratio • Smart Motor Technology • Medium rotor inertia • Easy migration from 1326AB motors
Features	• 200V and 400V-class windings • Multiple winding speed options • High-energy rare-earth magnets • Shaft end threaded hole • SpeedTec-ready DIN connectors, rotates 180° • Standard IEC 72-1 mounting dimensions
Motor type	Brushless AC synchronous servo motors
Environmental rating	• IP50 minimum, without shaft seal (standard). • IP67 with optional shaft seal and use of environmentally sealed cable connectors.
Certifications	Bulletin MPM rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	2.18...62.8 N·m (19.3...556 lb·in)
Peak stall torque	6.6...154.2 N·m (58...1365 lb·in)
Speed	Up to 7000 rpm
Motor rated output	0.75...7.50 kW
Compatible servo drives	• Kinetix 6200/6500 • Kinetix 6000 • Kinetix 300/350 • Kinetix 2000 • Kinetix 7000 • Ultra3000
Typical applications	• Printing • Web handling • Converting • Automotive • Metal forming

Catalog Numbers - MP-Series Medium Inertia Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Resolver feedback is not available on all models.

(2) Not all combinations are available. Only the configurations for rated speed and magnet stacks, as listed in MP-Series Medium Inertia Motor (200V-class) Performance Specifications on [page 44](#) and MP-Series Medium Inertia Motor (400V-class) Performance Specifications on [page 45](#), are available. Use Motion Analyzer software to size and select motors for your application.

(3) Maximum speed is servo drive dependant.

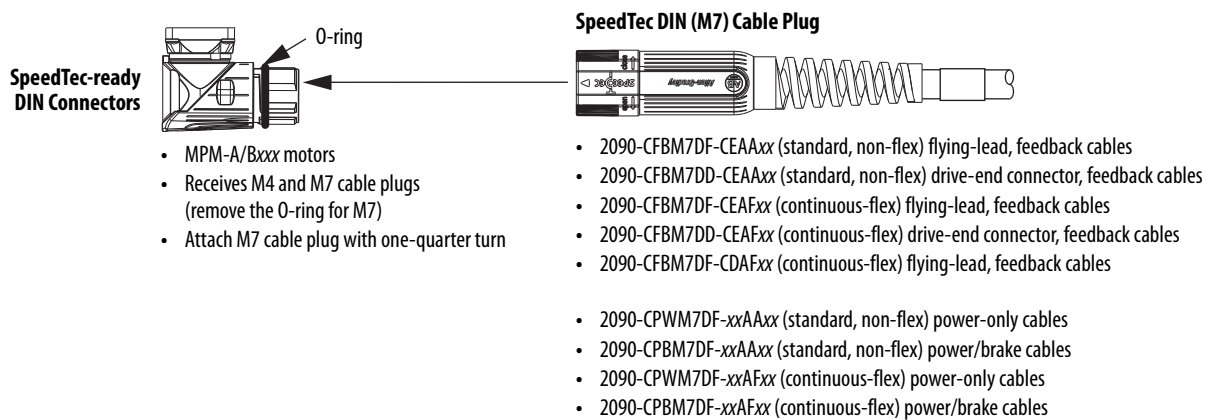
MP-Series Medium Inertia Motor High Resolution Encoders

MP-Series medium-inertia motors are available with high performance encoders with a choice of single-turn (-S) or multi-turn (-M) high-resolution feedback:

- Up to 2 million counts per revolution (-M and -S) for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns. The electromechanical design does not require a battery.

Motor Connector/Cable Compatibility

MP-Series (Bulletin MPM) motors are equipped with SpeedTec-ready DIN connectors.

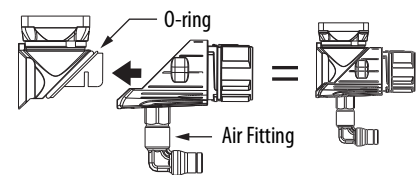


MP-Series Medium Inertia Motor Options

MP-Series medium-inertia motors are available with these options:

- 24V DC brake.
- Shaft seal kit available for field installation. Shaft seals are made of nitrile. Kits include a lubricant to reduce wear.
- Positive Air Pressure kit (catalog number MPF-7-AIR-PURGE) is mounted on the feedback connector to provide positive air pressure to further reduce the chance of contamination inside the motor.

Refer to the MP-Series Medium Inertia Servo Motor Installation Instructions, publication [MPM-IN001](#), for more information.



Motor Shaft Seal Kit Combinations and Dimensions

Motor Cat. No.	Shaft Seal Cat. No.	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
MPM-A115xx and MPL-B115xx	MPL-SSN-A4B4	20 (0.79)	52 (2.05)	7 (0.28)
MPM-A130xx and MPL-B130xx	MPL-SSN-A5B5	25 (0.98)	62 (2.44)	
MPM-A165xx and MPM-B165xx	MPL-SSN-F165	30 (1.18)	72 (2.83)	8 (0.31)
MPM-A215xx and MPL-B215xx	MPL-SSN-A6B6	40 (1.57)	90 (3.54)	

Technical Specifications - MP-Series Medium Inertia Motors

MP-Series Medium Inertia Motor (200V-class) Performance Specifications

Motor Cat. No.	Base Speed rpm	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, ⁽¹⁾ approx kg (lb)
MPM-A1151M	4500	6000	2.18 (19.3)	6.60 (58.0)	0.90	5000	0.00065 (0.00575)	3.45 (7.6)
MPM-A1152F	3000	5000	4.74 (42.0)	13.5 (119)	1.40	4000	0.00077 (0.00682)	5.20 (11.4)
MPM-A1153F	3000	5000	6.55 (58.0)	19.8 (175)	1.45	4000	0.00089 (0.00784)	6.4 (14.0)
MPM-A1302F	3000	4500	5.99 (53.0)	13.5 (119)	1.65	4000	0.000983 (0.00870)	6.8 (15.0)
MPM-A1304F	3000	4000	9.30 (82.0)	19.3 (171)	2.20	3500	0.001223 (0.01082)	9.6 (21.2)
MPM-A1651F	3000	5000	10.7 (95.0)	20.5 (181)	2.50	3000	0.006605 (0.05846)	15.3 (33.8)
MPM-A1652F	3000	4000	13.5 (119)	36.0 (319)	4.03	3500	0.007265 (0.06430)	20.6 (45.4)
MPM-A1653F	3000	4000	18.6 (165)	42.0 (372)	5.10	3000	0.008025 (0.07103)	25.6 (56.4)
MPM-A2152F	3000	4000	27.0 (239)	56.0 (496)	5.20	2000	0.02059 (0.18223)	35.8 (79.0)
MPM-A2153F	3000	3600	34.0 (301)	58.0 (513)	5.80	2000	0.02254 (0.19950)	44.6 (98.3)
MPM-A2154C	1500	2000	55.0 (487)	106 (938)	6.50	1750	0.02449 (0.21675)	53.6 (118)
MPM-A2154E	2250	2650	44.0 (389)	84.0 (743)	7.00	2000		

(1) Refer to MP-Series Medium Inertia Motor Brake Specifications on [page 46](#) for brake rotor inertia and brake motor weight.

MP-Series Medium Inertia Motor (400V-class) Performance Specifications

Motor Cat. No.	Base Speed rpm	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, ⁽¹⁾ approx kg (lb)	
MPM-B1151F	3000	5000	2.18 (19.3)	6.6 (58.0)	0.75	4000	0.00065 (0.00575)	3.45 (7.6)	
MPM-B1151T	6000	7000			0.90	5000			
MPM-B1152C	1500	3000	4.74 (42.0)	13.5 (119)	1.20	2500	0.00077 (0.00681)	5.20 (11.4)	
MPM-B1152F	3000	5200			1.40	4000			
MPM-B1152T	6000	7000							
MPM-B1153E	2250	3500	6.55 (58.0)	19.8 (175)	1.40	3000	0.00089 (0.00788)	6.40 (14.0)	
MPM-B1153F	3000	5500			1.45	4000			
MPM-B1153T	6000	7000							
MPM-B1302F	3000	4500	5.99 (53.0)	13.5 (119)	1.65	4000	0.000983 (0.00870)	6.80 (15.0)	
MPM-B1302M	4500	6000							
MPM-B1302T	6000	7000							
MPM-B1304C	1500	2750	10.2 (90.0)	27.1 (240)	2.00	3500	0.001223 (0.01082)	9.60 (21.2)	
MPM-B1304E	2250	4000			2.20				
MPM-B1304M	4500	6000							
MPM-B1651C	1500	3500	10.7 (95.0)	23.2 (205)	2.50	3000	0.006605 (0.05846)	15.3 (33.8)	
MPM-B1651F	3000	5000							
MPM-B1651M	4500	5000							
MPM-B1652C	1500	2500	16.0 (142)	40.0 (354)	3.80	2500	0.007265 (0.06430)	20.6 (45.4)	
MPM-B1652E	2250	3500	19.4 (172)	48.0 (425)	4.30	3500			
MPM-B1652F	3000	4500							
MPM-B1653C	1500	2500	26.8 (237)	67.8 (600)	4.60	2000	0.008025 (0.07103)	25.6 (56.4)	
MPM-B1653E	2250	3500		62.0 (549)	5.10	3000			
MPM-B1653F	3000	4000		56.0 (496)					
MPM-B2152C	1500	2500	36.7 (325)	72.3 (640)	5.60	2000	0.02059 (0.18224)	35.8 (79.0)	
MPM-B2152F	3000	4500	33.0 (292)		5.90	2500			
MPM-B2152M	4500	5000	30.0 (266)	50.0 (443)					
MPM-B2153B	1250	2000	48.0 (425)	101.1 (895)	6.80	1750	0.02254 (0.19949)	44.6 (98.3)	
MPM-B2153E	2250	3000			7.20	2000			
MPM-B2153F	3000	3800							45.0 (398)
MPM-B2154B	1250	2000	62.8 (556)	154.2 (1365)	6.90	1750	0.02449 (0.21675)	53.6 (118.2)	
MPM-B2154E	2250	3000	56.0 (496)	112.0 (991)	7.50	2000			
MPM-B2154F	3000	3300		88.0 (779)					

(1) Refer to MP-Series Medium Inertia Motor Brake Specifications on [page 46](#) for brake rotor inertia and brake motor weight.

MP-Series Medium Inertia Motor Brake Specifications

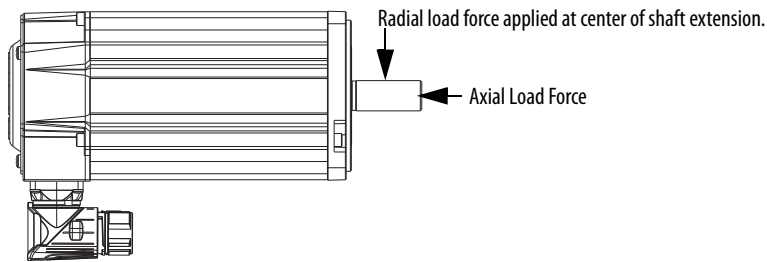
Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time			Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage (by using external arc suppression device)			
					MOV ms	Diode ms		
MPM-A/B1151	45	4.18 (37)	0.45...0.55	50	20	110	0.00065 (0.00575)	5.2 (11.4)
MPM-A/B1152							0.00077 (0.00681)	6.9 (15.2)
MPM-A/B1153							0.00089 (0.00788)	8.1 (17.8)
MPM-A/B1302	48	10.2 (90)	0.576...0.704	110	25	160	0.000983 (0.00870)	8.6 (19.0)
MPM-A/B1304							0.001223 (0.01082)	11.7 (25.7)
MPM-A/B1651	25	28.3 (250)	1.05...1.28	70	50	250	0.006605 (0.05846)	17.9 (39.5)
MPM-A/B1652							0.007265 (0.06430)	23.2 (51.1)
MPM-A/B1653							0.008025 (0.07103)	28.2 (62.1)
MPM-A/B2152	25	70 (619)	1.84...2.25	200	120	900	0.02059 (0.18224)	43.8 (96.5)
MPM-A/B2153							0.02254 (0.19949)	53.6 (115.8)
MPM-A/B2154							0.02449 (0.21675)	61.6 (135.7)

MP-Series Medium Inertia Motor Load Force Ratings

Bulletin MPM motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L₁₀ bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	5000 rpm kg (lb)	7000 rpm kg (lb)
MPM-A/B1151	77 (170)	61 (134)	54 (119)	45 (99)	40 (88)
MPM-A/B1152	84 (185)	66 (145)	58 (128)	49 (108)	43 (95)
MPM-A/B1153	88 (194)	70 (154)	61 (134)	51 (112)	46 (101)
MPM-A/B1302	105 (231)	83 (183)	72 (159)	61 (134)	54 (119)
MPM-A/B1304	115 (253)	91 (200)	80 (176)	67 (148)	—
MPM-A/B1651	141 (311)	112 (247)	97 (214)	82 (181)	—
MPM-A/B1652	151 (333)	119 (262)	104 (229)	—	—
MPM-A/B1653	156 (344)	123 (271)	107 (236)	—	—
MPM-A/B2152	216 (476)	171 (377)	149 (328)	—	—
MPM-A/B2153	228 (502)	180 (396)	156 (344)	—	—
MPM-A/B2154	235 (518)	185 (407)	161 (355)	—	—

MPM-xxxx-xxxxAA Load Forces**Axial Load Force Ratings (maximum radial load)**

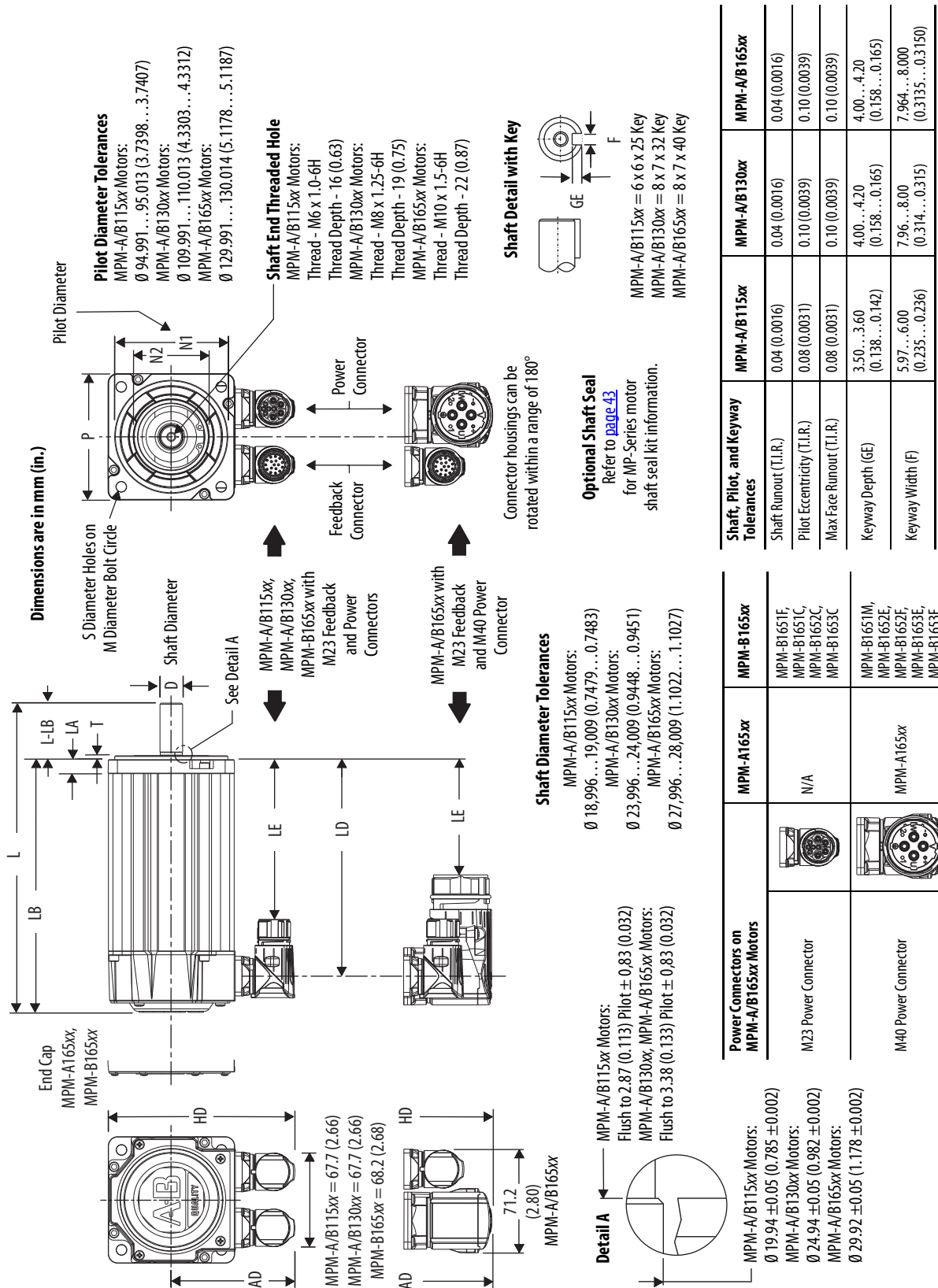
Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	5000 rpm kg (lb)	7000 rpm kg (lb)
MPM-A/B1151	29 (64)	22 (48)	18 (40)	14 (31)	12 (26)
MPM-A/B1152	31 (68)	23 (51)	19 (42)	15 (33)	13 (29)
MPM-A/B1153	33 (73)	24 (53)	20 (44)	16 (35)	14 (31)
MPM-A/B1302	26 (57)	19 (42)	16 (35)	13 (29)	11 (24)
MPM-A/B1304	30 (66)	22 (48)	18 (40)	15 (33)	–
MPM-A/B1651	37 (81)	28 (62)	23 (51)	18 (40)	–
MPM-A/B1652	41 (90)	30 (66)	25 (55)	–	–
MPM-A/B1653	43 (95)	32 (70)	27 (59)	–	–
MPM-A/B2152	55 (121)	40 (88)	34 (75)	–	–
MPM-A/B2153	60 (132)	44 (97)	36 (79)	–	–
MPM-A/B2154	63 (139)	46 (101)	38 (84)	–	–

Axial Load Force Ratings (zero radial load)

Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	5000 rpm kg (lb)	7000 rpm kg (lb)
MPM-A/B1151	46 (101)	34 (75)	28 (62)	23 (51)	19 (42)
MPM-A/B1152	46 (101)	34 (75)	28 (62)	23 (51)	19 (42)
MPM-A/B1153	46 (101)	34 (75)	28 (62)	23 (51)	19 (42)
MPM-A/B1302	46 (101)	34 (75)	28 (62)	23 (51)	19 (42)
MPM-A/B1304	46 (101)	34 (75)	28 (62)	23 (51)	–
MPM-A/B1651	61 (134)	44 (97)	38 (84)	30 (66)	–
MPM-A/B1652	61 (134)	44 (97)	38 (84)	–	–
MPM-A/B1653	61 (134)	44 (97)	38 (84)	–	–
MPM-A/B2152	90 (198)	65 (143)	54 (119)	–	–
MPM-A/B2153	90 (198)	65 (143)	54 (119)	–	–
MPM-A/B2154	90 (198)	65 (143)	54 (119)	–	–

Dimensions - MP-Series Medium Inertia Motors

MPM-A/B115xx, MPM-A/B130xx, MPM-A/B165xx Motor Dimensions



MPM-A/B115x, MPM-A/B130x, MPM-A/B165x Motor Dimensions

Motor Cat. No.	AD ⁽¹⁾ mm (in.)	HD ⁽¹⁾ mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽²⁾⁽³⁾ mm (in.)	LE ⁽²⁾⁽⁴⁾ mm (in.)	L ⁽²⁾ mm (in.)	LB ⁽²⁾ mm (in.)	L-LB ⁽⁵⁾ mm (in.)	D ⁽⁶⁾ mm (in.)	M mm (in.)	S ⁽⁷⁾ mm (in.)	N1 ⁽⁶⁾ mm (in.)	N2 mm (in.)	P mm (in.)	GE ⁽⁶⁾ mm (in.)	F ⁽⁶⁾ mm (in.)
MPM-A/B1151					124 (4.89)	84.1 (3.31)	190 (7.48)	150 (5.90)									
MPM-A/B1152	90.9 (3.58)	140.1 (5.52)	2.74 (0.108)	10.16 (0.40)	150 (5.89)	110 (4.31)	215 (8.48)	175 (6.90)	40.0 (1.58)	19.0 (0.748)	115.0 (4.528)	10.0 (0.401)	95.0 (3.74)	59.0 (2.32)	98.3 (3.87)	3.5 (0.138)	6.0 (0.236)
MPM-A/B1153					175 (6.89)	135 (5.31)	241 (9.48)	201 (7.90)									
MPM-A/B1302	98.6 (3.88)	155.4 (6.12)	2.74 (0.108)	12.19 (0.48)	153 (6.02)	113 (4.44)	229 (9.0)	179 (7.03)	50.0 (1.97)	24.0 (0.945)	130.0 (5.118)	10.0 (0.401)	110.0 (4.331)	70.3 (2.77)	113.7 (4.48)	4.0 (0.158)	8.0 (0.315)
MPM-A/B1304					204 (8.02)	164 (6.44)	279 (11.0)	229 (9.03)									
MPM-A/B1651					200 (7.88)	160 (6.30)	287 (11.28)	227 (8.92)									
MPM-A/B1652	113.4 (4.47)	185.2 (7.29)	3.12 (0.123)	14.0 (0.55)	251 (9.88)	211 (8.30)	337 (13.28)	277 (10.92)	60.0 (2.36)	28.0 (1.102)	165.0 (6.496)	12.0 (0.481)	130.0 (5.118)	81.0 (3.19)	143.5 (5.65)	4.0 (0.158)	8.0 (0.315)
MPM-A/B1653					302 (11.88)	262 (10.30)	388 (15.28)	328 (12.92)									

(1) This dimension applies to MPM-B165x motors with M23 connectors. For MPM-A/B165x motors with M40 connectors, add 23 mm (0.91 in.).

(2) If ordering an MPM-A/B115x or MPM-A/B130x motor with brake, add 48.5 mm (1.91 in.) to dimensions L, LB, LE, and LD.
If ordering an MPM-A/B165x motor with brake, add 51.5 mm (2.03 in.) to dimensions L, LB, LE, and LD.

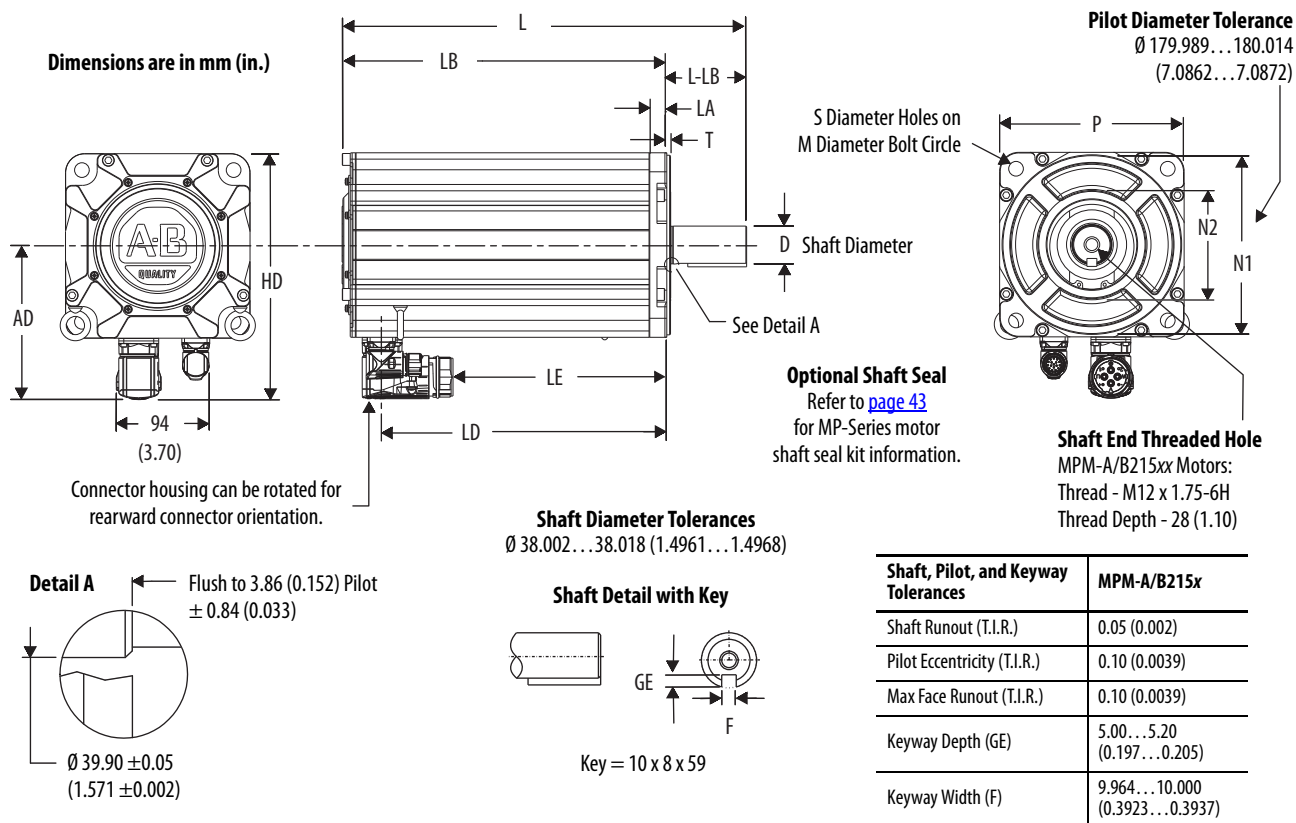
(3) This dimension applies to MPM-B165x motors with M23 connectors. For MPM-A/B165x motors with M40 connectors, add 2.0 mm (0.07 in.).

(4) This dimension applies to MPM-B165x motors with M23 connectors. For MPM-A/B165x motors with M40 connectors, subtract 29.0 mm (1.15 in.).

(5) The tolerance for this dimension is ± 0.7 mm (± 0.028 in.).(6) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 48](#).(7) For MPM-A/B115x and MPM-A/B130x motors, the tolerance for this dimension is $+0.36$ mm (± 0.007 in.).For MPM-A/B165x motors, the tolerance is $+0.43$ mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MPM-A/B215x Motor Dimensions



Motor Cat. No. MPM-	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D mm (in.)	M mm (in.)	S ⁽³⁾ mm (in.)	N1 mm (in.)	N2 mm (in.)	P mm (in.)	GE mm (in.)	F mm (in.)
A/B2152					234 (9.23)	163 (6.43)	355 (13.96)	275 (10.81)									
A/B2153	154 (6.06)	247 (9.70)	3.73 (0.147)	17.8 (0.70)	285 (11.23)	214 (8.43)	405 (15.96)	325 (12.81)	80.0 (3.150)	38.0 (1.50)	215 (8.465)	14.50 (0.579)	180 (7.09)	108 (4.25)	185 (7.28)	5.0 (0.197)	10.0 (0.394)
A/B2154					336 (13.23)	265 (10.43)	456 (17.96)	376 (14.81)									

(1) If ordering an MPM-A/B215x motor with brake, add 88.9 mm (3.5 in.) to dimensions LD, LE, L, and LB.

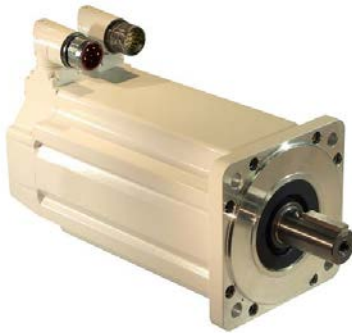
(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) Tolerance for this dimension is ± 0.43 mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Notes:

MP-Series Food Grade Motors



MP-Series (Bulletin MPF) food-grade motors combine the characteristics of the MP-Series low-inertia servo motors with features specifically designed to meet the unique needs of many food and beverage applications. These high performance servo motors address the challenges of food environments by incorporating improved sealing techniques and noncorrosive food-grade fasteners and coatings. For meat and poultry applications, and for applications with high pressure wash and caustic chemicals, the MP-Series stainless-steel servo motors are recommended.

MP-Series Food Grade Motor Features

Attribute	Value
Main characteristics	- Combined characteristics of MP-Series low-inertia motors and features specifically designed for food and beverage applications - Low rotor inertia
Features	- Epoxy coated 200V and 400V-class windings - Shaft end threaded hole - SpeedTec-ready DIN connectors, rotates 180° - Standard IEC 72-1 mounting dimensions
Motor type	Brushless AC synchronous servo motors
Environmental rating	- IP66/IP67 with shaft seal (standard) and use of environmentally sealed cable connectors - Food grade grease on shaft seal
Certifications	Bulletin MPF rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	1.6 ... 19.4 N·m (14 ... 172 lb·in)
Peak stall torque	3.61 ... 48.6 N·m (32 ... 430 lb·in)
Speed	Up to 5000 rpm
Motor rated output	0.73 ... 4.1 kW
Compatible servo drives	- Kinetix 6200/6500 - Kinetix 6000 - Kinetix 300/350 - Kinetix 2000 - Ultra3000
Typical applications	- Food packaging - Volumetric filling - Form, fill, seal - Food handling - For meat and poultry applications, the MP-Series Stainless Steel motors are recommended

Catalog Numbers - MP-Series Food Grade Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.

MP	F	-	x	xx	xx	x-x	J	7	x	B	A	
												Factory Options
												A = Standard
												Mounting Flange
												B = IEC metric (oversized), free mounting holes (type FF)
												Brake
												2 = No brake
												4 = 24V DC brake
												Connectors
												7 = Circular (SpeedTec) DIN connector, right angle, 180° rotatable
												Enclosure/Shaft Key
												J = IP66/IP67 housing/Keyed shaft
												Feedback
												M = Multi-turn, 1024 sin/cos, absolute encoder (Hiperface protocol)
												S = Single-turn, 1024 sin/cos, absolute encoder (Hiperface protocol)
												Rated Speed ⁽¹⁾
												F = 3000 rpm
												H = 3500 rpm
												K = 4000 rpm
												P = 5000 rpm
												Magnet Stack Length ⁽¹⁾
												10 = 25.4 mm (1.0 in.)
												20 = 50.8 mm (2.0 in.)
												30 = 76.2 mm (3.0 in.)
												40 = 101.6 mm (4.0 in.)
												Frame Size
												3 = 100 mm
												4 = 115 mm
												45 = 130 mm
												5 = 165 mm
												Voltage Class
												A = 200V
												B = 400V
												Series Type
												F = Food grade enclosure (including shaft seal)
												Series
												MP = Premium permanent magnet rotary servo motor

(1) Not all combinations are available. Only the configurations for rated speed and magnet stack length, as listed in MP-Series Food Grade (200V-class) Performance Specifications on [page 55](#) and MP-Series Food Grade Motor (400V-class) Performance Specifications on [page 55](#), are available. Use Motion Analyzer software to size and select motors for your application.

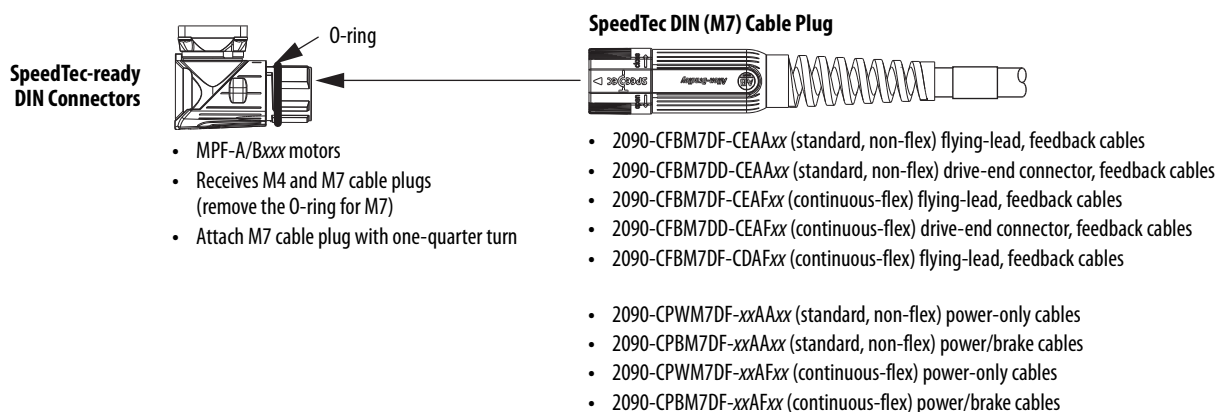
MP-Series Food Grade Motor High Resolution Encoders

MP-Series Food Grade motors are available with high performance encoders with a choice of single-turn (-S) or multi-turn (-M) high resolution feedback:

- Up to 2 million counts per revolution for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns.

Motor Connector/Cable Compatibility

MP-Series (Bulletin MPF) motors are equipped with SpeedTec-ready DIN connectors.

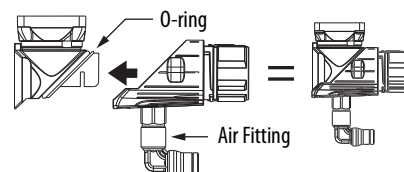


MP-Series Food Grade Motor Options

MP-Series Food Grade motors are available with these options:

- 24V DC brake.
- Shaft seal kit is available for field replacement. Shaft seals are made of PTFE. Kits include a lubricant to reduce wear.
- Positive Air Pressure kit (catalog number MPF-7-AIR-PURGE) is mounted on the feedback connector to provide positive air pressure to further reduce the chance of contamination inside the motor.

Refer to the MP-Series Food Grade Servo Motor Installation Instructions, publication [MP-IN004](#), for more information.



Motor Shaft Seal Kit Combinations and Dimensions

Motor Cat. No.	Shaft Seal Cat. No.	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
MPF-A3xx and MPF-B3xx	MPF-SST-A3B3	23 (0.90)	47 (1.85)	6 (0.24)
MPF-A4xx and MPF-B4xx	MPF-SST-A4B4	20 (0.79)	52 (2.05)	7 (0.28)
MPF-A45xx and MPF-B45xx	MPF-SST-A45B45	31 (1.22)	62 (2.44)	7 (0.28)
MPF-A5xx and MPF-B5xx	MPF-SST-F165	30 (1.18)	72 (2.84)	8 (0.32)

Technical Specifications - MP-Series Food Grade Motors

MP-Series Food Grade (200V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPF-A310P	5000	1.58 (14)	3.61 (32)	0.73	4750	0.000044 (0.00039)	2.8 (6.1)
MPF-A320P	5000	3.05 (27)	7.91 (70)	1.3	4750	0.000078 (0.00069)	3.8 (8.3)
MPF-A320H	3500	3.05 (27)	7.91 (70)	1.0	3350		
MPF-A330P	5000	4.18 (37)	11.1 (98)	1.6	5000	0.00012 (0.0010)	4.7 (10)
MPF-A430P	5000	5.99 (53)	19.8 (175)	1.9	5000	0.00038 (0.0033)	5.6 (12)
MPF-A430H	3500	6.21 (55)	19.8 (175)	1.8	3500		
MPF-A4530K	4000	8.13 (72)	20.3 (180)	2.3	4000	0.00040 (0.0036)	7.4 (16)
MPF-A4540F	3000	10.2 (90)	27.1 (240)	2.5	3000	0.00052 (0.0046)	8.7 (19)
MPF-A540K	4000	19.4 (172)	48.6 (430)	4.1	4000	0.00147 (0.013)	16 (35)

(1) Refer to MP-Series Low Inertia Motor (200V-class) Performance Specifications on [page 28](#) for brake rotor inertia and brake motor weight.

MP-Series Food Grade Motor (400V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPF-B310P	5000	1.58 (14)	3.61 (32)	0.77	5000	0.000044 (0.00039)	2.8 (6.1)
MPF-B320P	5000	3.05 (27)	7.91 (70)	1.5	5000	0.000078 (0.00069)	3.8 (8.3)
MPF-B330P	5000	4.18 (37)	11.1 (98)	1.6	5000	0.00012 (0.0010)	4.7 (10)
MPF-B430P	5000	6.55 (58)	19.8 (175)	2.0	5000	0.00038 (0.0033)	5.6 (12)
MPF-B4530K	4000	8.25 (73)	20.3 (180)	2.4	4000	0.00040 (0.0036)	7.4 (16)
MPF-B4540F	3000	10.2 (90)	27.1 (240)	2.5	3000	0.00052 (0.0046)	8.7 (19)
MPF-B540K	4000	19.4 (172)	48.6 (430)	4.1	4000	0.00147 (0.013)	16 (35)

(1) Refer to MP-Series Low Inertia Motor (200V-class) Performance Specifications on [page 28](#) for brake rotor inertia and brake motor weight.

MP-Series Food Grade Motor Brake Specifications

Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time			Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage (by using external arc suppression device)			
					MOV ms	Diode ms		
MPF-A/B310	45	4.18 (37)	0.45...0.55	50	20	110	0.000057 (0.00050)	3.8 (8.3)
MPF-A/B320							0.000092 (0.00081)	4.7 (10)
MPF-A/B330							0.00013 (0.0011)	5.7 (13)
MPF-A/B430	37	10.2 (90)	0.576...0.704	110	25	160	0.00042 (0.0038)	7.4 (16)
MPF-A/B4530							0.00044 (0.0039)	9.2 (20)
MPF-A/B4540							0.00056 (0.0050)	11 (24)
MPF-A/B540	25	28.3 (250)	1.05...1.28	70	50	250	0.00157 (0.0139)	19 (41)

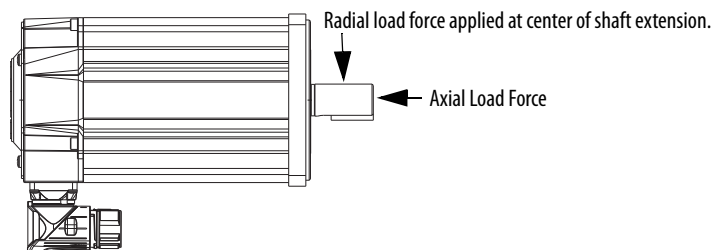
MP-Series Food Grade Motor Load Force Ratings

Bulletin MPF motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables below represent an L_{10} bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPF-A/B310	78 (172)	62 (137)	49 (108)	—	40 (88)	—	36 (79)
MPF-A/B320	87 (192)	69 (152)	55 (121)	—	45 (99)	—	40 (88)
MPF-A/B330	—	74 (163)	59 (130)	—	49 (108)	—	43 (95)
MPF-A/B430	106 (234)	84 (185)	67 (148)	—	55 (121)	—	49 (108)
MPF-A/B4530	133 (293)	105 (232)	84 (185)	73 (161)	—	66 (146)	—
MPF-A/B4540	140 (309)	111 (245)	89 (196)	77 (170)	—	—	—
MPF-A/B540	—	143 (316)	114 (251)	99 (219)	—	90 (199)	—

MPF-xxxx-xJ7xAB Load Forces



Axial Load Force Ratings (maximum radial load)

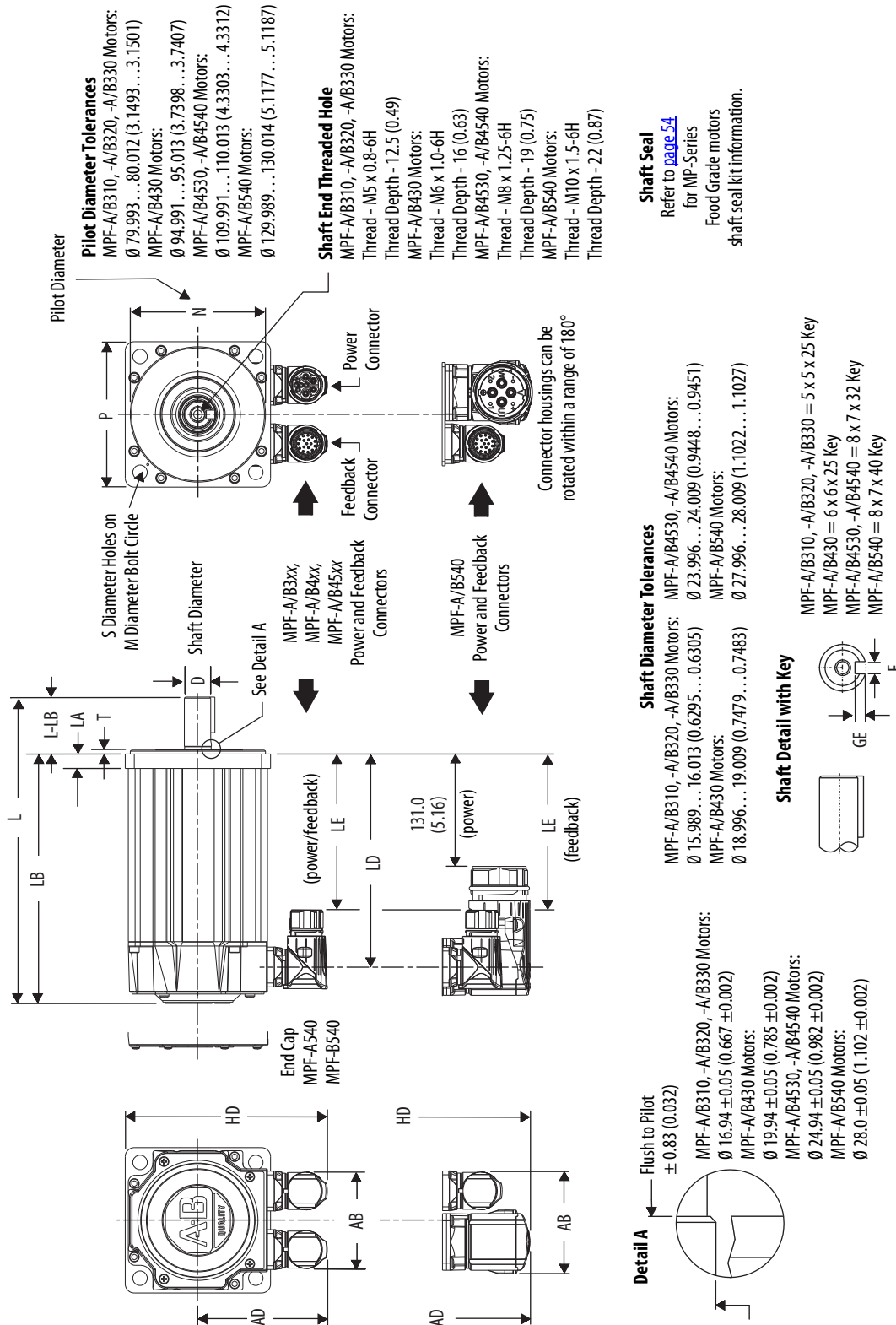
Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPF-A/B310	30 (66)	23 (51)	16 (35)	—	13 (29)	—	11 (24)
MPF-A/B320	34 (75)	25 (55)	19 (42)	—	15 (33)	—	13 (29)
MPF-A/B330	—	27 (60)	20 (44)	—	16 (35)	—	13 (29)
MPF-A/B430	52 (115)	39 (86)	29 (64)	—	22 (49)	—	19 (42)
MPF-A/B4530	45 (99)	34 (75)	25 (55)	21 (46)	—	19 (42)	—
MPF-A/B4540	49 (108)	36 (79)	27 (60)	22 (49)	—	—	—
MPF-A/B540	—	48 (107)	35 (79)	30 (66)	—	26 (58)	—

Axial Load Force Ratings (zero radial load)

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPF-A/B310	49 (108)	36 (79)	27 (60)	—	21 (46)	—	18 (40)
MPF-A/B320	49 (108)	36 (79)	27 (60)	—	21 (46)	—	18 (40)
MPF-A/B330	—	36 (79)	27 (60)	—	21 (46)	—	18 (40)
MPF-A/B430	69 (152)	51 (112)	38 (84)	—	30 (66)	—	25 (55)
MPF-A/B4530	69 (152)	51 (112)	38 (84)	31 (68)	—	28 (62)	—
MPF-A/B4540	69 (152)	51 (112)	38 (84)	31 (68)	—	—	—
MPF-A/B540	—	67 (149)	49 (109)	41 (92)	—	36 (81)	—

Dimensions - MP-Series Food Grade Motors

MPF-A/B3xx, MPF-A/B4xx, MPF-A/B45xx, MPF-A/B5xx Motor Dimensions



MPF-A/B3xx, MPF-A/B4xx, MPF-A/B45xx, MPF-A/B5xx Motor Dimensions

Motor Cat. No.	AB mm (in.)	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽³⁾ mm (in.)	M mm (in.)	S ⁽⁴⁾ mm (in.)	N ⁽³⁾ mm (in.)	P mm (in.)	GE ⁽³⁾ mm (in.)	F ⁽³⁾ mm (in.)
MPF-A/B310						102.0 (4.03)	62.0 (2.45)	168.0 (6.62)	128.0 (5.04)								
MPF-A/B320	66.0 (2.60)	87.25 (3.43)	133.4 (5.25)	2.74 (0.11)	9.91 (0.39)	128.0 (5.03)	88.0 (3.45)	193.0 (7.62)	153.0 (6.04)	40.0 (1.57)	16.0 (0.629)	100.0 (3.94)	7.0 (0.283)	80.0 (3.15)	92.39 (3.64)	3.0 (0.118)	5.0 (0.197)
MPF-A/B330						153.0 (6.03)	113.0 (4.45)	219.0 (8.62)	179.0 (7.04)								
MPF-A/B430	67.7 (2.66)	90.9 (3.58)	142.0 (5.59)	2.74 (0.11)	10.16 (0.40)	150.0 (5.89)	110.0 (4.31)	215.0 (8.48)	175.0 (6.90)	40.0 (1.57)	19.0 (0.748)	115.0 (4.53)	10.0 (0.401)	95.0 (3.74)	102.1 (4.02)	3.5 (0.138)	6.0 (0.236)
MPF-A/B4530						153.0 (6.02)	113.0 (4.44)	229.0 (9.0)	179.0 (7.03)								
MPF-A/B4540	67.7 (2.66)	98.6 (3.88)	157.6 (6.20)	2.74 (0.11)	12.19 (0.48)	178.0 (7.02)	138.0 (5.44)	254.0 (10.0)	204.0 (8.03)	50.0 (1.97)	24.0 (0.945)	130.0 (5.12)	10.0 (0.401)	110.0 (4.33)	118.1 (4.65)	4.0 (0.158)	8.0 (0.315)
MPF-A/B540	71.2 (2.80)	136.4 (5.37)	209.0 (8.23)	3.12 (0.12)	13.97 (0.55)	202.0 (7.95)	162.0 (6.38)	287.0 (11.30)	227.0 (8.92)	60.0 (2.36)	28.0 (1.102)	165.0 (6.50)	12.0 (0.481)	130.0 (5.12)	145.3 (5.72)	4.0 (0.158)	8.0 (0.315)

(1) If ordering an MPF-A/B310, MPF-A/B320, or MPF-A/B330 motor with brake, add 35 mm (1.38 in.) to dimensions L, LB, LD, and LE.

If ordering an MPF-A/B430 motor with brake, add 48 mm (1.89 in.) to dimensions L, LB, LD, and LE.

If ordering an MPF-A/B4530 or MPF-A/B4540 motor with brake, add 23 mm (0.90 in.) to dimensions L, LB, LD, and LE.

If ordering an MPF-A/B540 motor with brake, add 51 mm (2.0 in.) to dimensions L, LB, LD, and LE.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 53](#).

(4) Tolerance for this dimension is: MPF-A/B3xx, MPF-A/B4xx, or MPF-A/B45xx ± 0.36 mm (± 0.007 in.) and MPF-A/B5xx ± 0.43 mm (± 0.008 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

MP-Series Stainless Steel Motors



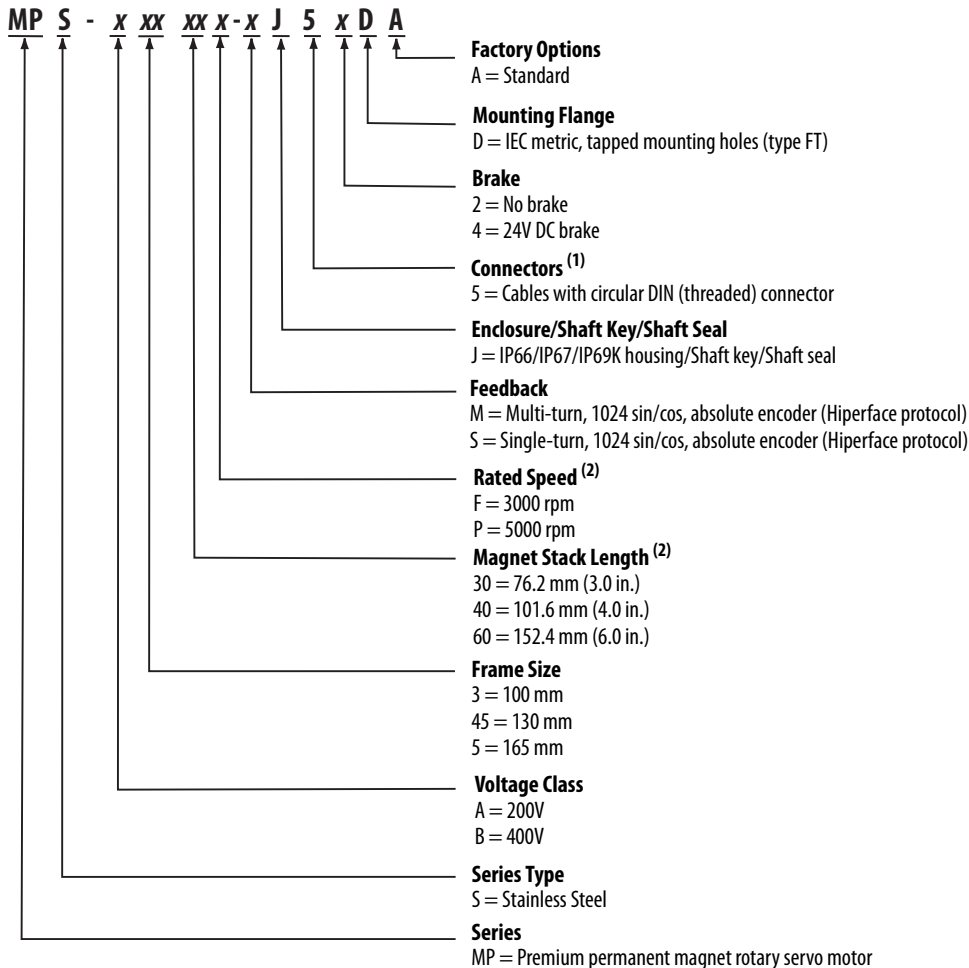
The MP-Series stainless-steel motors are specifically designed to meet the unique needs of hygienic environments. With these servo motors, the benefits of Kinetix Integrated Motion are available to a greater range of applications, allowing the use of servo motors even in high pressure, highly caustic washdown environments. The MP-Series Stainless Steel motors extend the wide range of Allen-Bradley servo motors into new applications on food, beverage, brewing, dairy, pharmaceutical, and health and beauty manufacturing equipment.

MP-Series Stainless Steel Motor Features

Attribute	Value
Main characteristics	- Specifically designed for hygienic environments for use with high pressure, highly caustic washdown applications - Low rotor inertia
Features	- Smooth, passivated 300 series stainless-steel cylindrical exterior - Certified and listed to NSF/ANSI Standard 169 200V and 400V-class windings - Shaft end threaded hole - Cable extensions, 3 m (9.8 ft) - Standard IEC 72-1 mounting dimensions
Motor type	Brushless AC synchronous servo motors
Environmental rating	- IP66/IP67 with shaft seal (standard) and use of environmentally sealed cable connectors - IP69K for 1200 psi washdown
Certifications	Bulletin MPS rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	3.6...21.5 N•m (32...190 lb•in)
Peak stall torque	11.1...98 N•m (67.8...600 lb•in)
Speed	3000 and 5000 rpm
Motor rated output	1.3...3.5 kW
Compatible servo drives	- Kinetix 6200/6500 - Kinetix 6000 - Kinetix 300/350 - Kinetix 2000 - Ultra3000
Typical applications	- Meat and poultry - Food slicing and filling - Raw food handling - Processing - Life science - Consumer products

Catalog Numbers - MP-Series Stainless Steel Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) The motor has 3 m (9.8 ft) cables with nickel-plated connector extensions.

IMPORTANT

The connectors are O-ring sealed, but not designed to withstand direct high-pressure washdown with aggressive cleaning compounds. The 3 m (9.8 ft) cables are provided so the connectors can be positioned in an area away from direct exposure to the cleaning process, such as within washdown-rated conduit or junction boxes.

(2) Not all combinations are available. Only the configurations for rated speed and magnet stack length, as listed in MP-Series Stainless Steel Motor (200V-class) Performance Specifications on [page 63](#) and MP-Series Stainless Steel Motor (400V-class) Performance Specifications on [page 63](#), are available. Use Motion Analyzer software to size and select motors for your application.

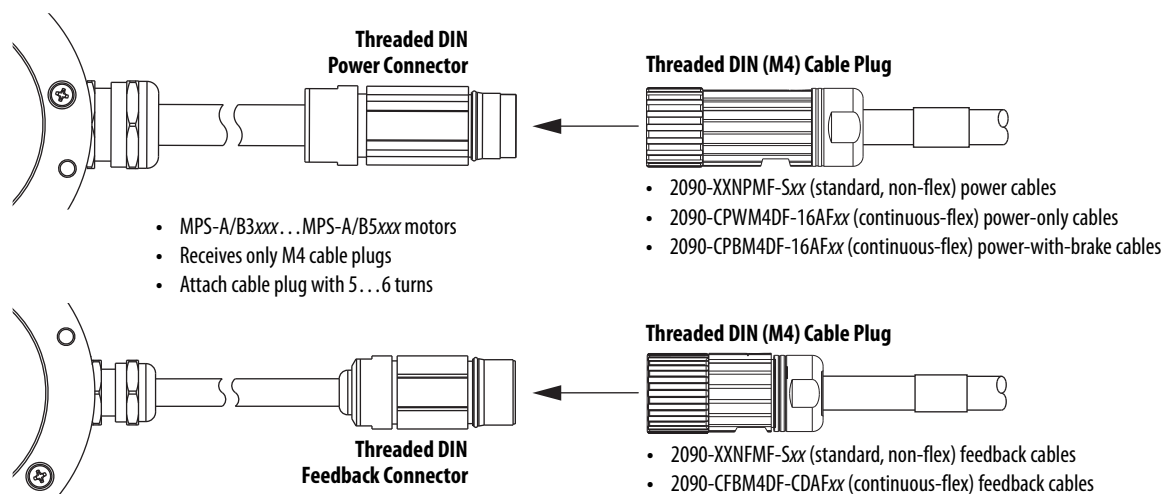
MP-Series Stainless Steel Motor High Resolution Encoders

MP-Series Stainless Steel motors are available with high performance encoders with a choice of single-turn (-S) or multi-turn (-M) high resolution feedback:

- Up to 2 million counts per revolution for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns.

Motor Connector/Cable Compatibility

MP-Series (Bulletin MPS) motors are equipped with threaded DIN connectors.



MP-Series Stainless Steel Motor Options

MP-Series Stainless Steel motors are available with these options:

- 24V DC brake.
- Shaft seal kit (with slinger) is available for field replacement. Shaft seals are made of PTFE. Kits include a lubricant to reduce wear.
- Positive Air Pressure accessory kit (catalog number MPS-AIR-PURGE) is mounted to the rear cover of the motor to provide positive air pressure and further reduce the chance of contamination inside the motor. No special tool is required for installation and removal.

Refer to the MP-Series Stainless Steel Servo Motor Installation Instructions, publication [MP-IN005](#), for more information.

Motor Shaft Seal Kit Combinations and Dimensions

Motor Cat. No. ⁽¹⁾	Shaft Seal Cat. No.	Shaft Seal Dimensions			Slinger Dimensions		
		Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
MPS-A3xx and MPF-B3xx	MPS-SST-A3B3	23.0 (0.90)	47.0 (1.85)	6.0 (0.24)	16.0 (0.63)	50.8 (2.0)	5.1 (0.20)
MPS-A45xx and MPF-B45xx	MPS-SST-A45B45	31.0 (1.22)	62.0 (2.44)	7.0 (0.27)	24.0 (0.94)	63.5 (2.50)	5.2 (0.20)
MPS-B5xx	MPS-SST-F165	36 (1.42)	72 (2.84)	8 (0.32)	28 (1.10)	82.6 (3.25)	5.1 (0.20)

(1) Shaft seals are subject to wear and require periodic inspection and replacement. Replacement is recommended every 3 months, not to exceed 12 months, depending on use.

Technical Specifications - MP-Series Stainless Steel Motors

MP-Series Stainless Steel Motor (200V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPS-A330P	5000	3.6 (32)	11.1 (98)	1.3	5000	0.00012 (0.0010)	7.4 (16.2)
MPS-A4540F	3000	8.1 (72)	27.1 (240)	1.4	3000	0.00052 (0.0046)	13 (28.5)

(1) Refer to MP-Series Stainless Steel Motor Brake Specifications on [page 63](#) for brake rotor inertia and brake motor weight.

MP-Series Stainless Steel Motor (400V-class) Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾⁽²⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx ⁽¹⁾ kg (lb)
MPS-B330P	5000	3.6 (32)	11.1 (98)	1.3	5000	0.00012 (0.0010)	7.4 (16.2)
MPS-B4540F	3000	8.1 (72)	27.1 (240)	1.4	3000	0.00052 (0.0046)	13 (28.5)
MPS-B560F	3000	21.5 (190)	67.8 (600)	3.5	3000	0.00227 (0.0200)	30 (66)

(1) Refer to MP-Series Stainless Steel Motor Brake Specifications on [page 63](#) for brake rotor inertia and brake motor weight.

(2) Rotor inertia can vary slightly depending on feedback.

MP-Series Stainless Steel Motor Brake Specifications

Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time			Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage (by using external arc suppression device)			
					MOV ms	Diode ms		
MPS-A/B330	45	4.18 (37)	0.45...0.55	50	20	110	0.00013 (0.0011)	8.8 (19.3)
MPS-A/B4540	48	10.2 (90)	0.576...0.704	110	25	160	0.00052 (0.0046)	15.4 (34.0)
MPS-B560	25	28.3 (250)	1.05...1.28	70	50	250	0.00227 (0.0200)	32.2 (70.8)

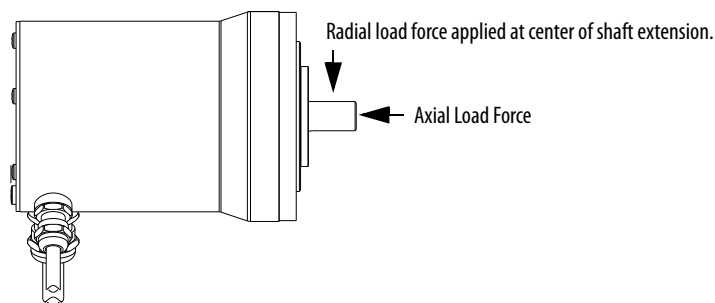
MP-Series Stainless Steel Motor Load Force Ratings

Bulletin MPS motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L_{10} bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPS-A/B330	—	74 (163)	59 (130)	—	49 (108)	—	43 (95)
MPS-A/B4540	140 (309)	111 (245)	89 (195)	77 (170)	—	—	—
MPS-B560	—	154 (338)	122 (268)	106 (234)	—	—	—

MPS-xxxx-xJ5xDA Load Forces



Axial Load Force Ratings (maximum radial load)

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPS-A/B330	—	27 (59)	20 (44)	—	16 (35)	—	13 (29)
MPS-A/B4540	49 (107)	36 (80)	27 (59)	22 (49)	—	—	—
MPS-B560	—	52 (115)	39 (85)	32 (71)	—	—	—

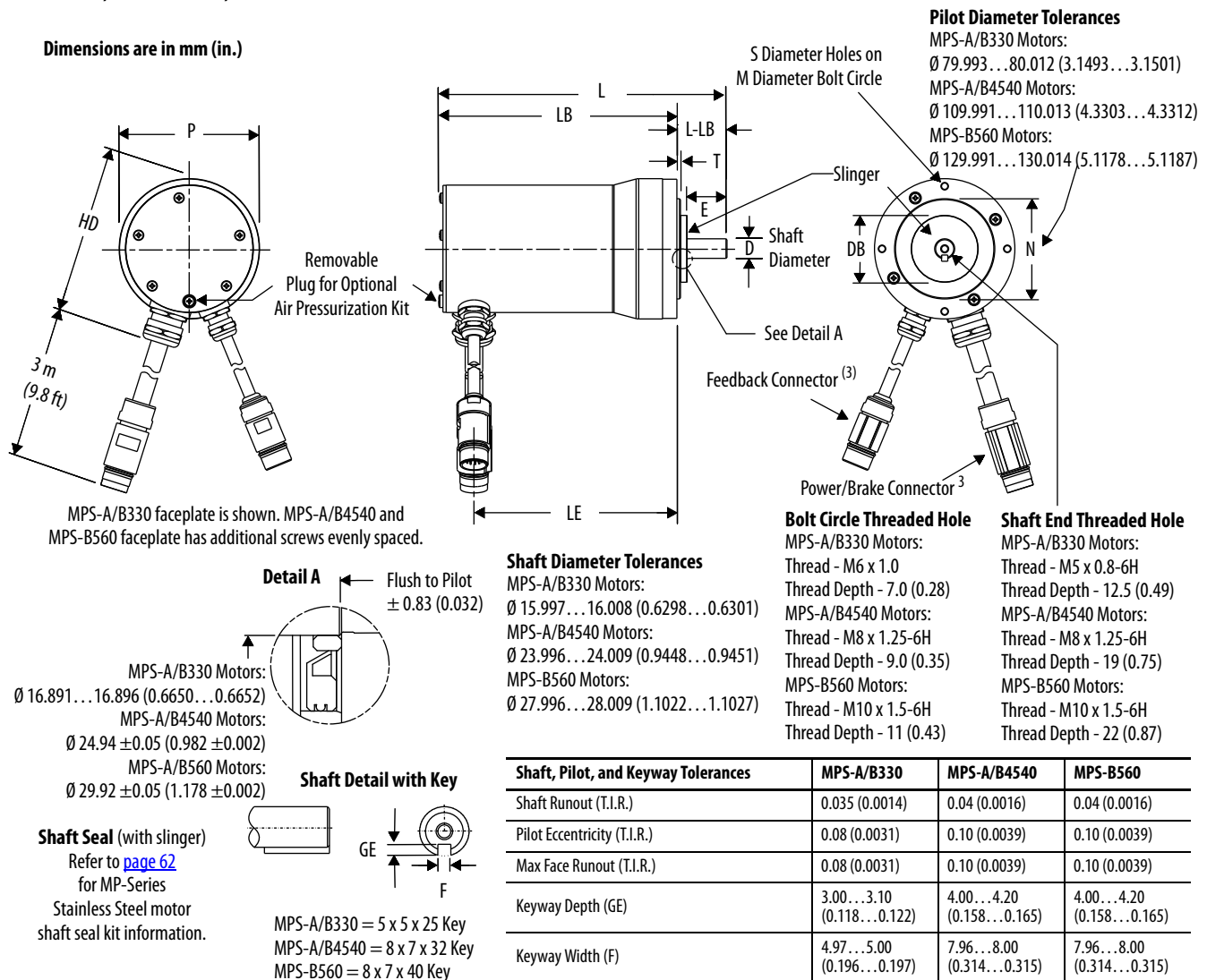
Axial Load Force Ratings (zero radial load)

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPS-A/B330	—	36 (79)	27 (59)	—	21 (46)	—	18 (40)
MPS-A/B4540	69 (152)	51 (112)	38 (83)	31 (69)	—	—	—
MPS-B560	—	68 (149)	50 (109)	42 (92)	—	—	—

Dimensions - MP-Series Stainless Steel Motors

MPS-A/B330, MPS-A/B4540, MPS-B560 Motor Dimensions

Dimensions are in mm (in.)



Shaft, Pilot, and Keyway Tolerances	MPS-A/B330	MPS-A/B4540	MPS-B560
Shaft Runout (T.I.R.)	0.035 (0.0014)	0.04 (0.0016)	0.04 (0.0016)
Pilot Eccentricity (T.I.R.)	0.08 (0.0031)	0.10 (0.0039)	0.10 (0.0039)
Max Face Runout (T.I.R.)	0.08 (0.0031)	0.10 (0.0039)	0.10 (0.0039)
Keyway Depth (GE)	3.00...3.10 (0.118...0.122)	4.00...4.20 (0.158...0.165)	4.00...4.20 (0.158...0.165)
Keyway Width (F)	4.97...5.00 (0.196...0.197)	7.96...8.00 (0.314...0.315)	7.96...8.00 (0.314...0.315)

Motor Cat. No. MPS-	HD mm (in.)	T mm (in.)	E mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D mm (in.)	DB mm (in.)	M mm (in.)	S mm (in.)	N mm (in.)	P mm (in.)	GE mm (in.)	F mm (in.)
A/B330	135 (5.31)	2.87 (0.113)	32.1 (1.26)	162 (6.38)	230 (9.05)	190 (7.49)	40.0 (1.57)	16.0 (0.63)	50.8 (2.0)	100 (3.94)	7.0 (0.28)	80.0 (3.15)	112 (4.41)	3.0 (0.118)	5.0 (0.197)
A/B4540	164 (6.46)	3.38 (0.133)	41.4 (1.63)	185 (7.30)	266 (10.45)	216 (8.48)	50.0 (1.97)	24.0 (0.945)	63.5 (2.50)	130 (5.12)	9.0 (0.35)	110 (4.33)	143.2 (5.64)	4.0 (0.158)	8.0 (0.315)
B560	198 (7.79)	3.38 (0.13)	51.52 (2.03)	302 (11.90)	396 (15.60)	336 (13.24)	60.0 (2.36)	28.0 (1.10)	82.6 (3.25)	165 (6.49)	11.0 (0.43)	130 (5.12)	181 (7.13)	4.0 (0.158)	8.0 (0.315)

(1) If ordering an MPS-A/B330 motor with brake, add 35 mm (1.38 in.) to dimensions L and LB, and 34 mm (1.34 in.) to dimension LE.

If ordering an MPS-A/B4540 motor with brake add 48.5 mm (1.91 in.) to dimensions L, LB, and LE.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) Specifications for the 3 m (9.8 ft) power and feedback cable leads are identical to those of the 2090-XXNPMF-xxSxx (power) and 2090-XXNFMF-Sxx (feedback) cables. Refer to Kinetix Motion Accessories Technical Data, publication [GMC-TD004](#), for more information.

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Kinetix 6000M Integrated Drive-Motor Systems



The Kinetix 6000M integrated drive-motor system combines the reliable high-performance MP-Series food-grade servo motor and Kinetix 6000 servo drive technologies into a single, compact package that provides significant space savings and machine control system simplification.

The Kinetix 6000M integrated drive-motor (IDM) units feature mounting flanges and shaft dimensions that are identical to MP-Series motors of the same frame size, making it easy to upgrade to integrated drive-motor technology.

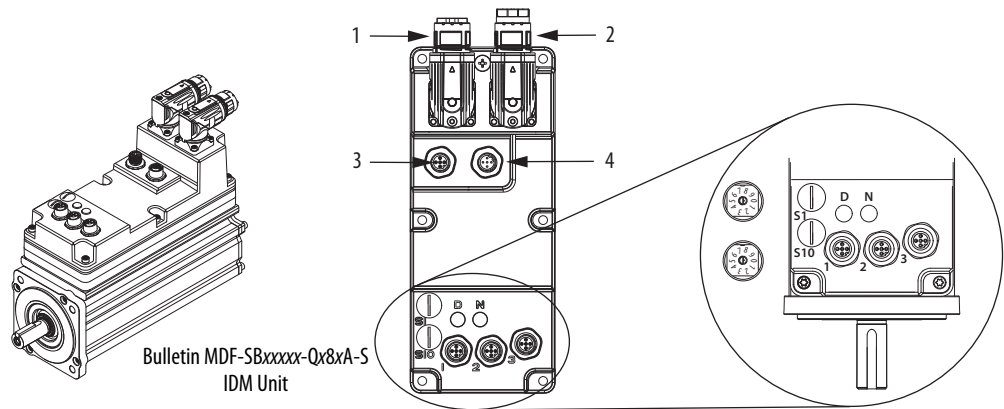
Hybrid and network cables connect the Kinetix 6000M power interface module (IPIM) and daisy-chain to as many as 16 Kinetix 6000M integrated drive-motor (IDM) units.

Kinetix 6000M Integrated Drive-Motor System Features

Attribute	Value
Main characteristics	- Combines the reliable high-performance MP-Series servo motors and Kinetix 6000 servo drives - Compatible with 400V-class Kinetix 6000 and Kinetix 6200 drive systems - Integrated SIL2/PLd safe torque-off capability - Motor mounting flanges and shaft dimensions same as MP-Series motors - Low rotor inertia
Features	- As many as 4 Kinetix 6000M IPIM modules on a single 2094 power rail. - As many as 16 Kinetix 6000M integrated drive-motor (IDM) units connect to a single IPIM module 5 digital inputs on each integrated drive-motor (home, over-travel, and registration) - USDA compliant food-grade paint 180° rotatable hybrid cable connectors
Motor type	Brushless AC synchronous servo motors
Environmental rating	- IP66 with shaft seal (standard) and use of environmentally sealed cable connectors - Food grade grease on shaft seal
Continuous stall torque	3.0...7.25 N·m (27...64 lb·in)
Peak stall torque	11.0...22.0 N·m (93...192 lb·in)
Speed	3000, 3500, and 5000 rpm
Motor rated output	1.0...1.4 kW
Compatible servo drives	- Kinetix 6200 (400V-class) drives - Kinetix 6000 (400V-class) drives
Typical applications	- Food packaging - Volumetric filling - Form, fill, seal - Food handling - For meat and poultry applications, the MP-Series Stainless Steel motors are recommended

Kinetix 6000M Integrated Drive-Motor System Connectors and Indicators

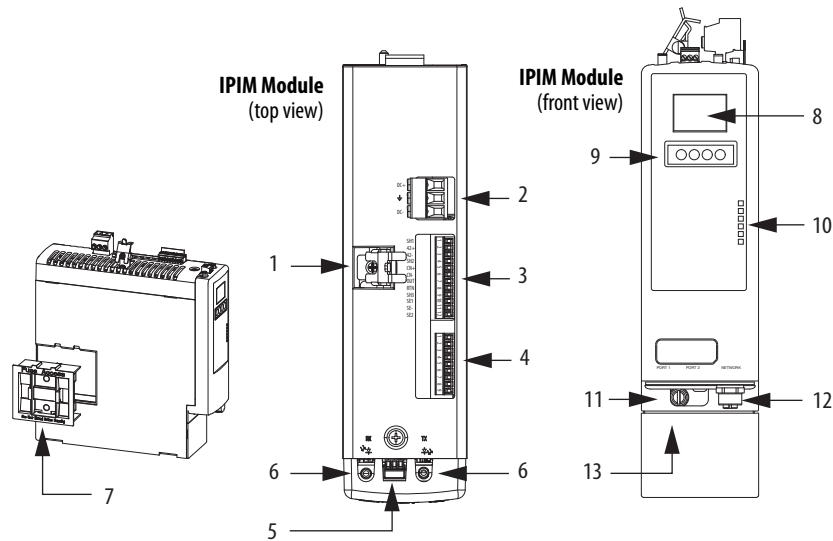
Kinetix 6000M IDM Units



Item	Description
1	Hybrid output connector
2	Hybrid input connector
3	Network output connector
4	Network input connector

Item	Description
1, 2, 3	Digital input connectors (M12)
S1	Network node address switch (least significant digit)
S10	Network node address switch (most significant digit)
D, N	Status indicators

Kinetix 6000M IPIM Modules



Item	Description
1	Hybrid cable shield clamp
2	Hybrid DC bus connector
3	Hybrid communication connector
4	Safe-off connector
5	Enable connector
6	Sercos (Rx and Tx) connectors
7	Fuse holder, fuses (2)
8	System display
9	System display programming switches
10	Status indicators
11	Mounting screw
12	Network connector
13	EtherNet/IP connectors, (not visible)

Kinetix 6000M Integrated Drive-Motor High Resolution Encoders

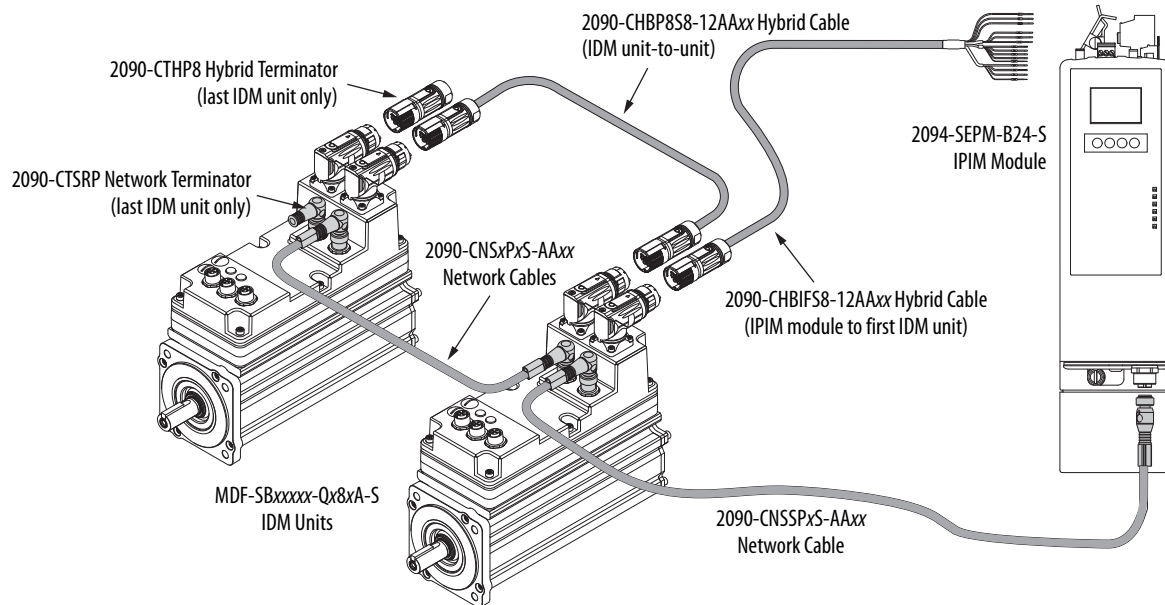
Kinetix 6000M integrated drive-motors are available with high performance digital encoders with multi-turn high resolution feedback:

- 524,288 counts per revolution for smooth performance
- High-resolution multi-turn absolute position feedback within 4096 turns

Kinetix 6000M Integrated Drive-Motor System Cables

Kinetix 6000M integrated drive-motor (IDM) system is compatible with Kinetix 6000 and Kinetix 6200 (400V-class) power rail configurations. The Kinetix 6000M IDM system includes one 2094-SEPM-B24-S IDM power interface module (IPIM), as many as 16 MDF-SBxxxxx IDM units, and cables and terminators as illustrated below.

Kinetix 6000M Hybrid and Network Cables



Cat. No.	Cable Type	Description	Quantity
2090-CHBIFS8-12AAxx ⁽¹⁾	Hybrid (SpeedTec)	Connects IPIM module (flying-leads) with the first IDM unit	1 required per system
2090-CHBP8S8-12AAxx ⁽²⁾		Connects from IDM unit-to-unit	1 required for each downstream IDM unit
20990-CBKS8-16AA03		Manual brake release cable	Optional
2090-CTHP8		Hybrid bus terminator, install on the last IDM unit	1 required per system (included with IPIM module)
2090-CNSSPSS-AAxx ⁽²⁾	Network	Straight (pin) connector and straight (socket) connector	1 required per system ⁽³⁾ (IPIM module to first IDM unit) Plus, 1 required for the second IDM unit and each additional downstream IDM unit
2090-CNSRPRS-AAxx ⁽²⁾		Right-angle (pin) connector and right-angle (socket) connector	
2090-CNSRPSS-AAxx ⁽²⁾		Right-angle (pin) connector and straight (socket) connector	
2090-CNSSPRS-AAxx ⁽²⁾		Straight (pin) connector and right-angle (socket) connector	
2090-CTSRP		Network bus terminator, right-angle (pin), to the last IDM unit	1 required per system (included with IPIM module)

(1) Cables are available in standard lengths of 1, 2, 3, 4, 5, 7, 9, 12, 15, 20, and 25 m (3.2, 6.6, 9.8, 13.1, 16.4, 22.9, 29.5, 39.3, 49.2, 65.5, and 82.0 ft).

(2) Cables are available in standard lengths of 0.5, 1, 2, 3, 4, 5, 7, 9, 12, 15, 20, and 25 m (1.6, 3.2, 6.6, 9.8, 13.1, 16.4, 22.9, 29.5, 39.3, 49.2, 65.5, and 82.0 ft).

(3) Use of straight or right-angle connectors depends on application. Right-angle (pin) connectors are not compatible for connection to the IPIM module. Only straight (pin) connectors fit properly.

Digital Input Cables

Kinetix 6000M IDM units have three 5-pin, M12, digital input connectors. Allen-Bradley (Bulletin 889D) DC micro-style patchcords, splitters, and V-cables are available with straight and right-angle connectors for making connections from the IDM unit to input sensors.

Refer to the Kinetix 6000 and Kinetix 6200/6500 Drive Systems Design Guide, publication [GMC-RM003](#), for catalog numbers and example diagrams.

Kinetix 6000M Integrated Drive-Motor Options

Kinetix 6000M integrated drive-motor units are available with these options:

- Holding brake.
- Shaft can be smooth or keyed. Shaft seals (made of PTFE) are installed at the factory and kits are available for field replacement. Kits include a lubricant to reduce wear.
- Positive Air Pressure kit (catalog number MPS-AIR-PURGE) is mounted on the rear of the IDM unit to provide positive air pressure to further reduce the chance of contamination inside the motor.

Refer to the Kinetix 6000M Integrated Drive-Motor Installation Instructions, publication [MDF-IN001](#), for more information.

Shaft Seal Kit Combinations and Dimensions

Motor Cat. No.	Shaft Seal Cat. No.	Inside Diameter, mm (in.)	Outside Diameter, mm (in.)	Width, mm (in.)
MDF-SB1003	MPF-SST-A3B3	17 (0.67)	47 (1.85)	7 (0.28)
MDF-SB1153	MPF-SST-A4B4	25 (0.98)	62 (2.44)	7 (0.28)
MDF-SB1304	MPF-SST-A45B45	30 (1.18)	72 (2.83)	8 (0.31)

Technical Specifications - Kinetix 6000M Integrated Drive-Motor System

Kinetix 6000M Integrated Drive-Motor Unit (400V-class) Performance Specifications

Attribute	Units	MDF-SB1003P		MDF-SB1153H		MDF-SB1304F	
		No Brake	Brake	No Brake	Brake	No Brake	Brake
Bandwidth ⁽¹⁾ Velocity loop Current loop	Hz Hz	500 1300		500 1300		500 1300	
PWM frequency	kHz	4		4		4	
Nominal bus input voltage	V DC	650		650		650	
Control power Input voltage Power on load Digital input load	V DC W W	32...44 8 0...6		32...44 8 0...6		32...44 8 0...6	
Brake load	W	N/A	15.0	N/A	19.2	N/A	19.2
Digital inputs Supply voltage Supply voltage current	V DC mA	21.6...26.4 200		21.6...26.4 200		21.6...26.4 200	
Speed, max	rpm	5000		3500		3000	
Continuous stall torque	N·m (lb·in)	3.0 (26.5)		4.8 (42.5)		7.25 (64.2)	
Peak stall torque	N·m (lb·in)	10.5 (92.9)		18.5 (164)		21.75 (192)	
Rated output power	kW	1.10	1.02	1.15	1.0	1.39	1.24
Speed at rated output power	rpm	5000		3500		3000	
Rated input power	kVA	1.27	1.28	1.36	1.26	1.61	1.44
Rotor inertia	kg·m ² (lb·in·s ²)	0.00012 (0.0010)	0.00013 (0.0011)	0.00038 (0.0033)	0.00042 (0.0038)	0.00052 (0.0046)	0.00056 (0.0050)
Bus overvoltage	V DC	825		825		825	
Bus undervoltage	V DC	275		275		275	
Weight	kg (lb)	7.2 (15.9)	8.4 (18.5)	8.1 (17.9)	9.9 (21.9)	11.3 (25.0)	13.6 (30.1)

(1) Bandwidth values vary based on tuning parameters and mechanical components.

Kinetix 6000M Integrated Drive-Motor Unit Brake Specifications

IDM Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time		Brake Rotor Inertia kg·m ² (lb·in·s ²)	Brake Motor Weight, approx kg (lb)
				Release ms	Engage ms		
MDF-SB1003	45	4.18 (37)	0.45...0.55	100	40	0.00013 (0.0011)	8.4 (18.5)
MDF-SB1153	48	10.2 (90)	0.576...0.704	120	65	0.00042 (0.0038)	9.9 (21.9)
MDF-SB1304						0.00056 (0.0050)	13.6 (30.1)

Kinetix 6000M IPIM Module Specifications

The Kinetix 6000M integrated drive-motor (IDM) power interface module (IPIM), catalog number 2094-SEPM-B24-S, is compatible with Kinetix 6000 and Kinetix 6200 (400V-class) drive families and mounts to the 2094 power rail.

IMPORTANT The 2094-SEPM-B24-S IPIM module is compatible with only 400V-class drive systems.

DC Bus Power Specifications

Attribute	Value
Bus output voltage, nom	650V DC
Bus continuous output current	24 A, rms
Instantaneous output current, max	60 A
Intermittent current duration	400 ms
Intermittent current duty cycle	16%
Continuous power output, nom	15 kW
Internal shunt Continuous power Peak power	200 W 22.5 kW
Internal shunt resistor	28.75 Ω
Capacitance	840 μ F
Short circuit current rating	200,000 A (rms) symmetrical

Control Power Specifications

Attribute	Value
Control power output Voltage Power Current	40.4...41.7V DC 270 W 6.5 A
24V output voltage	21.6...26.4V DC
24V output current, max Enable input Safety bypass	50 mA 320 mA

Control power line-loss ride-through is used to determine how long you can remove control power without causing the system to shut down and reset. For the IPIM module, it is highly dependent on the load current and applied voltage. For an example of these calculations, refer to Kinetix 6000M Integrated Drive-Motor User Manual, publication [2094-UM003](#).

Control Power Line-loss Ride-through Specifications

Control Power Input Voltage	Control Power Line-loss Ride-through as % of IPIM Module Control Power Current Output Rating				
	ms				
AC	20%	40%	60%	80%	100%
120V	67	34	23	18	14
240V	448	246	173	135	112

You can calculate power (heat) dissipation as it applies to sizing the enclosure for the 2094 power rail that includes your IPIM module by using these tables. For an example, refer to Kinetix 6000M Integrated Drive-Motor User Manual, publication [2094-UM003](#).

Power Dissipation Specifications

Power Dissipation as % of DC Bus Current Output Rating Watts					Heat Dissipation Formula ⁽¹⁾
20%	40%	60%	80%	100%	
2	7	14	25	38	$Y = 33.95x^2 + 3.18x$

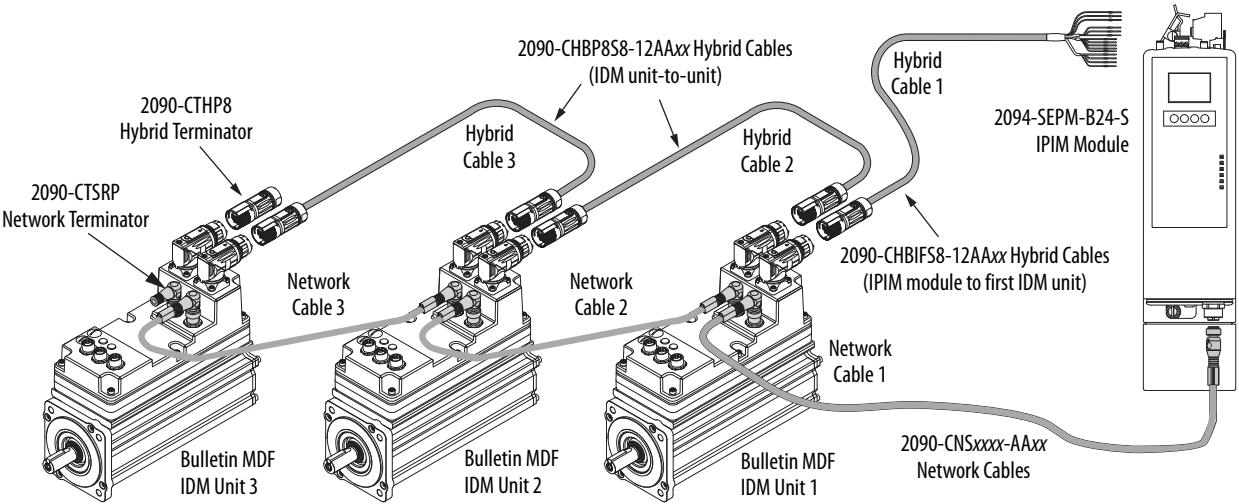
(1) x = percent of DC bus current output rating; any value between 0.0 and 1.0.

Control Power Input		Power Dissipation as % of IPIM Module Control Power Output Rating Watts					Heat Dissipation Formulas ⁽¹⁾
Frequency Hz	Voltage AC	20%	40%	60%	80%	100%	
50	120V	22	29	38	48	61	$Y = 23.76x^2 + 20.73x + 16.54$
	240V	34	42	52	63	76	$Y = 18.56x^2 + 30.19x + 27.41$
60	120V	23	27	32	39	46	$Y = 14.57x^2 + 11.40x + 20.01$
	240V	38	49	62	76	92	$Y = 19.63x^2 + 43.22x + 28.75$

(1) x = percent of IPIM module control power output rating; any value between 0.0 and 1.0.

Maximum System Cable Lengths

The maximum length for hybrid and network cables is 25 m (82 ft). The maximum combined cable length for all axes daisy-chained from the same IPIM module is 100 m (328 ft).



For example, in this Kinetix 6000M system, if each cable length is the maximum 25 m (82 ft), the combined cable length is 75 m (246 ft).

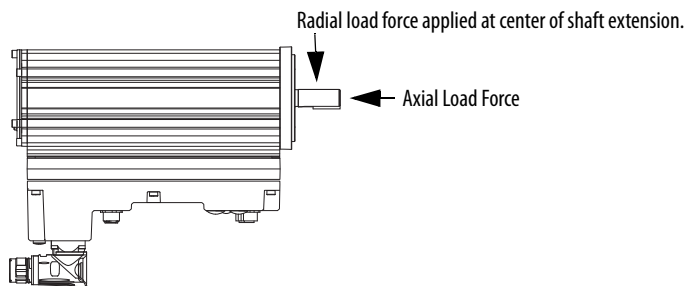
Kinetix 6000M Integrated Drive-Motor Load Force Ratings

Bulletin MDF motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables below represent an L_{10} bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	5000 rpm kg (lb)
MDF-SB1003	—	74 (163)	59 (129)	—	49 (107)	43 (95)
MDF-SB1153	106 (234)	84 (185)	67 (148)	—	55 (121)	—
MDF-SB1304	140 (309)	111 (245)	89 (195)	77 (170)	—	—

MDF-SBxxxx-Qx8xA-S Load Forces



Axial Load Force Ratings (maximum radial load)

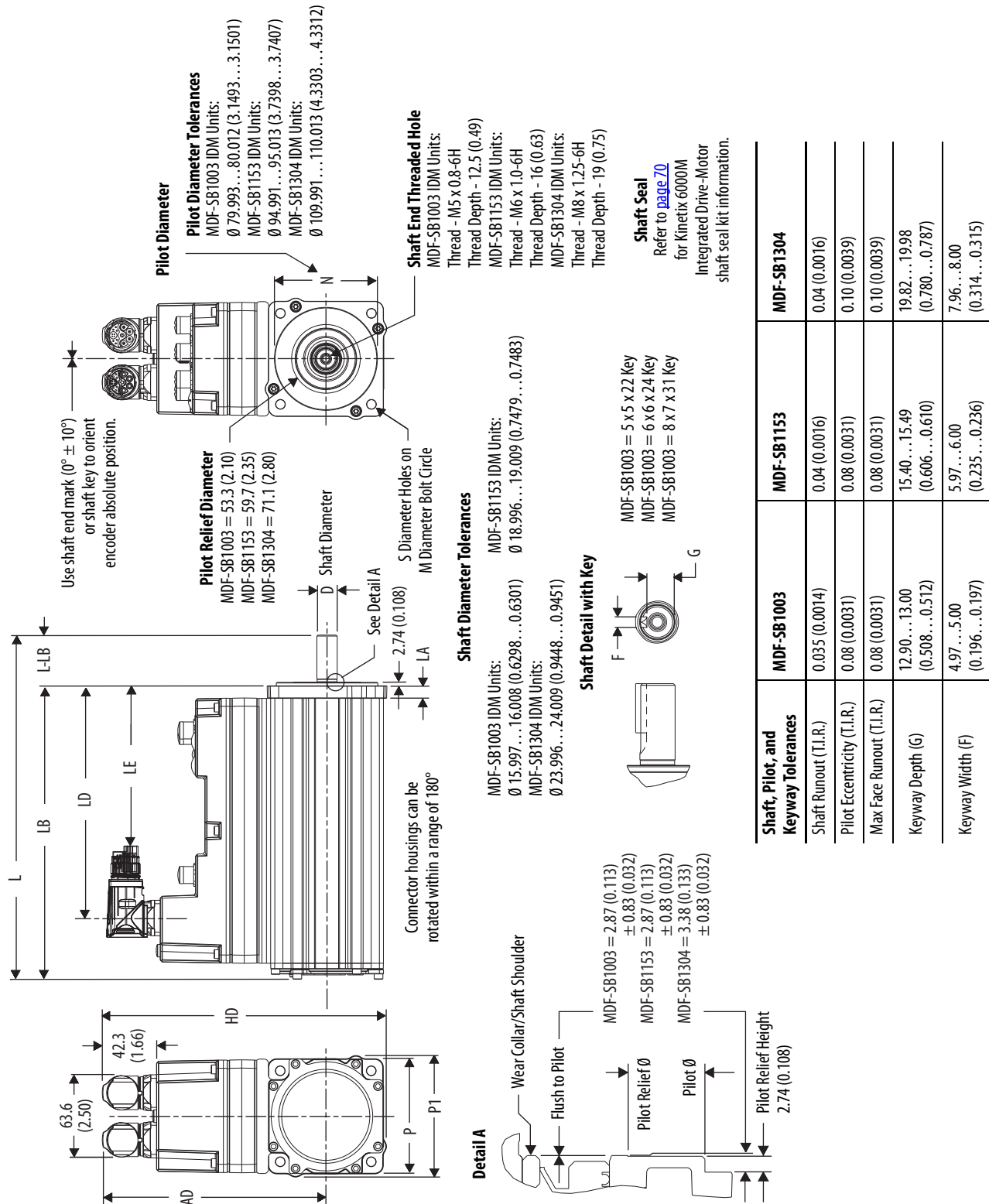
Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	5000 rpm kg (lb)
MDF-SB1003	—	27 (59)	20 (44)	—	16 (35)	13 (29)
MDF-SB1153	52 (115)	39 (86)	29 (64)	—	22 (49)	—
MDF-SB1304	49 (107)	36 (80)	27 (60)	22 (49)	—	—

Axial Load Force Ratings (zero radial load)

Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	5000 rpm kg (lb)
MDF-SB1003	—	36 (80)	27 (59)	—	21 (47)	18 (40)
MDF-SB1153	69 (152)	51 (112)	38 (83)	—	30 (66)	—
MDF-SB1304	69 (152)	51 (112)	38 (83)	31 (69)	—	—

Dimensions - Kinetix 6000M Integrated Drive-Motor System

MDF-SB1003, MDF-SB1153, MDF-SB1304 IDM Unit Dimensions



MDF-SB1003, MDF-SB1153, MDF-SB1304 IDM Unit Dimensions

IDM Unit Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA mm (in.)	LD ⁽¹⁾ mm (in.)	LE ⁽¹⁾ mm (in.)	L ⁽¹⁾ mm (in.)	LB ⁽¹⁾ mm (in.)	L-LB ⁽²⁾ mm (in.)	D ⁽³⁾ mm (in.)	M mm (in.)	S ⁽⁴⁾ mm (in.)	N ⁽³⁾ mm (in.)	P mm (in.)	P1 mm (in.)	G ⁽³⁾ mm (in.)	F ⁽³⁾ mm (in.)
MDF-SB1003	173.8 (6.84)	221.0 (8.70)		9.90 (0.39)	183.0 (7.21)	126.3 (4.97)	271.3 (10.68)	231.3 (9.11)	40.0 (1.575)	16.0 (0.629)	100.0 (3.937)	7.0 (0.283)	80.0 (3.15)	89.4 (3.52)	94.4 (3.72)	12.95 (0.510)	5.0 (0.197)
MDF-SB1153	178.2 (7.02)	229.0 (9.02)	2.74 (0.108)	10.20 (0.40)	183.3 (7.22)	126.5 (4.98)	271.2 (10.67)	231.2 (9.10)		19.0 (0.74)	115.0 (4.528)	10.0 (0.401)	95.0 (3.74)	98.3 (3.87)	101.6 (4.0)	15.40 (0.606)	6.0 (0.236)
MDF-SB1304	185.8 (7.31)	244.7 (9.63)		12.20 (0.48)	212.0 (8.35)	155.2 (6.11)	310.6 (12.23)	260.6 (10.26)	50.0 (1.969)	24.0 (0.945)	130.0 (5.118)		110.0 (4.33)	113.7 (4.48)	117.7 (4.63)	19.82 (0.780)	8.0 (0.315)

(1) If ordering an MDF-SB1003 IDM unit with brake, add 34.5 mm (1.36 in.) to dimensions L, LB, LD, and LE.

If ordering an MPF-SB1153 IDM unit with brake, add 48.5 mm (1.91 in.) to dimensions L, LB, LD, and LE.

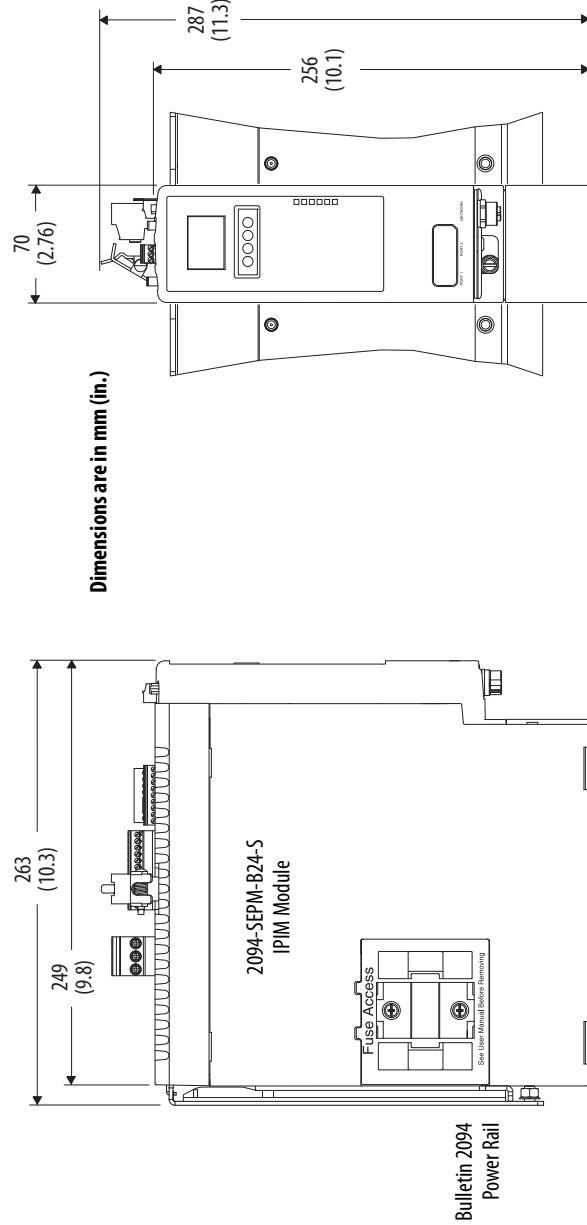
If ordering an MPF-SB1304 IDM unit with brake, add 48.5 mm (1.91 in.) to dimensions L, LB, LD, and LE.

(2) Tolerance for this dimension is ± 0.7 mm (± 0.028 in.).

(3) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 74](#).

(4) Tolerance for this dimension is ± 0.36 mm (± 0.007 in.).

IDM units are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

2094-SEPM-B24-S IPIM Module Dimensions

Modules are shown mounted to the 2094 power rail and the dimensions reflect that.

Environmental Specifications - Kinetix 6000M IPIM Module

Attribute	Operational Range	Storage Range (nonoperating)
Temperature, ambient	0...50 °C (32...122 °F)	-40...70 °C (-40...158 °F)
Relative humidity	5...95% noncondensing	5...95% noncondensing
Altitude	1000 m (3281 ft) 3000 m (9843 ft) with derating	3000 m (9843 ft) during transport
Vibration	5...55 Hz @ 0.35 mm (0.014 in.) double amplitude, continuous displacement; 55...500 Hz @ 2.0 g peak constant acceleration (10 sweeps in each of 3 mutually perpendicular directions)	
Shock	15 g, 11 ms half-sine pulse (3 pulses in each direction of 3 mutually perpendicular directions)	
Weight	3.5 kg (7.8 lb)	

Certifications - Kinetix 6000M IDM System

Agency Certification ⁽¹⁾	Standards
c-UL-us ⁽²⁾	UL Listed to U.S. and Canadian safety standards (UL 508C File E59272). Solid-state motor overload protection provides dynamic fold-back of motor current when 110% of the motor rating is reached with a peak current limit based on the peak rating of the motor as investigated by UL to comply with UL 508C (UL File E59272, volume 1, section 22).
CE	European Union 2004/108/EC EMC Directive compliant with EN 61800-3:2004: Adjustable Speed Electrical Power Drive Systems - Part 3; EMC requirements and specific test methods. European Union 2006/95/EC Low Voltage Directive compliant with: - EN 61800-5-1:2007 - Adjustable speed electrical power drive systems. - EN 50178:1997 - Electronic Equipment for use in Power Installations.
Functional Safety	TÜV Certified for Functional Safety: up to SIL CL2, according to EN 61800-5-2, EN 61508, and EN 62061; up to Performance Level PLd and Category 3, according to EN ISO 13849-1; when used as described in the Kinetix 6000M Integrated Drive-Motor User Manual, publication 2094-UM003 .
C-Tick	Australian Radio Communications Act, compliant with: - AS/NZS CISPR 11; Industrial Emissions - Radio Communications Act: 1992 - Radio Communications (Electromagnetic Compatibility) Standard: 1998 - Radio Communications (Compliance Labelling - Incidental Emissions) Notice: 1998 - AS/NZS CISPR 11: 2003 (Group 2, Class A)
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: - Article 58-2 of Radio Waves Act, Clause 3 - IDM unit registration number, KCC-REM-RAA-MDF - IPIM module registration number, KCC-REM-RAA-2094
ODVA	EtherNet/IP conformance tested (applies to IPIM module).

(1) When product is marked, refer to <http://www.ab.com> for Declarations of Conformity Certificates.

(2) Underwriters Laboratories Inc. has not evaluated the safe-off, safe torque-off, or safe speed-monitoring options in these products.

Notes:

RDD-Series Direct Drive Motors



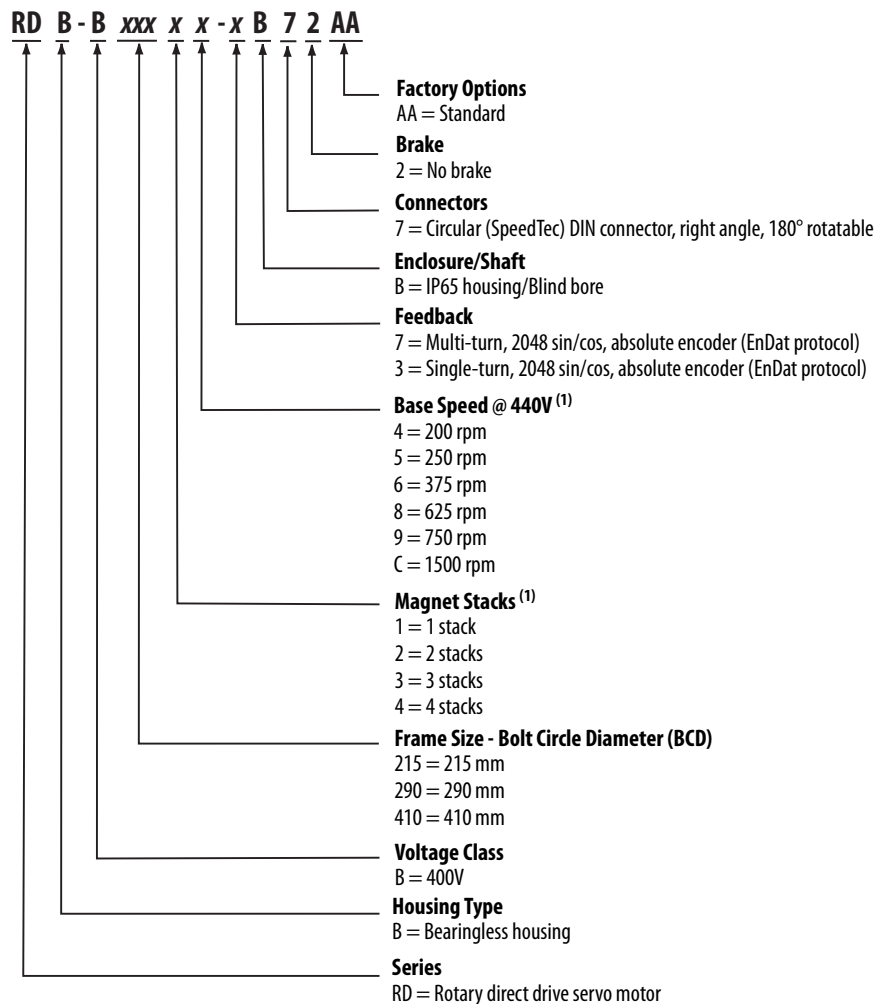
The RDD-Series™ (Bulletin RDB) direct-drive servo motor design provides direct-coupling to the load, thus improving system performance and efficiency by eliminating the need for inefficient mechanical power transmission devices, such as gearboxes, timing belts and pulleys. The initial RDD-Series offering incorporates a bearingless housed configuration designed for applications where the load is already supported by its own bearings.

RDD-Series Direct Drive Motor Features

Attribute	Value
Main characteristics	• Smart Motor Technology • Direct coupling to the load • Bearingless housed configuration
Features	• 400V-class windings • Multiple winding speed options • SpeedTec-ready DIN connectors, rotates 180° • Standard IEC 72-1 mounting dimensions
Motor type	Direct-drive rotary servo motor
Environmental rating	IP65 with use of environmentally sealed cable connectors
Certifications	Bulletin RDB rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	32.7 ... 426 N·m (289 ... 3770 lb·in)
Peak stall torque	86.5 ... 1050 N·m (766 ... 9293 lb·in)
Speed	Base speeds between 177 ... 1836 rpm
Motor rated output	1.97 ... 8.69 kW
Compatible servo drives	• Kinetix 6200/6500 • Kinetix 6000 • Kinetix 7000
Typical applications	• Use to replace mechanical gear reduction (gear boxes, belts, pulleys) • Tight space constraints • Axes with high-power and high-performance requirements

Catalog Numbers - RDD-Series Direct Drive Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Not all combinations are available. Only the configurations for rated speed and magnet stacks, as listed in RDD-Series Direct Drive Motor Performance Specifications on [page 81](#), are available. Use Motion Analyzer software to size and select motors for your application.

RDD-Series Direct Drive Motor High-resolution Encoders

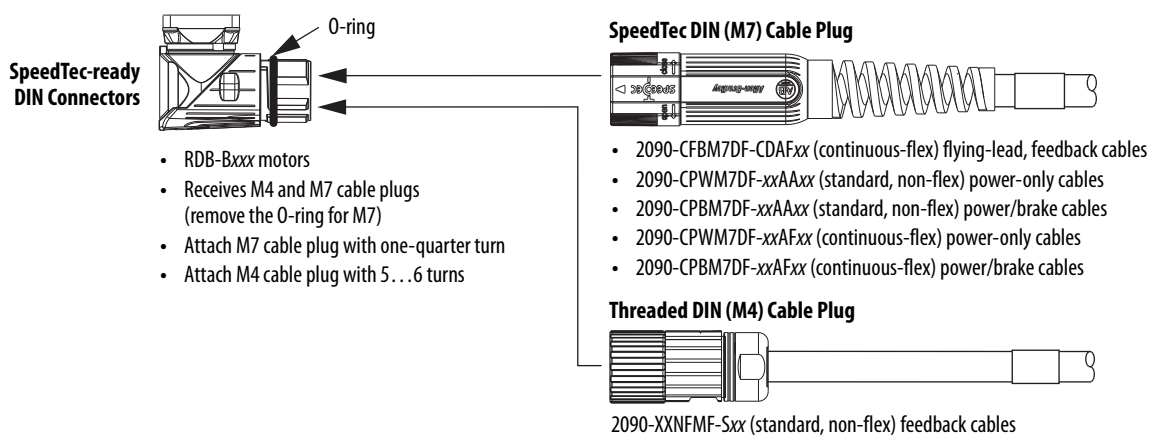
RDD-Series direct drive motors are available with high performance encoders with a choice of single-turn (-3) or multi-turn (-7) high-resolution feedback:

- Up to 4 million counts per revolution (-3 and -7) for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns. The electromechanical design does not require a battery.

Use the 2090-K6CK-KENDAT feedback module (Kinetix 6000 drives) and the 2090-K7CK-KENDAT feedback module (Kinetix 7000 drives) for wiring the Bulletin RDB motor feedback connections. For Kinetix 6200 and Kinetix 6500 drives, use the 2090-K6CK-D15M motor feedback connector kit.

Motor Connector/Cable Compatibility

RDD-Series motors are equipped with SpeedTec-ready DIN connectors, however, EnDat encoder feedback requires the additional conductors included in the cables listed.



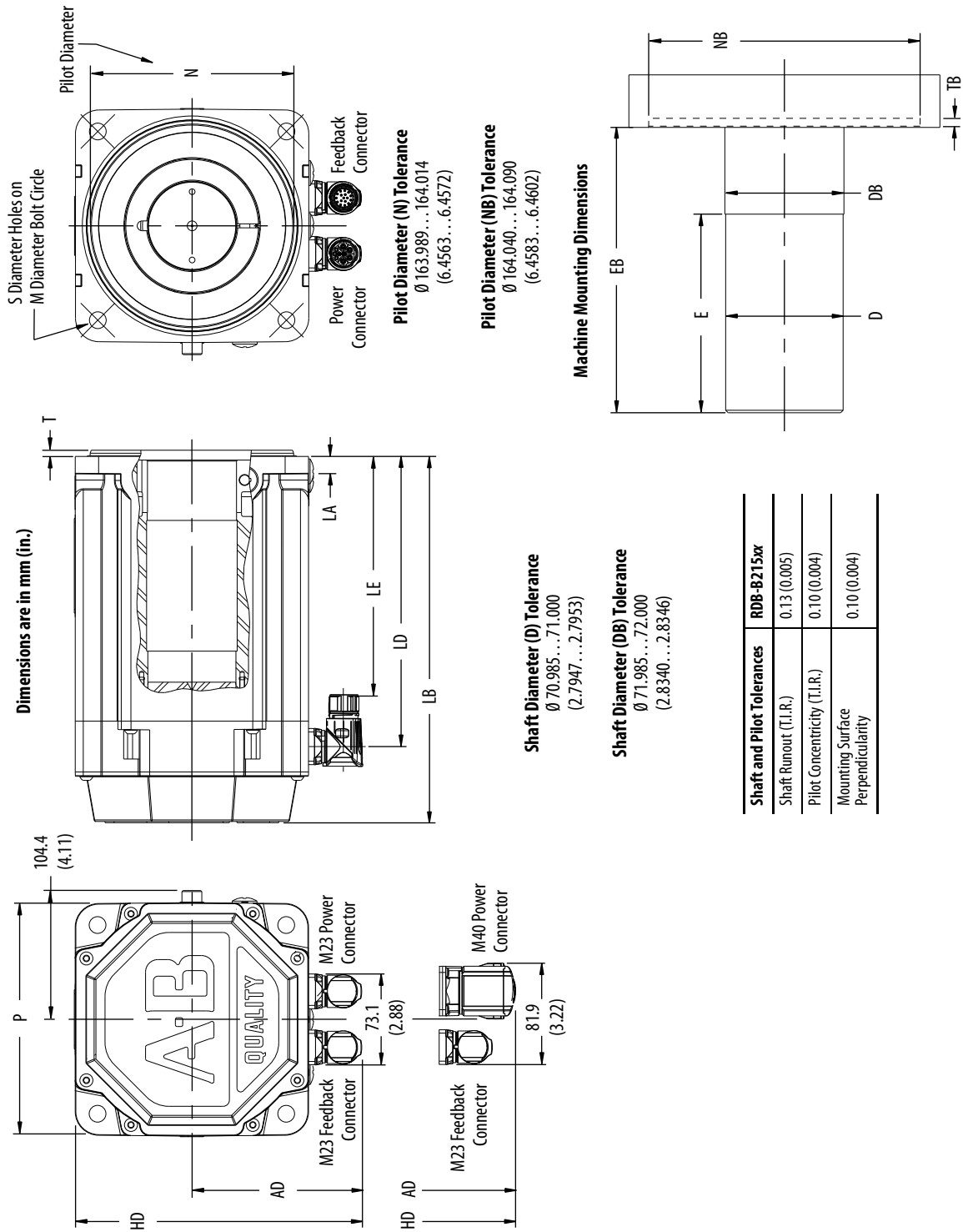
Technical Specifications - RDD-Series Direct Drive Motors

RDD-Series Direct Drive Motor Performance Specifications

Motor Cat. No.	Base Speed rpm	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia kg·m ² (lb·in·s ²)	Motor Weight, approx kg (lb)
RDB-B21519	750	1235	32.7 (289)	86.5 (766)	3.64	1235	0.0094 (0.083)	19.1 (42)
RDB-B2151C	1500	2125			5.23	2125		
RDB-B21529	750	1035	45.4 (402)	116 (1027)	4.33	1035	0.0126 (0.112)	24.5 (54)
RDB-B2152C	1500	2125			6.41	2125		
RDB-B21539	750	1250	53.7 (475)	143 (1266)	5.34	1250	0.0157 (0.139)	29.5 (65)
RDB-B2153C	1500	2250			5.87	1772		
RDB-B29014	200	450	49.2 (435)	110 (974)	1.97	391	0.028 (0.25)	28.6 (63)
RDB-B29016	375	785			3.18	729		
RDB-B29019	750	1500			3.63	1128		
RDB-B29024	200	435	98.0 (867)	214 (1894)	3.33	413	0.047 (0.42)	42.7 (94)
RDB-B29026	375	885			4.05	632		
RDB-B29029	750	1200						
RDB-B29034	200	500	140 (1239)	318 (2815)	5.16	493	0.066 (0.58)	55.4 (122)
RDB-B29036	375	750			5.49	646		
RDB-B29039	750	1000			4.41	578		
RDB-B41014	200	385	183 (1620)	340 (3009)	5.20	360	0.123 (1.09)	67.6 (149)
RDB-B41016	375	700			4.83	440		
RDB-B41018	625	700						
RDB-B41024	200	365	332 (2938)	690 (6107)	7.29	350	0.225 (1.99)	108 (238)
RDB-B41026	375	600	308 (2726)					
RDB-B41035	250	490	426 (3770)	1050 (9293)	8.69	361	0.302 (2.67)	136 (300)

Dimensions - RDD-Series Direct Drive Motors

Bulletin RDB-B215xx Motor Dimensions



Bulletin RDB-B215xx Motor Dimensions

Motor Cat. No.	AD ⁽¹⁾ mm (in.)	HD ⁽¹⁾ mm (in.)	T mm (in.)	LA mm (in.)	LD mm (in.)	LE mm (in.)	LB ⁽²⁾ mm (in.)	D mm (in.)	DB mm (in.)	E ⁽³⁾ mm (in.)	EB ⁽⁴⁾ mm (in.)	TB mm (in.)	M mm (in.)	S ⁽⁵⁾ mm (in.)	N mm (in.)	NB mm (in.)	P mm (in.)
RDB-B2151					166 (6.52)	124 (4.90)	226 (8.90)			49.0 (1.93)	104 (4.09)						
RDB-B2152	136.7 (5.38)	230.9 (9.09)	5.0 (0.197)	14.0 (0.55)	200 (7.86)	158 (6.24)	260 (10.24)	71.0 (2.795)	72.0 (2.834)	83.0 (3.27)	138 (5.43)	5.5 (0.22)	215 (8.465)	13.50 (0.5315)	164 (6.456)	164 (6.459)	189 (7.44)
RDB-B2153					234 (9.20)	192 (7.58)	294 (11.58)			117 (4.61)	172 (6.77)						

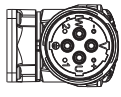
(1) Dimension is for motor with M23 power connector. For motor with M40 power connector, add 18.6 (0.73 in.).

(2) Tolerance for this dimension is ± 0.52 mm (± 0.02 in.).

(3) Tolerance for this dimension is ± 0.40 mm (± 0.015 in.).

(4) Tolerance for this dimension is ± 1.50 mm (± 0.06 in.) static, ± 0.13 mm (± 0.005 in.) dynamic.

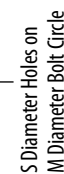
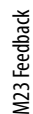
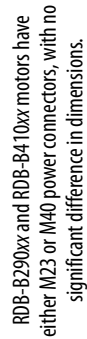
(5) Tolerance for this dimension is $+0.430$, -0.000 mm ($+0.0169$, -0.0000 in.).

Power Connectors on RDB-Series Motors		RDB-B215xx
M23 Power Connector		RDB-B21519, RDB-B21529, RDB-B2151C, RDB-B21539, RDB-B2152C
M40 Power Connector		RDB-B2153C

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

Rockwell Automation Publication GMC-TD001D-EN-P - May 2013

Dimensions are in mm (in.)

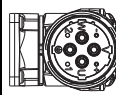


Machine Mounting Dimensions

Bulletin RDB-B290xx and RDB-B410xx Motor Dimensions

Motor Cat. No.	AD mm (in.)	HD mm (in.)	T mm (in.)	LA ⁽¹⁾ mm (in.)	LD mm (in.)	LE mm (in.)	LB ⁽²⁾ mm (in.)	D mm (in.)	DB mm (in.)	E ⁽³⁾ mm (in.)	EB ⁽⁴⁾ mm (in.)	M mm (in.)	S mm (in.)	N mm (in.)	P ⁽⁵⁾ mm (in.)	G mm (in.)	GD mm (in.)	F mm (in.)
RDB-B2901					86.5 (3.40)	136 (5.34)	201 (7.92)			43.94 (1.730)	88.92 (3.540)							
RDB-B2902	182.3 (7.18)	305.9 (12.05)	13.5 (0.53)	22.2 (0.88)	136 (5.36)	185 (7.30)	251 (9.90)	59.9 (2.362)	69.9 (2.755)	88.14 (3.470)	134.11 (5.280)	290 (11.417)	14.0 (0.551)	232.9 (9.17)	245.9 (9.68)	24.99 (0.984)	8.00 (0.315)	12.0 (0.472)
RDB-B2903					186 (7.31)	235 (9.25)	301 (11.83)			124.7 (4.910)	170.69 (6.720)							
RDB-B4101					105 (4.14)	164 (6.46)	230 (9.05)			40.39 (1.590)	114.05 (4.490)							
RDB-B4102	256.3 (10.09)	432.1 (17.01)	17.8 (0.70)	25.4 (1.00)	174 (6.86)	233 (9.18)	300 (11.77)	69.9 (2.755)	79.9 (3.149)	83.82 (3.300)	167.89 (6.610)	410 (16.142)	17.5 (0.689)	333.9 (13.14)	350.0 (13.78)	29.99 (1.181)	8.00 (0.315)	12.0 (0.472)
RDB-B4103					243 (9.58)	302 (11.90)	368 (14.49)			118.62 (4.670)	253.49 (9.980)							

(1) Tolerance for this dimension is ± 2.15 mm (± 0.085 in.).(2) Tolerance for this dimension is ± 2.30 mm (± 0.09 in.).(3) Tolerance for this dimension is ± 0.13 mm (± 0.005 in.).(4) Tolerance for this dimension is ± 1.50 mm (± 0.060 in.) static, ± 0.05 mm (± 0.002 in.) dynamic.(5) Tolerance for this dimension is ± 1.52 mm (± 0.06 in.).

Power Connectors on RDB-Series Motors		RDB-B290xx	RDB-B410xx
M23 Power Connector		RDB-B29014, RDB-B29016, RDB-B29024, RDB-B29019, RDB-B29034, RDB-B29026	N/A
		RDB-B29036, RDB-B29029, RDB-B29039	RDB-B410xx

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-Series Asynchronous Servo Motors



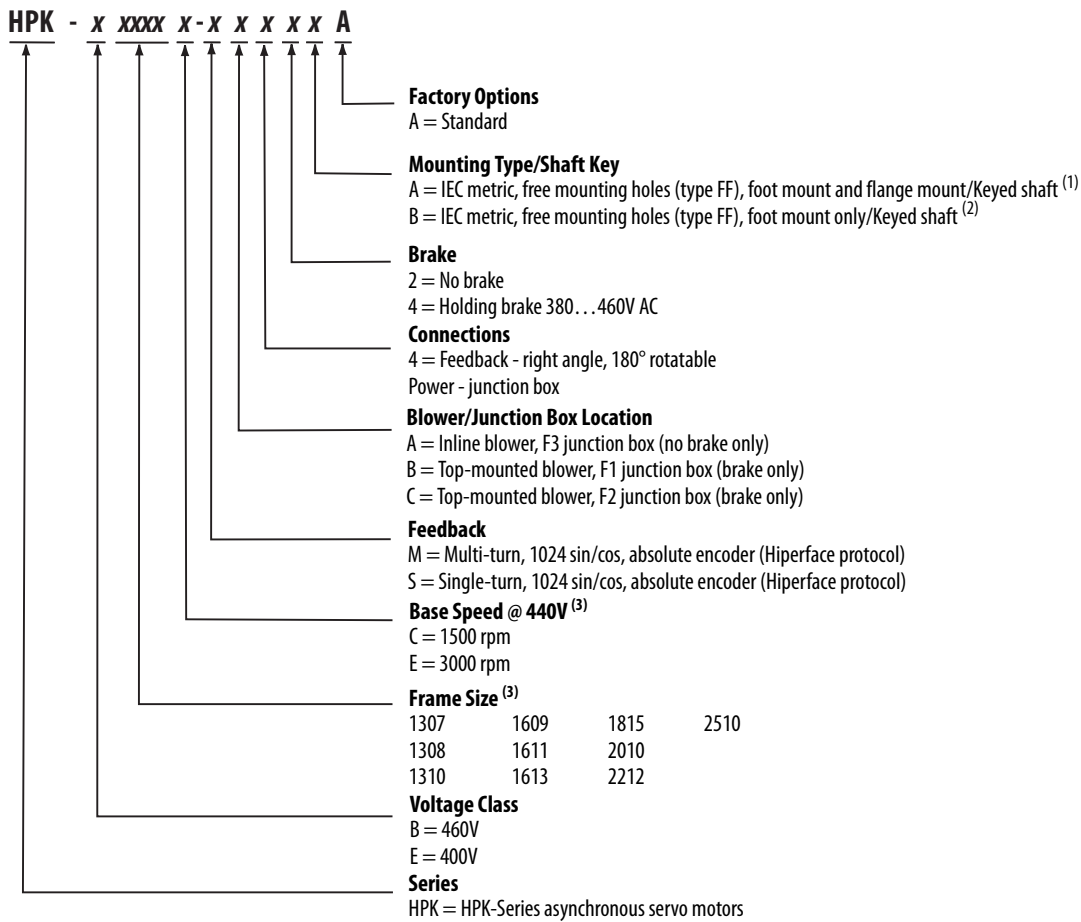
The HPK-Series™ Asynchronous Servo Motors employ proven induction motor technology optimized for servo system performance. These high horsepower motors offer exceptional performance for rapid acceleration and deceleration. Team these AC motors with the Kinetix 7000 high power servo drives to extend the range of Kinetix Integrated Motion solutions up to 150 kW.

HPK-Series Asynchronous Motor Features

Attribute	Value
Main characteristics	• High-power • Large load inertia
Features	• 400V and 460V windings • DIN connectors, rotates 180° • Blower cooled • IEC flange or foot mount
Motor type	Asynchronous Induction Motors
Environmental rating	IP54
Certifications	HPK-Series rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	96...482 N·m (849...4266 lb·in)
Peak stall torque	192...964 N·m (1699...8531 lb·in)
Speed	Base speeds of 1500 and 3000 rpm
Motor rated output	17.1...150 kW
Compatible servo drives	Kinetix 7000
Typical applications	• High power packaging • Converting • Wind/unwind/rewind • Sheeters • Flying knife • Material handling

Catalog Numbers - HPK-Series Asynchronous Servo Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Applies to only HPK-B/E13xx and HPK-B/E16xx motors.

(2) Applies to only HPK-B/E18xx, HPK-B/E20xx, HPK-B22xx, and HPK-B25xx motors.

(3) Not all combinations are available. Only the configurations for base speed and frame size, as listed in HPK-Series Asynchronous Servo Motor (460V) Performance Specifications on [page 89](#) and HPK-Series Asynchronous Servo Motor (400V) Performance Specifications on [page 89](#), are available. Use Motion Analyzer software to size and select motors for your application.

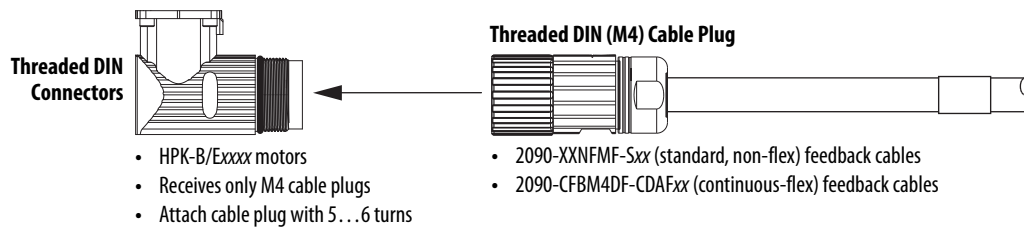
HPK-Series Asynchronous Servo Motor Encoders

HPK-Series motors are available with high performance encoders with a choice of single-turn (-S) or multi-turn (-M) high-resolution feedback:

- Up to 2 million counts per revolution for smooth performance.
- Single-turn encoder provides high-resolution absolute position feedback within one turn.
- Multi-turn encoder provides high-resolution absolute position feedback within 4096 turns.

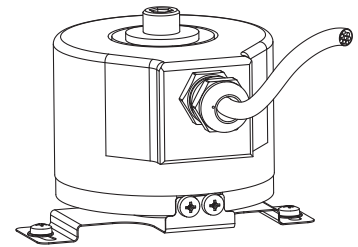
Motor Connector/Cable Compatibility

HPK-Series motors are equipped with threaded DIN connectors.



HPK-Series Asynchronous Servo Motor Options

- Multiple junction box mounting locations (F1, F2, and F3).
- Holding brake, 380V...460V AC.
- 460V and 400V windings.
- Encoder kit (catalog number HPK-xxxxxx-ENC-xx) available for field replacement. Kits are pre-programmed for a specific motor catalog number. Kit includes cable and DIN connector.



Technical Specifications - HPK-Series Asynchronous Servo Motors

HPK-Series Asynchronous Servo Motor (460V) Performance Specifications

Motor Cat. No.	Base Speed rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output at Base Speed kW (Hp)	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx kg (lb)
HPK-B1307C	1500	112 (991)	260 (2301)	17.1 (22.9)	0.081 (0.7168)	135 (297)
HPK-B1308C		141 (1247)	262 (2319)	21.6 (28.9)	0.098 (0.8673)	152 (335)
HPK-B1310C		155 (1372)	325 (2876)	23.8 (31.9)	0.111 (0.9823)	166 (366)
HPK-B1613C		271 (2398)	541.9 (4796)	41.7 (55.9)	0.206 (1.8231)	275 (606)
HPK-B1815C		360 (3186)	850 (7523)	55.9 (74.9)	0.468 (4.1418)	474 (1045)
HPK-B2010C		482 (4266)	970 (8585)	75.0 (100.5)	0.885 (7.8322)	531 (1170)
HPK-B2212C		607 (5371)	1105 (9780)	112 (150)	1.900 (16.829)	1095 (2414)
HPK-B2510C		955 (8452)	1927 (17,054)	150 (200)	3.070 (27.192)	1005 (2216)
HPK-B1307E	3000	96 (849)	165 (1460)	29.8 (39.9)	0.081 (0.7168)	135 (297)
HPK-B1308E		115 (1018)	230 (2035)	35.7 (47.8)	0.098 (0.8673)	152 (335)
HPK-B1609E		156 (1381)	270 (2390)	48.4 (64.8)	0.147 (1.3009)	231 (469)
HPK-B1611E		183 (1619)	400 (3540)	57.0 (76.4)	0.177 (1.5664)	244 (538)
HPK-B1613E		237 (2097)	459 (4062)	73.7 (98.8)	0.206 (1.8231)	275 (606)
HPK-B2010E		295 (2610)	500 (4425)	92.0 (125)	0.885 (7.8322)	351 (1170)

(1) Rotor inertia can vary slightly depending on feedback.

HPK-Series Asynchronous Servo Motor (400V) Performance Specifications

Motor Cat. No.	Base Speed rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output at Base Speed kW (Hp)	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)	Motor Weight, approx kg (lb)
HPK-E1307C	1500	112 (991)	263 (2327)	17.1 (22.9)	0.081 (0.7168)	135 (297)
HPK-E1310C		155 (1372)	380 (3363)	23.8 (32.4)	0.111 (0.9823)	166 (366)
HPK-E1613C		271 (2398)	625 (5531)	41.7 (55.9)	0.206 (1.8231)	275 (606)
HPK-E1815C		360 (3186)	840 (7434)	55.9 (74.9)	0.468 (4.1418)	474 (1045)
HPK-E2010C		482 (4266)	870 (7700)	75.0 (100.5)	0.885 (7.8322)	531 (1170)
HPK-E1307E	3000	96.0 (849)	202 (1788)	29.8 (39.9)	0.081 (0.7168)	135 (297)
HPK-E1308E		107 (947)	200 (1770)	33.2 (45.0)	0.098 (0.8673)	152 (335)
HPK-E1609E		156 (1381)	359 (3176)	48.4 (64.9)	0.147 (1.3009)	213 (469)
HPK-E1611E		183 (1619)	430 (3805)	57.0 (76.4)	0.177 (1.5664)	244 (538)
HPK-E1613E		237 (2097)	430 (3805)	73.7 (98.8)	0.206 (1.8231)	275 (606)

(1) Rotor inertia can vary slightly depending on feedback.

HPK-Series Asynchronous Servo Motor Brake Specifications

Motor Cat. No.	Holding Torque N·m (lb·in)
HPK-B/E1307C	20 (177)
HPK-B/E1308C	
HPK-B/E1310C	
HPK-B/E1613C	
HPK-B/E1815C	48 (425)
HPK-B/E2010C	
HPK-B2212C	102 (903)

Motor Cat. No.	Holding Torque N·m (lb·in)
HPK-B/E1307E	20 (177)
HPK-B/E1308E	
HPK-B/E1609E	
HPK-B/E1611E	
HPK-B/E1613E	48 (425)
HPK-B/E2010E	

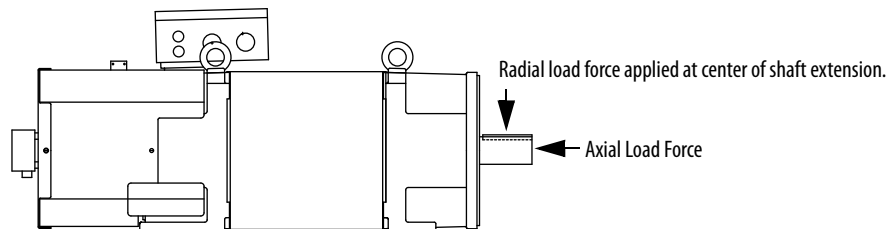
HPK-Series Asynchronous Servo Motor Load Force Ratings

HPK-Series motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables starting below represent an L_{10} bearing fatigue life of 10,000 hours. This 10,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings (zero axial load)

Motor Cat. No.	850 rpm kg (lb)	1150 rpm kg (lb)	1750 rpm kg (lb)	2500 rpm kg (lb)
HPK-B/E1307	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1308	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1310	320 (704)	290 (638)	250 (550)	220 (485)
HPK-B/E1609	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1611	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1613	500 (1100)	450 (990)	390 (858)	350 (770)
HPK-B/E1815	530 (1166)	530 (1166)	530 (1166)	450 (990)
HPK-B/E2010	660 (1452)	660 (1452)	660 (1452)	580 (1276)
HPK-B2212	730 (1609)	690 (1521)	600 (1323)	530 (1168)
HPK-B2510				

HPK-xxxxxx-xxxxAA Motor Load Forces

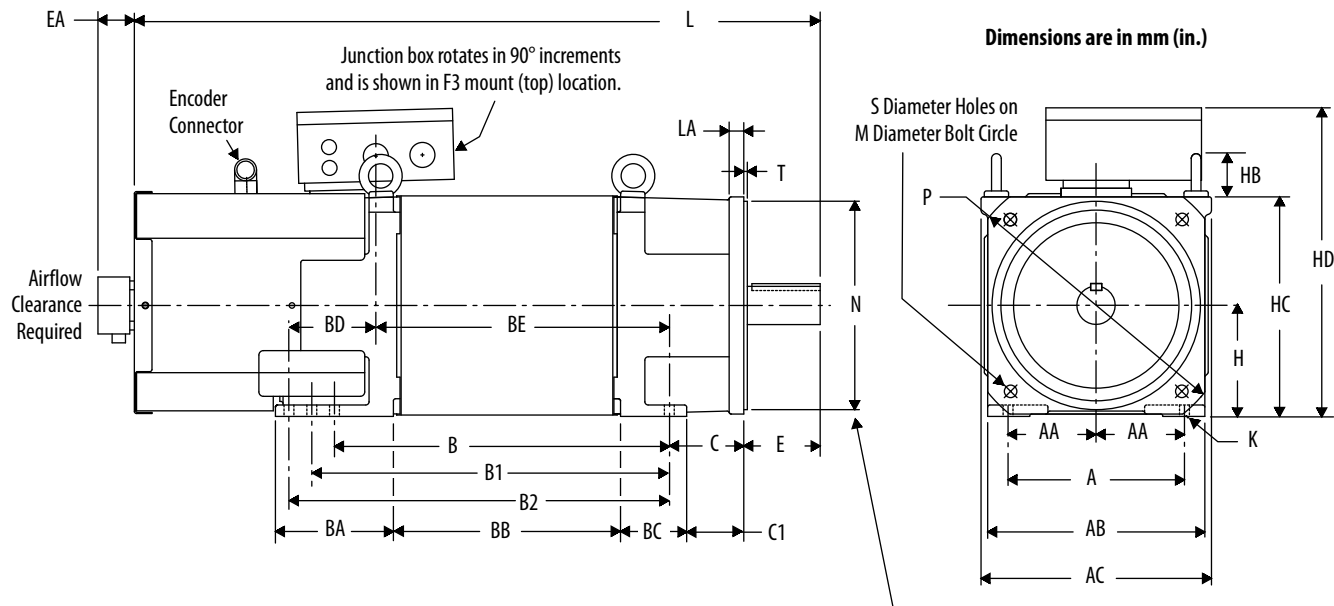


Axial Load Force Ratings (zero radial load)

Motor Cat. No.	850 rpm kg (lb)	1150 rpm kg (lb)	1750 rpm kg (lb)	2500 rpm kg (lb)
HPK-B/E1307	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1308	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1310	260 (572)	240 (528)	210 (462)	180 (396)
HPK-B/E1609	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1611	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1613	360 (796)	330 (726)	290 (638)	250 (550)
HPK-B/E1815	440 (970)	380 (838)	310 (682)	260 (572)
HPK-B/E2010	530 (1166)	460 (1012)	370 (814)	310 (682)
HPK-B2212	800 (1764)	730 (1609)	630 (1389)	560 (1235)
HPK-B2510				

Dimensions - HPK-Series Asynchronous Servo Motors

HPK-B/E13xx and HPK-B/E16xx Motor (non-brake) Dimensions



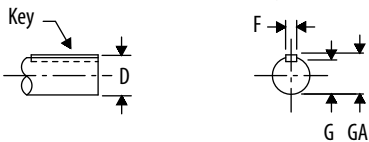
Shaft Diameter Tolerances

HPK-B/E1307, 1308, 1310
Ø 48.003...48.016 (1.8899...1.8904)
HPK-B/E1609, 1611, 1613
Ø 55.011...55.030 (2.1658...2.1665)

Pilot Diameter Tolerances

HPK-B/E1307, 1308, 1310
Ø 249.99...250.02 (9.842...9.844)
HPK-B/E1609, 1611, 1613
Ø 299.99...300.02 (11.809...11.811)

Shaft Detail with Key



HPK-B/E1307, 1308, 1310 = 14 x 9 x 80 Key
HPK-B/E1609, 1611, 1613 = 16 x 10 x 90 Key

Shaft, Pilot, and Keyway Tolerances	HPK-B/E13xx	HPK-B/E16xx
Shaft Runout (T.I.R.)	0.06 (0.002)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)	0.13 (0.005)
Keyway Depth (GA)	51.30...51.9 (2.02...2.04)	58.67...58.92 (2.31...2.32)
Keyway Depth (G)	42.42...42.92 (1.67...1.69)	48.50...49.00 (1.91...1.93)
Keyway Width (F)	13.94...13.99 (0.549...0.551)	15.95...16.00 (0.628...0.630)

HPK-B/E13xx and HPK-B/E16xx Motor (non-brake) Dimensions

Motor Cat. No. HPK-	H mm (in.)	HC mm (in.)	HD mm (in.)	HB mm (in.)	L mm (in.)	EA mm (in.)	LA mm (in.)	T mm (in.)	P mm (in.)	M mm (in.)	S ⁽¹⁾ mm (in.)	N ⁽²⁾ mm (in.)	D ⁽²⁾ mm (in.)	G ⁽²⁾ mm (in.)	GA ⁽²⁾ mm (in.)	F ⁽²⁾ mm (in.)
B/E1307					806 (31.7)											
B/E1308	132 (5.20)	262 (10.3)	366 (14.4)	53.0 (2.09)	845 (33.2)	52.0 (2.05)	17.0 (0.67)	5.0 (0.20)	350 (13.7)	300 (11.8)	18.5 (0.73)	250 (9.84)	48.0 (1.89)	42.4 (1.67)	51.3 (2.02)	13.9 (0.55)
B/E1310					876 (34.4)											
B/E1609			444 (17.4)		886 (34.8)											
B/E1611	160 (6.30)	316 (12.4)	450 (17.7)	62.0 (2.44)	937 (36.8)	52.0 (2.05)	21.0 (0.83)	5.0 (0.20)	400 (15.7)	350 (13.7)	18.5 (0.73)	300 (11.8)	55.0 (2.16)	48.5 (1.91)	58.7 (2.31)	16.0 (0.63)
B/E1613					987 (38.8)											

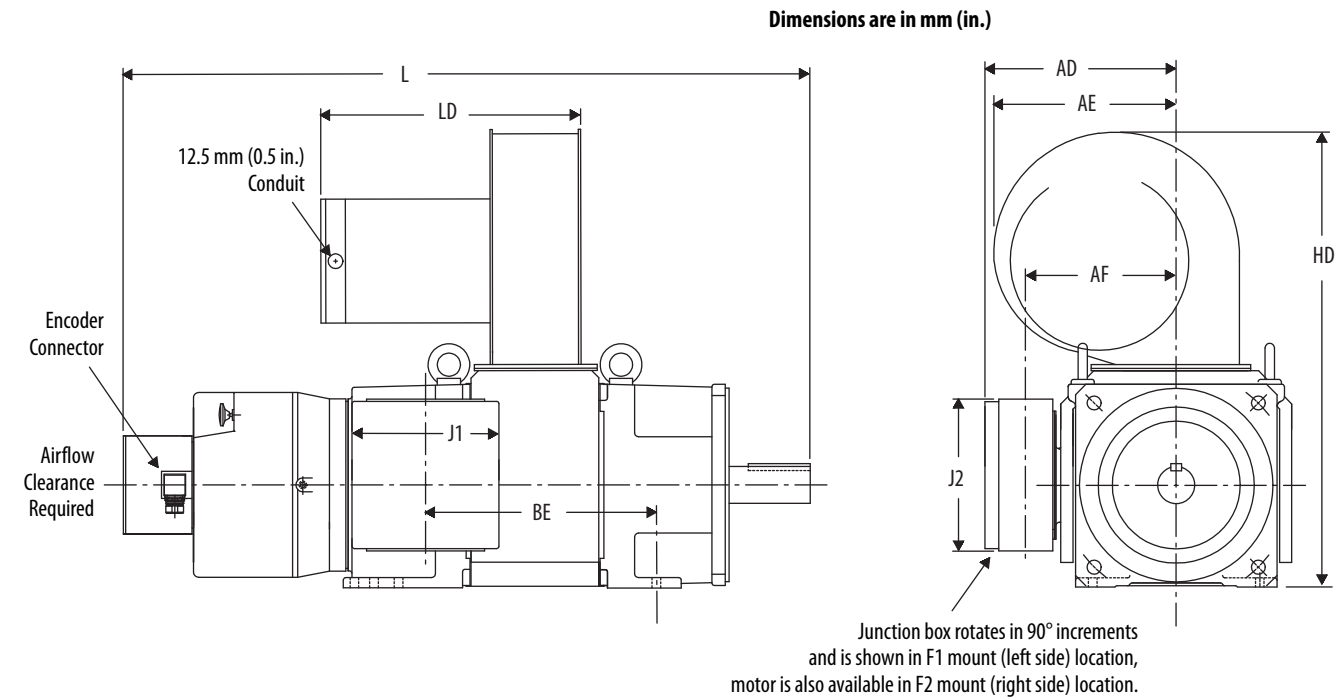
(1) Tolerance for this dimension is +0.52, -0.0 mm (+0.02, -0.0 in.).

(2) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 92](#).

Motor Cat. No. HPK-	K mm (in.)	A mm (in.)	AA mm (in.)	AB mm (in.)	AC mm (in.)	B mm (in.)	B1 mm (in.)	B2 mm (in.)	BA mm (in.)	BB mm (in.)	BC mm (in.)	C mm (in.)	C1 mm (in.)	E mm (in.)	BD mm (in.)	BE mm (in.)
B/E1307						333 (13.1)	365 (14.3)	390 (15.3)		187 (7.36)						300 (11.8)
B/E1308	12.0 (0.47)	216 (8.50)	108 (4.25)	260 (10.2)	279 (10.9)	371 (14.6)	403 (15.8)	428 (16.8)	154 (6.06)	226 (8.90)	95.0 (3.74)	89.0 (3.50)	57.0 (2.24)	110 (4.33)	91.0 (3.58)	338 (13.3)
B/E1310						403 (15.8)	435 (17.1)	462 (18.1)		257 (10.1)						369 (14.5)
B/E1609						N/A	414 (16.3)	452 (17.8)		225 (8.86)						321 (12.6)
B/E1611	14.0 (0.55)	254 (10.0)	127 (5.0)	313 (12.3)	332 (13.0)	N/A	464 (18.2)	502 (19.7)	170 (6.69)	276 (10.8)	95.0 (3.74)	108 (4.25)	82.0 (3.23)	110 (4.33)	130 (5.12)	372 (14.6)
B/E1613						N/A	515 (20.2)	548 (21.5)		327 (12.8)					125 (4.92)	423 (16.6)

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

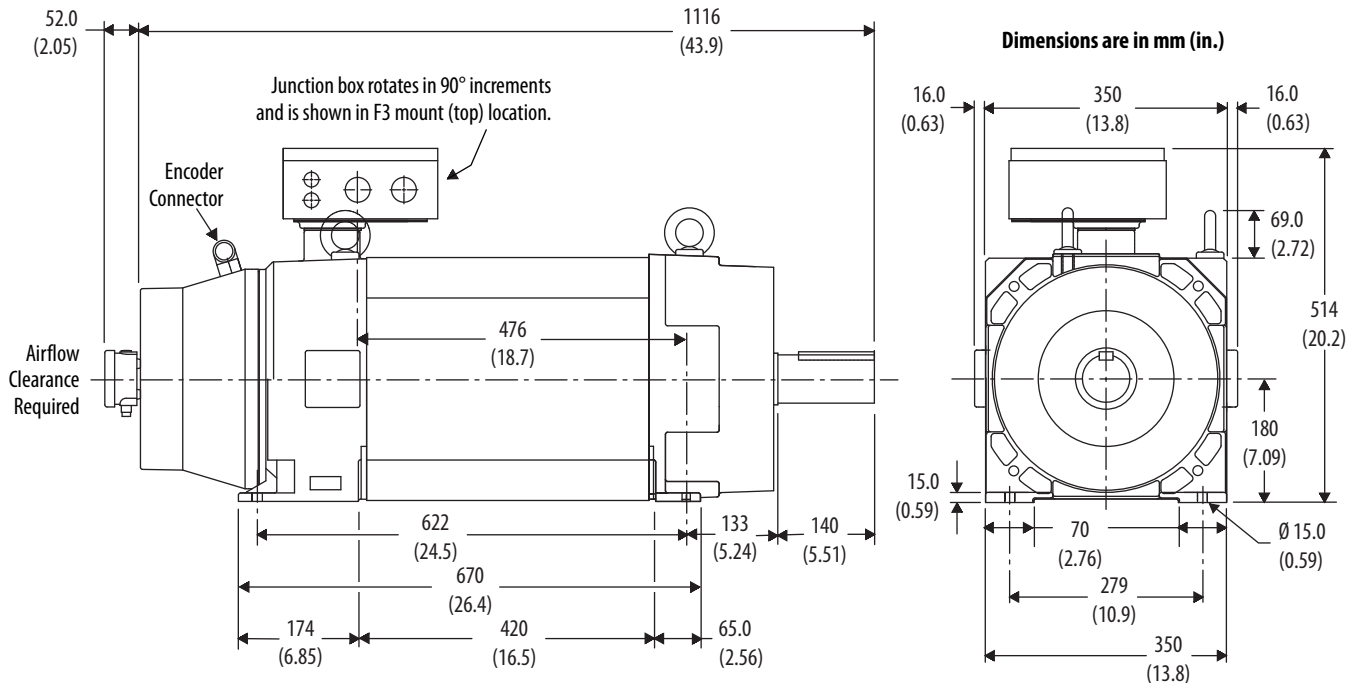
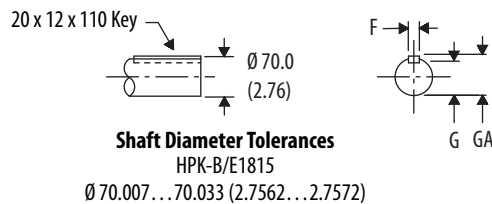
HPK-B/E13xx and HPK-B/E16xx Motor (brake) Dimensions



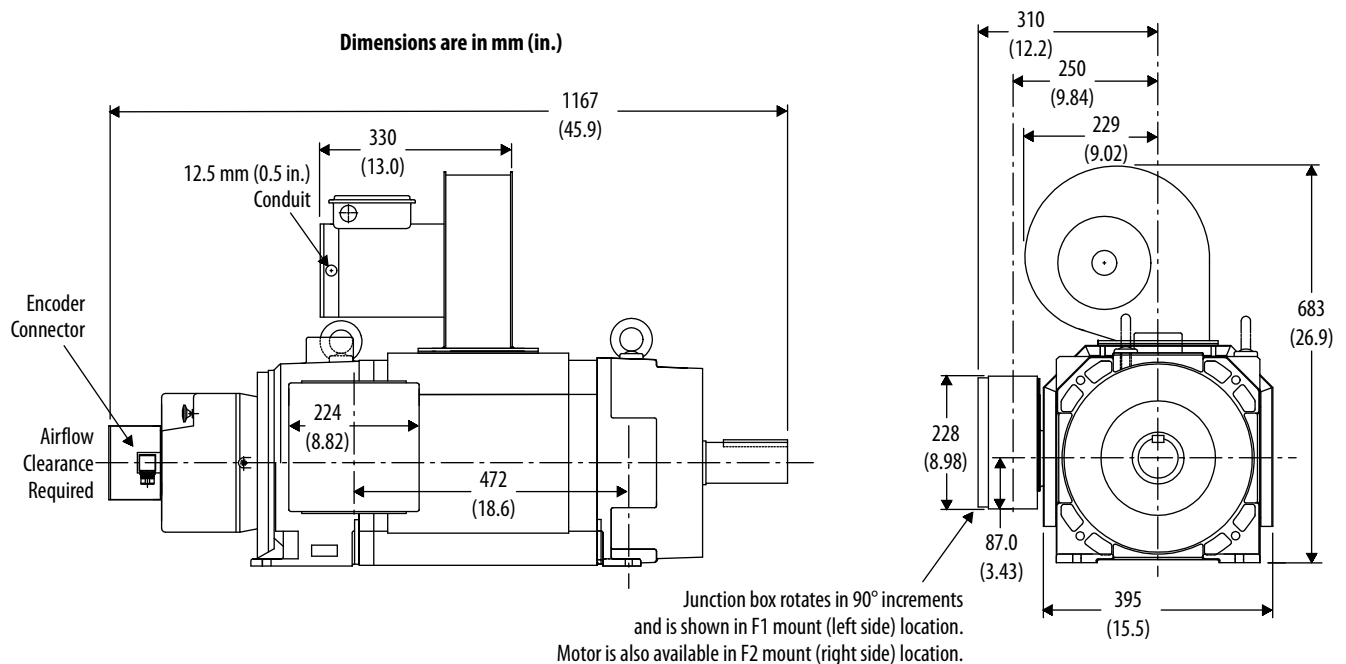
HPK-B/E13xx and HPK-B/E16xx Motor (brake) Dimensions

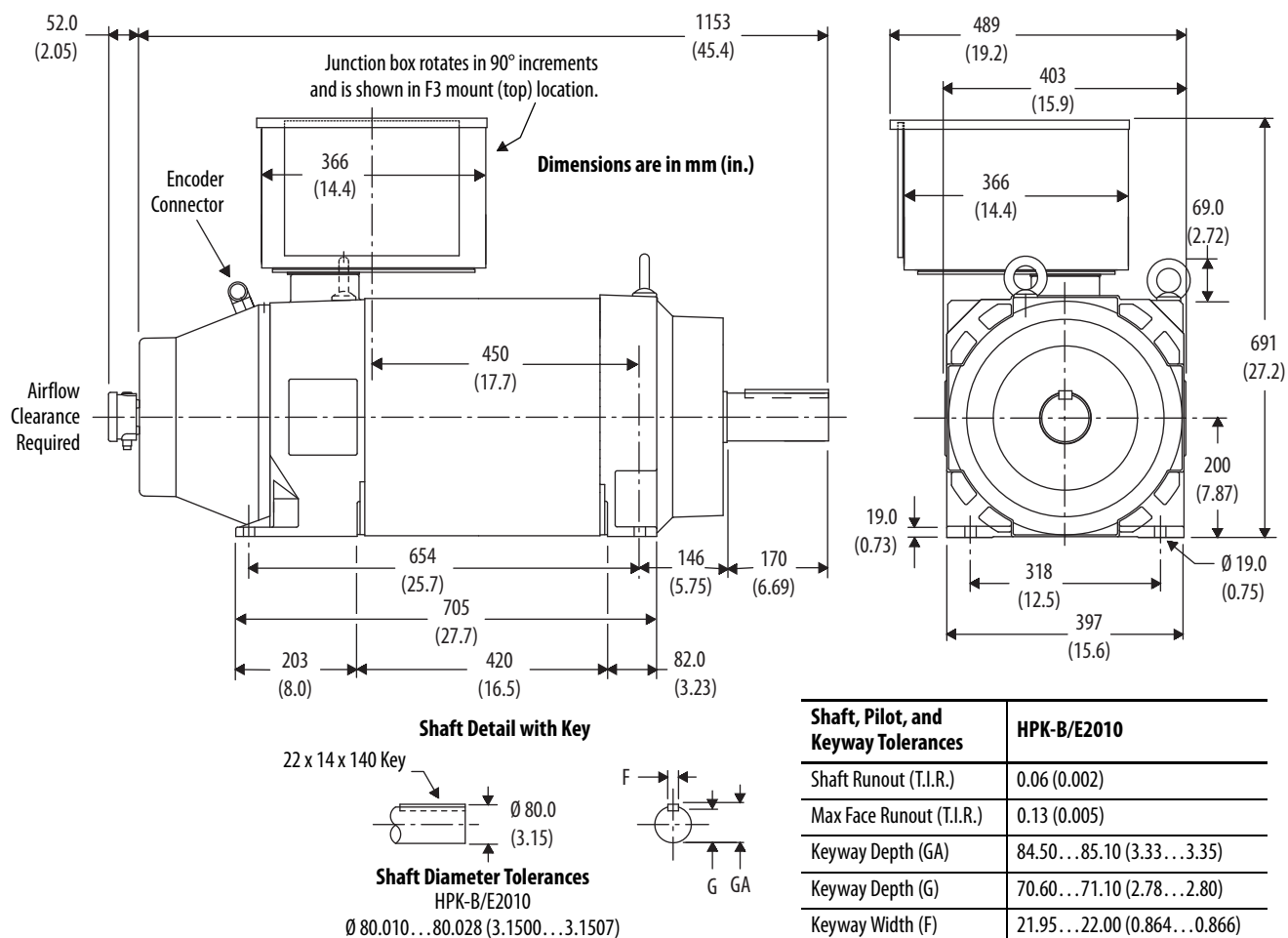
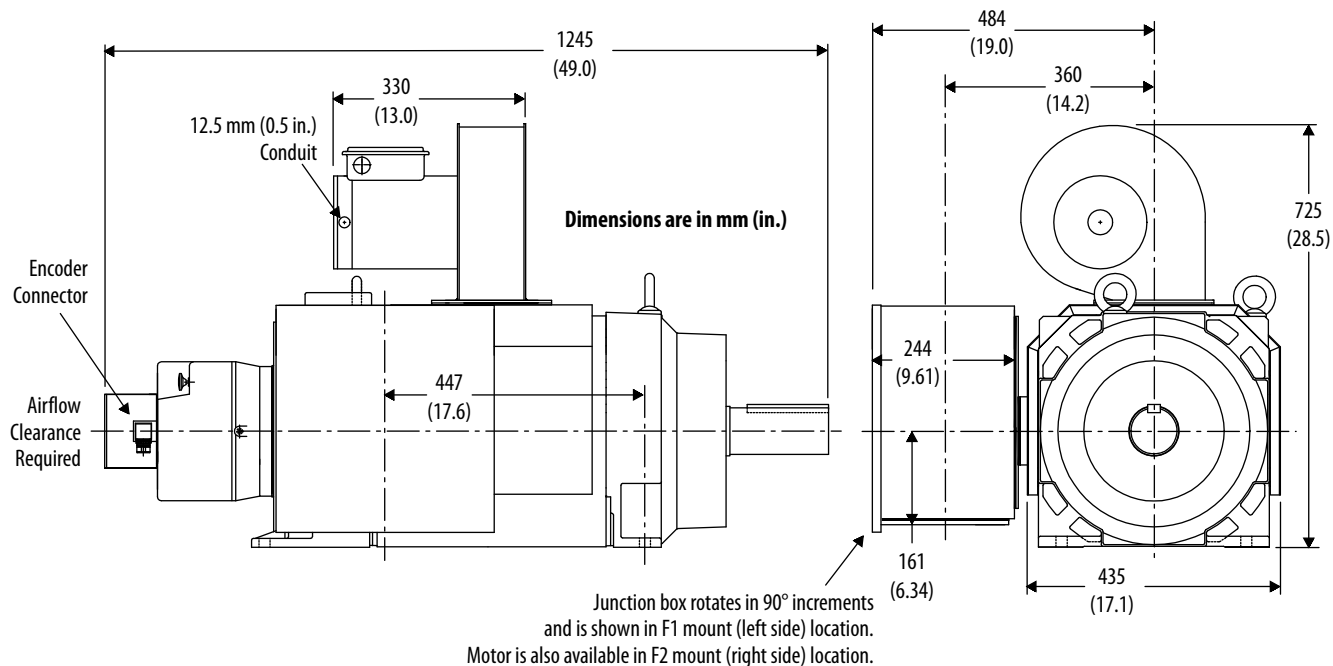
Motor Cat. No.	L mm (in.)	LD mm (in.)	BE mm (in.)	AD mm (in.)	AE mm (in.)	AF mm (in.)	HD mm (in.)	J1 mm (in.)	J2 mm (in.)
HPK-B/E1307	888 (34.9)	336 (13.2)	298 (11.7)	247 (9.72)	236 (9.29)	195 (7.68)	588 (23.1)	190 (7.48)	196 (7.72)
HPK-B/E1308	926 (36.4)		336 (13.2)						
HPK-B/E1310	957 (37.7)		368 (14.5)						
HPK-B/E1609	967 (38.0)	332 (13.0)	328 (12.9)	285 (11.2)	236 (9.29)	225 (8.86)	670 (26.3)	224 (8.82)	228 (8.98)
HPK-B/E1611	1018 (40.1)		379 (14.9)						
HPK-B/E1613	1069 (42.1)		430 (16.9)						

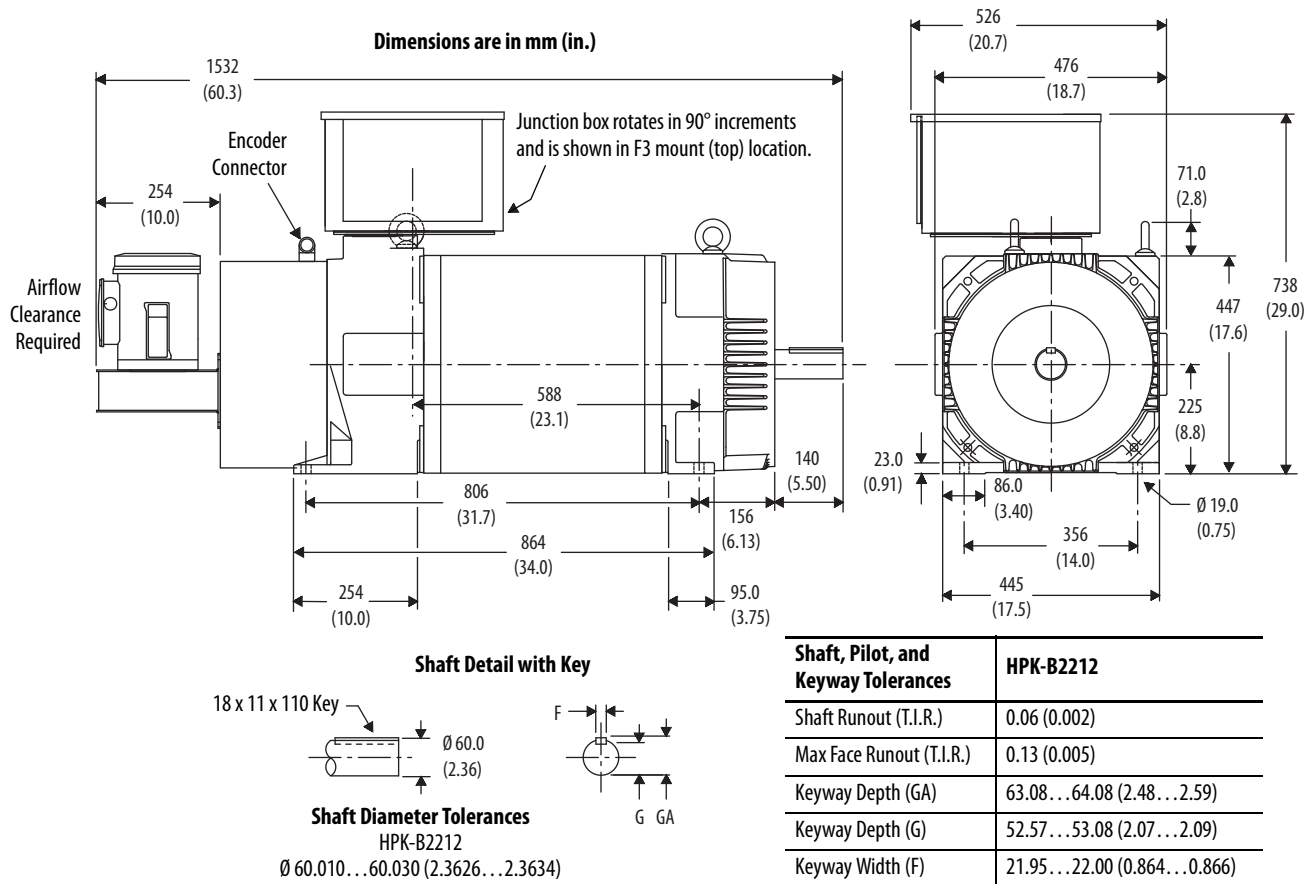
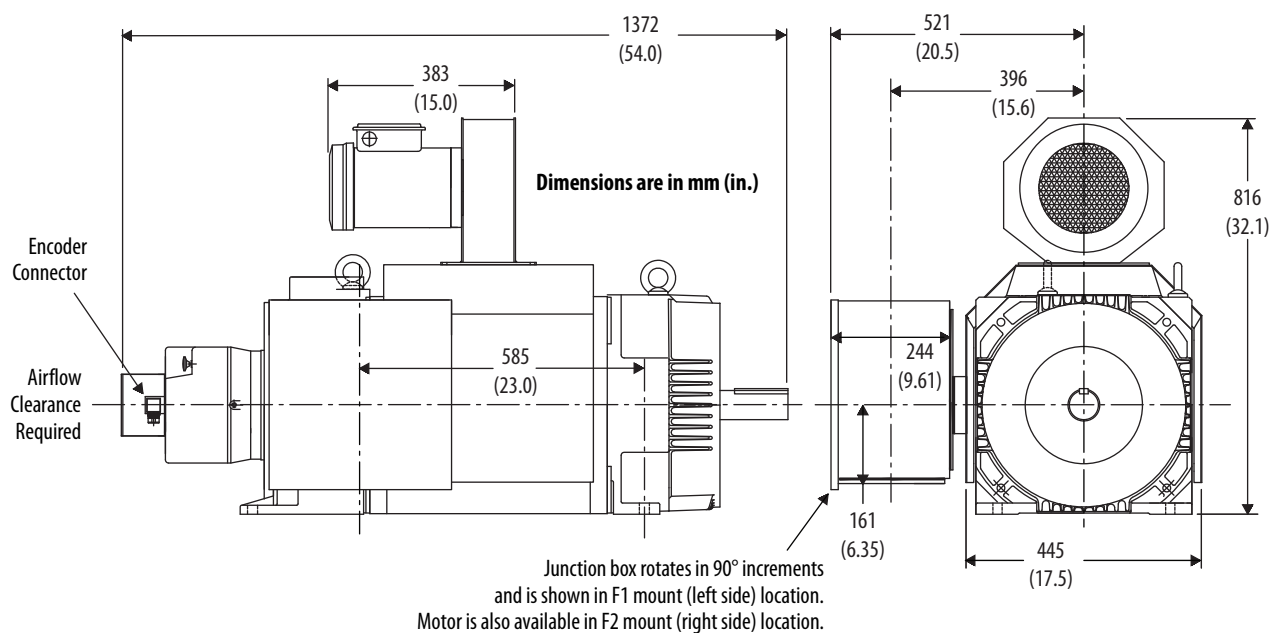
Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-B/E1815 Motor (non-brake) Dimensions**Shaft Detail with Key**

Shaft, Pilot, and Keyway Tolerances	HPK-B/E1815
Shaft Runout (T.I.R.)	0.06 (0.002)
Max Face Runout (T.I.R.)	0.13 (0.005)
Keyway Depth (GA)	73.90...74.50 (2.91...2.93)
Keyway Depth (G)	62.00...62.50 (2.44...2.46)
Keyway Width (F)	19.94...19.99 (0.785...0.787)

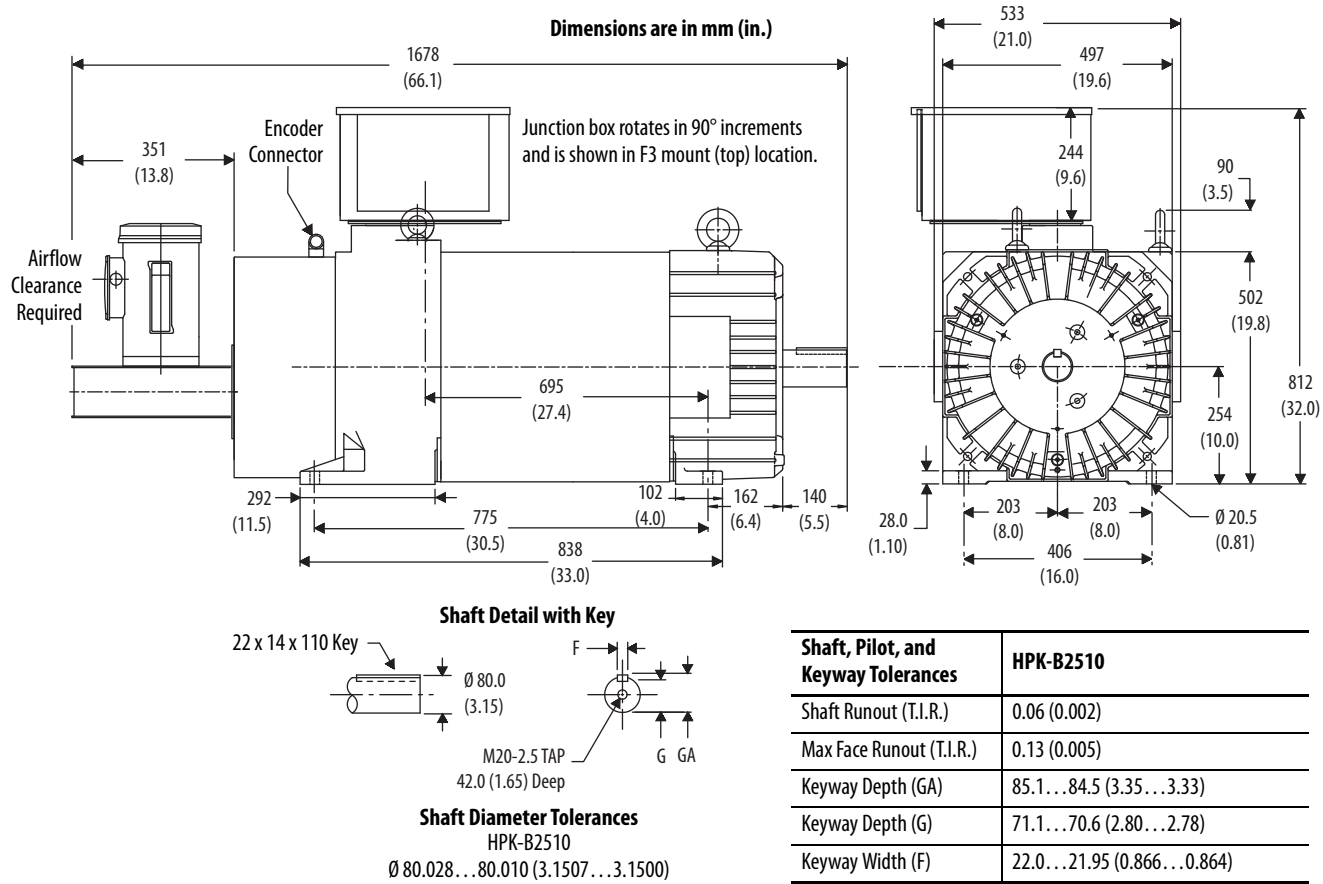
HPK-B/E1815 Motor (brake) Dimensions

HPK-B/E2010 Motor (non-brake) Dimensions**HPK-B/E2010 Motor (brake) Dimensions**

HPK-B2212 Motor (non-brake) Dimensions**HPK-B2212 Motor (brake) Dimensions**

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

HPK-B2510 Motor (non-brake) Dimensions



Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

TL-Series Motors

The TL-Series™ motors are low-inertia high-performance servo motors featuring metric and NEMA frame sizes. They combine a compact size with a high torque density afforded by their superior stator design. The result is a package that provides substantial power in a small footprint.

TL-Series (Bulletin TLY) Motors



The TL-Series (Bulletin TLY) motors are equipped with circular plastic connectors and when used with the Kinetix 2000, Kinetix 6000, or Ultra3000 drives, the TL-Series (Bulletin TLY) motors are able to offer the benefits of Kinetix Integrated Motion.

TL-Series (Bulletin TL) Motors



The TL-Series (Bulletin TL) motor performance specifications match the Bulletin TLY motor specifications identically, but are available in only metric frame sizes and with high-resolution absolute position encoders. Similar to the Bulletin TLY motors, Bulletin TL motors support frame sizes TL-A110, TL-A120, TL-A130, TL-A220, TL-A230, TL-A2530, TL-A2540, and TL-A410 (TL-A310 is not supported).

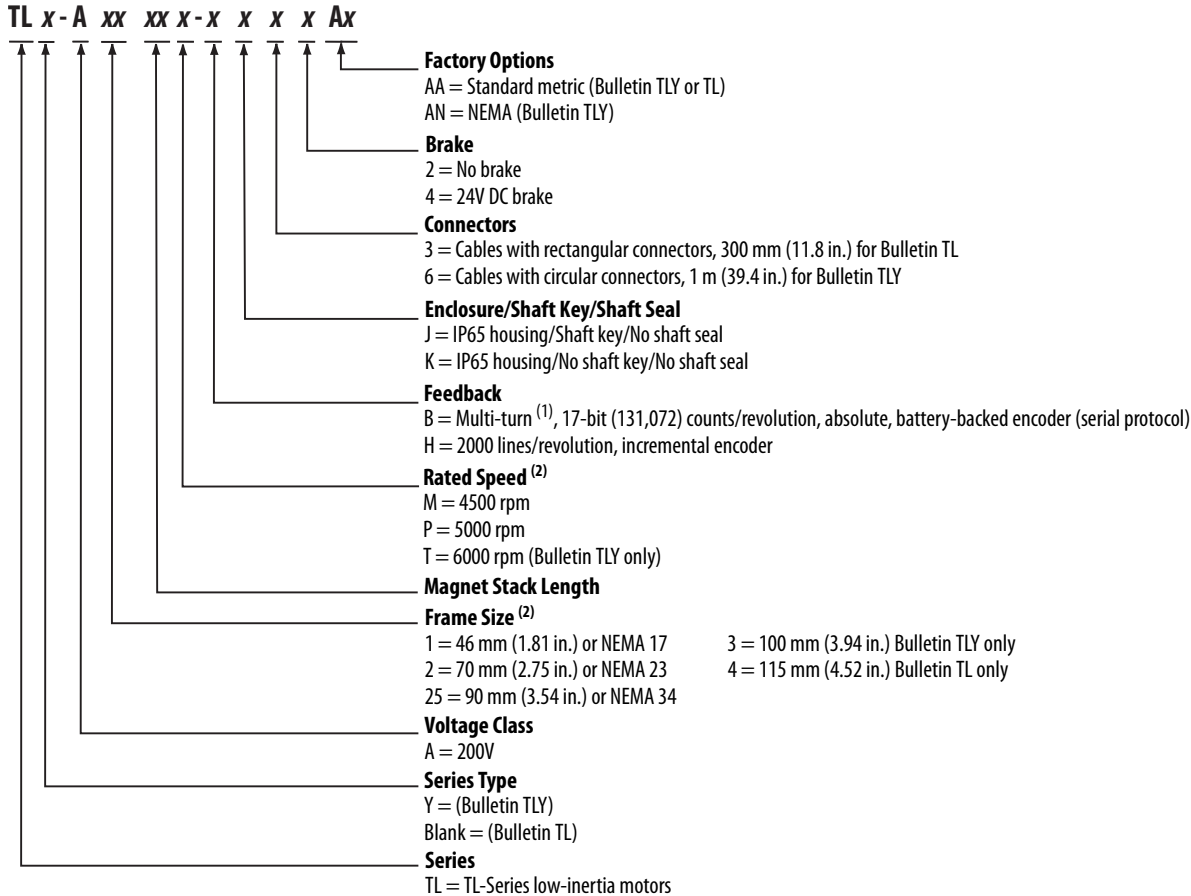
The Bulletin TL motors are equipped with rectangular plastic connectors and are intended for use with Kinetix 3 servo drives.

TL-Series Motor Features

Attribute	Value
Main characteristics	• Compact size, high torque density • Metric and NEMA frame sizes • Smart Motor Technology • Low rotor inertia
Features	• 200V-class windings • High-energy Neodymium-Iron-Boron (NeFeB) magnets • Cable extensions, 1 m (3.2 ft) • 17-bit serial communication
Motor type	Brushless AC Synchronous Servo Motors
Environmental rating	IP65 with optional shaft seal
Certifications	TL-Series rotary motors are CE marked for all applicable directives. Refer to http://www.ab.com for more information.
Continuous stall torque	0.086...5.42 N•m (0.76...48 lb•in)
Peak stall torque	0.22...13 N•m (1.94...115 lb•in)
Speed	4500, 5000, and 6000 rpm
Motor rated output	0.037...2.0 kW
Compatible servo drives	• Kinetix 6000 (Bulletin TLY) • Kinetix 300/350 (Bulletin TLY) • Kinetix 3 (Bulletin TL and TLY) • Kinetix 2000 (Bulletin TLY) • Ultra3000 (Bulletin TLY)
Typical applications	• Robotics • Material handling • X-Y tables • Specialty machinery • Semiconductor manufacturing • Medical/laboratory equipment • Light packaging machines • Office machinery

Catalog Numbers - TL-Series Motors

Catalog numbers consist of various characters, each of which identifies a specific option for that component. Use the catalog numbering table chart below to understand the configuration of your motor. For questions regarding product availability, contact your Allen-Bradley distributor.



(1) Single-turn if used without battery backup.

(2) Not all combinations are available. Only the configurations for rated speed, as listed in [Technical Specifications - TL-Series Motors](#) on [page 104](#), are available. Use Motion Analyzer software to size and select motors for your application.

For TL-Series connector kit catalog numbers, refer to Kinetix Motion Accessories Technical Data, publication [GMC-TD004](#).

TL-Series Motor Encoders

TL-Series motors are available with high-resolution or industry standard incremental encoder feedback:

- High-resolution, high performance encoders providing multi-turn absolute position feedback (131,072 counts/revolution) for smooth performance.

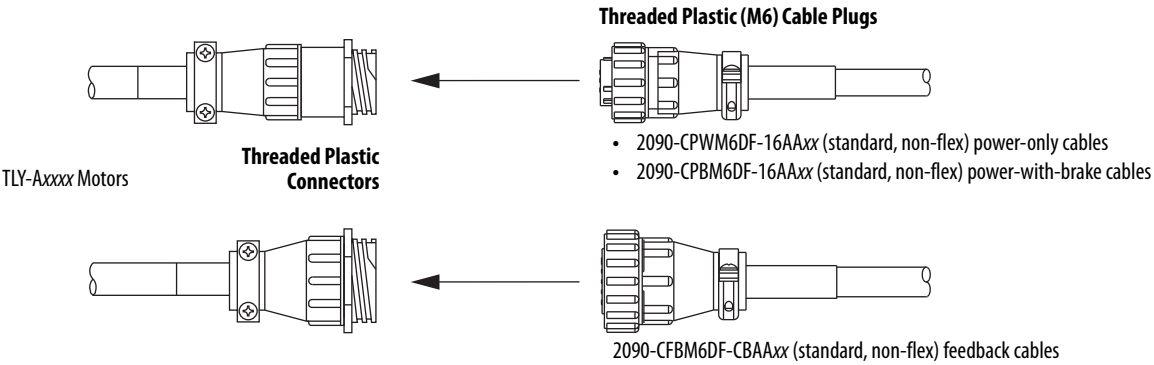
Servo drives compatible with multi-turn absolute position feedback require the appropriate connector kit, with battery, for absolute position backup in the event of a power loss.

- Industry standard incremental encoder feedback (2000 counts/revolution) applies to Bulletin TLY motors.

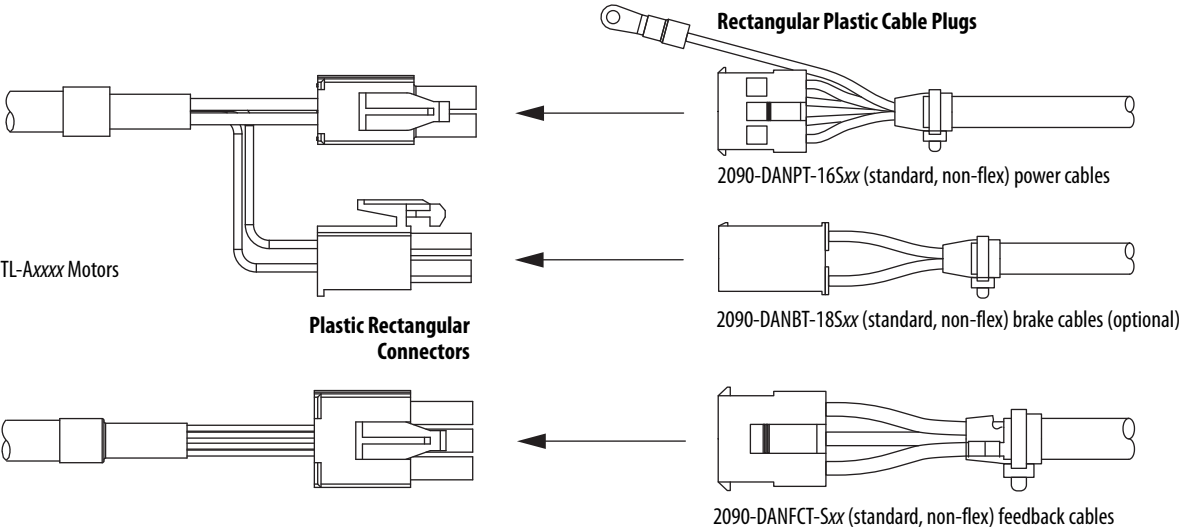
Motor Connector/Cable Compatibility

TL-Series motors are equipped with either threaded or rectangular plastic connectors.

Bulletin TLY Motor Connectors



Bulletin TL Motor Connectors



TL-Series Motor Options

TL-Series motors are available with these options:

- 24V DC brake.
- Shaft seal kit is available for field installation. Lubricant is provided with each shaft seal kit to reduce wear.

Motor Shaft Seal Kit Combinations and Dimensions

Motor Cat. No.	Seal Kit Cat. No.	Inside Diameter mm (in.)	Outside Diameter mm (in.)	Width mm (in.)
TLY/TL-A1xx	TL-SSN-1	8.9 (0.35)	16 (0.71)	3 (0.12)
TLY/TL-A2xx	TL-SSN-2	14 (0.55)	24 (0.95)	5 (0.20)
TLY/TL-A25xx	TL-SSN-3	19.8 (0.78)	30 (1.18)	5 (0.20)
TLY-A3xx				
TL-A4xx	TL-SSN-4	24.0 (0.95)	40 (1.57)	10 (0.39)

Transition Plates for N-Series Retrofit

Transition plates provide a means of retrofitting an existing N-Series motor with a TL-Series (Bulletin TLY) NEMA motor. In most applications, the TL-Series (Bulletin TLY) NEMA motors are physically smaller, but deliver the same torque rating as the N-Series motor it is replacing. Transition plates are not available for the N-56xx motors. Select your transition plate catalog number from the table below.

N-Series to TL-Series Transition Plates

Transition Plate Cat. No.	Description	Converts from This N-Series Motor	To This TL-Series NEMA Motor
TL-TRPLAT-17-23	TL-Series Transition Plate, NEMA 17 to 23	N-23xx	TLY-A1xxx-HxxxAN
TL-TRPLAT-23-34	TL-Series Transition Plate, NEMA 23 to 34	N-34xx	TLY-A2xxx-HxxxAN
TL-TRPLAT-34-42	TL-Series Transition Plate, NEMA 34 to 42	N-42xx	TLY-A25xxx-HxxxAN

Technical Specifications - TL-Series Motors

TL-Series (non-brake) Motor Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)
TLY-A110 ⁽²⁾	6000 ⁽³⁾	0.096 (0.85)	0.20 (1.75)	0.041	5000	0.000001 (0.0000089)
TL-A110 ⁽²⁾			0.22 (1.94)			
TLY/TL-A120		0.181 (1.60)	0.36 (3.20)	0.086	5000	0.000002 (0.000018)
TLY/TL-A130		0.325 (2.88)	0.76 (6.70)	0.14	5000	0.000003 (0.000027)
TLY/TL-A220		0.836 (7.40)	1.48 (13.1)	0.35	5000	0.000018 (0.00016)
TLY/TL-A230		1.30 (11.50)	3.05 (27.0)	0.44	5000	0.000034 (0.00030)
TLY/TL-A2530	5000	2.60 (23.0)	5.20 (46.0)	0.69	4400	0.000098 (0.00087)
TLY/TL-A2540		2.94 (26.0)	7.10 (63.0)	0.86	4575	0.00011 (0.00096)
TLY-A310	4500	3.61 (32.0)	9.0 (80.0)	0.95	4000	0.00015 (0.0013)
TL-A410 ⁽²⁾		5.42 (48.0)	13.00 (115)	2.0	4500	0.00036 (0.0032)

(1) Refer to TL-Series Motor Weight Specifications on [page 105](#) for brake motor weight.

(2) The TLY/TL-A110 and TL-A410 motors are available in only metric frame sizes. All other motors are available in metric and NEMA frame sizes.

(3) Applies to TLY-AxxxT-H motors with incremental feedback. The TLY/TL-AxxxP-B motors with absolute high-resolution encoders are rated at 5000 rpm.

TL-Series (brake) Motor Performance Specifications

Motor Cat. No.	Speed, max rpm	Continuous Stall Torque N·m (lb·in)	Peak Stall Torque N·m (lb·in)	Motor Rated Output kW	Speed at Motor Rated Output rpm	Rotor Inertia ⁽¹⁾ kg·m ² (lb·in·s ²)
TLY-A110 ⁽²⁾	6000 ⁽³⁾	0.086 (0.76)	0.20 (1.75)	0.037	5000	0.000004 (0.000035)
TL-A110 ⁽²⁾			0.22 (1.94)			
TLY/TL-A120		0.163 (1.44)	0.36 (3.20)	0.077	5000	0.000005 (0.000044)
TLY/TL-A130		0.293 (2.59)	0.76 (6.70)	0.13	5000	0.000006 (0.000053)
TLY/TL-A220		0.757 (6.70)	1.48 (13.1)	0.24	5000	0.000028 (0.00025)
TLY/TL-A230		1.16 (10.3)	3.05 (27.0)	0.32	4250	0.000044 (0.00039)
TLY/TL-A2530	5000	2.60 (23.0)	5.20 (46.0)	0.55	3650	0.00012 (0.0011)
TLY/TL-A2540		2.94 (26.0)	7.10 (63.0)	0.66	3750	0.00013 (0.0012)
TLY-A310	4500	3.61 (32.0)	9.0 (80.0)	0.90	3900	0.00017 (0.0017)
TL-A410 ⁽²⁾		4.86 (43.0)	13.0 (115)	1.80	4500	0.00041 (0.0036)

(1) Refer to TL-Series Motor Weight Specifications on [page 105](#) for brake motor weight.

(2) The TLY/TL-A110 and TL-A410 motors are available in only metric frame sizes. All other motors are available in metric and NEMA frame sizes.

(3) Applies to TLY-AxxxT-H motors with incremental feedback. The TLY/TL-AxxxP-B motors with absolute high-resolution encoders are rated at 5000 rpm.

TL-Series Motor Weight Specifications

Motor Cat. No.	High Resolution Feedback Option Bulletin TLY/TL-Axxxx-B Motors		Incremental Feedback Option Bulletin TLY-Axxxx-H Motors	
	Motor Weight, approx kg (lb)	Brake Motor Weight, approx kg (lb)	Motor Weight, approx kg (lb)	Brake Motor Weight, approx kg (lb)
TLY/TL-A110	0.29 (0.64)	0.55 (1.2)	0.29 (0.64)	0.55 (1.2)
TLY/TL-A120	0.34 (0.75)	0.59 (1.3)	0.35 (0.78)	0.59 (1.3)
TLY/TL-A130	0.46 (1.0)	0.68 (1.5)	0.50 (1.1)	0.68 (1.5)
TLY/TL-A220	0.95 (2.1)	1.4 (3.0)	1.1 (2.4)	1.5 (3.4)
TLY/TL-A230	1.4 (3.0)	1.8 (4.0)	1.5 (3.3)	2.0 (4.4)
TLY/TL-A2530	2.3 (5.0)	3.2 (7.0)	2.3 (5.1)	3.2 (7.0)
TLY/TL-A2540	2.6 (5.7)	3.5 (7.7)	2.6 (5.8)	3.5 (7.7)
TLY-A310	3.9 (8.6)	4.5 (10.0)	3.9 (8.6)	4.5 (10.0)
TL-A410	5.5 (12.0)	6.80 (15.0)	5.5 (12.0)	6.80 (15.0)

TL-Series Motor Brake Specifications

Motor Cat. No.	Backlash, max (brake engaged) arc minutes	Holding Torque N·m (lb·in)	Coil Current at 24V DC A	Brake Response Time		
				Release ms	Engage (by using external arc suppression device)	
					MOV ms	Diode ms
TLY/TL-A110	60	0.32 (2.8)	0.18...0.22	21	7	40
TLY/TL-A120						
TLY/TL-A130						
TLY/TL-A220		1.24 (11.0)	0.333...0.407	22	13	73
TLY/TL-A230						
TLY/TL-A2530		2.5 (22.0)	0.351...0.429	42	14	86
TLY/TL-A2540						
TLY-A310		9.3 (82.0)	0.648...0.792	69	20	84
TL-A410						

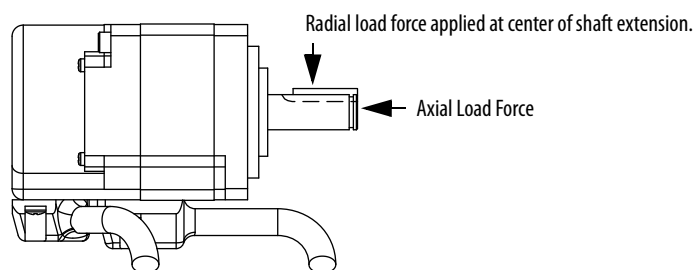
TL-Series Motor Load Force Ratings

TL-Series motors are capable of operating with the maximum radial or maximum axial shaft loads listed in the following tables. Radial loads listed are applied in the middle of the shaft extension. The tables below represent an L₁₀ bearing fatigue life of 20,000 hours. This 20,000-hour life does not account for possible application-specific life reduction that can occur due to bearing grease contamination from external sources. Maximum operating speed is limited by motor winding.

Radial Load Force Ratings

Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	4000 rpm kg (lb)	4500 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)
TLY/TL-A110	11 (24)	9 (19)	7 (16)	7 (16)	—	6 (13)	6 (13)
TLY/TL-A120	12 (26)	10 (21)	8 (18)	7 (16)	—	7 (15)	6 (13)
TLY/TL-A130	13 (29)	10 (23)	9 (20)	8 (18)	—	8 (17)	7 (15)
TLY/TL-A220	27 (60)	22 (48)	19 (42)	17 (37)	—	16 (35)	15 (33)
TLY/TL-A230	31 (68)	24 (54)	21 (47)	19 (42)	—	18 (40)	17 (37)
TLY/TL-A2530	48 (106)	38 (84)	34 (74)	—	—	28 (62)	—
TLY/TL-A2540	50 (110)	39 (87)	34 (76)	—	—	29 (64)	—
TLY-A310	80 (177)	63 (139)	56 (123)	—	48 (106)	—	—
TL-A410	76 (168)	60 (133)	53 (117)	—	44 (98)	—	—

Bulletin TLY-Axxxx or TL-Axxxx Motor Load Forces



Axial Load Force Ratings (maximum radial load)

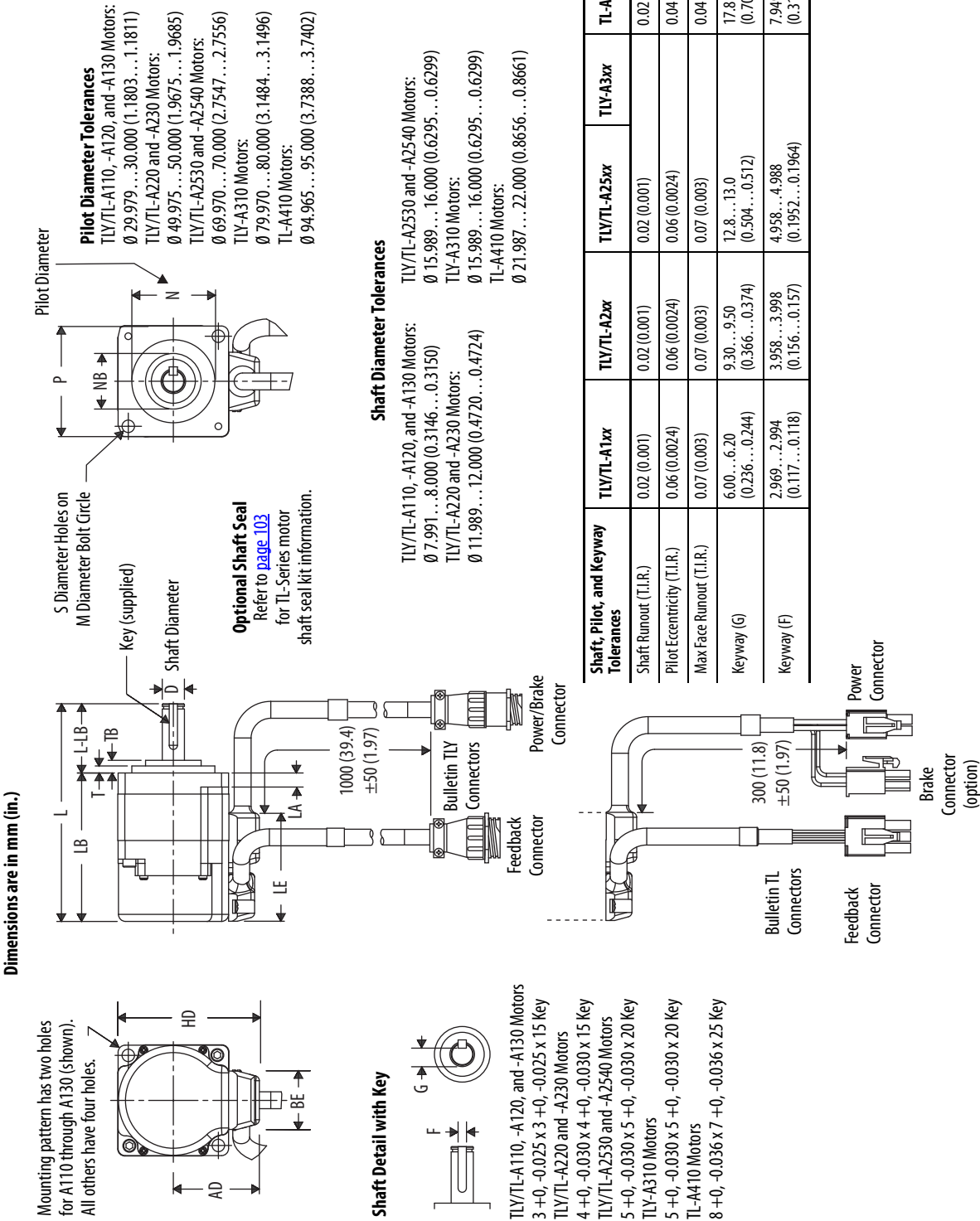
Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	4000 rpm kg (lb)	4500 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)
TLY/TL-A110	8 (18)	6 (13)	5 (11)	4 (9)	—	4 (9)	3 (7)
TLY/TL-A120	9 (20)	7 (16)	5 (11)	4 (9)	—	4 (9)	3 (7)
TLY/TL-A130	10 (22)	8 (17)	6 (13)	5 (12)	—	5 (11)	4 (9)
TLY/TL-A220	15 (33)	11 (24)	9 (20)	8 (17)	—	7 (16)	5 (11)
TLY/TL-A230	15 (33)	12 (26)	10 (21)	9 (20)	—	8 (17)	6 (13)
TLY/TL-A2530	18 (39)	13 (29)	11 (24)	—	—	9 (19)	—
TLY/TL-A2540	18 (39)	13 (29)	11 (25)	—	—	9 (20)	—
TLY-A310	19 (42)	14 (31)	11 (25)	—	10 (21)	—	—
TL-A410	29 (64)	21 (47)	18 (40)	—	14 (31)	—	—

Axial Load Force Ratings (zero radial load)

Motor Cat. No.	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	4000 rpm kg (lb)	4500 rpm kg (lb)	5000 rpm kg (lb)	6000 rpm kg (lb)
TLY/TL-A110	12 (26)	9 (20)	7 (16)	6 (13)	—	6 (13)	5 (11)
TLY/TL-A120	12 (26)	9 (20)	7 (16)	6 (13)	—	6 (13)	5 (11)
TLY/TL-A130	12 (26)	9 (20)	7 (16)	6 (13)	—	6 (13)	5 (11)
TLY/TL-A220	19 (41)	14 (30)	11 (25)	10 (21)	—	9 (20)	8 (17)
TLY/TL-A230	19 (41)	14 (30)	11 (25)	10 (21)	—	9 (20)	8 (17)
TLY/TL-A2530	23 (50)	17 (37)	14 (31)	—	—	11 (25)	—
TLY/TL-A2540	23 (50)	17 (37)	14 (31)	—	—	11 (25)	—
TLY-A310	26 (57)	19 (42)	16 (35)	—	14 (31)	—	—
TL-A410	34 (75)	25 (55)	21 (47)	—	17 (37)	—	—

Dimensions - TL-Series Motors

Bulletin TLY-Axxxxx-xx6xAA or TL-Axxxxx-Bx3xAA Motor Dimensions



Bulletin TLY-Axxxxx-xx6xAA or TL-Axxxxx-B3x6AA Motor Dimensions

Motor Cat. No.	AD mm (in.)	BE mm (in.)	D ⁽¹⁾ mm (in.)	HD mm (in.)	L ⁽²⁾ mm (in.)	L-LB ⁽³⁾ mm (in.)	LA mm (in.)	LB ⁽²⁾ mm (in.)	LE ⁽²⁾ mm (in.)	M mm (in.)	N ⁽¹⁾ mm (in.)	NB mm (in.)	P mm (in.)	S mm (in.)	T mm (in.)	TB mm (in.)	G ⁽¹⁾ mm (in.)	F ⁽¹⁾ mm (in.)
TLY/TL-A110					78.5 (3.09)			53.5 (2.11)										
TLY/TL-A120	31.1 (1.22)	21.0 (0.83)	8.0 (0.31)	51.1 (2.01)	84.5 (3.33)	25.0 (0.98)	5.0 (0.20)	59.5 (2.34)	39.1 (1.54)	46.0 (1.81)	30.0 (1.18)	20.0 (0.79)	40.0 (1.57)	4.5 (0.18)	2.5 (0.10)	4.5 (0.18)	6.2 (0.24)	3.0 (0.12)
TLY/TL-A130					98.5 (3.88)			73.5 (2.89)										
TLY/TL-A220	43.0 (1.69)	27.6 (1.09)	12.0 (0.47)	73.0 (2.87)	106.1 (4.18)	30.0 (1.18)	6.0 (0.24)	76.1 (3.00)	42.8 (1.69)	70.0 (2.76)	50.0 (1.97)	27.0 (1.06)	60.0 (2.36)	5.5 (0.22)	3.0 (0.12)	7.0 (0.28)	9.5 (0.37)	4.0 (0.16)
TLY/TL-A230					128.0 (5.04)			98.1 (3.86)										
TLY/TL-A2530	53.0 (2.09)	27.6 (1.09)	16.0 (0.63)	93.0 (3.66)	134.7 (5.30)	35.0 (1.38)	8.0 (0.32)	99.7 (3.93)	43.8 (1.72)	90.0 (3.54)	70.0 (2.76)	34.0 (1.34)	80.0 (3.15)	6.6 (0.26)	3.0 (0.12)	7.0 (0.28)	13.0 (0.51)	5.0 (0.20)
TLY/TL-A2540					143.7 (5.66)			108.7 (4.28)										
TLY-A310	56.0 (2.20)			99.0 (3.90)	179.2 (7.06)			144.2 (5.68)	57.1 (2.24)	100.0 (3.94)	80.0 (3.15)		86.0 (3.39)					
TL-A410	67.0 (2.64)	38.4 (1.51)	22.0 (0.87)	117.0 (4.61)	216.0 (8.50)	40.0 (1.57)	17.0 (0.67)	176.0 (6.93)	102.0 (4.02)	115.0 (4.53)	95.0 (3.74)	N/A	100.0 (3.94)	9.0 (0.35)	7.0 (0.28)	N/A	18.0 (0.71)	8.0 (0.32)

(1) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 108](#).(2) If ordering an TLY/TL-A110, TLY/TL-A120 or TLY/TL-A130 motor with brake, add 35.6 mm (1.40 in.) to dimensions L, LB, and LE.
If ordering an TLY/TL-A220 or TLY/TL-A230 motor with brake, add 34.6 mm (1.36 in.) to dimensions L, LB, and LE.

If ordering an TLY/TL-A2530 or TLY/TL-A2540 motor with brake, add 36.6 mm (1.44 in.) to dimensions L, LB, and LE.

If ordering an TLY-A310 motor with brake, add 23.0 mm (0.90 in.) to dimensions L, LB, and LE.

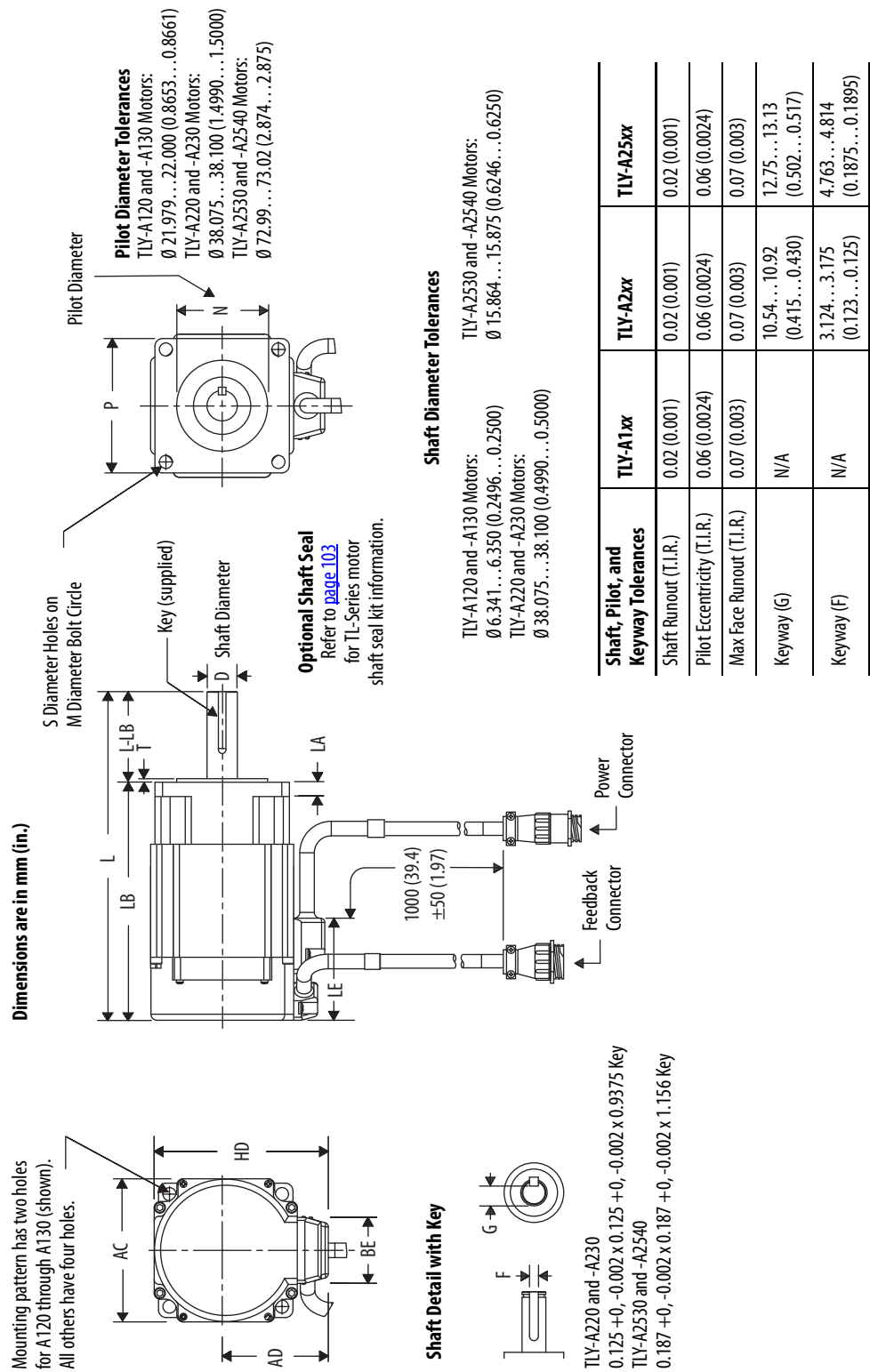
If ordering an TL-A410 motor with brake, add 32.0 mm (1.26 in.) to dimensions L, LB, and LE.

(3) Tolerance for this dimension is ± 1.0 mm (± 0.039 in.).

Motors are designed to metric dimensions. Inch dimensions are approximate conversions from millimeters. Dimensions without tolerances are for reference.

TL-Series (Bulletin TLY) NEMA Motor Dimensions

Bulletin TLY-Axxxxx-Hx6xAN NEMA Motor Dimensions



Bulletin TLY-Axxxx-Hx6xAN NEMA Motor Dimensions

Motor Cat. No.	AC mm (in.)	AD mm (in.)	BE mm (in.)	D ⁽¹⁾ mm (in.)	HD mm (in.)	L ⁽²⁾ mm (in.)	L-LB ⁽³⁾ mm (in.)	LA mm (in.)	LB ⁽²⁾ mm (in.)	LE ⁽²⁾ mm (in.)	M mm (in.)	N ⁽¹⁾ mm (in.)	P mm (in.)	S mm (in.)	T mm (in.)	G ⁽¹⁾ mm (in.)	F ⁽¹⁾ mm (in.)
TLY-A120	N/A	31.10 (1.22)	21.0 (0.83)	6.35 (0.25)	52.0 (2.05)	91.5 (3.603)	27.0 (1.06)	5.0 (0.20)	64.5 (2.54)	39.1 (1.54)	43.8 (1.725)	22.0 (0.86)	42.0 (1.65)	8-32 Thread	2.0 (0.08)	N/A	N/A
TLY-A130						105.5 (4.153)			78.5 (3.09)								
TLY-A220	60 (2.36)	43.0 (1.69)	27.6 (1.09)	12.70 (0.50)	73.0 (2.87)	137.9 (5.43)	38.1 (1.50)	6.0 (0.24)	99.8 (3.93)	43.3 (1.70)	66.7 (2.625)	38.1 (1.50)	56.4 (2.22)	5.5 (0.217)	1.5 (0.06)	10.92 (0.43)	3.175 (0.125)
TLY-A230						159.9 (6.30)			121.8 (4.80)								
TLY-A2530	N/A	53.0 (2.09)	15.875 (0.625)	15.875 (0.625)	96.0 (3.78)	149.2 (5.872)	44.5 (1.752)	8.0 (0.32)	104.7 (4.12)	43.8 (1.72)	98.4 (3.875)	73.02 (2.87)	86.0 (3.39)	5.5 (0.217)	1.5 (0.06)	13.13 (0.517)	4.814 (0.189)
TLY-A2540						158.2 (6.205)			113.7 (4.48)								

(1) For keyway, shaft diameter, and pilot diameter tolerances, refer to [page 110](#).

(2) If ordering an TLY-A120 or TLY-A130 motor with brake, add 35.6 mm (1.40 in.) to dimensions L, LB, and LE.

If ordering an TLY-A220 or TLY-A230 motor with brake, add 34.6 mm (1.36 in.) to dimensions L, LB, and LE.

(3) If ordering an TLY-A2530 or TLY-A2540 motor with brake, add 36.6 mm (1.44 in.) to dimensions L, LB, and LE.
(3) Tolerance for this dimension is ± 1.0 mm (± 0.039 in.).

NEMA motor flanges and shafts are designed to inch dimensions. Other frame areas are designed to metric dimensions. Conversions are approximate values.

Common Rotary Motor Specifications

These specifications are common to all Kinetix rotary motor families.

Environmental Specifications - Kinetix Rotary Motion

Attribute	Kinetix VP	MP-Series	Kinetix 6000M (Bulletin MDF)	RDD-Series	TL-Series	HPK-Series
Temperature, ambient	0...40 °C (32...104 °F)					
Temperature, storage	-30...40 °C (-22...104 °F)	-30...70 °C (-22...158 °F)				
Relative humidity (noncondensing)	5...95%					
Shock	20 g peak, 6 ms duration					10 g peak, 6 ms duration
Vibration	2.5 g peak @ 30...2000 Hz					

Thermal Ratings - Kinetix Rotary Motion

To obtain the specified motor thermal rating do not mount the motor in an area with restricted airflow. Keep other heat producing devices away from the motor and mount the motor on a surface with heat dissipation equivalent to an aluminum heatsink attached as specified in the following table.

Aluminum Heatsink Attached to Front Mounting Flange

Heatsink Size mm (in.)	VPL-x063xx	VPL-x075xx	VPL-x100xx VPL-x115xx VPL-x130xx VPL-B165xx	MPL-x15xx	MPL-x2xx	MPL-x3xx MPL-x4xx MPL-x45xx MPL-x5xx	MPL-B6xx	MPL-B8xx MPL-B9xx	MPM-xxxx MPF-xxxx MPS-xxxx MDF-SBxxxx	RDB-B215x	RDB-B290x	RDB-B410x	TL-A1xx TLV-A1xx	TL-A2xx TLV-A2xx	TL-A25xx TLV-A25xx	TL-A3xx TLV-A3xx
203 x 203 x 6.35 (8 x 8 x 0.25)	X	–	–	X	–	–	–	–	–	–	–	–	X	–	–	–
254 x 254 x 6.35 (10 x 10 x 0.25)	–	X	–	–	X	–	–	–	–	–	–	–	–	X	–	–
305 x 305 x 12.7 (12 x 12 x 0.50)	–	–	X	–	–	X	–	–	X	–	–	–	–	–	X	X
305 x 305 x 25.4 (12 x 12 x 1.0)	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
407 x 407 x 19.1 (16 x 16 x 0.75)	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–
457 x 457 x 12.7 (18 x 18 x 0.50)	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–
508 x 508 x 19.1 (20 x 20 x 0.75)	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–
533 x 533 x 25.4 (21 x 21 x 1.0)	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–

Environmental Ratings - Kinetix Rotary Motion

IP Rating	Dust Protection	Liquid Protection	Shaft Seal	Motor
IP50	Limited protection from dust (no harmful deposit).	No protection from liquids.	Motor without shaft seal.	Bulletin VPL, MPL and MPM
IP54		Protected against sprays from all directions.		TL-Series, HPK-Series
IP65	Total protection from dust.	Protected against low-pressure jets of water from all directions.	Motor with shaft seal (cable connectors rated IP54).	TL-Series
IP66		Protected against strong jets of water.	Motor with shaft seal and Bulletin 2090 environmentally sealed cable connectors.	RDD-Series ⁽¹⁾
IP67		Protected against the effects of temporary liquid immersion.		Bulletin VPL, MPL, MPF, MPS, and MDF
IP69K		Protected against the effects of water/stream jets up to 100 bar (1200 psi) with nozzle temperature at approximately 80 °C (176 °F).		Bulletin MPF, MPS, and MPM
				Bulletin MPS

(1) Environmental rating applies from mounting face to rear of motor. Customer is responsible for providing environmental protection to mounting face of motor.

Certifications - Kinetix Rotary Motion

Rotary Motor Family	Bulletin Number	c-UL-us ⁽¹⁾	CE ⁽²⁾
Kinetix VP servo motors	Bulletin VPL	√	√
MP-Series servo motors	Bulletin MPL, MPM, MPF, MPS	√	√
TL-Series servo motors	Bulletin TL, TLY	–	√
RDD-Series	Bulletin RDB	√	√
HPK-Series	N/A	√	√

(1) UL recognized components to applicable UL and CSA standards.

(2) When product is marked, see the Product Certification link at <http://www.ab.com> for Declarations of Conformity, certificates, and other certification details.

Motor Brake Application Guidelines

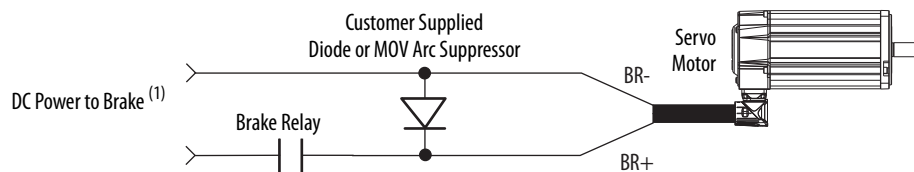
The brakes offered as options on these servo motors are holding brakes designed to hold the motor shaft at 0 rpm up to the rated brake holding torque. The brakes release when voltage is applied to the brake coil. Voltage and polarity supplied to the brake must be as specified to be sure of proper brake performance.

The brakes are not designed for stopping rotation of the motor shaft. Use servo drive inputs to stop motor shaft rotation. The recommended method of stopping motor shaft rotation is to command the servo drive to decelerate the motor to 0 rpm, and engage the brake after the servo drive has decelerated the motor to 0 rpm.

If system mains power fails, the brakes can withstand use as stopping brakes. However, use of the brakes as stopping brakes creates rotational mechanical backlash that is potentially damaging to the system, increases brake pad wear, and reduces brake life. The brakes are not designed nor are they intended to be used as a safety device.

A separate power source is required to disengage the brake. This power source can be controlled by the servo motor controls, in addition to manual operator controls. Electrical arcing can occur at the relay contacts until the brake power dissipates. A customer supplied diode or metal oxide varistor (MOV) is recommended to prevent arcing. Use of an MOV can also reduce the time to mechanically engage the brake. For brake response time specifications, refer to the motor brake specification tables.

Suppression Device for Brake Relay Contacts



- (1) Kinetix 2000, Kinetix 6000, Kinetix 6200, Kinetix 6500, and Kinetix 7000 servo drives provide motor brake relay outputs and supply an MOV arc suppressor, so customer supplied arc suppressor is not required unless the coil current of motor brake is greater than the maximum brake current rating of the drive relay output.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Kinetix Motion Control Selection Guide, publication GMC-SG001	Provides an overview of Kinetix servo drives, motors, actuators, and motion accessories designed to help make initial decisions for the motion control products best suited for your system requirements.
Kinetix Linear Motion Specifications, publication GMC-TD002	Provides product specifications for Bulletin MPAS and MPMA linear stages, Bulletin MPAI, MPAI, and TLAR electric cylinders, and LDC-Series™ and LDL-Series™ linear motors.
Kinetix Servo Drives Specifications, publication GMC-TD003	Provides product specifications for Kinetix Integrated Motion over EtherNet/IP, Integrated Motion over sercos interface, EtherNet/IP networking, and component servo drive families.
Kinetix Motion Accessories Specifications, publication GMC-TD004	Provides product specifications for Bulletin 2090 motor and interface cables, low-profile connector kits, drive power components, and other servo drive accessory items.
Kinetix 5500 Drive Systems, publication GMC-RM009	Provides information to determine and select the required (drive specific) drive module, power accessory, connector kit, motor cable, and interface cable catalog numbers for your drive and motor/actuator motion control system. Includes system performance specifications and torque/speed curves (rotary motion) and force/velocity curves (linear motion) for your motion application.
Kinetix 6000 and Kinetix 6200/6500 Drive Systems Design Guide, publication GMC-RM003	
Kinetix 300/350 Drive Systems Design Guide, publication GMC-RM004	
Kinetix 3 Drive Systems Design Guide, publication GMC-RM005	
Kinetix 2000 Drive Systems Design Guide, publication GMC-RM006	
Kinetix 7000 Drive Systems Design Guide, publication GMC-RM007	
Ultra3000 Drive Systems Design Guide, publication GMC-RM008	
Kinetix 6200 and Kinetix 6500 Safe Speed Monitoring Servo Drives Safety Reference Manual, publication 2094-RM001	Provides information on wiring, configuring, and troubleshooting the safe-speed features of your Kinetix 6200 and Kinetix 6500 drives.
Kinetix 6200 and Kinetix 6500 Safe Torque-off Servo Drives Safety Reference Manual, publication 2094-RM002	Provides information on wiring, configuring, and troubleshooting the safe torque-off features of your Kinetix 6200 and Kinetix 6500 drives.
Kinetix Safe-off Feature Safety Reference Manual, publication GMC-RM002	Provides information on wiring and troubleshooting your Kinetix 6000 and Kinetix 7000 servo drives with the safe-off feature.
System Design for Control of Electrical Noise Reference Manual, publication GMC-RM001	Provides information, examples, and techniques designed to minimize system failures caused by electrical noise.
EMC Noise Management DVD, publication GMC-SP004	
ControlLogix Selection Guide, publication 1756-SG001	Provides information to determine which ControlLogix® controller fits your application and the product specifications to help design a ControlLogix system and select the appropriate components.
CompactLogix Selection Guide, publication 1769-SG001	Provides information to determine which CompactLogix™ controller fits your application and the product specifications to help design a CompactLogix system and select the appropriate components.
Integrated Architecture Recommended Literature Reference Manual, publication IASIMP-RM001	Provides lists of technical publications for Integrated Architecture™ products. These lists are not all-inclusive, but they do include the most-commonly accessed publications for the related products.
Industrial Ethernet Media Brochure, publication 1585-BR001	Provides information to determine which Bulletin 1585 Ethernet cable fits your application and the product specifications to help select the appropriate components.
Download Motion Analyzer software from: http://www.ab.rockwellautomation.com/motion-control/motion-analyzer-software	Comprehensive motion application sizing tool used for analysis, optimization, selection, and validation of your Kinetix Motion Control system.
Rockwell Automation Configuration and Selection Tools, website http://ab.rockwellautomation.com	Provides online product selection and system configuration tools, including AutoCad (DXF) drawings.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Important Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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