

Profile



PRODUCT

MP-Series Low-Inertia Brushless Servo Motors

with Absolute Feedback Option



Overview

MP-Series low-inertia, high output, brushless servo motors feature a newly engineered design that reduces motor size while delivering significantly higher torque. These compact, low-inertia, brushless servo motors are designed by Allen-Bradley to meet the demanding requirements of high performance motion systems. This series of servo motors is intended to be used with the Allen-Bradley Kinetix 6000 (230 or 460 volt), Ultra3000 (230 or 460 volt), 8720MC and the 1394 Digital Servo Drive (460 volt). Available in seven frame sizes, these motors provide continuous stall torque from 1.6 to 158 Nm (14-1400 lb-in.) and peak torque from 3.1 to 260 Nm (28-2300 lb-in.).



Catalog Numbers **MPL-Axxxx-xxxxAA** (230 volt)
MPL-Bxxxx-xxxxAA (460 volt)

Features

MP-Series motors provide:

- ◆ Segmented core technology yielding up to 40% higher torque per unit size than conventional servo motors
- ◆ Enhanced winding encapsulation for increased thermal efficiency
- ◆ High-energy neodymium magnets for quicker acceleration
- ◆ Low profile, field reversible motor connectors for minimal servo motor impact on machine design
- ◆ Integral 24 volt brake option
- ◆ Broad torque range – all within one motor family
- ◆ Optional Shaft Seal for IP 66 environmental rating

High Performance Feedback

- ◆ Absolute Feedback Option
 - Multi-turn option provides absolute feedback within 4096 turns
 - Single-turn option provides absolute feedback within one turn
 - Eliminates the need for a homing routine
 - Unique geared magnet design means there are no batteries to fail
- ◆ High Resolution Performance
 - Up to 2 million counts per revolution
 - Smooth rotation even at low speeds
 - Ability to control higher load-to-motor rotor inertia ratios while maintaining a stable system. With less torque required to accelerate motor rotor, there's more torque available to move the load.
- ◆ Smart Motor Technology
 - On-board memory retains motor identity
 - RS-485 communication link automatically reports identity to the system upon startup for reduced commissioning time
 - Real-time reporting of critical motor statistics such as temperature.

Typical Applications

Applications where more power is required in a smaller package will benefit from the use of MP-Series motors. Typical applications include:

- | | | |
|--------------|------------------------|---------------------|
| ◆ Packaging | ◆ Electronics Assembly | ◆ Automotive |
| ◆ Converting | ◆ Metal Forming | ◆ Material Handling |



Bringing Together Leading Brands in Industrial Automation

Specifications

Catalog Number	Rated Speed* rpm	Rated Output kW	Rotor Inertia* kg-m ² (lb-in.-s ²)	Continuous Stall Torque Nm (lb-in.)	Peak Stall Torque Nm (lb-in.)	Continuous Stall Current Amperes (0-peak)	Peak Stall Current Amperes (0-peak)	
MPL-A310P	5000	0.73	0.000044 (0.00039)	1.58 (14.0)	3.61 (32.0)	4.85	14.0	230 volt ↓
MPL-A310F	3000	0.46	0.000044 (0.00039)	1.58 (14.0)	3.61 (32.0)	3.0	9.3	
MPL-A320P	5000	1.3	0.000078 (0.00069)	3.05 (27.0)	7.34 (70.0)	9.0	29.5	
MPL-A320H	3500	1.0	0.000078 (0.00069)	3.05 (27.0)	7.34 (70.0)	6.5	19.3	
MPL-A330P	5000	1.8	0.00012 (0.0010)	4.18 (37.0)	11.1 (98.0)	12.0	38.0	
MPL-A420P	5000	2.0	0.00026 (0.0023)	4.74 (42.0)	13.5 (120.0)	12.7	46.0	
MPL-A430P	5000	2.2	0.00038 (0.0033)	5.99 (53.0)	19.8 (175.0)	16.8	67.0	
MPL-A430H	3500	1.8	0.00038 (0.0033)	6.21 (55.0)	19.8 (175.0)	12.2	45.0	
MPL-A4520P	5000	2.2	0.00028 (0.0024)	5.99 (53.0)	13.5 (120.0)	17.5	50.0	
MPL-A4520K	4000	2.1	0.00028 (0.0024)	5.99 (53.0)	13.5 (120.0)	15.0	43.0	
MPL-A4530F	2800	1.9	0.00040 (0.0036)	8.36 (74.0)	20.3 (180.0)	13.4	42.0	
MPL-A4530K	4000	2.5	0.00040 (0.0036)	8.13 (72.0)	20.3 (180.0)	20.3	62.0	
MPL-A4540C	1500	1.5	0.00052 (0.0046)	10.20 (90.0)	27.1 (240.0)	9.4	29.0	
MPL-A4540F	3000	2.6	0.00052 (0.0046)	10.20 (90.0)	27.1 (240.0)	18.4	54.0	
MPL-A520K	4000	3.5	0.000783 (0.0069)	10.70 (95.0)	24.3 (215.0)	23.0	65.0	
MPL-A540K	4000	5.5	0.00147 (0.013)	19.4 (172.0)	48.6 (430.0)	41.5	120.0	
MPL-A560F	3000	5.5	0.0018 (0.016)	27.9 (247.0)	56.5 (500.0)	41.5	120.0	
MPL-B310P	5000	0.77	0.000044 (0.00039)	1.58 (14.0)	3.61 (32.0)	2.3	7.1	460 volt ↓
MPL-B320P	5000	1.5	0.000078 (0.00069)	3.05 (27.0)	7.91 (70.0)	4.3	14.0	
MPL-B330P	5000	1.7	0.00012 (0.0010)	4.18 (37.0)	11.1 (98.0)	5.7	19.0	
MPL-B420P	5000	1.9	0.00026 (0.0023)	4.74 (42.0)	13.5 (120.0)	5.3	22.0	
MPL-B430P	5000	2.2	0.00038 (0.0033)	6.55 (58.0)	19.8 (175.0)	9.2	31.0	
MPL-B4520P	5000	2.1	0.00028 (0.0024)	5.65 (50.0)	13.5 (120.0)	8.1	25.0	
MPL-B4530F	3000	2.1	0.00040 (0.0036)	8.25 (73.0)	20.3 (180.0)	6.7	21.0	
MPL-B4530K	4000	2.6	0.00040 (0.0036)	4.25 (73.0)	20.3 (180.0)	9.9	31.0	
MPL-B4540F	3000	2.6	0.00052 (0.0046)	10.20 (90.0)	27.1 (240.0)	9.1	26.0	
MPL-B520K	4000	3.5	0.00783 (0.0069)	10.70 (95.0)	23.2 (205.0)	11.5	33.0	
MPL-B540K	4000	5.4	0.00147 (0.013)	19.40 (172.0)	48.6 (430.0)	20.5	60.0	
MPL-B560F	3000	5.4	0.0018 (0.016)	27.90 (247.0)	56.5 (500.0)	20.5	60.0	
MPL-B580J	3800	7.9	0.00289 (0.023)	34.0 (301.0)	81.0 (716.0)	32.0	94.0	
MPL-B640F	3000	6.1	0.0040 (0.0354)	36.70 (325.0)	72.3 (640.0)	32.1	65.0	
MPL-B660F	3000	6.1	0.00580 (0.051)	48.0 (425.0)	101.1 (895.0)	38.5	96.0	
MPL-B680D	2000	9.3	0.00775 (0.0685)	62.8 (556.0)	154.2 (1365.0)	34.0	94.0	
MPL-B680F	3000	7.5	0.00775 (0.0685)	60.0 (531.0)	108.5 (785.0)	48.0	96.0	
MPL-B860D	2000	12.5	0.0169 (0.150)	83.0 (735.0)	152.5 (1350.0)	47.5	95.5	
MPL-B880C	1500	12.6	0.0224 (0.198)	110.0 (973.0)	203.0 (1800.0)	47.5	97.5	
MPL-B960B	1200	16.0	0.0273 (0.242)	130.0 (1150.0)	240.0 (2124.0)	42.0	90.0	
MPL-B960D	2000	15.0	0.0273 (0.242)	124.3 (1100.0)	226.0 (2000.0)	70.0	125.0	
MPL-B980B	1000	17.0	0.0354 (0.313)	150.0 (1327.0)	290.0 (2566.0)	45.0	100.0	
MPL-B980D	2000	18.6	0.0354 (0.313)	158.2 (1400.0)	260.0 (2300.0)	79.0	140.0	

* Rotor inertia may vary slightly depending upon feedback and brake option.

Certification

The MP-Series motors are certified for the following:

- UL recognized components
- CE marked for all applicable directives

Environmental Specifications

Operating temperature
Humidity

0 - 40° C (32 - 104° F)
5 - 95% relative humidity,
non-condensing

For more information refer to our web site: www.ab.com/motion

www.rockwellautomation.com

Corporate Headquarters

Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414.212.5200, Fax: (1) 414.212.5201

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36-BP 3A/B, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Headquarters for Dodge and Reliance Electric Products

Americas: Rockwell Automation, 6040 Ponders Court, Greenville, SC 29615-4617 USA, Tel: (1) 864.297.4800, Fax: (1) 864.281.2433

Europe: Rockwell Automation, Brühlstraße 22, D-74834 Elztal-Dallau, Germany, Tel: (49) 6261 9410, Fax: (49) 6261 17741

Asia Pacific: Rockwell Automation, 55 Newton Road, #11-01/02 Revenue House, Singapore 307987, Tel: (65) 351 6723, Fax: (65) 355 1733