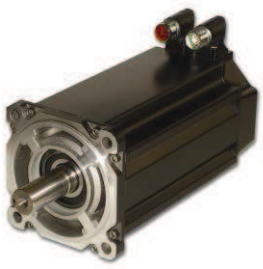
MP-Series Low Inertia Motors



MP-Series (Bulletin MPL) low-inertia 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 5500 (1) • Kinetix 6200/6500 • Kinetix 6000 • Kinetix 300/350 • Kinetix 2000 • Kinetix 7000 • Ultra3000
Typical applications	• Packaging • Converting • Material handling • Electronic assembly • Automotive • Metal forming

(1) Requires the 2198-H2DCK Hiperface-to-DSL feedback converter kit. MP-Series (200V-class) low-inertia motors require the 2198-H2DCK (series B or later) converter kit.

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 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	H = 3500 rpm	T = 6000 rpm
C = 1500 rpm	J = 3750 rpm	U = 7000 rpm
D = 2000 rpm	K = 4000 rpm	V = 8000 rpm
F = 3000 rpm	P = 5000 rpm	

Magnet Stack Length (6)

10 = 25.4 mm (1.0 in.)	50 = 127.0 mm (5.0 in.)
20 = 50.8 mm (2.0 in.)	60 = 152.4 mm (6.0 in.)
30 = 76.2 mm (3.0 in.)	70 = 177.8 mm (7.0 in.)
40 = 101.6 mm (4.0 in.)	80 = 203.2 mm (8.0 in.)

Frame Size

15 = 63 mm	5 = 165 mm
2 = 75 mm	6 = 215 mm
3 = 100 mm	8 = 265 mm
4 = 115 mm	9 = 300 mm
45= 130 mm	

Voltage Class
A = 200V
B = 400V

Series Type
L = Low Inertia

Series
MP = Premium permanent magnet rotary servo motor

(1) Applies to MPL-A/B15*xx* and MPL-A/B2*xx* motors.
(2) Applies to MPL-A/B3*xx*, MPL-A/B4*xx*, MPL-A/B45*xx*, MPL-A/B5*xx*, MPL-B6*xx*, MPL-B8*xx*, and MPL-B9*xx* motors.
(3) Requires longer lead times. Applies to only limited frame sizes.
(4) Applies to MPL-A/B15*xxx*-H, MPL-A/B2*xxx*-H, MPL-A/B3*xxx*-H, MPL-A/B4*xxx*-H, MPL-A/B45*xxx*-H motors.
(5) Applies to MPL-B3*xxx*-R, MPL-B4*xxx*-R, and MPL-B45*xxx*-R motors.
(6) Not all combinations are available. Only the configurations for rated speed and magnet stack length, as listed in MP-Series Low Inertia Motor (200V-class) Performance Specifications on page 54 and MP-Series Low Inertia Motor (400V-class) Performance Specifications on page 55, are available. Use Motion Analyzer software to size and select motors for your application.
(7) Applies to all Bulletin MPL motors with M23 and M40 cable connectors. M58 connectors (MPL-B8*xxx* and MPL-B9*xxx* motors) must be physically removed and repositioned in 90° increments.