

## MP-Series Stainless Steel Motors



MP-Series (Bulletin MPS) 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.

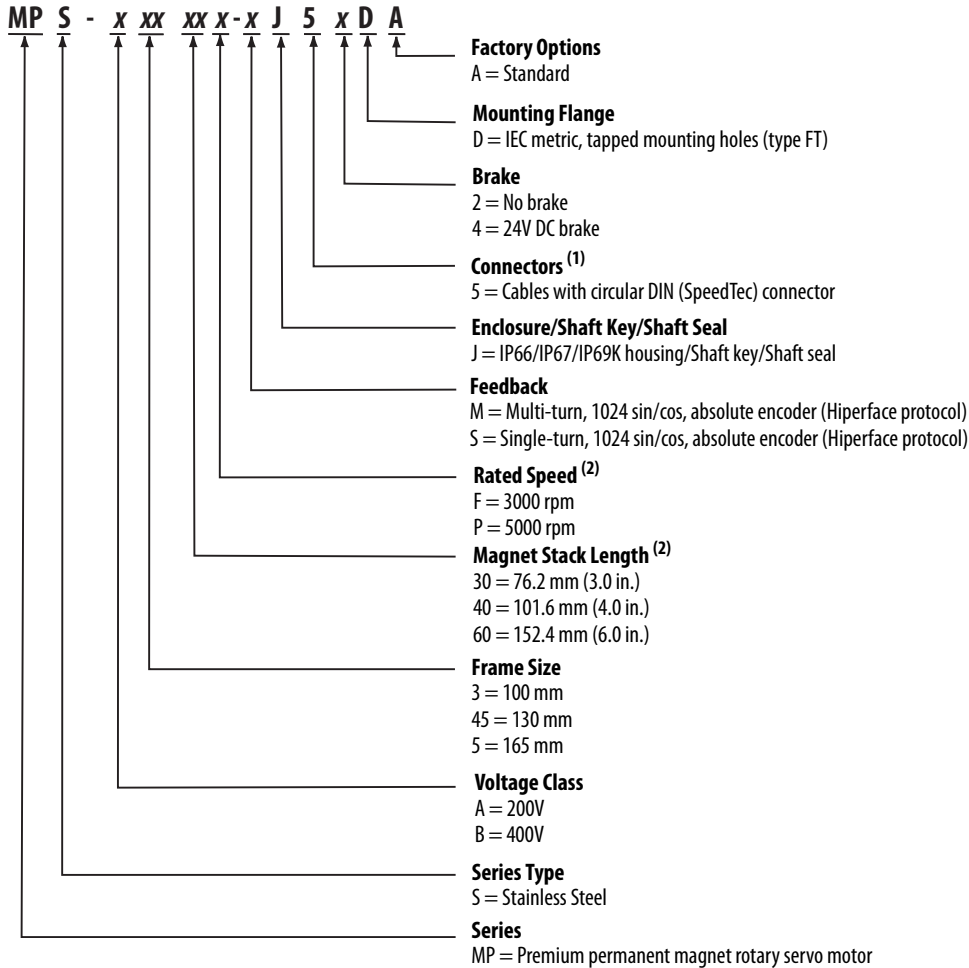
### MP-Series Stainless Steel Motor Features

Attribute	Value
Main characteristics	<ul style="list-style-type: none"> <li>Specifically designed for hygienic environments for use with high pressure, highly caustic washdown applications</li> <li>Low rotor inertia</li> </ul>
Features	<ul style="list-style-type: none"> <li>Smooth, passivated 300 series stainless-steel cylindrical exterior</li> <li>Certified and listed to NSF/ANSI Standard 169</li> <li>200V and 400V-class windings</li> <li>Shaft-end threaded hole</li> <li>Cable extensions, 3 m (9.8 ft)</li> <li>Standard IEC 72-1 mounting dimensions</li> </ul>
Motor type	Brushless AC synchronous servo motors
Environmental rating	<ul style="list-style-type: none"> <li>IP66/IP67 with shaft seal (standard) and use of environmentally sealed cable connectors</li> <li>IP69K for 1200 psi washdown</li> </ul>
Certifications	Bulletin MPS rotary motors are UL Recognized components to applicable UL and CSA standards. CE marked for all applicable directives. Refer to <a href="http://www.ab.com">http://www.ab.com</a> 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	<ul style="list-style-type: none"> <li>Kinetix 5500<sup>(1)</sup></li> <li>Kinetix 6200/6500</li> <li>Kinetix 6000</li> <li>Kinetix 300/350</li> <li>Kinetix 2000</li> <li>Ultra3000</li> </ul>
Typical applications	<ul style="list-style-type: none"> <li>Meat and poultry</li> <li>Food slicing and filling</li> <li>Raw food handling</li> <li>Processing</li> <li>Life science</li> <li>Consumer products</li> </ul>

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

## 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 89](#) and MP-Series Stainless Steel Motor (400V-class) Performance Specifications on [page 89](#), are available. Use Motion Analyzer software to size and select motors for your application.

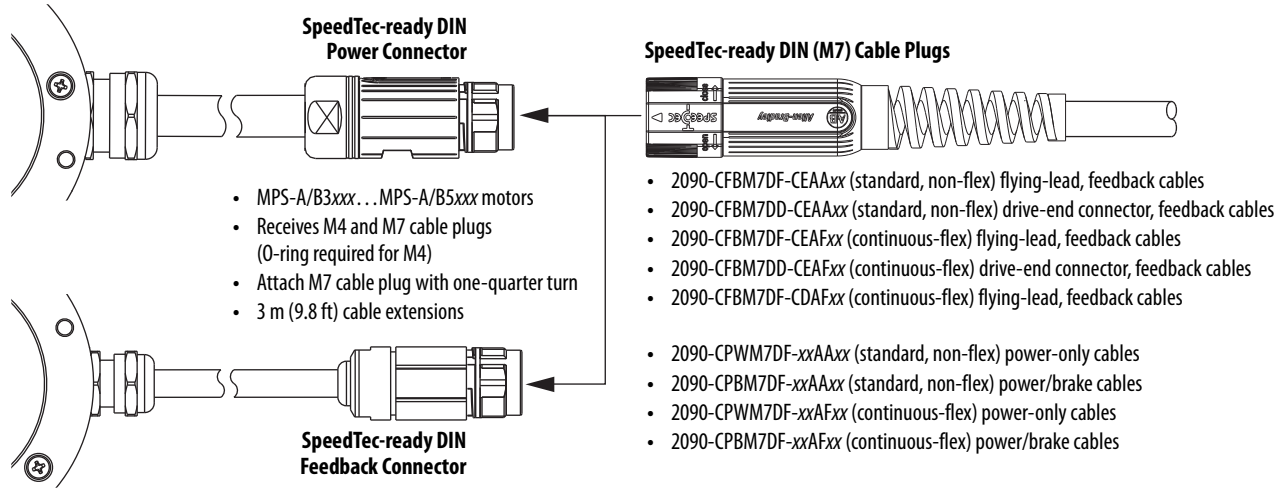
## MP-Series Stainless Steel Motor High Resolution Encoders

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 SpeedTec-ready DIN connectors.



## MP-Series Stainless Steel Motor Options

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

- 24V DC brake.
- The 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.
- Shaft seal kits (with slinger) are available for field replacement. Shaft seals are made of PTFE and kits include a lubricant to reduce wear.

**IMPORTANT** 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.

### Shaft Seal Kit Catalog Numbers

Motor Cat. No.	Shaft Seal Kit Cat. No.
MPS-A3xx and MPF-B3xx	MPS-SST-A3B3
MPS-A45xx and MPF-B45xx	MPS-SST-A45B45
MPS-B5xx	MPS-SST-F165

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

## 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 <sup>(1)</sup> kg·m <sup>2</sup> (lb·in·s <sup>2</sup> )	Motor Weight, approx <sup>(1)</sup> 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 89](#) 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 <sup>(1)(2)</sup> kg·m <sup>2</sup> (lb·in·s <sup>2</sup> )	Motor Weight, approx <sup>(1)</sup> 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 89](#) 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 <sup>2</sup> (lb·in·s <sup>2</sup> )	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)

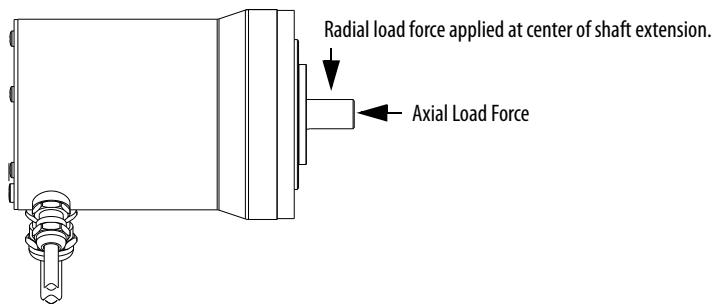
### MP-Series Stainless Steel Motor Load Force Ratings

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<sub>10</sub> 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)

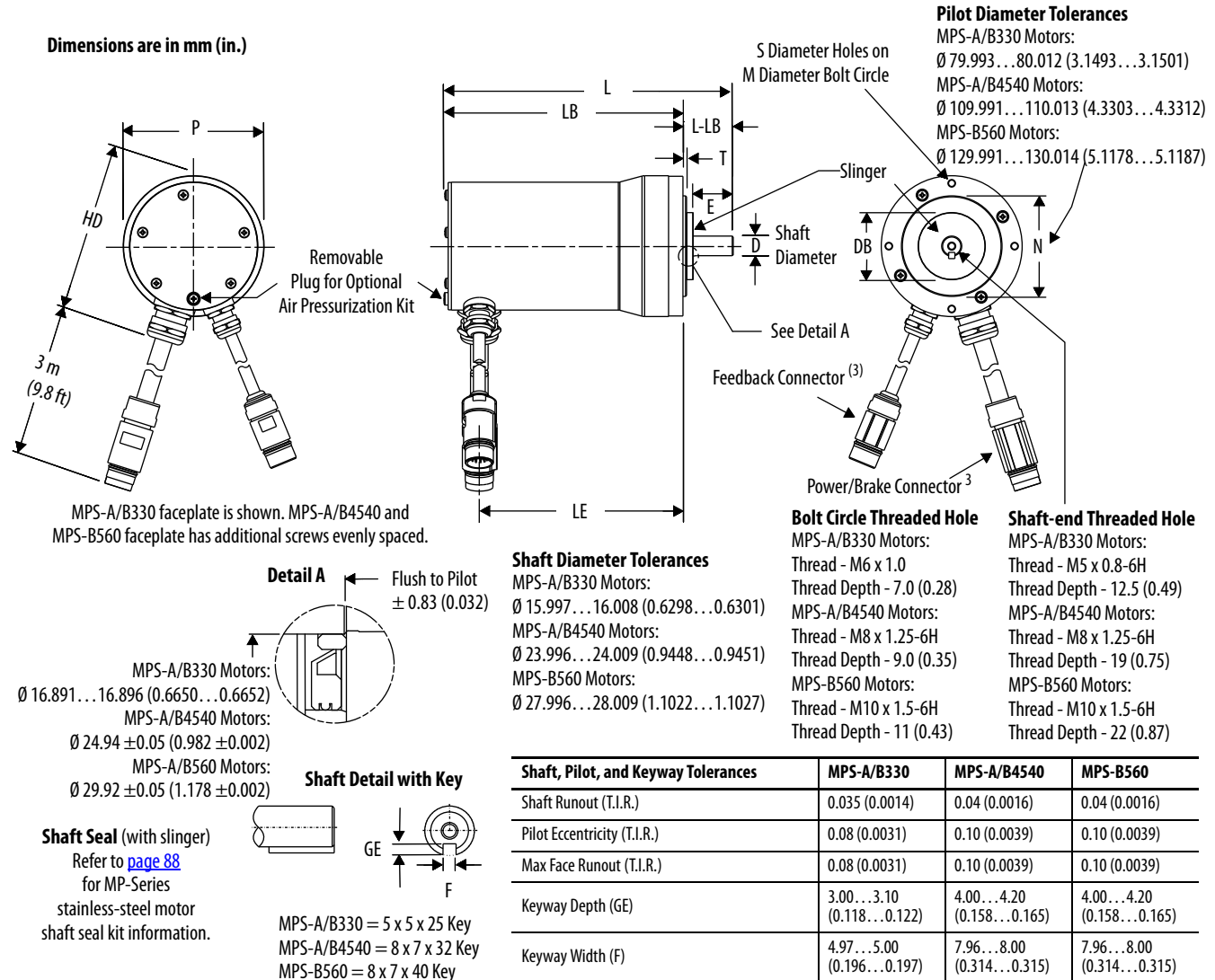
Motor Cat. No.	500 rpm kg (lb)	1000 rpm kg (lb)	2000 rpm kg (lb)	3000 rpm kg (lb)	3500 rpm kg (lb)	4000 rpm kg (lb)	5000 rpm kg (lb)
MPS-A/B330	–	27 (59)	20 (44)	–	16 (35)	–	13 (29)
MPS-A/B4540	49 (107)	36 (80)	27 (59)	22 (49)	–	–	–
MPS-B560	–	52 (115)	39 (85)	32 (71)	–	–	–

#### 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



Motor Cat. No.	HD mm (in.)	T mm (in.)	E mm (in.)	LE <sup>(1)</sup> mm (in.)	L <sup>(1)</sup> mm (in.)	LB <sup>(1)</sup> mm (in.)	L-LB <sup>(2)</sup> 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.)
MPS-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)
MPS-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)	70.0 (2.75)	130 (5.12)	9.0 (0.35)	110 (4.33)	143.2 (5.64)	4.0 (0.158)	8.0 (0.315)
MPS-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)

- 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.
- Tolerance for this dimension is  $\pm 0.7$  mm ( $\pm 0.028$  in.).
- 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.