

### Discontinuation of the MM-CF Series Sensorless PM Motors

Thank you for your continued patronage of Mitsubishi Electric drive control products.  
 We are discontinuing the production of the highly valued MM-CF series motors according to the following schedule as it is difficult to continue the production.  
 We ask for your understanding in this matter.

#### 1. Models to be Discontinued

Sensorless PM motor MM-CF52 to 702(C)(B) (19 models)

#### 2. Schedule

Production continues on orders received by the last day of November 2022.

Requests for repair service will be accepted by the last day of November 2029.

\* Repairs are subject to the supply of service parts and may not be possible even within the repair service period.

#### 3. Products Affected

MM-CF motor model		
Standard	With Cannon connector	With electromagnetic brake
MM-CF52	MM-CF52C	MM-CF52B
MM-CF102	MM-CF102C	MM-CF102B
MM-CF152	MM-CF152C	MM-CF152B
MM-CF202	MM-CF202C	MM-CF202B
MM-CF352	MM-CF352C	MM-CF352B
MM-CF502	MM-CF502C	
MM-CF702	MM-CF702C	

#### 4. Successor Models

Discontinued model	Successor model
MM-CF52(C)(B)	EM-AMF(B)(K)(W)0.75kW 3000r/min 200V
MM-CF102(C)(B)	EM-AMF(B)(K)(W)1.5kW 3000r/min 200V
MM-CF152(C)(B)	EM-AMF(B)(K)(W)2.2kW 3000r/min 200V
MM-CF202(C)(B)	EM-AMF(B)(K)(W)3.7kW 3000r/min 200V
MM-CF352(C)(B)	EM-AMF(B)(K)(W)5.5kW 3000r/min 200V
MM-CF502(C)	EM-AMF(B)(K)(W)7.5kW 3000r/min 200V
MM-CF702(C)	-

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◆ Compatible drive unit / inverter

The following table shows the drive units and inverters compatible with the MM-CF/EM-A motors.

The EM-A series motor can be driven by the drive unit or inverter whose capacity is the same as the motor capacity.

The size and full length of the motor may differ before and after the replacement.

Before replacement: MM-CF series	Output [kW]	0.5	1.0	1.5	2.0	3.5	5.0	7.0	
	Drive unit FR-E720EX-□K	0.4	0.75	1.5	2.2	3.7	-	-	
	Inverter FR-A820-□K	SLD/LD rating	0.4	0.4	0.75	1.5	2.2	3.7	5.5
		ND rating	0.4	0.75	1.5	2.2	3.7	5.5	7.5
		HD rating	0.75	1.5	2.2	3.7	5.5	7.5	11
	Inverter FR-E820-□K	-	-	-	-	-	-	-	-
	Torque [N·m]	2.39	4.78	7.16	9.55	16.70	23.86	33.41	
	Flange size [mm]	□130	□130	□130	□176	□176	□176	□176	
Full length [mm]	97	122	147	128	170	224	299		
After replacement: EM-A series	Output [kW]	0.75	1.5	2.2	3.7	5.5	7.5	-	
	Drive unit FR-E720EX-□K	0.75	1.5	2.2	3.7	-	-	-	
	Inverter FR-A820-□K *1	SLD rating*3 (carrier frequency: 2 kHz*2 only)	0.4	0.75	1.5	- (2.2)	3.7	5.5	-
		LD rating*4 (carrier frequency: 2 kHz*2 only)	0.4	0.75	- (1.5)	-	- (3.7)	- (5.5)	-
		ND rating	0.75	1.5	2.2	3.7	5.5	7.5	-
		HD rating	1.5	2.2	3.7	5.5	7.5	11	-
	Inverter FR-E820-□K	LD rating	-	-	-	-	-	-	-
		ND rating	0.75 *1	1.5 *1	2.2 *1	3.7 *1	5.5	7.5	-
	Torque [N·m]	2.39	4.78	7.00	11.78	17.50	23.88	-	
	Flange size [mm]	□110	□125	□125	□176	□176	□176	-	
Full length [mm]	185	201	231	228	273	318	-		

\*1 This inverter is to be compatible.

\*2 When the carrier frequency becomes low after the replacement, acoustic noise from the motor will increase.

\*3 Continuous rated torque for the FR-A820-2.2K (SLD rating): 80%

\*4 Continuous rated torque for the FR-A820-1.5K/3.7K/5.5K (LD rating): 80%

◆ Comparison of performance specifications

The following table shows the performance specifications of the MM-CF series and EM-A series motors.

The performance specifications of the EM-A series are the same or higher than those of the MM-CF series.

	MM-CF series		EM-A series		
	FR-E700EX	FR-A800	FR-E700EX	FR-A800	FR-E800
Speed control range	1:1000 (high frequency superposition control) 1:20 (current synchronization operation)	1:1000 (high frequency superposition control) 1:20 (current synchronization operation)	1:1000 (high frequency superposition control only)	1:1000 (high frequency superposition control only)	1:1000 (high frequency superposition control only)
Speed fluctuation ratio	±0.05%	±0.05%	±0.05%	±0.05%	±0.05%
Speed response	50 Hz*1	Normal-response operation: 30 Hz*1 Fast-response operation: 50 Hz*1	To be equivalent to that of MM-CF series		
Motor internal command resolution	4096 pulses/rev	4096 pulses/rev	4096 pulses/rev	4096 pulses/rev	4096 pulses/rev
Positioning accuracy *2	1.5 kW or lower: ±1.8° (mechanical angle: equivalent to a resolution of 200 pulses per revolution) 2 kW or higher: ±3.6° (mechanical angle: equivalent to a resolution of 100 pulses per revolution)	1.5 kW or lower: ±1.8° (mechanical angle: equivalent to a resolution of 200 pulses per revolution) 2 kW or higher: ±3.6° (mechanical angle: equivalent to a resolution of 100 pulses per revolution)	±1.8° (mechanical angle: equivalent to a resolution of 200 pulses per revolution)	To be equivalent to that of MM-CF series	±1.8° (mechanical angle: equivalent to a resolution of 200 pulses per revolution)
Maximum torque (initial value)	150% 60 s	150% 60 s	200% 3 s	200% 3 s	200% 3 s
Starting torque (initial value)	100%	150%	200%	200%	200%

	MM-CF series		EM-A series		
	FR-E700EX	FR-A800	FR-E700EX	FR-A800	FR-E800
Carrier frequency	5 kHz	Normal-response operation: 6, 10, or 14 kHz (high frequency superposition control) 2, 6, 10, or 14 kHz (current synchronization operation) Fast-response operation: 4 kHz	5 kHz	Normal-response operation: 2, 6, 10, or 14 kHz Fast-response operation: 4 kHz	4 or 8 kHz
Recommended load inertia moment ratio	-	-	10 times max.	10 times max.	10 times max.

\*1 Value for stand-alone 0.5kW motor operating at rated speed.

\*2 Value when the input voltage is 200 V and the wiring length is 5 m or less.