MITSUBISHI ELECTRIC Sensorless Servo Sales and Service

No. 030E

Firmware Upgrade for the FR-E700EX Series Sensorless Servo Drive Units

Thank you for your continued patronage of Mitsubishi Electric drive control products.
The firmware of the FR-E700EX series sensorless servo drive units will be upgraded to improve functionality.

1. Products Affected

FR-E700EX series

2. Details of Change

(1) Compatibility with the 3.7kW EM-A motor

3.7kW EM-A motor will be supported.

<Motor specifications>

Motor model	EM-AMF(B)(K)(W) []kW*1	3.7
Compatible drive unit	FR-E720EX-[]K	3.7
Power supply capacity (kVA)*2		9
Rated speed (r/min)		3000
Maximum speed (r/min)		4000
Number of poles		6
Rated current (A)		16.5
Rated torque (N・m)*3*4		11.78
Maximum torque (%)		200%
Thermal class		F: 155°C
Recommended load inertia moment ratio		10 times max.
Structure		Totally enclosed naturally cooled
Protective structure		IP44*5, IP65*5*6
Environment *7	Surrounding air temperature / ambient humidity	0°C to +40°C (non-freezing), 90%RH or less (non-condensing)
	Altitude	Maximum 1000m
	Vibration resistance*8	4.9 m/s^2 or less (momentarily tolerable up to 9.8 m/s^2)
Permissible load on the shaft*9	L (mm)	41.5
	Radial (N)	1470
	Thrust (N)	980
Mass (kg)	Without brake	22
	With brake	28

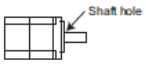
*1 Symbols in the model name indicate the motor specification
B: With electromagnetic brake
K: With a key shaft
W: Conforming to protective structure IP65

*2 The power supply capacity varies with the value of the power supply side impedance (including those of the input reactor and cables).

*3 Applicable when the rated AC voltage is input from the drive unit.
Output and the rated motor speed are not guaranteed when the power supply voltage drops.

*4 To drive a machine that produces unbalanced torque, such as a lift axis, the unbalanced torque is recommended to be equal to or less than the 90% of the rated torque.

*5 Except for the shaft hole.

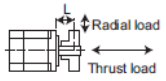


*6 Applicable for EM-AMF[][]W motors.

*7 The standard motor may not be used under the condition where it is constantly exposed to oil mist, oil, or water. For details, please contact your sales representative.

*8 For the vibration direction, X indicates the direction of the motor output axis and Y indicates the direction perpendicular to the motor output axis. The numbers are values at points where the maximum values are indicated (normally the bracket at the non-load side). Bearings are subjected to fretting while the motor is stopped. Suppress the vibration to about the half of the permissible value.

*9 For the permissible load on the shaft, refer to the following figure. On the shaft, do not apply a load exceeding the value in the table. Each value in the table shows the permissible value for the single load application.



L: Distance from the flange mounting surface to the center of the load

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(2) Automatic restart after instantaneous power failure function for MM-GKR and EM-A motors
When the MM-GKR or EM-A motor is used, the drive unit can be restarted without stopping the motor.

- When power comes back ON after an instantaneous power failure during operation of the drive unit
- When the motor is coasting at start

Parameter Number	Name	Initial Value	Setting Range	Description
57	Restart coasting time	9999	0	Coasting time: 0.05s
			0.1 to 5s	Set the delay time for the drive unit to perform a restart after restoring power due to an instantaneous power failure.
			9999	No restart
162	Automatic restart after instantaneous power failure selection	0	0	Speed search only performed at the first start
			10	Speed search at every start
611	Acceleration time at a restart	9999	0 to 360s	Set the acceleration time for the speed to reach Pr.20 Acceleration/deceleration reference speed at a restart.
			9999	Standard acceleration time (for example, Pr.7 setting) is applied as the acceleration time at restart.

A setting value of Pr.997 Fault initiation and the corresponding fault will be added.

Setting (Data code)	Fault
81 (H51)	E.UVT

3. Date of Change

The change will be applied to the products manufactured in April 2021 or later.

4. Product Identification

The products after the change will have the following SERIAL or later on their rating plates.

□ 1 4 ○○○○○○
Symbol Year Month Control number

SERIAL

The SERIAL consists of one symbol, two characters indicating the production year and month, and six characters indicating the control number.
The last digit of the production year is indicated as the Year, and the Month is indicated by 1 to 9, X (October), Y (November), or Z (December).