MITSUBISHI ELECTRIC Inverter
Sales and Service

No. 727E

Firmware Upgrade for the FR-E800 Series General-Purpose Inverters

Thank you for your continued patronage of Mitsubishi Electric drive control products.
The firmware of the FR-E800 series general-purpose inverters will be upgraded to improve functionality.

1. Products Affected

FR-E800 series

2. Details of Change

(1) Addition of supported EM-A motor capacities

For the EM-A series global PM motor, the following capacities will be added.

200 V: 0.1 to 0.4 kW*1

400 V: 2.2 kW

Speed control and position control under PM sensorless vector control will be available.

*1 For the single-phase 100 V power input models, output voltage decreases by applying motor load, and output current increases compared to the three-phase power input models. The load must be reduced so that output current does not exceed the rated motor current.

The following table shows compatibility between EM-A motors and FR-E800 inverters.

Model	Applicable motor capacity (kW)								
	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5
Three-phase 200 V FR-E820	○	○	○	○	○	○	○	○	○
Three-phase 400 V FR-E840	-	-	×	×	×	○	○	○	×
Single-phase 200 V FR-E820S	○	○	○	○	○	○	-	-	-
Single-phase 100 V FR-E810W	○	○	○	○	-	-	-	-	-

○: Compatible, ×: Not compatible (to be compatible), -: Not applicable

(2) Supporting position accuracy compensation gain tuning

When an EM-A motor is used, automatic measurement of the position compensation amount improves the positioning accuracy.

1) Added parameters

Pr. (Pr. group)	Name	Initial value	Setting range	Description
979 to 981 (C194 to C196)	Position accuracy compensation gain tuning 1 to 3	9999	90% to 110%, 9999	Tuning data (The value measured by position accuracy compensation gain tuning is automatically set.) 9999: Function disabled.*1

*1 When "9999" is set in any parameter from Pr.979 to Pr.981, the position accuracy compensation function is disabled.

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2) Added setting values

Pr. (Pr. group)	Name	Details of the change
96 (C110)	Auto tuning setting/status	Setting value "301" (EM-A) will be added.

(3) Enhanced anti-sway control function

When the Anti-sway control disabled (X54) signal is assigned to an input terminal using Pr.178 to Pr.189 (Input terminal function selection), turning ON the X54 signal can disable anti-sway control. The Anti-sway control disabled (X54) signal is used to disable anti-sway control during very low-speed operation such as inching or centering.

Pr. (Pr. group)	Name	Details of the change
178, 179 (T700, T701)	STF/DI0 or STR/DI1 terminal function selection	The following setting values will be added.
180 to 184 (T702 to T704, T709, T711)	RL/RM/RH/MRS/RES terminal function selection	
185 to 189 (T751 to T755)	NET X1 to X5 input selection	

Setting value	Signal name	Description
54	X54	Anti-sway control disabled.

(4) Addition of specifications for BACnet/IP and BACnet MS/TP communication

Network Port Object will be added.

(5) Addition of specifications for PROFINET communication

The safety circuit fault (E.SAF) can be reset by clearing fault using bit 7 of Control word 1 (STW1).

3. Date of Change

Country of origin	Date of Change
MADE IN JAPAN	The change will be sequentially applied to the November 2022 production or later.
MADE IN CHINA	The change will be sequentially applied to the December 2022 production or later.

4. Product Identification

The SERIAL (determined by date of production) can be checked on the rating plate or packaging plate of the inverter.

SERIAL example on rating plate

□□ 22 Y ○○○○○○

Symbol Year Month Control number

SERIAL

SERIAL example on packaging plate

□□ 22 Y ○○○

Symbol Year Month Control number

SERIAL

The SERIAL consists of two symbols, three characters indicating the production year and month, and the control number (six characters for the rating plate, three characters for the packaging plate).

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).

5. Firmware Version

The inverter firmware version to which the change described will be applied is 11 or later.

For how to install the downloaded firmware, refer to the FR Configurator2 (SW1DND-FRC2-E) Instruction Manual (IB-0600516ENG).