

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) Supporting cumulative pulse monitoring function

The accumulated value of the encoder pulses can be monitored.

The cumulative pulse monitor is available when "71 or 72" is set in the monitor selection parameters (Pr.52, Pr.774 to Pr.776, and Pr.992).

1) Parameters

Pr. (Pr. group)	Name	Initial value	Setting range	Description		
635 (M610)*1	Cumulative pulse clear signal selection	0	0, 1	Select the clearing method for the cumulative pulse monitor. 0: Cleared at the edge when the signal is switched to ON. 1: Cleared while the signal is ON.		
636 (M611)*1	Cumulative pulse division scaling factor	1	1 to 16384	Set the division scaling factor on the cumulative pulse for the Vector control compatible option.		
638 (M613)*1	Cumulative pulse storage	0	0, 1	Select the processing method for the cumulative pulse monitor value when the power is turned OFF or the inverter is reset.		
				Setting value	Cumulative pulse monitor / Cumulative pulse overflow times	
					At power-OFF	At reset
				0	Not stored in the EEPROM	Cleared
1	Stored in the EEPROM	Retained				

*1 The setting is available when a Vector control compatible option is installed.

2) Setting values

Pr. (Pr. group)	Name	Change						
52 (M100)	Operation panel main monitor selection	Setting values "71" (cumulative pulse) and "72" (cumulative pulse overflow times) will be added.						
774 to 776 (M101 to M103)	Operation panel monitor selection 1 to 3							
992 (M104)	Operation panel setting dial push monitor selection							
1027 to 1034 (A910 to A917)	Analog source selection (1ch) to (8ch)	The following setting value will be added.						
178, 179 (T700, T701)	STF/DI0 or STR/DI1 terminal function selection							
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	<table border="1"> <thead> <tr> <th>Setting value</th> <th>Signal name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>52</td> <td>X52</td> <td>Cumulative pulse monitor clear (for Vector control compatible options)</td> </tr> </tbody> </table>	Setting value	Signal name	Description	52	X52	Cumulative pulse monitor clear (for Vector control compatible options)
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(2) Supporting 24 V external power supply operation

Connecting the 24 V external power supply to the FR-E8DS E kit (plug-in option) installed in the inverter enables 24 V external power supply operation. This operation mode enables turning ON/OFF I/O terminals, keeping the operation panel ON, and communicating with other devices even at power-OFF state of inverter's main circuit power supply.

To assign the signal to be output during 24 V external power supply operation to an output terminal, setting values will be added to the following parameters.

Pr. (Pr. group)	Name	Change		
190 to 192 (M400, M404, M405)	RUN/FU/ABC terminal function selection	The following setting values will be added.		
193 to 196 (M451 to M454)	NET Y1 to Y4 output selection	Setting value (Positive/negative logic)	Signal name	Description
		68/168	EV	24 V external power supply operation (for FR-E8DS)
313 to 319 (M410 to M416)	DO0 to DO6 output selection			
320 to 322 (M420 to M422)	RA1 to RA3 output selection	The following setting value will be added.		
		Setting value (Positive logic)	Signal name	Description
		68	EV	24 V external power supply operation (for FR-E8DS)

(3) Addition of Internal storage device fault (E.PE6)

The storage device in the inverter can be checked.

If a data fault occurs in the storage device in the inverter, the protective function (E.PE6) is activated to shut off the inverter output.

When the read value of Pr.890 is "7" or smaller, an inverter reset after All parameter clear can return the operation to normal. (The parameters that had been changed before All parameter clear must be set again.)

When E.PE6 occurs, faulty area in the internal storage device can be checked by reading Pr.890.

Pr.	Name	Initial value	Setting range	Description
890 H325	Internal storage device status indication	0	(0 to 255)*1	A faulty area detected by check function can be indicated in the internal storage device.

*1 Read only

The following table shows faulty areas indicated by the read value of Pr.890.

Some read values indicate that there are multiple faulty areas.

(For example, the read value "7" indicates that all the areas described in No. 1 to No. 3 are faulty.)

No.	Read value	Description
1	1, 3, 5, 7	Storage area other than the area for parameter settings is faulty (such as area for the set frequency). (When All parameter clear is performed, the set frequency, remotely-set frequency, host name for Ethernet communication, and offline auto tuning data are cleared.)
2	2, 3, 6, 7	Storage area for standard parameter settings is faulty.
3	4, 5, 6, 7	Storage area for communication parameter settings is faulty.
4	8 to 255	Area for manufacturer setting is faulty.

(4) Addition of supported MM-GKR motor capacities

Mitsubishi Electric PM motor MM-GKR 0.1kW and 0.2kW will be additionally supported.

Speed control and position control under PM sensorless vector control are available to drive MM-GKR motors.

(5) Addition of the environmental impact diagnosis function

The Cor (Corrosion warning) warning, which appears on the operation panel according to the corrosion level of the control circuit board detected by the environmental impact diagnosis function, will be added.

The Cor warning appears when the corrosion level of the control circuit board becomes "3"*1 (Pr.198 = "3").

(This warning is available only for the FR-E8[]-[]-60 (with coating).)

*1 This level indicates the condition where corrosion that may affect the inverter is very likely to occur, requiring improvement of the environment (by a filter or ventilation). Consider replacing the inverter early as required. For details, refer to the FR-E800 Instruction Manual (Function).

3. Date of Change

Country of origin	Date of Change
MADE IN JAPAN	The change will be applied to the products manufactured in December 2021 or later.
MADE IN CHINA	The change will be applied to the products manufactured in January 2022 or later.

4. Product Identification

The SERIAL (determined by date of production) can be checked on the product's rating plate.

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Symbol Year Month Control number

SERIAL

The SERIAL consists of two symbols, three characters indicating the production year and month, and six characters indicating the control number.

The last two digits of the production year are indicated as the Year, and the Month is indicated by 1 to 9, X (October), Y (November), or Z (December).