

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 the Change

(1) FR-A8AP E kit supported

Vector control (speed control and torque control) and encoder feedback control will be available.
Position control and orientation control will be available in a future firmware upgrade.

(2) Enhanced functions for EtherNet/IP and PROFINET communications (FR-E800-E only)

◆ EtherNet/IP

Data of parameters, monitor items, and terminals can be accessed via EtherNet/IP communication (using Inverter Configuration Object).

◆ PROFINET

Data of parameters, monitor items, and terminals can be accessed via PROFINET communication (using Acyclic Data Exchange).

(3) Addition of parameters and change of parameter setting range

◆ Addition of parameters

Pr. (Pr. group)	Name	Pr. (Pr. group)	Name
284 (A106)	Deceleration detection function selection	695 (H014)	Second free thermal reduction ratio 2
285 (A107)	Overspeed detection frequency (speed deviation excess detection frequency)	696 (H015)	Second free thermal reduction frequency 3
359 (C141)	Encoder rotation direction	802 (G102)	Pre-excitation selection
367 (G240)	Speed feedback range	823 (G215)	Speed detection filter 1
368 (G241)	Feedback gain	828 (G224)	Model speed control gain
369 (C140)	Number of encoder pulses	833 (G315)	Speed detection filter 2
376 (C148)	Encoder signal loss detection enable/disable selection	840 (G230)	Torque bias selection
422 (B003)	Position control gain	841 to 843 (G231 to G233)	Torque bias 1 to 3
552 (H429)	Frequency jump range	844 (G234)	Torque bias filter
600 (H001)	First free thermal reduction frequency 1	845 (G235)	Torque bias operation time
601 (H002)	First free thermal reduction ratio 1	847 (G237)	Fall-time torque bias terminal 4 bias
602 (H003)	First free thermal reduction frequency 2	848 (G238)	Fall-time torque bias terminal 4 gain
603 (H004)	First free thermal reduction ratio 2	854 (G217)	Excitation ratio
604 (H005)	First free thermal reduction frequency 3	873 (H415)	Speed limit
607 (H006)	Motor permissible load level	877 (G220)	Speed feed forward control / model adaptive speed control selection
608 (H016)	Second motor permissible load level	878 (G221)	Speed feed forward filter
690 (H881)	Deceleration check time	879 (G222)	Speed feed forward torque limit
692 (H011)	Second free thermal reduction frequency 1	880 (C114)	Load inertia ratio
693 (H012)	Second free thermal reduction ratio 1	881 (G223)	Speed feed forward gain
694 (H013)	Second free thermal reduction frequency 2		

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◆ Change of parameter setting range

Pr. (Pr. group)	Name	Details of the change																		
11 (G101)	DC injection brake operation time	Setting value "8888" (DC injection brake operation starts when the X13 signal is turned ON) is added.																		
52 (M100)	Operation panel main monitor selection	Setting values "19" (position pulse) and "35" (feedback pulse) are 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)																			
71 (C100)	Applied motor	Setting values "30 and 33" (Vector control dedicated motor SF-V5RU (1500 r/min series)) are added.																		
450 (C200)	Second applied motor																			
178, 179 (T700, T701)	STF/DI0, STR/DI1 terminal function selection	The following setting values are added.																		
180 to 184 (T702 to T704, T709, T711)	RL, RM, RH, MRS, RES terminal function selection	<table border="1"> <thead> <tr> <th>Setting value</th> <th>Signal name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>13</td> <td>X13</td> <td>External DC injection brake operation start</td> </tr> <tr> <td>23</td> <td>LX</td> <td>Pre-excitation</td> </tr> <tr> <td>42</td> <td>X42</td> <td>Torque bias selection 1</td> </tr> <tr> <td>43</td> <td>X43</td> <td>Torque bias selection 2</td> </tr> <tr> <td>74</td> <td>X74</td> <td>Magnetic flux decay output shutoff</td> </tr> </tbody> </table>	Setting value	Signal name	Description	13	X13	External DC injection brake operation start	23	LX	Pre-excitation	42	X42	Torque bias selection 1	43	X43	Torque bias selection 2	74	X74	Magnetic flux decay output shutoff
		Setting value	Signal name	Description																
		13	X13	External DC injection brake operation start																
23	LX	Pre-excitation																		
42	X42	Torque bias selection 1																		
43	X43	Torque bias selection 2																		
74	X74	Magnetic flux decay output shutoff																		
185 to 189 (T751 to T755)	NET X1 to X5 input selection																			
190 to 192 (M400, M404, M405)	RUN, FU, ABC terminal function selection	The following setting values are added.																		
193 to 196 (M451 to M454)	NET Y1 to Y4 output selection	<table border="1"> <thead> <tr> <th>Setting value (Positive/negative logic)</th> <th>Signal name</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>30/130</td> <td>Y30</td> <td>Forward rotation output</td> </tr> <tr> <td>31/131</td> <td>Y31</td> <td>Reverse rotation output</td> </tr> <tr> <td>32/132</td> <td>Y32</td> <td>Regenerative status output</td> </tr> <tr> <td>33/133</td> <td>RY2</td> <td>Operation ready 2</td> </tr> </tbody> </table>	Setting value (Positive/negative logic)	Signal name	Description	30/130	Y30	Forward rotation output	31/131	Y31	Reverse rotation output	32/132	Y32	Regenerative status output	33/133	RY2	Operation ready 2			
		Setting value (Positive/negative logic)	Signal name	Description																
30/130	Y30	Forward rotation output																		
31/131	Y31	Reverse rotation output																		
32/132	Y32	Regenerative status output																		
33/133	RY2	Operation ready 2																		
313 to 319 (M410 to M416)	DO0 to DO6 output selection																			
320 to 322 (M420 to M422)	RA1 to RA3 output selection	Setting values "30" (Y30 (Forward rotation output)), "31" (Y31 (Reverse rotation output)), "32" (Y32 (Regenerative status output)), and "33" (RY2 (Operation ready 2)) are added.																		
800 (G200)	Control method selection	Setting values "0 to 2, and 9" (Vector control) are added.																		
850 (G103)	Brake operation selection	Setting value "2" (Magnetic flux decay output shutoff) is added.																		
858 (T040)	Terminal 4 function assignment	Setting value "6" (Torque bias input) is added.																		

3. Date of Change

The change will be sequentially applied to the products manufactured in August 2020 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).