

MITSUBISHI ELECTRIC Inverter

Sales and Service

No. 704E

Firmware Upgrade for FR-A800-AWH Inverters (FR-A800 Plus Series)

Thank you for your continued patronage of Mitsubishi Electric drive control products.
The firmware of FR-A800-AWH inverters (FR-A800 plus series) will be upgraded to improve functionality.

1. Products Affected

FR-A800-AWH inverters (FR-A800 Plus series)

2. Details of Change

(1) Monitoring distance meter fault codes

If multiple distance meter faults occur, the code of the fault detected first is displayed.

Pr.	Name	Initial value	Setting range	Description
52 M100	Operation panel main monitor selection	0	0, 5 to 14, 17, 18, 20, 23 to 25, 32 to 36, 38 to 46, 50 to 52, 54 to 57, 61, 62, 64, 67, 71 to 74, 81, 87 to 98, 100	The distance meter fault codes can be displayed on the operation panel or the parameter unit by setting "54" in the parameters for monitoring (Pr.52, Pr.774 to Pr.776, Pr.992).
774 to 776 M101 to M103	Operation panel monitor selection 1 to 3	9999	1 to 3, 5 to 14, 17, 18, 20, 23 to 25, 32 to 36, 38 to 46, 50 to 52, 54 to 57, 61, 62, 64, 67, 71 to 74, 81, 87 to 98, 100, 9999	
992 M104	Operation panel setting dial push monitor selection	0	0 to 3, 5 to 14, 17, 18, 20, 23 to 25, 32 to 36, 38 to 46, 50 to 52, 54 to 57, 61, 62, 64, 67, 71 to 74, 81, 87 to 98, 100	

(2) Setting the relative position of the home position

A desired home position can be set to enable writing of the stop position command and monitoring related to the position feed based on the relative position.

Pr.	Name	Initial value	Setting range	Description
128 W002, W320	Motion range 1	0.01 m	0 to 300 m	Set the lower limit (absolute value) of the motion range that can be specified by the stop position command.
129 W003, W321	Motion range 2	300 m	0 to 300 m	Set the upper limit (absolute value) of the motion range that can be specified by the stop position command.
131 W004	Motion range sign selection	0	0	Lower limit: positive, upper limit: positive
			1	Lower limit: negative, upper limit: positive
			2	Lower limit: negative, upper limit: negative
132 W005*1	Home position (upper digits)	0	0 to 300	Set a desired home position.
133 W006*1	Home position (lower digits)	0	0 to 999.9	

*1 The setting is applied after an inverter reset or next power-ON.

Date of issue	January 2022	Title	Firmware Upgrade for FR-A800-AWH Inverters (FR-A800 Plus Series)	Mitsubishi Electric Corp., Nagoya Works 5-1-14 Yada-minami, Higashi-ku, Nagoya 461-8670 Tel.: +81 (52) 721-2111 Main line
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(3) Distance meter (DT1000/DL1000)

SICK DL1000/DT1000 dust-proof, long-range laser distance sensors will be supported.

Pr.	Name	Initial value	Setting range	Description
549 N000	Protocol selection	0	1050	DT1000/DL1000_DstSta_CRLF
			1051	DT1000/DL1000_DstSta_STX/ETX

(4) Setting the S-curve deceleration time when a system failure occurs

This function can reduce the coasting distance when a system failure occurs.

Pr.	Name	Initial value	Setting range	Description
609 W305	S-curve time after system failure detection	9999	0.1 to 2.5 s	Set the S-curve deceleration time when a system failure occurs.
			9999	Pr.517, Pr.754, or Pr.1143 setting value is used for the full-closed control, and Pr.519 setting value is used for the fork control.

(5) Selecting deceleration stop operation after system failure detection

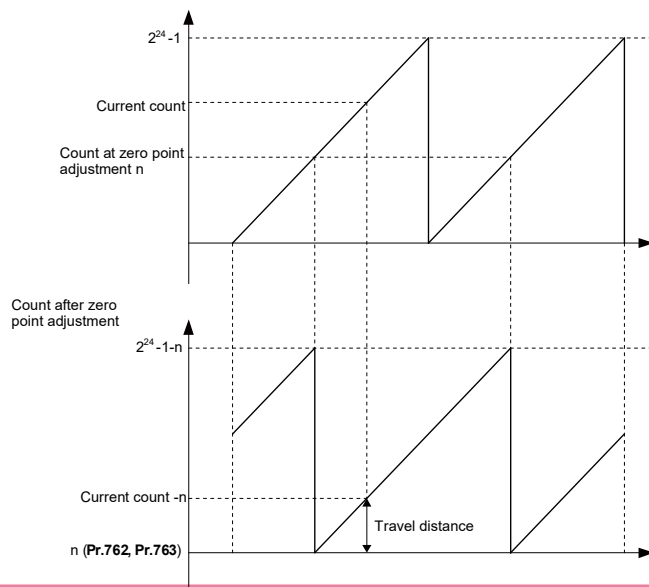
This function can reduce the coasting distance when a system failure occurs.

Pr.	Name	Initial value	Setting range	Description
610 W306	Deceleration stop operation selection after system failure detection	0	0	S-curve deceleration
			1	Linear deceleration

(6) Adjusting absolute encoder zero position

Pr.	Name	Initial value	Setting range	Description
762 W086	Absolute encoder count (upper digits) at zero position calibration	0	0 to 255	When Pr.764 = "1", the current encoder count is set as the zero position.
763 W087	Absolute encoder count (lower digits) at zero position calibration	0	0 to 65535	
764 W088	Absolute encoder zero position calibration	0	0	Zero point adjustment is disabled.
			1	Zero point adjustment is enabled.
			3	Zero position calibration is complete. (Read only)
			9	Zero position calibration failed. (Read only)

Actual encoder count



(7) Supporting Internal storage device status indication

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

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.)

Pr.	Name	Initial value	Setting range	Description
890 H325	Internal storage device status indication	0	(0 to 511)	A detected faulty area can be indicated in the internal storage device.

Use the read value of Pr.890 to check the faulty area.

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, 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 511	Area for manufacturer setting

(8) Setting acceleration/deceleration time when the speed feed is selected

Pr.1140 to Pr.1143 can be used to set the acceleration/deceleration time and S-curve time separately for the speed feed and position feed.

Pr.	Name	Initial value	Setting range	Description
1140 W076	Speed feed acceleration time	9999	0 to 3600 s	Set the acceleration time (time required to change the frequency from stop status (0 Hz) to the frequency set in Pr.100) when the speed feed is selected.
			9999	The acceleration/deceleration time setting for speed feed is disabled.
1141 W077	Speed feed deceleration time	9999	0 to 3600 s	Set the deceleration time (time required to change the frequency from the frequency set in Pr.100 to stop status (0 Hz)) when the speed feed is selected.
			9999	The acceleration time applies to the deceleration time.
1142 W078	Speed feed S-curve acceleration time	0.1 s	0.1 to 2.5 s	Set the S-curve acceleration time when the speed feed is selected.
1143 W079	Speed feed S-curve deceleration time	0.1 s	0.1 to 2.5 s	Set the S-curve deceleration time when the speed feed is selected.

	Acceleration time	Deceleration time			S-curve acceleration time	S-curve deceleration time		
		At system failure		In normal operation		At system failure		In normal operation
		Pr.395 ≠ "9999"	Pr.395 = "9999"			Pr.609 ≠ "9999"	Pr.609 = "9999"	
Position feed or Pr.1140 = "9999"	Pr.7, Pr.110*1	Pr.395	Pr.8, Pr.111*1		Pr.516, Pr.753*1	Pr.609	Pr.517, Pr.754*1	
Speed feed and Pr.1140 ≠ "9999"	Pr.1140		Pr.1141		Pr.1142		Pr.1143	

*1 Switch ON/OFF the X110 signal to select the acceleration/deceleration time setting.

(9) Warning indication for system failure

The following warnings are displayed on the operation panel when system failure is detected. If multiple system failures occur, the warning of the failure detected first is displayed.

No.	Read value
Crane overspeed detection	SY1
Speed range excess fault	SY2
Speed deviation detection	SY3
Position deviation detection	SY4
Distance meter fault	SY5
Stop position command out of motion range	SY6
Limit dog detection	SY7
Brake sequence fault	SY8
Emergency stop	SY9
Distance meter alarm	SY10

(10) Monitoring using the PLC function

Motor torque (with sign), torque command (with sign), and torque current command (with sign) will be added.

3. Date of Change

The change will be applied to the products manufactured in February 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 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).