

Firmware Upgrade for FR-A842-P Inverters (FR-A800 Series)

Thank you for your continued patronage of Mitsubishi Electric drive control products.
The firmware of FR-A842-P inverters (FR-A800 series) will be upgraded to improve functionality.

1. Products Affected

FR-A842-P inverters (FR-A800 series)

2. Details of the Change

(1) Dual wound motor supported

The inverter can drive a dual wound motor. Driving a dual wound motor provides the following features:

- A smaller enclosure can be used and less wiring is required as the FR-POL is not required.
- Less wiring is required as terminals P and terminals N need not be connected and cables need not be joined on the output side of the inverter.
- A suitable capacity inverter can be selected as the inverter rated current under Vector control or Real sensorless vector control is larger than that for driving a single wound motor.

Item	Driving a single wound motor	Driving a dual wound motor																
Wiring																		
1) Terminals P and terminals N	Need be connected	Need not be connected (Do not connect them.)																
2) FR-POL	Required when the wiring length from a unit to the node point is less than 10 m	Not required																
3) Inverter output cables	Need be joined	Need not be joined (Do not join them.)																
Rated output current *1	V/F control, Advanced magnetic flux vector control <table border="1"> <thead> <tr> <th>Model FR-A842-[-]-P</th> <th>400K</th> <th>450K</th> <th>500K</th> </tr> </thead> <tbody> <tr> <td>Rated output current [A]</td> <td>1232</td> <td>1386</td> <td>1539</td> </tr> </tbody> </table> (Equivalent to 80% of each inverter's rated output current multiplied by 2)	Model FR-A842-[-]-P	400K	450K	500K	Rated output current [A]	1232	1386	1539	V/F control, Advanced magnetic flux vector control <table border="1"> <thead> <tr> <th>Model FR-A842-[-]-P</th> <th>400K</th> <th>450K</th> <th>500K</th> </tr> </thead> <tbody> <tr> <td>Rated output current [A]</td> <td>1232</td> <td>1386</td> <td>1539</td> </tr> </tbody> </table> (Equivalent to 80% of each inverter's rated output current multiplied by 2)	Model FR-A842-[-]-P	400K	450K	500K	Rated output current [A]	1232	1386	1539
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*1 The table shows the values for the ND rating as a reference. For other inverter rated specifications, refer to the Instruction Manual.

Date of issue	October 2020	Title	Firmware Upgrade for FR-A842-P Inverters (FR-A800 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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The following setting values will be added.

Pr.	Name	Initial value	Setting range	Applied motor	Description	
					Master/slave station	Number of slave stations
1001 E390	Parallel operation selection	100	10200	Dual wound motor	Master station	1
			10201		Slave station	-

(2) PPO type support specification

The setting value "11" for Pr.1110 PROFIBUS format selection is available when the FR-A8NP plug-in option is used. Commands (HSW, STW, ECW and REF1 to 7) can be prioritized in extended format. For details, refer to the FR-A8NP Instruction Manual.

(3) Torque current command limit (torque limit, torque command)

The torque current can be limited for limiting the torque during speed control or giving the torque command during torque control.

To avoid overload or overcurrent of the inverter or motor, use Pr.801 Output limit level to limit the torque current.

Pr.	Name	Initial value	Setting range	Description
801 H704	Output limit level	9999	0% to 400%	Set the torque current limit level.
			9999	The torque limit setting value (Pr.22, Pr.812 to Pr.817, etc.) is used for limiting the torque current.

◆ Changing the torque characteristic in the constant power output range (Pr.803)

For the torque limit operation during speed control, the torque characteristic can be changed between in the low-speed range and in the constant power range.

Pr.	Name	Initial value	Setting range	Description	
803 G210	Constant output range torque characteristic selection	0	0	The torque rises in the low-speed range.	The motor power output is limited to be constant in the constant output range.
			1	The torque is kept constant in the low-speed range.	The torque is limited to be constant in the constant output range.
			2	The torque is kept constant in the low-speed range. (The torque current is limited.)	The torque is limited to be constant in the constant output range unless the output limit of the torque current is reached. (The torque current is limited.)
			10	The torque is kept constant in the low-speed range.	The motor power output is limited to be constant in the constant output range.
			11	The torque rises in the low-speed range.	The torque is limited to be constant in the constant output range.

Torque in a low-speed range is constant during torque control regardless of the setting of Pr.803. However, when "2" is set in Pr.803 under Real sensorless vector control, the torque may not be kept constant in the low-speed range.

Pr.	Name	Initial value	Setting range	Description	
803 G210	Constant output range torque characteristic selection	0	0, 10	Constant motor output command	In the torque command setting, select torque command for the constant output range.
			1, 11	Constant torque command	
			2	The torque is constant unless the output limit of the torque current is reached. (The torque current is limited.)	

3. Date of Change

Country of origin	Date of Change
MADE IN JAPAN	The change will be sequentially applied to the November 2020 production or later.
MADE IN CHINA	The change will be sequentially applied to the December 2020 production or later.

4. Product Identification

The country of origin and the production year and month can be checked on the inverter rating plate or packaging.

□ 0 Y ○○○○○
 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).