

Firmware Upgrade for the FR-XC Inverter Option

Thank you for your continued patronage of Mitsubishi Electric drive control products.
The firmware of the FR-XC inverter option will be upgraded to improve functionality.

1. Products Affected

FR-XC(-PWM)

2. Details of the Change

(1) Addition of monitor items (cumulative power-driving power and cumulative regenerative power)

◆ Monitor item list (Pr.52)

- The cumulative power-driving power and the cumulative regenerative power can be monitored using **Pr.52 PU main monitor selection**.
- Refer to the following table and select the item to be monitored.

Monitor item	Increment and unit*1	Pr.52 setting	Description
Cumulative power-driving power	0.01 kW / 0.1 kWh	26	The counter of cumulative power-driving power calculated from the input power monitor value is displayed. Setting "1" in Pr.46 Watt-hour meter clear *2 clears the counter.
Cumulative regenerative power	0.01 kW / 0.1 kWh	27	The counter of cumulative regenerative power calculated from the input power monitor value is displayed. Setting "2" in Pr.46 Watt-hour meter clear *2 clears the counter.

*1 Differs depending on the capacity (FR-XC-(H)55K or lower / FR-XC-H75K).

*2 When **Pr.46** is read just after "0 to 2" has been written in **Pr.46**, "9999" or "10" is displayed.

- When the cumulative power-driving power is monitored (**Pr.52** = "26"), the input power monitor value for the power-driving power is added up and is updated in 100 ms increments. (The values are registered in EEPROM every hour.)
- When the cumulative regenerative power is monitored (**Pr.52** = "27"), the input power monitor value for the regenerative power is added up and is updated in 100 ms increments. (The values are registered in EEPROM every hour.)
- The decimal point position on the watt-hour meter can be shifted to left. The number of digits to be shifted is equal to the setting of **Pr.48 Cumulative power monitor digit shifted times**.
For example, when **Pr.48** = "2", the cumulative power value 1278.56 kWh is displayed as 12.78 (in 100 kWh increments) on the PU or displayed as 12 on a display used for monitoring via communication.
- When **Pr.48** = "0 to 4", the meter stops at the maximum number.
When **Pr.48** = "9999", the meter returns to 0 and the counting starts again.
- After the setting of **Pr.48** is changed, the watt-hour meter holds the cumulative value.

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- Increments and ranges of monitoring on the operation panel or parameter unit or via communication (RS-485 communication) are as follows.

Example when Pr.48 = "0 or 9999"

On operation panel / parameter unit*3		Via communication		
Range	Increment	Range		Increment
		Pr.46 = "10"	Pr.46 = "9999"	
0 to 999.99 kWh / 0 to 999.9 kWh*4	0.01 kWh / 0.1 kWh*4	0 to 9999 kWh	0 to 65535 kWh (initial value)	1 kWh
1000.0 to 9999.9 kWh	0.1 kWh			
10000 to 99999 kWh	1 kWh			

*3 Power is measured in 0.01 increments (for FR-XC-(H)55K or lower) or 0.1 increments (for FR-XC-H75K), and the values are displayed in upper five digits.

After the watt-hour meter (cumulative power counter) reaches "999.99" (999.99 kWh), the meter displays values in 0.1 increments such as "1000.0" (1000.0 kWh).

*4 Differs depending on the capacity (FR-XC-(H)55K or lower / FR-XC-H75K).

(2) Addition of **Pr.455** and **Pr.456** (Delay time for the magnetic contactor (MC))

These parameters are used to set the delay for the magnetic contactor (MC) to be turned ON/OFF after the start/stop command is input.

These parameters are set according to the magnetic contactor (MC) used.

Pr.	Name	Initial value	Setting range	Description
455	MC-ON delay time	9999	1 to 4000 ms	Set the mechanical delay time when the magnetic contactor (MC) is turned ON.
			9999	60 ms
456	MC-OFF delay time	9999	1 to 4000 ms	Set the mechanical delay time when the magnetic contactor (MC) is turned OFF.
			9999	150 ms

- Setting these parameters is not required when the FR-MCB is used.
- When the FR-XC-H75K in power regeneration mode 2 is connected with the 90K or higher inverter, use the magnetic contactor (MC), not the FR-MCB.
- These parameters are available for the FR-XC-H75K only.

3. Date of Change

The change will be sequentially applied to the products manufactured in October 2020 or later.

4. Product Identification

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

□ 0 X ○○○○○○
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).