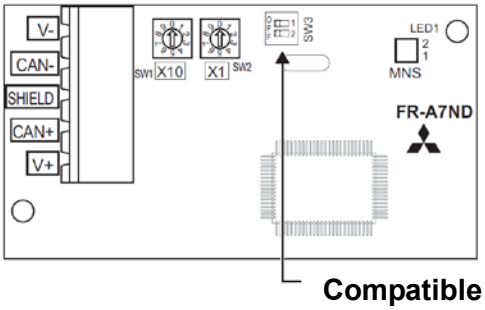
Information for Replacement of FR-A5ND with FR-A7ND

Precautions concerning replacement and relevant parameters are stated on the following pages.

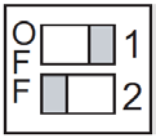
BCN-C21002-147B

1. FR-A5ND/FR-E5ND (FR-E500-KND) compatible mode of FR-A7ND

Selecting the FR-A5ND/FR-E5ND (FR-E500-KND) compatible mode of FR-A7ND enables DeviceNet communication in the FR-A5ND/FR-E5ND (FR-E500-KND) specifications.



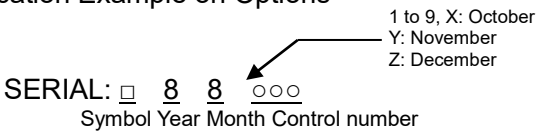
Compatible mode switch (SW3)



Turning ON switch 1 and OFF switch 2 will switch to the FR-A5ND/FR-E5ND (FR-E500-KND) compatible mode.
(Switches 1 and 2 are set to OFF in the initial status.)
This switch setting is applied when the power is turned ON.
Set the switches before turning ON the power.

The models with the following SERIAL or later support the compatible mode. The SERIAL can be found on the option bodies and their packaging plates.

<Indication Example on Options>



* FR-A7ND and FR-A7ND E kit manufactured in August 2008 or later support the compatible mode.

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

2. EDS file

The EDS file, which supports the FR-A5ND/FR-E5ND (FR-E500-KND) compatible mode switching, can be downloaded via Internet.

Mitsubishi Electric FA Global Website
http://www.MitsubishiElectric.co.jp/fa/

3. Compatible mode specification

(1) FR-A5ND/FR-A7ND

Class ID	Instance ID	Attribute ID	Name	FR-A5ND	FR-A7ND FR-A5ND Compatible Mode	FR-A7ND Normal Mode
01	1	7	Product Name	A500/F500	A700[]/F700[] (*2)	A700/F700
01	1	3	Product Code	500/503	64/67	48/51
03	1	1	Node address setting (MAC ID)	Available by re-powering ON after writing to MAC ID		Available immediately after writing to MAC ID
04	26	—	Output instance 26	○		×
04	76	—	Input instance 76	○		×
28	1	6	Rated current (Pr.9)	0.01 A/0.1 A increments (*1)		0.1 A increments
28	1	7	Rated voltage	Read from / write to Pr.83		Read from / write to Pr.19
				0.1 V increments		1 V increments
28	1	8	Motor capacity (Pr.80)	○		×
28	1	9	Rated frequency (Pr.84)	○		×
28	1	12	Number of motor poles (Pr.144)	○		×
28	1	15	Base speed (Pr.3)	○		×
29	1	40	Input assembly	○		×
29	1	41	Output assembly	○		×
2A	1	7	Actual speed	Same as the normal mode (of the FR-A700/FR-F700)		Regardless of the Pr.37 setting, a frequency is converted to a speed according to the Pr.144 setting.
2A	1	8	Speed setting value			
2A	1	20	Minimum frequency			
2A	1	21	Maximum frequency			
Speed setting / monitor of the polling I/O						
2A	1	9	Actual current	0.01 A/0.1 A increments (*1)		0.1 A increments
2A	1	17	Output voltage	0.1 V increments		1 V increments
2A	1	18	Acceleration time	Time set in Pr.7/Pr.8 used to change the frequency between 0 Hz and the frequency set in Pr.20 Acceleration/deceleration reference frequency, 0.1 s/0.01 s increments (Pr.21)		Time used to change the frequency between 0 Hz and the frequency set in Pr.1 Maximum frequency, 1 ms increments
2A	1	19	Deceleration time			
2A	1	114	Run command (Set)	STOP and RES are not available.		STOP and RES are available.

(○: Available, ×: Not available)

*1 Differs according to the inverter capacity. (55K or lower / 75K or higher)
*2 Change the configuration of network devices. ([] means the ASCII code for space (0x20).)

(2) FR-E5ND (FR-E500-KND) / FR-A7ND

Class ID	Instance ID	Attribute ID	Name	FR-E5ND (FR-E500-KND)	FR-A7ND FR-E5ND (FR-E500-KND) Compatible Mode	FR-A7ND Normal Mode
01	1	7	Product Name	E500	E700[] (*2)	E700
01	1	3	Product Code	501	65	49
03	1	1	Node address setting (MAC ID)	Available by re-powering ON after writing to MAC ID		Available immediately after writing to MAC ID
04	100	—	Output instance 100	○		×
04	150	—	Input instance 150	○		×
28	1	6	Rated current (Pr.9)	0.01 A/0.1 A increments (*1)		0.1 A increments
28	1	7	Rated voltage	Read from / write to Pr.83		Read from / write to Pr.19
				0.1 V increments		1 V increments
28	1	9	Rated frequency (Pr.84)	○		×
28	1	15	Base speed (Pr.3)	○		×
2A	1	7	Actual speed	When Pr.37 = "0", the number of motor poles is always 4, and a frequency is converted to a speed. When Pr.37 ≠ "0", the speed is as set in Pr.37.		Regardless of the Pr.37 setting, the number of motor poles is always 4, and a frequency is converted to a speed.
2A	1	8	Speed setting value			
2A	1	20	Minimum frequency			
2A	1	21	Maximum frequency			
Speed setting / monitor of the polling I/O						
2A	1	9	Actual current	0.01 A/0.1 A increments (*1)		0.1 A increments
2A	1	17	Output voltage	0.1 V increments		1 V increments
2A	1	18	Acceleration time	Time set in Pr.7/Pr.8 used to change the frequency between 0 Hz and the frequency set in Pr.20 Acceleration/deceleration reference frequency, 0.1 s/0.01 s increments (Pr.21)		Time used to change the frequency between 0 Hz and the frequency set in Pr.1 Maximum frequency, 1 ms increments
2A	1	19	Deceleration time			
2A	1	114	Run command (Set)	RT, AU, and RES are not available.		RT, AU, and RES are available.

(○: Available, ×: Not available)

*1 Differs according to the inverter capacity. (55K or lower / 75K or higher)
*2 Change the configuration of network devices. ([] means the ASCII code for space (0x20).)

4. Parameter

Some parameter numbers and the setting values differ. Please refer to the remarks in the following table to set the parameters.

Setting
◎: Set the FR-A5ND parameter as it is.
△: Change the FR-A5ND parameter and set.
×: Adjust or set the FR-A7ND parameters.

FR-A5ND parameter list				FR-A7ND compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
345	DeviceNet address Startup data (low byte)	0 to 255	63	345	DeviceNet address	0 to 4095	63	△	High and low byte data is set by batch in FR-A7ND. Set "0" for the address key (AKey) when setting the data using the DeviceNet address (Pr.345). In this case, use the master device or DeviceNet Connection Object (0x05 Instance 2 Attribute 12) to change Watchdog timeout action (WDA) setting.
346	DeviceNet baudrate Startup data (low byte)	0 to 255	132	346	DeviceNet baudrate	0 to 4095	132	△	High and low byte data is set by batch in FR-A7ND. Set "0" for the baud rate key when setting the data using the DeviceNet baud rate (Pr.346).
347	DeviceNet address Startup data (high byte)	0 to 255	160	—					
348	DeviceNet baudrate Startup data (high byte)	0 to 255	80	—					

FR-E5ND parameter list				FR-A7ND compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
345	DeviceNet address Startup data (low byte)	0 to 255	63	345	DeviceNet address	0 to 4095	63	△	High and low byte data is set by batch in FR-A7ND. Set "0" for the address key (AKey) when setting the data using the DeviceNet address (Pr.345). In this case, use the master device or DeviceNet Connection Object (0x05 Instance 2 Attribute 12) to change Watchdog timeout action (WDA) setting.
346	DeviceNet baudrate Startup data (low byte)	0 to 255	132	346	DeviceNet baudrate	0 to 4095	132	△	High and low byte data is set by batch in FR-A7ND. Set "0" for the baud rate key when setting the data using the DeviceNet baud rate (Pr.346).
347	DeviceNet address Startup data (high byte)	0 to 255	160	—					
348	DeviceNet baudrate Startup data (high byte)	0 to 255	80	—					