

Information for Replacement of FR-E500 Series with FR-E700 Series

Size, connection, parameter, and options concerning replacement are stated on the next page.

1. Size

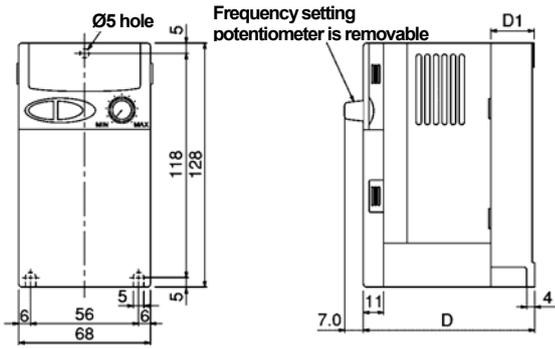
Note that installation size of the FR-E500 series and of the FR-E700 series are the same.

For details of size, refer to the outline dimensions on the next page and later.

Power Supply Voltage	Installed Inverter	Replacing Inverter	Installation Size
Three phase 200 V	FR-E520-0.1K	FR-E720-0.1K	Same size
	FR-E520-0.2K	FR-E720-0.2K	Same size
	FR-E520-0.4K	FR-E720-0.4K	Same size
	FR-E520-0.75K	FR-E720-0.75K	Same size
	FR-E520-1.5K	FR-E720-1.5K	Same size
	FR-E520-2.2K	FR-E720-2.2K	Same size
	FR-E520-3.7K	FR-E720-3.7K	Same size
	FR-E520-5.5K	FR-E720-5.5K	Same size
	FR-E520-7.5K	FR-E720-7.5K	Same size
Three phase 200 V (CC-Link type)	FR-E520-0.1KN	FR-E720-0.1K + FR-A7NC E kit	Same size
	FR-E520-0.2KN	FR-E720-0.2K + FR-A7NC E kit	Same size
	FR-E520-0.4KN	FR-E720-0.4K + FR-A7NC E kit	Same size
	FR-E520-0.75KN	FR-E720-0.75K + FR-A7NC E kit	Same size
	FR-E520-1.5KN	FR-E720-1.5K + FR-A7NC E kit	Same size
	FR-E520-2.2KN	FR-E720-2.2K + FR-A7NC E kit	Same size
	FR-E520-3.7KN	FR-E720-3.7K + FR-A7NC E kit	Same size
	FR-E520-5.5KN	FR-E720-5.5K + FR-A7NC E kit	Same size
	FR-E520-7.5KN	FR-E720-7.5K + FR-A7NC E kit	Same size
Three phase 200 V (DeviceNet type)	FR-E520-0.1KND	FR-E720-0.1K + FR-A7ND E kit	Same size
	FR-E520-0.2KND	FR-E720-0.2K + FR-A7ND E kit	Same size
	FR-E520-0.4KND	FR-E720-0.4K + FR-A7NDE kit	Same size
	FR-E520-0.75KND	FR-E720-0.75K + FR-A7ND E kit	Same size
	FR-E520-1.5KND	FR-E720-1.5K + FR-A7ND E kit	Same size
	FR-E520-2.2KND	FR-E720-2.2K + FR-A7NDE kit	Same size
	FR-E520-3.7KND	FR-E720-3.7K + FR-A7ND E kit	Same size
	FR-E520-5.5KND	FR-E720-5.5K + FR-A7NDE kit	Same size
	FR-E520-7.5KND	FR-E720-7.5K + FR-A7ND E kit	Same size
Three phase 400 V	FR-E540-0.4K	FR-E740-0.4K	Same size
	FR-E540-0.75K	FR-E740-0.75K	Same size
	FR-E540-1.5K	FR-E740-1.5K	Same size
	FR-E540-2.2K	FR-E740-2.2K	Same size
	FR-E540-3.7K	FR-E740-3.7K	Same size
	FR-E540-5.5K	FR-E740-5.5K	Same size
	FR-E540-7.5K	FR-E740-7.5K	Same size
Single phase 200 V	FR-E520S-0.1K	FR-E720S-0.1K	Same size
	FR-E520S-0.2K	FR-E720S-0.2K	Same size
	FR-E520S-0.4K	FR-E720S-0.4K	Same size
	FR-E520S-0.75K	FR-E720S-0.75K	Same size
Single phase 100 V	FR-E510W-0.1K	FR-E710W-0.1K	Same size
	FR-E510W-0.2K	FR-E710W-0.2K	Same size
	FR-E510W-0.4K	FR-E710W-0.4K	Same size
	FR-E510W-0.75K	FR-E710W-0.75K	Same size

Outline dimension drawing (Unit: mm)

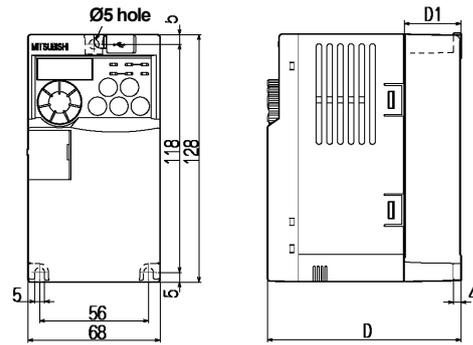
■FR-E520-0.1K to 0.75K



Inverter Type	D	D1
FR-E520-0.1K/0.2K	76	10
FR-E520-0.4K	108	42
FR-E520-0.75K	128	62

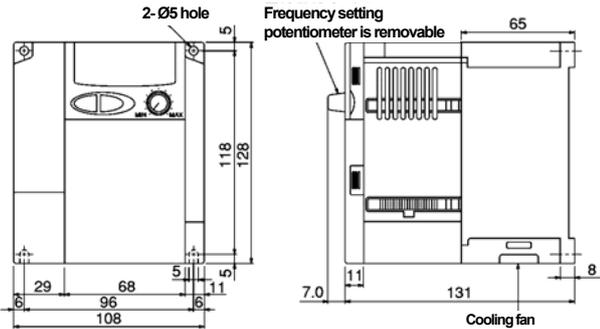
(Note) 0.75K type has a cooling fan.

■FR-E720-0.1K to 0.75K

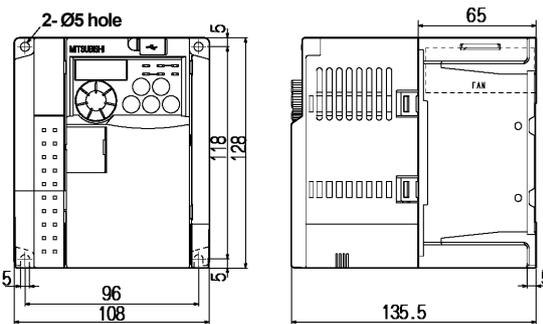


Inverter Type	D	D1
FR-E720-0.1K/0.2K	80.5	10
FR-E720-0.4K	112.5	42
FR-E720-0.75K	132.5	62

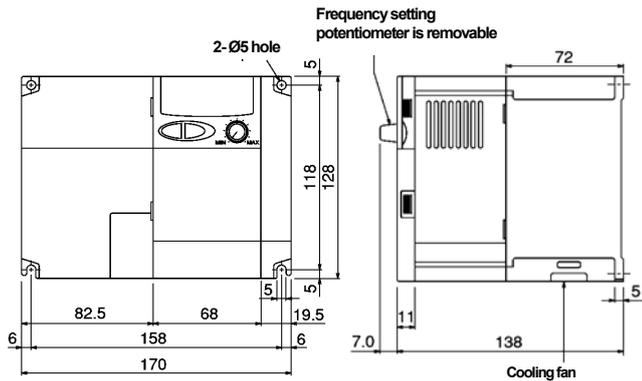
■FR-E520-1.5K, 2.2K



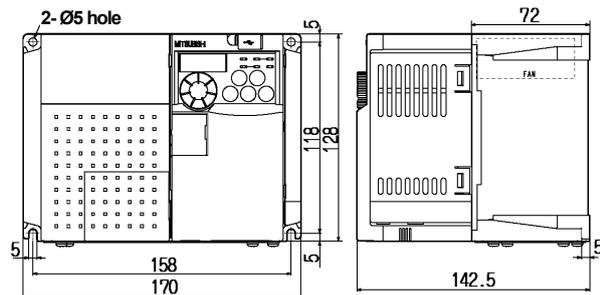
■FR-E720-1.5K, 2.2K



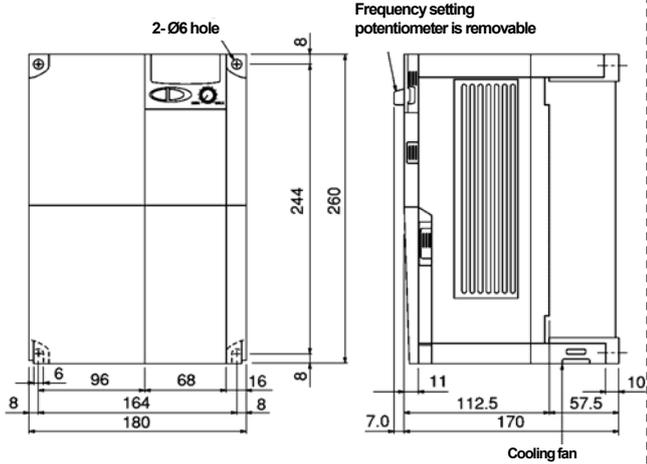
■FR-E520-3.7K



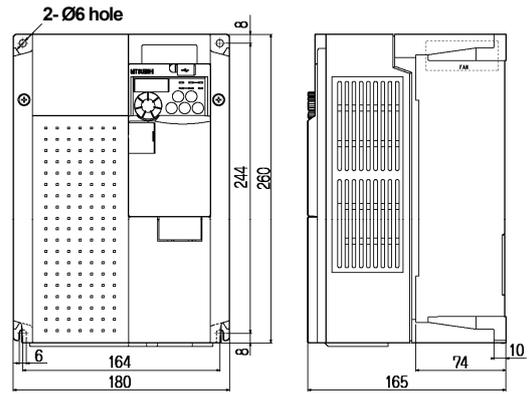
■FR-E720-3.7K



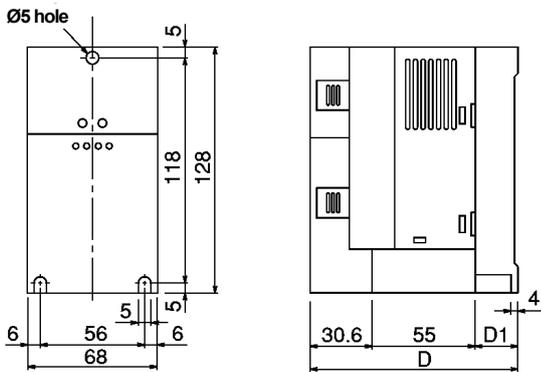
■FR-E520-5.5K, 7.5K



■FR-E720-5.5K, 7.5K



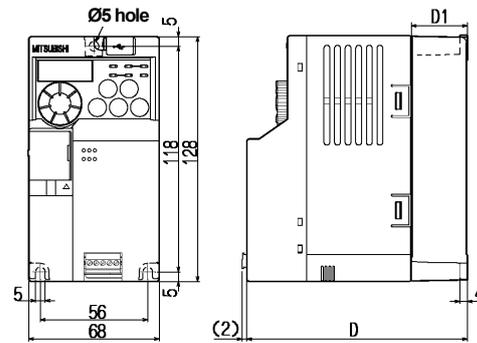
■FR-E520-0.1KN to 0.75KN (CC-Link type)
 ■FR-E520-0.1KND to 0.75KND (DeviceNet type)



Inverter Type	D	D1
FR-E520-0.1K/0.2K	95.6	10
FR-E520-0.4K	127.6	42
FR-E520-0.75K	147.6	62

(Note) 0.75K type has a cooling fan.

■FR-E720-0.1K to 0.75K + FR-A7NC E kit
 ■FR-E720-0.1K to 0.75K + FR-A7ND E kit

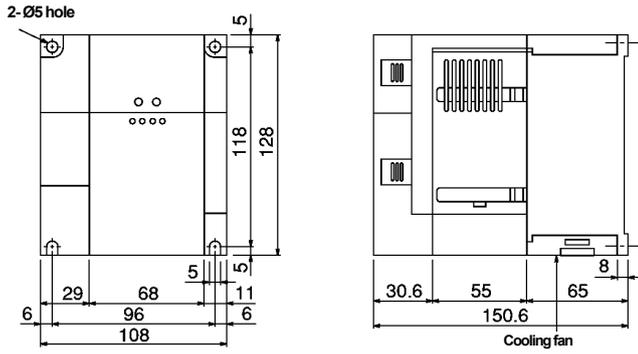


Inverter Type	D	D1
FR-E720-0.1K/0.2K	95.6	10
FR-E720-0.4K	127.6	42
FR-E720-0.75K	147.6	62

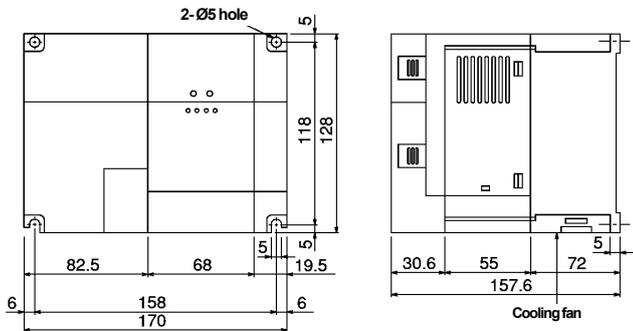
(Note) Installation size for FR-A7NC/A7ND E kit.

When the FR-A7NC E kit is mounted, terminal block protrudes making the depth approximately 2 mm longer.

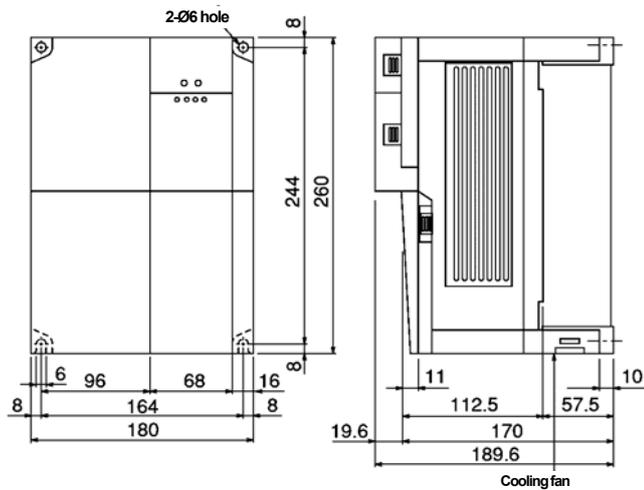
- FR-E520-1.5KN, 2.2KN (CC-Link type)
- FR-E520-1.5KND, 2.2KND (DeviceNet type)



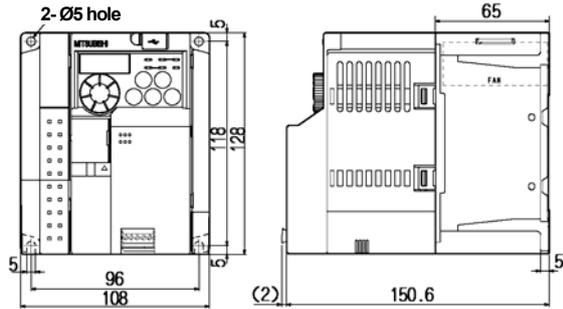
- FR-E520-3.7KN (CC-Link type)
- FR-E520-3.7KND (DeviceNet type)



- FR-E520-5.5KN, 7.5KN (CC-Link type)
- FR-E520-5.5KND, 7.5KND (DeviceNet type)



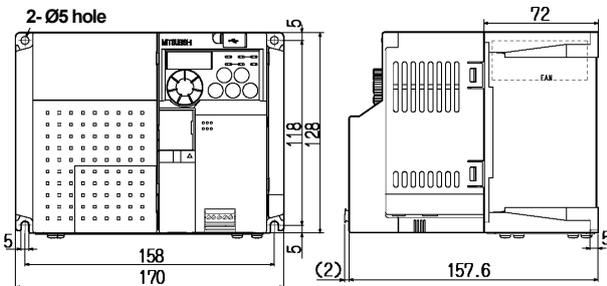
- FR-E720-1.5K, 2.2K + FR-A7NC E kit
- FR-E720-1.5K, 2.2K + FR-A7ND E kit



(Note) Installation size for FR-A7NC/A7ND E kit.

When the FR-A7NC E is mounted, terminal block protrudes making the depth approximately 2 mm longer.

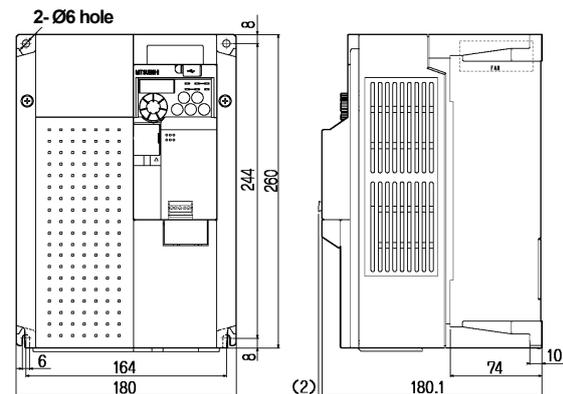
- FR-E720-3.7K + FR-A7NC E kit
- FR-E720-3.7K + FR-A7ND E kit



(Note) Installation size for FR-A7NC/A7ND E kit.

When the FR-A7NC E is mounted, terminal block protrudes making the depth approximately 2 mm longer.

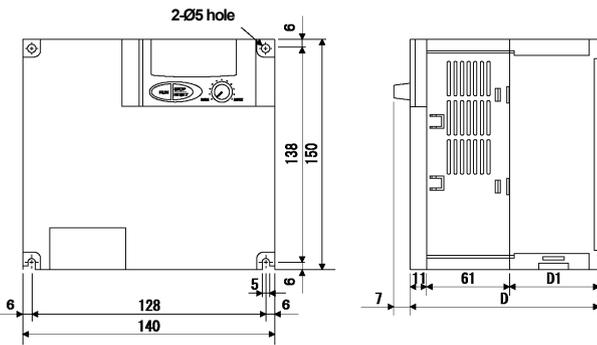
- FR-E720-5.5K, 7.5K + FR-A7NC E kit
- FR-E720-5.5K, 7.5K + FR-A7ND E kit



(Note) Installation size for FR-A7NC/A7ND E kit.

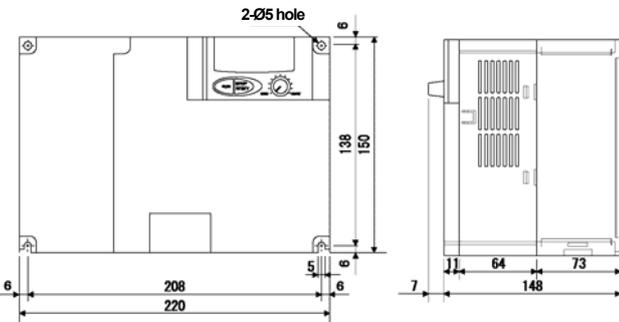
When the FR-A7NC E kit is mounted, terminal block protrudes making the depth approximately 2 mm longer.

■FR-E540-0.4K to 3.7K

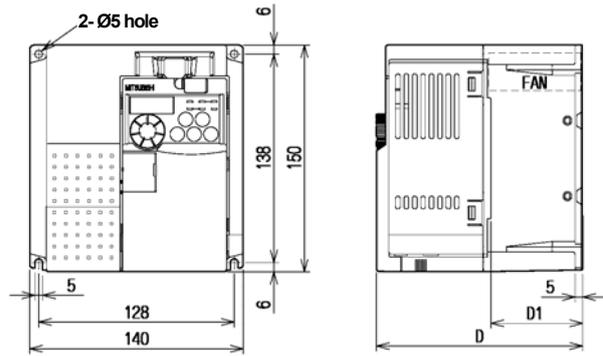


Inverter Type	D	D1
FR-E540-0.4K/0.75K	116	44
FR-E540-1.5K/2.2K/3.7K	136	64

■FR-E540-5.5K to 7.5K

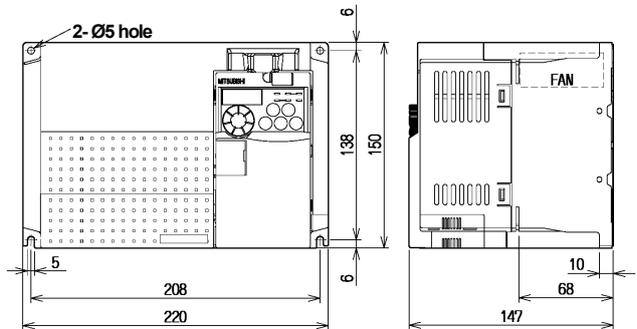


■FR-E740-0.4K to 3.7K

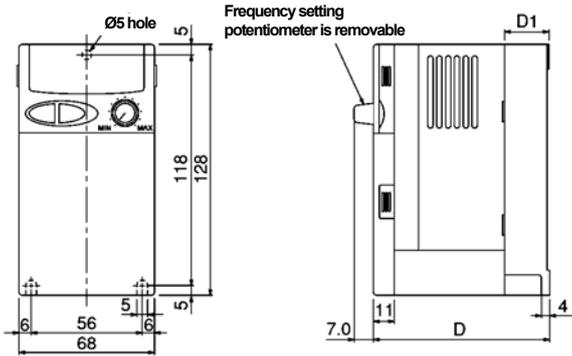


Inverter Type	D	D1
FR-E740-0.4K/0.75K	114	39
FR-E740-1.5K/2.2K/3.7K	135	60

■FR-E740-5.5K to 7.5K

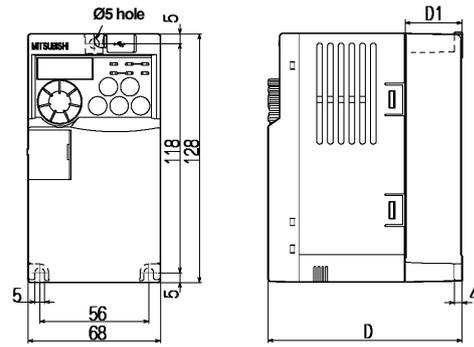


■FR-E520S-0.1K to 0.4K



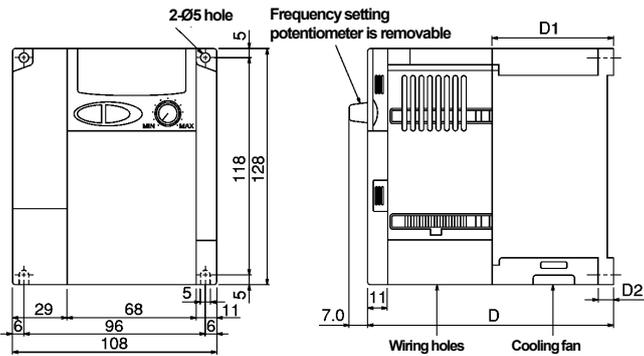
Inverter Type	D	D1
FR-E520S-0.1K/0.2K	76	10
FR-E520S-0.4K	138	42

■FR-E720S-0.1K to 0.4K



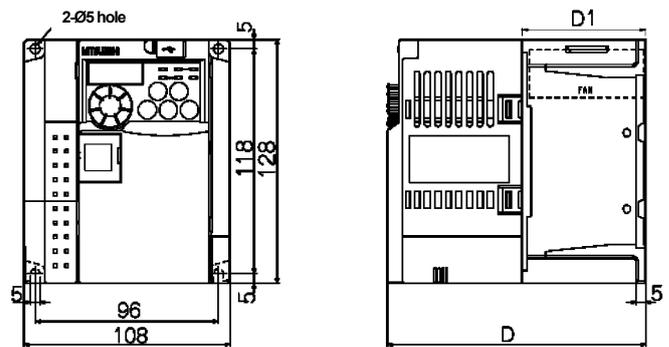
Inverter Type	D	D1
FR-E720S-0.1K/0.2K	80.5	10
FR-E720S-0.4K	142.5	42

■FR-E520S-0.75K



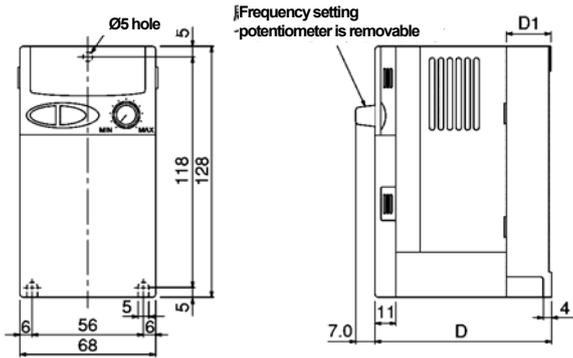
Inverter Type	D	D1	D2
FR-E520S-0.75K	131	65	8

■FR-E720S-0.75K



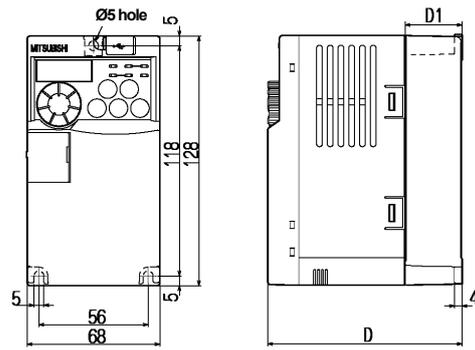
Inverter Type	D	D1
FR-E720S-0.75K	135.5	60

■FR-E510W-0.1K to 0.4K



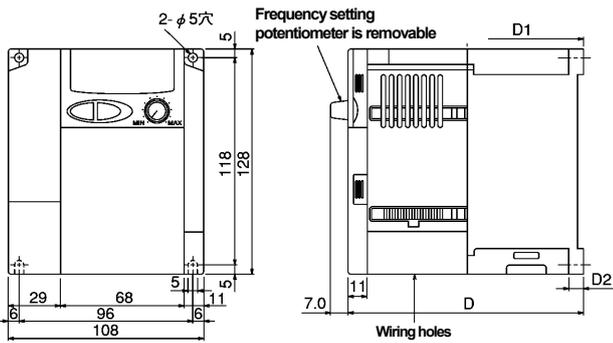
Inverter Type	D	D1
FR-E510W-0.1K	76	10
FR-E510W-0.2K	106	10
FR-E510W-0.4K	138	42

■FR-E710W-0.1K to 0.4K



Inverter Type	D	D1
FR-E710W-0.1K	80.5	10
FR-E710W-0.2K	110.5	10
FR-E710W-0.4K	142.5	42

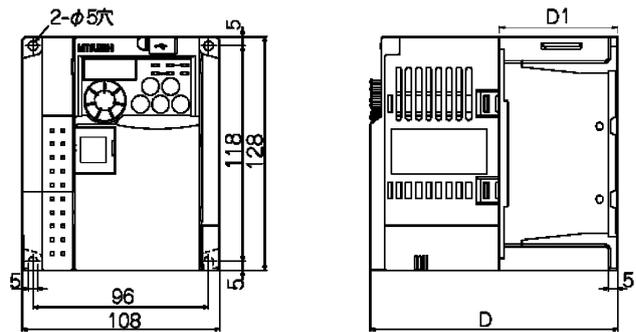
■FR-E510W-0.75K



Inverter Type	D	D1	D2
FR-E510W-0.75K	155	59	5

(Note) FR-E510W-0.75K type does not have a cooling fan.

■FR-E710W-0.75K



Inverter Type	D	D1
FR-E710W-0.75K	155	54

(Note) FR-E710W-0.75K type does not have a cooling fan.

2. Connection

Since terminal names are the same, connect according to the names.

Refer to page 11, 12 for terminal size.

[Standard Type Inverter]

Type		FR-E500 Terminal Name	FR-E700 Compatible Terminal Name	Remarks
Main circuit		R, S, T	R/L1, S/L2, T/L3	Single phase power input models do not have terminal T, T/L 3.
		U, V, W	U, V, W	
		P, PR	P/+, PR	
		P, N	P/+, N/-	
		P, P1	P/+, P1	Single phase power input models do not have terminal P1.
				
Control circuit / input signal	Contact	STF	STF	
		STR	STR	
		RH	RH	
		RM	RM	
		RL	RL	
		MRS	MRS	
		RES	RES	
		SD	SD	Not isolated from terminal 5 in FR-E500 (isolated in 400 V class). Isolated from terminal SE.
		PC	PC	Isolated from both of terminals 5 and SE in FR-E700.
Analog	Frequency setting	10	10	
		2	2	
		5	5	Not isolated from terminal SD in FR-E500 (isolated in 400 V class). Isolated from terminal SE.
		4	4	Isolated from both of terminals SD and SE in FR-E700.
Control circuit output signal	Contact	A,B,C	A,B,C	
	Open collector	RUN	RUN	
		FU	FU	
	Pulse	SE	SE	Isolated from terminals 5 and SD in FR-E500 and FR-E700 series.
Communication	RS-485	PU connector	PU connector	

[FR-E520-□□KN (CC-Link type) Inverter]

Type		FR-E520-□□KN Terminal Name	FR-E720 + FR-A7NC E kit Compatible Terminal Name	Remarks
Main circuit		R, S, T	R/L1, S/L2, T/L3	
		U, V, W	U, V, W	
		P, PR	P/+, PR	
		P, N	P/+, N/-	
		P, P1	P/+, P1	
		⊕	⊕	
Control circuit / input signal	Contact	MRS	MRS	
		RES	RES	
		SD	SD	
		P24	PC	
Control circuit / output signal	Contact	A, B, C	A, B, C	
Communication	RS-485	PU connector	PU connector	
CC-Link communication		DA	DA	Available with FR-A7NC E kit in FR-E700. FR-E500 has two SLD terminals, but FR-E700 (FR-A7NC) has only one.
		DB	DB	
		DG	DG	
		SLD	SLD	
		FG	FG	

[FR-E520-□□KND (DeviceNet type) inverter]

Type		FR-E520-□□KND Terminal Name	FR-E720 + FR-A7ND E kit Compatible Terminal Name	Remarks
Main circuit		R, S, T	R/L1, S/L2, T/L3	
		U, V, W	U, V, W	
		P, PR	P/+, PR	
		P, N	P/+, N/-	
		P, P1	P/+, P1	
		⊕	⊕	
Control circuit / input signal	Contact	MRS	MRS	
		RES	RES	
		SD	SD	
		P24	PC	
Control circuit / output signal	Contact	A, B, C	A, B, C	
Communication	RS-485	PU connector	PU connector	
DeviceNet communication		V+	V+	Available with FR-A7NC E kit in FR-E700.
		CAN+	CAN+	
		SHLD	SHLD	
		CAN-	CAN-	
		V-	V-	

Terminal Size

[Main circuit terminal]

Voltage Class	Capacity	FR-E500				FR-E700			
		R, S, T*1	U, V, W	P, N, P1*2, PR	⊕	R, S, T*1	U, V, W	P, N, P1*2, PR	⊕
Three phase 200 V	0.1K to 0.75K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	1.5K to 3.7K	M4	M4	M4	M4	M4	M4	M4	M4
	5.5K, 7.5K	M5	M5	M5	M5	M5	M5	M5	M5
Three phase 400 V	0.4K to 3.7K	M4	M4	M4	M4	M4	M4	M4	M4
	5.5K, 7.5K	M4	M4	M4	M4	M4	M4	M4	M4
Single phase 200 V	0.1K to 0.4K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	0.75K	M4	M4	M4	M4	M4	M4	M4	M4
Single phase 100 V	0.1K to 0.4K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	0.75K	M4	M4	M4	M4	M4	M4	M4	M4

*1 Single phase power input models do not have terminal T.

*2 Single phase 100 V power input models do not have terminal P1.

[Control circuit terminal]

FR-E500		FR-E700			
Control circuit	CC-Link, DeviceNET communication terminal block	Control circuit		FR-A7NC E kit plug-in option	FR-A7ND E kit plug-in option
		Other than A,B,C	A,B,C		
M2.5 Insertion type ⊕ screw terminal	M2.5 Insertion type ⊖ screw terminal	M2 Insertion type ⊖ screw terminal	M3 Insertion type ⊖ screw terminal	M2 Insertion type ⊖ screw terminal	M3 Insertion type ⊖ screw terminal

(Note 1) TME BT 1.25-10-1 terminal by Nichifu may have been used in FR-E500 but cannot be used for FR-E700 as the control circuit terminal size of FR-E700 is smaller. (Other large bar terminals may not fit FR-E700.)

In such case, cut the bar terminal and strip off the wire to make it bare wire, or use bar terminals listed below. Applied wire size should be noted also.

Table. FR-E700 control terminal block applied wire size (bare wires)

Terminal Symbol	Cable Stripping Size	Applied Bare Wire Size	
		Stranded wire (mm ²)	Single wire (mm ²)
Other than A, B, C (M2)	 Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it.	0.25 to 1	0.25 to 1.5
A,B,C (M3)	 Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it.	0.25 to 1.5	0.25 to 1.5

Table. FR-E700 control terminal block applied wire size (bar terminal)

Terminal Symbol	Bar Terminal Type (Phoenix Contact Co., Ltd.)		Applied Bare Wire Size
	With insulation sleeve	With insulation sleeve	
Other than A, B, C (M2)	AI 0.5-6WH	A 0.5-6	0.3 to 0.5
A, B, C (M3)	AI 0.5-6WH	A 0.5-6	0.3 to 0.5
	AI 0.75-6GY	A 0.75-6	0.5 to 0.75

(Note 2) When using a plug-in option with FR-E700, perform wiring in the order of (1) main circuit wiring → (2) control circuit wiring → (3) plug-in option wiring.

(Note 3) When using FR-A7AC E kit, terminating resistor embedded in FR-A7NC (selected by DIP switch) is also available.

3. Parameter

Although most parameter numbers are the same, some setting values differ. Please refer to the following table to set the parameters.

List of FR-E500 series parameters compatible with the FR-E700 series

The following shows parameter settings when replacing the FR-E500series by the FR-E700series.

When the FR-E500 series settings are set to other than factory settings, set parameters of the FR-E700 series according to the following table.

When the FR-E500 series settings are factory settings, it is unnecessary to change parameters of the FR-E700 series.

The number of the parameters differ from that of the FR-E500 series.

Setting ⊙: Set the FR-E500 parameter as it is

Δ: Change the FR-E500 parameter and set

×: Adjust on the FR-E700 and set

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
0	Torque boost	0 to 30%	Other than the below:6% E540-5.5K, 7.5K :4%	0	Torque boost	0 to 30%	0.75K or less:6% 1.5K to 3.7K :4% 5.5K, 7.5K:3% 11K, 15K:2%	Δ	Divide the FR-E500 setting value by its initial value, and multiply the FR-E700 initial value by the result.*1
1	Maximum frequency	0 to 120 Hz	120 Hz	1	Maximum frequency	0 to 120 Hz	120 Hz	⊙	
2	Minimum frequency	0 to 120 Hz	0 Hz	2	Minimum frequency	0 to 120 Hz	0 Hz	⊙	
3	Base frequency	0 to 400 Hz	60 Hz	3	Base frequency	0 to 400 Hz	60 Hz	⊙	
4	Multi-speed setting (high speed)	0 to 400 Hz	60 Hz	4	Multi-speed setting (high speed)	0 to 400 Hz	60 Hz	⊙	
5	Multi-speed setting (middle speed)	0 to 400 Hz	30 Hz	5	Multi-speed setting (middle speed)	0 to 400 Hz	30 Hz	⊙	
6	Multi-speed setting (low speed)	0 to 400 Hz	10 Hz	6	Multi-speed setting (low speed)	0 to 400 Hz	10 Hz	⊙	
7	Acceleration time	0 to 3600 s/ 0 to 360 s	3.7K or less:5 s 5.5K, 7.5K :10 s	7	Acceleration time	0 to 3600 s/ 0 to 360 s	3.7K or less :5 s 5.5K, 7.5K : 10 s 11K, 15K :15 s	⊙	Note that changing Pr.21 after setting this parameter value will change the setting value.
8	Deceleration time	0 to 3600s/ 0 to 360s	3.7K or less:5 s 5.5K, 7.5K :10 s	8	Deceleration time	0 to 3600 s/ 0 to 360 s	3.7K or less : 5 s 5.5K, 7.5K : 10 s 11K, 15K :15 s	⊙	Note that changing Pr.21 after setting this parameter value will change the setting value.
9	Electronic thermal O/L relay	0 to 500 A	Rated output current	9	Electronic thermal O/L relay	0 to 500 A	Rated output current	⊙	Set the motor constants.
10	DC injection brake operation frequency	0 to 120 Hz	3 Hz	10	DC injection brake operation frequency	0 to 120 Hz	3 Hz	⊙	
11	DC injection brake operation time	0 to 10 s	0.5 s	11	DC injection brake operation time	0 to 10 s	0.5 s	⊙	
12	DC injection brake voltage	0 to 30%	6%	12	DC injection brake operation voltage	0 to 30%	0.1K, 0.2K :6% 0.4K to 7.5K :4% 11K, 15K :2%	Δ	Divide the FR-E500 setting value by its initial value, and multiply the FR-E700 initial value by the result.*1
13	Starting frequency	0 to 60 Hz	0.5 Hz	13	Starting frequency	0 to 60 Hz	0.5 Hz	⊙	
14	Load pattern selection	0 to 3	0	14	Load pattern selection	0 to 3	0	⊙	
15	Jog frequency	0 to 400 Hz	5 Hz	15	Jog frequency	0 to 400 Hz	5 Hz	⊙	
16	Jog acceleration/deceleration time	0 to 3600 s/ 0 to 360 s	0.5 s	16	Jog acceleration/deceleration time	0 to 3600 s/ 0 to 360 s	0.5 s	⊙	Note that changing Pr.21 after setting this parameter value will change the setting value.
18	High-speed maximum frequency	120 to 400 Hz	120 Hz	18	High-speed maximum frequency	120 to 400 Hz	120 Hz	⊙	
19	Base frequency voltage	0 to 1000 V, 8888, 9999	9999	19	Base frequency voltage	0 to 1000 V, 8888, 9999	9999	⊙	
20	Acceleration/deceleration reference frequency	1 to 400 Hz	60 Hz	20	Acceleration/deceleration reference frequency	1 to 400 Hz	60 Hz	⊙	
21	Acceleration/deceleration time increments	0, 1	0	21	Acceleration/deceleration time increments	0, 1	0	⊙	
22	Stall prevention operation level	0 to 200%	150%	22	Stall prevention operation level	0 to 200%	150%	⊙	

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
23	Stall prevention operation level compensation factor at double speed	0 to 200%, 9999	9999	23	Stall prevention operation level compensation factor at double speed	0 to 200%, 9999	9999	⊙	
24	Multi-speed setting (speed 4)	0 to 400 Hz, 9999	9999	24	Multi-speed setting (speed 4)	0 to 400 Hz, 9999	9999	⊙	
25	Multi-speed setting (speed 5)	0 to 400 Hz, 9999	9999	25	Multi-speed setting (speed 5)	0 to 400 Hz, 9999	9999	⊙	
26	Multi-speed setting (speed 6)	0 to 400 Hz, 9999	9999	26	Multi-speed setting (speed 6)	0 to 400 Hz, 9999	9999	⊙	
27	Multi-speed setting (speed 7)	0 to 400 Hz, 9999	9999	27	Multi-speed setting (speed 7)	0 to 400 Hz, 9999	9999	⊙	
29	Acceleration/deceleration pattern	0, 1, 2	0	29	Acceleration/deceleration pattern selection	0, 1, 2	0	⊙	
30	Regenerative function selection	0, 1	0	30	Regenerative function selection	0, 1, 2	0	⊙	
31	Frequency jump 1A	0 to 400 Hz, 9999	9999	31	Frequency jump 1A	0 to 400 Hz, 9999	9999	⊙	
32	Frequency jump 1B	0 to 400 Hz, 9999	9999	32	Frequency jump 1B	0 to 400 Hz, 9999	9999	⊙	
33	Frequency jump 2A	0 to 400 Hz, 9999	9999	33	Frequency jump 2A	0 to 400 Hz, 9999	9999	⊙	
34	Frequency jump 2B	0 to 400 Hz, 9999	9999	34	Frequency jump 2B	0 to 400 Hz, 9999	9999	⊙	
35	Frequency jump 3A	0 to 400 Hz, 9999	9999	35	Frequency jump 3A	0 to 400 Hz, 9999	9999	⊙	
36	Frequency jump 3B	0 to 400 Hz, 9999	9999	36	Frequency jump 3B	0 to 400 Hz, 9999	9999	⊙	
37	Speed display	0, 0.01 to 9998	0	37	Speed display	0, 0.01 to 9998	0	⊙	
38	Frequency at 5V(10V) input	1 to 400 Hz	60 Hz	125	Terminal 2 frequency setting gain frequency	0 to 400 Hz	60 Hz	Δ	Frequency at 5 V (10 V) input for the FR-E500 and frequency to the voltage set with C4 for the FR-E700 are output. If output frequencies do not match, calibrate again.
39	Frequency at 20mA input	1 to 400 Hz	60 Hz	126	Terminal 4 frequency setting gain frequency	0 to 400 Hz	60 Hz	Δ	Frequency at 20 mA input for the FR-E500 and frequency to the current set with C7 for the FR-E700 are output. If output frequencies do not match, calibrate again.
41	Up-to-frequency sensitivity	0 to 100%	10%	41	Up-to-frequency sensitivity	0 to 100%	10%	⊙	
42	Output frequency detection	0 to 400 Hz	6 Hz	42	Output frequency detection	0 to 400 Hz	6 Hz	⊙	
43	Output frequency detection for reverse rotation	0 to 400 Hz, 9999	9999	43	Output frequency detection for reverse rotation	0 to 400 Hz, 9999	9999	⊙	
44	Second acceleration/deceleration time	0 to 3600 s/ 0 to 360 s	Other than the below : 5 s E540-5.5K, 7.5K : 10 s	44	Second acceleration/deceleration time	0 to 3600 s/ 0 to 360 s	3.7K or below:5 s 5.5K, 7.5K:10 s 11K, 15K:15 s	⊙	Note that changing Pr.21 after setting this parameter value will change the setting value.
45	Second deceleration time	0 to 3600 s/ 0 to 360 s, 9999	9999	45	Second deceleration time	0 to 3600 s/ 0 to 360 s, 9999	9999	⊙	Note that changing Pr.21 after setting this parameter value will change the setting value.
46	Second torque boost	0 to 30%, 9999	9999	46	Second torque boost	0 to 30%, 9999	9999	Δ	Set the value same as the FR-E500 setting (when "1" is set in Pr.72 PWM frequency selection of the FR-E500.)
47	Second V/F (base frequency)	0 to 400 Hz, 9999	9999	47	Second V/F (base frequency)	0 to 400 Hz, 9999	9999	⊙	
48	Second electronic thermal O/L relay	0 to 500 A, 9999	9999	51	Second electric thermal O/L relay	0 to 500 A, 9999	9999	⊙	
52	Operation panel/PU main display data selection	0, 23, 100	0	52	DU/PU main display data selection	0, 5, 7 to 12, 14, 20, 23 to 25, 52 to 57, 61, 62, 100	0	⊙	Monitor display increments of actual operating time differ when Pr.52 = "23".
54	FM terminal function selection	0, 1, 2	0	54	FM terminal function selection	1 to 3, 5, 7 to 12, 14, 21, 24, 52, 53, 61, 62	1	Δ	Setting values of the FR-E500 and corresponding values of the FR-E700 are as follows; 0→1, 1→2, 2→3.
55	Frequency monitoring reference	0 to 400 Hz	60 Hz	55	Frequency monitoring reference	0 to 400 Hz	60 Hz	⊙	
56	Current monitoring reference	0 to 500 A	Rated output current	56	Current monitoring reference	0 to 500 A	Rated output current	⊙	

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
57	Restart coasting time	0, 0.1 to 5 s, 9999	9999	57	Restart coasting time	0, 0.1 to 5 s, 9999	9999	△	When Pr.57 = "0", the coasting time of the FR-E500 differs from that of the FR-E700. Generally, different coasting times do not pose a problem, but set 0.5 s for the 1.5K or more and 1.0 s for the 2.2K or more if you desire to match the time with that of the FR-E500.
58	Restart cushion time	0 to 60 s	1.0 s	58	Restart cushion time	0 to 60 s	1.0 s	◎	
59	Remote setting function selection	0, 1, 2	0	59	Remote function selection	0, 1, 2, 3	0	◎	
60	Shortest acceleration/deceleration mode	0, 1, 2, 11, 12	0	292	Automatic acceleration/deceleration	0, 1, 7, 8, 11	0	△	When the settings are "0, 1, 11" in the FR-E500, use the same setting. When the setting is "2 or 12", set Pr.292 = "1 or 11" respectively, and set Pr.62 = "180%", Pr.63 = "180".
61	Reference current	0 to 500 A, 9999	9999	61	Reference current	0 to 500 A, 9999	9999	◎	
62	Reference current for acceleration	0 to 200%, 9999	9999	62	Reference value at acceleration	0 to 200%, 9999	9999	◎	
63	Reference current for deceleration	0 to 200%, 9999	9999	63	Reference value at deceleration	0 to 200%, 9999	9999	◎	
65	Retry selection	0, 1, 2, 3	0	65	Retry selection	0 to 5	0	◎	
66	Stall prevention operation level reduction starting frequency	0 to 400 Hz	60 Hz	66	Stall prevention operation level reduction starting frequency	0 to 400 Hz	60 Hz	◎	
67	Number of retries at alarm occurrence	0 to 10, 101 to 110	0	67	Number of retries at fault occurrence	0 to 10, 101 to 110	0	◎	
68	Retry waiting time	0.1 to 360 s	1s	68	Retry waiting time	0.1 to 360 s	1 s	◎	
69	Retry count display erasure	0	0	69	Retry count display erasure	0	0	◎	
70	Special regenerative brake duty	0 to 30%	0%	70	Special regenerative brake duty	0 to 30%	0%	◎	
71	Applied motor	0, 1, 3, 5, 6, 13, 15, 16, 23, 100, 101, 103, 105, 106, 113, 115, 116, 123	0	71	Applied motor	0, 1, 3 to 6, 13 to 16, 23, 24, 40, 43, 44, 50, 53, 54	0	△	If the setting in FR-E500 were in the 100's, set the value subtracted 100 in FR-E700, and set Pr.450 = "1".
				450	Second applied motor	0, 1, 9999	9999	×	
72	PWM frequency selection	0 to 15	1	72	PWM frequency selection	0 to 15	1	◎	
73	0-5V/0-10V selection	0, 1	0	73	Analog input selection	0, 1, 10, 11	1	△	Setting values of the FR-E500 and corresponding values of the FR-E700 are as follows; 0→1, 1→0
74	Filter time constant	0 to 8	1	74	Input filter time constant	0 to 8	1	◎	
75	Reset selection/disconnected PU detection/PU stop selection	0 to 3, 14 to 17	14	75	Reset selection/Disconnected PU detection/PU stop selection	0 to 3, 14 to 17	14	◎	
77	Parameter write disable selection	0, 1, 2	0	77	Parameter write disable selection	0, 1, 2	0	◎	
78	Reverse rotation prevention selection	0, 1, 2	0	78	Reverse rotation prevention selection	0, 1, 2	0	◎	
79	Operation mode selection	0 to 4, 6 to 8	1	79	Operation mode selection	0 to 4, 6, 7	0	△	When the setting is "8" in FR-E500, set Pr.182 = "16" in FR-E700.
80	Motor capacity	0.1 to 7.5kW, 9999	9999	80	Motor capacity	0.1 to 15kW, 9999	9999	△	Set the same settings for Pr.80. When a value other than "9999" is set in Pr.80 of the FR-E500, set the number of motor poles in Pr.81 and set 30 (General-purpose magnetic flux vector control) in Pr.800 of the FR-E700.
				81	Number of motor poles	2, 4, 6, 8, 10, 9999	9999	×	
				800	Control method selection	20, 30	20	×	
82	Motor excitation current	0 to 500 A, 9999	9999	82	Motor excitation current	0 to 500 A, 9999	9999	△	
83	Rated motor voltage	0 to 1000 V	Other than the below: 200 V 400 V class: 400 V	83	Rated motor voltage	0 to 1000 V	Other than the below: 200 V 400 V class: 400 V	◎	
84	Rated motor frequency	50 to 120 Hz	60 Hz	84	Rated motor frequency	10 to 120 Hz	60 Hz	◎	
90	Motor constant (R1)	0 to 50 Ω, 9999	9999	90	Motor constant (R1)	0 to 50 Ω, 9999	9999	◎	
96	Auto-tuning setting/status	0, 1	0	96	Auto-tuning setting/status	0, 1, 11, 21	0	△	If auto tuning was in operation in the FR-E500, start tuning again by setting Pr.96 = "11" in the FR-E700.
117	Communication station number	0 to 31	0	117	PU communication station number	0 to 31	0	◎	
118	Communication speed	48, 96, 192	192	118	PU communication speed	48, 96, 192, 384	192	◎	
119	Stop bit length	0, 1, 10, 11	1	119	PU communication stop bit length	0, 1, 10, 11	1	◎	
120	Parity check presence/absence	0, 1, 2	2	120	PU communication parity check	0, 1, 2	2	◎	

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
121	Number of communication retries	0 to 10, 9999	1	121	Number of PU communication retries	0 to 10, 9999	1	⊙	
122	Communication check time interval	0, 0.1 to 999.8 s, 9999	0	122	PU communication check time interval	0, 0.1 to 999.8 s, 9999	0	⊙	
123	Waiting time setting	0 to 150, 9999	9999	123	PU communication waiting time setting	0 to 150, 9999	9999	⊙	
124	CR/LF presence/absence selection	0, 1, 2	1	124	PU communication CR/LF setting	0, 1, 2	1	⊙	
128	PID action selection	0, 20, 21	0	128	PID action selection	0, 20, 21, 40 to 43, 50, 51, 60, 61	0	⊙	
129	PID proportional band	0.1 to 1000%, 9999	100%	129	PID proportional band	0.1 to 1000%, 9999	100%	⊙	
130	PID integral time	0.1 to 3600s, 9999	1 s	130	PID integral time	0.1 to 3600 s, 9999	1 s	⊙	
131	Upper limit	0 to 100%, 9999	9999	131	PID Upper limit	0 to 100%, 9999	9999	⊙	
132	Lower limit	0 to 100%, 9999	9999	132	PID Lower limit	0 to 100%, 9999	9999	⊙	
133	PID action set point for PU operation	0 to 100%	0%	133	PID action set point for PU operation	0 to 100%, 9999	9999	Δ	Set "9999" to use the set point in terminal 2. Note that if other than "9999" is set in the FR-E700, the set point becomes effective in other operations also.
134	PID differential time	0.01 to 10.00 s, 9999	9999	134	PID differential time	0.01 to 10.00 s, 9999	9999	⊙	
145	PU display language selection	0 to 7	0	145	PU display language selection	0 to 7	0	⊙	
146	Frequency setting command selection	0, 1, 9999	0	146	Built-in potentiometer switching	0, 1	1	Δ	The initial value differs according to the frequency setting command setting in the FR-E500 (setting using the built-in frequency setting potentiometer or the up/down key of the operation panel (FR-PA02)). Also, 9999 setting is deleted in the FR-E700. Set "0" to enable built-in potentiometer for frequency setting, and set "1" to disable it.
150	Output current detection level	0 to 200%	150%	150	Output current detection level	0 to 200%	150%	⊙	
151	Output current detection period	0 to 10 s	0	151	Output current detection signal delay time	0 to 10 s	0	⊙	
152	Zero current detection level	0 to 200%	5.0%	152	Zero current detection level	0 to 200%	5.0%	⊙	
153	Zero current detection period	0.05 to 1 s	0.5 s	153	Zero current detection time	0 to 1 s	0.5 s	⊙	
156	Stall prevention operation selection	0 to 31, 100	0	156	Stall prevention operation selection	0 to 31, 100, 101	0	⊙	
160	User group read selection	0, 1, 10, 11	0	160	User group read selection	0, 1, 9999	0	Δ	User group 2 is deleted in the FR-E700.
171	Actual operation hour meter clear	0	0	171	Operation hour meter clear	0, 9999	9999	⊙	
173	User group 1 registration	0 to 999	0	173	User group registration	0 to 999, 9999	9999	⊙	
174	User group 1 deletion	0 to 999, 9999	0	174	User group clear	0 to 999, 9999	9999	⊙	
175	User group 2 registration	0 to 999	0	—				×	No function in the FR-E700.
176	User group 2 deletion	0 to 999, 9999	0	—				×	No function in the FR-E700.
180	RL terminal function selection	0 to 8, 16, 18	0	180	RL terminal function selection	0 to 5, 7, 8, 10, 12, 14 to 16,	0	Δ	Following setting values of the FR-E500 corresponds to the values in the FR-E700 as below. If setting values are other than those values, set the same setting values in the FR-E700. STOP signal: 5→25, MRS signal: 6→24
181	RM terminal function selection	0 to 8, 16, 18	1	181	RM terminal function selection	18, 24, 25, 62, 65 to 67, 9999	1	Δ	
182	RH terminal function selection	0 to 8, 16, 18	2	182	RH terminal function selection		2	Δ	
183	MRS terminal function selection	0 to 8, 16, 18	6	183	MRS terminal function selection		24	Δ	
190	RUN terminal function selection	0 to 99	0	190	RUN terminal function selection	0 to 199, 9999	0	⊙	
191	FU terminal function selection	0 to 99	4	191	FU terminal function selection	0 to 199, 9999	4	⊙	
192	A, B, C terminal function selection	0 to 99	99	192	A, B, C terminal function selection	0 to 199, 9999	99	⊙	

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
232	Multi-speed setting (speed 8)	0 to 400 Hz, 9999	9999	232	Multi-speed setting (speed 8)	0 to 400 Hz, 9999	9999	⊙	
233	Multi-speed setting (speed 9)	0 to 400 Hz, 9999	9999	233	Multi-speed setting (speed 9)	0 to 400 Hz, 9999	9999	⊙	
234	Multi-speed setting (speed 10)	0 to 400 Hz, 9999	9999	234	Multi-speed setting (speed 10)	0 to 400 Hz, 9999	9999	⊙	
235	Multi-speed setting (speed 11)	0 to 400 Hz, 9999	9999	235	Multi-speed setting (speed 11)	0 to 400 Hz, 9999	9999	⊙	
236	Multi-speed setting (speed 12)	0 to 400 Hz, 9999	9999	236	Multi-speed setting (speed 12)	0 to 400 Hz, 9999	9999	⊙	
237	Multi-speed setting (speed 13)	0 to 400 Hz, 9999	9999	237	Multi-speed setting (speed 13)	0 to 400 Hz, 9999	9999	⊙	
238	Multi-speed setting (speed 14)	0 to 400 Hz, 9999	9999	238	Multi-speed setting (speed 14)	0 to 400 Hz, 9999	9999	⊙	
239	Multi-speed setting (speed 15)	0 to 400 Hz, 9999	9999	239	Multi-speed setting (speed 15)	0 to 400 Hz, 9999	9999	⊙	
240	Soft-PWM setting	Other than the below: 0, 1 400 V class: 0, 1, 10, 11	1	240	Soft-PWM setting	0, 1	1	Δ	Setting values of the FR-E500 and corresponding values of the FR-E700 are as follows; 1 or 10→1, 1 or 11→1
244	Cooling fan operation selection	0, 1	0	244	Cooling fan operation selection	0, 1	1	Δ	Factory settings are different in the FR-E700.
245	Rated motor slip	0 to 50%, 9999	9999	245	Rated slip	0 to 50%, 9999	9999	⊙	
246	Slip compensation response time	0.01 to 10 s	0.5 s	246	Slip compensation time constant	0.01 to 10 s	0.5 s	⊙	
247	Constant-output region slip compensation selection	0, 9999	9999	247	Constant-power range slip compensation selection	0, 9999	9999	⊙	
249	Earth (ground) fault detection at start (Not in 400V class)	0, 1	0	249	Earth (ground) fault detection at start	0, 1	0	⊙	
250	Stop selection	0 to 100 s, 1000 to 1100 s, 8888, 9999	9999	250	Stop selection	0 to 100 s, 1000 to 1100 s, 8888, 9999	9999	⊙	
251	Output phase failure protection selection	0, 1	1	251	Output phase loss protection selection	0, 1	1	⊙	
342	E ² PROM write selection	0, 1	0	342	Communication EEPROM write selection	0, 1	0	⊙	
503	Capacitor life timer (Not in 400V class)	—	0	503	Maintenance timer	0 (1 to 9998)	0	⊙	
504	Capacitor life alarm output setting time (Not in 400V class)	0 to 9998, (9999)	500	504	Maintenance timer alarm output set time	0 to 9998, (9999)	9999	Δ	When "9999" is set in the FR-E700, the function is disabled. If "9999" is selected in the FR-E500, set "500" in the FR-E700.
555	Current average time	0.1 to 1.0 s	1	555	Current average time	0.1 to 1.0 s	1	⊙	
556	Data output mask time	0.0 to 20.0 s	0	556	Data output mask time	0.0 to 20.0 s	0	⊙	
557	Current average value monitor signal output reference current	0.1 to 999 A	1	557	Current average value monitor signal output reference current	0.1 to 999 A	Rated output current	⊙	

FR-E500 Parameter List				FR-E700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
900	FM terminal calibration	—	—	C0 (900)	FM terminal calibration	—	—	⊙	
902	Frequency setting voltage bias	0 to 60 Hz: 0 to 10 V	0 Hz: 0 V	C2 (902)	Terminal 2 frequency setting bias frequency	0 to 400 Hz	0 Hz	Δ	As the operation panel is changed, the setting method differs. For the details, refer to 4.17 Frequency setting by analog input (terminal 2, 4) of the FR-E700 Instruction Manual (Applied).
				C3 (902)	Terminal 2 frequency setting bias	0 to 300%	0%	Δ	
903	Frequency setting voltage gain	1 to 400 Hz: 0 to 10 V	60 Hz: 5 V	125 (903)	Terminal 2 frequency setting gain frequency	0 to 400 Hz	60 Hz	Δ	
				C4 (903)	Terminal 2 frequency setting gain	0 to 300%	100%	Δ	
904	Frequency setting current bias	0 to 60 Hz: 0 to 20 mA	0 Hz: 4 mA	C5 (904)	Terminal 4 frequency setting bias frequency	0 to 400 Hz	0 Hz	Δ	
				C6 (904)	Terminal 4 frequency setting bias	0 to 300%	20%	Δ	
905	Frequency setting current gain	1 to 400 Hz: 0 to 20 mA	60 Hz: 20 mA	126 (905)	Terminal 4 frequency setting gain frequency	0 to 400 Hz	60 Hz	Δ	
				C7 (905)	Terminal 4 frequency setting gain	0 to 300%	100%	Δ	
922	Built-in frequency setting potentiometer bias	0 to 60 Hz: 0 to 5 V	0 Hz: 0 V	C22 (922)	Frequency setting voltage bias frequency (built-in potentiometer)	0 to 400 Hz	0 Hz	Δ	
				C23 (922)	Frequency setting voltage bias (built-in potentiometer)	0 to 300%	0%	Δ	
923	Built-in frequency setting potentiometer gain	1 to 400 Hz: 0 to 5 V	60 Hz: 5 V	C24 (923)	Frequency setting voltage gain frequency (built-in potentiometer)	0 to 400 Hz	60 Hz	Δ	
				C25 (923)	Frequency setting voltage gain (built-in potentiometer)	0 to 300%	100%	Δ	
990	PU buzzer control	0, 1	1	990	PU buzzer control	0, 1	1	⊙	
991	PU contrast adjustment	0 to 63	58	991	PU contrast adjustment	0 to 63	58	⊙	

*1 For a parameter whose setting has been changed from the initial value in the FR-E500, the value of the corresponding parameter in the FR-E700 can be obtained as follows:

A: The initial value in the FR-E500

B: The setting value in the FR-E500

C: The initial value in the FR-E700

The setting value in the FR-E700 = $(B \times C) / A$

CC-Link related parameters when replacing the FR-E500 series CC-Link compatible inverter to FR-E700 series + FR-A7NC E kit are listed as follow:

FR-E520-□□□KN CC—Link Related Parameter FR-E540-□□□K + FR-E5NC CC—Link Related Parameter				FR-E700 series+FR—A7NC E kit CC—Link Related Parameter				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
79	Operation mode selection	0, 1, 2	2	79	Operation mode selection	0 to 4, 6, 7	0	Δ	To select NET operation mode always, set Pr.79 = "2", Pr.340 = "10".
				313	DO0 output selection	0, 1, 3, 4, 7, 8, 11 to 16, 20, 25, 26, 46, 47, 64, 90, 91, 93, 95, 96, 98, 99, 100, 101, 103, 104, 107, 108, 111 to 116, 120, 125, 126, 146, 147, 164, 190, 191, 193, 195, 196, 198, 199, 9999	9999	×	Set "9999" (no function).
				314	DO1 output selection		×	×	Set "9999" (no function).
				315	DO2 output selection		×	×	Set "9999" (no function).
				338	Communication operation command source	0, 1	0	×	Set "0" (command source: NET)
				339	Communication speed command source	0, 1, 2	0	×	Set "0" (command source: NET)
				340	Communication startup mode selection	0, 1, 10	0	×	To select NET operation mode always, set Pr.79 = "2", Pr.340 = "10".
342	EEPROM write selection	0, 1	0	342	Communication EEPROM write selection	0, 1	0	⊙	
				349	Communication reset selection	0, 1	0	×	Set "0" (error reset is enabled regardless of the operation mode).
500	Communication error recognition waiting time	0 to 999.8 s	0	500	Communication error execution waiting time	0 to 999.8 s	0	⊙	
501	Communication error occurrence output display	0	0	501	Communication error occurrence count display	0	0	⊙	Communication error occurrence count is displayed. Set "0" only to clear the count.
502	Stop mode selection at communication error	0, 1, 2	0	502	Stop mode selection at communication error	0 to 3	0	⊙	Output error code at option fault occurrence is changed from E.3 to E.1.
				541	Frequency command sign selection (CC-Link)	0, 1	0	×	Set "0" (no sign)
				542	Communication station number (CC-Link)	1 to 64	1	×	Set the communication station number and baud rate, which are set by the rotary switch on the inverter front in FR-E520-□□□KN, in the FR-E700 with parameters.
				543	Baud rate (CC-Link)	0 to 4	0	×	
				544	CC-Link extended setting	0, 1, 12, 14, 18	0	×	
				550	NET mode operation command source selection	0, 2, 9999	9999	×	Set "9999" (communication option automatic recognition)

DeviceNet related parameters when replacing the FR-E500 series DeviceNet compatible inverter to FR-E700 series + FR-A7NC E kit are listed as follow:

FR-E520-□□KND DeviceNet Related Parameter FR-E540-□□K + FR-E7ND DeviceNet Related Parameter				FR-E700 series+FR-A7ND E kit DeviceNet Related Parameters				Parameter Setting	
Function Number	Name	Setting Range	Factory setting	Function Number	Name	Setting Range	Initial Value (Factory Setting)	Setting	Remarks
345	DeviceNet address setup data (lower bite)	0 to 255	63(0x3F)	345	DeviceNet address	0 to 4095	63	×	Settings differ from FR-E520-□□KND.
346	DeviceNet baudrate startup data (lower bite)	0 to 255	132(0x84)	346	DeviceNet baud rate	0 to 4095	132	×	Settings differ from FR-E520-□□KND.
347	DeviceNet address startup data (higher byte)	0 to 255	160(0xA0)	347	-	-	-	-	When using FR-E700 series with FR-A7ND E kit, this parameter does not exist.
348	DeviceNet baudrate startup data (higher byte)	0 to 255	80(0x50)	348	-	-	-	-	When using FR-E700 series with FR-A7ND E kit, this parameter does not exist.
				349	Communication reset selection	0, 1	0	×	Set "0" (error reset is enabled regardless of the operation mode).
				500	Communication error execution waiting time	0 to 999.8 s	0	×	Set "0" (waiting time: 0)
				501	Communication error occurrence count display	0	0	-	Communication error occurrence count is displayed. Set "0" only to clear the count.
				502	Stop mode selection at communication error	0, 1, 2, 3	0	×	Set "0" (coast to stop at communication error occurrence)
				550	NET mode operation command source selection	0, 1, 9999	9999	×	Set "9999" (communication option automatic recognition)

4. Option

Compatibilities of options with the FR-E500 series and FR-E700 series are explained below.

Name		Option Type		
		FR-E500	FR-E700	
Plug-in Type	CC-Link communication	FR-E5NC (plug-in is only for 400 V class)	FR-A7NC E kit	
	DeviceNet communication	FR-E5ND (plug-in is only for 400 V class)	FR-A7ND E kit	
	LONWORKS communication	FR-E5NL (plug-in is only for 400 V class)	FR-A7NL E kit	
Stand-alone Type	Parameter unit	FR-PU04	FR-PU04 (Some functions such as parameter copy are restricted.) FR-PU07	
	Parameter unit connection cable	FR-CB201, 203, 205	Compatible.	
	Operation panel rear cover · adapter set	FR-E5P	Cannot be used. Operation panel is not removable in FR-E700.	
	Brake resistor	MRS□□, MYS□□ FR-ABR-(H)□□K	Compatible.	
	Brake unit	Discharging resistor	BU-1500 to 15K, H7.5K, H15K GZG□□, GRZG□□	Compatible.
				Compatible.
	Power factor improving AC reactor	FR-BAL-(H)□□K	Compatible.	
	Power factor improving DC reactor	FR-BEL-(H)□□K	Compatible.	
	Radio noise filter	FR-BIF-(H)	Compatible.	
	Line noise filter	FR-BSF01, FR-BLF	Compatible.	
	FR-CV type power regeneration common converter		FR-CV-(H)7.5K(-AT)	Compatible.
		Dedicated Stand-alone reactor	FR-CVL-(H)7.5K	Compatible.
	FR-HC type high power factor converter	FR-HC-(H)7.5K	Compatible.	
	Surge voltage suppression filter	FR-ASF-H□□K	Compatible.	
Manual controller / speed controller	Manual controller	FR-AX	Compatible.	
	Combination controller	FR-AL	Compatible.	
	Three speed selector	FR-AT	Compatible.	
	Motorized speed setter	FR-FK	Compatible.	
	Ratio setter	FR-FH	Compatible.	
	Speed detector	FR-FP	Compatible.	
	Master controller	FR-FG	Compatible.	
	Soft starter	FR-FC	Compatible.	
	Deviation detector	FR-FD	Compatible.	
	Preamplifier	FR-FA	Compatible.	
Others	Pilot generator	QVAH-10	Compatible.	
	Deviation sensor	YVGC-500W-NS	Compatible.	
	Frequency setting potentiometer	WA2W 1kΩ	Compatible.	
	Frequency meter	YM206NRI 1mA	Compatible.	
	Calibration resistor	RV24YN 10kΩ	Compatible.	
	Inverter setup software	FR-SW1-SETUP-WJ	Cannot be used. Use FR-SW3-SETUP-WJ.	

5. Main differences with FR-E500 series

(1) Main specification comparison and differences

Item		FR-E500	FR-E700
Model	Three phase 200 V class	FR-E520-0.1K to 7.5K (9 models)	FR-E720-0.1K to 15K (11 models)
	Three phase 400 V class	FR-E540-0.4K to 7.5K (7 models)	FR-E740-0.4K to 15K (9 models)
	Single phase 200 V class	FR-E520S-0.1K to 0.75K (4 models)	FR-E720S-0.1K to 2.2K (6 models)
	Single phase 100 V class	FR-E510W-0.1K to 0.75K (4 models)	FR-E710W-0.1K to 0.75K (4 models)
Control method		Soft-PWM control or High carrier frequency PWM control (V/F control or General-purpose magnetic flux vector control is selectable.)	Soft-PWM control or High carrier frequency PWM control (Selectable among V/F control, General-purpose magnetic flux vector control, Advanced magnetic flux vector, and Optimum excitation control)
Overload capacity		150% 60 s, 200% 0.5 s (inverse-time characteristics)	150% 60 s, 200% 3 s (inverse-time characteristics)
Frequency setting signal	Analog input	Terminal 2: 0 to 10 V or 0 to 5 V is selectable Terminal 4: 4 to 20 mA Built-in frequency setting potentiometer	Terminal 2: 0 to 10 V or 0 to 5 V is selectable Terminal 4: Selectable among 0 to 10 V, 0 to 5 V, and 4 to 20 mA
	Digital input	Input from operation panel or parameter unit	Input using the setting dial on the operation panel or parameter unit
Input signal	Terminal function		<Additional function> Stop-on-contact (RL, RT (Pr.270 = "1")), Jog operation selection (JOG), PID control valid terminal (X14), BRI Brake opening completion signal (BRI) , PU-NET operation switchover (X65), External-NET operation switchover (X66), Command source switchover (X67), Inverter run enable signal (X10), PU operation external interlock (X12)
	Terminal function selection	Pr.180 to Pr.183 (Input terminal selection)	Pr.178 (STF), Pr.179 (STR), Pr.184 (RES) are added.
Output signal	Terminal function		<Additional function> Regenerative brake pre-alarm (RBP), Electronic thermal relay function pre-alarm (THP), Brake opening request (BOF), Fan fault (FAN), Heatsink overheat pre-alarm (FIN), During deceleration at occurrence of power failure (Y46), During PID control activated (PID), During retry (Y64), Life alarm (Y90), Current average value monitor (Y93), Maintenance timer (Y95), Remote output (REM) Negative logic are added to all terminal functions.
	Output signal for indicator		<Additional function> Frequency setting, Motor torque, Converter output voltage, Regenerative brake duty, Electronic thermal relay function load factor, Output current peak value, Converter output voltage peak value, Reference voltage output, Motor load factor, PID set point, PID measured value, Output power

Item		FR-E500	FR-E700
Fault and alarm function			<Additional function> Input phase loss, Output short-circuit, Output phase loss, Option alarm, Inrush resistance overheat, Communication error, Analog input fault, USB communication error, Brake sequence error 2 to 7, Regenerative brake pre-alarm, Electronic thermal relay function pre-alarm, Maintenance output, Undervoltage
Outline size Capacity: Three phase 200 VAC 0.1K to 7.5K Three phase 400 VAC 0.4K to 7.5K Single phase 200 VAC 0.1K to 0.75K Single phase 100 VAC 0.1K to 0.75K		Width and Height: Same Depth: FR-E500 series has more depth (volume) than FR-E700 series	
Installation size Capacity: Three phase 200 VAC 0.1K to 7.5K Three phase 400 VAC 0.4K to 7.5K Single phase 200 VAC 0.1K to 0.75K Single phase 100 VAC 0.1K to 0.75K		Compatible	
Main circuit terminal block Capacity: Three phase 200 VAC 0.1K to 7.5K Three phase 400 VAC 0.4K to 7.5K Single phase 200 VAC 0.1K to 0.75K Single phase 100 VAC 0.1K to 0.75K		Compatible (screw type terminal block)	
Control circuit terminal and screw size		Insertion terminal block is fixed. (⊕ Screw M2.5)	Insertion terminal block is removable. (⊖ Screw M2, M3)
Control terminal wiring size when bar terminal is used		M2.5: 0.3 to 0.75 mm ²	M3: 0.3 to 0.75 mm ² M2: 0.3 to 0.5 mm ²
Cooling fan position		Placed below the inverter.	Placed on top of the inverter. Clearance is necessary in the above for a cooling fan replacement.
Operation panel		Removable	Integrated into the body, not removable. FR-E500 operation panel (PA02) can be used.
Parameter (function)		Compatible with conventional models (Some functions are changed or deleted.)	
Parameter Unit	FR-PU07	Can be used.	Can be used.
	FR-PU04	Can be used.	Can be used. (With some restrictions)
	PA02	Can be used.	Can be used.
	FR-PU03/FR-ARW03		
	FR-DU01	Cannot be used.	Cannot be used.
PU connection cable	FR-PU02/FR-ARW		
	FR-CB2□□	Can be used.	Can be used.
	FR-CBL□□	Cannot be used.	Cannot be used.

Refer to
1.Size

Item		FR-E500	FR-E700
Plug-in option		Plug-in is not compatible	
CC-Link communication DeviceNet communication	CC-Link communication	FR-E5NC (plug-in is only with 400 V class)	FR-A7NC E kit FR-A7ND E kit Turning ON DIP switch 1 of the option board will switch to the FR-E5ND compatible mode. Output instance 100 and input instance 150 in the assembly object are not disclosed but available. When using Pr.346, set "8" for input assembly and output assembly. When using Network, set "0x96" for instance ID of input assembly, and "0x64" for instance ID of output assembly.
	DeviceNet communication	FR-E5ND (plug-in is only with 400 V class)	
	LONWORKS communication	FR-E5NL (plug-in is only with 400 V class)	FR-A7NL E kit
	16bit digital input	-	FR-A7AX E kit
	Digital output / extension analog output	-	FR-A7AY E kit
	Relay output	-	FR-A7AR E kit
PROFIBUS-DP communication	-	FR-A7NP E kit	
Terminal card		Terminal card is not removable.	Use in exchange of a standard terminal card. Two port EIA-485 terminal card: FR-E7TR Analog input/output terminal card: to be released soon Pulse train input/output terminal card: to be released soon
Inrush current limit circuit		Provided with 200 V class 2.2K or more, and 400 V with every capacity	Provided with every capacity
Design life	Cooling fan	2 to 3 years	10 years
	Capacitor	5 years	10 years
Stand-alone option (noise filter, reactor, and other)		Compatible	Refer to 4. Option

Item	Parameter Comparison Description	Difference with FR-E500				Remarks
		Added function	Function change	Name change	Parameter number change	
15	Communication setting	○	○			(1)Addition: Setting at communication speed of 38400 bps (Pr.118) (2)Addition: Modbus RTU communication setting (Pr.549) (3)Addition: Stop mode selection at communication error (Pr.502) (4)Change: Setting range of communication station number (Pr.117)
16	USB communication	○				Addition: USB communication setting
17	Frequency setting voltage/gain (frequency) (Pr.902 to Pr.905)	○	○	○		(1)Name: <i>Frequency setting voltage bias/gain</i> are changed to <i>Terminal 2 /4 frequency setting bias/gain (frequency)</i> . (2)Addition: Analog input display unit switchover (Pr.241) (3)Change: Setting range of bias and gain for terminal 2 and 4 (4)Change: Frequency at maximum voltage (current) input • Pr.38 is changed to Pr.125. • Pr.39 is changed to Pr.126.
18	PID control function	○	○			(1)Addition: PID control automatic switchover function (Pr.127) (2)Addition: PID action selection (Pr.128) (3)Addition: Input signal (X14 PID control valid terminal) and Out put signal (Y47 During PID control activated)
19	Output current detection function		○			Change: Setting range of Zero current detection time (Pr.153)
20	Extended function display/User group (Pr.160)		○			(1)Addition: Simple mode parameters (2)Addition: User group registered display/batch clear function (3)Deletion: User group 2 is deleted
21	Automatic restart after instantaneous power failure function	○				Settings of ; Automatic restart after instantaneous power failure selection (Pr.162), Stall prevention operation level for restart(Pr.165), Rotation direction detection selection at restarting (Pr.299), and Acceleration time at a restart (Pr.611)
22	Input terminal function selection (Pr.178 to Pr. 184)		○			(1)Addition: STF, STR, RES terminal function selection (2)Addition: Choices for input terminal function assignment
23	Output terminal function selection (Pr.190 to Pr.192)		○			Addition: Choices for output terminal function assignment
24	Cooling fan (Pr.244)		○			Change: In the initial setting, cooling fan on/off control is valid.
25	Soft-PWM, long wiring mode		○			Long wiring mode is no longer necessary and is deleted.
26	Function to display life of inverter parts	○				Life measuring and display of, Inrush current limit circuit, Control circuit capacitor, Main circuit capacitor, and Cooling fan. (Pr.255 to Pr.259)
27	Power failure stop selection	○				Power failure stop selection (Pr.261)
28	Stop selection		○			Change: Increments is changed to 0.1 s (Pr.250)
29	Stop-on-contact control function	○				Stop-on-contact control setting (Pr.275, Pr.276)
30	Brake sequence function	○				Brake sequence function setting (Pr.278 to Pr.283)
31	Droop control function	○				Droop control function setting (Pr.286, Pr.287)
32	Automatic acceleration/deceleration setting	○	○	○	○	(1)Name: <i>Pr.60 Shortest acceleration/deceleration mode</i> is changed to <i>Pr.292 Automatic acceleration/deceleration</i> (2)Addition: Brake sequence mode 1, 2 (3)Addition: Acceleration/deceleration separate selection
33	Remote output function	○				Remote output setting by switch ON/OFF of output terminal (Pr.495 to Pr.497)

Item	Parameter Comparison Description	Difference with FR-E500				Remarks
		Added function	Function change	Name change	Parameter number change	
34	Maintenance time alarm (Pr.503, Pr.504)			○		Name: <i>Capacitor life timer</i> and <i>Capacitor life alarm output set time</i> are changed to <i>Maintenance timer</i> and <i>Maintenance timer alarm output set time</i>
35	Average current value monitor function (Pr.555 to Pr.557)	○				Average current during constant speed operation and pulse output function setting of maintenance timer
36	Holding time at a start function (Pr.571)	○				Duration of start frequency held is set.
37	Advanced magnetic flux vector, control method selection (Pr.80, Pr.81, Pr.800)	○				General-purpose magnetic flux vector control or Advanced magnetic flux vector is selectable (Pr.80, Pr.81, Pr.800)
38	General-purpose magnetic flux vector control (Pr.80, Pr.81)				○	During General-purpose magnetic flux vector control, set Pr.800 = "30". Both of Pr.80 and Pr.81 need to be set.
39	Speed control gain (Advanced magnetic flux vector) (Pr.89)	○				Motor speed adjustment when load fluctuates
40	Speed smoothing control (Pr.653)	○				Function to suppress vibration generated between mechanical system and electrical system (Pr.653)
41	Input phase failure protection selection	○				Input/output phase failure protection selection (Pr.251, Pr.872)
42	Regeneration avoidance function	○				Regeneration avoidance operation selection/ level setting (Pr.882 to Pr.886)
43	Free parameter	○				Reserved for users (Pr.888, Pr.889)