Information for Replacement of

FR-A100(E) Series with FR-F800 Series

Size, connection, parameters, options concerning replacement are stated on the following pages.

1. SIZE

When the FR-A100(E) series is replaced with the FR-F800 series, some FR-F800 series models have different installation size from that of the corresponding FR-A100(E) series models.

Refer to the applicable outline dimension and drill new mounting holes, or use the installation interchange attachment shown in the table below.

Existing inverter	Replacing inverter	Installation size / installation interchange attachment
FR-A120(E)-0.75K	FR-F820-0.75K	FR-A5AT01
FR-A120(E)-1.5K	FR-F820-1.5K	FR-A5AT02
FR-A120(E)-2.2K	FR-F820-2.2K	FR-A5AT02
FR-A120(E)-3.7K	FR-F820-3.7K	FR-A5AT02
FR-A120(E)-5.5K	FR-F820-5.5K	FR-A5AT03
FR-A120(E)-7.5K	FR-F820-7.5K	FR-A5AT03
FR-A120(E)-11K	FR-F820-11K	FR-A5AT03
FR-A120(E)-15K	FR-F820-15K	FR-AAT24
FR-A120(E)-18.5K	FR-F820-18.5K	Same
FR-A120(E)-22K	FR-F820-22K	FR-A5AT04
FR-A120(E)-30K	FR-F820-30K	FR-A5AT04
FR-A120(E)-37K	FR-F820-37K	Same
FR-A120(E)-45K	FR-F820-45K	Same
FR-A120(E)-55K	FR-F820-55K	FR-A5AT05
FR-A140(E)-0.75K	FR-F840-0.75K	FR-A5AT02
FR-A140(E)-1.5K	FR-F840-1.5K	FR-A5AT02
FR-A140(E)-2.2K	FR-F840-2.2K	FR-A5AT02
FR-A140(E)-3.7K	FR-F840-3.7K	FR-A5AT02
FR-A140(E)-5.5K	FR-F840-5.5K	FR-A5AT03
FR-A140(E)-7.5K	FR-F840-7.5K	FR-A5AT03
FR-A140(E)-11K	FR-F840-11K	FR-A5AT03
FR-A140(E)-15K	FR-F840-15K	FR-AAT24
FR-A140(E)-18.5K	FR-F840-18.5K	FR-AAT24
FR-A140(E)-22K	FR-F840-22K	FR-A5AT04
FR-A140(E)-30K	FR-F840-30K	FR-AAT27
FR-A140(E)-37K	FR-F840-37K	FR-AAT23
FR-A140(E)-45K	FR-F840-45K	Same
FR-A140(E)-55K	FR-F840-55K	FR-A5AT05

The inverter with the installation interchange attachment requires greater installation depth.

For more information on other combinations, refer to the FR-F800 inverter catalog.

When the enclosure cut dimensions are different, change the dimensions for the panel through attachment of the FR-F800 series.

[When used with the panel through attachment]

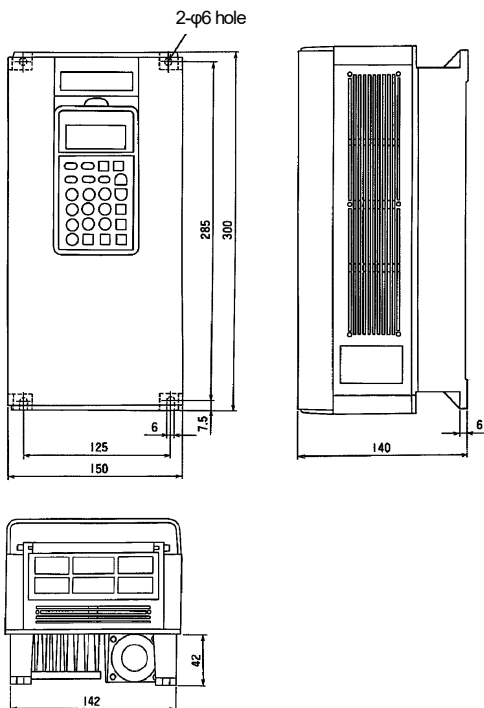| Existing inverter		Replacing inverter		Installation size / enclosure cut dimensions
Inverter model	Panel through attachment model	Inverter model	Panel through attachment model	
FR-A120(E)-0.75K	—	FR-F820-0.75K	—	—
FR-A120(E)-1.5K	FR-ACN01	FR-F820-1.5K	—	—
FR-A120(E)-2.2K	FR-ACN01	FR-F820-2.2K	FR-A8CN01	Different size
FR-A120(E)-3.7K	FR-ACN02	FR-F820-3.7K	FR-A8CN01	Different size
FR-A120(E)-5.5K	FR-ACN03	FR-F820-5.5K	FR-A8CN01	Different size
FR-A120(E)-7.5K	FR-ACN03	FR-F820-7.5K	FR-A8CN02	Different size
FR-A120(E)-11K	FR-ACN03	FR-F820-11K	FR-A8CN02	Different size
FR-A120(E)-15K	FR-ACN04	FR-F820-15K	FR-A8CN03	Different size
FR-A120(E)-18.5K	FR-ACN04	FR-F820-18.5K	FR-A8CN04	Same*
FR-A120(E)-22K	FR-ACN05	FR-F820-22K	FR-A8CN04	Different size
FR-A120(E)-30K	FR-ACN05	FR-F820-30K	FR-A8CN04	Different size
FR-A120(E)-37K	FR-ACN06	FR-F820-37K	FR-A8CN05	Different size
FR-A120(E)-45K	FR-ACN07	FR-F820-45K	FR-A8CN06	Different size
FR-A120(E)-55K	FR-ACN08	FR-F820-55K	FR-A8CN06	Different size
FR-A140(E)-0.75K	FR-ACN02	FR-F840-0.75K	FR-A8CN01	Different size
FR-A140(E)-1.5K	FR-ACN02	FR-F840-1.5K	FR-A8CN01	Different size
FR-A140(E)-2.2K	FR-ACN02	FR-F840-2.2K	FR-A8CN01	Different size
FR-A140(E)-3.7K	FR-ACN02	FR-F840-3.7K	FR-A8CN01	Different size
FR-A140(E)-5.5K	FR-ACN03	FR-F840-5.5K	FR-A8CN01	Different size
FR-A140(E)-7.5K	FR-ACN03	FR-F840-7.5K	FR-A8CN02	Different size
FR-A140(E)-11K	FR-ACN03	FR-F840-11K	FR-A8CN02	Different size
FR-A140(E)-15K	FR-ACN04	FR-F840-15K	FR-A8CN03 FR-A8CN102	Different size Same*
FR-A140(E)-18.5K	FR-ACN04	FR-F840-18.5K	FR-A8CN03 FR-A8CN102	Different size Same*
FR-A140(E)-22K	FR-ACN05	FR-F840-22K	FR-A8CN04	Different size
FR-A140(E)-30K	FR-ACN06	FR-F840-30K	FR-A8CN04	Different size
FR-A140(E)-37K	FR-ACN07	FR-F840-37K	FR-A8CN05	Different size
FR-A140(E)-45K	FR-ACN07	FR-F840-45K	FR-A8CN06	Different size
FR-A140(E)-55K	FR-ACN08	FR-F840-55K	FR-A8CN06	Different size

* The depths inside and outside the enclosure differ.
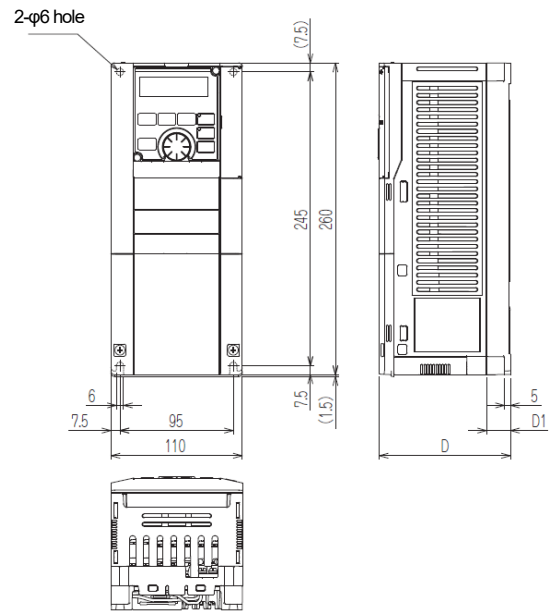
Outline dimension drawings (Unit: mm)
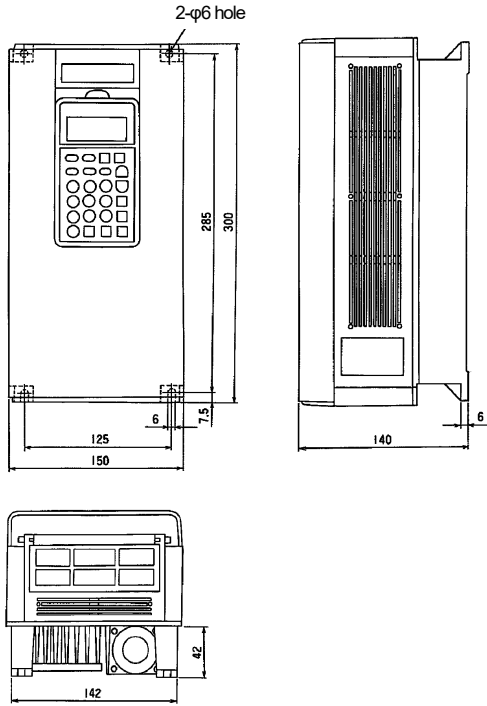
■ FR-A120(E)-0.75K
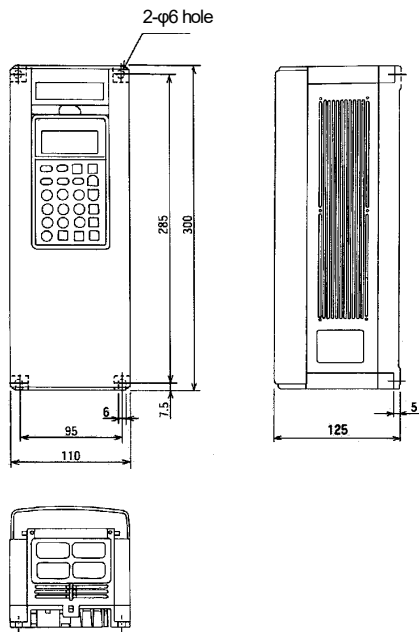
■ FR-F820-0.75K, 1.5K

■ FR-A120(E)-1.5K

Inverter model	D	D1
FR-F820-0.75K	110	20
FR-F820-1.5K	125	35

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■ FR-A120(E)-2.2K

■ FR-F820-2.2K, 3.7K

2-φ6 hole

2-φ6 hole

285
300

125
150

140

6
7.5

6

142

42

■ FR-A120(E)-3.7K

2-φ6 hole

285
300

125
150

170

6
7.5

2.3

142

71

7.5

245
260

(7.5)
(1.5)

6

12.5
125
150

140

5

45.5

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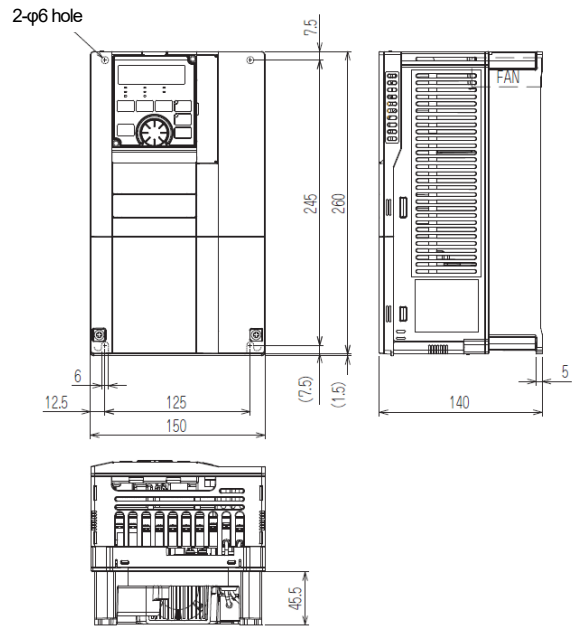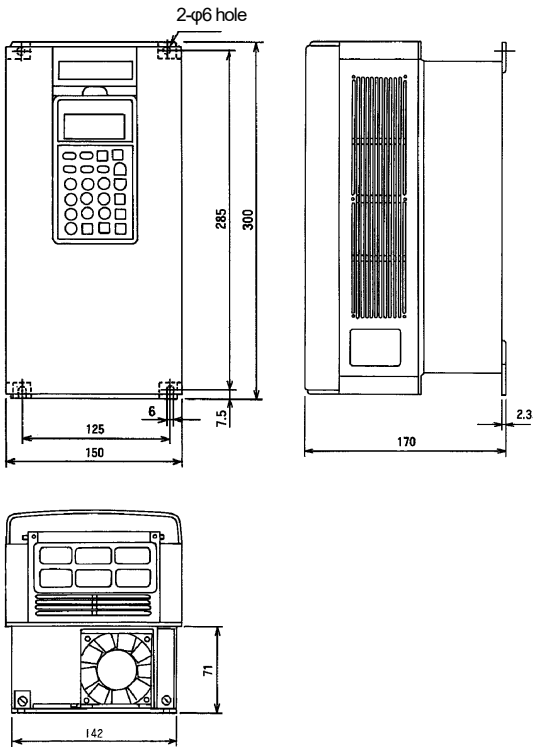
■ FR-A120(E)-5.5K, 7.5K, 11K
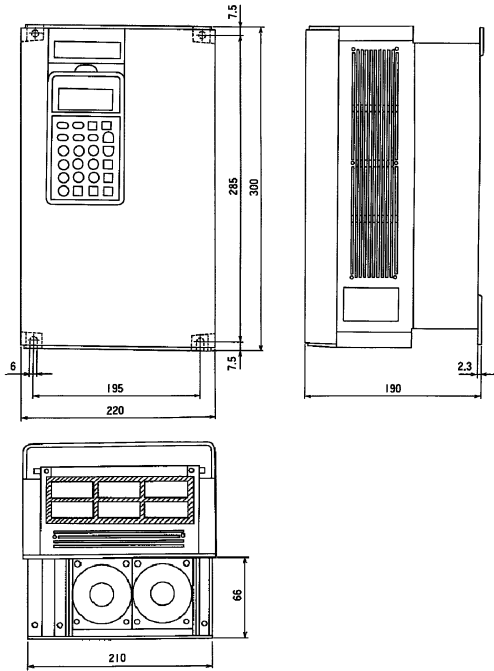
■ FR-F820-5.5K
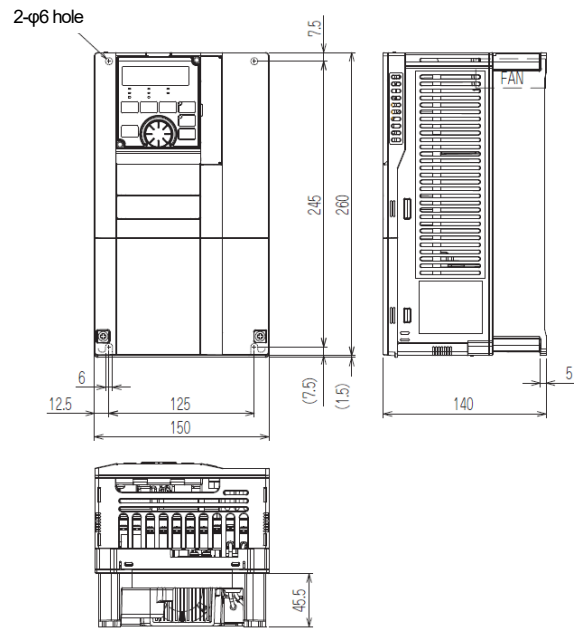
■ FR-F820-7.5K, 11K
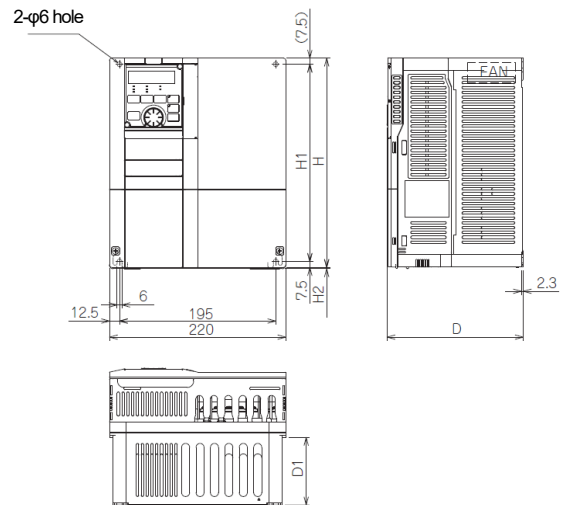
Inverter model	H	H1	H2	D	D1
FR-F820-7.5K, 11K	260	245	1.5	170	84

■ FR-A120(E)-15K, 18.5K, 22K, 30K
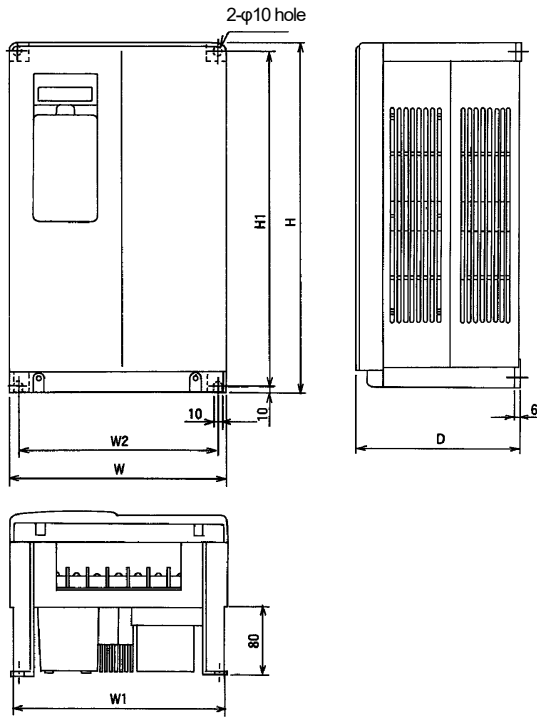
Inverter model	W	W1	H	D
FR-A120(E)-15K	250	242	400	190
FR-A120(E)-18.5K	250	242	400	190
FR-A120(E)-22K	300	292	450	195
FR-A120(E)-30K	300	292	450	195

Inverter model	W2	H1
FR-A120(E)-15K	230	380
FR-A120(E)-18.5K	230	380
FR-A120(E)-22K	280	430
FR-A120(E)-30K	280	430

■ FR-F820-15K
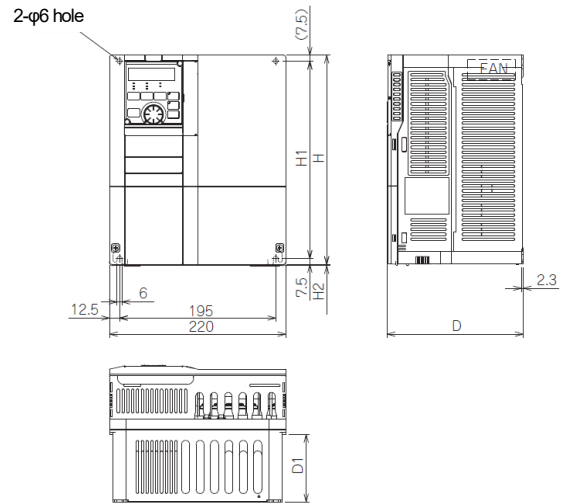
Inverter model	H	H1	H2	D	D1
FR-F820-15K	300	285	3	190	101.5

■ FR-F820-18.5K, 22K, 30K

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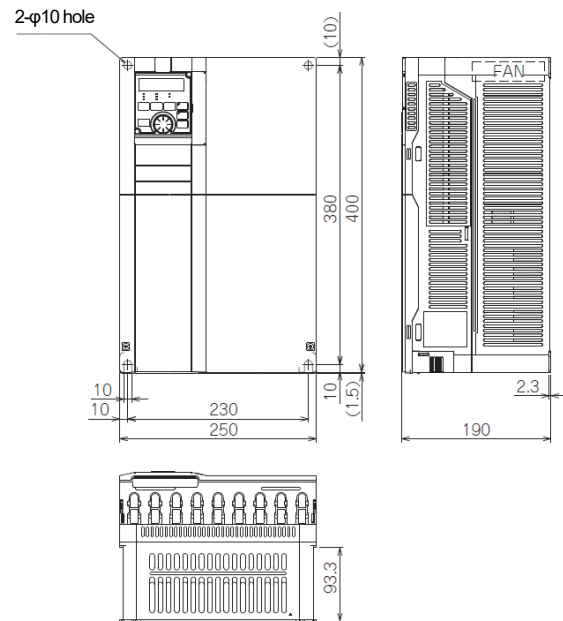
■ FR-A120(E)-37K, 45K, 55K
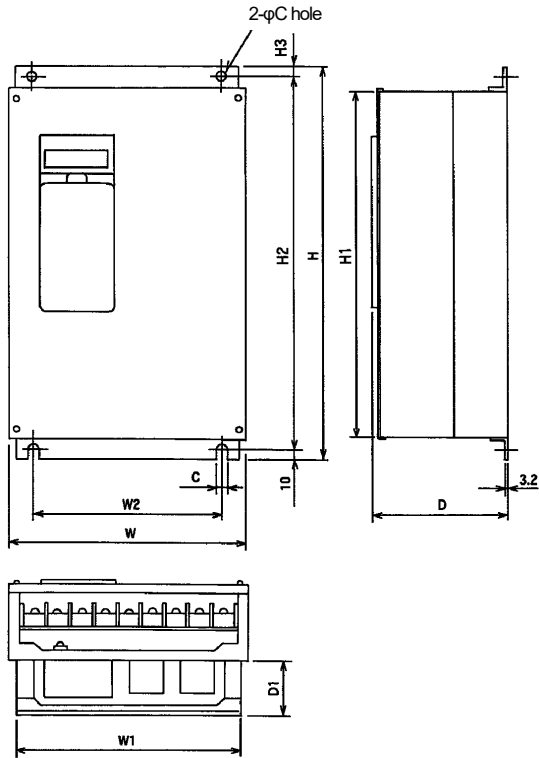
Inverter model	W	W1	H	H1
FR-A120(E)-37K	340	324	550	510
FR-A120(E)-45K	450	434	550	495
FR-A120(E)-55K	480	464	700	645

Inverter model	D	D1	W2	H2
FR-A120(E)-37K	195	78	270	530
FR-A120(E)-45K	250	130	380	525
FR-A120(E)-55K	250	130	410	675

Inverter model	H3	C
FR-A120(E)-37K	10	10
FR-A120(E)-45K	15	12
FR-A120(E)-55K	15	12

■ FR-F820-37K
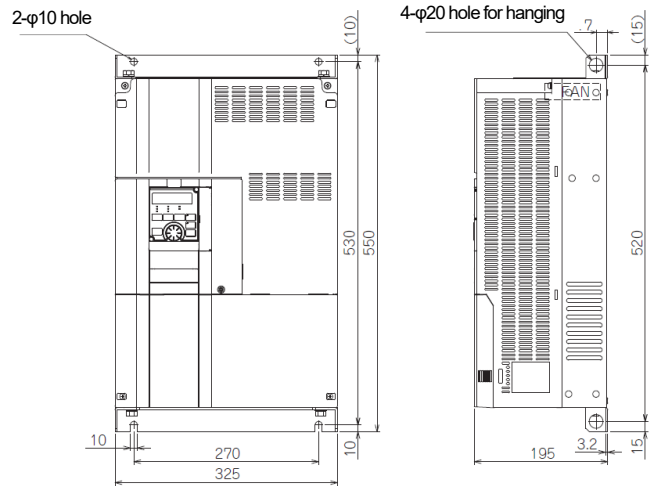
■ FR-F820-45K, 55K
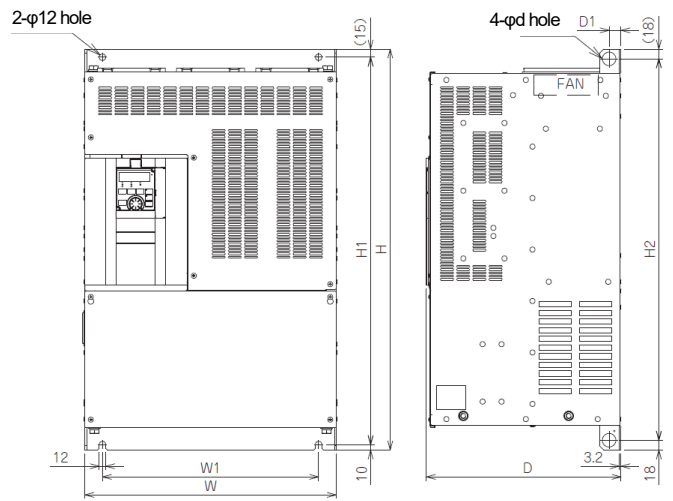
Inverter model	W	W1	H	H1	H2
FR-F820-45K, 55K	435	380	550	525	514

Inverter model	d	D	D1
FR-F820-45K, 55K	25	250	24

■ FR-A140(E)-0.75K, 1.5K, 2.2K, 3.7K

2-φ6 hole

285
300
125
6
7.5
150
170
2.3

71
142
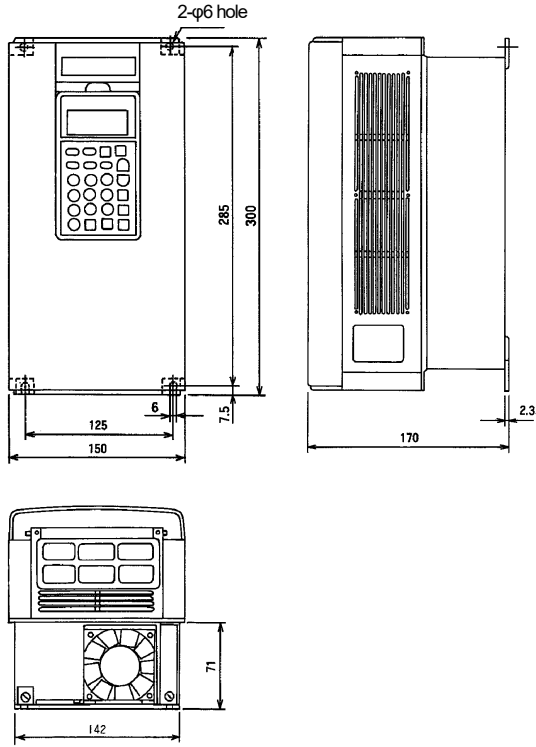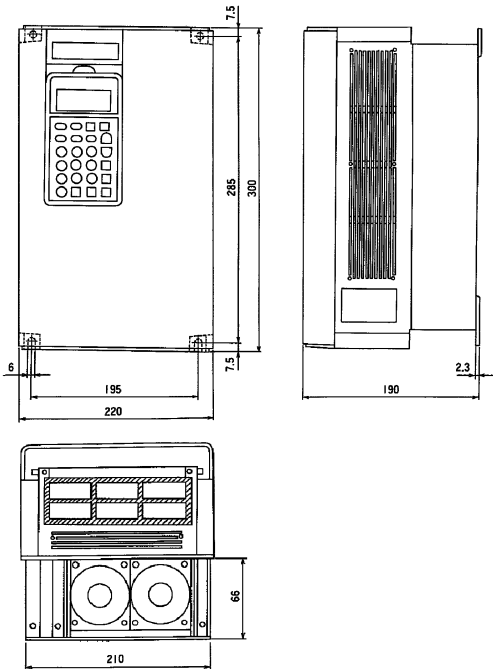
■ FR-F840-0.75K, 1.5K, 2.2K, 3.7K, 5.5K

2-φ6 hole

7.5
245
260
6
12.5
125
(7.5)
(1.5)
150
140
5
FAN

45.5

■ FR-A140(E)-5.5K

7.5
285
300
6
195
7.5
220
190
2.3

66
210

BCN-C21002-213
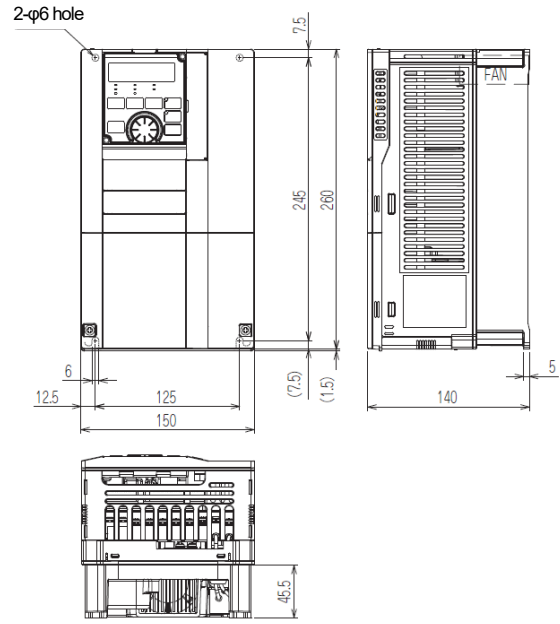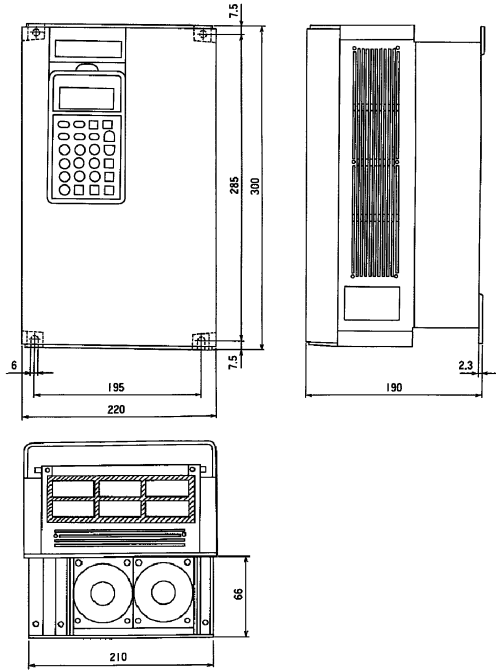
■ FR-A140(E)-7.5K, 11K

■ FR-A140(E)-15K, 18.5K
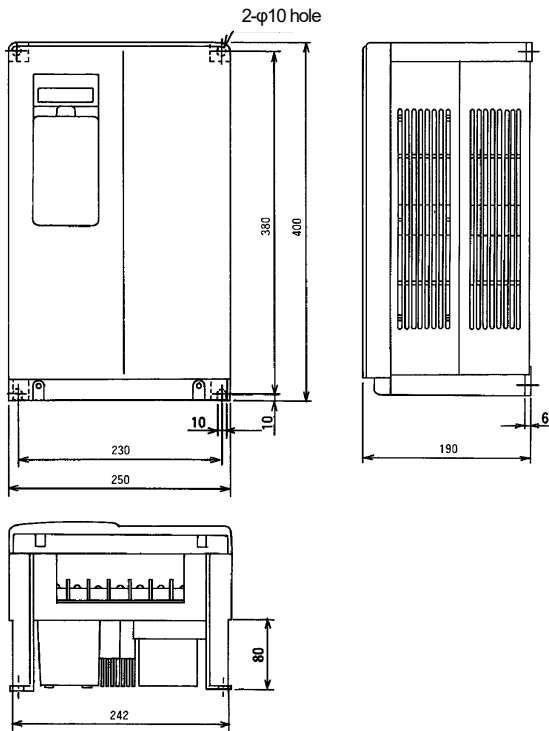
■ FR-F840-7.5K, 11K, 15K, 18.5K
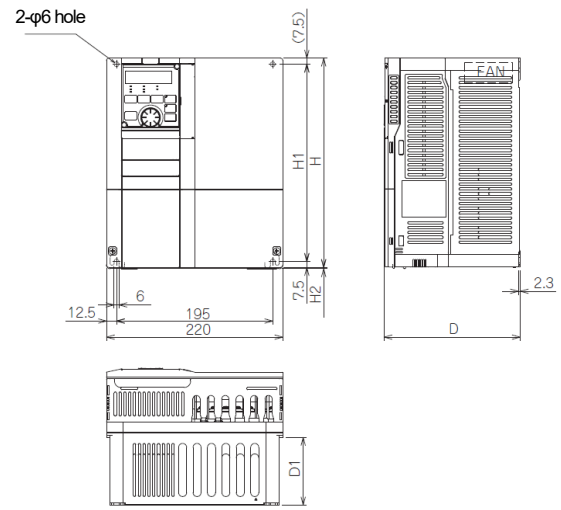
Inverter model	H	H1	H2	D	D1
FR-F840-7.5K, 11K	260	245	1.5	170	84
FR-F840-15K, 18.5K	300	285	3	190	101.5

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■ FR-A140(E)-22K

2-φ10 hole

430
450
10
10
6
280
300
195

80
292

■ FR-F840-22K, 30K

2-φ10 hole

(10)
380
400
10
(1.5)
10
10
230
250

FAN

2.3
190

93.3

■ FR-A140(E)-30K

2-φC10 hole

10
530
550
510
10
10
3.2
270
340
195

78
324

BCN-C21002-213
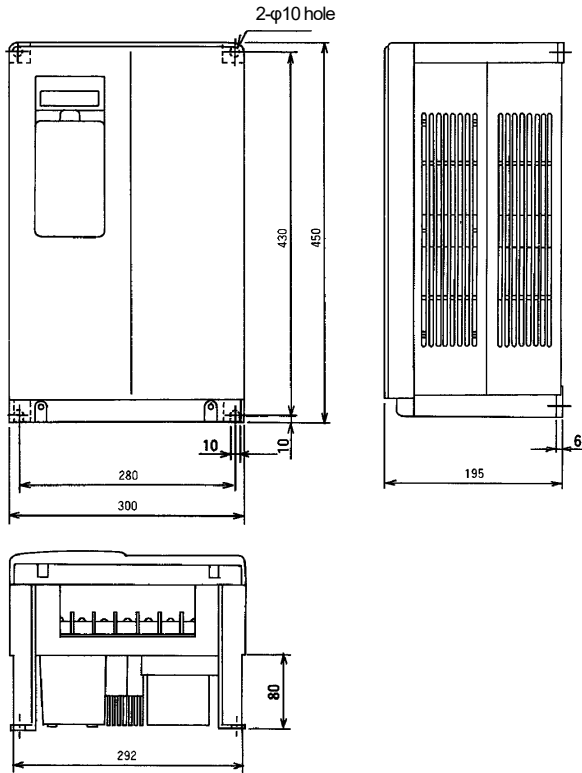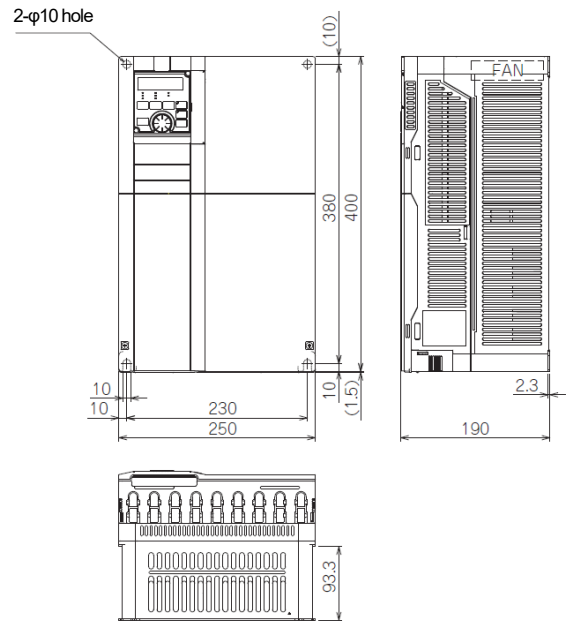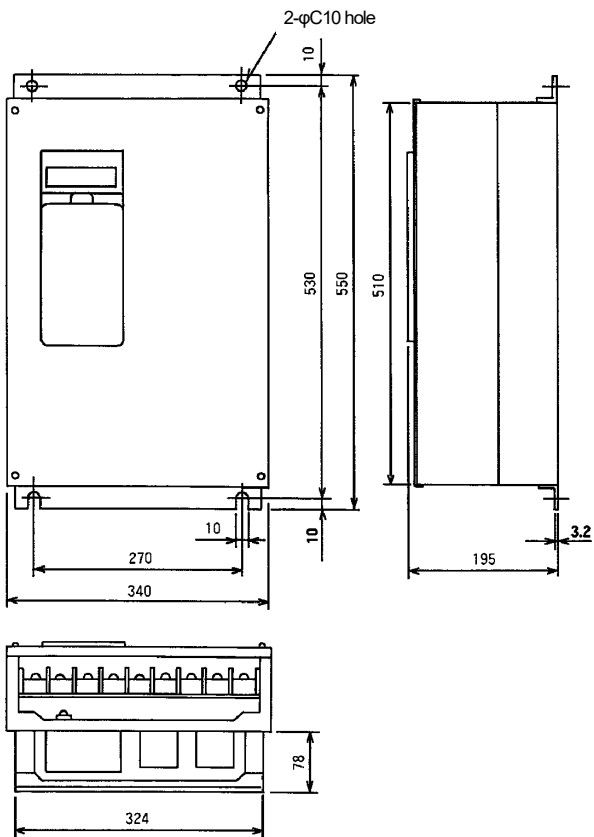
■ FR-A140(E)-37K, 45K, 55K

■ FR-F840-37K
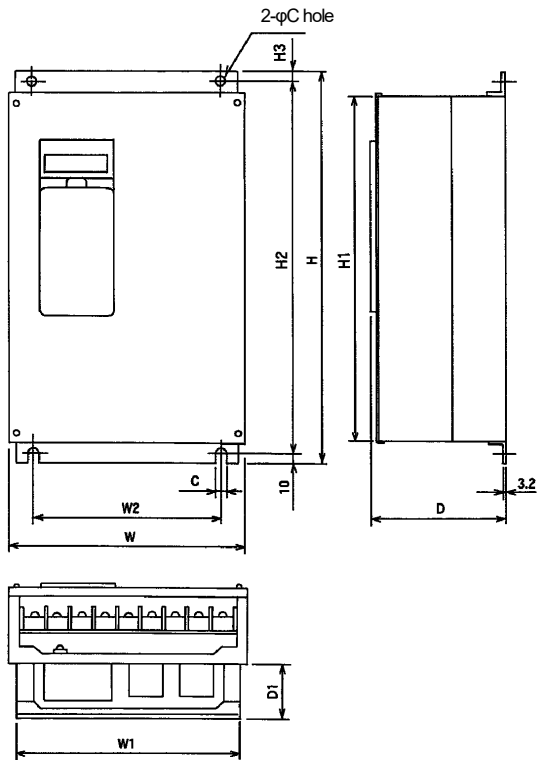
Inverter model	W	W1	H	H1
FR-A140(E)-37K	450	434	550	495
FR-A140(E)-45K	450	434	550	495
FR-A140(E)-55K	480	464	700	645

Inverter model	D	D1	W2	H2
FR-A140(E)-37K	250	130	380	525
FR-A140(E)-45K	250	130	380	525
FR-A140(E)-55K	250	130	410	675

Inverter model	H3	C
FR-A140(E)-37K	15	12
FR-A140(E)-45K	15	12
FR-A140(E)-55K	15	12
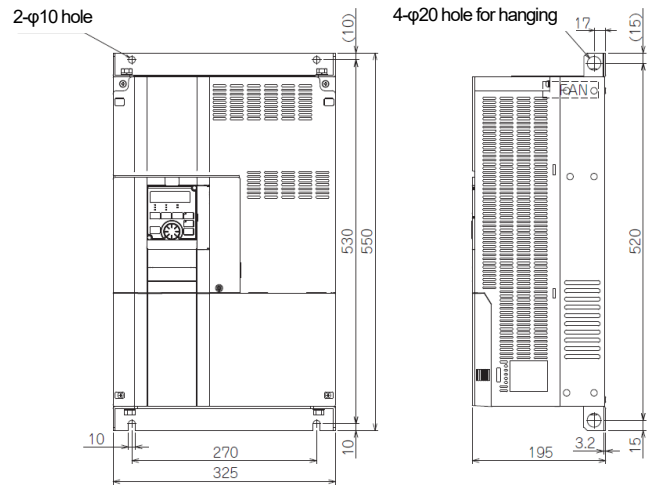
■ FR-F840-45K, 55K
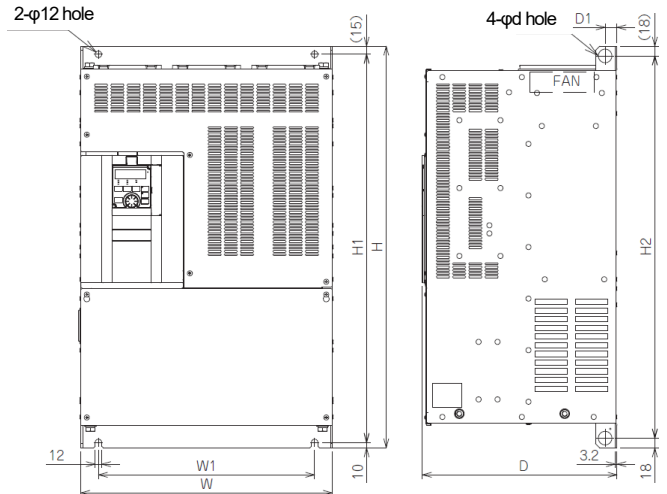
Inverter model	W	W1	H	H1	H2
FR-F840-45K, 55K	435	380	550	525	514

Inverter model	d	D	D1
FR-F840-45K, 55K	25	250	24

2. Wiring

The wiring of the new inverters can follow the one of the existing inverters as the terminal names between them are almost the same.

Type		A100(E) terminal name	F800 compatible terminal name
Main circuit		R, S, T	R/L1, S/L2, T/L3
		U, V, W	U, V, W
		R1, S1	R1/L11, S1/L21
		P, N	P/+, N/- P3, N/-*1
		P, P1	P/+, P1
		⏚	⏚
Control circuit input signal	Contact	STF	STF
		STR	STR
		STOP	STP (STOP)
		RH	RH
		RM	RM
		RL	RL
		JOG/OH	JOG
		RT	RT
		AU	AU
		CS	CS
		MRS	MRS
		RES	RES
		SD	SD
		PC	PC
Analog	Frequency setting	10E	10E
		10	10
		2	2
		4	4
		1	1
		5	5
Control circuit output signal	Relay	A, B, C	A1, B1, C1
	Open collector	RUN	RUN
		SU	SU
		OL	OL
		IPF	IPF
		FU	FU
		SE	SE
	Pulse	FM	FM
	Analog	AM	AM

*1 For the FR-F820-18.5K to 30K and the FR-F840-22K to 55K, connect the brake unit between P3 and N/-.

The response of the input/output terminals of the FR-F800 series is improved compared to the FR-A100(E) series.
Operation timing of the device may differ depending on the usage. In this case, set Pr.289 (Inverter output terminal filter) and Pr.699 (Input terminal filter) to adjust the terminal response time. Set "20 to 30 ms" in Pr.289 and Pr.699 and adjust according to the system.

Terminal screw size

[Main circuit terminals for 200 V class]

FR-A120(E)					FR-F820				
Capacity	R, S, T	U, V, W	P, N, P1	R1, S1	⏚	Capacity	R/L1, S/L2, T/L3	U, V, W	P/+, P3 N/-, P1	R1, S1	⏚
0.75K	M4	M4	M4	M4	M4	0.75K	M4	M4	M4	M4	M4
1.5K	M4	M4	M4	M4	M4	1.5K	M4	M4	M4	M4	M4
2.2K	M4	M4	M4	M4	M4	2.2K	M4	M4	M4	M4	M4
3.7K	M4	M4	M4	M4	M4	3.7K	M4	M4	M4	M4	M4
5.5K	M5	M5	M5	M4	M5	5.5K	M4	M4	M4	M4	M4
7.5K	M5	M5	M5	M4	M5	7.5K	M5	M5	M5	M4	M5
11K	M5	M5	M5	M4	M5	11K	M5	M5	M5	M4	M5
15K	M6	M6	M6	M4	M6	15K	M5	M5	M5	M4	M6
18.5K	M6	M6	M6	M4	M6	18.5K	M6	M6	M6	M4	M6
22K	M8	M8	M8	M4	M6	22K	M8	M8	M8	M4	M6
30K	M8	M8	M8	M4	M6	30K	M8	M8	M8	M4	M6
37K	M10	M10	M10	M4	M6	37K	M8	M8	M8	M4	M6
45K	M10	M10	M10	M4	M8	45K	M10	M10	M10	M4	M8
55K	M12	M12	M12	M4	M8	55K	M10	M10	M10	M4	M8

Terminal screw size

[Main circuit terminals for 400 V class]

FR-A140(E)						FR-F840					
Capacity	R, S, T	U, V, W	P, N, P1	R1, S1	⏚	Capacity	R/L1, S/L2, T/L3	U, V, W	P/+, N/-, P1	R1, S1	⏚
0.75K	M4	M4	M4	M4	M4	0.75K	M4	M4	M4	M4	M4
1.5K	M4	M4	M4	M4	M4	1.5K	M4	M4	M4	M4	M4
2.2K	M4	M4	M4	M4	M4	2.2K	M4	M4	M4	M4	M4
3.7K	M4	M4	M4	M4	M4	3.7K	M4	M4	M4	M4	M4
5.5K	M5	M5	M5	M4	M5	5.5K	M4	M4	M4	M4	M4
7.5K	M5	M5	M5	M4	M5	7.5K	M4	M4	M4	M4	M4
11K	M5	M5	M5	M4	M5	11K	M4	M4	M4	M4	M4
15K	M6	M6	M6	M4	M6	15K	M5	M5	M5	M4	M5
18.5K	M6	M6	M6	M4	M6	18.5K	M5	M5	M5	M4	M5
22K	M6	M6	M6	M4	M6	22K	M6	M6	M6	M4	M6
30K	M8	M8	M8	M4	M8	30K	M6	M6	M6	M4	M6
37K	M8	M8	M8	M4	M8	37K	M6	M6	M6	M4	M6
45K	M8	M8	M8	M4	M8	45K	M8	M8	M8	M4	M8
55K	M8	M8	M8	M4	M8	55K	M8	M8	M8	M4	M8

[Control circuit terminal block]

FR-A100(E)	FR-F800
M3	Spring clamp terminal
⊕ screw type terminal block	

Terminal block layout

The control circuit terminal blocks of the FR-A100(E) and FR-F800 are as shown below.

The terminal block layouts are not compatible.

FR-A100(E)

| A |
| B |
| C |
| SE |
| RUN |
| SU |
| IPF |
| OL |
| FU |
| FM |
| SD |
| RL |
| RM |
| RH |
| RT |
| AU |
| STOP |
| MRS |
| RES |
| SD |
| STF |
| STR |
| JOG/OH |
| CS |
| PC |

| AM |
| 10E |
| 10 |
| 2 |
| 5 |
| 4 |
| 1 |

FR-F800

2 5 4 1 F/C +24 SD So SOC SD SIC S1 S2 PC   A1 B1 C1 A2 B2 C2

AM 5 10E 10 SE SE RUN SU IPF OL FU   PC RL RM RH RT AU STP MRS RES SD SD STF STR JOG CS
*2

*1 This terminal operates as terminal FM for the FM type inverter and as terminal CA for the CA type inverter.
*2 Represents the terminal STOP.

Refer to the Instruction Manual for information about the wiring method.

* Position of the control circuit terminals
The control circuit terminal block is arranged vertically in the FR-A100(E) and horizontally in the FR-F800.

When replacing the inverter, wire the terminals correctly.

FR-A100(E)

FR-F800

FR-A100(E) control circuit terminal block

FR-F800 control circuit terminal block

3. PARAMETER

Note that most parameter numbers of inverters in both series are the same but some setting values differ. Refer to the following table to set the parameters.

<u>List of FR-F800 series parameters compatible with the FR-A100(E) series</u>

The following table shows the parameter settings required when replacing FR-A100(E) series inverters with FR-F800 series inverters.

When an FR-A100(E) series parameter is set to <u>a value other than the initial value</u>, set the corresponding FR-F800 series parameter according to the following table.

When an FR-A100(E) series parameter is set to an initial value, it is usually not necessary to change the corresponding FR-F800 series parameter setting.

The parameter number of the [ ] parameters differs from that of the FR-A100(E) series inverter.

Setting
◎: Set the FR-A100(E) parameter as it is.
△: Change the FR-A100(E) parameter and set.
×: Adjust and set the FR-F800 parameter.

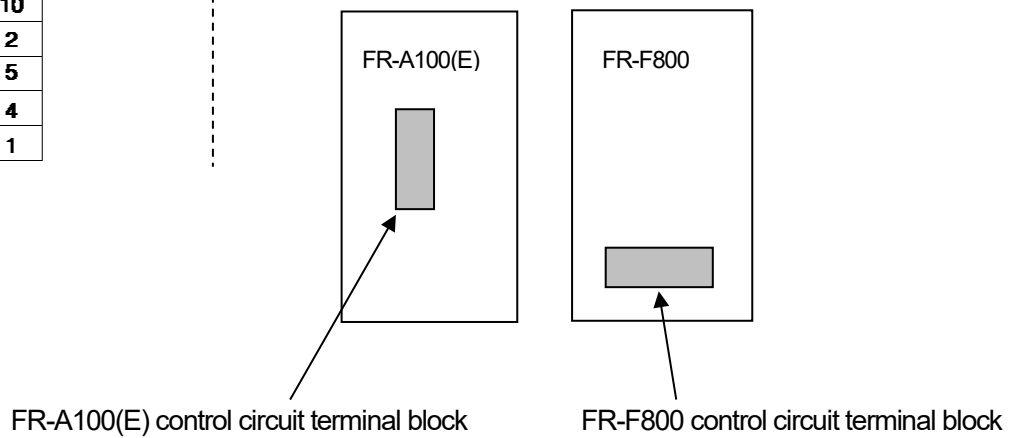| FR-A100(E) parameter list						FR-F800 compatible parameter				Parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range	Initial value	Setting	Remarks
		A100	A100E	A100	A100E						
0	Torque boost (manual)	0% to 30%		6% / 3%		0	Torque boost	0% to 30%	6% / 4% / 3% / 2% / 1.5%	△	When this parameter has been used at the initial setting in the FR-A100(E) inverters, use it at the initial setting in the FR-F800 inverters as well. When the setting has been changed from the initial value in the FR-A100(E), set the value obtained by multiplying the ratio of the set value to the initial value by the initial value in the FR-F800. Example) When the FR-A120-11K has been used at the setting of 6%, the value for the FR-F820-11K can be obtained as follows: (6/3) × 2 = 4(%).
1	Maximum frequency	0 to 120 Hz		60 Hz		1	Maximum frequency	0 to 400 Hz	60 Hz	◎	
2	Minimum frequency	0 to 120 Hz		0 Hz		2	Minimum frequency	0 to 400 Hz	0 Hz	◎	
4	Multi-speed setting (high speed)	0 to 120 Hz		60 Hz		4	Multi-speed setting (high speed)	0 to 400 Hz	60 Hz	◎	
5	Multi-speed setting (middle speed)	0 to 120 Hz		30 Hz		5	Multi-speed setting (middle speed)	0 to 400 Hz	30 Hz	◎	
6	Multi-speed setting (low speed)	0 to 120 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		5 s / 15 s		7	Acceleration time	0 to 3600 s / 0 to 360 s	5 s / 15 s	◎	Changing Pr.21 after setting this parameter will change the set value.
8	Deceleration time	0 to 3600 s / 0 to 360 s		5 s / 15 s		8	Deceleration time	0 to 3600 s / 0 to 360 s	5 s / 15 s	◎	Changing Pr.21 after setting this parameter will change the set value.
9	Electronic thermal O/L relay	0 to 500 A		Rated output current		9	Electronic thermal O/L relay	0 to 500 A / 0 to 3600 A	Rated output current	◎	Set the rated motor current.
10	DC injection brake operation frequency	0 to 120 Hz, 9999		3 Hz		10	DC injection brake operation frequency	0 to 400 Hz, 9999	3 Hz	◎	
11	DC injection brake operation time	0 to 10 s	0 to 10 s, 8888	0.5 s		11	DC injection brake operation time	0.1 to 10 s	0.5 s	×	The setting value "8888" cannot be selected with the FR-F800.
12	DC injection brake voltage	0% to 30%		6% / 3%		12	DC injection brake voltage	0% to 30%	4% / 2%	△	When this parameter has been used at the initial setting in the FR-A100(E) inverters, use it at the initial setting in the FR-F800 inverters as well. When the setting has been changed from the initial value in the FR-A100(E), set the value obtained by multiplying the ratio of the set value to the initial value by the initial value in the FR-F800. Example) When the FR-A120-11K has been used at the setting of 6%, the value for the FR-F820-11K can be obtained as follows: (6/3) × 2 = 4(%).
13	Starting frequency	0.5 to 60 Hz		0.5 Hz		13	Starting frequency	0 to 60 Hz	0.5 Hz	◎	
14	Applied load selection	0, 1		0		14	Load pattern selection	0, 1	1	◎	The initial setting value for the FR-F800 is "1" (for variable-torque load).
15	Jog frequency	0 to 120 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	◎	Changing Pr.21 after setting this parameter will change the set value.
17	External thermal O/L relay input	0, 1, 2, 3	0 to 7	0		17	MRS input selection	0, 2, 4	0	◎	
19	Base frequency voltage	0 to 1000 V, 9999	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 120 Hz		60 Hz		20	Acceleration/deceleration reference frequency	1 to 400 Hz	60 Hz	◎	

FR-A100(E) parameter list					FR-F800 compatible parameter				Parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range	Initial value	Setting	Remarks
		A100	A100E	A100	A100E						
21	Acceleration/deceleration time increments	0, 1		0		21	Acceleration/deceleration time increments	0, 1	0	◎	
22	Stall prevention operation level	0% to 150%, 9999		120%		22	Stall prevention operation level	0% to 150%, 9999	120%	◎	
23	Stall prevention operation level 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 120 Hz, 9999		9999		24	Multi-speed setting (speed 4)	0 to 400 Hz, 9999	9999	◎	
25	Multi-speed setting (speed 5)	0 to 120 Hz, 9999		9999		25	Multi-speed setting (speed 5)	0 to 400 Hz, 9999	9999	◎	
26	Multi-speed setting (speed 6)	0 to 120 Hz, 9999		9999		26	Multi-speed setting (speed 6)	0 to 400 Hz, 9999	9999	◎	
27	Multi-speed setting (speed 7)	0 to 120 Hz, 9999		9999		27	Multi-speed setting (speed 7)	0 to 400 Hz, 9999	9999	◎	
28	Multi-speed input compensation	0, 1		0		28	Multi-speed input compensation selection	0, 1	0	◎	
29	Acceleration/deceleration pattern	0, 1, 2, 3		0		29	Acceleration/deceleration pattern selection	0 to 5	0	◎	
30	High power factor converter connection section	—	0, 3 to 5, 9999	0		30	Regenerative function selection	0, 1, 2	0	×	When connecting FR-HC, set Pr.30 = "2".
31	Frequency jump 1A	0 to 120 Hz, 9999		9999		31	Frequency jump 1A	0 to 400 Hz, 9999	9999	◎	
32	Frequency jump 1B	0 to 120 Hz, 9999		9999		32	Frequency jump 1B	0 to 400 Hz, 9999	9999	◎	
33	Frequency jump 2A	0 to 120 Hz, 9999		9999		33	Frequency jump 2A	0 to 400 Hz, 9999	9999	◎	
34	Frequency jump 2B	0 to 120 Hz, 9999		9999		34	Frequency jump 2B	0 to 400 Hz, 9999	9999	◎	
35	Frequency jump 3A	0 to 120 Hz, 9999		9999		35	Frequency jump 3A	0 to 400 Hz, 9999	9999	◎	
36	Frequency jump 3B	0 to 120 Hz, 9999		9999		36	Frequency jump 3B	0 to 400 Hz, 9999	9999	◎	
37	Speed display	2 to 10, 11 to 9998	2, 4, 6, 8, 10, 11 to 9998	0		37	Speed display	0, 1 to 9998	0	◎	
38	Automatic torque boost	0% to 200%		0%		80	Motor capacity	0.4 to 55 kW,	9999	×	When the automatic torque boost function is used in the FR-A100(E), set a value other than "9999" in Pr.80 to select Simple magnetic flux vector control as required.
39	Automatic torque boost operation starting current	0 to 500 A		0 A		90	Motor constant	0 to 50 Ω	9999	×	
40	Output terminal assignment	0 to 9999		1234		190	RUN terminal function selection	0 to 8, 10 to 20, 25 to 28, 30 to 36, 39, 41 to 47, 64, 70, 84, 85, 90 to 99, 100, 108, 110 to 116, 120, 125 to 128, 130 to 136, 139, 141 to 147, 164, 170, 184, 185, 190 to 199, 9999	0	×	
						191	SU terminal function selection		1	×	
						192	IPF terminal function selection		2	×	
						193	OL terminal function selection		3	×	
						194	FU terminal function selection		4	×	
						195	ABC1 terminal function selection	0 to 8, 10 to 20, 25 to 28, 34, 45 to 47, 64, 70, 90, 91, 94 to 99, 100 to 108, 110 to 116, 125 to 128, 134, 145 to 147, 164, 170, 191, 194 to 199, 9999	99	×	
41	Up-to-frequency sensitivity	0% to 100%		10%		41	Up-to-frequency sensitivity	0% to 100%	10%	◎	
42	Output frequency detection	0 to 120 Hz		6 Hz		42	Output frequency detection	0 to 400 Hz	6 Hz	◎	
43	Output frequency detection at reverse rotation	0 to 120 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		5 s		44	Second acceleration/deceleration time	0 to 3600 s / 0 to 360 s	5 s	◎	
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	◎	
46	Second torque boost	0% to 30%, 9999		9999		46	Second torque boost	0% to 30%, 9999	9999	◎	
47	Second V/F (base frequency)	0 to 120 Hz, 9999		9999		47	Second V/F (base frequency)	0 to 400 Hz, 9999	9999	◎	
48	Second stall prevention operation current	0% to 150%		120%		48	Second stall prevention operation level	0% to 150%	120%	◎	

FR-A100(E) parameter list						FR-F800 compatible parameter				Parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range	Initial value	Setting	Remarks
		A100	A100E	A100	A100E						
49	Second stall prevention operation frequency	0 to 120 Hz	0 to 120 Hz, 9999	0 Hz		49	Second stall prevention operation frequency	0 to 400 Hz, 9999	0 Hz	◎	
50	Second output frequency detection	0 to 120 Hz		30 Hz		50	Second output frequency detection	0 to 400 Hz	30 Hz	◎	
51	Inverter LED display data selection	1 to 6, 8, 10 to 14, 17		1		—	—	—	—	×	This function is not available for the FR-F800.
52	PU main display data selection	0, 17 to 20	0, 17, 19, 20, 22, 23, 24, 25	0		52	Operation panel main monitor selection	0, 5, 6, 8 to 14, 17, 20, 23 to 25, 50 to 57, 100	0	◎	
53	PU level display data selection	5, 6, 8 to 14, 17, 18	0 to 3, 5, 6, 8, 10 to 14, 17	1		—	—	—	—	×	This function is not available for the FR-F800.
54	FM terminal function selection	0 to 6, 8, 10 to 14, 17	1 to 3, 5, 6, 8, 10 to 14, 17, 21, 101 to 103, 105, 106, 108, 110 to 114, 117, 121	1		54	FM/CA terminal function selection	1 to 3, 5, 6, 8 to 14, 17, 21, 24, 50, 52, 53	1	◎	
55	Frequency monitoring reference	0 to 120 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	◎	
57	Restart coasting time	0 to 5 s, 9999		9999		57	Restart coasting time	0, 0.1 to 5 s, 9999	9999	◎	
58	Restart cushion time	0 to 5 s	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	Intelligent mode selection	0, 3, 4		0		60	Energy saving control selection	0, 4, 9	0	×	The setting value "3" (optimum acceleration/deceleration operation) cannot be selected with the FR-F800.
65	Retry selection	—	0 to 5	—	0	65	Retry selection	0 to 5	0	◎	
66	Stall prevention operation reduction starting frequency	0 to 120 Hz		60 Hz		66	Stall prevention operation reduction starting frequency	0 to 400 Hz	60 Hz	◎	
67	Number of retries at alarm occurrence	0 to 10		0		67	Number of retries at fault occurrence	0 to 10, 101 to 110	0	◎	
68	Retry waiting time	0 to 10 s, 9999	0 to 10 s	9999	1.0 s	68	Retry waiting time	0 to 10 s	1 s	△	Set Pr.67 = "0" when the retry is not performed.
69	Retry count display erasure	0		0		69	Retry count display erase	0	0	◎	
71	Applied motor	0, 1, 2		0		71	Applied motor	0, 1, 2	0	◎	
72	PWM frequency selection	2 to 14.5 kHz	0.7 to 14.5 kHz	14.5 kHz		72	PWM frequency selection	0 to 15	2	×	The initial setting value for the FR-F800 is "2 (kHz)".
73	0 to 5 V, 0 to 10 V selection	0 to 5, 10 to 15		1		73	Analog input selection	0 to 5, 6, 7, 10 to 15, 16, 17	1	◎	
74	Response time for analog signal	0 to 8		1		74	Input filter time constant	0 to 8	1	◎	
75	Reset selection/PU disconnection detection/PU stop selection	0, 1, 2, 3	0, 1, 2, 3, 14, 15, 16, 17	0	14	75	Reset selection/disconnected PU detection/PU stop selection	0, 1, 2, 3, 14, 15, 16, 17	14	◎	
76	Alarm code output selection	0, 1, 2, 3		0		76	Fault code output selection	0, 1, 2	0	×	The setting value "3" (output during programmed operation) cannot be selected with the FR-F800.
77	Parameter write disable selection	0, 1, 2		0		77	Parameter write 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 5	0 to 5, 7, 8	0		79	Operation mode selection	0, 1, 2, 3, 4, 6, 7	0	◎	
107	Commercial power supply switching sequence output terminal selection	0, 1, 2		0		135	Electronic bypass sequence selection	0, 1	0	×	Pr.135 is used to enable/disable the electronic bypass sequence function. To assign functions to terminals MC1 to MC3, use Pr.190 to Pr.196 (Output terminal function selection).

FR-A100(E) parameter list						FR-F800 compatible parameter				Parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range	Initial value	Setting	Remarks
		A100	A100E	A100	A100E						
108	MC switching interlock time	0 to 100 s		1.0 s		136	MC switchover interlock time	0 to 100 s	1 s	◎	
109	Restart waiting time	0 to 100 s		0.5 s		137	Start waiting time	0 to 100 s	0.5 s	◎	
110	Commercial power supply switching selection at alarm occurrence	0, 1		0		138	Bypass selection at a fault	0, 1	0	◎	
111	Automatic inverter-commercial power supply switching selection	0 to 60 Hz, 9999		9999		139	Automatic switchover frequency from inverter to bypass operation	0 to 60 Hz, 9999	9999	◎	
128	Forward-reverse action selection	—	0, 1, 10, 11, 20, 21	—	0	128	PID action selection	10, 11, 20, 21, 50, 51, 60, 61	10	×	The setting values "0 and 1" cannot be selected with the FR-F800.
129	PI proportional band	—	0.1% to 1000% 9999	—	100%	129	PID proportional band	0.1% to 1000%, 9999	100%	◎	
130	Integral time	—	0.1 to 3600 s, 9999	—	1 s	130	PID integral time	0.1 to 3600 s, 9999	1 s	◎	
131	Upper limit value	—	0.1% to 100% 9999	—	9999	131	PID upper limit	0% to 100%, 9999	9999	◎	
132	Lower limit value	—	0.1% to 100% 9999	—	9999	132	PID lower limit	0% to 100%, 9999	9999	◎	
133	PI control set value setting for PU operation	—	0% to 100%	—	0%	133	PID action set point	0% to 100%, 9999	9999	△	Pr.133 setting is used as a set point for the FR-F800 regardless of the operation mode. To use the value input via terminal 2 as a set point, set Pr.133 = "9999".
145	Parameter unit language switching	—	0, 1, 2, 3	—	0	145	PU display language selection	0 to 7	0	◎	
152	Open motor circuit detection level	—	0% to 50%	—	5.0%	152	Zero current detection level	0% to 150%	5.0%	◎	
153	Open motor circuit detection time	—	0.05 to 1 s	—	0.5 s	153	Zero current detection time	0 to 1 s	0.5 s	◎	
154	Cumulative power monitoring clear	—	0	—	0	170	Watt-hour meter clear	0, 10, 9999	0	◎	
155	RT activated condition	0, 10		0		155	RT signal function validity condition selection	0, 10	0	◎	
156	Stall prevent. select. at regeneration	0, 100	0 to 31, 100	0		156	Stall prevention operation selection	0 to 31, 100, 101	0	◎	
157	OL signal waiting time	0 to 25 s, 9999		0		157	OL signal output timer	0 to 25 s, 9999	0	◎	
158	AM terminal function selection	1 to 3, 5, 6, 8, 10 to 14, 17, 21, 9999		9999		158	AM terminal function selection	1 to 3, 5, 6, 8 to 14, 17, 21, 24, 50, 52, 53	1	×	The setting value "9999" cannot be selected with the FR-F800. The signal output via terminal FM can be output also via terminal AM by setting the value set in Pr.54 in this parameter.
159	PWM f decrease at low speed	—	0, 1, 2, 3	—	0	—	—	—	—	×	This function is not available for the FR-F800.
200	Programmed operation minute/second selection	0 to 3		0		—	—	—	—	×	The program operation function was deleted for the FR-F800.
201 to 210	Program set 1, 1 to 10	0 to 2 0 to 400 Hz, 9999 0 to 99.59		0 9999 0		—	—	—	—	×	The program operation function was deleted for the FR-F800.
211 to 220	Program set 2, 11 to 20	0 to 2 0 to 400 Hz, 9999 0 to 99.59		0 9999 0		—	—	—	—	×	The program operation function was deleted for the FR-F800.

FR-A100(E) parameter list						FR-F800 compatible parameter				Parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range	Initial value	Setting	Remarks
		A100	A100E	A100	A100E						
221 to 230	Program set 3, 21 to 30	0 to 2		0		—	—	—	—	×	The program operation function was deleted for the FR-F800.
		0 to 400 Hz, 9999		9999							
		0 to 99.59		0							
231	Timer setting	0 to 99.59		0		—	—	—	—	×	The program operation function was deleted for the FR-F800.
900	FM terminal calibration	—		—		C0 (900)	FM/CA terminal calibration	—	—	×	The calibration method differs between inverters in both series.
901	AM terminal calibration	—		—		C1 (901)	AM terminal calibration	—	—	×	The calibration method differs between inverters in both series.
902	Frequency setting voltage bias	0 to 10 V		0 V		C2 (902)	Terminal 2 frequency setting bias frequency	0 to 400 Hz	0 Hz	×	The calibration method differs between inverters in both series.
		0 to 60 Hz		0 Hz		C3 (902)	Terminal 2 frequency setting bias	0% to 300%	0%		
903	Frequency setting voltage gain	0 to 10 V		5V		125 (903)	Terminal 2 frequency setting gain frequency	0 to 400 Hz	60 Hz	×	The calibration method differs between inverters in both series.
		1 to 120 Hz		60 Hz		C4 (903)	Terminal 2 frequency setting gain	0% to 300%	100%		
904	Frequency setting current bias	0 to 20 mA		4 mA		C5 (904)	Terminal 4 frequency setting bias frequency	0 to 400 Hz	0 Hz	×	The calibration method differs between inverters in both series.
		0 to 60 Hz		0 Hz		C6 (904)	Terminal 4 frequency setting bias	0% to 300%	20%		
905	Frequency setting current gain	0 to 20 mA		20 mA		126 (905)	Terminal 4 frequency setting gain frequency	0 to 400 Hz	60 Hz	×	The calibration method differs between inverters in both series.
		1 to 120 Hz		60 Hz		C7 (905)	Terminal 4 frequency setting gain	0% to 300%	100%		
—	—	—		—		990	PU buzzer control	0, 1	1	◎	

4. Option

The following table shows which FR-A100(E) series options are compatible with the FR-F800 series inverters and their corresponding F800 series options.

Item		Option model		
		FR-A100	FR-A100(E)	FR-F800
Plug-in type	Computer link function	FR-APB	FR-EPB	Computer link (serial communication): Supported as standard (RS-485 terminals).
	Programmable controller link function	FR-APC	FR-EPC	NET/MINI: Not supported.
	Automatic control compatible function	FR-APD	FR-EPD	PI control: Supported as standard*1. Programmed operation: Not supported*2.
	I/O function	FR-APE	FR-EPE	12-bit digital input: FR-A8AX. Relay output: FR-A8AR (three terminals) or terminals A2, B2, and C2 on the inverter. Analog current output: FR-A8AY.
	Computer link and extension output function	—	FR-EPG	Computer link (serial communication): Supported as standard (RS-485 terminals). Relay output: FR-A8AR (three terminals) or terminals A2, B2, and C2 on the inverter. Analog current output: FR-A8AY. 24 VDC power supply: Terminal PC on the inverter.
	Pulse train input function	—	FR-EPH	Pulse train input: Pulse train input terminal on the inverter. Relay output: FR-A8AR (three terminals) or terminals A2, B2, and C2 on the inverter. Analog current output: FR-A8AY. PI control: Supported as standard*1.

Note (right column, spanning plug-in rows): Up to 3 plug-in options can be mounted.

Item		FR-A100	FR-F800
Stand-alone	Parameter unit	FR-PU02	FR-PU07 Some restrictions apply for parameter copy and operable parameters, etc.
	Parameter copy unit	FR-ARW	Integrated as standard function (FR-DU08)
	Serial communication unit	FR-CU01	RS-485 communication supported as standard
	Digital operation panel	FR-DU01	Supported as standard (FR-DU08)
	Panel through attachment	FR-ACN	FR-A8CN
	Totally enclosed structure attachment	FR-ACV	Not available
	Attachment for conduit connection	FR-AFN	Not available
	Intercompatibility attachment	FR-AAT	FR-AAT, FR-A5AT
	VDE standard compliant noise filter	FR-ALF	HF3000 series manufactured by Soshin Electric Co., Ltd.
	EMC Directive compliant noise filter	SF1□□□	Built-in function of the inverter (EN 61800-3 2nd Environment compatible)
	Surge voltage suppression filter	FR-ASF-H	Compatible
	Parameter unit connection cable	FR-CBL	FR-CB201, 203, 205 Prepare FR-ADP for installing the operation panel on the enclosure surface.
	BU type brake unit	BU1500 to 15K, H7.5K to 30K	Compatible.
	Brake unit	FR-BU-(H)15K to 55K	If replacing the brake unit, use FR-BU2-(H).
	Resistor unit	FR-BR-(H)15K to 55K	Compatible
	FR-RC power regeneration converter	FR-RC-(H)15K to 55K	Compatible. If replacing the converter, use FR-XC-(H).
	FR-HC high power factor converter	FR-HC-(H)7.5K to 55K	Compatible. If replacing the converter, use FR-HC2-(H).
	Power factor improving AC reactor	FR-BAL-(H)	Compatible. If replacing the reactor, use FR-HAL-(H)*3.
	Power factor improving DC reactor	FR-BEL-(H)	Compatible. If replacing the reactor, use FR-HEL-(H).
	Radio noise filter	FR-BIF-(H)	Compatible
	Line noise filter	FR-BSF01, FR-BLF	Compatible

*1 The forward and reverse rotation signals cannot be output separately. "Hi" is output during forward rotation, and "Low" is output during reverse rotation and during stop by using PID forward/reverse rotation output function.
*2 Automatic operation can be performed according to the time by combining the real-time clock function with the PLC function.
*3 When FR-RC-(H) is used, use FR-BAL-(H).

Name		Option model		
		FR-A100	FR-A100(E)	FR-F800
Manual controller / speed controller	Manual controller	FR-AX		Compatible
	DC tach. follower	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 1 kΩ		Compatible
	Analog frequency meter	YM206NRI 1 mA		Compatible
	Calibration resistor	RV24YN 10 kΩ		Compatible

BCN-C21002-213