Information for Replacement of FR-F500J Series with FR- F700PJ Series

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

1. Size

When the FR-F500J series inverters are replaced with the FR-F700PJ series inverters, the required installation space of the FR-F700PJ series inverters is the same as that of the corresponding FR-F500J series inverters.

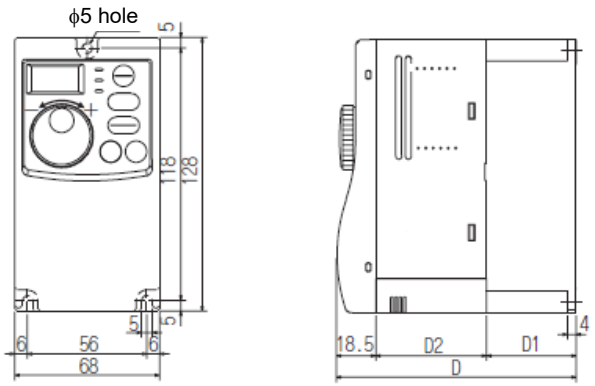
For more information about the product size, refer to the outline dimension drawings on the following pages.

Power supply voltage	Existing inverter	New inverter	Installation space comparison
Three-phase 200 V	FR-F520J-0.4K	FR-F720PJ-0.4K	Same
	FR-F520J-0.75K	FR-F720PJ-0.75K	Same
	FR-F520J-1.5K	FR-F720PJ-1.5K	Same
	FR-F520J-2.2K	FR-F720PJ-2.2K	Same
	FR-F520J-3.7K	FR-F720PJ-3.7K	Same
	FR-F520J-5.5K	FR-F720PJ-5.5K	Same
	FR-F520J-7.5K	FR-F720PJ-7.5K	Same
	FR-F520J-11K	FR-F720PJ-11K	Same
	FR-F520J-15K	FR-F720PJ-15K	Same
Three-phase 400 V	FR-F540J-0.4K	FR-F740PJ-0.4K	Same
	FR-F540J-0.75K	FR-F740PJ-0.75K	Same
	FR-F540J-1.5K	FR-F740PJ-1.5K	Same
	FR-F540J-2.2K	FR-F740PJ-2.2K	Same
	FR-F540J-3.7K	FR-F740PJ-3.7K	Same
	FR-F540J-5.5K	FR-F740PJ-5.5K	Same
	FR-F540J-7.5K	FR-F740PJ-7.5K	Same
	FR-F540J-11K	FR-F740PJ-11K	Same
	FR-F540J-15K	FR-F740PJ-15K	Same

* The installation space is the same for inverters of the same capacity between the FR-F500J series and the FR-F700PJ series.

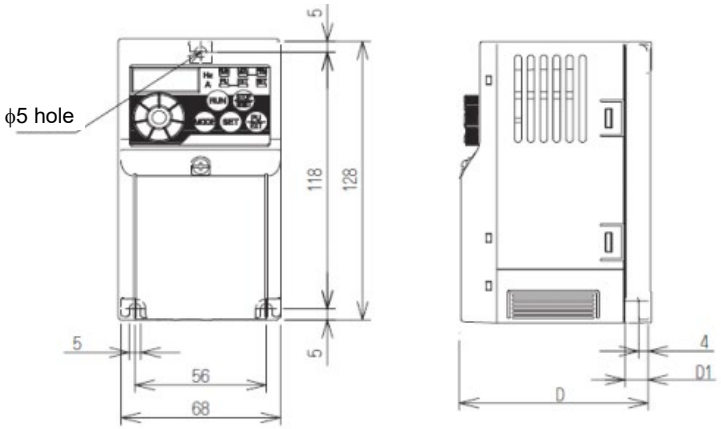
Outline dimension drawings (Unit: mm)

■FR-F520J-0.4K, 0.75K



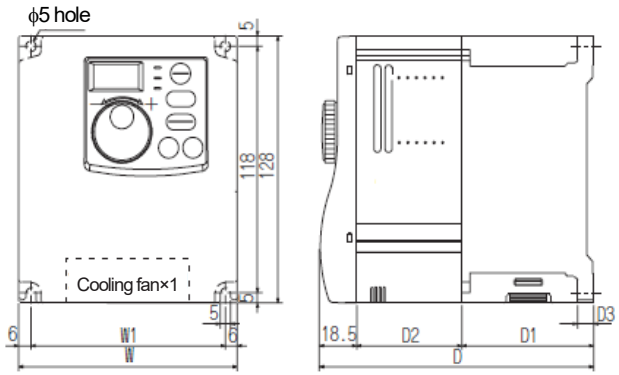
Inverter model	D	D1	D2
FR-F520J-0.4K	112.5	42	52
FR-F520J-0.75K	132.5	62	52

■FR-F720PJ-0.4K, 0.75K



Inverter model	D	D1
FR-F720PJ-0.4K	112.5	42
FR-F720PJ-0.75K	132.5	62

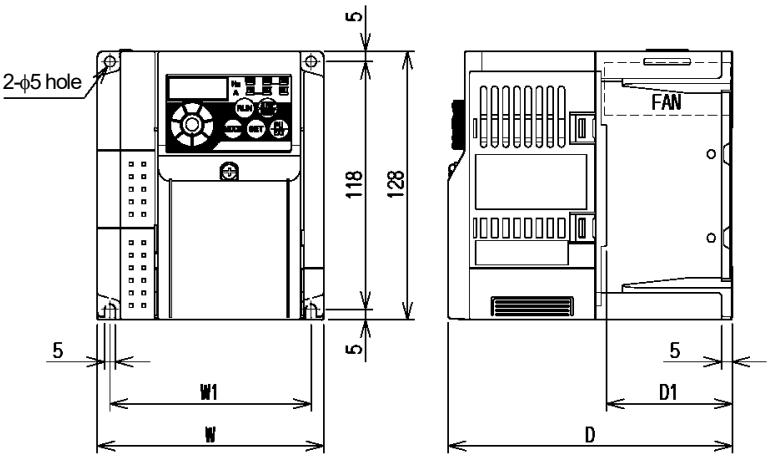
■FR-F520J-1.5K to 3.7K



Inverter model	W	W1
FR-F520J-1.5K, 2.2K	108	96
FR-F520J-3.7K	170	158

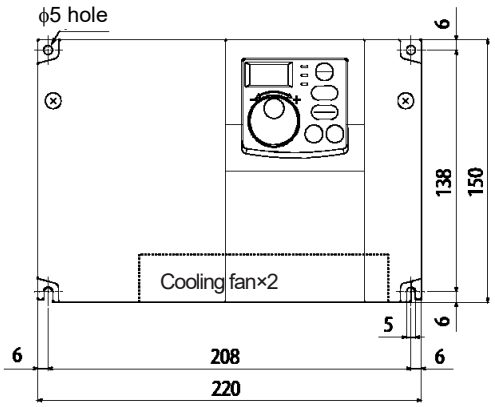
Inverter model	D	D1	D2	D3
FR-F520J-1.5K, 2.2K	135.5	65	52	8
FR-F520J-3.7K	142.5	72	52	5

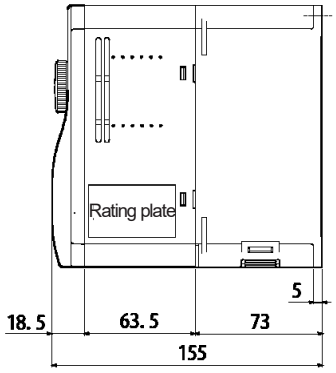
■FR-F720PJ-1.5K to 3.7K



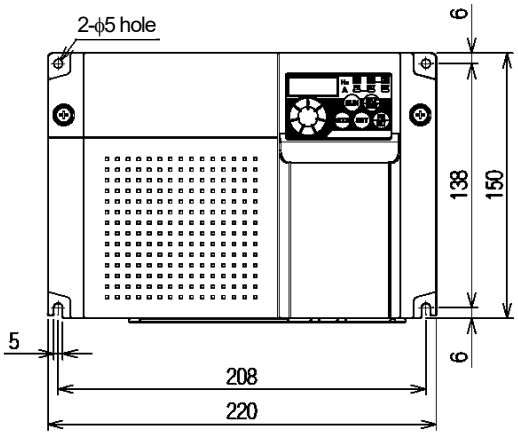
Inverter model	W	W1	D	D1
FR-F720PJ-1.5K, 2.2K	108	96	135.5	60
FR-F720PJ-3.7K	170	158	142.5	66.5

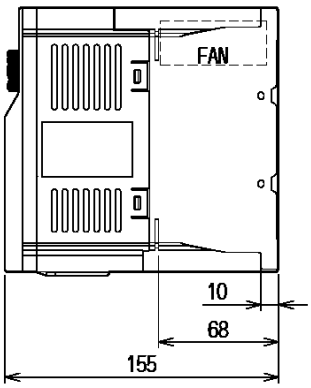
■FR-F520J-5.5K, 7.5K



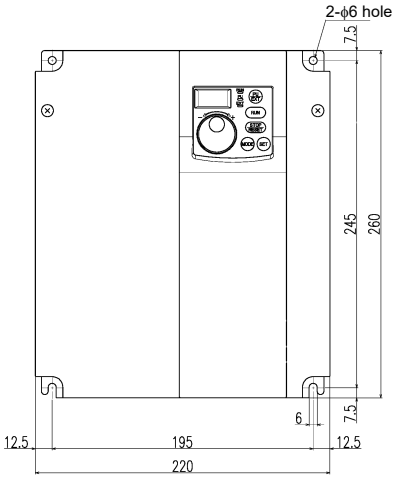


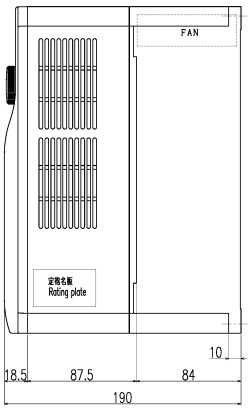
■FR-F720PJ-5.5K, 7.5K



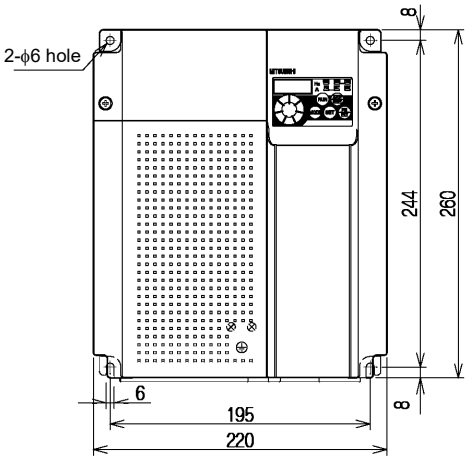


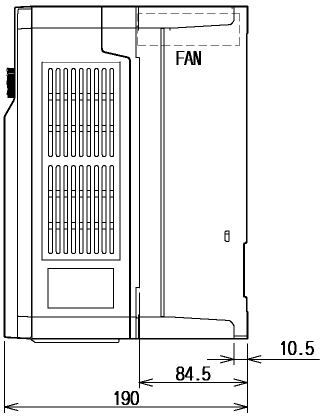
■FR-F520J-11K, 15K



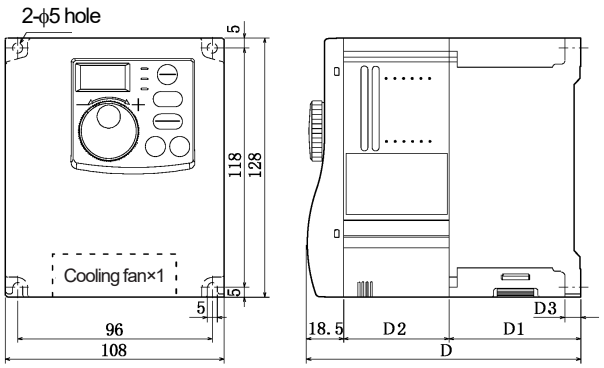


■FR-F720PJ-11K, 15K





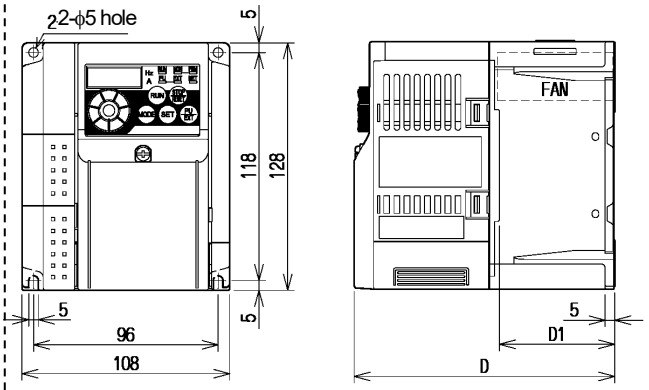
■FR-F540J-0.4K to 3.7K



Inverter model	D	D1	D2	D3
FR-F540J-0.4K FR-F540J-0.75K	129.5	59	52	5
FR-F540J-1.5K	135.5	65	52	8
FR-F540J-2.2K	155.5	65	72	8
FR-F540J-3.7K	165.5	65	82	8

Note: The 0.4K inverters and 0.75K inverters are not provided with a cooling fan.

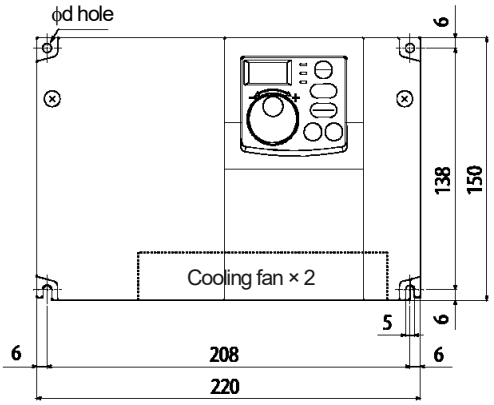
■FR-F740PJ-0.4K to 3.7K

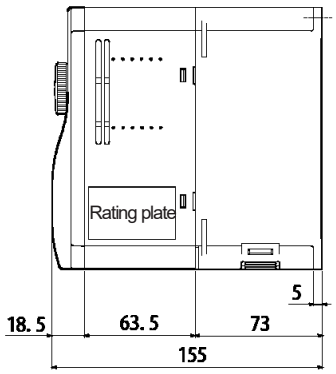


Inverter model	D	D1
FR-F740PJ-0.4K FR-F740PJ-0.75K	129.5	54
FR-F740PJ-1.5K	135.5	60
FR-F740PJ-2.2K	155.5	60
FR-F740PJ-3.7K	165.5	60

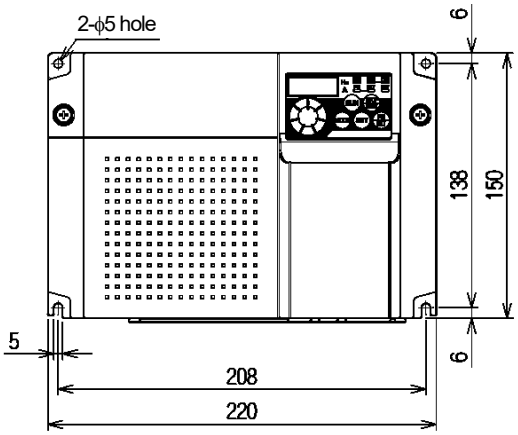
Note: The 0.4K inverters and 0.75K inverters are not provided with a cooling fan.

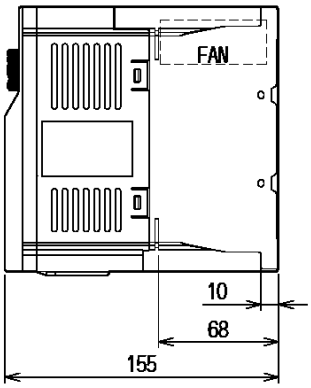
■FR-F540J-5.5K, 7.5K



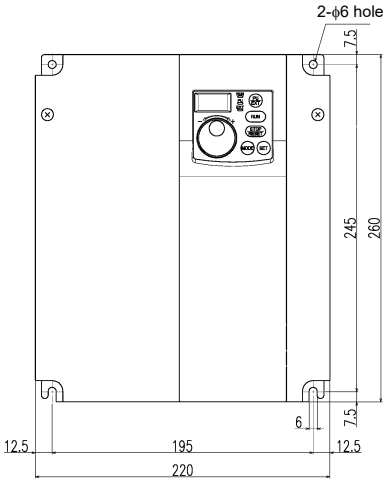


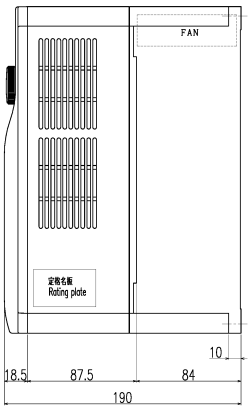
■FR-F740PJ-5.5K, 7.5K



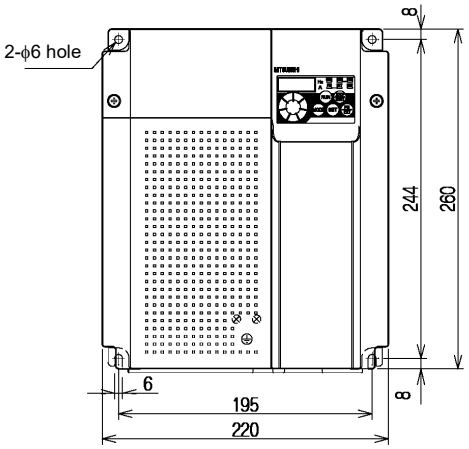


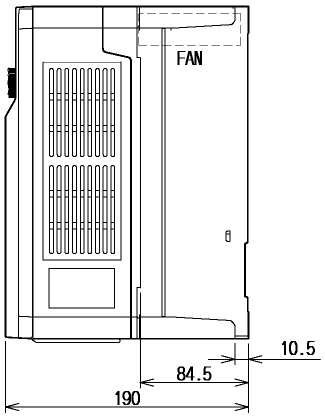
■FR-F540J-11K, 15K





■FR-F740PJ-11K, 15K





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.

For the terminal screw size, refer to page 9 and 10.

[Standard inverter]

Type		FR-F500J terminal name	FR-F700PJ compatible terminal name	Remarks
Main circuit		R/L1, S/L2, T/L3	R/L1, S/L2, T/L3	
		U, V, W	U, V, W	
		P/+	P/+, PR	Terminal PR is not provided for the FR-F500J series inverters.
		P/+, N/-	P/+, N/-	
		P/+, P1	P/+, P1	
		⏚	⏚	
Control circuit input signal	Contact	STF	STF	The function of terminal can be selected using the input terminal function selection.
		STR	STR	
		RH	RH	
		RM	RM	
		AU	AU	
		SD	SD	Isolated from terminals 5 and SE.
		PC	PC	
Analog	Frequency setting	10	10	
		2	2	
		5	5	Isolated from terminals SD and SE.
		4	4	
Thermistor	PTC thermistor input		10	
			2	
Control circuit terminal/ Output signal	Relay	A, B, C	A, B, C	
	Open collector	RUN	RUN	
		SE	SE	Isolated from terminals 5 and SD.
	Pulse	FM	FM	
Communication	RS-485	PU connector	PU connector	

Terminal screw size

[Main circuit terminal]

Voltage class	Capacity	FR -F500J				FR -F700PJ			
		R/L1, S/L2, T/L3	U, V, W	P/+, N/−, P1	⏚	R/L1, S/L2, T/L3	U, V, W	P/+, N/− P1, PR	⏚
Three-phase 200 V	0.4K to 0.75K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	1.5K to 2.2K	M4	M4	M4	M4	M4	M4	M4	M4
	3.7K	M4	M4	M4	M4	M4	M4	M4	M4
	5.5K	M5	M5	M5	M5	M5	M5	M5	M5
	7.5K,11K	M5	M5	M5	M5	M5	M5	M5	M5
	15K	M6	M6	M6	M6	M6	M6	M6	M5
Three-phase 400 V	0.4K to 11K	M4	M4	M4	M4	M4	M4	M4	M4
	15K	M6	M6	M6	M6	M5	M5	M5	M5

[Control circuit terminal]

FR-F500J		FR-F700PJ
Control circuit		Control circuit
Other than A, B, C	A, B, C	
M2 Insertion type Θ screw terminal	M3 Insertion type Θ screw terminal	Spring clamp terminal

Note 1: When using our authorized ferrules manufactured by Phoenix Contact for the FR-F500J series inverters, they cannot be used for the FR-F700PJ series inverters since they are not compatible with the spring clamp terminal block. (Even other crimp terminals are used, they may not be used for the FR-F700PJ series inverters due to differences in size.)
To use the wires of the FR-F500J series inverters for the FR-F700PJ series inverters, disconnect the existing crimp terminal at the end of each wire, and strip wires or use crimp terminals shown below. Check the applicable wire gauge.

Table. Applicable wire gauge (stripped wire) for the FR-F700PJ control terminal block

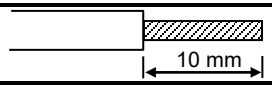
Wire strip length	Applicable stripped wire gauge
	Single wire (mm²)
 Twist the stripped end of wires to prevent them from fraying. Do not solder it.	0.3 to 0.75

Table. Applicable wire gauge (crimped wire) for the FR-F700PJ control terminal block

Ferrule part No. (Phoenix Contact Co., Ltd.)		Applicable stripped wire gauge (mm²)
With insulation sleeve	Without insulation sleeve	
AI 0.5-10WH	-	0.3 to 0.5
AI 0.75-10GY	AI 0.75-10	0.75
AI 1-10RD	A 1-10	1
AI 1.5-10BK	AI 1.5-10	1.25, 1.5
AI-TWIN 2×0.75-10GY	-	0.75 (two wires)

Blade terminal part No. (NICHIFU Co., Ltd.)		Applicable stripped wire gauge (mm²)
BT 0.75-11	VC 0.75	0.3 to 0.75

* The length of applicable crimp terminals differs between the FR-F700PJ series inverters and the FR-F500J series inverters. (FR-F700PJ: 10 mm, FR-F500J: 6 mm)

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.

List of FR-F700PJ series inverter parameters compatible with the FR-F500J series inverter parameters

The following table shows the parameter settings required when replacing FR-F500J series inverters with FR-F700PJ series inverters.
For parameters of the FR-F500J series inverters whose setting has been changed from the initial value, set the corresponding parameters of the FR-F700PJ series inverters according to the following table.
For parameters of the FR-F500J series inverters whose setting has not been changed from the initial value, it is basically not necessary to change the setting of the corresponding parameters of the FR-F700PJ series inverters.

The number of the parameter in ▭ is different from that of the FR-F500J series inverters.

Setting ◎: Use the same setting of the FR-F500J inverters.
△: Change the setting of the FR-F500J inverters as needed.
×: Adjust and set the FR-F700PJ inverter parameters independently.

FR-F500J parameter				FR-F700PJ compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
0	Torque boost	0 to 15%	Other than the below: 6% F520J-5.5K, 7.2K: 4% F520J-11K, 15K: 3% F540J-1.5K, 2.2K: 5% F540J-3.7K: 4% F540J-5.5, 7.5K: 3% F540J-11K, 15K: 2%	0	Torque boost	0 to 30%	0.75K or lower: 6% 1.5K to 3.7K: 4% 5.5K, 7.5K: 3% 11K, 15K: 2%	△	When this parameter has been used at the initial setting in the FR-F500J inverters, use it at the initial setting in the FR-D700J inverters as well. When the setting has been changed from the initial value in the FR-F500J inverters, set the value obtained by multiplying the ratio of the set value to the initial value by the initial value in the FR-D700 inverters. Example) When the FR-F500J-1.5K has been used at the setting of 6%, the value for the FR-F740PJ-1.5K can be obtained as follows: 6/5 × 4 = 4.8(%).
1	Maximum frequency	0 to 120 Hz	60 Hz	1	Maximum frequency	0 to 120 Hz	120 Hz	◎	The initial value differs between inverters in both series.
2	Minimum frequency	0 to 120 Hz	0 Hz	2	Minimum frequency	0 to 120 Hz	0 Hz	◎	
3	Base frequency	0 to 120 Hz	60 Hz	3	Base frequency	0 to 400 Hz	60 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 999 s	7.5K or lower: 5 s 11K or higher: 15 s	7	Acceleration time	0 to 3600 s	7.5K or lower: 5 s 11K or higher: 15 s	◎	
8	Deceleration time	0 to 999 s	7.5K or lower 10 s 11K or higher: 30 s	8	Deceleration time	0 to 3600 s	7.5K or lower: 10 s 11K or higher: 30 s	◎	
9	Electronic thermal O/L relay	0 to 100 A	Inverter rated current	9	Electronic thermal O/L relay	0 to 500 A	Inverter rated current	◎	Set the rated motor current.
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 15%	7.5K or lower: 4% 11K or higher: 2%	12	DC injection brake operation voltage	0 to 30%	7.5K or lower: 4% 11K or higher: 2%	◎	
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	1	14	Load pattern selection	0, 1	1	△	The settings for vertical lift load are not available in the FR-F700PJ.
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 999 s	0.5 s	16	Jog acceleration/deceleration time	0 to 3600 s	0.5 s	◎	
17	RUN key rotation direction selection	0,1	0	40	RUN key rotation direction selection	0, 1	0	◎	
19	Base frequency voltage	0 to 800 V, 888, –––	–––	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	◎	
21	Stall prevention function selection	0 to 31, 100	0	156	Stall prevention operation selection	0 to 31, 100, 101	0	◎	
22	Stall prevention operation level	0 to 150%	120%	22	Stall prevention operation level	0 to 150%	120%	◎	
23	Stall prevention operation level compensation factor at double speed	0 to 200%,–––	–––	23	Stall prevention operation level compensation factor at double speed	0 to 200%, 9999	9999	◎	

FR-F500J parameter				FR-F700PJ compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
24	Multi-speed setting (speed 4)	0 to 120 Hz,---	---	24	Multi-speed setting (speed 4)	0 to 400 Hz, 9999	9999	◎	
25	Multi-speed setting (speed 5)	0 to 120 Hz,---	---	25	Multi-speed setting (speed 5)	0 to 400 Hz, 9999	9999	◎	
26	Multi-speed setting (speed 6)	0 to 120 Hz, ---	---	26	Multi-speed setting (speed 6)	0 to 400 Hz, 9999	9999	◎	
27	Multi-speed setting (speed 7)	0 to 120 Hz, ---	---	27	Multi-speed setting (speed 7)	0 to 400 Hz, 9999	9999	◎	
28	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	◎	
29	Acceleration/ deceleration pattern	0 to 2	0	29	Acceleration/deceleration pattern selection	0 to 2	0	◎	
30	Extended function display selection	0, 1	0	160	Extended function display selection	0, 9999	9999	△	Set 0 to display extended parameters as well on the PU.
31	Frequency jump 1A	0 to 120 Hz, ---	---	31	Frequency jump 1A	0 to 400 Hz, 9999	9999	◎	
32	Frequency jump 1B	0 to 120 Hz, ---	---	32	Frequency jump 1B	0 to 400 Hz, 9999	9999	◎	
33	Frequency jump 2A	0 to 120 Hz, ---	---	33	Frequency jump 2A	0 to 400 Hz, 9999	9999	◎	
34	Frequency jump 2B	0 to 120 Hz, ---	---	34	Frequency jump 2B	0 to 400 Hz, 9999	9999	◎	
35	Frequency jump 3A	0 to 120 Hz, ---	---	35	Frequency jump 3A	0 to 400 Hz, 9999	9999	◎	
36	Frequency jump 3B	0 to 120 Hz, ---	---	36	Frequency jump 3B	0 to 400 Hz, 9999	9999	◎	
37	Speed display	0, 0.1 to 999	0	37	Speed display	0,0.01 to 9998	0	◎	
38	Frequency setting voltage gain frequency	1 to 120 Hz	60 Hz	125	Terminal 2 frequency setting gain frequency	0 to 400 Hz	60 Hz	△	The frequency at 5 V (10 V) input is set for the FR-F500J inverters. The frequency at input of the voltage set in Pr.C4 is set for the FR-F700PJ inverters. If the frequency deviates, calibrate again.
39	Frequency setting current gain frequency	1 to 120 Hz	60 Hz	126	Terminal 4 frequency setting gain frequency	0 to 400 Hz	60 Hz	△	The frequency at 20 mA input is set for the FR-F500J inverters. The frequency at the input of the current set in Pr.C7 is set for the FR-F700PJ inverters. If the frequency deviates, calibrate again.
40	Start-time earth (ground) fault detection selection	0, 1	0	249	Earth (ground) fault detection at start	0, 1	0	◎	
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 for reverse rotation	0 to 120 Hz,---	---	43	Output frequency detection for reverse rotation	0 to 400 Hz, 9999	9999	◎	
44	Second acceleration/ deceleration time	0 to 999 s	5 s	44	Second acceleration/ deceleration time	0 to 3600 s	7.5K or lower: 5 s 11K or higher: 15 s	◎	The initial values for some capacities differ between inverters in both series.
45	Second deceleration time	0 to 999 s,---	---	45	Second deceleration time	0 to 3600 s, 9999	9999	◎	
46	Second torque boost	0 to 15%,---	---	46	Second torque boost	0 to 30%, 9999	9999	△	Set the same value as the value set in the F500J inverters (when Pr.72 PWM frequency selection = "1" in the FR-F500J inverters).
47	Second V/F (base frequency)	0 to 120 Hz,---	---	47	Second V/F (base frequency)	0 to 400 Hz, 9999	9999	◎	
48	Output current detection level	0 to 150%	120%	150	Output current detection level	0 to 150%	120%	◎	
49	Output current detection signal delay time	0 to 10 s	0 s	151	Output current detection signal delay time	0 to 10 s	0 s	◎	
50	Zero current detection level	0 to 150%	5%	152	Zero current detection level	0 to 150%	5%	◎	
51	Zero current detection period	0.05 to 1 s	0.5 s	153	Zero current detection time	0 to 1 s	0.5 s	◎	
52	Operation panel display data selection	0, 1, 100	0	52	DU/PU main display data selection	0, 5, 8 to 12, 14, 20, 23 to 25, 50 to 55, 61, 62, 64, 100	0	△	When this parameter has been set to “1” in the FR-F500J inverters, set it to “0” in the FR- F700PJ inverters, select the monitoring of the output current on the operation panel, and press the SET key for one second. For the setting “100” in the FR-F500J inverters, select the monitoring of the output frequency.
53	Frequency setting operation selection	0, 1	0	161	Frequency setting/key lock operation selection	0, 1, 10, 11	0	◎	
54	FM terminal function selection	0, 1	0	54	FM terminal function selection	1 to 3, 5, 8 to 12, 14,21, 24, 50, 52, 53, 61, 62	1	△	When this parameter has been set to “0” in the FR-F500J inverters, set it to “1” in the FR-F700PJ inverters. When it has been set to “1”, set it to “2”.
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 100 A	Inverter rated current	56	Current monitoring reference	0 to 500 A	Inverter rated current	◎	
57	Restart coasting time	0 to 5 s,---	---	57	Restart coasting time	0, 0.1 to 5 s, 9999	9999	△	The coasting time at the setting of “0” differs between inverters in both series. Basically the setting in the FR-F700PJ inverters does not need to be changed for use. To set the same coasting time in the FR-F500J inverters, set 0.5 second for 1.5K inverters or lower, or 1.0 second for 2.2K to 7.5 inverters.
58	Restart cushion time	0 to 60 s	1.0s	58	Restart cushion time	0 to 60 s	1.0 s	◎	

FR-F500J parameter				FR-F700PJ compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
59	Remote setting function selection	0 to 2	0	59	Remote function selection	0 to 3	0	◎	
60	AU terminal function selection	0 to 10, 14, 16, ---	4	180	AU terminal function selection	0 to 5, 7, 8, 10, 12, 14, 16, 24, 25, 62, 64 to 67, 72, 9999	4	△	When this parameter has been set to “5” in the FR-F500J inverters, set it to “25” in the FR-F700PJ inverters. When it has been set to “6”, set it to “24”. When it has been set to “9”, set it to “5”. When it has been set to “10”, set it to “8”.
61	RM terminal function selection		1	181	RM terminal function selection		1	◎	
62	RH terminal function selection		2	182	RH terminal function selection		2	◎	
63	STR terminal function selection		---	179	STR terminal function selection	0 to 5, 7, 8, 10, 12, 14, 16, 24, 25, 61, 62, 64 to 67, 72, 9999	61	◎	When this parameter has been set to “---” in the FR-F500J inverters, set it to “61” in the FR-F700PJ inverters.
64	RUN terminal function selection	0, 1, 3, 4, 11, 12, 13, 14, 15, 16, 95, 98, 99	0	190	RUN terminal function selection	0, 1, 3, 4, 7, 8, 11 to 16, 25, 26, 46 to 48, 57, 64, 70, 79, 90 to 93, 95, 96, 98 to 101, 103, 104, 107, 108, 111 to 116, 125, 126, 146 to 148, 157, 164, 170, 179, 190 to 193, 195, 196, 198, 199, 9999	0	◎	
65	A, B, C terminal function selection		99	192	A, B, C terminal function selection	0, 1, 3, 4, 7, 8, 11 to 16, 25, 26, 46 to 48, 57, 64, 70, 79, 90, 91, 95, 96, 98 to 101, 103, 104, 107, 108, 111 to 116, 125, 126, 146 to 148, 157, 164, 170, 179, 190, 191, 195, 196, 198, 199, 9999	99	◎	
66	Retry selection	0, 1, 2, 3	0	65	Retry selection	0 to 5	0	◎	
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	1 s	68	Retry waiting time	0.1 to 600 s	1 s	◎	
69	Retry count display erase	0	0	69	Retry count display erase	0	0	◎	
70	Soft-PWM setting	0, 1, 10, 11	11	240	Soft-PWM operation selection	0, 1	1	△	When this parameter has been set to “10” in the FR-F500J inverters, set it to “0” in the FR-F700PJ inverters. When it has been set to “11”, set it to “1”.
71	Applied motor	0,1	0	71	Applied motor	0, 1, 3, 13, 23, 40, 43, 50, 53, 120	0	◎	
				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	0-5 V/0-10 V selection	0, 1	0	73	Analog input selection	0, 1, 10, 11	1	△	When this parameter has been set to “0” in the FR-F500J inverters, set it to “1” in the FR-F700PJ inverters. When it has been set to “1”, set it to “0”.
74	Input filter time constant	0 to 8	1	74	Input filter time constant	0 to 8	1	◎	
75	Reset selection/PU stop selection	0, 1, 14, 15,	14	75	Reset selection/disconnected PU detection/PU stop selection	0 to 3, 14 to17	14	△	When Pr.n17 (933) has been set to “1” in the FR-F500J inverters, set this parameter of the FR-F700PJ inverters to a value obtained by adding 2 to the setting value of this parameter in the FR-F500J inverters.
76	Cooling fan operation selection	0, 1	0	244	Cooling fan operation selection	0, 1	1	◎	The initial value differs between inverters in both series.
77	Parameter write disable selection	0, 1, 2	0	77	Parameter write selection	0 to 2	0	◎	
78	Reverse rotation prevention selection	0, 1, 2	0	78	Reverse rotation prevention selection	0 to 2	0	◎	
79	Operation mode selection	0 to 4, 7, 8	0	79	Operation mode selection	0 to 4, 6, 7	0	△	When this parameter has been set to “8” in the FR-F500J inverters, set it to “0” in the FR-F700PJ inverters. Assign the X16 signal to any of the input terminals by using Pr.178 to Pr.182 (Input terminal function selection).
80	Multi-speed setting (speed 8)	0 to 120 Hz, ---	---	232	Multi-speed setting (speed 8)	0 to 400 Hz, 9999	9999	◎	
81	Multi-speed setting (speed 9)	0 to 120 Hz, ---	---	233	Multi-speed setting (speed 9)	0 to 400 Hz, 9999	9999	◎	
82	Multi-speed setting (speed 10)	0 to 120 Hz, ---	---	234	Multi-speed setting (speed 10)	0 to 400 Hz, 9999	9999	◎	
83	Multi-speed setting (speed 11)	0 to 120 Hz, ---	---	235	Multi-speed setting (speed 11)	0 to 400 Hz, 9999	9999	◎	
84	Multi-speed setting (speed 12)	0 to 120 Hz, ---	---	236	Multi-speed setting (speed 12)	0 to 400 Hz, 9999	9999	◎	
85	Multi-speed setting (speed 13)	0 to 120 Hz, ---	---	237	Multi-speed setting (speed 13)	0 to 400 Hz, 9999	9999	◎	
86	Multi-speed setting (speed 14)	0 to 120 Hz, ---	---	238	Multi-speed setting (speed 14)	0 to 400 Hz, 9999	9999	◎	
87	Multi-speed setting (speed 15)	0 to 120 Hz, ---	---	239	Multi-speed setting (speed 15)	0 to 400 Hz, 9999	9999	◎	

FR-F500J parameter				FR-F700PJ compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
88	PID action selection	20, 21	20	128	PID action selection	0, 20, 21, 40 to 43	0	△	When the X14 signal is not assigned to any of Pr.60 to Pr.63 (Input terminal function selection) in the FR-F500J inverters, set "0" in this parameter in the FR-F700PJ inverters.
89	PID proportional band	0.1 to 999%, ---	100%	129	PID proportional band	0.1 to 1000%, 9999	100%	◎	
90	PID integral time	0.1 to 999 s, ---	1 s	130	PID integral time	0.1 to 3600 s, 9999	1 s	◎	
91	PID upper limit	0 to 100%, ---	---	131	PID upper limit	0 to 100%, 9999	9999	◎	
92	PID lower limit	0 to 100%, ---	---	132	PID lower limit	0 to 100%, 9999	9999	◎	
93	PID action set point for PU operation	0 to 100%	0%	133	PID action set point	0 to 100%, 9999	9999	△	To use the value input via terminal 2 as a set point for the FR-F700PJ inverters, set "9999". When the value other than "9999" is set, the set value will be also used as a set point during operations other than the PU operation.
94	PID differential time	0.01 to 10 s, ---	---	134	PID differential time	0.01 to 10 s, 9999	9999	◎	
95	Rated motor slip	0 to 50%, ---	---	245	Rated slip	0 to 50%, 9999	9999	◎	
96	Slip compensation time constant	0.01s to 10 s	0.5 s	246	Slip compensation time constant	0.01 to 10 s	0.5 s	◎	
97	Constant-power range slip compensation selection	0, ---	---	247	Constant-power range slip compensation selection	0, 9999	9999	◎	
98	Automatic torque boost selection (Motor capacity)	0.2 to 15 kW	---	80	Motor capacity	0.4 to 15 kW, 9999	9999	◎	When the automatic torque boost function is used in the FR-F500J inverters, perform General-purpose magnetic flux vector control in the FR-F700PJ inverters. Set the same motor capacity of the FR-F500J inverters in Pr.80 in the FR-F700PJ inverters, and perform the auto tuning after setting Pr.71, Pr.83, and Pr.84.
				82	Motor excitation current	0 to 500 A, 9999	9999	×	
				83	Rated motor voltage	0 to 1000 V	200/400 V	×	
				84	Rated motor frequency	10 to 120 Hz	60 Hz	×	
99	Motor primary resistance	0 to 50 Ω, ---	---	90	Motor constant (R1)	0 to 50 Ω, 9999	9999	×	
				96	Auto tuning setting/status	0, 11, 21	0	×	
H1 (503)	Maintenance timer	0 to 999	0	503	Maintenance timer	0 to 9998	0	△	On the FR-F500J inverters, the cumulative time is displayed as 1000 h. On the FR-F700PJ inverters, it is displayed as 100 h. Resetting the timer is available in the FR-F700PJ inverters.
H2 (504)	Maintenance timer alarm output set time	0 to 999, ---	87	504	Maintenance timer alarm output set time	0 to 10 s	0 s	△	In the FR-D700 inverters, set a value of ten times larger than the setting value of the FR-F500J inverters.
H8 (251)	Output phase failure protection selection	0, 1	0	251	Output phase loss protection selection	0, 1	1	◎	The initial value differs between inverters in both series.
C1 (900)	FM terminal calibration	—	—	C0 (900)	FM terminal calibration	—	—	◎	
C2 (902)	Frequency setting voltage bias frequency	0 to 60 Hz	0 Hz	C2 (902)	Terminal 2 frequency setting bias frequency	0 to 400 Hz	0 Hz	△	The calibration method differs between inverters in both series.
C3 (902)	Frequency setting voltage bias	0 to 300%	0%	C3 (902)	Terminal 2 frequency setting bias	0 to 300%	0%	△	The calibration method differs between inverters in both series.
C4 (903)	Frequency setting voltage gain	0 to 300%	96%	125 (903)	Terminal 2 frequency setting gain frequency	0 to 400 Hz	60 Hz	△	The calibration method differs between inverters in both series.
				C4 (903)	Terminal 2 frequency setting gain	0 to 300%	100%	△	The calibration method differs between inverters in both series.
C5 (904)	Frequency setting current bias frequency	0 to 60 Hz	0 Hz	C5 (904)	Terminal 4 frequency setting bias frequency	0 to 400 Hz	0 Hz	△	The calibration method differs between inverters in both series.
C6 (904)	Frequency setting current bias	0 to 300%	20%	C6 (904)	Terminal 4 frequency setting bias	0 to 300%	20%	△	The calibration method differs between inverters in both series.
C7 (905)	Frequency setting current gain	0 to 300%	100%	126 (905)	Terminal 4 frequency setting gain frequency	0 to 400 Hz	60 Hz	△	The calibration method differs between inverters in both series.
				C7 (905)	Terminal 4 frequency setting gain	0 to 300%	100%	△	The calibration method differs between inverters in both series.

FR-F500J parameter				FR-F700PJ compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
n1 (331)	Communication station number	0 to 31	0	117	PU communication station number	0 to 31 (0 to 247)	0		
n2 (332)	Communication speed	48, 96, 192	192	118	PU communication speed	48, 96, 192, 384	192	◎	
n3 (333)	Stop bit length	0, 1, 10, 11	1	119	PU communication stop bit length	0, 1, 10, 11	1	◎	
n4 (334)	Parity check presence/ absence	0, 1, 2	2	120	PU communication parity check	0 to 2	2	◎	
n5 (335)	Number of communication retries	0 to 10, ---	1	121	Number of PU communication retries	0 to 10, 9999	1	◎	
n6 (336)	Communication check time interval	0 to 999 s, ---	0	122	PU communication check time interval	0 to 999.8 s, 9999	0	◎	
n7 (337)	Waiting time setting	0 to 150 ms, ---	---	123	PU communication waiting time setting	0 to 150 ms, 9999	9999	◎	
n8 (338)	Operation command source	0, 1	0	338	Communication operation command source	0, 1	0	◎	
n9 (339)	Speed command source	0, 1	0	339	Communication speed command source	0 to 2	0	◎	
n10 (340)	Link startup mode selection	0, 1	0	340	Communication startup mode selection	0, 1, 10	0	◎	
n11 (341)	CR/LF selection	0, 1, 2	1	124	PU communication CR/LF selection	0 to 2	1	◎	
n12 (342)	EEPROM write selection	0, 1	0	342	Communication EEPROM write selection	0, 1	0	◎	
n13 (145)	PU display language selection	0 to 7	0	145	PU display language selection	0 to 7	0	◎	
n14 (990)	PU buzzer control	0, 1	1	990	PU buzzer control	0, 1	1	◎	
n15 (991)	PU contrast adjustment	0 to 63	58	991	PU contrast adjustment	0 to 63	58	◎	
n16 (992)	PU main display screen data selection	0, 100	0						In the FR-F700PJ inverters, this function is set by the setting of Pr.52.
n17 (993)	Disconnected PU detection/PU setting lock	0, 1, 10	0						In the FR-F700PJ inverters, this function is set by the setting of Pr.75.

4. Option

The following table shows the comparison of options between the FR-F500J series inverters and the FR-F700PJ series inverters.

	Name	Option model	
		FR-F500J	FR-F700PJ
Stand-alone type	Parameter unit	FR-PU04	Some function restricted (parameter copy, etc.)
	Parameter unit connection cable	FR-CB201, 203, 205	Compatible
	Brake resistor	MRS[][], MYS[][]	Compatible
		FR-ABR-(H)[][]K	Compatible
	Brake unit	BU-1500 to 15K, H7.5K, H15K	Compatible
	Discharging resistor	GZG[][], GRZG[][]	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 power regeneration common converter	FR-CV-(H)7.5K(-AT)	Compatible
	Dedicated stand-alone reactor	FR-CVL-(H)7.5K	Compatible
	FR-HC high power factor converter	FR-HC-(H)7.5K	Compatible
	Surge voltage suppression filter	FR-ASF-H[][]K	Compatible
	Filterpack	FR-BFP	Compatible*1, *2
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
	Inverter setup software	FR-SW1-SETUP-WE	Not available. (Use FR-SW3-SETUP-WE.)

*1: When using the FR-BFP for the FR-F700PJ series inverters, the output current of some FR-F700PJ series inverters needs to be limited to the rated current of the compatible FR-F500J series inverters

Rated current of the FR-F500J and FR-F700PJ series inverters

Class \ Capacity		0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K
Rated current of three-phase 200 V	FR-F520J	2.5 A	4.1 A	7.0 A	10.0 A	16.5 A	23.8 A	31.8 A	45.0 A	58.0 A
	FR-F720PJ	2.5 A	4.2 A	7.0 A	10.0 A	16.5 A	23.8 A	31.8 A	45.0 A	58.0 A
Rated current of three-phase 400 V	FR-F540J	1.1 A	2.1 A	3.7 A	4.8 A	8.1 A	12.0 A	16.3 A	23.0 A	29.5 A
	FR-F740PJ	1.2 A	2.2 A	3.7 A	5.0 A	8.1 A	12.0 A	16.3 A	23.0 A	29.5 A

The output current in shaded cells in the table above needs to be limited to the rated current of the corresponding FR-F500J series inverter.

*2: When using the FR-BFP2

The following table shows the permissible output current of inverters for the FR-BFP2.
To use the FR-BFP2 for the FR-F700PJ series inverters, be sure to use the FR-BFP2 in combination with the applicable FR-F720PJ or FR-F740PJ inverters shown below.
The FR-BFP2 is enclosed with the inverter which has "-F" at the end of its model name.

Filterpack	Permissible inverter output current (A)	Inverter Model	Inverter rated output current (A)
FR-BPF2-0.4K	2.5	FR-F720PJ-0.4K	2.5
FR-BPF2-0.75K	4.2	FR-F720PJ-0.75K	4.2
FR-BPF2-1.5K	7.0	FR-F720PJ-1.5K	7.0
FR-BPF2-2.2K	10.0	FR-F720PJ-2.2K	10.0
FR-BPF2-3.7K	16.5	FR-F720PJ-3.7K	16.5
FR-BPF2-5.5K	23.8	FR-F720PJ-5.5K	23.8
FR-BPF2-7.5K	31.8	FR-F720PJ-7.5K	31.8
FR-BPF2-11K	45.0	FR-F720PJ-11K	45.0
FR-BPF2-15K	58.0	FR-F720PJ-15K	58.0
FR-BPF2-H0.4K	1.2	FR-F740PJ-0.4K	1.2
FR-BPF2-H0.75K	2.2	FR-F740PJ-0.75K	2.2
FR-BPF2-H1.5K	3.7	FR-F740PJ-1.5K	3.7
FR-BPF2-H2.2K	5.0	FR-F740PJ-2.2K	5.0
FR-BPF2-H3.7K	8.1	FR-F740PJ-3.7K	8.1
FR-BPF2-H5.5K	12.0	FR-F740PJ-5.5K	12.0
FR-BPF2-H7.5K	16.3	FR-F740PJ-7.5K	16.3
FR-BPF2-H11K	23.0	FR-F740PJ-11K	23.0
FR-BPF2-H15K	29.5	FR-F740PJ-15K	29.5

Note: For the combination of the FR-BFP2 and the FR-F700PJ series inverters, consider the capacity of both so that the output current of the load (inverter) does not exceed the permissible output current of inverters for the FR-BFP2.

5. Major differences between the FR-F500J and FR-F700PJ series inverters

(1) Specification comparison and major differences

Item		FR -F500J	FR -F700PJ
Inverter model	Three-phase 200 V class	FR-F520J-0.4K to 15K (9 models)	FR-F720PJ-0.4K to 15K (9 models)
	Three-phase 400 V class	FR-F540J-0.4K to 15K (9 models)	FR-F740PJ-0.4K to 15K (9 models)
Control method		Soft-PWM control, high carrier frequency PWM control (selectable between V/F control and automatic torque boost control). Long-wiring mode available.	Soft-PWM control, high carrier frequency PWM control (selectable between V/F control, General-purpose magnetic flux vector control, Optimum excitation control, and IPM motor control) Long-wiring mode not available (not supported due to no necessity).
Overload capacity		120% 60 s, 150% 0.5 s (inverse-time characteristics)	120% 60 s, 150% 0.5 s (inverse-time characteristics)
Frequency setting signal	Analog input	Terminal 2: Selectable between the range from 0 to 10 V and the range from 0 to 5 V Terminal 4: 4 to 20 mA	Terminal 2: Selectable between the range from 0 to 10 V and the range from 0 to 5 V Terminal 4: Selectable between the range from 0 to 10 V, the range from 0 to 5 V, and the range from 4 to 20 mA
	Digital input	Input using the setting dial of the operation panel or parameter unit	Input using the setting dial of the operation panel or parameter unit
Input signal	Terminal function		<Additional function (signal name)> Inverter run enable (X10),PU operation external interlock (X12), Starting frequency for elevator mode (X64), PU/NET operation switchover (X65), External/NET operation switchover (X66), Command source switchover (X67), PWM frequency selection (X72)
	Terminal function selection	Pr.60 to 63 (Input terminal function selection)	Pr.178 (for terminal STF) has been added.
Output signal	Terminal function		<Additional function (signal name)> Regenerative brake pre-alarm (RBP), Electronic thermal O/L relay pre-alarm (THP), Fan fault output (FAN), Heatsink overheat pre-alarm (FIN), During deceleration at occurrence of power failure (Y46), During PID control activated (PID), PID deviation limit (Y48), IPM motor control (IPM), During retry (Y64), PID output interruption (SLEEP), Pulse train output of output power (Y79), Life alarm (Y90), Power-off (Y91), Energy saving average value updated timing (Y92), Current average value monitor (Y93), Remote output (REM) A negative logic setting is available to all functions.
	Monitor item	Output frequency and output current only.	<Additional item> Output voltage, Frequency setting value, Converter output voltage, Regenerative brake duty, Electronic thermal relay function load factor, Output current peak value, Converter output voltage peak value, Output power, Reference voltage output, Motor load factor, Power saving effect, PID set point, PID measured value, Motor thermal load factor, Inverter thermal load factor
Protective function		Communication error available.	<Additional functions> Undervoltage, Input phase loss, Loss of synchronism detection, Brake transistor alarm detection, PTC thermistor operation, Output current detection value exceeded, Inrush current limit circuit fault, Analog input fault, PID signal fault, Safety circuit fault

Item		FR-F500J	FR-F700PJ
Outline dimension*1		Compatible	
Installation space*1		Compatible	
Main circuit terminal block*1		Compatible (screw type terminal block) except for the 15K inverters (FR-F500J-15K: M6 screw, FR-F700PJ-15K: M5 screw)	
Control circuit terminal block and screw size*1		Fixed to the insertion terminal block Θ M3 screw: ABC terminal Θ M2 screw: Other than ABC terminal	Spring clamp terminal
Control terminal Cable size (when crimp terminals used)*1		0.3 to 0.75 mm^2	0.3 to 1.5 mm^2
Cooling fan position*1		Installed at the bottom of the inverter. (For 11K and 15K inverters, installed at the top of the inverter.)	Installed at the top of the inverter for inverters of any capacities. For replacing the cooling fan, a space is necessary at the top of the inverter.
Operation panel		Not removable since it is integrated to the inverter.	Not removable since it is integrated to the inverter.
Parameter (function)		Compatible with the conventional models (some functions are changed or removed).	
Parameter unit	FR-PU07	Available	Available
	FR-PU04	Available	Available (with some restrictions)
	FR-PU03/FR-ARW03	Not available	Not available
	FR-DU01		
	FR-PU02/FR-ARW		
Parameter unit connection cable	FR-CB2[][]	Available	Available
	FR-CBL[][]	Not available	Not available
Plug-in option		Not available	Not available
Inrush current limit circuit		Equipped with inverters of any capacities.	Equipped with all capacities.
Design life	Cooling fan	2 to 3 years	10 years
	Electrolytic capacitor	5 years	10 years
Stand-alone option (noise filter, reactor, etc.)*2		Compatible	

*1: Refer to Chapter 1 “Size”.

*2: Refer to Chapter 4 “Option".

(2) Parameter comparison and major differences

No.	Function	Change in FR-F700PJ from FR-F500J				Remarks
		Newly added	Function changed	Name changed	Parameter No. changed	
1	V/F control		○			· The initial value of Pr.0 (Torque boost) is changed. FR-F500J / FR-F700PJ Other than the below: 6% / 0.75K or lower: 6% F520J-5.5K, 7.5K: 4% / 1.5K to 3.7K: 4% F520J-11K, 15K: 3% / 5.5K, 7.5K: 3% F540J-1.5K, 2.2K: 5% / 11K, 15K: 2% F540J-3.7K: 4% F540J-5.5, 7.5K: 3% F540J-11K, 15K: 2% · The options “2” and “3” of Pr.14 (Load pattern selection) are removed.
2	Output frequency	○			○	· The initial value of Pr.1 (Maximum frequency) is changed (FR-F500J: 60, FR-F700PJ: 120). · New parameter “High speed maximum frequency” (Pr.18) is added.
3	External terminal	○	○		○	· The number of the following parameters is changed. FR-F500J / FR-F700PJ Multi-speed setting (speed 8): Pr.80 / Pr.232 Multi-speed setting (speed 9): Pr.81 / Pr.233 Multi-speed setting (speed 10): Pr.82 / Pr.234 Multi-speed setting (speed 11): Pr.83 / Pr.235 Multi-speed setting (speed 12): Pr.84 / Pr.236 Multi-speed setting (speed 13): Pr.85 / Pr.237 Multi-speed setting (speed 14): Pr.86 / Pr.238 Multi-speed setting (speed 15): Pr.87 / Pr.239 · The following new parameters are added: MRS input selection (Pr.17), Stop selection (Pr.250), Remote output selection (Pr.495), Remote output data 1 (Pr.496), and Pulse increment setting for output power (Pr.799). · New option “3” is added in Pr.59 (Remote function selection).
4	Regenerative function selection	○				New parameters “Regenerative function selection” (Pr.30) and “Special regenerative brake duty” (Pr.70) are added.
5	Extended function display selection				○	· Parameter number is changed from Pr.30 to Pr.160. · The initial value is changed from "0" to "9999" due to the change in the setting range but the initial setting is not changed.
6	Operation panel	○		○	○	· The number of the parameter “RUN key rotation direction selection” is changed from Pr.17 to Pr.40. · The number and name of Pr.53 Frequency setting operation selection are changed to Pr.161 Frequency setting/key lock operation selection, and the new options “10” and “11” are added. · The following new parameters are added: Built-in potentiometer switching (Pr146), Monitor decimal digits selection (Pr.268), and Magnitude of frequency change setting (Pr.295).
7	Stall prevention function	○	○		○	· The number of the parameter “Stall prevention operation selection” is changed from Pr.21 to Pr.156, and the new option “101” is added. · The number of the parameter “Stall prevention operation reduction starting frequency” is changed from Pr.28 to Pr.66. · The new parameters “Second stall prevention operation current” (Pr.48) and “OL signal output timer” (Pr.157) are added.
8	Analog input	○			○	· The number of the parameter “Terminal 2 frequency setting gain frequency” is changed from Pr.38 to Pr.125. · The number of the parameter “Terminal 4 frequency setting gain frequency” is changed from Pr.39 to Pr.126. · New parameter “Analog input display unit switchover” (Pr.241) is added.
9	Ground fault detection				○	The number of the parameter “Start-time earth (ground) fault detection selection” is changed from Pr.40 to Pr.249.
10	Acceleration/ deceleration time	○	○			· For the 11K inverters or higher, the initial value of Pr.44 (Second acceleration/deceleration time) is changed from "5" to "15”. · The following new parameters are added: Holding time at a start (Pr.571), Acceleration time in low-speed range (Pr.791), and Deceleration time in low-speed range (Pr.792)

No.	Function	Change in FR-F700PJ from FR-F500J				Remarks
		Newly added	Function changed	Name changed	Parameter No. changed	
11	Output current detection	○			○	· The number of the following parameters is changed. FR-F500J FR-F700PJ Output current detection level: Pr.48 Pr.150 Output current detection signal delay time: Pr.49 Pr.15 Zero current detection level: Pr.50 Pr.152 Zero current detection time: Pr.51 Pr.153 · New parameters “Output current detection signal retention time” (Pr.166) and “Output current detection operation selection” (Pr.167) are added.
12	Electronic thermal O/L relay	○				New parameters “Second electronic thermal O/L relay” (Pr.51) and “PTC thermistor protection level” (Pr.561) are added.
13	Monitor function (DU/PU monitor display, terminal FM output)	○	○	○		· Parameter name of Pr.52 has been changed from “Operation panel display data selection” to “DU/PU main display data selection”, and the new options “5, 8 to 12, 14, 20, 23 to 25, 50 to 55, 61, 62, 64” are added. · The new options “3, 5, 8 to 12, 14, 21, 24, 50, 52, 53, 61, 62” are added in Pr.54 (FM terminal function selection), and the initial value of Pr.54 is changed from "0" to "1" due to the change in the setting range but the initial setting is not changed. · The following new parameters are added: Watt-hour meter clear (Pr.170), Operation hour meter clear (Pr.171), Energization time carrying-over times (Pr.563), and Operating time carrying-over times (Pr.564).
14	Energy saving operation/ monitor	○				The following new parameters are added: Energy saving control selection (Pr.60), Cumulative power monitor digit shifted times (Pr.891), Load factor (Pr.892), Energy saving monitor reference (motor capacity) (Pr.893), Control selection during commercial power-supply operation (Pr.894), Power saving rate reference value (Pr.895), Power unit cost (Pr.896), Power saving monitor average time (Pr.897), Power saving cumulative monitor clear (Pr.898), and Operation time rate (estimated value) (Pr.899).
15	Input terminal function selection	○	○		○	· The number of the following parameters is changed. FR-F500J FR-F700PJ AU terminal function selection: Pr.60 Pr.180 RM terminal function selection: Pr.61 Pr.181 RH terminal function selection: Pr.62 Pr.182 STR terminal function selection: Pr.63 Pr.179 · The initial value of Pr.63 (STR terminal function selection) is changed from "---" to "61" due to the change in the setting range but the initial setting is not changed. · New parameter “STF terminal function selection” (Pr.178) is added. · New options “12, 61, 62, 64 to 67, 72” are added in Pr.179 (STR terminal function selection). · New options “12, 62, 64 to 67, 72” are added in Pr.180 to Pr.182 (AU terminal function selection).
16	Output terminal function selection		○		○	· The number of the following parameters is changed. FR-F500J FR-F700PJ RUN terminal function selection: Pr.64 Pr.190 A, B, C terminal function selection: Pr.65 Pr.192 · New options “7, 8, 25, 26, 46 to 48, 57, 64, 70, 79, 90 to 93, 96, 100, 101, 103, 104, 107, 108, 111 to 116, 125, 126, 146 to 148, 157, 164, 170, 179, 190 to 193, 195, 196, 198, 199, 9999” are added in Pr.190 (RUN terminal function selection). · New options “7, 8, 25, 26, 46 to 48, 57, 64, 70, 79, 90, 91, 96, 100, 101, 103, 104, 107, 108, 111 to 116, 125, 126, 146 to 148, 157, 164, 170, 179, 190, 191, 195, 196, 198, 199, 9999” are added in Pr.192 (A, B, C terminal function selection)

No.	Function	Change in FR-F700PJ from FR-F500J				Remarks
		Newly added	Function changed	Name changed	Parameter No. changed	
17	Retry selection		○			New options “4, 5” are added in Pr.65 (Retry selection).
18	PWM	○	○		○	· For the parameter “Soft-PWM operation selection”, the parameter number is changed from Pr.70 to Pr.240, the options “10, 11” are removed, and the initial value is changed from "11" to “1" due to the change in the setting range but the initial setting is not changed. · New parameters “PWM frequency automatic switchover” (Pr.260) and “Speed smoothing control” (Pr.653) are added.
19	Applied motor	○	○			· New options “3, 13, 23, 40, 43, 50, 53, 120” are added in Pr.71 (Applied motor). · New parameter “Second applied motor” (Pr.450) is added.
20	Analog input selection	○	○			· The initial value of Pr.73 (Analog input selection) is changed from "0" to "1" due to the change in the setting range but the initial setting is not changed. · New options “10, 11” are added in Pr.73 (Analog input selection). · New parameter “Terminal 4 input selection” (Pr.267) is added.
21	Reset selection / disconnected PU detection / PU stop selection		○	○		For Pr.75, the name is changed from “Reset selection / PU stop selection” to “Reset selection / disconnected PU detection / PU stop selection”, and new options” 3,16,17” are added.
22	Cooling fan		○		○	The number of Pr. 76 (Cooling fan operation selection) is changed to Pr.244, and the initial value is changed from"0 to 1".
23	Operation mode selection and command I/O source selection	○	○			· New option “6” is added in Pr.79 (Operation mode selection) and the option “8” is removed. · New option “2” is added in Pr.339 (Communication speed command source). · New option “10” is added in Pr.340 (Communication startup mode selection). · New parameter “PU mode operation command source selection” (Pr.551) is added.
24	PID control function	○	○	○	○	· The number of the following parameters is changed. FR-F500J FR-F700PJ PID action selection: Pr.88 Pr.128 PID proportional band: Pr.89 Pr.129 PID integral time: Pr.90 Pr.130 PID upper limit: Pr.91 Pr.131 PID lower limit: Pr.92 Pr.132 PID action set point: Pr.93 Pr.133 PID differential time: Pr.94 Pr.134 · The name of the parameter “PID action set point for PU operation” (Pr.93 for the FR-F500J) is changed to “PID action set point” (Pr.133 for the FR-F700PJ). · For the parameter “PID action selection”, new options “0, 40 to 43” are added in Pr.128 for the FR-F700PJ, and the initial value is changed from "20" (PID reverse action) in Pr.88 for the FR-F500J to "0" (PID action disabled) in Pr.128 for the FR-F700PJ. · For the parameter about the PID action set point, new option “9999” (the value of terminal 2 is used as a set point) is added in Pr.133 for the FR-F700PJ, and the initial value is changed from "0" (0%) in Pr.93 for the FR-F500J to "9999" in Pr.133 for the FR-F700PJ. · The following new parameters are added: PID control automatic switchover frequency (Pr.127), PID deviation limit (Pr.553), PID signal operation selection (Pr.554), Output interruption detection time (Pr.575), Output interruption detection level (Pr.576), Output interruption cancel level (Pr.577), PID display bias coefficient (Pr.C42 (934)), PID display bias analog value (Pr.C43 (934)), PID display gain coefficient (Pr.C44 (935)), and PID display gain analog value (Pr.C45 (935)).

No.	Function	Change in FR-F700PJ from FR-F500J				Remarks
		Newly added	Function changed	Name changed	Parameter No. changed	
25	Slip compensation			○	○	· The number and name of Pr.95 (Rated motor slip) is changed to Pr.245 (Rated slip). · The number of the following parameters is changed. FR-F500J FR-F700PJ Slip compensation time constant: Pr.96 Pr.246 Constant-power range slip compensation selection: Pr.97 Pr.247
26	Motor constant	○	○		○	· Pr.98 (Automatic torque boost selection) is removed. · The number of the parameter “Motor constant (R1)” is changed from Pr.99 to Pr.90. · The following new parameters are added: Motor capacity (Pr.80), Motor excitation current (Pr.82), Rated motor voltage (Pr.83), Rated motor frequency (Pr.84), and Auto tuning setting/status (Pr.96).
27	Rotation speed	○				New parameters “Speed setting switchover” (Pr.144) and “Speed setting reference” (Pr.505) are added.
28	Restart	○				The following new parameters are added: Automatic restart after instantaneous power failure selection (Pr.162), Stall prevention operation level for restart (Pr.165), Power failure stop selection (Pr.261), Frequency search gain (Pr.298), Rotation direction detection selection at restarting (Pr.299), and Acceleration time at a restart (Pr.611).
29	Life diagnosis check	○				The following new parameters are added: Life alarm status display (Pr.255), Inrush current limit circuit life display (Pr.256), Control circuit capacitor life display (Pr.257), Main circuit capacitor life display (Pr.258), and Main circuit capacitor life measuring (Pr.259).
30	Password function	○				New parameters “Password lock level” (Pr.296) and “Password lock/unlock” (Pr.297) are added.
31	Maintenance timer		○			· The increment of Pr.503 (Maintenance timer) and Pr. 504 (Maintenance timer warning output set time) is changed from 1000 hours to 100 hours. · New option “0” is added in Pr.503. · The initial value of Pr.504 is changed from "87" to "0".
32	Input phase loss protection	○	○			· The initial value of Pr.251 (Output phase loss protection selection) is changed from "0" to "1". · New parameter “Input phase loss protection selection” (Pr.872) is added.
33	Current average monitor	○				The following new parameters are added: Current average time (Pr.555), Data output mask time (Pr.556), and Current average value monitor signal output reference current (Pr.557).
34	IPM control	○				The following new parameters are added: Speed control P gain 1 (Pr.820), Speed control integral time 1 (Pr.821), Control method selection (Pr.800), and IPM parameter initialization (Pr.998).
35	Speed detection	○				New parameter “Speed detection hysteresis” (Pr.870) is added.
36	Regeneration avoidance function	○				The following new parameters are added: Regeneration avoidance operation selection (Pr.882), Regeneration avoidance operation level (Pr.883), Regeneration avoidance compensation frequency limit value (Pr.885), Regeneration avoidance voltage gain (Pr.886), and Regeneration avoidance frequency gain (Pr.665).
37	Free parameter	○				New parameters “Free parameter 1” (Pr.888) and “Free parameter 2” (Pr.889) are added.

No.	Function	Change in FR-F700PJ from FR-F500J				Remarks
		Newly added	Function changed	Name changed	Parameter No. changed	
38	Calibration parameter	○			○	· The number of the parameter “FM terminal calibration” is changed from Pr.C1 (900) to Pr.C0 (900). · The initial value of Pr.C4 (903) (Terminal 2 frequency setting gain) is changed from "96" to "100". · The following new parameters are added: Terminal 2 frequency setting gain frequency (Pr.125 (903)), Terminal 4 frequency setting gain frequency (Pr.126 (905)), Frequency setting voltage bias frequency (built-in potentiometer) (Pr.C22 (922)), Frequency setting voltage bias (built-in potentiometer) (Pr.C23 (922)), Frequency setting voltage gain frequency (built-in potentiometer) (Pr.C24 (923)), and Frequency setting voltage gain (built-in potentiometer) (Pr.C25 (923)).
39	Fault initiation	○				New parameter “Fault initiation” (Pr.997) is added.
40	Automatic parameter setting	○				New parameter “Automatic parameter setting” (Pr.999) is added.
41	Communication setting	○	○			· The name and number of the following parameters are changed as follows: Communication station number (Pr.n1 (331)) → PU communication station number (Pr.117) Communication speed (Pr.n2 (332)) → PU communication speed (Pr.118) Stop bit length (Pr.n3 (333)) → PU communication stop bit length (Pr.119) Parity check presence/ absence (Pr.n4 (334)) → PU communication parity check (Pr.120) Number of communication retries (Pr.n5 (335)) → Number of PU communication retries (Pr.121) Communication check time interval (Pr.n6 (336)) → PU communication check time interval (Pr.122) Waiting time setting (Pr.n7 (337)) → PU communication waiting time setting (Pr.123) CR/LF selection (Pr.n11 (341)) → PU communication CR/LF selection (Pr.124) · New options “32 to 247” are added in Pr.117 (PU communication station number) for MODBUS RTU communication. · New option “384” is added in Pr.118 (PU communication speed). · The following new parameters are added: Communication error count (Pr.343), Stop mode selection at communication error (Pr.502), Protocol selection (Pr.549), and Operation frequency during communication error (Pr.779).

Revisions

Revision date	Version	Revision
Feb. 2021	B	F700PJ: Pr.504 setting range and initial value changed