

Information for Replacement of **FR-E500 Series with FR-E800 Series**

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

1. Size

When the FR-E500 series is replaced with the FR-E800 series, some FR-E800 series models have different installation size from that of the corresponding FR-E500 series models.

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

Power supply voltage	Existing inverter	Replacing inverter	Installation size*1 / installation interchange attachment
Three-phase 200 V	FR-E520-0.1K	FR-E820-0.1K-1	Same
	FR-E520-0.2K	FR-E820-0.2K-1	Same
	FR-E520-0.4K	FR-E820-0.4K-1	Same
	FR-E520-0.75K	FR-E820-0.75K-1	Same
	FR-E520-1.5K	FR-E820-1.5K-1	Same
	FR-E520-2.2K	FR-E820-2.2K-1	Same
	FR-E520-3.7K	FR-E820-3.7K-1	FR-E8AT03
	FR-E520-5.5K	FR-E820-5.5K-1	Same
	FR-E520-7.5K	FR-E820-7.5K-1	Same
Three-phase 400 V	FR-E540-0.4K	FR-E840-0.4K-1	FR-E7AT02
	FR-E540-0.75K	FR-E840-0.75K-1	FR-E7AT02
	FR-E540-1.5K	FR-E840-1.5K-1	FR-E7AT02
	FR-E540-2.2K	FR-E840-2.2K-1	Same
	FR-E540-3.7K	FR-E840-3.7K-1	Same
	FR-E540-5.5K	FR-E840-5.5K-1	Same
	FR-E540-7.5K	FR-E840-7.5K-1	Same
Single-phase 200 V	FR-E520S-0.1K	FR-E820S-0.1K-1	Same
	FR-E520S-0.2K	FR-E820S-0.2K-1	Same
	FR-E520S-0.4K	FR-E820S-0.4K-1	Same
	FR-E520S-0.75K	FR-E820S-0.75K-1	Same

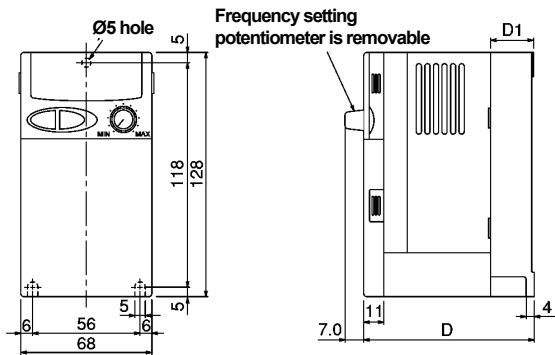
*1 The depth required for installation differs depending on the inverter model. Refer to the outline dimension drawings on the following pages.

To remove the wiring cover of the FR-E800, a tool such as a flathead screwdriver is required depending on the inverter capacity. Insert the tool into the half-hole above the "PUSH" mark on the cover, and pull out the cover along the guides. Be sure to refer to the FR-E800 Instruction Manual (Connection).

Outline dimension drawings

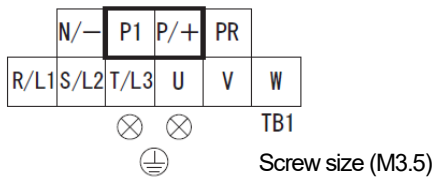
(Unit: mm)

■ FR-E520-0.1K to 0.75K

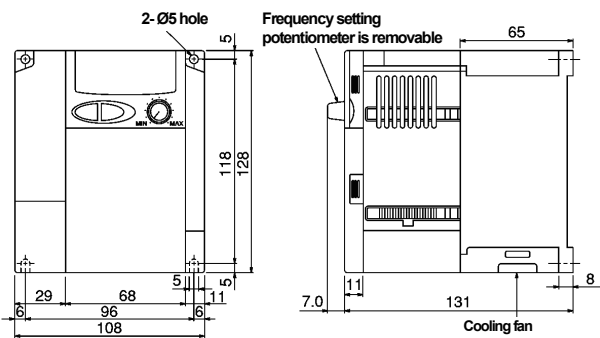


Inverter model	D	D1
FR-E520-0.1K, 0.2K	76	10
FR-E520-0.4K	108	42
FR-E520-0.75K	128	62

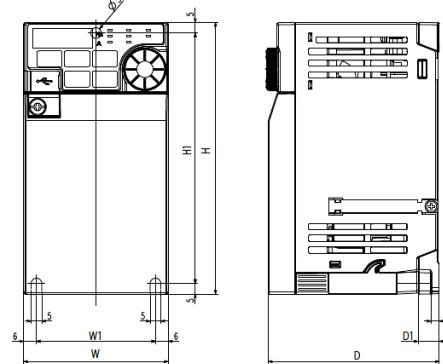
(Note) The 0.75K inverters have cooling fans.



■ FR-E520-1.5K, 2.2K

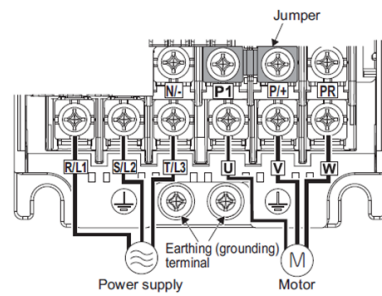


■ FR-E820-0.1K to 0.75K-1

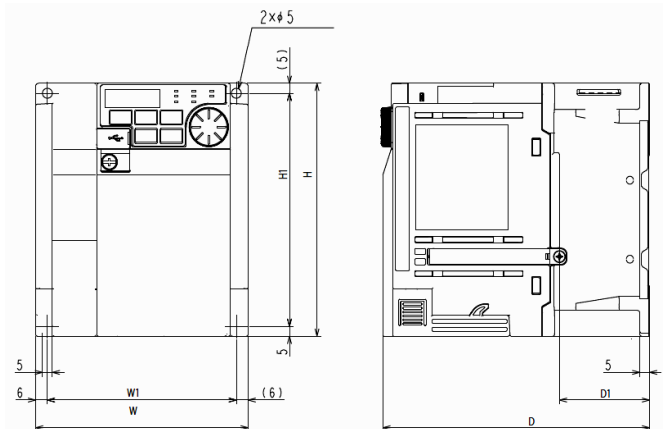


Inverter model	W	W1	H	H1	D	D1
FR-E820-0.1K, 0.2K	68	56	128	118	80.5	10
FR-E820-0.4K					112.5	42
FR-E820-0.75K					132.5	

When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.

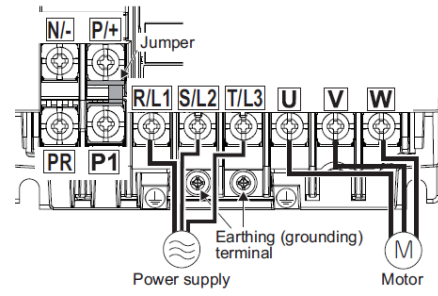
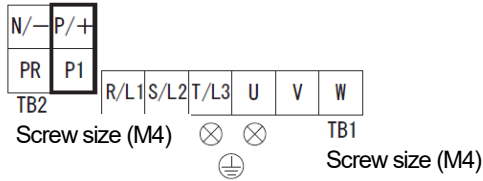


■ FR-E820-1.5K, 2.2K-1

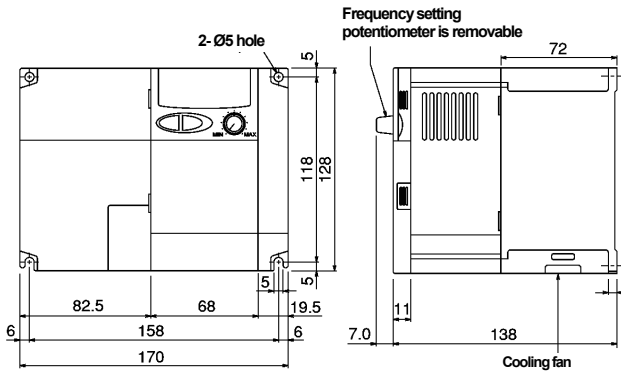


Inverter model	W	W1	H	H1	D	D1
FR-E820-1.5K, 2.2K	108	96	128	118	135.5	46

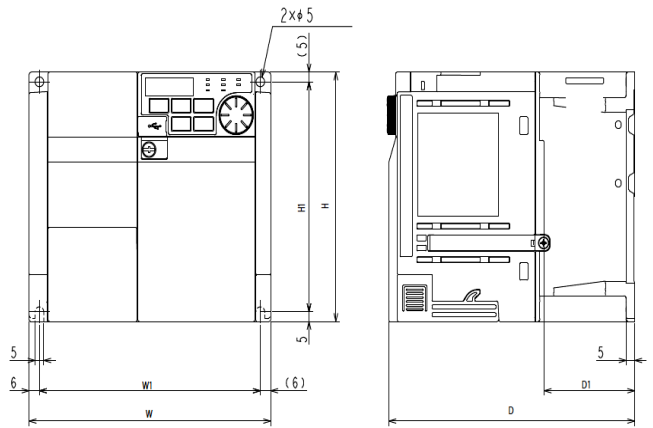
When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.



■ FR-E520-3.7K

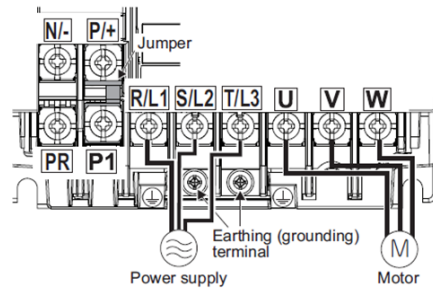
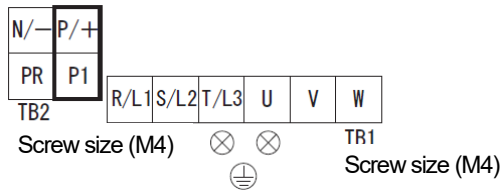


■ FR-E820-3.7K-1

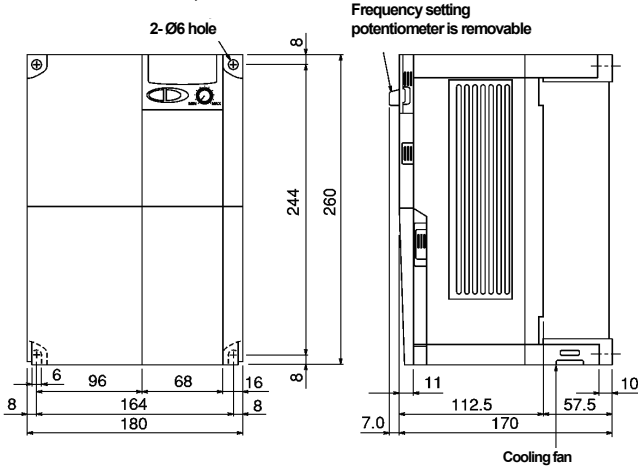


Inverter model	W	W1	H	H1	D	D1
FR-E820-3.7K	140	128	128	118	142.5	52.5

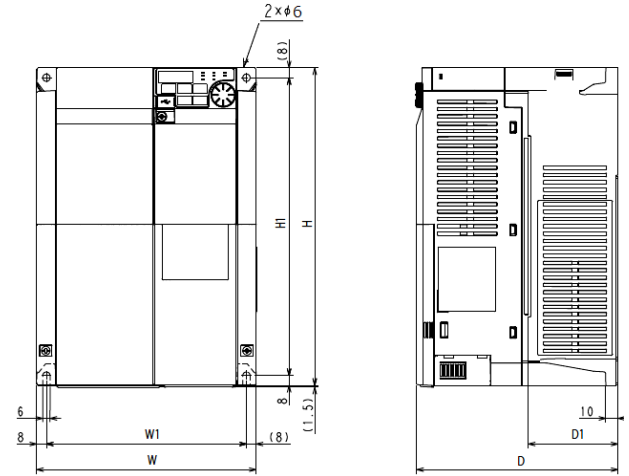
When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.



■ FR-E520-5.5K, 7.5K

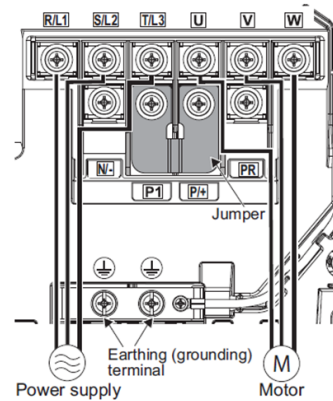
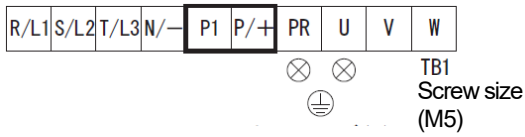


■ FR-E820-5.5K, 7.5K-1

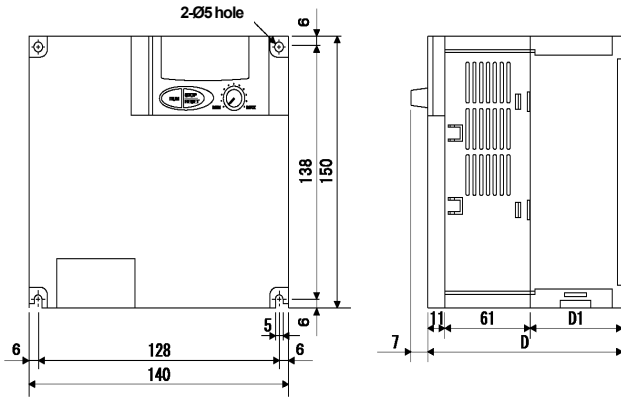


Inverter model	W	W1	H	H1	D	D1
FR-E820-5.5K, 7.5K	180	164	260	244	165	71.5

When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.

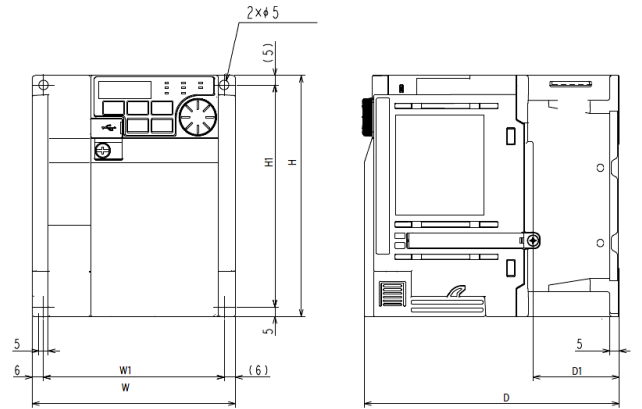


■ FR-E540-0.4K to 3.7K

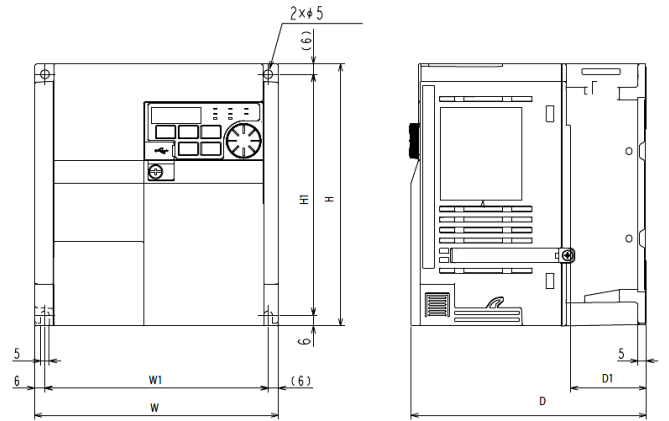


Inverter model	D	D1
FR-E540-0.4K, 0.75K	116	44
FR-E540-1.5K, 2.2K, 3.7K	136	64

■ FR-E840-0.4K to 3.7K-1

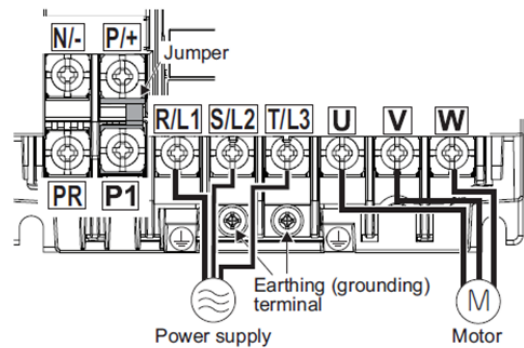
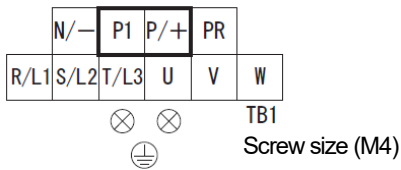


Inverter model	W	W1	H	H1	D	D1
FR-E840-0.4K, 0.75K	108	96	128	118	129.5	40
FR-E840-1.5K					135	46

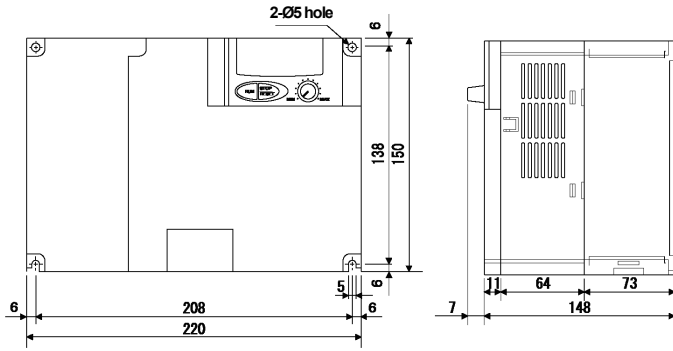


Inverter model	W	W1	H	H1	D	D1
FR-E840-2.2K, 3.7K	140	128	150	138	135	43.5

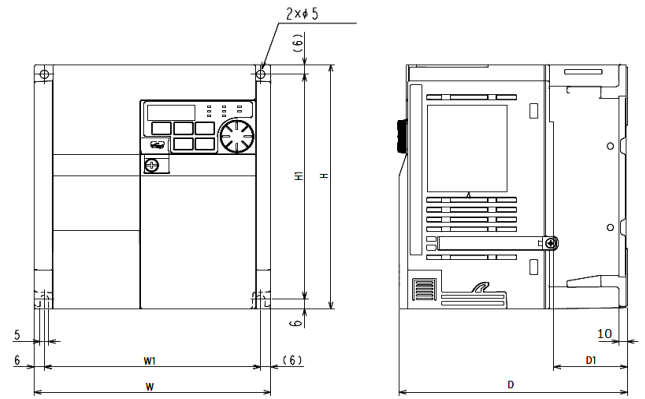
When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.



■ FR-E540-5.5K to 7.5K

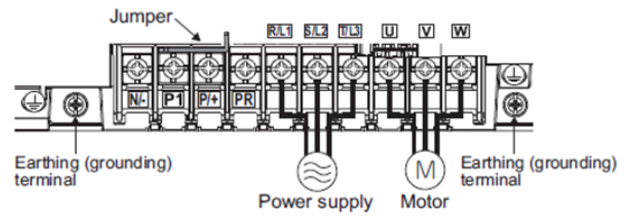
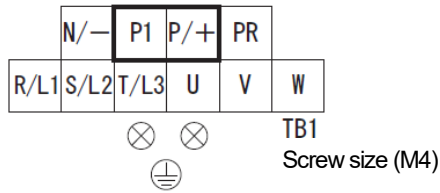


■ FR-E840-5.5K to 7.5K-1

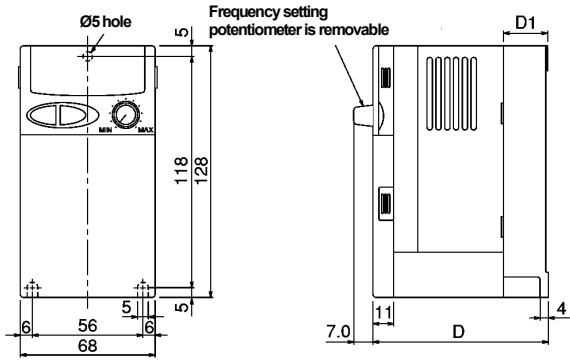


Inverter model	W	W1	H	H1	D	D1
FR-E840-5.5K, 7.5K	220	208	150	138	147	68

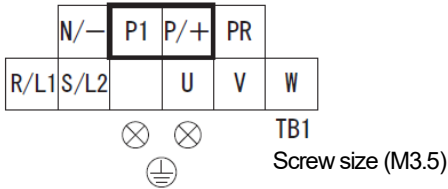
When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.



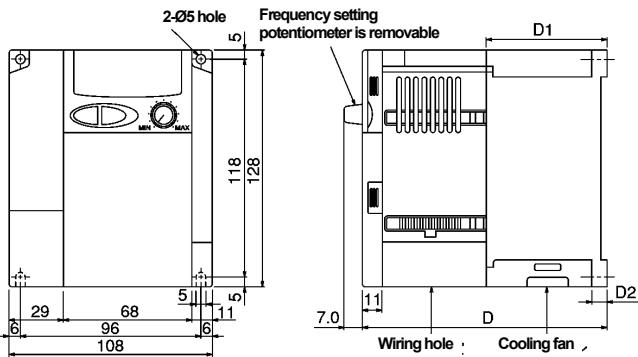
■ FR-E520S-0.1K to 0.4K



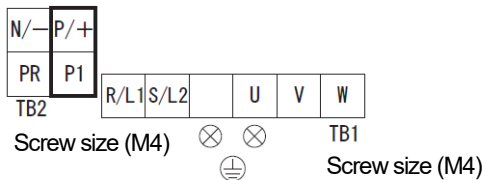
Inverter model	D	D1
FR-E520S-0.1K, 0.2K	76	10
FR-E520S-0.4K	138	42



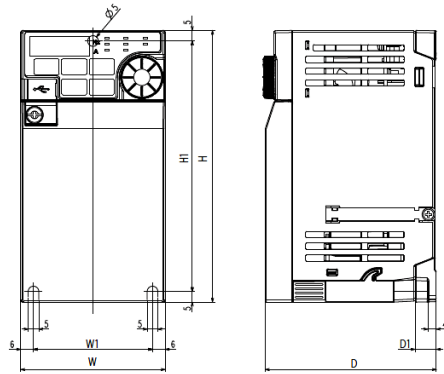
■ FR-E520S-0.75K



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

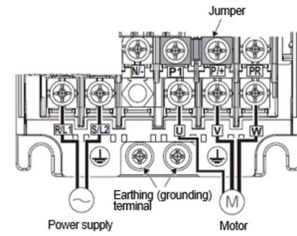


■ FR-E820S-0.1K to 0.4K-1

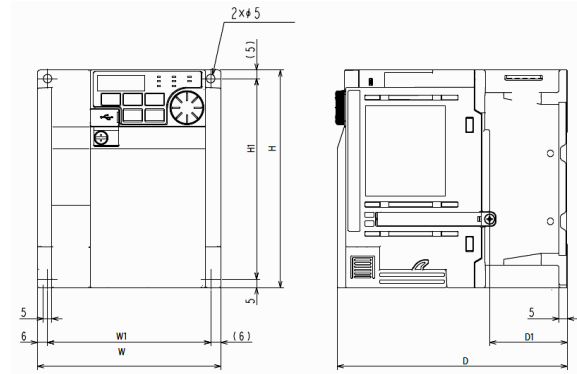


Inverter model	W	W1	H	H1	D	D1
FR-E820S-0.1K, 0.2K	68	56	128	118	80.5	10
FR-E820S-0.4K					142.5	42

When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.

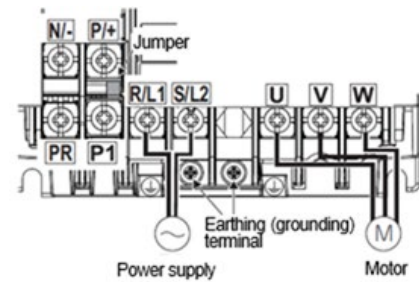


■ FR-E820S-0.75K-1



Inverter model	W	W1	H	H1	D	D1
FR-E820S-0.75K	108	96	128	118	135	45.5

When the plug-in option is installed, the depth required for installation is approx. 27.6 mm larger.





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 the following pages.

[Standard inverter]

Type		FR-E500 terminal name	FR-E800 compatible terminal name FR-E800-[-]1	Remarks
Main circuit		R, S, T	R/L1, S/L2, T/L3	Terminals T and T/L3 are not available for the single-phase power input model.
		U, V, W	U, V, W	
		P, PR	P/+, PR	
		P, N	P/+, N/-	
		P, P1	P/+, P1	
				
Control circuit / input signal	Contact	STF	STF	
		STR	STR	
		RH	RH	
		RM	RM	
		RL	RL	
		MRS	MRS	
		RES	RES	
		SD	SD	For the FR-E500, terminals SD and 5 are not isolated (isolated for the 400 V class). Terminals SD and SE are isolated. For the FR-E800, terminals SD, 5, and SE are isolated from each other.
	PC	PC	*1	
Analog	Frequency setting	10	10	
		2	2	
		5	5	For the FR-E500, terminals 5 and SD are not isolated (isolated for the 400 V class). Terminals 5 and SE are isolated. For the FR-E800, terminals 5, SD, and SE are isolated from each other.
		4	4	
Control circuit / output signal	Relay	A, B, C	A, B, C	
	Open collector	RUN	RUN	
		FU	FU	
		SE	SE	Isolated from terminals 5 and SD.
Pulse	FM	FM		
Communication	RS-485	PU connector	PU connector	Wiring methods are different. Refer to the Instruction Manual.

*1 Terminal PC operates as the common terminal for safety stop input terminals, the external transistor common terminal (sink logic), the common terminal for contact input terminal (source logic), or the 24 VDC power supply terminal. To use terminal PC while the safety stop function is not used, short across terminals S1 and PC and terminals S2 and PC. Then connect terminal PC to the power supply common terminal of a transistor device, contact input terminals, or 24 VDC power supply.

Terminal screw size

[Main circuit terminal]

Voltage class	Capacity	FR-E500				FR-E800-□-1			
		R, S, T*1	U, V, W	P, N, P1, PR	⊕	R, S, T*1	U, V, W	P, N, P1, PR	⊕
Three-phase 200 V	0.1K to 0.75K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	1.5K to 3.7K	M4	M4	M4	M4	M4	M4	M4	M4
	5.5K, 7.5K	M5	M5	M5	M5	M5	M5	M5	M5
Three-phase 400 V	0.4K to 3.7K	M4	M4	M4	M4	M4	M4	M4	M4
	5.5K, 7.5K	M4	M4	M4	M4	M4	M4	M4	M4
Single-phase 200 V	0.1K to 0.4K	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
	0.75K	M4	M4	M4	M4	M4	M4	M4	M4

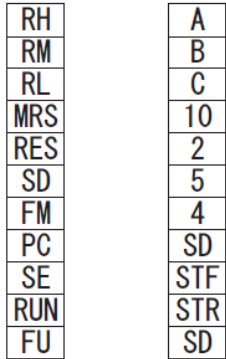
*1 Terminal T is not available for the single-phase power input model.

[Control circuit terminal]

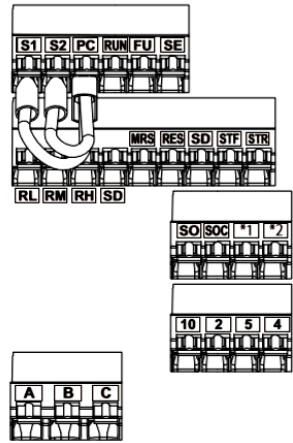
FR-E500	FR-E800-[-]-1
Control circuit	Control circuit
M2.5 Insertion type ⊕ screw terminal	Spring clamp terminal

[Terminal layout]

FR-E500



FR-E800-[-]-1



*1 Terminal FM is available for the FM type inverter.
 *2 Terminal SD is available for the FM type inverter.

Note 1: When our authorized ferrules are used for the FR-E500 inverters, they cannot be used for the FR-E800 inverters since they are not compatible with the spring clamp terminal block. (Even other crimp terminals, they may not be used for the FR-E800 inverters due to differences in size.) To use the wires of the FR-E500 inverters for the FR-E800 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-E800 control terminal block

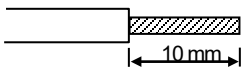
Wire strip length	Applicable stripped wire gauge	
	Single wire (mm ²)	
 <p>Twist the stripped end of wires to prevent them from fraying. Do not solder it.</p>	0.3 to 0.75	

Table. Applicable wire gauge (crimped wire) for the FR-E800 control terminal block

Ferrule terminal model (Phoenix Contact Co., Ltd.)		Applicable stripped wire gauge (mm ²)
With insulation sleeve	Without insulation sleeve	
AI 0,34-10TQ	—	0.3
AI 0,5-10WH	—	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 (mm ²)
Blade terminal part No.	Blade terminal part No.	
BT 0.75-11	VC 0.75	0.3 to 0.75

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-E800 series parameters compatible with the FR-E500 series

The following table shows the parameter settings required when replacing FR-E500 series inverters with FR-E800 series inverters.

When an FR-E500 series parameter is set to a value other than the initial value, set the corresponding FR-E800 series parameter according to the following table.

When an FR-E500 series parameter is set to an initial value, it is usually not necessary to change the corresponding FR-E800 series parameter setting.

The parameters with Δ are used for adjustment. Set them as required.

The parameter replacement following the table below does not guarantee the inverter characteristics or performance.

The parameter number of the parameters differs from that of the FR-E500 series inverter.

Setting \odot : Set the FR-E500 parameter as it is.

Δ : Change the FR-E500 parameter and set.

\times : Adjust and set the FR-E800 inverter parameters.

FR-E500 parameter list				FR-E800-[-]1 compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
0	Torque boost	0% to 30%	6% / 4%	0	Torque boost	0% to 30%	6% / 4% / 3%	Δ	Divide the FR-E500 setting value by its initial value, and multiply the FR-E800 initial value by the result. *1
1	Maximum frequency	0 to 120 Hz	120 Hz	1	Maximum frequency	0 to 120 Hz	120 Hz	\odot	
2	Minimum frequency	0 to 120 Hz	0 Hz	2	Minimum frequency	0 to 120 Hz	0 Hz	\odot	
3	Base frequency	0 to 400 Hz	60 Hz	3	Base frequency	0 to 590 Hz	60 Hz	\odot	To set V/F control, set Pr.800 = "40", Pr.80 = "9999", and Pr.81 = "9999" in the FR-E800-[-]1. (In the FR-E500, Pr.80 = "9999".) The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
4	Multi-speed setting (high speed)	0 to 400 Hz	60 Hz	4	Multi-speed setting (high speed)	0 to 590 Hz	60 Hz	\odot	The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
5	Multi-speed setting (middle speed)	0 to 400 Hz	30 Hz	5	Multi-speed setting (middle speed)	0 to 590 Hz	30 Hz	\odot	
6	Multi-speed setting (low speed)	0 to 400 Hz	10 Hz	6	Multi-speed setting (low speed)	0 to 590 Hz	10 Hz	\odot	
7	Acceleration time	0 to 3600 s / 0 to 360 s	5 s / 10 s	7	Acceleration time	0 to 3600 s	5 s / 10 s	\odot	Changing Pr.21 after setting this parameter will change the set value. Refer to the Instruction Manual.
8	Deceleration time	0 to 3600 s / 0 to 360 s	5 s / 10 s	8	Deceleration time	0 to 3600 s	5 s / 10 s	\odot	
9	Electronic thermal O/L relay	0 to 500 A	Rated output current	9	Electronic thermal O/L relay	0 to 500 A	Rated output current	\odot	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	\odot	
11	DC injection brake operation time	0 to 10 s	0.5 s	11	DC injection brake operation time	0 to 10 s, 8888	0.5 s	\odot	
12	DC injection brake voltage	0% to 30%	6%	12	DC injection brake operation voltage	0% to 30%	6% / 4%	Δ	Divide the FR-E500 setting value by its initial value, and multiply the FR-E800 initial value by the result. *1
13	Starting frequency	0 to 60 Hz	0.5 Hz	13	Starting frequency	0 to 60 Hz	0.5 Hz	\odot	
14	Load pattern selection	0 to 3	0	14	Load pattern selection	0 to 3	0	\odot	
15	Jog frequency	0 to 400 Hz	5 Hz	15	Jog frequency	0 to 590 Hz	5 Hz	\odot	
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	0.5 s	\odot	Changing Pr.21 after setting this parameter will change the set value. Refer to the Instruction Manual.
18	High-speed maximum frequency	120 to 400 Hz	120 Hz	18	High speed maximum frequency	0 to 590 Hz	120 Hz	\odot	
19	Base frequency voltage	0 to 1000 V, 8888, 9999	9999	19	Base frequency voltage	0 to 1000 V, 8888, 9999	9999	\odot	To set V/F control, set Pr.800 = "40", Pr.80 = "9999", and Pr.81 = "9999" in the FR-E800-[-]1. (In the FR-E500, Pr.80 = "9999".) The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
20	Acceleration/deceleration reference frequency	1 to 400 Hz	60 Hz	20	Acceleration/deceleration reference frequency	1 to 590 Hz	60 Hz	\odot	The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
21	Acceleration/deceleration time increments	0, 1	0	21	Acceleration/deceleration time increments	0, 1	0	Δ	Changing Pr.21 after setting this parameter will change the set value. Refer to the Instruction Manual.
22	Stall prevention operation level	0% to 200%	150%	22	Stall prevention operation level	0% to 400%	150%	\odot	Set Pr.570 = "2" to select ND rating.
23	Stall prevention operation level compensation factor at double speed	0% to 200%, 9999	9999	23	Stall prevention operation level compensation factor at double speed	0% to 200%, 9999	9999	\odot	
24	Multi-speed setting (speed 4)	0 to 400 Hz, 9999	9999	24	Multi-speed setting (speed 4)	0 to 590 Hz, 9999	9999	\odot	
25	Multi-speed setting (speed 5)	0 to 400 Hz, 9999	9999	25	Multi-speed setting (speed 5)	0 to 590 Hz, 9999	9999	\odot	
26	Multi-speed setting (speed 6)	0 to 400 Hz, 9999	9999	26	Multi-speed setting (speed 6)	0 to 590 Hz, 9999	9999	\odot	
27	Multi-speed setting (speed 7)	0 to 400 Hz, 9999	9999	27	Multi-speed setting (speed 7)	0 to 590 Hz, 9999	9999	\odot	

FR-E500 parameter list				FR-E800-[-]1 compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
29	Acceleration/deceleration pattern	0, 1, 2	0	29	Acceleration/deceleration pattern selection	0, 1, 2	0	⊙	
30	Regenerative function selection	0, 1	0	30	Regenerative function selection	0, 1, 2	0	⊙	
31	Frequency jump 1A	0 to 400 Hz, 9999	9999	31	Frequency jump 1A	0 to 590 Hz, 9999	9999	⊙	
32	Frequency jump 1B	0 to 400 Hz, 9999	9999	32	Frequency jump 1B	0 to 590 Hz, 9999	9999	⊙	
33	Frequency jump 2A	0 to 400 Hz, 9999	9999	33	Frequency jump 2A	0 to 590 Hz, 9999	9999	⊙	
34	Frequency jump 2B	0 to 400 Hz, 9999	9999	34	Frequency jump 2B	0 to 590 Hz, 9999	9999	⊙	
35	Frequency jump 3A	0 to 400 Hz, 9999	9999	35	Frequency jump 3A	0 to 590 Hz, 9999	9999	⊙	
36	Frequency jump 3B	0 to 400 Hz, 9999	9999	36	Frequency jump 3B	0 to 590 Hz, 9999	9999	⊙	
37	Speed display	0, 0.01 to 9998	0	37	Speed display	0.01 to 9998	1800	△	To display the frequency, set Pr.53 = "0". To display the machine speed, set Pr.53 = "4". For the reference frequency, 60 Hz is set in Pr.505.
38	Frequency at 5V (10V) input	1 to 400 Hz	60 Hz	125	Terminal 2 frequency setting gain frequency	0 to 590 Hz	60 Hz	△	The frequency at 5 V (10 V) input is set for the FR-E500 inverters. The frequency at input of the voltage set in Pr.C4 is set for the FR-E800 inverters. If the frequency deviates, calibrate again. The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
39	Frequency at 20mA input	1 to 400 Hz	60 Hz	126	Terminal 4 frequency setting gain frequency	0 to 590 Hz	60 Hz	△	The frequency at 20 mA input is set for the FR-E500 inverters. The frequency at the input of the current set in Pr.C7 is set for the FR-E800 inverters. If the frequency deviates, calibrate again. The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
41	Up-to-frequency sensitivity	0% to 100%	10%	41	Up-to-frequency sensitivity	0% to 100%	10%	⊙	
42	Output frequency detection	0 to 400 Hz	6 Hz	42	Output frequency detection	0 to 590 Hz	6 Hz	⊙	
43	Output frequency detection for reverse rotation	0 to 400 Hz, 9999	9999	43	Output frequency detection for reverse rotation	0 to 590 Hz, 9999	9999	⊙	
44	Second acceleration/deceleration time	0 to 3600 s / 0 to 360 s	5 s / 10 s	44	Second acceleration/deceleration time	0 to 3600 s	5 s / 10 s	⊙	Changing Pr.21 after setting this parameter will change the set value. Refer to the Instruction Manual.
45	Second deceleration time	0 to 3600 s / 0 to 360 s, 9999	9999	45	Second deceleration time	0 to 3600 s, 9999	9999	⊙	
46	Second torque boost	0% to 30%, 9999	9999	46	Second torque boost	0% to 30%, 9999	9999	△	Set the same value as the value set in the FR-E500 (when Pr.72 PWM frequency selection = "1" in the FR-E500).
47	Second V/F (base frequency)	0 to 400 Hz, 9999	9999	47	Second V/F (base frequency)	0 to 590 Hz, 9999	9999	⊙	To set V/F control, set Pr.800 = "40", Pr.80 = "9999", and Pr.81 = "9999" in the FR-E800-[-]1. (In the FR-E500, Pr.80 = "9999".)
48	Second electronic thermal O/L relay	0 to 500 A, 9999	9999	51	Second electronic thermal O/L relay	0 to 500 A, 9999	9999	⊙	
52	Operation panel/PU main display data selection	0, 23, 100	0	52	Operation panel main monitor selection	0, 5 to 14, 17 to 20, 23 to 33, 35, 38, 40 to 42, 44, 45, 50 to 57, 61, 62, 64, 65, 67, 83, 91, 97, 100	0	△	The increment of the actual operation time displayed on the monitor (when Pr.52 = "23") differs between inverters in both series.
54	FM terminal function selection	0, 1, 2	0	54	FM terminal function selection	1 to 3, 5 to 14, 17, 18, 21, 24, 32, 33, 50, 52, 53, 61, 62, 67, 70, 97	1	△	The initial value is different. FR-E500 → FR-E800 0 → 1. 1 → 2. 2 → 3.
55	Frequency monitoring reference	0 to 400 Hz	60 Hz	55	Frequency monitoring reference	0 to 590 Hz	60 Hz	⊙	The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.
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, 0.1 to 5 s, 9999	9999	57	Restart coasting time	0, 0.1 to 30 s, 9999	9999	△	The coasting time when Pr.57 = "0" is different. It is usually not necessary to change the value. For the same time setting as the FR-E500, set 0.5 s for 1.5K inverters or lower, or 1.0 s for 2.2K inverters or higher.
58	Restart cushion time	0 to 60 s	1.0 s	58	Restart cushion time	0 to 60 s	1.0 s	⊙	
59	Remote setting function selection	0, 1, 2	0	59	Remote function selection	0 to 3, 11 to 13	0	⊙	The inverter can decelerate the motor to the frequency lower than the set frequency by the remote setting function.
60	Shortest acceleration/deceleration mode	0, 1, 2, 11, 12	0	292	Automatic acceleration/deceleration	0, 1, 7, 8, 11	0	△	When "0, 1, or 11" is set in the FR-E500, set the same value in the FR-E800. When "2" is set in the FR-E500, set "1" ("11" when the "12" is set in the FR-E500) in Pr.292 in the FR-E800, and set 180% in Pr.62 and Pr.63 for the FR-E800.
61	Reference current	0 to 500 A, 9999	9999	61	Reference current	0 to 500 A, 9999	9999	⊙	
62	Reference current for acceleration	0% to 200%, 9999	9999	62	Reference value at acceleration	0% to 400%, 9999	9999	⊙	
63	Reference current for deceleration	0% to 200%, 9999	9999	63	Reference value at deceleration	0% to 400%, 9999	9999	⊙	
65	Retry selection	0, 1, 2, 3	0	65	Retry selection	0 to 5	0	△	When an error that triggers the retry operation occurs, the retry operation continues even when another error that does not trigger a retry. After the retry due to the former error is complete, the retry operation is stopped due to the latter error.
66	Stall prevention operation level reduction starting frequency	0 to 400 Hz	60 Hz	66	Stall prevention operation reduction starting frequency	0 to 590 Hz	60 Hz	⊙	The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1.

FR-E500 parameter list				FR-E800-[-]1 compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
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	Special regenerative brake duty	0% to 30%	0%	70	Special regenerative brake duty	0% to 100%	0%	⊙	
71	Applied motor	0, 1, 3, 5, 6, 13, 15, 16, 23, 100, 101, 103, 105, 106, 113, 115, 116, 123	0	71	Applied motor	0, 3, 5, 6, 10, 13, 15, 16, 20, 23, 30, 33, 40, 43, 50, 53, 70, 73, 1800, 1803, 8090, 8093, 9090, 9093	0	△	Change the setting value as follows: FR-E500 → FR-E800 1 → 10 or 13. 23 → 0 or 3. When a value in 100s is set in the FR-E500, set Pr.450 = "10 or 13" and change the setting value of Pr.71 as follows: 100 → 0. 101 → 10 or 13. 103 → 3. 105 → 5. 106 → 6. 113 → 13. 115 → 15. 116 → 16. 123 → 0 or 3. Set Pr.451 = "40" to select V/F control.
72	PWM frequency selection	0 to 15	1	72	PWM frequency selection	0 to 15	1	△	Change the Pr.260 setting as required.
73	0-5V/0-10V selection	0, 1	0	73	Analog input selection	0, 1, 6, 10, 11, 16	1	△	The parameter name and initial value are different. Change the setting value as follows: FR-E500 → FR-E800 0 → 1. 1 → 0. Use the voltage/current input selection switch 2 or 4 to select voltage input or current input.
74	Filter time constant	0 to 8	1	74	Input filter time constant	0 to 8	1	⊙	
75	Reset selection/disconnected PU detection/PU stop selection	0 to 3, 14 to 17	14	75	Reset selection/disconnected PU detection/PU stop selection	0 to 3, 14 to 17	14	⊙	
77	Parameter write disable selection	0, 1, 2	0	77	Parameter write selection	0, 1, 2	0	⊙	
78	Reverse rotation prevention selection	0, 1, 2	0	78	Reverse rotation prevention selection	0, 1, 2	0	⊙	
79	Operation mode selection	0 to 4, 6 to 8	1	79	Operation mode selection	0 to 4, 6, 7	0	△	The operation modes in the initial setting are different: PU operation mode for the FR-E500, and External operation mode at power ON for the FR-E800. When the FR-E500 setting is "8", set Pr.182 = "16" for the FR-E800.
80	Motor capacity	0.1 to 7.5 kW, 9999	9999	80	Motor capacity	0.1 to 30 kW, 9999	9999	△	To set V/F control, set Pr.800 = "40".
				81	Number of motor poles	2, 4, 6, 8, 10, 12, 9999	9999	×	To set other control mode, change the setting values in Pr.80 and Pr.81. When the operation is started under a control mode other than V/F control while "9999" is set in Pr.80 and Pr.81, SE alarm is displayed. (Example) Pr.800 = "20", Pr.80 and Pr.81 = "9999". To set General-purpose magnetic flux vector control, set Pr.800 = "20" and use Pr.89 to make adjustments to keep the motor speed constant during variable load operation as required. In the initial setting, V/F control is selected.
82	Motor excitation current	0 to 500 A, 9999	9999	82	Motor excitation current	0 to 500 A, 9999	9999	⊙	
83	Rated motor voltage	0 to 1000 V	200/400 V	83	Rated motor voltage	0 to 1000 V	200/400 V	⊙	
84	Rated motor frequency	50 to 120 Hz	60 Hz	84	Rated motor frequency	10 to 400 Hz, 9999	9999	△	When "9999" is set, the setting value of Pr.3 is used.
—				89	Speed control gain (Advanced magnetic flux vector)	0% to 200%, 9999	9999	×	
90	Motor constant (R1)	0 to 50 Ω, 9999	9999	90	Motor constant (R1)	0 to 50 Ω, 9999	9999	⊙	
96	Auto-tuning setting/status	0, 1	0	96	Auto tuning setting/status	0, 1, 11	0	△	If auto tuning has been performed, set Pr.96 = "1" in the FR-E800 to perform tuning again as required.
117	Communication station number	0 to 31	0	117	PU communication station number	0 to 31	0	⊙	Available in FR-E800-[-]1. The operation mode is changed from the PU operation mode to the Network operation mode. When Pr.551 = "2", the inverter operates in the PU operation mode.
118	Communication speed	48, 96, 192	192	118	PU communication speed	48, 96, 192, 384, 576, 768, 1152	192	⊙	
119	Stop bit length	0, 1, 10, 11	1	119	PU communication stop bit length	0, 1, 10, 11	1	⊙	
120	Parity check presence/absence	0, 1, 2	2	120	PU communication parity check	0, 1, 2	2	⊙	
121	Number of communication retries	0 to 10, 9999	1	121	PU communication retry count	0 to 10, 9999	1	⊙	
122	Communication check time interval	0, 0.1 to 999.8 s, 9999	0	122	PU communication check time interval	0, 0.1 to 999.8 s, 9999	0	⊙	Change the setting as required.
123	Waiting time setting	0 to 150, 9999	9999	123	PU communication waiting time setting	0 to 150, 9999	9999	⊙	
124	CR/LF selection	0, 1, 2	1	124	PU communication CR/LF selection	0, 1, 2	1	⊙	
128	PID action selection	0, 20, 21, 50, 51, 60, 61	0	128	PID action selection	0, 20, 21, 40 to 43, 50, 51, 60, 61, 1000, 1001, 1010, 1011, 2000, 2001, 2010, 2011	0	×	The deviation value, measured value, and set point cannot be input via LONWORKS communication. Set Pr.609 and Pr.610 as required.
129	PID proportional band	0.1% to 1000%, 9999	100%	129	PID proportional band	0.1% to 1000%, 9999	100%	⊙	
130	PID integral time	0.1 to 3600 s, 9999	1 s	130	PID integral time	0.1 to 3600 s, 9999	1 s	⊙	
131	Upper limit	0% to 100%, 9999	9999	131	PID upper limit	0% to 100%, 9999	9999	⊙	
132	Lower limit	0% to 100%, 9999	9999	132	PID lower limit	0% to 100%, 9999	9999	⊙	

FR-E500 parameter list				FR-E800-[-]1 compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
133	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 the set point for the FR-E800, set "9999" in Pr.133 and set Pr.128. When a value other than "9999" is set for the FR-E800, the set point will be also valid for operations other than the PU operation.
134	PID differential time	0.01 to 10.00 s, 9999	9999	134	PID differential time	0.01 to 10.00 s, 9999	9999	◎	
145	Parameter unit display language selection	0 to 7	0	145	PU display language selection	0 to 7	—	×	FR-PU07
146	Frequency setting command selection	0, 1, 9999	0	—				×	Operation panel for the FR-E500 (FR-PA02) cannot be used.
150	Output current detection level	0% to 200%	150%	150	Output current detection level	0% to 400%	150%	◎	Set Pr.570 = "2" to select ND rating.
151	Output current detection period	0 to 10 s	0	151	Output current detection signal delay time	0 to 10 s	0	◎	
152	Zero current detection level	0% to 200%	5.0%	152	Zero current detection level	0% to 400%	5.0%	◎	
153	Zero current detection period	0.05 to 1 s	0.5 s	153	Zero current detection time	0 to 10 s	0.5 s	◎	
156	Stall prevention operation selection	0 to 31, 100	0	156	Stall prevention operation selection	0 to 31, 100, 101	0	◎	
160	User group read selection	0, 1, 10, 11	0	160	User group read selection	0, 1, 9999	0	△	The user group 2 was deleted for the FR-E800.
171	Actual operation hour meter clear	0	0	171	Operation hour meter clear	0, 9999	9999	◎	
173	User group 1 registration	0 to 999	0	173	User group registration	0 to 1999, 9999	9999	◎	
174	User group 1 deletion	0 to 999, 9999	0	174	User group clear	0 to 1999, 9999	9999	◎	
175	User group 2 registration	0 to 999	0	—				×	Not available for FR-E800.
176	User group 2 deletion	0 to 999, 9999	0	—				×	
180	RL terminal function selection	0 to 8, 16, 18	0	180	RL terminal function selection	0 to 5, 7, 8, 10, 12 to 16, 18, 23 to 27, 30, 37, 42, 43, 46, 47, 50, 51, 62, 65 to 67, 72, 74, 76, 87 to 89, 92, 9999	0	△	Change the setting value as follows: FR-E500 → FR-E800 5 → 25 (STOP signal). 6 → 24 (MRS signal).
181	RM terminal function selection	0 to 8, 16, 18	1	181	RM terminal function selection		1	△	
182	RH terminal function selection	0 to 8, 16, 18	2	182	RH terminal function selection		2	△	
183	MRS terminal function selection	0 to 8, 16, 18	6	183	MRS terminal function selection		24	△	
—				184	RES terminal function selection		62	×	
190	RUN terminal function selection	0 to 99	0	190	RUN terminal function selection	0, 1, 3, 4, 7, 8, 11 to 16, 20, 24 to 26, 30 to 36, 38 to 41, 44 to 48, 56, 57, 60 to 64, 70, 80, 81, 84, 90 to 93, 95, 96, 98 to 101, 103, 104, 107, 108, 111 to 116, 120, 124 to 126, 130 to 136, 138 to 141, 144 to 148, 156, 157, 160 to 164, 170, 180, 181, 184, 190 to 193, 195, 196, 198, 199, 206, 211 to 213, 242, 306, 311 to 313, 342, 9999	0	◎	
191	FU terminal function selection	0 to 99	4	191	FU terminal function selection		4	◎	
192	A, B, C terminal function selection	0 to 99	99	192	ABC terminal function selection		99	◎	Setting values "92, 93, 192, and 193" are not available.
232	Multi-speed setting (speed 8)	0 to 400 Hz, 9999	9999	232	Multi-speed setting (speed 8)	0 to 590 Hz, 9999	9999	◎	
233	Multi-speed setting (speed 9)	0 to 400 Hz, 9999	9999	233	Multi-speed setting (speed 9)	0 to 590 Hz, 9999	9999	◎	
234	Multi-speed setting (speed 10)	0 to 400 Hz, 9999	9999	234	Multi-speed setting (speed 10)	0 to 590 Hz, 9999	9999	◎	
235	Multi-speed setting (speed 11)	0 to 400 Hz, 9999	9999	235	Multi-speed setting (speed 11)	0 to 590 Hz, 9999	9999	◎	
236	Multi-speed setting (speed 12)	0 to 400 Hz, 9999	9999	236	Multi-speed setting (speed 12)	0 to 590 Hz, 9999	9999	◎	
237	Multi-speed setting (speed 13)	0 to 400 Hz, 9999	9999	237	Multi-speed setting (speed 13)	0 to 590 Hz, 9999	9999	◎	
238	Multi-speed setting (speed 14)	0 to 400 Hz, 9999	9999	238	Multi-speed setting (speed 14)	0 to 590 Hz, 9999	9999	◎	
239	Multi-speed setting (speed 15)	0 to 400 Hz, 9999	9999	239	Multi-speed setting (speed 15)	0 to 590 Hz, 9999	9999	◎	
240	Soft-PWM setting	0, 1, 10, 11	1	240	Soft-PWM operation selection	0, 1	1	△	Change the setting value as follows: FR-E500 → FR-E800 10 → 0. 11 → 1. Change the Pr.260 setting as required.
244	Cooling fan operation selection	0, 1	0	244	Cooling fan operation selection	0, 1	1	△	The initial value was changed.
245	Rated motor slip	0% to 50%, 9999	9999	245	Rated slip	0% to 50%, 9999	9999	◎	Enabled under V/F control.
246	Slip compensation response time	0.01 to 10 s	0.5 s	246	Slip compensation time constant	0.01 to 10 s	0.5 s	◎	The slip compensation function is always enabled under Advanced magnetic flux vector control. Calibrate the parameter as required.
247	Constant power range slip compensation selection	0, 9999	9999	247	Constant output range slip compensation selection	0, 9999	9999	◎	
249	Earth (ground) fault detection at start	0, 1	0	249	Earth (ground) fault detection at start	0, 1	0	◎	The initial value of the FR-E800-[-]1 is that of the parameter initial value group 1. A fault is detected only at start for the FR-E800 (400 V class), while a fault is always detected for the FR-E500 (400 V class).
250	Stop selection	0 to 100 s, 1000 to 1100 s, 8888, 9999	9999	250	Stop selection	0 to 100 s, 1000 to 1100 s, 8888, 9999	9999	△	Increment: 0.1 s
251	Output phase loss protection selection	0, 1	1	251	Output phase loss protection selection	0, 1	1	◎	
—				260	PWM frequency automatic switchover	0, 10	10	×	In initial setting, PWM carrier frequency automatic reduction function is enabled.
342	E2PROM write selection	0, 1	0	342	Communication EEPROM write selection	0, 1	0	◎	

FR-E500 parameter list				FR-E800-[]-1 compatible parameter				Parameter setting	
Pr.	Name	Setting range	Initial value	Pr.	Name	Setting range	Initial value	Setting	Remarks
—				450	Second applied motor	0, 3, 5, 6, 10, 13, 15, 16, 20, 23, 30, 33, 40, 43, 50, 53, 70, 73, 1800, 1803, 8090, 8093, 9090, 9093, 9999	9999	×	
—				451	Second motor control method selection	10 to 12, 20, 40, 9999	9999	×	In the initial setting, the control method and control mode selected in Pr.800 is enabled.
503	Capacitor life timer	—	0	503	Maintenance timer	0 (1 to 9998)	0	△	The parameter name was changed.
504	Capacitor life alarm output set time	0 to 9998, (9999)	500	504	Maintenance timer warning output set time	0 to 9998, (9999)	9999	△	Setting "9999" for the FR-E800 disables the function. When "9999" is set for the FR-E500, set "500" for the FR-E800.
—				551	PU mode operation command source selection	2 to 4, 9999	9999	△	
555	Current average time	0.1 to 1.0 s	1	555	Current average time	0.1 to 1.0 s	1	⊙	
556	Data output mask time	0.0 to 20.0 s	0	556	Data output mask time	0.0 to 20.0 s	0	⊙	
557	Current average value monitor signal output reference current	0.1 to 999 A	1	557	Current average value monitor signal output reference current	0 to 500 A	Rated output current	△	The initial value is different.
—				570	Multiple rating setting [3-phase]	1, 2	2	△	Set "2" to select ND rating. ND rating only for the single-phase 200 V class.
—				609	PID set point/deviation input selection	2 to 5	2	△	
—				610	PID measured value input selection	2 to 5	3	△	
—				800	Control method selection	0 to 5, 9, 10 to 12, 19, 20, 40	40	△	Set "40" to select V/F control, and "20" to select General-purpose magnetic flux vector control.
900	FM terminal calibration	—	—	C0 (900)	FM terminal calibration	—	—	⊙	Calibrate the parameter as required. Available in FR-E800-[]-1.
902	Frequency setting voltage bias	0 to 60 Hz: 0 to 10 V	0 Hz: 0 V	C2 (902)	Terminal 2 frequency setting bias frequency	0 to 590 Hz	0 Hz	△	Setting methods are different. Refer to the Instruction Manual. Calibrate the parameter as required.
				C3 (902)	Terminal 2 frequency setting bias	0% to 300%	0%	△	
903	Frequency setting voltage gain	1 to 400 Hz: 0 to 10 V	60 Hz: 5 V	125 (903)	Terminal 2 frequency setting gain frequency	0 to 590 Hz	60 Hz	△	
				C4 (903)	Terminal 2 frequency setting gain	0% to 300%	100%	△	
904	Frequency setting current bias	0 to 60 Hz: 0 to 20 mA	0 Hz: 4 mA	C5 (904)	Terminal 4 frequency setting bias frequency	0 to 590 Hz	0 Hz	△	
				C6 (904)	Terminal 4 frequency setting bias	0% to 300%	20%	△	
905	Frequency setting current gain	1 to 400 Hz: 0 to 20 mA	60 Hz: 20 mA	126 (905)	Terminal 4 frequency setting gain frequency	0 to 590 Hz	60 Hz	△	
				C7 (905)	Terminal 4 frequency setting gain	0% to 300%	100%	△	
922	Built-in frequency setting potentiometer bias	0 to 60 Hz: 0 to 5 V	0 Hz: 0 V	—				×	Operation panel for the FR-E500 (FR-PA02) cannot be used.
923	Built-in frequency setting potentiometer gain	1 to 400 Hz: 0 to 5 V	60 Hz: 5 V	—					
990	Buzzer beep control	0, 1	1	990	PU buzzer control	0, 1	1	×	Parameter for the LCD operation panel (FR-LU08).
991	LCD contrast	0 to 63	58	991	PU contrast adjustment	0 to 63	58	×	

*1 For a parameter whose setting has been changed from the initial value in the FR-E500, the value of the corresponding parameter in the FR-E800 can be obtained as follows:

(A: FR-E500 initial value, B: FR-E500 setting value, C: FR-E800 initial value)

FR-E800 setting value = (B × C)/A

Adjust the setting as required.

4. Option

The following table shows which FR-E500 series options are compatible with the FR-E800 series inverters and their corresponding FR-E800 series options.

Name		Option model	
		FR-E500	FR-E800
			FR-E800[-]1
Plug-in type	CC-Link communication	FR-E5NC (Available for 400 V class only)	FR-A8NC E kit
	DeviceNet communication	FR-E5ND (Available for 400 V class only)	FR-A8ND E kit
	LONWORKS communication	FR-E5NL (Available for 400 V class only)	Not supported. (Consider replacing the inverter with the FR-F800.)
Stand-alone	Parameter unit	FR-PU04	Not compatible. FR-PU07 or FR-PA07 operation panel can be used.
	Parameter unit connection cable	FR-CB201, 203, 205	Compatible
	Control panel rear cover and adapter set	FR-E5P	Operation panel for the FR-E500 cannot be used.
	Brake resistor	MRS□□, MYS□□	Compatible
		FR-ABR-(H)□□K	Compatible
	Brake unit	BU-1500 to 15K, H7.5K, H15K	Compatible. If replacing the brake unit, use FR-BU2.
		Discharging resistor	GZG□□, GRZG□□
	Power factor improving AC reactor	FR-BAL-(H)□□K	Compatible. If replacing the reactor, use FR-HAL.
	Power factor improving DC reactor	FR-BEL-(H)□□K	Compatible. If replacing the reactor, use FR-HEL.
	EMC Directive compliant noise filter	SF, FR-E5NF	Compatible
	EMC filter installation attachment	FR-E5T(-02)	FR-E8AT03, FR-E7AT03, FR-E5T(-02)
	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. If replacing the converter, use FR-XC.
		Dedicated stand-alone reactor	FR-CVL-(H)7.5K
	FR-HC high power factor converter	FR-HC-(H)7.5K	Compatible. If replacing the converter, use FR-HC2.
Surge voltage suppression filter	FR-ASF-H□□K	Compatible	
Manual controller / speed controller	Manual controller	FR-AX	Compatible. If replacing the option, prepare the same model.
	DC tach. follower	FR-AL	Compatible. If replacing the option, prepare the same model.
	Three speed selector	FR-AT	Compatible. If replacing the option, prepare the same model.
	Remote speed setter	FR-FK	Compatible. If replacing the option, prepare the same model.
	Ratio setter	FR-FH	Compatible. If replacing the option, prepare the same model.
	Speed detector	FR-FP	Compatible. If replacing the option, prepare the same model.
	Master controller	FR-FG	Compatible. If replacing the option, prepare the same model.
	Soft starter	FR-FC	Compatible. If replacing the option, prepare the same model.
	Deviation detector	FR-FD	Compatible. If replacing the option, prepare the same model.
	Preamplifier	FR-FA	Compatible. If replacing the option, prepare the same model.
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-WJ	Not compatible. Use SW1DND-FRC2.

Only one plug-in option can be mounted.

5. Precautions when replacing the FR-E500

Item		FR-E800-[-]1, FR-E800-[-]E	FR-E500
Outline dimension*1		Compatible. The product width is different between the FR-E500 and FR-E800-[-](-1)(E) inverters for some capacity models. 3-phase 200 V 3.7K: 170 mm → 140 mm, 3-phase 400 V 0.4K to 1.5K: 140 mm → 108 mm The depth required for installation differs depending on the inverter model. Refer to the outline dimension drawings.	
Installation size		The installation size is compatible. The product width is different between the FR-E500 and FR-E800-[-](-1)(E) inverters for some capacity models. (Installation interchange attachments are available.) 3-phase 200 V 3.7K: 170 mm → 140 mm, 3-phase 400 V 0.4K to 1.5K: 140 mm → 108 mm Attachment: FR-E8AT03 FR-E7AT02	
Main circuit terminal block		Compatible (screw type terminal block)	
Control circuit terminal (physical terminal)	Shape of terminal block	Spring clamp type When the terminal block is used to replace a screw type terminal block, applicable crimp terminal part numbers will be changed. The position of the control circuit terminal block and the terminal layout are different between the FR-E500 and FR-E800 inverters.	Insertion type terminal block
	Contact input*2	FR-E800-[-]1: 7 STF, STR, RH, RM, RL, MRS, RES, SD, PC FR-E800-[-]E: 2 DI0, DI1, SD, PC	7 STF, STR, RH, RM, RL, MRS, RES, SD, PC
	Analog input*2	FR-E800-[-]1/FR-E800-[-]E: 2 2, 4, 10, 5	2 2, 4, 10, 5
	Relay output	FR-E800-[-]1/FR-E800-[-]E: 1 A, B, C	1 A, B, C
	Open collector output	FR-E800-[-]1: 2 RUN, FU, SE FR-E800-[-]E: N/A (When the FR-A8AY E kit is installed: 7, Do0-6)	2 RUN, FU, SE
	Pulse output	FR-E800-[-]1 (FM type only): 1 FM FR-E800-[-]E: N/A	1 FM
	Safety input/output signal	FR-E800-[-]1/FR-E800-[-]E S1, S2, SO, SOC	N/A
Communication	Ethernet	FR-E800-[-]1: N/A FR-E800-[-]E: Available (2 ports) Example) PA: CC-Link IE TSN, CC-Link IE Filed Basic, EtherNet/IP, MODBUS/TCP, BACnet/IP	N/A
	Safety communication	N/A	N/A
	RS485*3	FR-E800-[-]1: Available (1 port) Mitsubishi inverter protocol, MODBUS RTU FR-E800-[-]E: N/A	Available (1 port) Mitsubishi inverter protocol
	USB	FR-E800-[-]1/FR-E800-[-]E Mini B connector. USB bus power available	N/A
Availability of option brake resistor		0.4K to 22K	0.4K to 7.5K
Operation panel		FR-E800-[-]1: Not removable (The FR-PA07 can be used.)	Removable
Parameter (function)		Compatible (some functions are changed or removed).	
Parameter unit	FR-DU08	Not compatible	
	FR-PU07	FR-E800-[-]1: Compatible	Compatible
	FR-DU04	Not compatible	Compatible
	FR-PU04	Not compatible	Compatible
	FR-PA02	Not compatible	Compatible
Parameter unit connection cable	FR-CB2	FR-E800-[-]1: Compatible	Compatible
Plug-in option: Only one option is available.*4		Plug-in options of the FR-E500 series are not compatible. FR-A8AX E kit FR-A8AY E kit FR-E5NC, E5ND, E5NL FR-A8AR E kit FR-A8NC E kit (Available for 400 V class only) FR-A8NP E kit FR-A8ND E kit	

Item		FR-E800(-1)(E)	FR-E500
External common option Noise filter, reactor, etc.		Compatible*5	Compatible
External FR controller		Compatible	
Soft-PWM control (long-wiring mode), Pr.240		Soft-PWM control selectable, no long-wiring mode setting required	Soft-PWM control, long-wiring mode selectable
Control method	V/F control	Available Pr.800 Control method selection = "40" It is easy to distinguish it from Advanced magnetic flux vector control.	Available Pr.800 Control method selection is not available.
	General-purpose magnetic flux vector control	N/A (Make adjustment for slip compensation under Advanced magnetic flux vector control.)	Available
	Advanced magnetic flux vector control	Available Pr.800 Control method selection = "20"	N/A
Built-in potentiometer switching, Pr.146		N/A (The FR-PA02 operation panel for the FR-E500 is not compatible.)	The built-in potentiometer switching function is not available. Pr.146 (frequency setting command selection) can be used.
0 to 5 V / 0 to 10 V selection for terminal 2, Pr.73		0: 0 to 10 V, 1: 0 to 5 V (initial value)	0: 0 to 5 V (initial value), 1: 0 to 10 V
Control by RS-485 communication via PU connector		Network operation mode (When Pr.551 = "2", the command source is the same as that of the FR-E500.)	PU operation mode
Simple mode		Selected using Pr.160 (User group read selection).	N/A
Intelligent mode selection, Pr.60	Parameter for setting, setting value	Pr.60 (Energy saving control selection): 0, 9 Pr.292 (Automatic acceleration/deceleration): 0, 1, 7, 8, 11	Pr.60 (Shortest acceleration/deceleration mode): 0, 1, 2, 11, 12
	Operation mode	Normal operation, Optimum excitation control Shortest acceleration/deceleration mode (with/without brakes) Brake sequence mode 1, 2	Normal operation Shortest acceleration/deceleration mode I, II (with/without brakes)
Inrush current limit circuit		All	Provided for 200 V 2.2K or higher and 400 V inverters

*1 To remove the wiring cover of the FR-E800, a tool such as a flathead screwdriver is required depending on the inverter capacity. Insert the tool into the half-hole above the "PUSH" mark on the cover, and pull out the cover along the guides.

Be sure to refer to the FR-E800 Instruction Manual (Connection).

*2 For the FR-E500, terminals 5 and SD are not isolated (isolated for the 400 V class). The terminals are isolated from terminal SE.

For the FR-E800, terminals 5 and SD are isolated from each other.

*3 Wiring methods are different. Refer to the Instruction Manual.

*4 LONWORKS communication is not supported. Consider replacing the inverter with the FR-F800.

*5 When the FR-CV or FR-HC(2) is used with the FR-E800E, all control circuit terminals must be assigned as specified.

● Note 1

Differences in the control methods from the FR-E500

To enable the control method and the control mode selected in Pr.800 (Pr.451), the condition to start operation must be satisfied. Otherwise the operation does not start due to the setting error (SE) alarm when the start signal is input.

(Example) FR-E800: Pr.800 = "20" (Advanced magnetic flux vector control), Pr.80 = "9999" (the motor capacity is not set), and Pr.81 = "9999" (the number of motor poles is not set)

Settings for V/F control

Control method	FR-E800	FR-E500
V/F control selected	Pr.800 = "40" Induction motor selected in Pr.71. Pr.80 = "9999", Pr.81 = "9999"	Pr.800: N/A Induction motor selected in Pr.71. Pr.80 = "9999"

- Note 2

Other precautions

- Number of the parameters to be set to change the control method from V/F control (initial setting) to Advanced magnetic flux vector control*

- FR-E500: 2 (Pr.71 and Pr.80)

- FR-E800: 4 (Pr.71, Pr.80, Pr.81, and Pr.800)

- * General-purpose magnetic flux vector control is not available. It is recommended to use Advanced magnetic flux vector control for slip compensation.

Revisions

Revision date	Version	Revision
Feb. 2021	B	Added Length of conductive part of the 2-wire blade terminal Edited Setting value "8888" added for Pr.11 Setting range changed for Pr.52, Pr.71, Pr.450, Pr.180 to Pr.184, Pr.190 to Pr.192, and Pr.800 Pr.37 setting range: "0" is deleted. Compatibility FR-PU07 supported