Information for Replacement of FR-V500(L) Series to FR-A700 Series

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

BCN-C21002-114B

1. Size

Installation sizes of the some FR-V500 series and the corresponding FR-A700 series are different.
Drill new mounting holes by referring to the outline dimension drawing. Alternatively, use intercompatibility attachments shown in the table below.

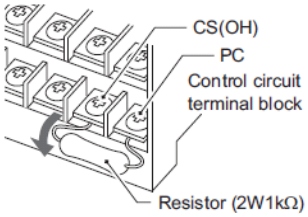
Inverter Currently Installed	Replacement Inverter	Installation Size/Intercompatibility Attachment
FR-V520-1.5K	FR-A720-2.2K	Same size
FR-V520-2.2K	FR-A720-3.7K	Same size
FR-V520-3.7K	FR-A720-5.5K	Same size
FR-V520-5.5K	FR-A720-7.5K	Same size
FR-V520-7.5K	FR-A720-11K	Different size
FR-V520-11K	FR-A720-15K	Same size
FR-V520-15K	FR-A720-18.5K	Same size
FR-V520-18.5K	FR-A720-22K	FR-A5AT04
FR-V520-22K	FR-A720-30K	Same installation size, different external dimensions
FR-V520-30K	FR-A720-37K	Same installation size, different external dimensions
FR-V520-37K	FR-A720-45K	Same installation size, different external dimensions
FR-V520-45K	FR-A720-55K	Same installation size, different external dimensions
FR-V520-55K	FR-A720-75K	Different size
FR-V520-75K	FR-A720-90K	Different size
FR-V540-1.5K	FR-A740-2.2K	Same size
FR-V540-2.2K	FR-A740-3.7K	Same size
FR-V540-3.7K	FR-A740-5.5K	Same size
FR-V540-5.5K	FR-A740-7.5K	Same size
FR-V540-7.5K	FR-A740-11K	FR-AAT24
FR-V540-11K	FR-A740-15K	FR-AAT24
FR-V540-15K	FR-A740-18.5K	Same size
FR-V540-18.5K	FR-A740-22K	Same size
FR-V540-22K	FR-A740-30K	Same installation size, different external dimensions
FR-V540-30K	FR-A740-37K	Same installation size, different external dimensions
FR-V540-37K	FR-A740-45K	Same installation size, different external dimensions
FR-V540-45K	FR-A740-55K	FR-AAT10
FR-V540-55K	FR-A740-75K	Different size
FR-V540-75K	FR-A740-90K	Different size
FR-V540-90K	FR-A740-110K	Different size
FR-V540-110K	FR-A740-132K	Different size
FR-V540-132K	FR-A740-160K	Different size
FR-V540-160K	FR-A740-185K	Different size
FR-V540-200K	FR-A740-220K	Different size
FR-V540-250K	FR-A740-280K	Different size

*1 An FR-A7AP or FR-A7AL built-in option is required to perform vector control with an FR-A700 series inverter.

*2 Provide a separate power supply of 5V/12V/15V/24V to perform vector control with FR-A700. Select an appropriate power supply according to the encoder power supply. FR-A7PS control terminal block, which has built-in encoder power supply (12VDC), is also available as an option.

*3 An FR-A700 series inverter uses thermal protection signals for a vector control dedicated motor. Assign the thermal protector signal as shown below.

Assign OH (external thermal input) signal to the terminal CS. (Set "7" in *Pr. 186*)
Connect a 2W1kΩ resistor between the terminal PC and CS (OH). Install the resistor pushing against the bottom part of the terminal block so as to avoid a contact with other cables.



*4 An FR-A700 series inverter has V/F control set as the initial setting. Change the parameter setting to select vector control.

Rated current

The table below shows the rated currents of FR-V500 series and FR-A700 series inverters.
When an FR-V500 series inverter is compared with a same-capacity FR-A700 series inverter, the rated current of the FR-V500 series inverter is higher than the rated current of the FR-A700 series inverter.
Thus, use an FR-A700 of one-rank-higher capacity when replacing an FR-V500.

Comparison of rated currents

Three-phase 200V

Capacity	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K	30K	37K	45K	55K
V520	9A	13A	20A	28.5A	37.5A	54A	72.8A	88.0A	103.5A	126.5A	168A	198A	264A
A720	8A	11A	17.5A	24A	33A	46A	61A	76A	90A	115A	145A	175A	215A

Capacity	75K	90K
V520	330A	—
A720	288A	346A

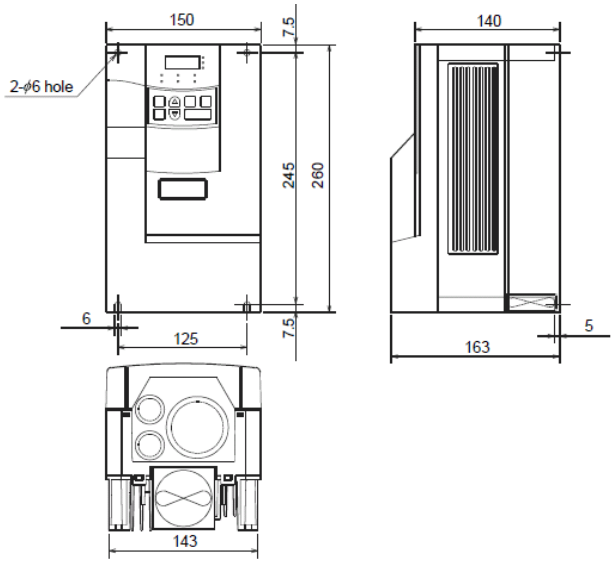
Three-phase 400V

Capacity	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K	30K	37K	45K	55K
V540	4.5A	6.5A	10A	14.5A	18.5A	27.5A	35.5A	44A	51.8A	67A	86A	99A	132A
A740	4A	6A	9A	12A	17A	23A	31A	38A	44A	57A	71A	86A	110A

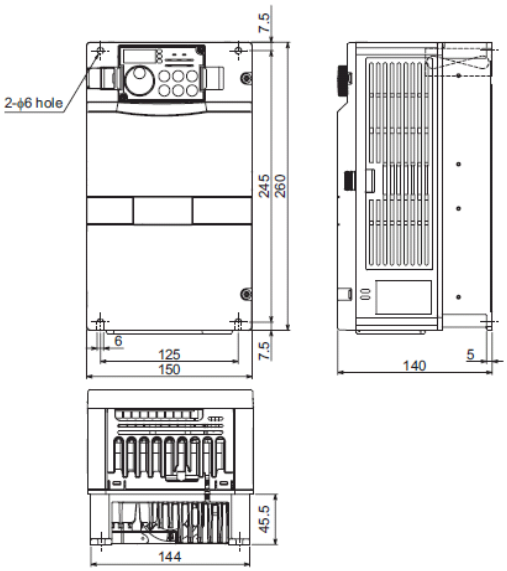
Capacity	75K	90K	110K	132K	160K	185A	200K	220K	250K	280K
V540	165A	195A	240A	270A	330A	—	415K	—	505K	—
A740	144A	180A	216A	260A	325A	361A	—	432A	481A	547A

Outline dimension drawings (Unit: mm)

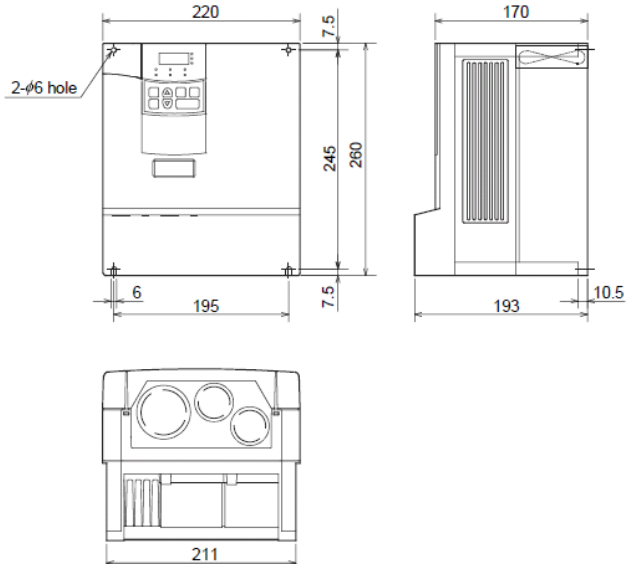
■ FR-V520-1.5K, 2.2K



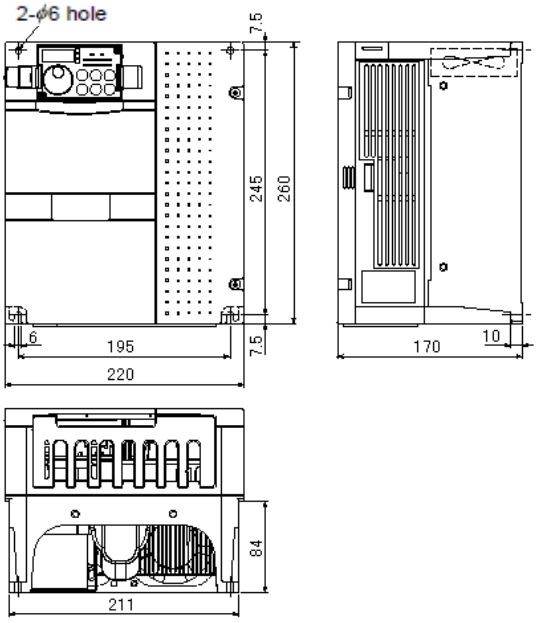
■ FR-A720-2.2K, 3.7K



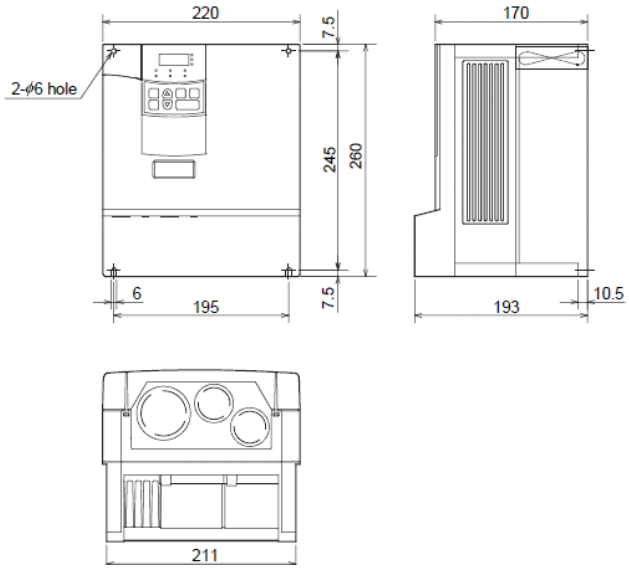
■ FR-V520-3.7K, 5.5K



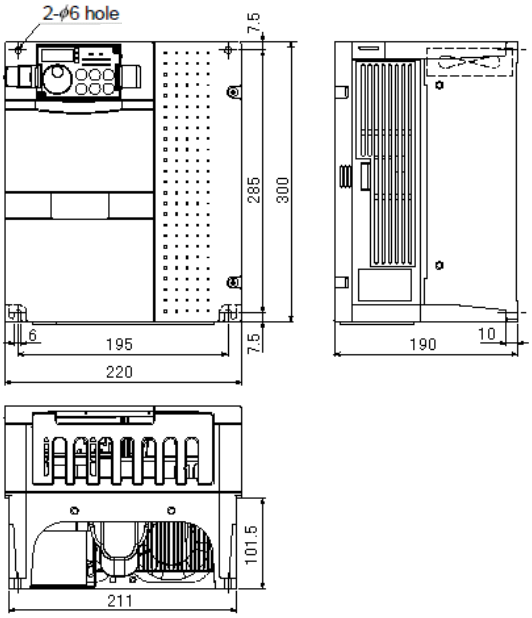
■ FR-A720-5.5K, 7.5K



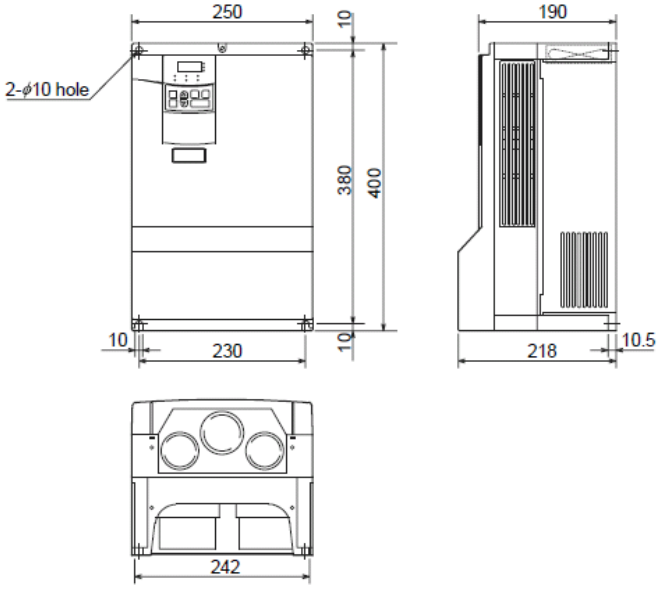
■ FR-V520-7.5K



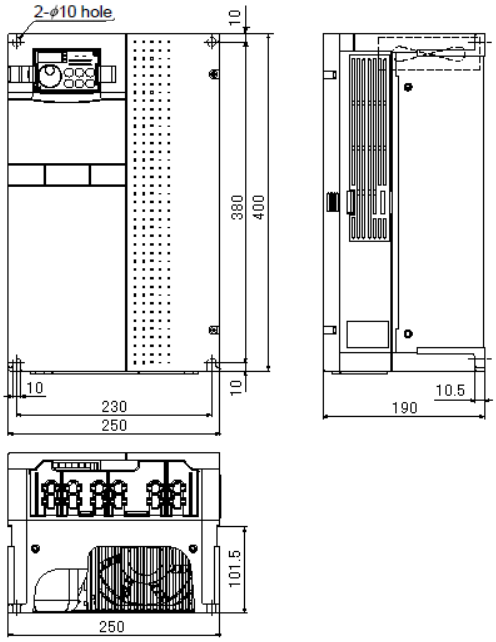
■ FR-A720-11K



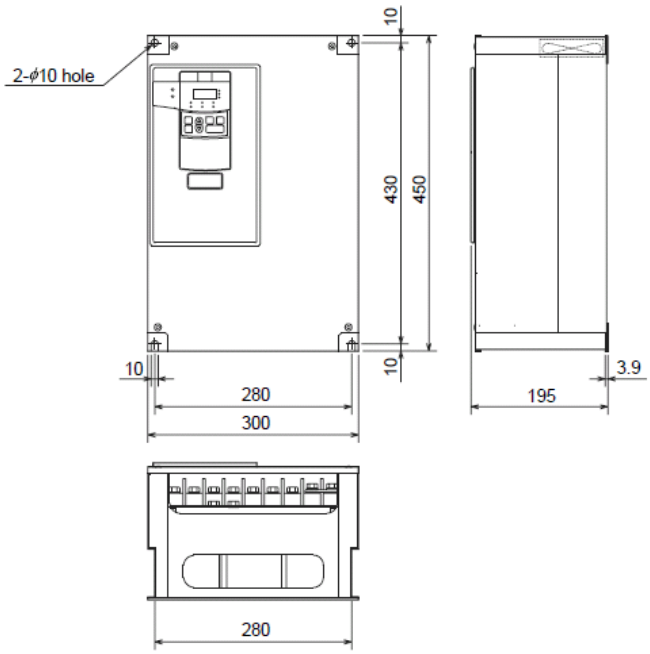
■ FR-V520-11K, 15K



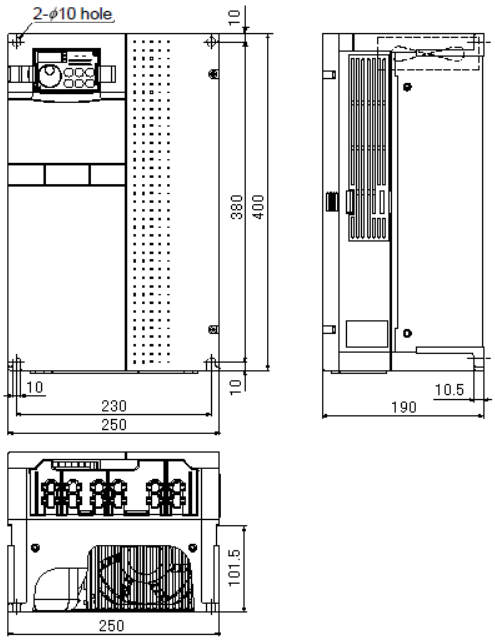
■ FR-A720-15K, 18.5K



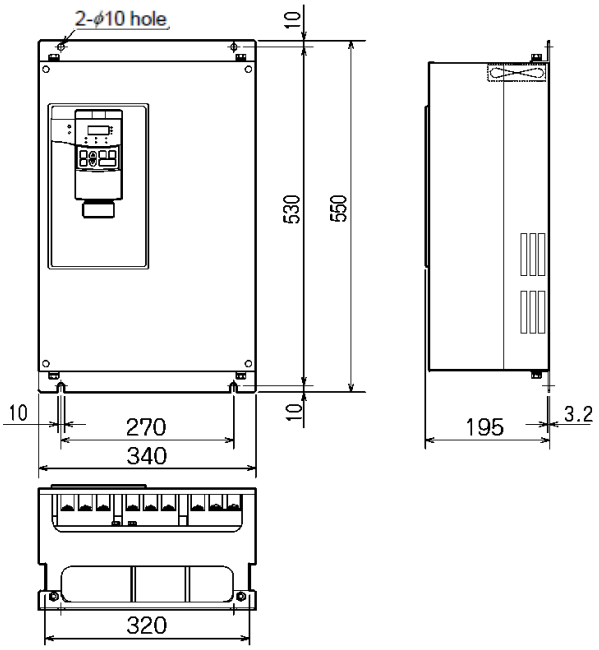
■ FR-V520-18.5K



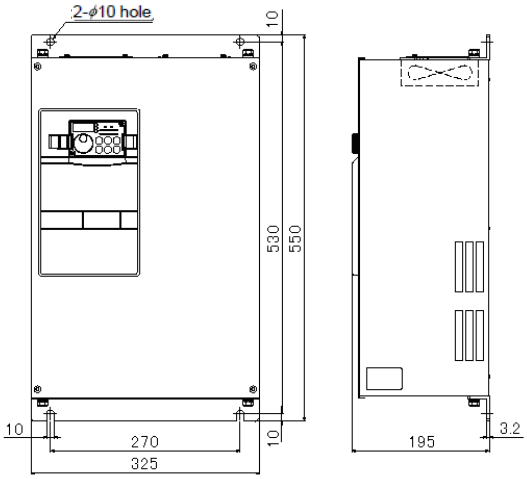
■ FR-A720-22K



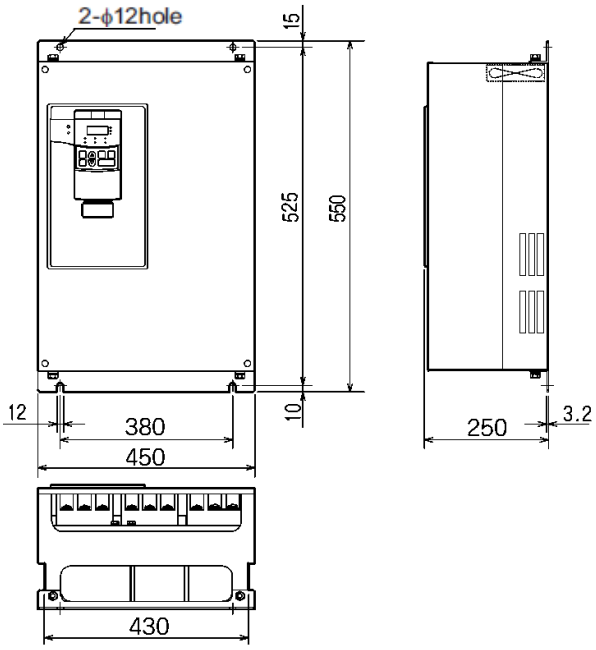
■ FR-V520-22K



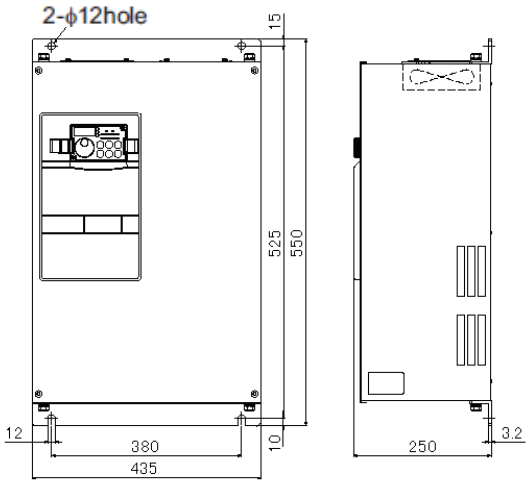
■ FR-A720-30K



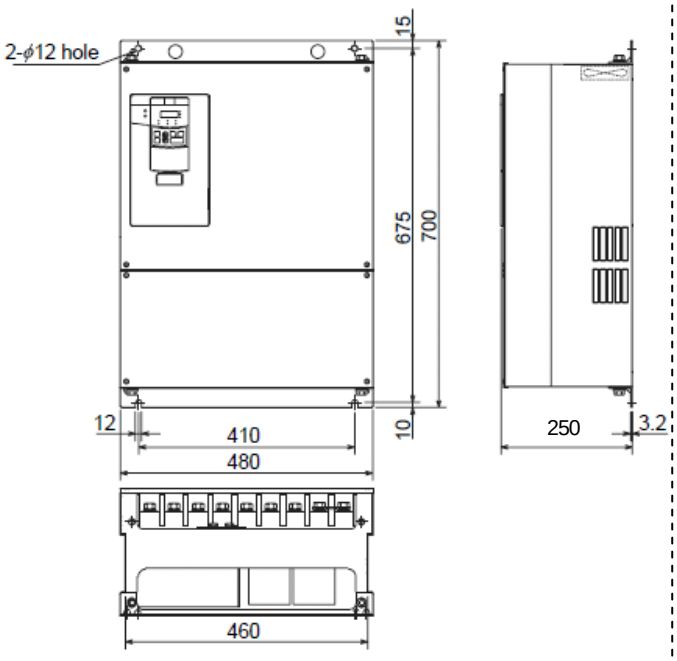
■ FR-V520-30K, 37K



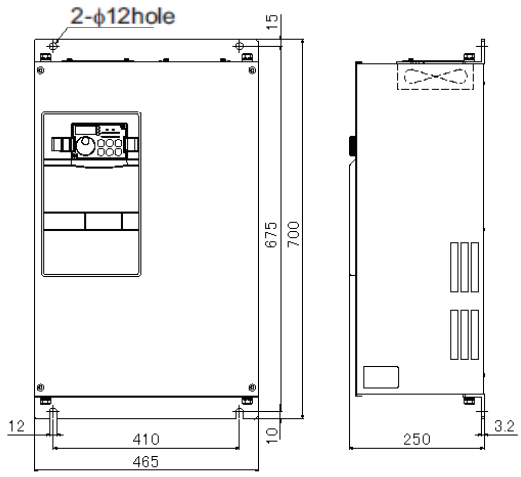
■ FR-A720-37K, 45K



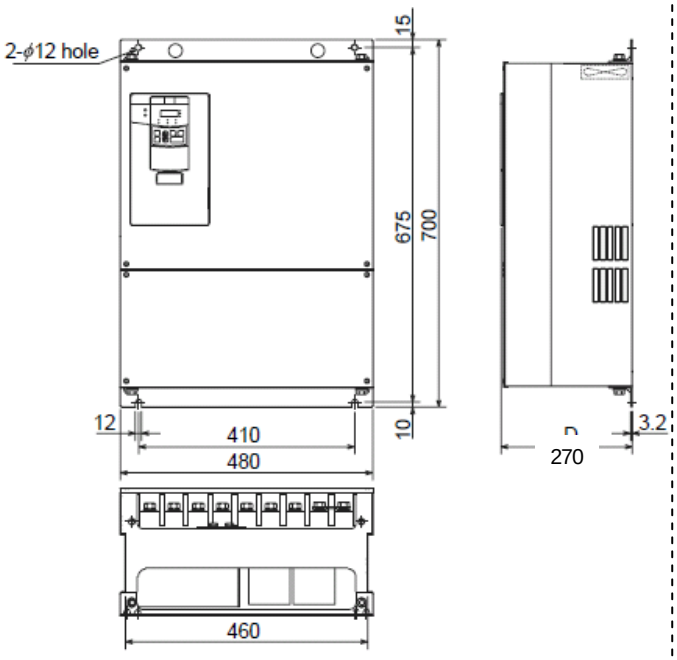
■ FR-V520-45K



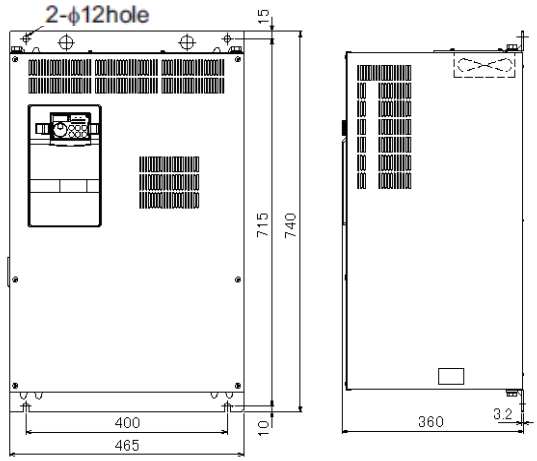
■ FR-A720-55K



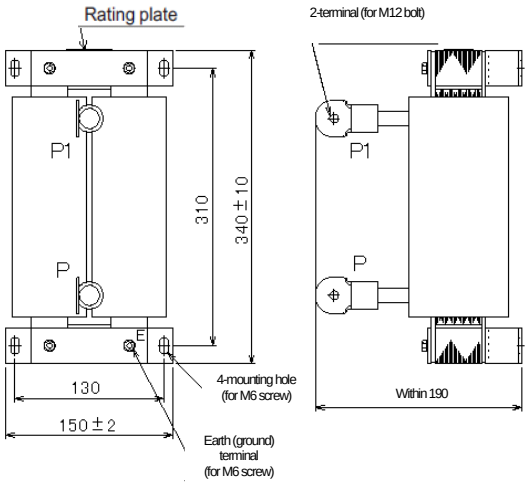
■ FR-V520-55K



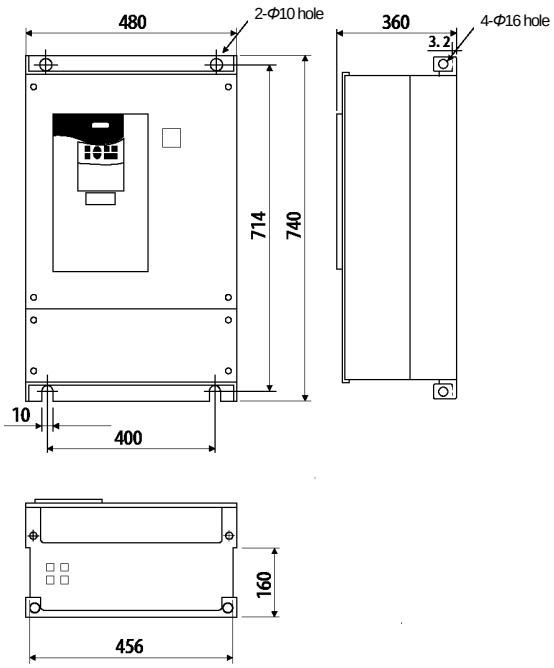
■ FR-A720-75K



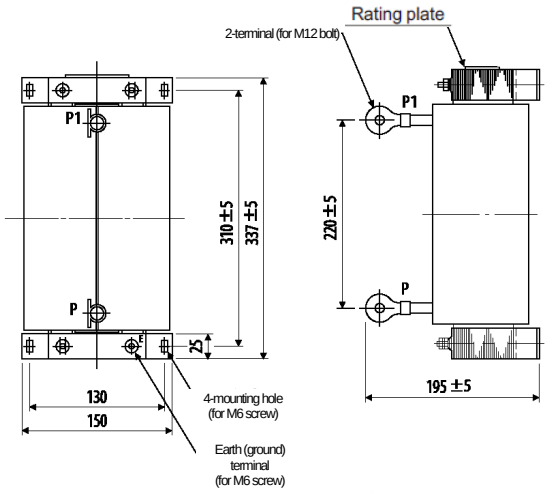
[Enclosed FR-HEL-75K DC reactor]



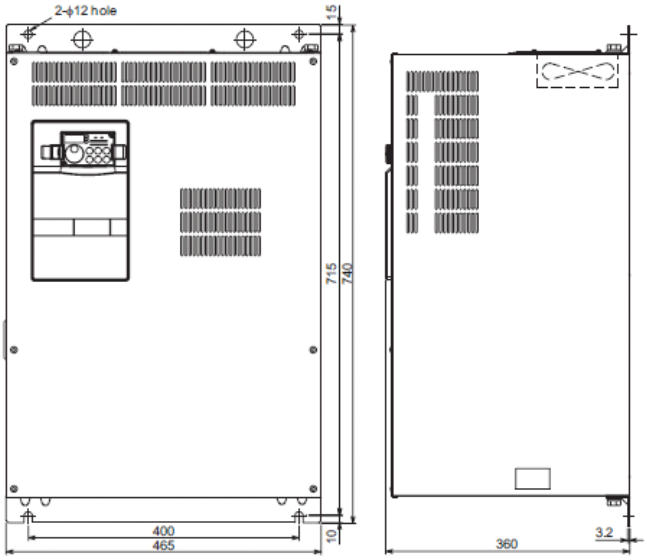
■ FR-V520L-75K



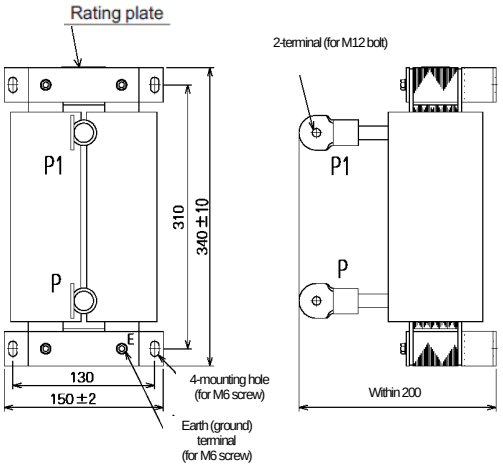
[Enclosed DC reactor]



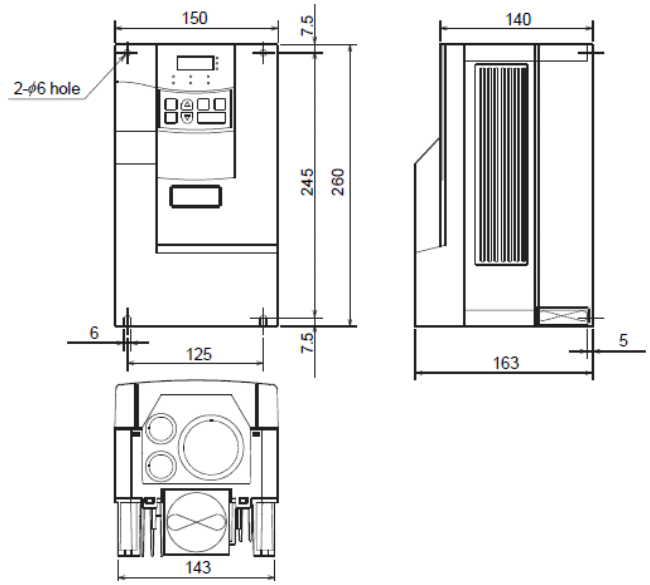
■ FR-A720-90K



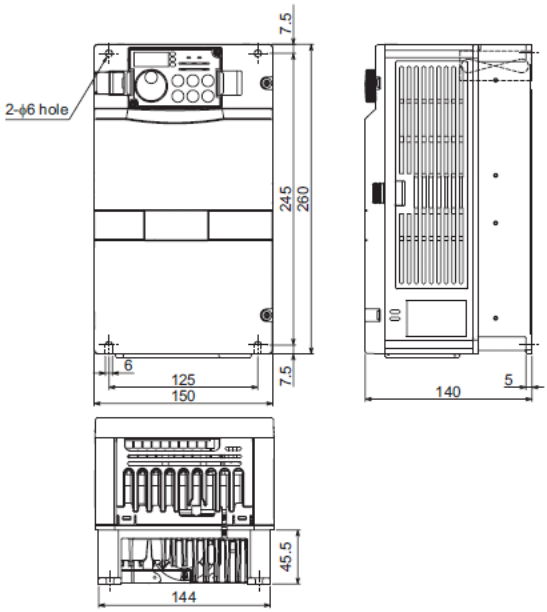
[Enclosed DC reactor FR-HEL-90K]



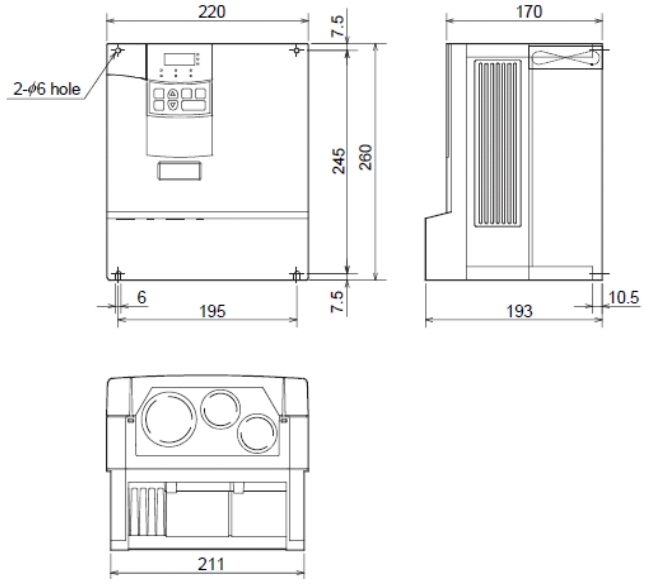
■ FR-V540-1.5K, 2.2K



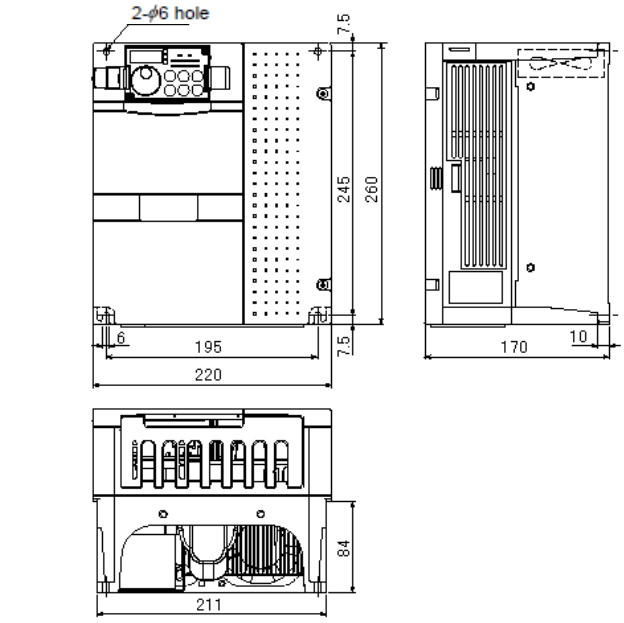
■ FR-A740-2.2K, 3.7K



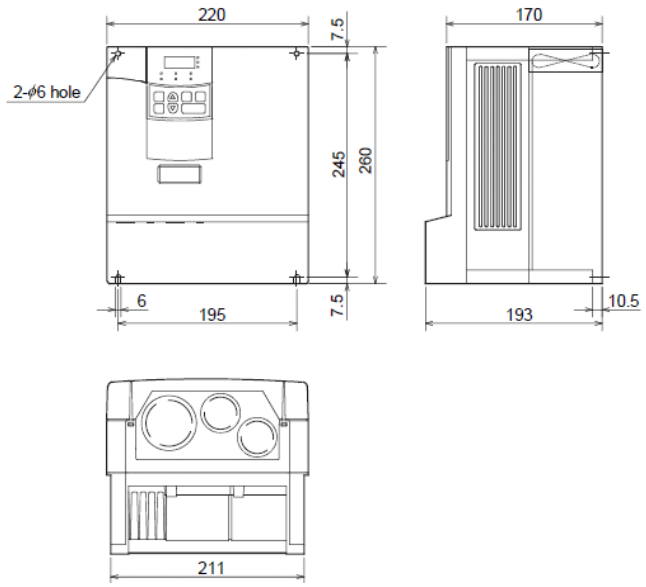
■ FR-V540-3.7K



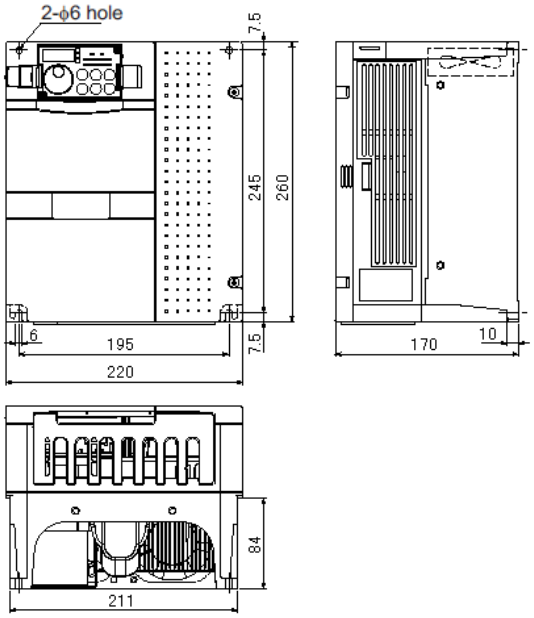
■ FR-A740-5.5K



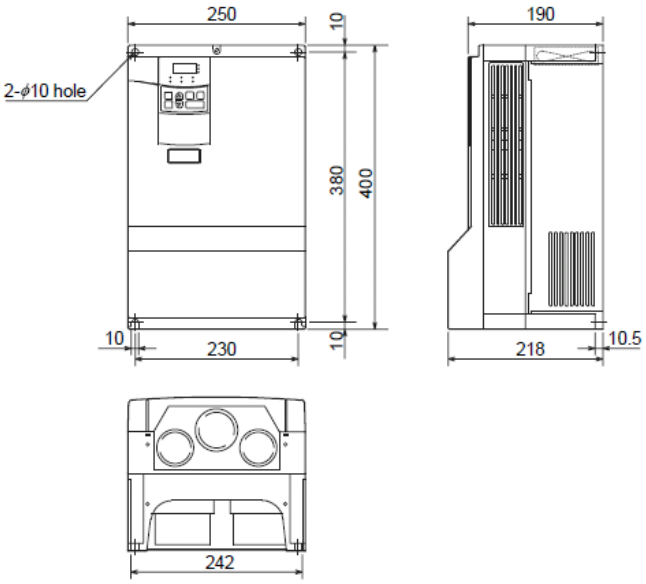
■ FR-V540-5.5K



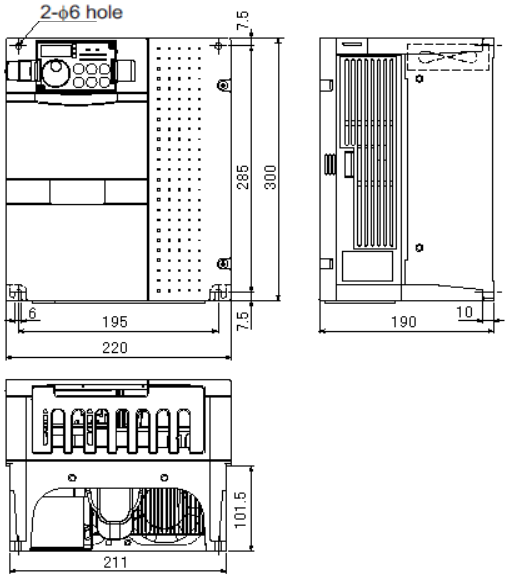
■ FR-A740-7.5K



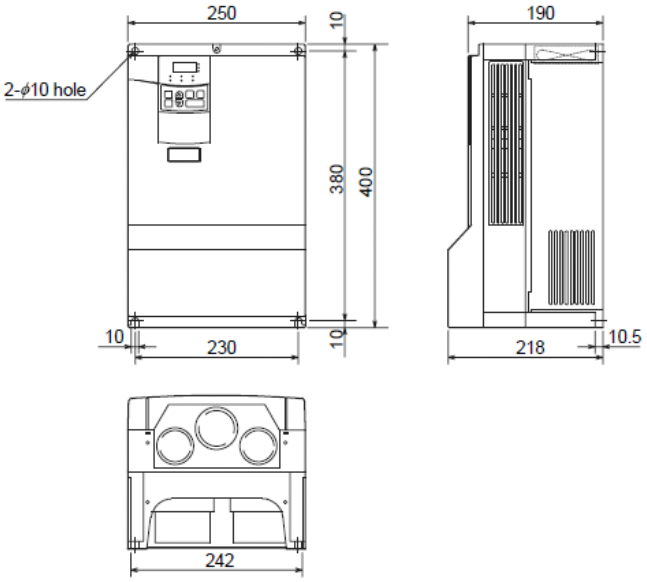
■ FR-V540-7.5K, 11K



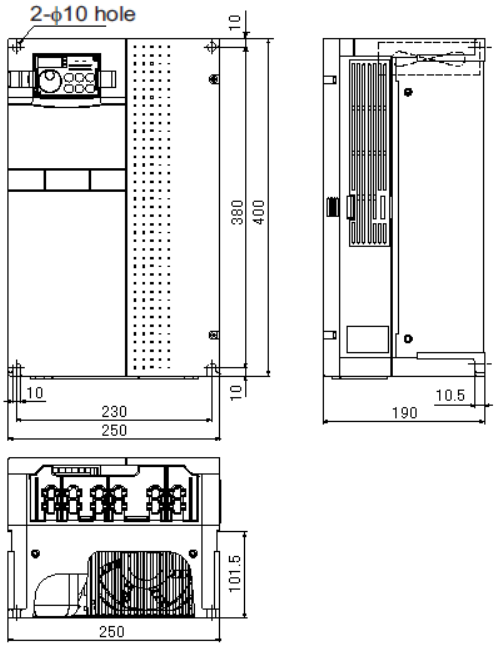
■ FR-A740-11K, 15K



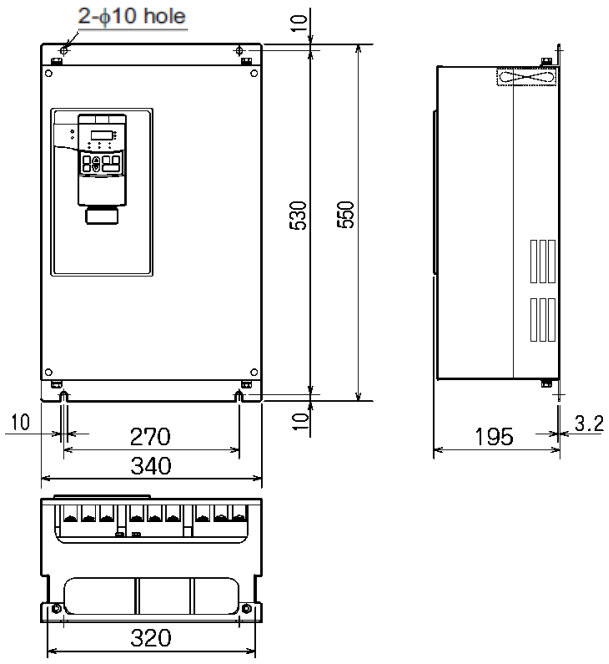
■ FR-V540-15K, 18.5K



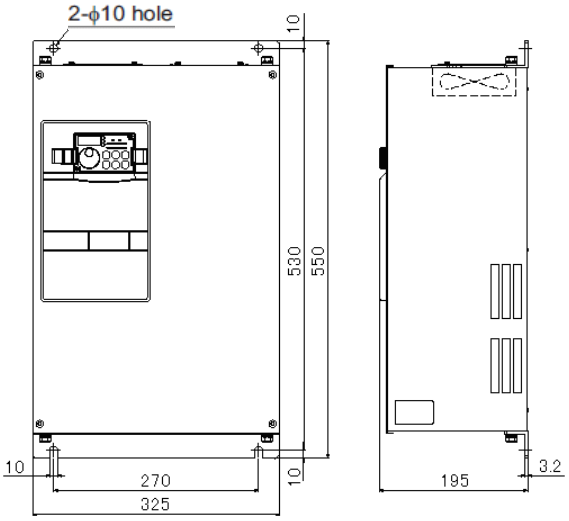
■ FR-A740-18.5K, 22K



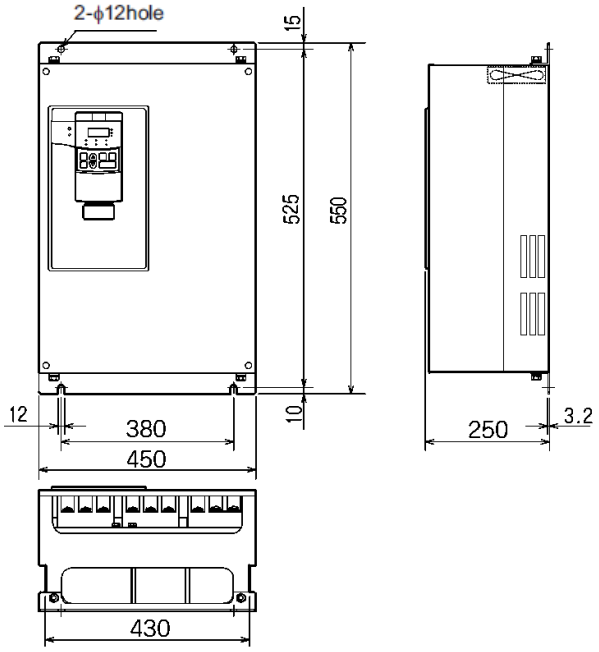
■ FR-V540-22K



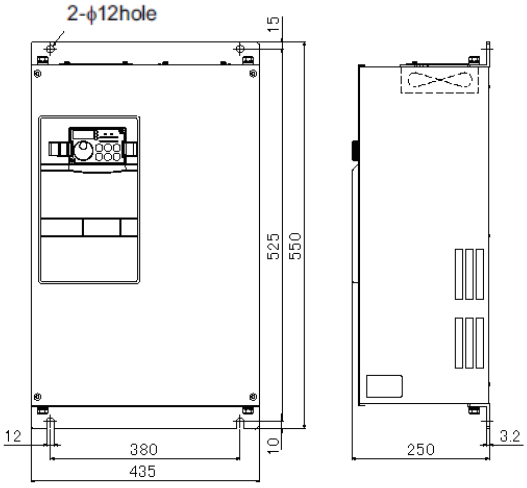
■ FR-A740-30K



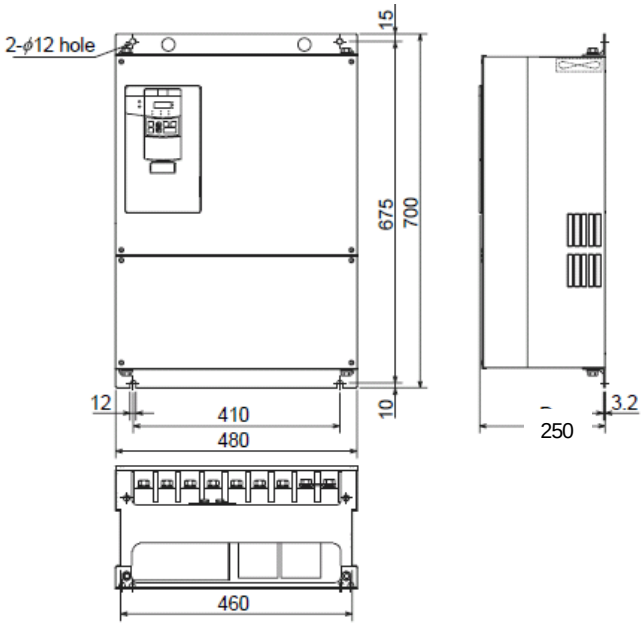
■ FR-V540-30K, 37K



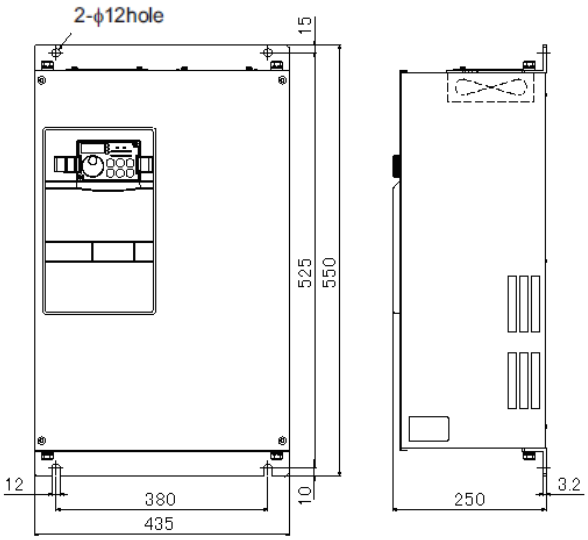
■ FR-A740-37K, 45K



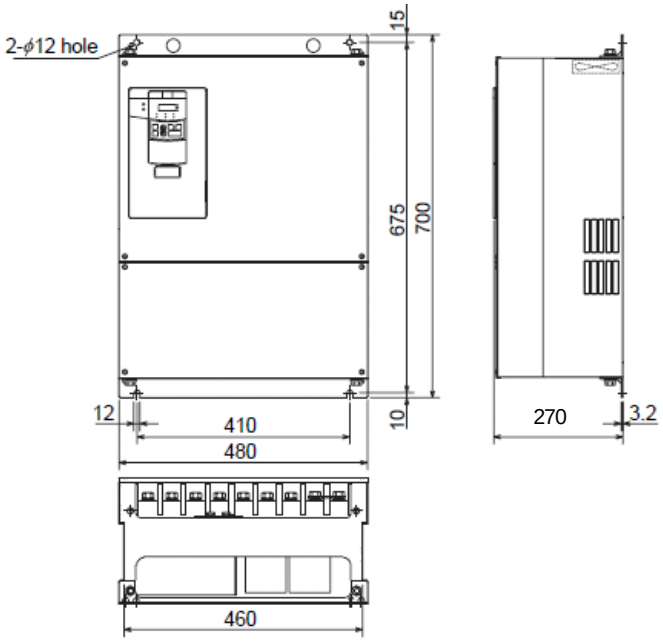
■ FR-V540-45K



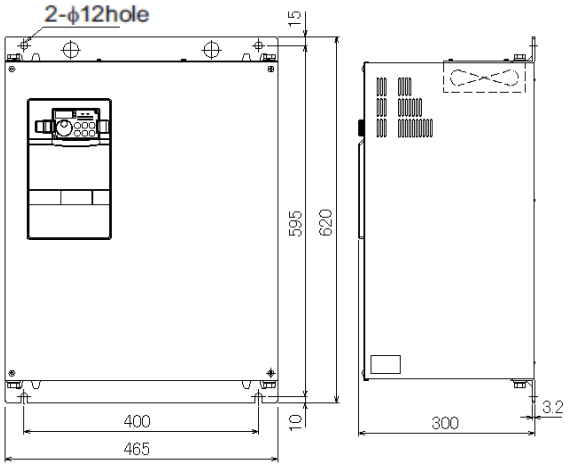
■ FR-A740-55K



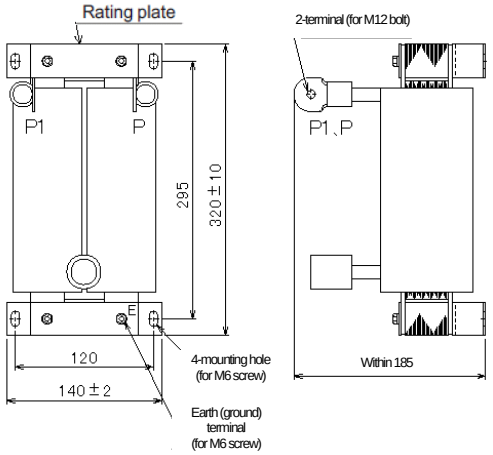
■ FR-V540-55K



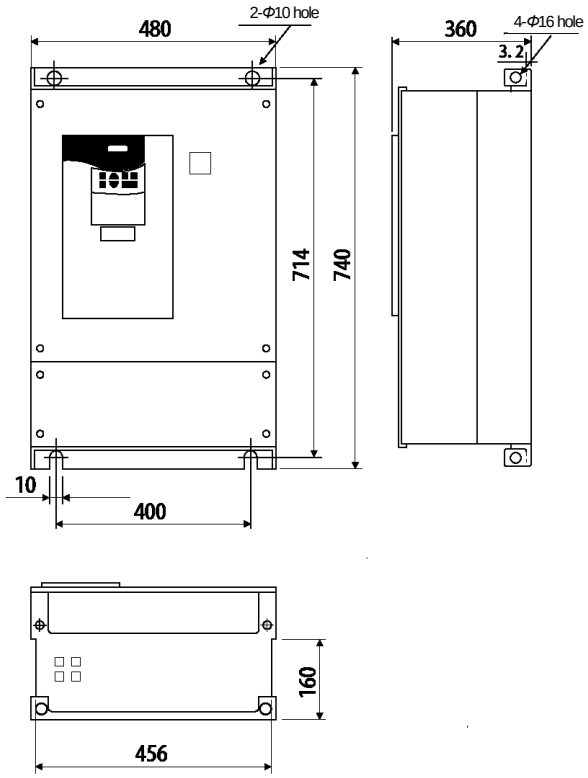
■ FR-A740-75K



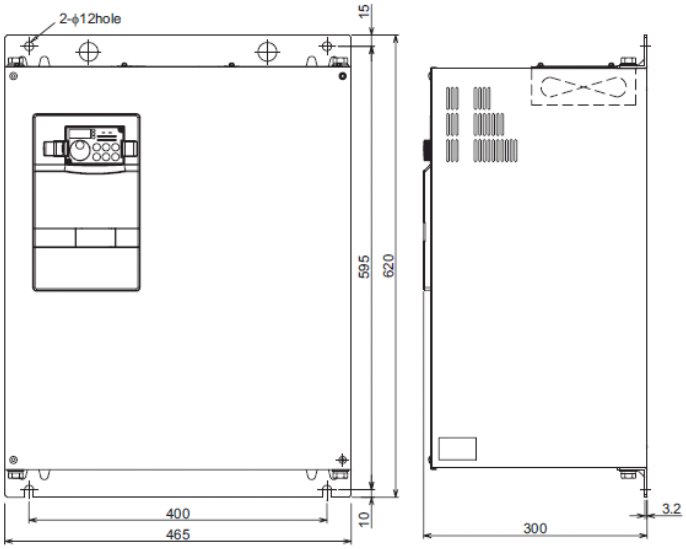
[Enclosed FR-HEL-75K DC reactor]



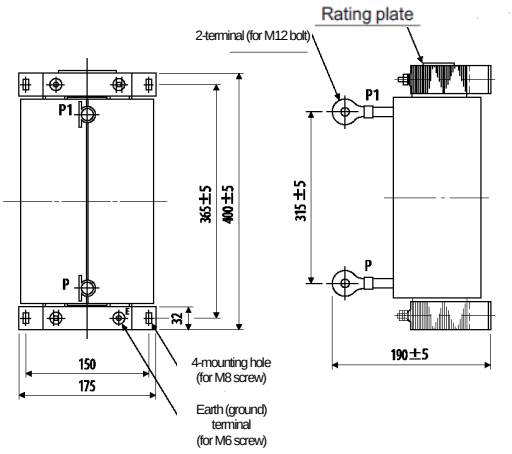
■ FR-V540-75K



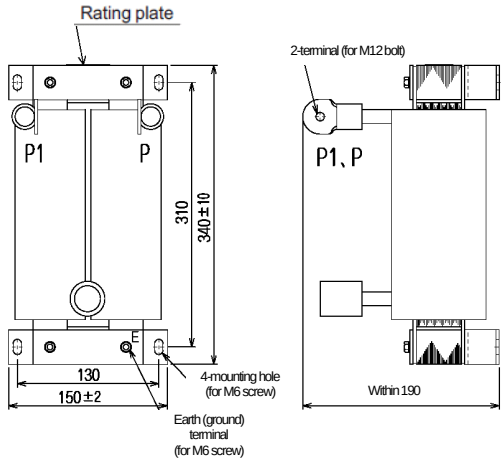
■ FR-A740-90K



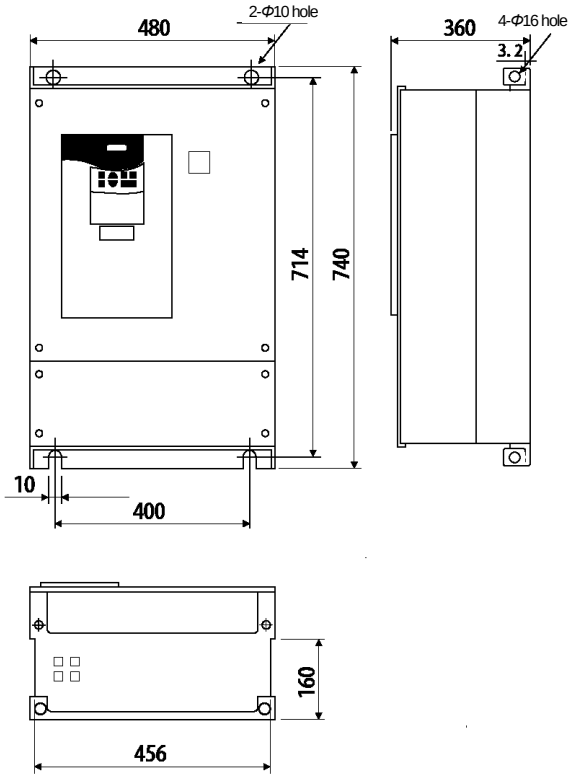
[Enclosed DC reactor]



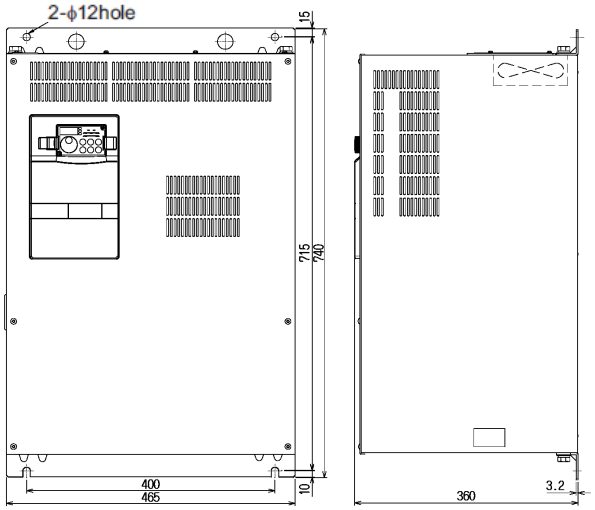
[Enclosed DC reactor FR-HEL-H90K]



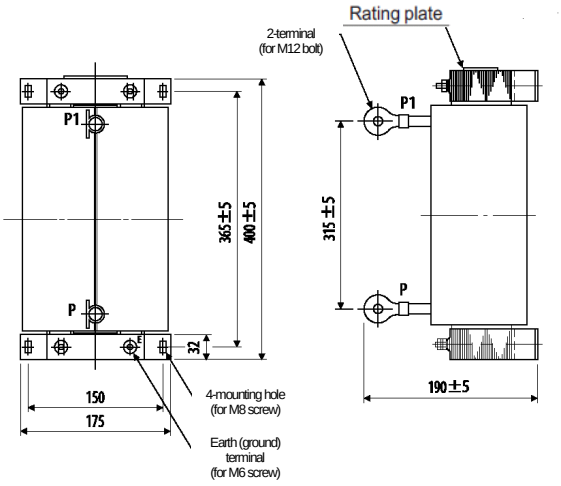
■ FR-V540-90K



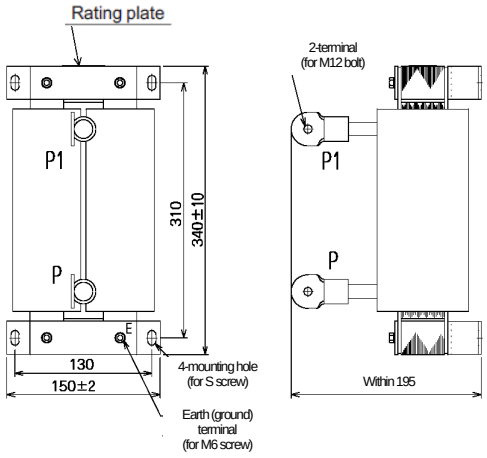
■ FR-A740-110K



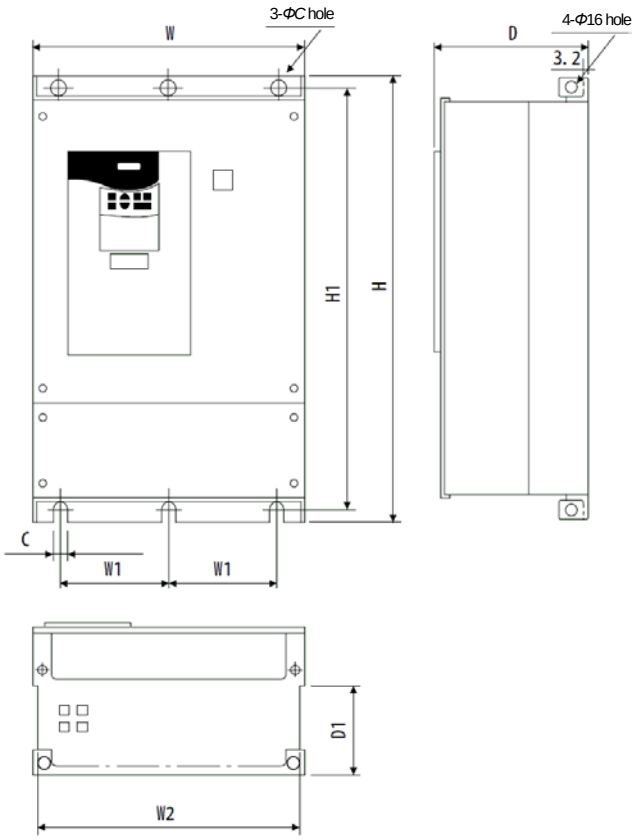
[Enclosed DC reactor]



[Enclosed DC reactor FR-HEL-H110K]

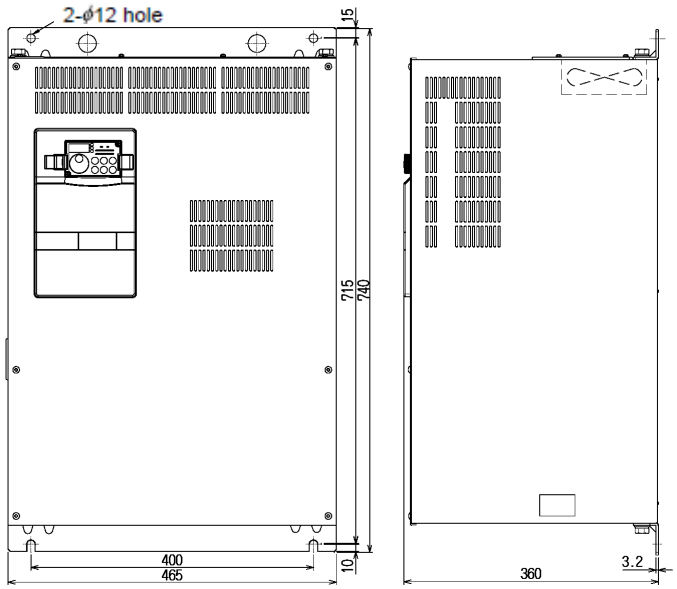


■ FR-V540-110K

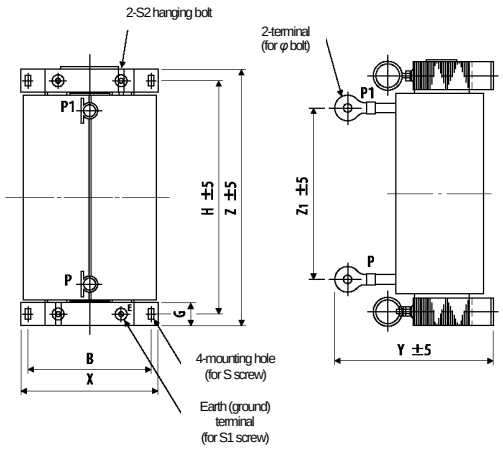


W	W1	W2	H	H1	D	D1	C
498	200	474	1010	984	380	185	10

■ FR-A740-132K



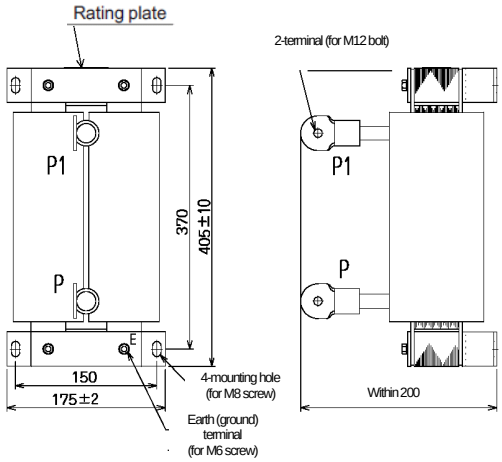
[Enclosed DC reactor]



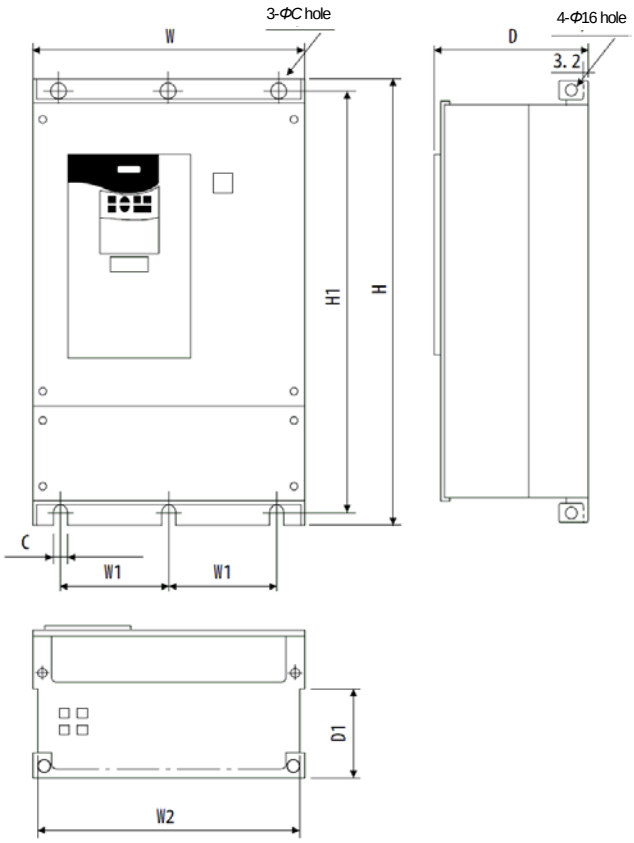
X	Y	Z	Z1	B	H	G
190	225	438	305	165	400	38

S	S1	S2	φ
M8	M8	M8	M12

[Enclosed DC reactor FR-HEL-H132K]

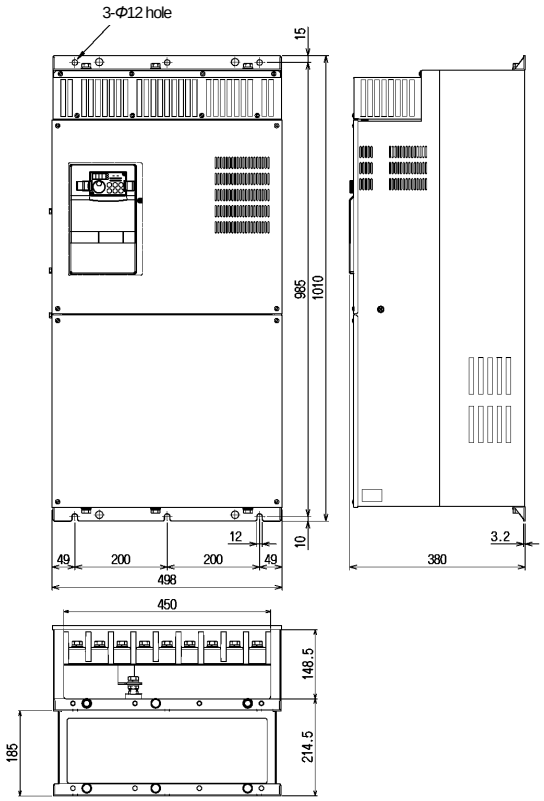


■ FR-V540L-132K

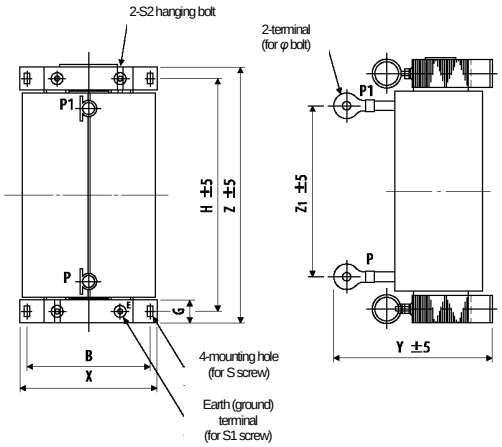


W	W1	W2	H	H1	D	D1	C
498	200	474	1010	984	380	185	10

■ FR-A740-160K



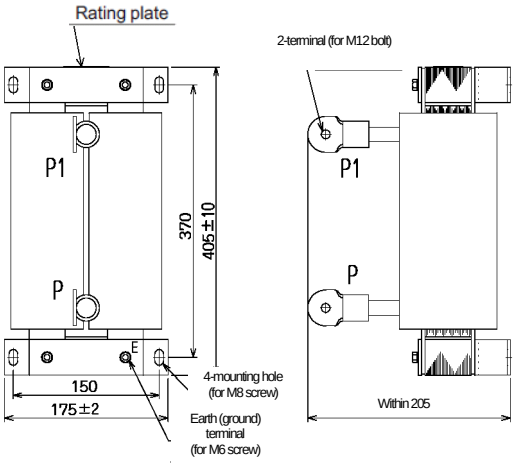
[Enclosed DC reactor]



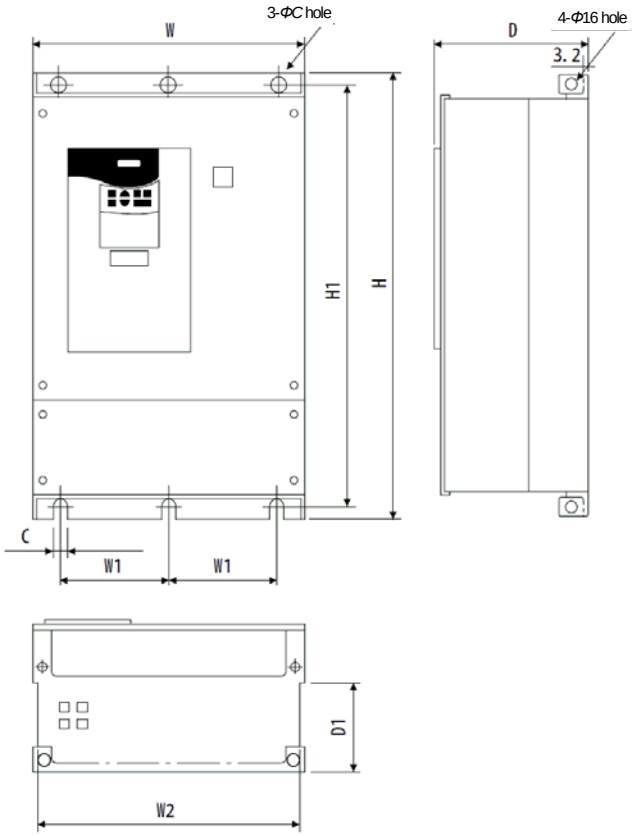
X	Y	Z	Z1	B	H	G
190	225	438	305	165	400	38

S	S1	S2	Φ
M8	M8	M8	M12

[Enclosed DC reactor]

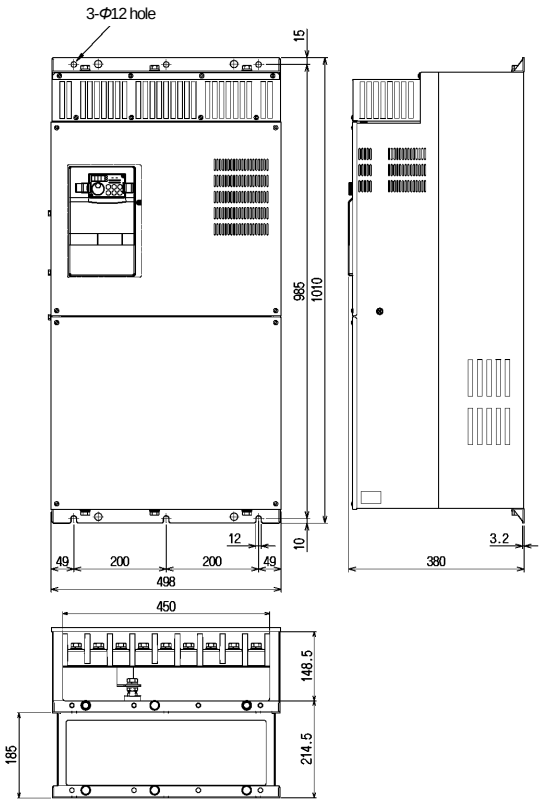


■ FR-V540-160K

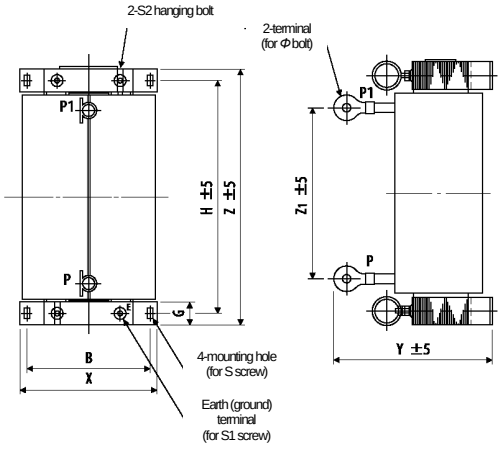


W	W1	W2	H	H1	D	D1	C
680	300	656	1010	984	380	185	10

■ FR-A740-185K



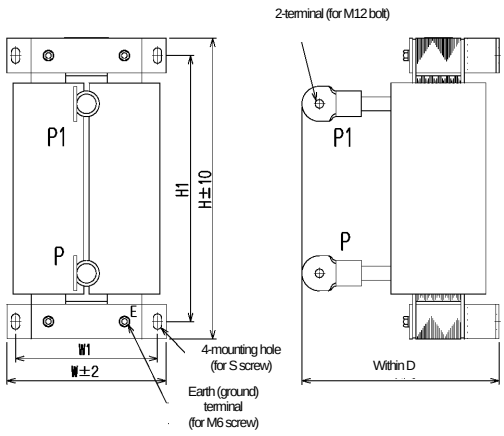
[Enclosed DC reactor]



X	Y	Z	Z1	B	H	G
210	235	495	350	185	450	44

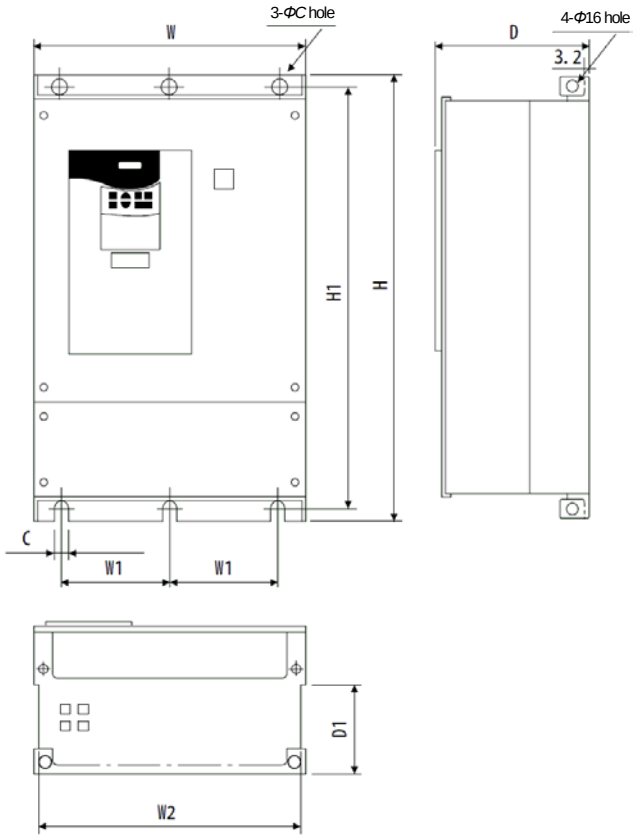
S	S1	S2	Φ
M10	M8	M8	M16

[Enclosed DC reactor]



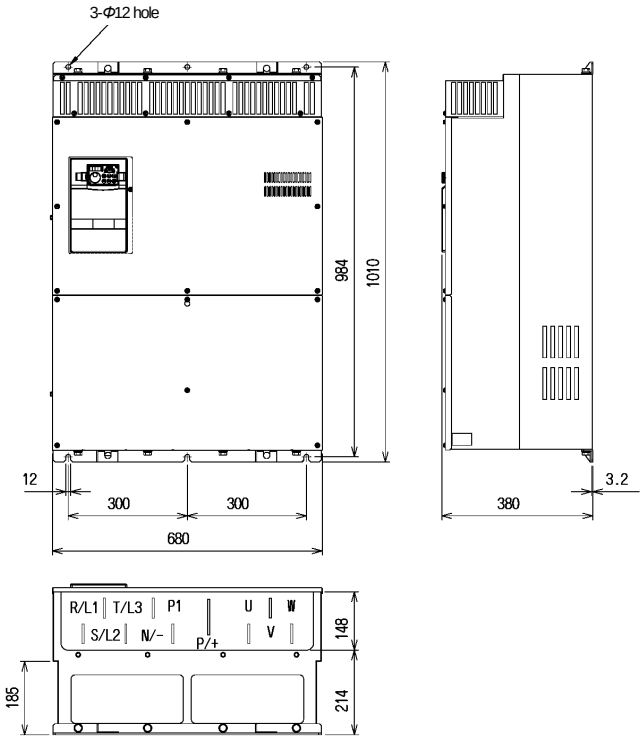
W	W1	H	H1	D	S
175	150	405	370	240	M8

■ FR-V540-200K

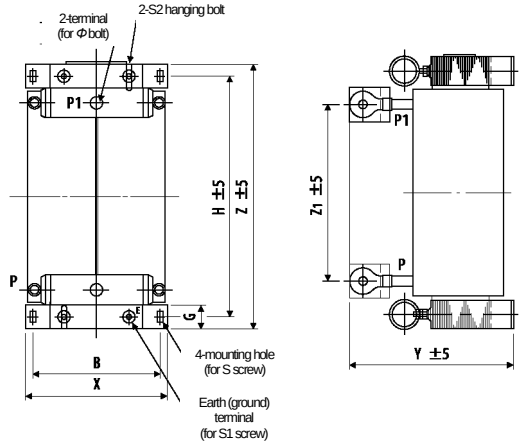


W	W1	W2	H	H1	D	D1	C
790	315	766	1330	1300	440	196	12

■ FR-A740-220K



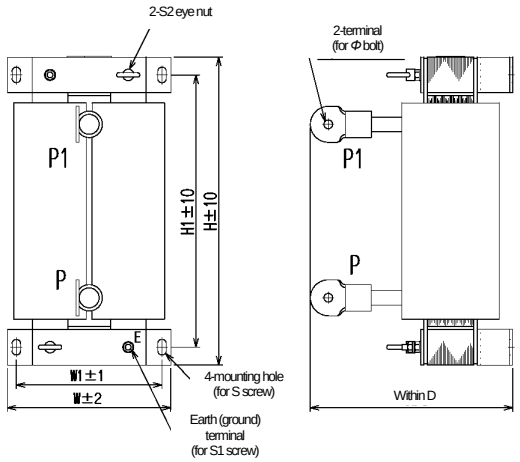
[Enclosed DC reactor]



X	Y	Z	Z1	B	H	G
220	250	495	380	195	450	44

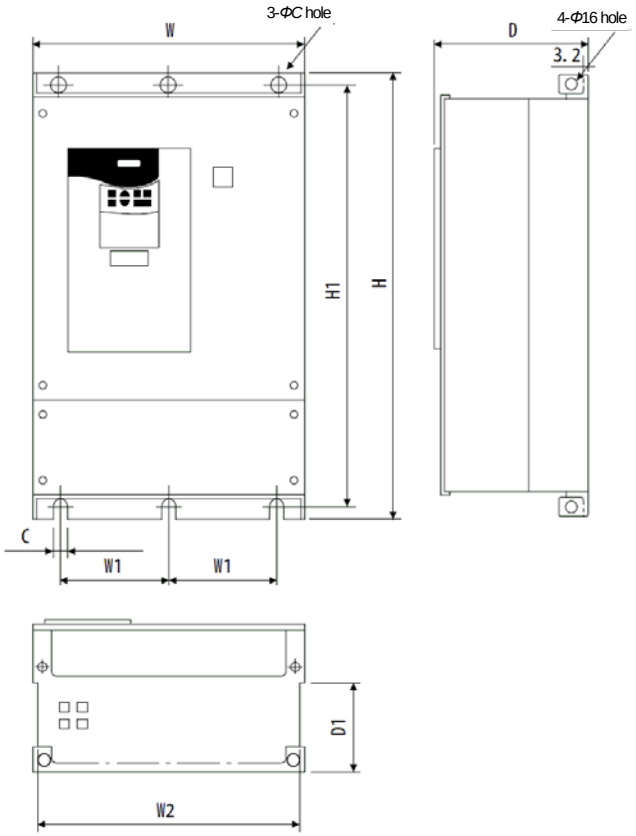
S	S1	S2	Φ
M10	M8	M8	M16

[Enclosed DC reactor FR-HEL-]



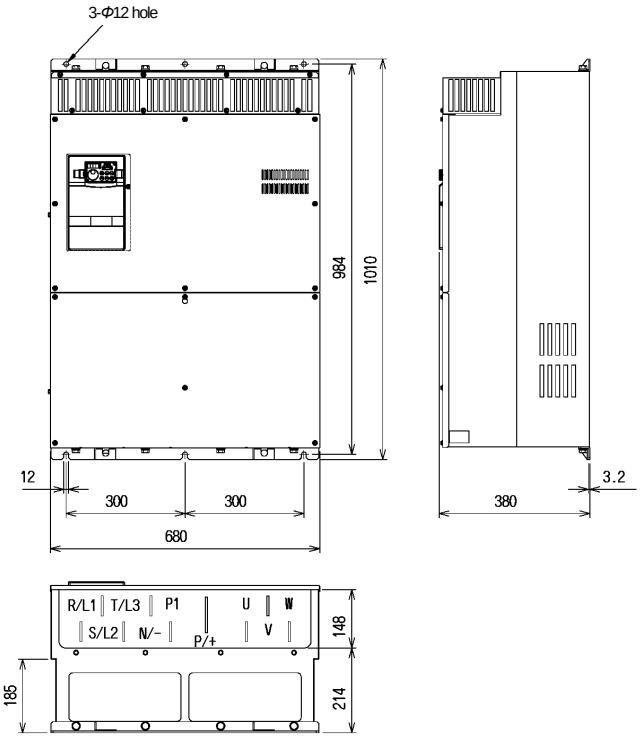
W	W1	H	H1	D	S	S1	S2	Φ
175	150	405	370	240	M8	M6	M6	M12

■ FR-V540-250K

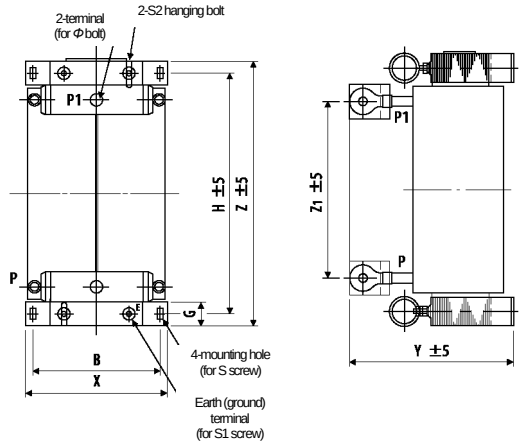


W	W1	W2	H	H1	D	D1	C
790	315	766	1330	1300	440	196	12

■ FR-A740-280K



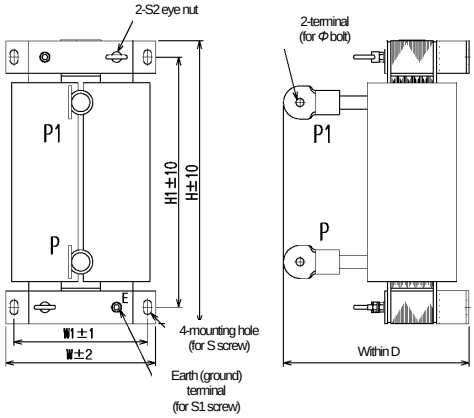
[Enclosed DC reactor]



X	Y	Z	Z1	B	H	G
220	250	495	380	195	450	44

S	S1	S2	Φ
M10	M8	M8	M16

[Enclosed DC reactor]



W	W1	H	H1	D	S	S1	S2	Φ
190	165	440	400	250	M8	M8	M8	M12

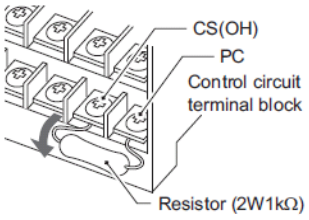
2. Connection

The terminal names are basically the same, so connect the terminals according to their names.

Type		V500 Terminal Name	A700 Compatible Terminal Name	Remarks
Main Circuit		R, S, T	R/L1, S/L2, T/L3	
		U, V, W	U, V, W	
		R1, S1	R1/L11, S1/L21	
		P, PR	P/+, PR	
		P, N	P/+, N/-	
		P, P1	P/+, P1	
		PR, PX	PR, PX	
		⏚	⏚	
Control circuit/ input signal	Contact	STF	STF	The terminal assignment can be changed with Pr.178 to Pr.189.
		STR	STR	
		DI1 (initial setting RL)	RL	
		DI2 (initial setting RM)	RM	
		DI3 (initial setting RH)	RH	
		DI4 (initial setting RT)	RT	
		OH	CS*1	
		RES	RES	
		SD	SD	
		PC	PC	
Analog	Frequency setting	10E	10E	
		2	2	
		3	4	Terminal 4 inputs are current inputs in the initial setting. Voltage inputs (0 to 10VDC) can also be selected.
		1	1	
		5	5	
Control circuit/ output signal	Contact	A, B, C	A1, B1, C1	
	Open collector	DO1 (initial setting RUN)	RUN	The terminal assignment can be changed with Pr.190 to Pr.194.
		DO2 (initial setting SU)	SU	
		DO3 (initial setting IPF)	IPF	
		SE	SE	
	Analog	DA1 (±10VDC) DA2 (0 to 10VDC)	AM (0 to 10VDC)	Analog monitor signal can only be output from the terminal AM
Communication	RS-485	PU connector	PU connector	

*1

Assign OH (external thermal input) signal to the terminal CS. (Set "7" in *Pr. 186*)
Connect a 2W1kΩ resistor between the terminal PC and CS (OH). Install the resistor pushing against the bottom part of the terminal block so as to avoid a contact with other cables.



Terminal size

[Main circuit power supply: three-phase 200V line]

Voltage class	FR-V520(L)							FR-A720						
	Capacity	R, S, T	U, V, W	P, N, P1	R1, S1	PR	⏚	Capacity	R/L1, S/L2, T/L3	U, V, W	P/+, N/-, P1	R1, S1	PR	⏚
Three-phase 200V	1.5K	M4	M4	M4	M4	M4	M4	2.2K	M4	M4	M4	M4	M4	M4
	2.2K	M4	M4	M4	M4	M4	M4	3.7K	M4	M4	M4	M4	M4	M4
	3.7K	M5	M5	M5	M4	M5	M5	5.5K	M5	M5	M5	M4	M4	M5
	5.5K	M5	M5	M5	M4	M5	M5	7.5K	M5	M5	M5	M4	M4	M5
	7.5K	M5	M5	M5	M4	M5	M5	11K	M5	M5	M5	M4	M5	M5
	11K	M6	M6	M6	M4	M5	M6	15K	M6	M6	M6	M4	M6	M6
	15K	M8	M8	M8	M4	M5	M6	18.5K	M8	M8	M8	M4	M6	M6
	18.5K	M8	M8	M8	M4	-	M6	22K	M8	M8	M8	M4	M6	M6
	22K	M8	M8	M8	M4	-	M6	30K	M8	M8	M8	M4	-	M6
	30K	M10	M10	M10	M4	-	M8	37K	M10	M10	M10	M4	-	M8
	37K	M10	M10	M10	M4	-	M8	45K	M10	M10	M10	M4	-	M8
	45K	M12	M12	M12	M4	-	M8	55K	M12	M12	M12	M4	-	M8
	55K	M12	M12	M12	M4	-	M8	75K	M12	M12	M12	M4	-	M10
	75K	M12	M12	M12	M4	-	M12	90K	M12	M12	M12	M4	-	M10

[Main circuit power supply: three-phase 400V line]

Voltage class	FR-V540(L)							FR-A740						
	Capacity	R, S, T	U, V, W	P, N, P1	R1, S1	PR	⏚	Capacity	R/L1, S/L2, T/L3	U,V,W	P/+, N/-, P1	R1, S1	PR	⏚
Three-phase 400V	1.5K	M4	M4	M4	M4	M4	M4	2.2K	M4	M4	M4	M4	M4	M4
	2.2K	M4	M4	M4	M4	M4	M4	3.7K	M4	M4	M4	M4	M4	M4
	3.7K	M4	M4	M4	M4	M4	M4	5.5K	M4	M4	M4	M4	M4	M4
	5.5K	M4	M4	M4	M4	M4	M4	7.5K	M4	M4	M4	M4	M4	M4
	7.5K	M6	M6	M6	M4	M5	M6	11K	M5	M5	M5	M4	M5	M5
	11K	M6	M6	M6	M4	M5	M6	15K	M5	M5	M5	M4	M5	M5
	15K	M6	M6	M6	M4	M5	M6	18.5K	M6	M6	M6	M4	M6	M6
	18.5K	M6	M6	M6	M4	-	M6	22K	M6	M6	M6	M4	M6	M6
	22K	M6	M6	M6	M4	-	M6	30K	M6	M6	M6	M4	-	M6
	30K	M8	M8	M8	M4	-	M8	37K	M8	M8	M8	M4	-	M8
	37K	M8	M8	M8	M4	-	M8	45K	M8	M8	M8	M4	-	M8
	45K	M8	M8	M8	M4	-	M8	55K	M8	M8	M10	M4	-	M8
	55K	M8	M8	M8	M4	-	M8	75K	M10	M10	M10	M4	-	M10
	75K	M10	M10	M10	M4	-	M10	90K	M10	M10	M10	M4	-	M10
	90K	M10	M10	M10	M4	-	M10	110K	M10	M10	M10	M4	-	M10
	110K	M12	M12	M12	M4	-	M10	132K	M10	M10	M10	M4	-	M10
	132K	M12	M12	M12	M4	-	M10	160K	M12	M12	M12	M4	-	M10
	160K	M12	M12	M12	M4	-	M10	185K	M12	M12	M12	M4	-	M10
	200K	M12	M12	M12	M4	-	M10, M20	220K	M12	M12	M12	M4	-	M10
	250K	M12	M12	M12	M4	-	M10, M20	280K	M12	M12	M12	M4	-	M10

[Control circuit terminals]

Shape of terminal block screws used in the control circuit terminal block wiring area

FR-V500(L)	FR-A700
M3.5 ⊕ screw terminal block	M3.5 ⊕ screw terminal block

Shape of terminal block screws used in the encoder cable wiring area

FR-V500(L)	FR-A700 (FR-A7AP, FR-A7AL)
M3.5 ⊕ screw terminal block	Insertion type Θ screw terminal

Connecting encoder signal

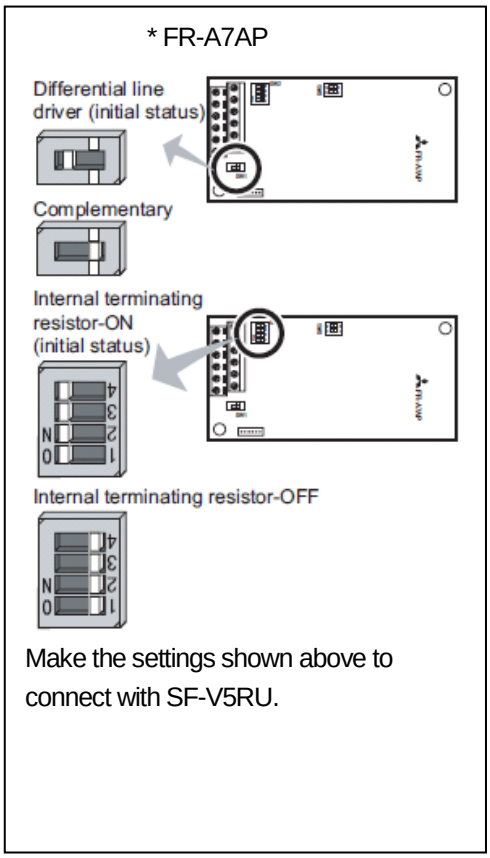
Connect encoder signals to the option unit FR-A7AP or FR-A7AL, which is mounted to FR-A700.

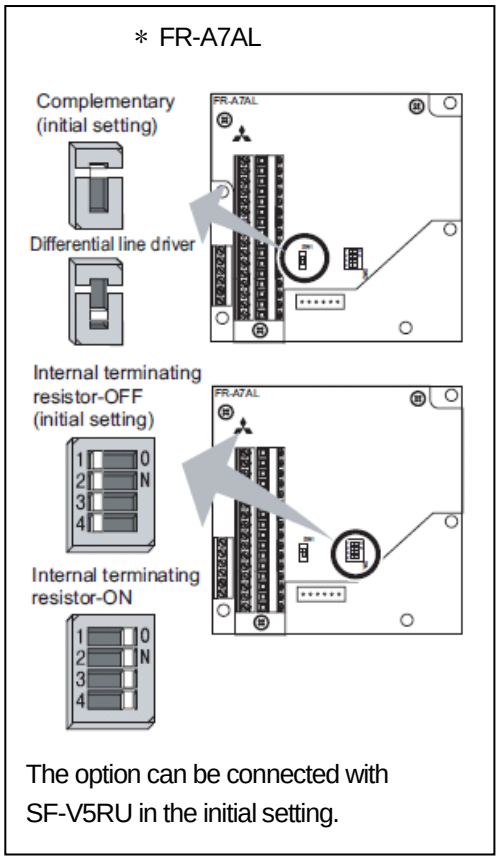
Type	V500(L) Terminal Name	FR-A7AP Corresponding Terminal Name	FR-A7AL Corresponding Terminal Name
Encoder signal	PA	PA1	PA
	PAR	PA2	PAR
	PB	PB1	PB
	PBR	PB2	PBR
	PZ	PZ1	PZ
	PZR	PZ2	PZR
	PG	PG	PG
	SD	SD	SD

Precaution for connecting the SF-V5RU vector dedicated motor:

Make the following settings on an FR-A7AP or FR-A7AL to use an SF-V5RU vector control motor.

- Encoder type selection switch: complementary
- Internal terminating resistor selection switch: OFF





* The initial settings of FR-A7AP and FR-A7AL are different as shown above.

3. Parameter

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

List of FR-A700 series parameters compatible with the FR-V500 series

The following table shows the parameter settings required when replacing an FR-V500 series inverter by an FR-A700 series inverter.
When an FR-V500 series parameter is set to a value other than the initial value, set the corresponding FR-A700 parameter according to the following table.
When an FR-V500 series parameter is set to an initial value, it is usually not necessary to change the corresponding FR-A700 parameter setting.

The parameter number of the ▭ parameters differs from that of the FR-V500 series inverter.

Setting ◎: Set the FR-V500 parameter as it is.
△: Change the FR-V500 parameter and set.
×: Adjust or set the FR-A700 parameter.

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
0	Torque boost	0 to 30%	1.5K to 3.7K: 4% 5.5K, 7.5K: 3% 11K to 55K: 2% 75K or higher: 1%	0	Torque boost	0 to 30%	1.5K to 3.7K: 4% 5.5K, 7.5K: 3% 11K to 55K: 2% 75K or higher:1%	◎	
1	Maximum frequency	0 to 3600r/min	1500r/min	1	Maximum frequency	0 to 120Hz	120Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
2	Minimum frequency	0 to 3600r/min	0r/min	2	Minimum frequency	0 to 120Hz	0Hz	×	
3	Base frequency	10 to 200Hz	60Hz	3	Base frequency	0 to 400Hz	60Hz	×	
4	Multi-speed setting (high speed)	0 to 3600r/min	1500r/min	4	Multi-speed setting (high speed)	0 to 400Hz	60Hz	×	
5	Multi-speed setting (middle speed)	0 to 3600r/min	750r/min	5	Multi-speed setting (middle speed)	0 to 400Hz	30Hz	×	
6	Multi-speed setting (low speed)	0 to 3600r/min	150r/min	6	Multi-speed setting (low speed)	0 to 400Hz	10Hz	×	
7	Acceleration time	0 to 3600s/ 0 to 360s	5.5K or lower: 5s 7.5K or higher: 15s	7	Acceleration time	0 to 3600s/ 0 to 360s	7.5K or lower: 5s 11K or higher: 15s	◎	Changing Pr.21 after setting this parameter will change the set value.
8	Deceleration time	0 to 3600s/ 0 to 360s	5.5K or lower: 5s 7.5K or higher: 15s	8	Deceleration time	0 to 3600s/ 0 to 360s	7.5K or lower: 5s 11K or higher: 15s	◎	Changing Pr.21 after setting this parameter will change the set value.
9	Electronic thermal O/L relay	0 to 500A	0A	9	Electronic thermal O/L relay	0 to 500A (55K or lower) 0 to 3600A (75K or higher)	Rated output current	◎	Set the rating motor current.
10	DC injection brake operation speed	0 to 1500r/min, 9999	15r/min	10	DC injection brake operation frequency	0 to 120Hz	3Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
11	DC injection brake operation time	0 to 0.5s	0.5s	11	DC injection brake operation time	0 to 10s	0.5s	◎	
12	DC injection brake voltage	0 to 30%	7.5K or lower: 4% 11K to 55K: 2% 75K or higher: 1%	12	DC injection brake operation voltage	0 to 30%	7.5K or lower: 4% 11K to 55K: 2% 75K or higher: 1%	◎	
13	Starting speed	0 to 1500r/min	15r/min	13	Starting frequency	0 to 60Hz	0.5Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
15	Jog speed setting	0 to 1500r/min	150r/min	15	Jog frequency	0 to 400Hz	5Hz	×	
16	Jog acceleration/deceleration time	0 to 3600s/ 0 to 360s	0.5s	16	Jog acceleration/deceleration time	0 to 3600s/ 0 to 360s	0.5s	◎	Changing Pr.21 after setting this parameter will change the set value.
17	MRS input selection	0, 2	0	16	MRS input selection	0, 2, 4	0	◎	
19	Base frequency voltage	0 to 1000V, 8888, 9999	9999	19	Base frequency voltage	0 to 1000V, 8888, 9999	9999	◎	
20	Acceleration/deceleration reference speed	0 to 1500r/min	1500r/min	20	Acceleration/deceleration reference frequency	1 to 400Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
21	Acceleration/deceleration time increments	0, 1	0	21	Acceleration/deceleration time increments	0, 1	0	◎	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
22	Torque limit level	0 to 200%	150%	22	Stall prevention operation level	0 to 200%	150%	◎	
24	Multi-speed setting (speed 4)	0 to 3600r/min, 9999	9999	24	Multi-speed setting (4 speed)	0 to 400Hz, 9999	9999	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
25	Multi-speed setting (speed 5)	0 to 3600r/min, 9999	9999	25	Multi-speed setting (5 speed)	0 to 400Hz, 9999	9999	×	
26	Multi-speed setting (speed 6)	0 to 3600r/min, 9999	9999	26	Multi-speed setting (6 speed)	0 to 400Hz, 9999	9999	×	
27	Multi-speed setting (speed 7)	0 to 3600r/min, 9999	9999	27	Multi-speed setting (7 speed)	0 to 400Hz, 9999	9999	×	
28	Multi-speed input compensation	0, 1	0	28	Multi-speed input compensation selection	0, 1	0	◎	
29	Acceleration/deceleration pattern	0, 1, 2, 3, 4	0	29	Acceleration/deceleration pattern selection	0 to 5	0	◎	
30	Regenerative function selection	0, 1, 2	0	30	Regenerative function selection	0, 1, 2, 10, 11, 20, 21	0	◎	
31	Speed jump 1A	0 to 3600r/min, 9999	9999	31	Frequency jump 1A	0 to 400Hz, 9999	9999	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
32	Speed jump 1B	0 to 3600r/min, 9999	9999	32	Frequency jump 1B	0 to 400Hz, 9999	9999	×	
33	Speed jump 2A	0 to 3600r/min, 9999	9999	33	Frequency jump 2A	0 to 400Hz, 9999	9999	×	
34	Speed jump 2B	0 to 3600r/min, 9999	9999	34	Frequency jump 2B	0 to 400Hz, 9999	9999	×	
35	Speed jump 3A	0 to 3600r/min, 9999	9999	35	Frequency jump 3A	0 to 400Hz, 9999	9999	×	
36	Speed jump 3B	0 to 3600r/min, 9999	9999	36	Frequency jump 3B	0 to 400Hz, 9999	9999	×	
37	Speed display	0, 1 to 9998	0	37	Speed display	0, 1 to 9998	0	◎	
41	Up-to-speed sensitivity	0 to 100%	10%	41	Up-to-frequency sensitivity	0 to 100%	10%	◎	
42	Speed detection	0 to 3600r/min	300r/min	42	Output frequency detection	0 to 400Hz	6Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
43	Speed detection for reverse rotation	0 to 3600r/min, 9999	9999	43	Output frequency detection for reverse rotation	0 to 400Hz, 9999	9999	×	
44	Second acceleration/deceleration time	0 to 3600s/ 0 to 360s	5s	44	Second acceleration/deceleration time	0 to 3600s/ 0 to 360s	5s	◎	Changing Pr.21 after setting this parameter will change the set value.
45	Second deceleration time	0 to 3600s/ 0 to 360s, 9999	9999	45	Second deceleration time	0 to 3600s/ 0 to 360s, 9999	9999	◎	Changing Pr.21 after setting this parameter will change the set value.
50	Second speed detection	0 to 3600r/min	750r/min	50	Second output frequency detection	0 to 400Hz	30Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
52	DU/PU main display data selection	0, 5 to 12, 17 to 20, 23, 24, 32 to 35, 38, 100	0	52	DU/PU main display data selection	0, 5, 7 to 12, 14, 20, 23 to 25, 52 to 57, 61, 62, 100	0	◎	The increment for the monitor display is different when Pr.52 = "23"
53	PU level display data selection	0 to 3, 5 to 12, 17, 18	1	-	-	-	-	-	The function is deleted in A700.
54	DA1 terminal function selection	1 to 3, 5 to 12, 17, 18, 21, 32 to 34, 36	1	54	FM terminal function selection	1 to 3, 5 to 14, 17, 18, 21, 24, 32 to 34, 50, 52, 53	1	△	Setting value "36 (torque monitor)" is deleted.
55	Speed monitoring reference	0 to 3600r/min	1500r/min	55	Frequency monitoring reference	0 to 400Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
56	Current monitoring reference	0 to 500A (V500) 0 to 3600A (V500L)	Rated output current	56	Current monitoring reference	0 to 500A (55K or lower) 0 to 3600A (75K or higher)	Rated output current	◎	
57	Restart coasting time	0, 0.1 to 5s, 9999	9999	57	Restart coasting time	0, 0.1 to 5s, 9999	9999	△	The coasting time differs when Pr.57 = 0. Generally it can be used as it is, but set 0.1s to set the same time period with V500.
58	Restart cushion time	0 to 60s	1.0s	58	Restart cushion time	0 to 60s	1.0s	◎	
59	Remote setting function selection	0, 1, 2, 3	0	59	Remote function selection	0, 1, 2, 3	0	◎	
60	Intelligent mode selection	0, 1, 2, 3, 7, 8	0	292	Automatic acceleration/deceleration	0, 1, 7, 8, 11	0	△	
65	Retry selection	0 to 5	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 to 10s	1s	68	Retry waiting time	0.1 to 360s	1s	◎	
69	Retry count display erasure	0	0	69	Retry count display erase	0	0	◎	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
70	Special regenerative brake duty	0 to 15% 0 to 30%	0%	70	Special regenerative brake duty	0 to 30%	0%	◎	
71	Applied motor	0, 3 to 8, 10, 13 to 18, 20, 23, 24, 30, 33, 34	30	71	Applied motor	0 to 8, 13 to 18, 20, 23, 24, 30, 33, 34, 40, 43, 44, 50, 53, 54	0	◎	
72	PWM frequency selection	0 to 6	1	72	PWM frequency selection	0 to 15	1	◎	
73	Speed setting signal	0, 4, 10, 14	0	73	Analog input selection	0 to 5, 6, 7, 10 to 15, 16, 17	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	×	If "8" has been set in V500, set Pr.182 = "16" in A700.
80	Motor capacity	0.4 to 55kW, 9999 (V500) 0 to 3600kW (V500L)	Inverter capacity	80	Motor capacity	0.4 to 55kW, 9999 (55K or lower) 0 to 3600kW (75K or higher)	9999	×	The Pr.80 setting can be used as it is. Set the number of motor poles in Pr.81, and set Pr.800 = "0 (vector control)".
81	Number of motor poles	2, 4, 6	4	81	Number of motor poles	2, 4, 6, 8, 10, 9999	9999	◎	
82	Motor excitation current (no load current)	0 to ****, 9999	9999	82	Motor excitation current	0 to 500A, 9999	9999	◎	
83	Rated motor voltage	0 to 1000V	200V class: 200V 400V class: 400V	83	Rated motor voltage	0 to 1000V	Other than below: 200V 400V class: 400V	◎	
84	Rated motor frequency	10 to 200Hz	60Hz	84	Rated motor frequency	10 to 120Hz	60Hz	◎	
90	Motor constant R1	0 to ****, 9999	9999	90	Motor constant (R1)	0 to 50Ω, 9999/ 0 to 400mΩ, 9999	9999	×	Connect the motor and perform auto tuning.
91	Motor constant R2	0 to ****, 9999	9999	91	Motor constant (R2)	0 to 50Ω, 9999/ 0 to 400mΩ, 9999	9999	×	
92	Motor constant L1	0 to ****, 9999	9999	92	Motor constant (L1)	0 to 50Ω (0 to 1000mH), 9999/0 to 3600mΩ (0 to 400mH), 9999	9999	×	
93	Motor constant L2	0 to ****, 9999	9999	93	Motor constant (L2)	0 to 50Ω (0 to 1000mH), 9999/0 to 3600mΩ (0 to 400mH), 9999	9999	×	
94	Motor constant X	0 to ****, 9999	9999	94	Motor constant (X)	0 to 500Ω (0 to 100%), 9999/0 to 100Ω (0 to 100%), 9999	9999	×	
95	Online auto tuning selection	0 to ****, 9999	9999	95	Online auto tuning selection	0, 1, 2	0	×	Set "2 (magnetic flux observer (always perform tuning))" under vector control.
96	Auto tuning setting/status	0, 1, 101	0	96	Auto tuning setting/status	0, 1, 101	0	×	Set Pr.96 = "1 or 101" to perform tuning again.

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
110	Third acceleration/deceleration time	0 to 3600/0 to 360s	5s	110	Third acceleration/deceleration time	0 to 3600/ 0 to 360s, 9999	9999	◎	
111	Third deceleration time	0 to 3600/0 to 360s, 9999	9999	111	Third deceleration time	0 to 3600/ 0 to 360s, 9999	9999	◎	
116	Third speed detection	0 to 3600r/min	1500r/min	116	Third output frequency detection	0 to 400Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
117	Communication station number	0 to 31	0	117	PU communication station number	0 to 31	0	◎	
118	Communication speed	48, 96, 192	192	118	PU communication speed	48, 96, 192, 384	192	◎	
119	Stop bit length/data 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	Number of PU communication retries	0 to 10, 9999	1	◎	
122	Communication check time interval	0, 0.1 to 999.8s, 9999	0	122	PU communication check time interval	0, 0.1 to 999.8s, 9999	0	◎	
123	Waiting time setting	0 to 150ms, 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	10, 11, 30, 31	10	128	PID action selection	10, 11, 20, 21, 50, 51, 60, 61	10	×	When changing the Pr.128 setting from "3*" to "2*", also change the terminal, where the measured signal is assigned, from the terminal 1 to terminal 4. To use the terminal 4 instead of the terminal 1 for the voltage input, select 10V input with the Pr.267 = "2" setting and turn OFF the on-board switch 1.
129	PID proportional band	0.1 to 1000%, 9999	100%	129	PID proportional band	0.1 to 1000%, 9999	100%	◎	
130	PID integral time	0.1 to 3600s, 9999	1s	130	PID integral time	0.1 to 3600s, 9999	1s	◎	
131	Upper limit	0 to 100%, 9999	9999	131	PID upper limit	0 to 100%, 9999	9999	◎	
132	Lower limit	0 to 100%, 9999	9999	132	PID lower limit	0 to 100%, 9999	9999	◎	
133	PID action set point for PU operation	0 to 100%	0%	133	PID action set point	0 to 100%, 9999	9999	△	Set "9999" to use the terminal 2 input as the set point. When a value other than "9999" is set in A700, the Pr.133 setting is used as the set point even in an operation mode other than the PU operation mode.
134	PID differential time	0.01 to 10s, 9999	9999	134	PID differential time	0.01 to 10.00s, 9999	9999	◎	
140	Backlash acceleration stopping speed	0 to 3600r/min	30r/min	140	Backlash acceleration stopping frequency	0 to 400Hz	1Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
141	Backlash acceleration stopping time	0 to 360s	0.5s	141	Backlash acceleration stopping time	0 to 360s	0.5s	◎	
142	Backlash deceleration stopping speed	0 to 3600r/min	30r/min	142	Backlash deceleration stopping frequency	0 to 400Hz	1Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
143	Backlash deceleration stopping time	0 to 360s	0.5s	143	Backlash deceleration stopping time	0 to 360s	0.5s	◎	
144	Speed setting switchover	0, 2, 4, 6, 8, 10	0	144	Speed setting switchover	0, 2, 4, 6, 8, 10, 102, 104, 106, 108, 110	4	×	Set "104" for the Mitsubishi vector control dedicated motor.
145	PU display language selection	0 to 7	0	145	PU display language selection	0 to 7	0	◎	
150	Output current detection level	0 to 200%	150%	150	Output current detection level	0 to 200%	150%	◎	
151	Output current detection period	0 to 10s	0	151	Output current detection signal delay time	0 to 10s	0	◎	
152	Zero current detection level	0 to 200%	5.0%	152	Zero current detection level	0 to 200%	5.0%	◎	
153	Zero current detection period	0 to 1s	0.5s	153	Zero current detection time	0 to 1s	0.5s	◎	
156	Stall prevention operation selection	0 to 31, 100, 101	0	156	Stall prevention operation selection	0 to 31, 100, 101	0	◎	
157	OL signal output timer	0 to 25s, 9999	0	157	OL signal output timer	0 to 25s, 9999	0	◎	
158	DA2 terminal function selection	1 to 3, 5 to 12, 17, 18, 21, 32 to 34, 36	1	158	AM terminal function selection	1 to 3, 5 to 12, 17, 18, 21, 24, 32 to 34, 50, 52, 53	1	△	Setting value "36 (torque monitor)" is deleted.

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
160	Extended function selection	0, 1	0	160	User group read selection	0, 1, 9999	0	×	In A700, simple mode + extended parameters are displayed with the initial value.
162	Automatic restart after instantaneous power failure selection	0, 1, 10	0	162	Automatic restart after instantaneous power failure selection	0, 1, 10	0	◎	
163	First cushion time for restart	0 to 20s	0s	163	First cushion time for restart	0 to 20s	0s	◎	
164	First cushion voltage for restart	0 to 100%	0%	164	First cushion voltage for restart	0 to 100%	0%	◎	
165	Restart current limit level	0 to 200%	150%	165	Stall prevention operation level for restart	0 to 220%	150%	×	For A700, set a value obtained by: "Pr.165 setting in V500" × "V500 rated current" / "A700 rated current" For example, a replacement value for V520-11K can be obtained by, 150% × 54A / 61A = 132.8% where: V520-11K rated current is 54A, Pr.165 setting is 150%, and A720-15K rated current is 61A.
171	Actual operation hour meter clear	0	0	171	Operation hour meter clear	0, 9999	9999	◎	Write “0” to clear the actual operation hour meter.
180	DI1 terminal function selection	0 to 3, 5, 8 to 12, 14 to 16, 20, 22 to 28, 42 to 44, 9999	0	180	RL terminal function selection	0 to 20, 22 to 28, 42 to 44, 62, 64 to 71, 74, 9999	0	◎	The terminals DI1, DI2, DI3, and DI4 correspond respectively with the terminals RL, RM, RH, and RT.
181	DI2 terminal function selection		1	181	RM terminal function selection		1	◎	
182	DI3 terminal function selection		2	182	RH terminal function selection		2	◎	
183	DI4 terminal function selection		3	183	RT terminal function selection		3	◎	
187	STR terminal function selection		9999	179	STR terminal function selection	0 to 20, 22 to 28, 42 to 44, 61, 62, 64 to 71, 74, 9999	61	×	
190	DO1 terminal function selection	0 to 8, 10 to 16, 20, 25 to 27, 30 to 37, 39, 40 to 44, 96 to 99, 100 to 108, 110 to 116, 120, 125 to 127, 130 to 137, 139, 140 to 144, 196 to 199, 9999	0	190	RUN terminal function selection	0 to 8, 10 to 20, 25 to 28, 30 to 36, 39, 41 to 47, 64, 70, 84, 85, 90 to 99, 100 to 108, 110 to 116, 120, 125 to 128, 130 to 136, 139, 141 to 147, 164, 170, 184, 185, 190 to 199, 9999	0	◎	The terminals DO1, DO2, and DO3 correspond respectively with the terminals RUN, SU, and IPF.
191	DO2 terminal function selection		1	191	SU terminal function selection		1	◎	
192	DO3 terminal function selection		2	192	IPF terminal function selection		2	◎	
195	ABC terminal function selection		99	195	ABC1 terminal function selection	0 to 8, 10 to 20, 25 to 28, 30 to 36, 39, 41 to 47, 64, 70, 84, 85, 90, 91, 94 to 99, 100 to 108, 110 to 116, 120, 125 to 128, 130 to 136, 139, 141 to 147, 164, 170, 184, 185, 190 to 199, 9999	99	◎	
232	Multi-speed setting (speed 8)	0 to 3600r/min, 9999	9999	232	Multi-speed setting (8 speed)	0 to 400Hz, 9999	9999	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
233	Multi-speed setting (speed 9)	0 to 3600r/min, 9999	9999	233	Multi-speed setting (9 speed)	0 to 400Hz, 9999	9999	×	
234	Multi-speed setting (speed 10)	0 to 3600r/min, 9999	9999	234	Multi-speed setting (10 speed)	0 to 400Hz, 9999	9999	×	
235	Multi-speed setting (speed 11)	0 to 3600r/min, 9999	9999	235	Multi-speed setting (11 speed)	0 to 400Hz, 9999	9999	×	
236	Multi-speed setting (speed 12)	0 to 3600r/min, 9999	9999	236	Multi-speed setting (12 speed)	0 to 400Hz, 9999	9999	×	
237	Multi-speed setting (speed 13)	0 to 3600r/min, 9999	9999	237	Multi-speed setting (13 speed)	0 to 400Hz, 9999	9999	×	
238	Multi-speed setting (speed 14)	0 to 3600r/min, 9999	9999	238	Multi-speed setting (14 speed)	0 to 400Hz, 9999	9999	×	
239	Multi-speed setting (speed 15)	0 to 3600r/min, 9999	9999	239	Multi-speed setting (15 speed)	0 to 400Hz, 9999	9999	×	
240	Soft-PWM setting	0, 1, 10, 11	10	240	Soft-PWM operation selection	0, 1	1	×	Long wiring mode is deleted.
244	Cooling fan operation selection	0, 1	0	244	Cooling fan operation selection	0, 1	1	△	Initial value is different.
250	Stop selection	0 to 100s, 9999	9999	250	Stop selection	0 to 100s, 1000 to 1100s, 8888, 9999	9999	◎	
251	Output phase failure protection selection	0, 1	1	251	Output phase failure protection selection	0, 1	1	◎	
252	Override bias	0 to 200%	50%	252	Override bias	0 to 200%	50%	◎	
253	Override gain	0 to 200%	150%	253	Override gain	0 to 200%	150%	◎	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
261	Power failure stop selection	0, 1	0	261	Power failure stop selection	0, 1, 11, 12	0	◎	
262	Subtracted speed at deceleration start	0 to 600r/min	90r/min	262	Subtracted frequency at deceleration start	0 to 20Hz	3Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
263	Subtraction starting speed	0 to 3600r/min, 9999	1500r/min	263	Subtraction starting frequency	0 to 120Hz, 9999	60Hz	×	
264	Power-failure deceleration time 1	0 to 3600/0 to 360s	5s	264	Power-failure deceleration time 1	0 to 3600/360s, 9999	5s	◎	
265	Power-failure deceleration time 2	0 to 3600/0 to 360s, 9999	9999	265	Power-failure deceleration time 2	0 to 3600/360s, 9999	9999	◎	
266	Power-failure deceleration time switchover speed	0 to 3600r/min	1500r/min	266	Power failure deceleration time switchover frequency	0 to 400Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
278	Brake opening speed	0 to 900r/min	20r/min	278	Brake opening frequency	0 to 30Hz	3Hz	×	
279	Brake opening current	0 to 200%	130%	279	Brake opening current	0 to 220%	130%	◎	
280	Brake opening current detection time	0 to 2s	0.3s	280	Brake opening current detection time	0 to 2s	0.3s	◎	
281	Brake operation time at start	0 to 5s	0.3s	281	Brake operation time at start	0 to 5s	0.3s	◎	
282	Brake operation speed	0 to 900r/min	25r/min	282	Brake operation frequency	0 to 30Hz	6Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
283	Brake operation time at stop	0 to 5s	0.3s	283	Brake operation time at stop	0 to 5s	0.3s	◎	
284	Deceleration detection function selection	0, 1	0	284	Deceleration detection function selection	0, 1	0	◎	
285	Overspeed detection speed	0 to 900r/min, 9999	9999	285	Overspeed detection frequency	0 to 30Hz, 9999	9999	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
286	Droop gain	0 to 100.0%	0%	286	Droop gain	0 to 100%	0%	◎	
287	Droop filter time constant	0.00 to 1.00s	0.3s	287	Droop filter time constant	0 to 1s	0.3s	◎	
288	Droop function activation selection	0, 1, 2	0	288	Droop function activation selection	0, 1, 2, 10, 11	0	◎	
342	E2PROM write selection	0, 1	0	342	Communication EEPROM write selection	0, 1	0	◎	
350	Stop position command selection	0, 1, 2, 3, 9999	9999	350	Stop position command selection	0, 1, 9999	9999	×	The specification differs from V500. A stop position can be commanded with only 16-bit data.
351	Orientation switchover speed	0 to 1000r/min	200r/min	351	Orientation speed	0 to 30Hz	2Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
356	Internal stop position command	0 to 16383	0	356	Internal stop position command	0 to 16383	0	×	For adjustment. Re-adjust as required.
357	In-position zone	0 to 8192	11	357	Orientation in-position zone	0 to 255	5	×	
360	External position command selection	0, 1, 2 to 127	0	360	16 bit data selection	0 to 127	0	×	The specification differs from V500. Adjust the setting according to the machine.
361	Position shift	0 to 16383	0	361	Position shift	0 to 16383	0	×	
362	Orientation position loop gain	0.1 to 100	10	362	Orientation position loop gain	0.1 to 100	1	×	For adjustment. Re-adjust as required.
374	Overspeed detection level	0 to 4200r/min	3450r/min	374	Overspeed detection level	0 to 400Hz	140Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
380	Acceleration S pattern 1	0 to 50%	0%	380	Acceleration S-pattern 1	0 to 50%	0%	◎	
381	Deceleration S pattern 1	0 to 50%	0%	381	Deceleration S-pattern 1	0 to 50%	0%	◎	
382	Acceleration S pattern 2	0 to 50%	0%	382	Acceleration S-pattern 2	0 to 50%	0%	◎	
383	Deceleration S pattern 2	0 to 50%	0%	383	Deceleration S-pattern 2	0 to 50%	0%	◎	
393	Orientation selection	0, 1, 2, 10, 11, 12	0	393	Orientation selection	0, 1, 2	0	×	The machine-end orientation setting is not available with A700.
396	Orientation speed gain (P term)	0 to 1000%	60%	396	Orientation speed gain (P term)	0 to 1000	60	×	For adjustment. Re-adjust as required.
397	Orientation speed integral time	0 to 20.0s	0.333s	397	Orientation speed integral time	0 to 20s	0.333s	×	
398	Orientation speed gain (D term)	0 to 100.0%	1	398	Orientation speed gain (D term)	0 to 100	1	×	
399	Orientation deceleration ratio	0 to 1000	20	399	Orientation deceleration ratio	0 to 1000	20	×	
408	Motor thermistor selection	0, 1	0	408	Motor thermistor selection	0, 1	0	◎	Available when FR-A7AZ is mounted.
419	Position command source selection	0, 1	0	419	Position command source selection	0, 2 With A7AL: 0, 1, 2	0	◎	A7AL is required to command a position with pulse train inputs (setting 1).
420	Command pulse scaling factor numerator	0 to 32767	1	420	Command pulse scaling factor numerator	0 to 32767	1	◎	
421	Command pulse scaling factor denominator	0 to 32767	1	421	Command pulse scaling factor denominator	0 to 32767	1	◎	
422	Position loop gain	0 to 150s-1	25s-1	422	Position loop gain	0 to 150s-1	25s-1	×	For adjustment. Re-adjust as required.
423	Position feed forward gain	0 to 100%	0%	423	Position feed forward gain	0 to 100%	0%	×	
424	Position command acceleration/ deceleration time constant	0 to 50s	0s	424	Position command acceleration/ deceleration time constant	0 to 50s	0s	×	
425	Position feed forward command filter	0 to 5s	0s	425	Position feed forward command filter	0 to 5s	0s	×	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
426	In-position width	0 to 32767 pulses	100 pulses	426	In-position width	0 to 32767 pulses	100 pulses	◎	
427	Excessive level error	0 to 400K, 9999	40K	427	Excessive level error	0 to 400K, 9999	40K	◎	
430	Pulse monitor selection	0 to 5, 9999	9999	430	Pulse monitor selection	0 to 5, 9999	9999	◎	
450	Second applied motor	0, 10, 30, 9999	9999	450	Second applied motor	0 to 8, 13 to 18, 20, 23, 24, 30, 33, 34, 40, 43, 44, 50, 53, 54, 9999	9999	◎	
451	Second motor control method selection	20, 9999	9999	451	Second motor control method selection	10, 11, 12, 20, 9999	9999	◎	
452	Second electronic thermal O/L relay	0 to 500A, 9999 (V500) 0 to 500A, 9999 (V500L)	9999	51	Second electronic thermal O/L relay	0 to 500A, 9999 (55K or lower) 0 to 3600A, 9999 (75K or higher)	9999	◎	
453	Second motor capacity	0.4 to 55kW (V500) 0 to 3600kW (V500L)	Inverter capacity	453	Second motor capacity	0.4 to 55kW, 9999 (55K or lower) 0 to 3600kW, 9999 (75K or higher)	9999	△	
454	Number of second motor poles	2, 4, 6	4	454	Number of second motor poles	2, 4, 6, 8, 10, 9999	9999	△	
464	Digital position control sudden stop deceleration time	0 to 360.0s	0	464	Digital position control sudden stop deceleration time	0 to 360.0s	0	◎	Available when FR-A7AP or A7AL is mounted.
465	First position feed amount lower 4 digits	0 to 9999	0	465	First position feed amount lower 4 digits	0 to 9999	0	◎	
466	First position feed amount upper 4 digits	0 to 9999	0	466	First position feed amount upper 4 digits	0 to 9999	0	◎	
467	Second position feed amount lower 4 digits	0 to 9999	0	467	Second position feed amount lower 4 digits	0 to 9999	0	◎	
468	Second position feed amount upper 4 digits	0 to 9999	0	468	Second position feed amount upper 4 digits	0 to 9999	0	◎	
469	Third position feed amount lower 4 digits	0 to 9999	0	469	Third position feed amount lower 4 digits	0 to 9999	0	◎	
470	Third position feed amount upper 4 digits	0 to 9999	0	470	Third position feed amount upper 4 digits	0 to 9999	0	◎	
471	Fourth position feed amount lower 4 digits	0 to 9999	0	471	Fourth position feed amount lower 4 digits	0 to 9999	0	◎	
472	Fourth position feed amount upper 4 digits	0 to 9999	0	472	Fourth position feed amount upper 4 digits	0 to 9999	0	◎	
473	Fifth position feed amount lower 4 digits	0 to 9999	0	473	Fifth position feed amount lower 4 digits	0 to 9999	0	◎	
474	Fifth position feed amount upper 4 digits	0 to 9999	0	474	Fifth position feed amount upper 4 digits	0 to 9999	0	◎	
475	Sixth position feed amount lower 4 digits	0 to 9999	0	475	Sixth position feed amount lower 4 digits	0 to 9999	0	◎	
476	Sixth position feed amount upper 4 digits	0 to 9999	0	476	Sixth position feed amount upper 4 digits	0 to 9999	0	◎	
477	Seventh position feed amount lower 4 digits	0 to 9999	0	477	Seventh position feed amount lower 4 digits	0 to 9999	0	◎	
478	Seventh position feed amount upper 4 digits	0 to 9999	0	478	Seventh position feed amount upper 4 digits	0 to 9999	0	◎	
479	Eighth position feed amount lower 4 digits	0 to 9999	0	479	Eighth position feed amount lower 4 digits	0 to 9999	0	◎	
480	Eighth position feed amount upper 4 digits	0 to 9999	0	480	Eighth position feed amount upper 4 digits	0 to 9999	0	◎	
481	Ninth position feed amount lower 4 digits	0 to 9999	0	481	Ninth position feed amount lower 4 digits	0 to 9999	0	◎	
482	Ninth position feed amount upper 4 digits	0 to 9999	0	482	Ninth position feed amount upper 4 digits	0 to 9999	0	◎	
483	Tenth position feed amount lower 4 digits	0 to 9999	0	483	Tenth position feed amount lower 4 digits	0 to 9999	0	◎	
484	Tenth position feed amount upper 4 digits	0 to 9999	0	484	Tenth position feed amount upper 4 digits	0 to 9999	0	◎	
485	Eleventh position feed amount lower 4 digits	0 to 9999	0	485	Eleventh position feed amount lower 4 digits	0 to 9999	0	◎	
486	Eleventh position feed amount upper 4 digits	0 to 9999	0	486	Eleventh position feed amount upper 4 digits	0 to 9999	0	◎	
487	Twelfth position feed amount lower 4 digits	0 to 9999	0	487	Twelfth position feed amount lower 4 digits	0 to 9999	0	◎	
488	Twelfth position feed amount upper 4 digits	0 to 9999	0	488	Twelfth position feed amount upper 4 digits	0 to 9999	0	◎	
489	Thirteenth position feed amount lower 4 digits	0 to 9999	0	489	Thirteenth position feed amount lower 4 digits	0 to 9999	0	◎	
490	Thirteenth position feed amount upper 4 digits	0 to 9999	0	490	Thirteenth position feed amount upper 4 digits	0 to 9999	0	◎	
491	Fourteenth position feed amount lower 4 digits	0 to 9999	0	491	Fourteenth position feed amount lower 4 digits	0 to 9999	0	◎	
492	Fourteenth position feed amount upper 4 digits	0 to 9999	0	492	Fourteenth position feed amount upper 4 digits	0 to 9999	0	◎	
493	Fifteenth position feed amount lower 4 digits	0 to 9999	0	493	Fifteenth position feed amount lower 4 digits	0 to 9999	0	◎	
494	Fifteenth position feed amount upper 4 digits	0 to 9999	0	494	Fifteenth position feed amount upper 4 digits	0 to 9999	0	◎	
495	Remote output selection	0, 1	0	495	Remote output selection	0, 1, 10, 11	0	◎	
496	Remote output data 1	0 to 4095	0	496	Remote output data 1	0 to 4095	0	◎	
497	Remote output data 2	0 to 4095	0	497	Remote output data 2	0 to 4095	0	◎	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
505	Speed setting reference	1 to 3600r/min	1500r/min	505	Speed setting reference	1 to 120Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
800	Control system selection	0 to 5, 9, 20	0	800	Control method selection	0 to 5, 9 to 12, 20	20	△	The initial value differs. Enter the value set in V500.
801	Torque characteristic selection	0, 1	1	-	-	-	-	-	This function is not available with A700.
802	Pre-excitation selection	0, 1	0	802	Pre-excitation selection	0, 1	0	◎	
803	Constant power range torque characteristic selection	0, 1	0	803	Constant power range torque characteristic selection	0, 1	0	◎	
804	Torque command source selection	0 to 6	0	804	Torque command source selection	0, 1, 3 to 6	0	◎	
805	Torque command source (RAM)	600 to 1400%	1000%	805	Torque command value (RAM)	600 to 1400%	1000%	◎	
806	Torque command source (RAM, E2PROM)	600 to 1400%	1000%	806	Torque command value (RAM, EEPROM)	600 to 1400%	1000%	◎	
807	Speed limit selection	0, 1, 2	0	807	Speed limit selection	0, 1, 2	0	◎	
808	Forward rotation speed limit	0 to 3600r/min	1500r/min	808	Forward rotation speed limit	0 to 120Hz	60Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
809	Reverse rotation speed limit	0 to 3600r/min, 9999	9999	809	Reverse rotation speed limit	0 to 120Hz, 9999	9999	×	
810	Torque restriction input method selection	0, 1	0	810	Torque limit input method selection	0, 1	0	◎	
811	Set resolution switchover	0, 1, 10, 11	0	811	Set resolution switchover	0, 1, 10, 11	0	◎	
812	Torque limit level (regeneration)	0 to 400%, 9999	9999	812	Torque limit level (regeneration)	0 to 400%, 9999	9999	×	For adjustment. Re-adjust as required.
813	Torque limit level (3 quadrant)	0 to 400%, 9999	9999	813	Torque limit level (3rd quadrant)	0 to 400%, 9999	9999	×	
814	Torque limit level (4 quadrant)	0 to 400%, 9999	9999	814	Torque limit level (4th quadrant)	0 to 400%, 9999	9999	×	
815	Torque limit level 2	0 to 400%, 9999	9999	815	Torque limit level 2	0 to 400%, 9999	9999	×	
816	Acceleration torque limit level	0 to 400%, 9999	9999	816	Torque limit level during acceleration	0 to 400%, 9999	9999	×	
817	Deceleration torque limit level	0 to 400%, 9999	9999	817	Torque limit level during deceleration	0 to 400%, 9999	9999	×	
818	Easy gain tuning response level setting	1 to 15	2	818	Easy gain tuning response level setting	1 to 15	2	×	
819	Easy gain tuning selection	0, 1, 2	0	819	Easy gain tuning selection	0, 1, 2	0	◎	
820	Speed control P gain 1	0 to 1000%	60%	820	Speed control P gain 1	0 to 1000%	60%	×	For adjustment. Re-adjust as required.
821	Speed control integral time 1	0 to 20s	0.333s	821	Speed control integral time 1	0 to 20s	0.333s	×	
822	Speed setting filter 1	0 to 5s	0s	822	Speed setting filter 1	0 to 5s, 9999	9999	×	
823	Speed detection filter 1	0 to 0.1s	0.001s	823	Speed detection filter 1	0 to 0.1s	0.001s	×	
824	Torque control P gain 1	0 to 200%	100%	824	Torque control P gain 1	0 to 200%	100%	×	
825	Torque control integral time 1	0 to 500ms	5ms	825	Torque control integral time 1	0 to 500ms	5ms	×	
826	Torque setting filter 1	0 to 5s	0s	826	Torque setting filter 1	0 to 5s, 9999	9999	×	
827	Torque detection filter 1	0 to 0.1s	0s	827	Torque detection filter 1	0 to 0.1s	0s	×	
828	Model speed control gain	0 to 1000%	60%	828	Model speed control gain	0 to 1000%	60%	×	
830	Speed control P gain 2	0 to 1000%, 9999	9999	830	Speed control P gain 2	0 to 1000%, 9999	9999	×	
831	Speed control integral time 2	0 to 20s, 9999	9999	831	Speed control integral time 2	0 to 20s, 9999	9999	×	
832	Speed setting filter 2	0 to 5s, 9999	9999	832	Speed setting filter 2	0 to 5s, 9999	9999	×	
833	Speed detection filter 2	0 to 0.1s, 9999	9999	833	Speed detection filter 2	0 to 0.1s, 9999	9999	×	
834	Torque control P gain 2	0 to 200%, 9999	9999	834	Torque control P gain 2	0 to 200%, 9999	9999	×	
835	Torque control integral time 2	0 to 500ms, 9999	9999	835	Torque control integral time 2	0 to 500ms, 9999	9999	×	
836	Torque setting filter 2	0 to 5s, 9999	9999	836	Torque setting filter 2	0 to 5s, 9999	9999	×	
837	Torque detection filter 2	0 to 0.1s, 9999	9999	837	Torque detection filter 2	0 to 0.1s, 9999	9999	×	

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
840	Torque bias selection	0 to 3, 9999	9999	840	Torque bias selection	0 to 3, 9999	9999	◎	Available when FR-A7AP or A7AL is mounted.
841	Torque bias 1	600 to 1400%, 9999	9999	841	Torque bias 1	600 to 1400%, 9999	9999	×	For adjustment. Re-adjust as required.
842	Torque bias 2	600 to 1400%, 9999	9999	842	Torque bias 2	600 to 1400%, 9999	9999	×	
843	Torque bias 3	600 to 1400%, 9999	9999	843	Torque bias 3	600 to 1400%, 9999	9999	×	
844	Torque bias filter	0 to 5s, 9999	9999	844	Torque bias filter	0 to 5s, 9999	9999	×	
845	Torque bias operation time	0 to 5s, 9999	9999	845	Torque bias operation time	0 to 5s, 9999	9999	×	
846	Torque bias balance compensation	0 to 10V, 9999	9999	846	Torque bias balance compensation	0 to 10V, 9999	9999	×	
847	Fall-time torque bias terminal 3 bias	0 to 400%, 9999	9999	847	Fall-time torque bias terminal 1 bias	0 to 400%, 9999	9999	×	
848	Fall-time torque bias terminal 3 gain	0 to 400%, 9999	9999	848	Fall-time torque bias terminal 1 bias	0 to 400%, 9999	9999	×	
849	Analog input offset adjustment	0 to 200%	100%	849	Analog input offset adjustment	0 to 200%	100%	◎	
851	Number of encoder pulses	0 to 4096	2048	369	Number of encoder pulses	0 to 4096	1024	◎	Available when FR-A7AP or A7AL is mounted. Enter the value set in V500.
852	Encoder rotation direction	0, 1	1	359	Encoder rotation direction	0, 1	1	◎	
854	Excitation ratio	0 to 100%	100%	854	Excitation ratio	0 to 100%	100%	◎	
859	Torque current	0 to ****, 9999	9999	859	Torque current	0 to 500A, 9999(55K or lower) 0 to 3000A, 9999(75K or higher)	9999	×	Connect the motor and perform auto tuning.
862	Notch filter frequency	0 to 31 (V500) 0 to 60 (V500L)	0	862	Notch filter time constant	0 to 60	0	×	The notch frequency differs between V500 and A700. Refer to the different section for the value set in A700.
863	Notch filter depth	0 to 3	0	863	Notch filter depth	0 to 3	0	◎	
864	Torque detection	0 to 400%	150%	864	Torque detection	0 to 400%	150%	◎	
865	Low speed detection	0 to 3600r/min	45r/min	865	Low speed detection	0 to 400Hz	1.5Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
866	Torque monitoring reference	0 to 400%	150%	866	Torque monitoring reference	0 to 400%	150%	◎	
867	DA1 output filter	0 to 5s	0.05s	867	AM output filter	0 to 5s	0.01s	△	
868	Terminal 1 function assignment	0, 1, 2, 5, 9999	0	868	Terminal 1 function assignment	0 to 6, 9999	0	×	If the terminal 3 has been used to input torque limits in V500, use the terminal 1 to input torque limits in A700 by setting Pr.868 = "4" (not required if the terminal 4 is used instead). If the terminal 3 has been used to input torque biases in V500, use the terminal 1 to input torque biases in A700 by setting Pr.868 = "6". If the terminal 3 has been used to input torque commands in V500, use the terminal 1 to input torque commands in A700 by setting Pr.868 = "3 or 4".
870	Speed deviation level	0 to 1500r/min, 9999	9999	285	Overspeed detection frequency (Excessive speed deviation detection frequency)	0 to 30Hz	9999	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
871	Speed deviation time	0 to 100s	12s	853	Speed deviation time	0 to 100s	1s	△	
873	Speed limit	0 to 3600r/min	600r/min	873	Speed limit	0 to 120Hz	20Hz	×	Before entering the value set in V500, set Pr.144 and select rotations per minute as the setting increment.
874	OLT level setting	0 to 200%	150%	874	OLT level setting	0 to 200%	150%	◎	
875	Fault definition	0, 1	0	875	Fault definition	0, 1	0	◎	
876	Thermal relay protector input	0, 1	1	-	-	-	-	-	Assign the OH signal (external thermal input) to an input terminal to use a thermal protector. A resistor is required. Refer to the A700 instruction manual for the wiring method.

FR-V500 Parameter List				FR-A700 Compatible Parameters				Parameter Setting	
Function Number	Name	Setting Range	Initial Value	Function Number	Name	Setting Range	Initial Value	Setting	Remarks
877	Speed feed forward control/model adaptive speed control selection	0, 1, 2	0	877	Speed feed forward control/model adaptive speed control selection	0, 1, 2	0	◎	
878	Speed feed forward filter	0 to 1s	0s	878	Speed feed forward filter	0 to 1s	0s	×	For adjustment. Re-adjust as required.
879	Speed feed forward torque limit	0 to 400%	150%	879	Speed feed forward torque limit	0 to 400%	150%	×	
880	Load inertia ratio	0, 1 to 200 times	7	880	Load inertia ratio	0 to 200 times	7	◎	
881	Speed feed forward gain	0 to 1000%	0%	881	Speed feed forward gain	0 to 1000%	0%	×	For adjustment. Re-adjust as required.
890	Maintenance output setting time	0 to 9998, 9999	9999	504	Maintenance timer alarm output set time	0 to 9998, 9999	9999	◎	
891	Maintenance output timer	0 to 9998	0	503	Maintenance timer	0 to 9998	0	◎	
892	Maintenance output signal clear	0	0	-	-	-	-	-	Write "0" in Pr.503 to clear the maintenance timer and maintenance timer output signals.
900	DA1 terminal calibration	-	-	C0 (900)	FM terminal calibration	-	-	×	Different calibration method.
901	DA2 terminal calibration	-	-	C1 (901)	AM terminal calibration	-	-	×	Different calibration method.
902	Speed setting terminal 2 bias	0 to 10V, 0 to 3600r/min	0V, 0r/min	C2 (902)	Terminal 2 frequency setting bias frequency	0 to 400Hz	0Hz	×	Different calibration method.
				C3 (902)	Terminal 2 frequency setting bias	0 to 300%	0%	×	Different calibration method.
903	Speed setting terminal 2 gain	0 to 10V, 0 to 3600r/min	10V, 1500r/min	125 (903)	Terminal 2 frequency setting gain frequency	0 to 400Hz	60Hz	×	Different calibration method.
				C4 (903)	Terminal 2 frequency setting gain	0 to 300%	100%	×	Different calibration method.
904	Torque command terminal 3 bias	0 to 10V, 0 to 400%	0V, 0%	C5 (904)	Terminal 4 frequency setting bias frequency	0 to 400Hz	0Hz	×	Different calibration method.
				C6 (904)	Terminal 4 frequency setting bias	0 to 300%	20%	×	Different calibration method.
905	Torque command terminal 3 gain	0 to 10V, 0 to 400%	10V, 150%	126 (905)	Terminal 4 frequency setting gain frequency	0 to 400Hz	60Hz	×	Different calibration method.
				C7 (905)	Terminal 4 frequency setting gain	0 to 300%	100%	×	Different calibration method.。
917	Terminal 1 terminal bias (speed)	0 to 10V, 0 to 3600r/min	0V, 0r/min	C12 (917)	Terminal 1 bias frequency (speed)	0 to 400Hz	0Hz	×	Different calibration method.
				C13 (917)	Terminal 1 bias (speed)	0 to 300%	0%	×	Different calibration method.
918	Terminal 1 terminal gain (speed)	0 to 10V, 0 to 3600r/min	10V, 1500r/min	C14 (918)	Terminal 1 gain frequency (speed)	0 to 400Hz	60Hz	×	Different calibration method.
				C15 (918)	Terminal 1 gain (speed)	0 to 300%	100%	×	Different calibration method.
919	Terminal 1 terminal bias (torque/magnetic flux)	0 to 10V, 0 to 400%	0V, 0%	C16 (919)	Terminal 1 bias command (torque/magnetic flux)	0 to 400Hz	0%	×	Different calibration method.
				C17 (919)	Terminal 1 bias (torque/magnetic flux)	0 to 300%	0%	×	Different calibration method.
920	Terminal 1 terminal gain (torque/magnetic flux)	0 to 10V, 0 to 400%	10V, 150%	C18 (920)	Terminal 1 gain command (torque/magnetic flux)	0 to 400Hz	150%	×	Different calibration method.
				C19 (920)	Terminal 1 gain (torque/magnetic flux)	0 to 300%	100%	×	Different calibration method.
990	PU buzzer control	0, 1	1	990	PU buzzer control	0, 1	1	◎	
991	PU contrast adjustment	0 to 63	58	991	PU contrast adjustment	0 to 63	58	◎	

Pr.862 notch filter setting

The notch filter setting and the notch frequency differ between V500(L) and A700.
In A700, set the notch filter according to the V500(L) setting as shown below. Re-adjust the setting as required.

Setting in V500 (L)		Setting in A700		Remarks
Setting	Notch frequency (Hz)	Setting	Notch frequency (Hz)	
0	Invalid	0	Invalid	
1	1125.0	1	1000.0	
2	562.5	2	500.0	
3	375.0	3	333.3	
4	281.3	4	250.0	
5	225.0	5	200.0	
6	187.5	5	200.0	
7	160.7	6	166.7	
8	140.6	7	142.9	
9	125.0	8	125.0	
10	112.5	9	111.1	
11	102.3	10	100.0	
12	93.8	11	90.9	
13	86.5	12	83.3	
14	80.4	13	76.9	
15	75.0	13	76.9	
16	70.3	14	71.4	
17	66.2	15	66.7	
18	62.5	16	62.5	
19	59.2	17	58.8	
20	56.3	18	55.6	
21	53.6	19	52.6	
22	51.1	20	50.0	
23	48.9	20	50.0	
24	46.9	21	47.6	
25	45.0	22	45.5	
26	43.3	23	43.5	
27	41.7	24	41.7	
28	40.2	25	40.0	
29	38.8	26	38.5	
30	37.5	27	37.0	
31	36.3	28	35.7	The setting range in V500 is "0 to 31".

Setting in V500 (L)		Setting in A700		Remarks
Setting	Notch frequency (Hz)	Setting	Notch frequency (Hz)	
32	35.2	28	35.7	
33	34.1	29	34.5	
34	33.1	30	33.3	
35	32.1	31	32.3	
36	31.3	32	31.3	
37	30.4	33	30.3	
38	29.6	34	29.4	
39	28.8	35	28.6	
40	28.1	36	27.8	
41	27.4	37	27.0	
42	26.8	37	27.0	
43	26.2	38	26.3	
44	25.6	39	25.6	
45	25.0	40	25.0	
46	24.5	41	24.4	
47	23.9	42	23.8	
48	23.4	43	23.3	
49	23.0	44	22.7	
50	22.5	45	22.2	
51	22.1	45	22.2	
52	21.6	46	21.7	
53	21.2	47	21.3	
54	20.8	48	20.8	
55	20.5	49	20.4	
56	20.1	50	20.0	
57	19.7	51	19.6	
58	19.4	52	19.2	
59	19.1	53	18.9	
60	18.8	53	18.9	The setting range in V500L is "0 to 60".
-	-	54	18.5	
-	-	55	18.2	
-	-	56	17.9	
-	-	57	17.5	
-	-	58	17.2	
-	-	59	16.9	
-	-	60	16.7	

4. Option

The following table shows which FR-V500(L) series options are compatible with the FR-A700 series inverters and their corresponding A700 series options.

	Name		Option Model	
			FR-V500(L)	FR-A700
Plug-in type	12-bit digital input		FR-A5AX	FR-A7AX (16-bit)
	16-bit digital input		FR-V5AH	FR-A7AX
	Digital output Additional digital output		FR-A5AY	FR-A7AY
	Relay output		FR-A5AR	FR-A7AR
	Additional open collector output		FR-V5AY	Inverter output terminal
	Orientation control encoder, pulse train input		FR-A5AP, T-PLG50, T-PLG51	FR-A7AP (with the inverter-built-in pulse train input function), FR-A7AL
	Encoder pulse division output		FR-V5AY	FR-A7AL
	Coded analog output		Built into the inverter (terminal DA1)	FR-A7AZ (terminal DA1)
	Torque setting input		Built into the inverter (inverter terminal 3)	FR-A7AZ (terminal 6)
	Computer link		FR-A5NR	Built into the inverter (RS-485 terminals, two relay output terminals)
	Profibus-DP		FR-A5NP	FR-A7NP
	DeviceNet		FR-A5ND	FR-A7ND
	CC-Link		FR-A5NC	FR-A7NC
	Modbus Plus		FR-A5NM	—
Stand-alone type	Parameter unit		FR-PU04	Some restrictions apply for parameter copy, etc.
	Parameter unit connection cable		FR-CB201, 203, 205	Compatible
	Heatsink protrusion attachment		FR-A5CN, MT-A5CN	FR-A7CN (no attachment required for FR-A740-160K or higher)
	Totally enclosed structure attachment		FR-A5CV	—
	Attachment for conduit connection		FR-A5FN	—
	Intercompatibility attachment		FR-AAT, FR-A5AT	Compatible
	EMC Directive compliant EMC filter		SF□□	Built into the inverter (compatible with the EN61800-3 2nd Environment)
	Surge voltage suppression filter		FR-ASF-H	Compatible
	Power factor improving DC reactor		FR-BEL-(H)	Compatible
	Power factor improving AC reactor		FR-BAL-(H), MT-BAL-(H)	Compatible
	Radio noise filter		FR-BIF-(H)	Compatible
	Line noise filter		FR-BSF01, FR-BLF	Compatible
	BU type brake unit		BU1500 to 15K, H7.5K to 30K	Compatible
	Brake unit		FR-BU-(H), MT-BU5-(H)-01	Compatible
	Resistor unit		FR-BR-(H), MT-BR5-(H)	Compatible
	FR-RC type high power factor converter		FR-RC-(H), MT-RC-(H)	Compatible
	Power regeneration common converter		FR-CV-(H)7.5K(-AT) to 55K	Compatible
	Stand-alone reactor dedicated for the FR-CV		FR-CVL-(H)7.5K to 55K	Compatible
	High power factor converter		FR-HC-(H), MT-HC-(H)	Compatible
	Sine wave filter	Reactor	MT-BSL-(H)	Compatible
		Capacitor	MT-BSC-(H)	Compatible

NOTE: FR-A700 accepts up to three plug-in options. FR-A7AP or FR-A7AL, which facilitates the connection with an encoder, is always required to perform vector control with FR-A700.

The following number of options can be connected when connecting to an encoder:

When FR-A7AP is mounted, two other options can be mounted.

When FR-A7AL is mounted, one other option can be mounted.

Name		Option type	
		FR-V500(L)	FR-A700
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
Other	Pilot generator	QVAH-10	Compatible
	Deviation sensor	YVGC-500W-NS	Compatible
	Frequency setting potentiometer	WA2W 1kΩ	Compatible
	Frequency meter	YM206NRI 1mA	Compatible
	Calibration resistor	RV24YN 10kΩ	Compatible

Precautions for replacement of FR-V500 (L) → FR-A700

* The following wiring needs to be changed.

・If the terminal DA2 has been used, use the terminal AM instead.

・If the restart at instantaneous power failure function (Pr.57≠ "9999") has been used, assign the CS signal to an input terminal, and connect that terminal with the terminal SD.

・If pulse train signals have been input via FR-A5AP, change the JOG terminal setting of the inverter to the pulse train input, and use that terminal. A resistor is required for the connection.

・If a thermal protector has been used (Pr.876 = "0"), assign the OH signal to an input terminal to connect the terminal protector. A resistor is required for the connection.

・If the measured signals have been input for the PID control (Pr.128 = "30 or 31"), change the terminal where the signal is assigned from the terminal 1 to the terminal 4. The terminal 4 is set for current input in the initial setting. Perform any of the following operation to change.
1: Change to the voltage input specification.
2: Set Pr.276 = "2" and set the switch 1 on the board to "OFF". The input to the terminal 4 changes to "0 to 10V" input.

・If FR-A5AX (Pr.350 = "2", Pr.360 = "1") has been used to command the stop position under orientation control with an encoder with 2048 or 4096 pulses (Pr.369), perform the wiring as shown below for FR-A7AX.
1: Number of encoder pulses (Pr.368) = 2048
Change the following terminals:
X0→X1, … X11→X12 (X0 is always open)
2：1: Number of encoder pulses (Pr.368) = 4096
Change the following terminals:
X0→X2, ... X11→X13 (X0 and X1 are always open)

・If relay outputs of FR-A5NR have been used, use the inverter terminal ABC2 instead.

・If the relay terminals of FR-A5NR have been used for remote outputs (Pr.496, Pr.497), the bit assignment must be changed as follow.
Pr.497 bit 10 → Pr.496 bit 6

* Activating the built-in EMC filter increases the leakage current.

	Capacitive filter (Radio noise filter)	Common mode choke (Line noise filter)	DC reactor
55K or lower	Standard (built-in)	Standard (built-in)	Option (sold separately)
75K or higher	Standard (built-in)	Option (sold separately)	Standard (built-in)

EMC filter is initially set to invalid (OFF). The EMC filter setting is, however, always valid for the 200V class 0.4K and 0.75K inverters because they have little leakage current. (They are not equipped with setting connectors.)
The common mode choke installed at the input side of the 55K- or lower-capacity inverter is always valid and unaffected by the ON/OFF status of the EMC filter ON/OFF connector.

FR-V500(L) and FR-A700 differ in the following points.

・The FR-A700 series offers wider range of capacities.

V520: 1.5kW to 55kW
V540: 1.5kW to 55kW
V520L: 75kW
V540L: 75kW to 250kW

⇒

A720: 0.4kW to 90kW
A740: 0.4kW to 500kW
Under vector control, select an inverter capacity, which is one or two rank higher than the motor output (kW).

・The FR-A701 series, a series of FR-A700 series, is equipped with the built-in power regeneration function.
The built-in power regeneration function was not available with the FR-V500(L) series.

Capacity range
FR-A721: 5.5kW to 55kW
FR-A741: 5.5kW to 55kW

・Different control methods can be selected according to the application.

FR-V500(L)		FR-A700/FR-A701
Vector control		Vector control
Sensorless vector control	⇒	Sensorless vector control
		Advanced magnetic flux vector control
		V/F control (suitable for test run, etc.)

・Offline auto tuning

The FR-A700 and FR-V500(L) series both have the motor-rotation mode and the motor-non-rotation mode.
With FR-A700, however, tuning can be performed in high accuracy without rotating the motor.
➔ Useful to tune a motor that cannot be disconnected from the machine load.

・Encoder pulse division output

When combined with FR-A7AL, FR-A700 can divide the pulse signals input from the encoder and output that divided signals. (FR-A7AL is equipped with open collectors and differential line drivers.)
The pulse signals from the motor-end encoder can be divided in the ratio of 1/1 to 1/32767 according to the parameter setting.
The division ratio can be set to "1" when sending pulse signals, which are sent from the motor-end encoder, to a device other than an inverter.
Note) This function is not available for the FR-V500 series and for the combination of FR-A700 + FR-A7AP.