Information for Replacement of FR-B, B3 (FR-A500 Specification) Series with FR-B, B3 (FR-A800 Specification) Series

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

1. Size

When the FR-B, B3 (A500 specification) series inverters are replaced with the FR-B, B3 (A800 specification) series inverters, some A800 specification models have different installation size from that of the corresponding A500 specification models. Refer to the applicable outline dimension and drill new mounting holes, or use the installation interchange attachment shown in the table below.

[Variable torque type FR-B[][] inverters]

	Existing inverter (A500 specification)	Replacing inverter (A800 specification)	Installation size / Installation interchange attachment
200 V class	FR-B-750	FR-B-750	Same
	FR-B-1500	FR-B-1500	Same
	FR-B-2200	FR-B-2200	Same
	FR-B-3700	FR-B-3700	Same
	FR-B-5.5K	FR-B-5.5K	Same
	FR-B-7.5K	FR-B-7.5K	Same
	FR-B-11K	FR-B-11K	Same
	FR-B-15K	FR-B-15K	Same
	FR-B-22K	FR-B-22K	Same
	FR-B-30K	FR-B-30K	Same
	FR-B-37K	FR-B-37K	Same
	FR-B-45K	FR-B-45K	Same
400 V class	FR-B-750	FR-B-750	Same
	FR-B-1500	FR-B-1500	Same
	FR-B-2200	FR-B-2200	Same
	FR-B-3700	FR-B-3700	Same
	FR-B-7.5K	FR-B-7.5K	Same
	FR-B-15K	FR-B-15K	FR-AAT24
	FR-B-22K	FR-B-22K	Same
	FR-B-37K	FR-B-37K	Same
	FR-B-55K	FR-B-55K	Same

Use screws with the proper lengths for installation as required.

[Constant torque, standard type FR-B3[][] inverters]

	Existing inverter (A500 specification)	Replacing inverter (A800 specification)	Installation size / Installation interchange attachment
200 V class	FR-B3-400	FR-B3-400	Same
	FR-B3-750	FR-B3-750	Same
	FR-B3-1500	FR-B3-1500	Same
	FR-B3-2200	FR-B3-2200	Same
	FR-B3-3700	FR-B3-3700	Same
	FR-B3-5.5K	FR-B3-5.5K	Same
	FR-B3-7.5K	FR-B3-7.5K	Same
	FR-B3-11K	FR-B3-11K	Same
	FR-B3-15K	FR-B3-15K	Same
	FR-B3-18.5K	FR-B3-18.5K	Same
	FR-B3-22K	FR-B3-22K	Same
	FR-B3-30K	FR-B3-30K	Same
	FR-B3-37K	FR-B3-37K	Same
400 V class	FR-B3-H400	FR-B3-H400	Same
	FR-B3-H750	FR-B3-H750	Same
	FR-B3-H1500	FR-B3-H1500	Same
	FR-B3-H2200	FR-B3-H2200	Same
	FR-B3-H3700	FR-B3-H3700	Same
	FR-B3-H5.5K	FR-B3-H5.5K	Same
	FR-B3-H7.5K	FR-B3-H7.5K	Same
	FR-B3-H11K	FR-B3-H11K	FR-AAT24
	FR-B3-H15K	FR-B3-H15K	FR-AAT24
	FR-B3-H18.5K	FR-B3-H18.5K	Same
	FR-B3-H22K	FR-B3-H22K	Same
	FR-B3-H30K	FR-B3-H30K	Same
	FR-B3-H37K	FR-B3-H37K	Same

* After replacing the inverter, perform offline auto tuning with motor rotation and drive the motor under Advanced magnetic flux vector control.
Use screws with the proper lengths for installation as required.

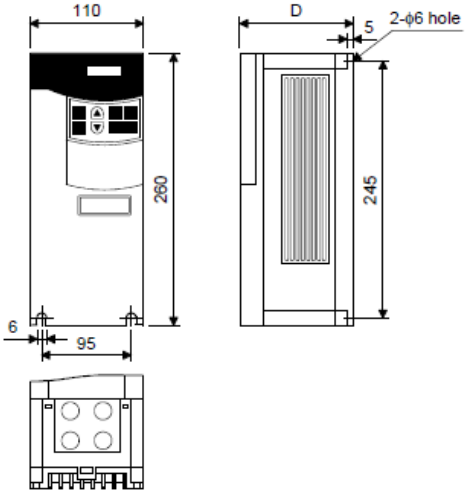
[Constant torque, low acoustic noise type FR-B3-N-[][] inverters]

	Existing inverter (A500 specification)	Replacing inverter (A800 specification)	Installation size / Installation interchange attachment
200 V class	FR-B3-N400	FR-B3-N-400	Same
	FR-B3-N750	FR-B3-N-750	Same
	FR-B3-N1500	FR-B3-N-1500	Same
	FR-B3-N2200	FR-B3-N-2200	Same
	FR-B3-N3700	FR-B3-N-3700	Same
	FR-B3-N5.5K	FR-B3-N-5.5K	Same
	FR-B3-N7.5K	FR-B3-N-7.5K	Same
	FR-B3-N11K	FR-B3-N-11K	Same
	FR-B3-N15K	FR-B3-N-15K	Same
	FR-B3-N18.5K	FR-B3-N-18.5K	Same
	FR-B3-N22K	FR-B3-N-22K	Same
	FR-B3-N30K	FR-B3-N-30K	Same
	FR-B3-N37K	FR-B3-N-37K	Same
400 V class	FR-B3-NH400	FR-B3-NH400	Same
	FR-B3-NH750	FR-B3-NH750	Same
	FR-B3-NH1500	FR-B3-NH1500	Same
	FR-B3-NH2200	FR-B3-NH2200	Same
	FR-B3-NH3700	FR-B3-NH3700	Same
	FR-B3-NH5.5K	FR-B3-NH5.5K	Same
	FR-B3-NH7.5K	FR-B3-NH7.5K	Same
	FR-B3-NH11K	FR-B3-NH11K	FR-AAT24
	FR-B3-NH15K	FR-B3-NH15K	FR-AAT24
	FR-B3-NH18.5K	FR-B3-NH18.5K	Same
	FR-B3-NH22K	FR-B3-NH22K	Same
	FR-B3-NH30K	FR-B3-NH30K	Same
	FR-B3-NH37K	FR-B3-NH37K	Same

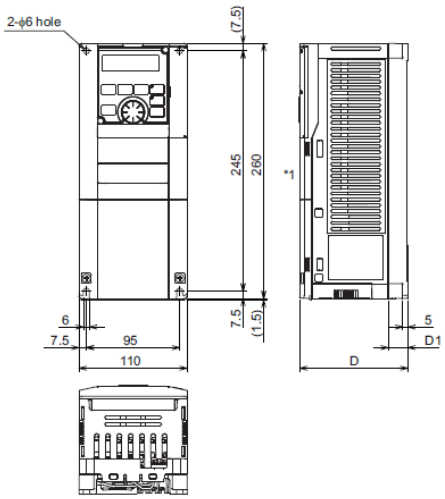
* After replacing the inverter, perform offline auto tuning with motor rotation and drive the motor under Advanced magnetic flux vector control.
Use screws with the proper lengths for installation as required.

Outline dimension drawings (Unit: mm)
Variable torque type FR-B[][] 200 V class inverters

■ FR-B-750 (A500 specification)

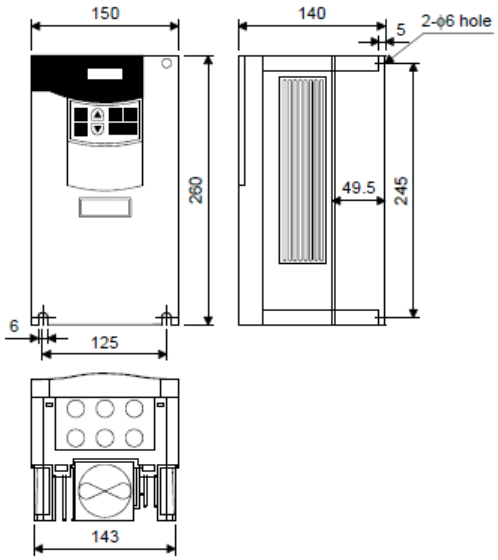


■ FR-B-750 (A800 specification)

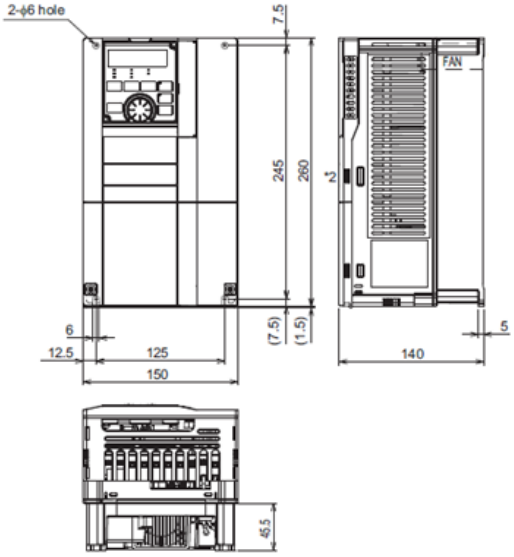


Inverter model	D1	D1
FR-B-750	125	35

■ FR-B-1500, 2200, 3700 (A500 specification)

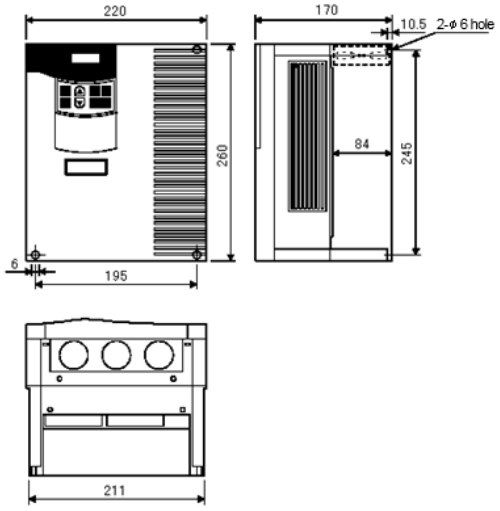


■ FR-B-1500, 2200, 3700 (A800 specification)

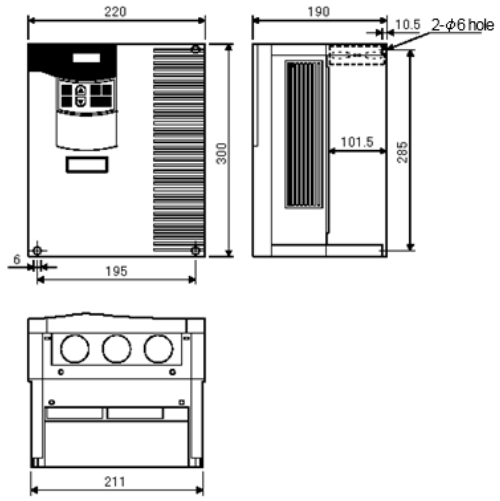


Variable torque type FR-B[][] 200 V class inverters

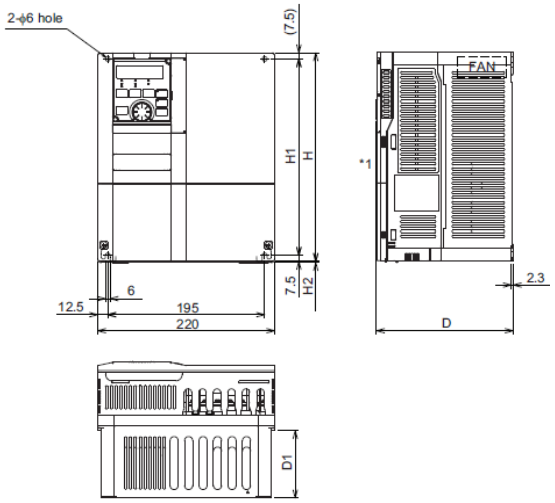
■ FR-B-5.5K, 7.5K (A500 specification)



■ FR-B-11K (A500 specification)



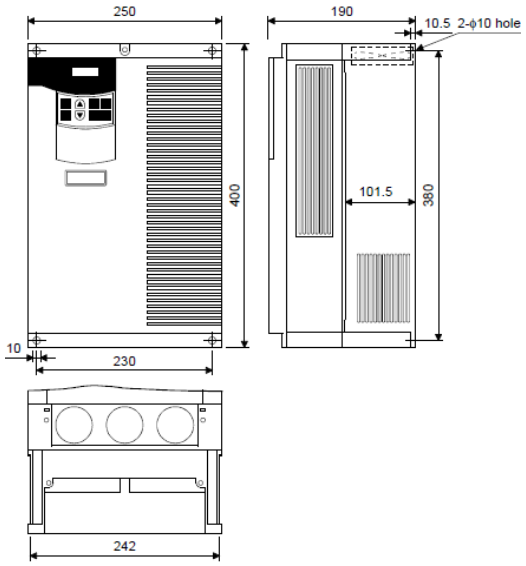
■ FR-B-5.5K, 7.5K, 11K (A800 specification)



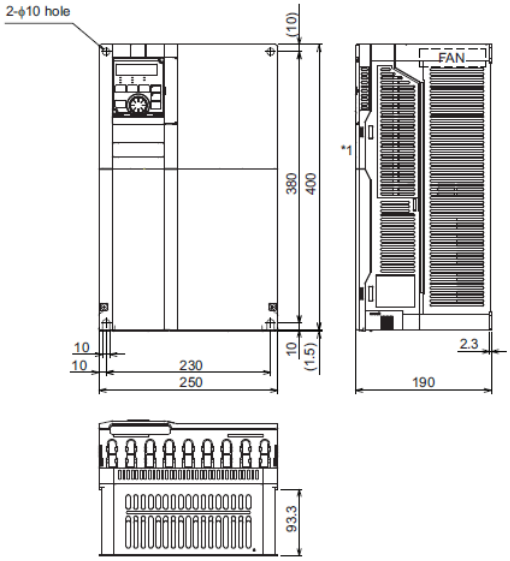
Inverter model	H	H1	H2	D	D1
FR-B-5.5K, 7.5K	260	245	1.5	170	84
FR-B-11K	300	285	3	190	101.5

Variable torque type FR-B[][] 200 V class inverters

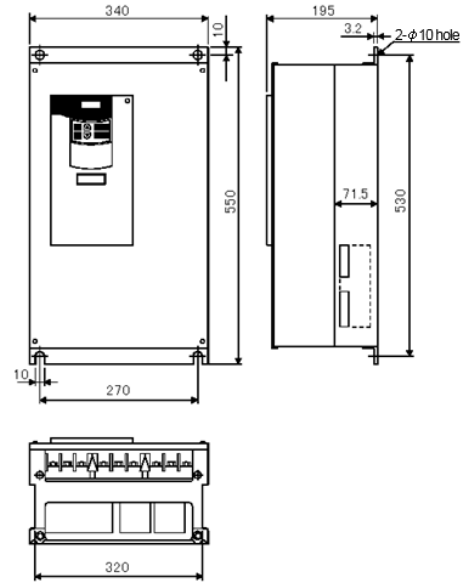
■ FR-B-15K, 22K (A500 specification)



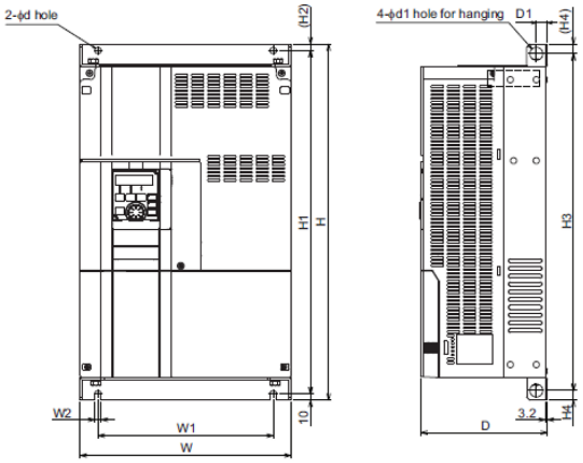
■ FR-B-15K, 22K (A800 specification)



■ FR-B-30K (A500 specification)



■ FR-B-30K (A800 specification)

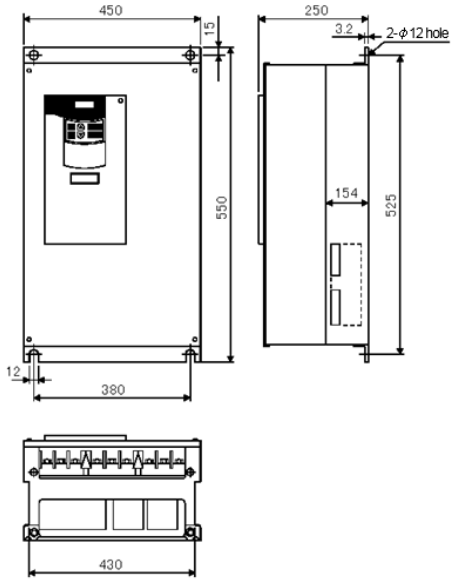


Inverter model	W	W1	W2	H	H1	H2
FR-B-30K	325	270	10	550	530	10

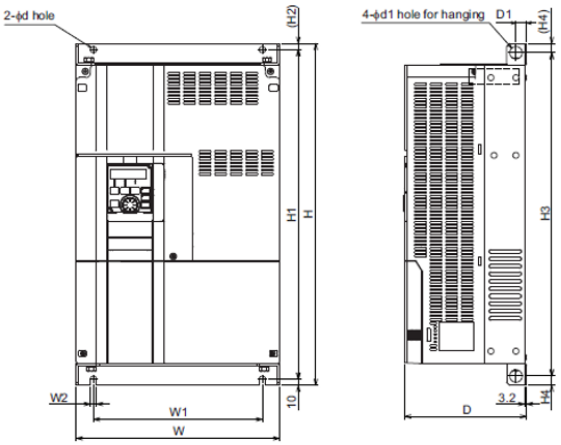
Inverter model	H3	H4	d	d1	D	D1
FR-B-30K	520	15	10	20	195	17

Variable torque type FR-B[][] 200 V class inverters

■ FR-B-37K, 45K (A500 specification)



■ FR-B-37K, 45K (A800 specification)

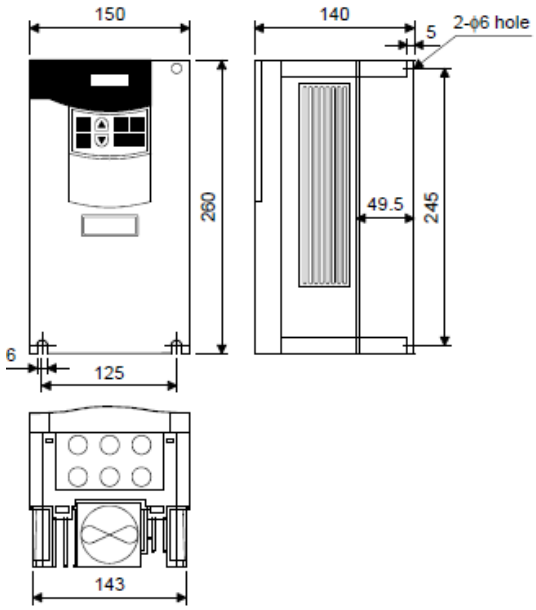


Inverter model	W	W1	W2	H	H1	H2
FR-B-37K, 45K	435	380	12	550	525	15

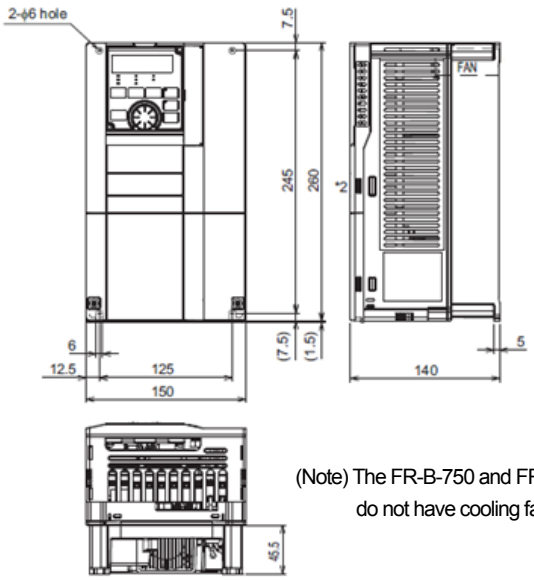
Inverter model	H3	H4	d	d1	D	D1
FR-B-37K, 45K	514	18	12	25	250	24

Outline dimension drawings (Unit: mm)
Variable torque type FR-B[][] 400 V class inverters

■ FR-B-750, 1500, 2200, 3700 (A500 specification)

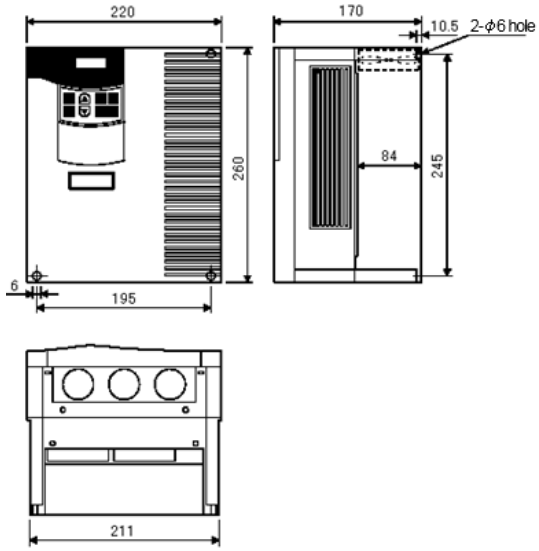


■ FR-B-750, 1500, 2200, 3700 (A800 specification)

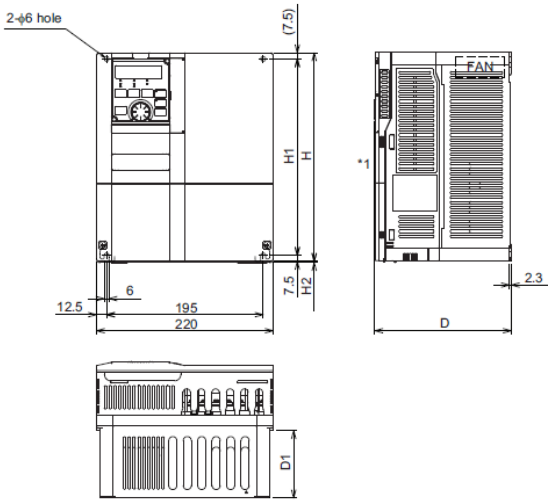


(Note) The FR-B-750 and FR-B-1500 do not have cooling fans.

■ FR-B-7.5K (A500 specification)



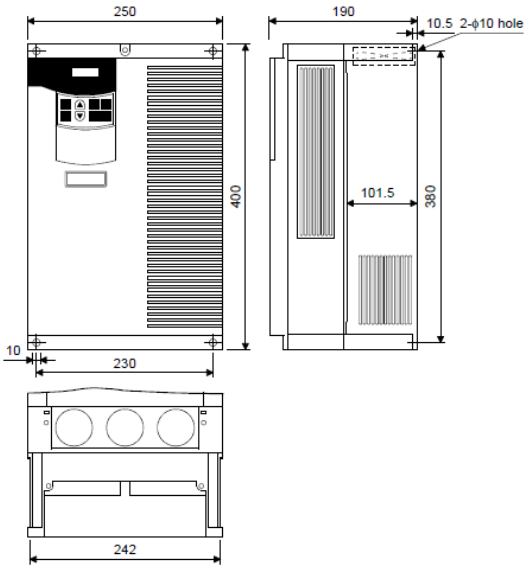
■ FR-B-7.5K (A800 specification)



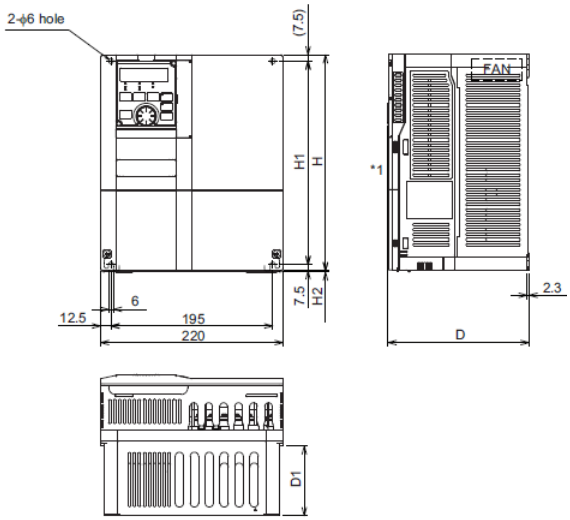
Inverter model	H	H1	H2	D	D1
FR-B-7.5K	260	245	1.5	170	84

Variable torque type FR-B[][] 400 V class inverters

■ FR-B-15K (A500 specification)

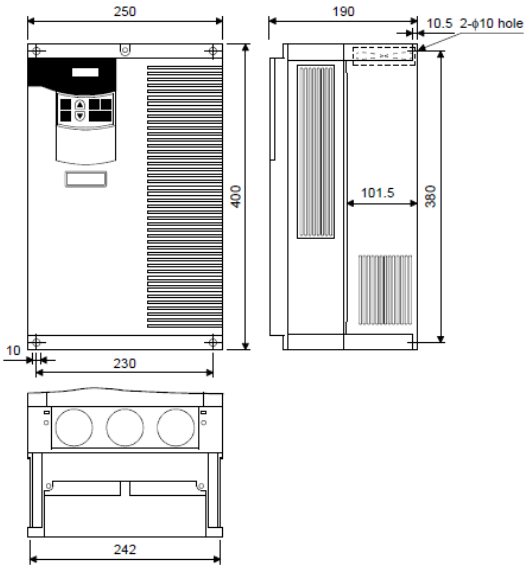


■ FR-B-15K (A800 specification)

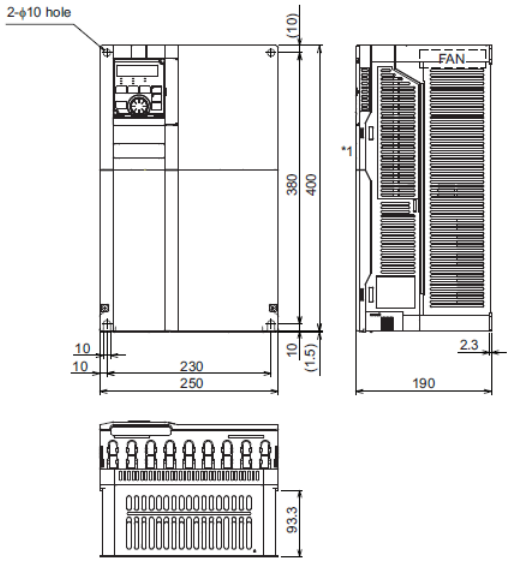


Inverter model	H	H1	H2	D	D1
FR-B-15K	300	285	3	190	101.5

■ FR-B-22K (A500 specification)

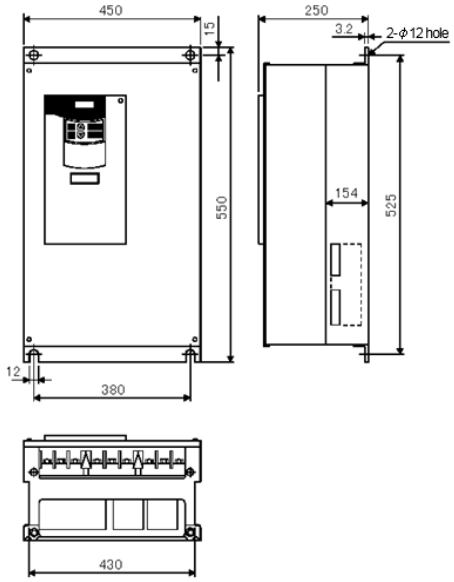


■ FR-B-22K (A800 specification)

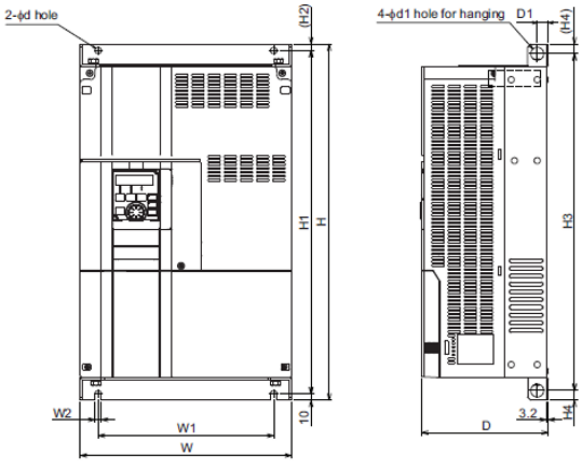


Variable torque type FR-B[][] 400 V class inverters

■ FR-B-37K, 55K (A500 specification)



■ FR-B-37K, 55K (A800 specification)



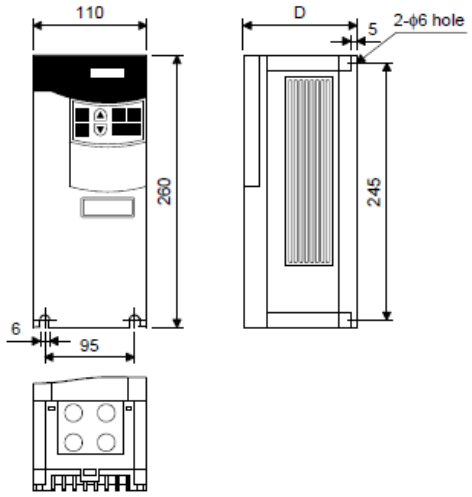
Inverter model	W	W1	W2	H	H1	H2
FR-B-37K, 55K	435	380	12	550	525	15

Inverter model	H3	H4	d	d1	D	D1
FR-B-37K, 55K	514	18	12	25	250	24

Outline dimension drawings (Unit: mm)

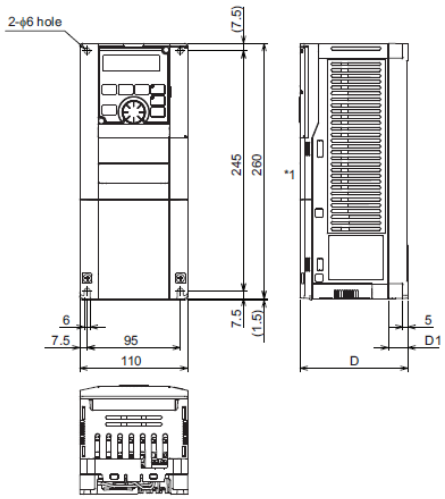
Constant torque type FR-B3-(N)[][] 200 V class inverters

■ FR-B3-(N)400, 750 (A500 specification)



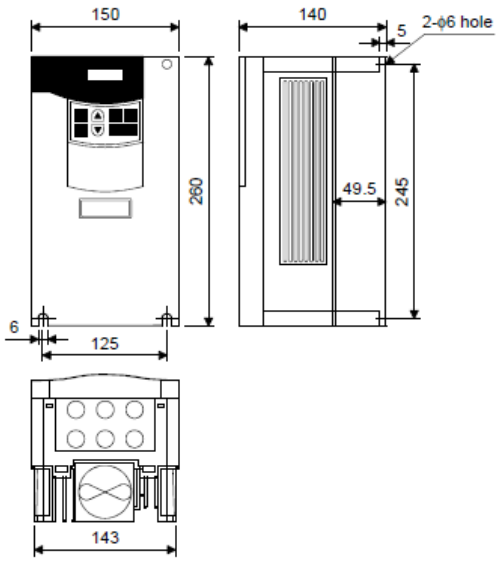
Inverter model	D1
FR-B3-(N)400	110
FR-B3-(N)750	125

■ FR-B3-(N)400, 750 (A800 specification)

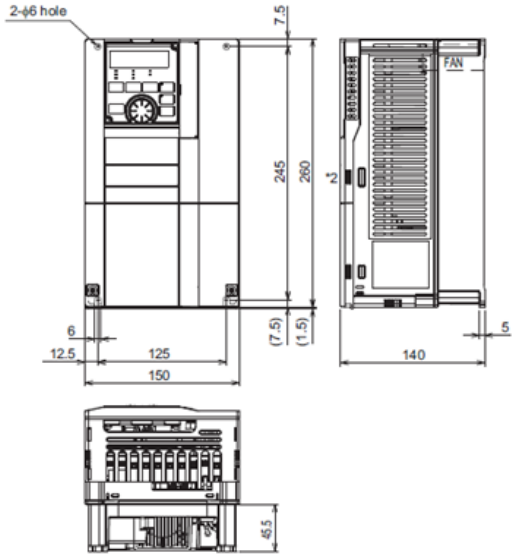


Inverter model	D	D1
FR-B3-(N)400	110	20
FR-B3-(N)750	125	35

■ FR-B3-(N)1500, 2200, 3700 (A500 specification)

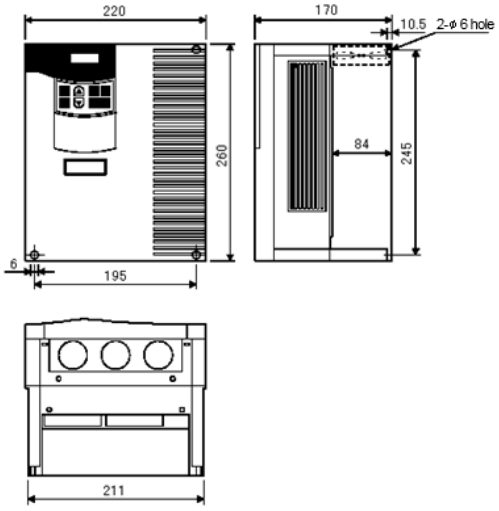


■ FR-B3-(N)1500, 2200, 3700 (A800 specification)

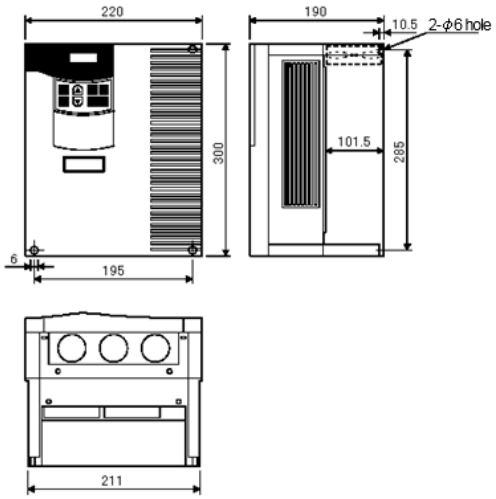


Constant torque type FR-B3-(N)[][] 200 V class inverters

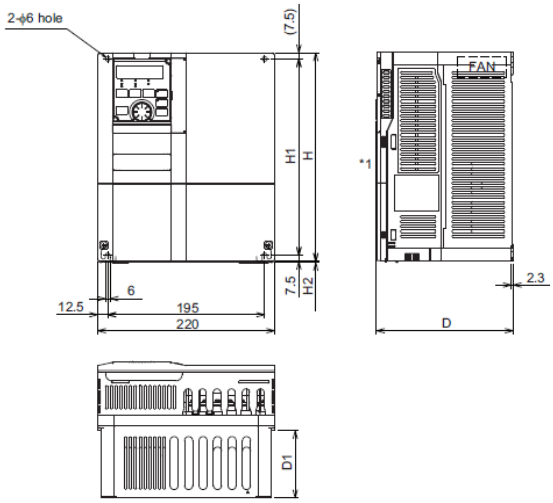
■ FR-B3-(N)5.5K, 7.5K (A500 specification)



■ FR-B3-(N)11K (A500 specification)



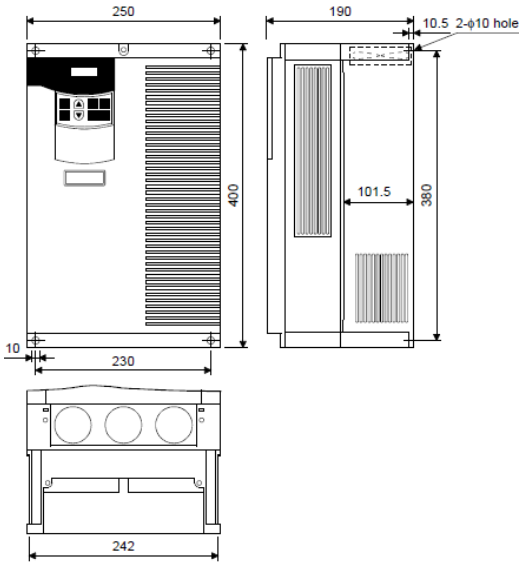
■ FR-B3-(N)5.5K, 7.5K, 11K (A800 specification)



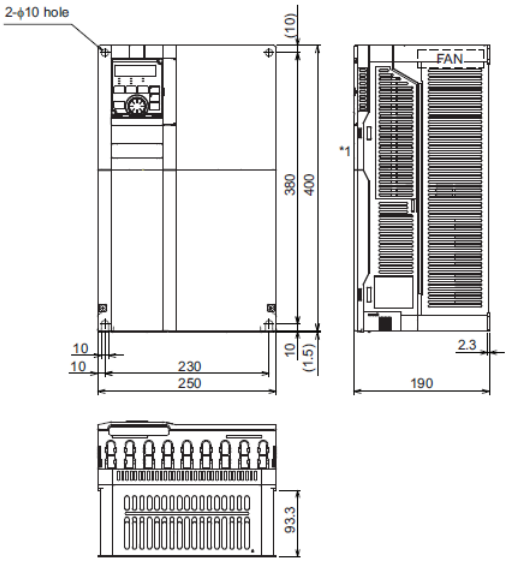
Inverter model	H	H1	H2	D	D1
FR-B3-(N)5.5K, 7.5K	260	245	1.5	170	84
FR-B3-(N)11K	300	285	3	190	101.5

Constant torque type FR-B3-(N)[][] 200 V class inverters

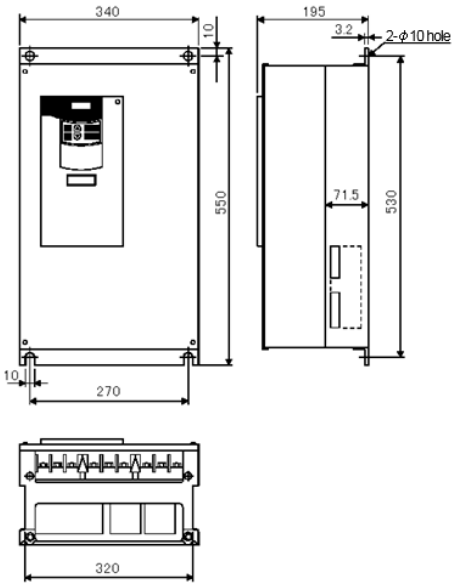
■ FR-B3-(N)15K, 18.5K, 22K (A500 specification)



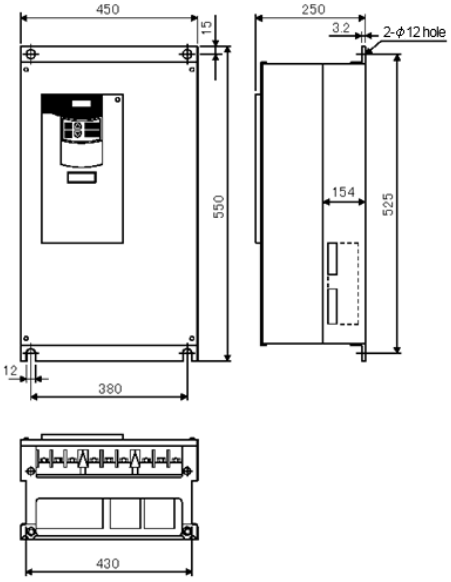
■ FR-B3-(N)15K, 18.5K, 22K (A800 specification)



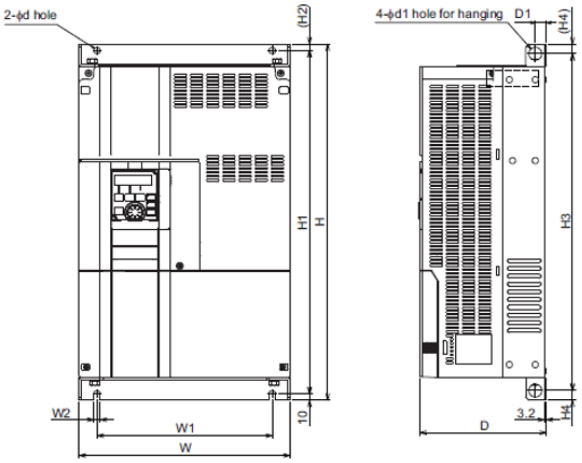
■ FR-B3-(N)30K (A500 specification)



■ FR-B3-(N)37K (A500 specification)



■ FR-B3-(N)30K, 37K (A800 specification)



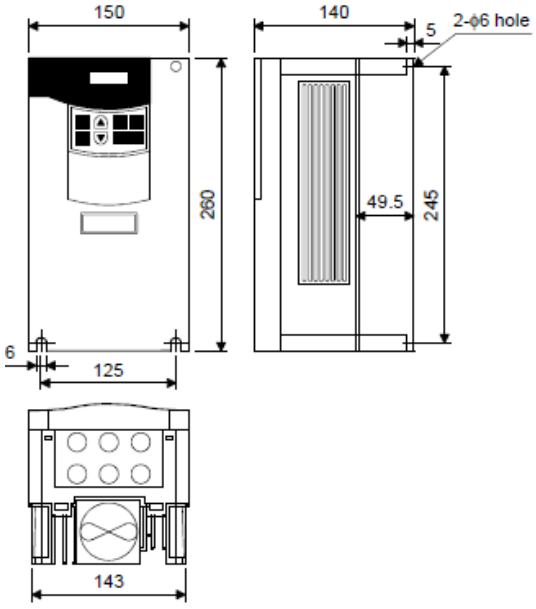
Inverter model	W	W1	W2	H	H1	H2
FR-B3-(N)30K	325	270	10	550	530	10
FR-B3-(N)37K	435	380	12	550	525	15

Inverter model	H3	H4	d	d1	D	D1
FR-B3-(N)30K	520	15	10	20	195	17
FR-B3-(N)37K	514	18	12	25	250	24

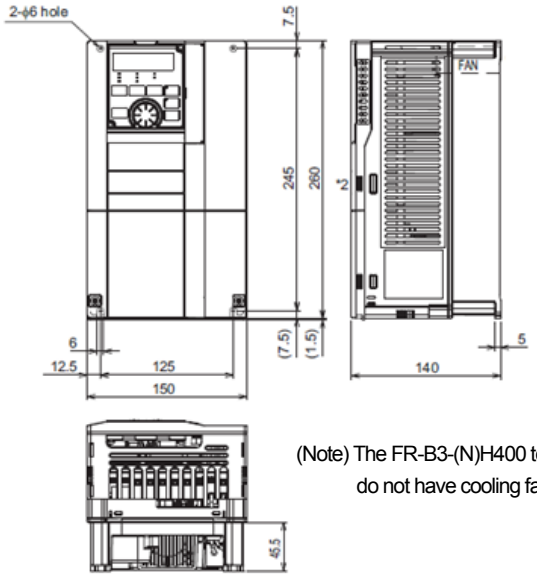
Outline dimension drawings (Unit: mm)

Constant torque type FR-B3-(N)H[][] 400 V class inverters

■ FR-B3-(N)H400, H750, H1500, H2200, H3700 (A500 specification)

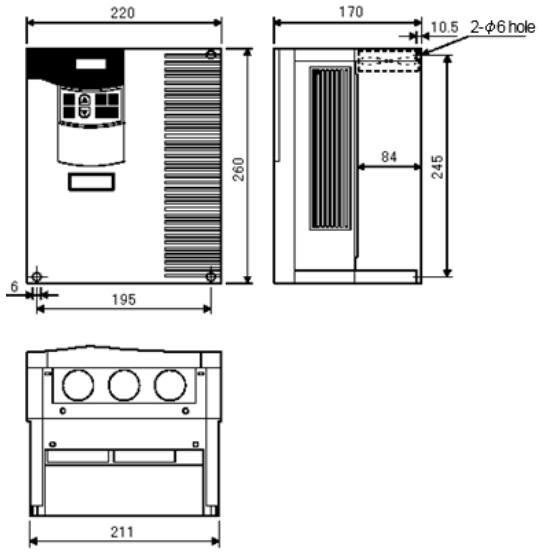


■ FR-B3-(N)H400, H750, H1500, H2200, H3700 (A800 specification)

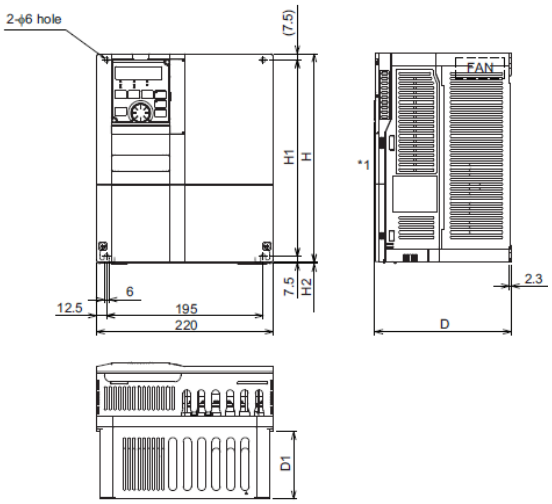


(Note) The FR-B3-(N)H400 to H1500 do not have cooling fans.

■ FR-B3-(N)H5.5K, H7.5K (A500 specification)



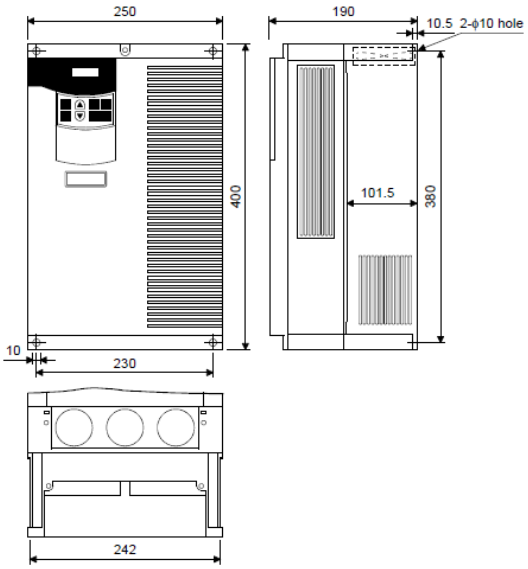
■ FR-B3-(N)H5.5K, H7.5K (A800 specification)



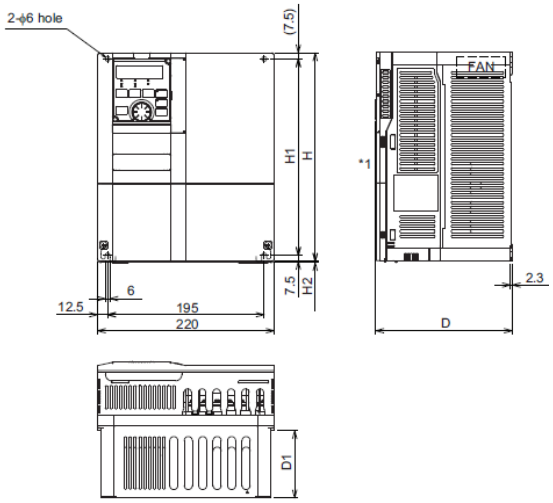
Inverter model	H	H1	H2	D	D1
FR-B3-(N)H5.5K, H7.5K	260	245	1.5	170	84

Constant torque type FR-B3-(N)H[][] 400 V class inverters

■ FR-B3-(N)H11K, H15K (A500 specification)

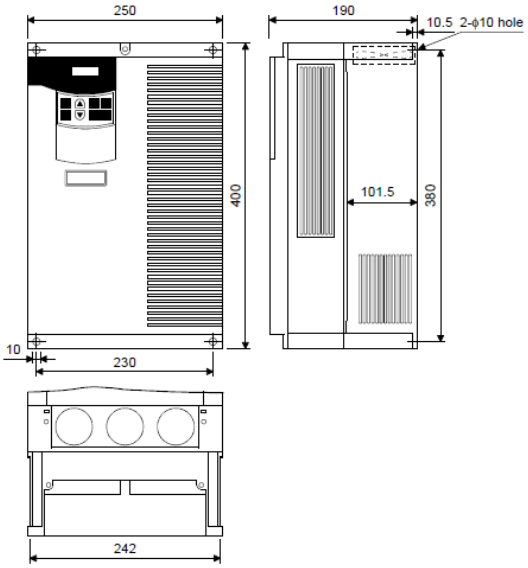


■ FR-B3-(N)H11K, H15K (A800 specification)

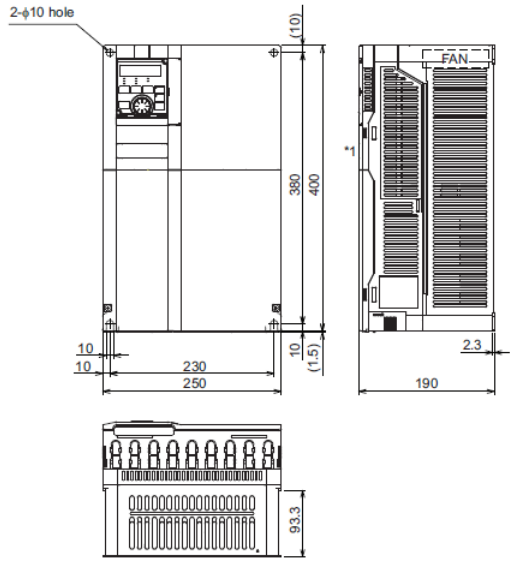


Inverter model	H	H1	H2	D	D1
FR-B3-(N)H11K, H15K	300	285	3	190	101.5

■ FR-B3-(N)H18.5K, H22K (A500 specification)

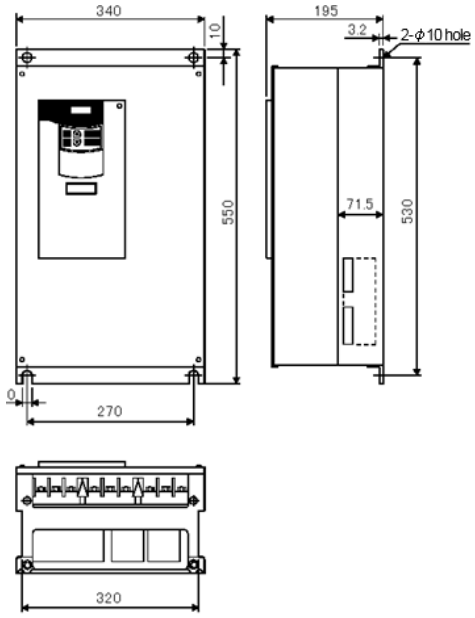


■ FR-B3-(N)H18.5K, H22K (A800 specification)

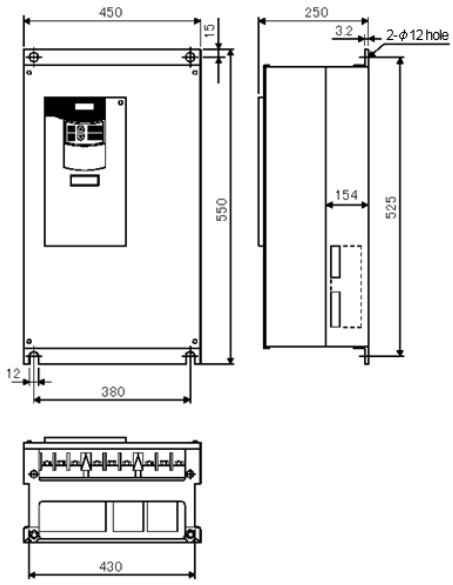


Constant torque type FR-B3-(N)H[][] 400 V class inverters

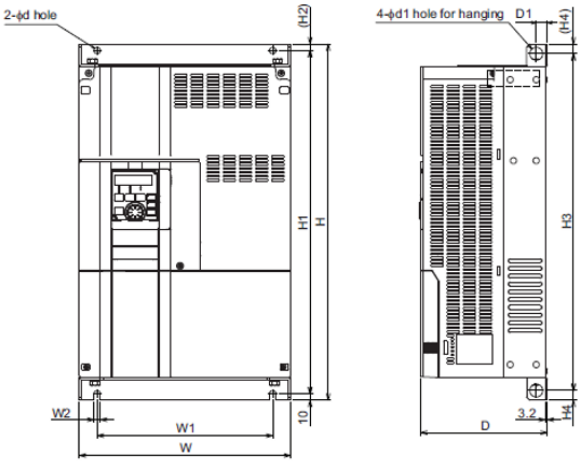
■ FR-B3-(N)H30K (A500 specification)



■ FR-B3-(N)H37K (A500 specification)



■ FR-B3-(N)H30K, H37K (A800 specification)



Inverter model	W	W1	W2	H	H1	H2
FR-B3-(N)H30K	325	270	10	550	530	10
FR-B3-(N)H37K	435	380	12	550	525	15

Inverter model	H3	H4	d	d1	D	D1
FR-B3-(N)H30K	520	15	10	20	195	17
FR-B3-(N)H37K	514	18	12	25	250	24

2. Wiring

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

Type		FR-B, B3 (A500 specification) terminal name	FR-B, B3 (A800 specification) terminal name
Main circuit		R, S, T	R/L1, S/L2, T/L3
		U, V, W	U, V, W
		R1, S1	R1/L11, S1/L21
		P/+, PR	P/+, PR P3, PR*1
		P/+, N/-	P/+, N/- P3, N/-*2
		P/+, P1	P/+, P1
		PR, PX	PR, PX
		⏚	⏚
Control circuit / Input signal	Contact	STF	STF
		STR	STR
		STOP	STP (STOP)
		RH	RH
		RM	RM
		RL	RL
		JOG	JOG
		RT	RT
		AU	AU
		CS	CS
		MRS	MRS
		RES	RES
		SD	SD
		PC	PC
Analog	Frequency setting	10E	10E
		10	10
		2	2
		4	4
		1	1
		5	5
Control circuit output signal	Relay	A, B, C	A1, B1, C1
	Open collector	RUN	RUN
		SU	SU
		OL	OL
		IPF	IPF
		FU	FU
		SE	SE
	Pulse	FM	FM
	Analog	AM	AM
Communication	RS-485	PU connector	PU connector

*1) For 200 V class 15K to 22K and 400 V class 18.5K to 55K inverters of the FR-B, B3 (A800 specification) series, connect the brake resistor between P3 and PR.

*2) For 200 V class 15K to 22K and 400 V class 18.5K to 55K inverters of the FR-B, B3 (A800 specification) series, connect the brake unit between P3 and N/-.

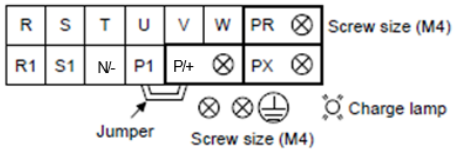
Main circuit terminal layout

The following shows the main circuit terminal layouts of the FR-B, B3 (A500 specification) series and FR-B, B3 (A800 specification) series.
The main circuit terminal layout and the position of the earth (ground) terminal may differ depending on the capacity. Check the terminal names and positions before performing wiring.
When the cable used for the FR-B, B3 (A500 specification) series is too short for the FR-B, B3 (A800 specification) series, prepare a longer one.
The terminal screw size may differ depending on the capacity. Check the terminal screw size before performing wiring.

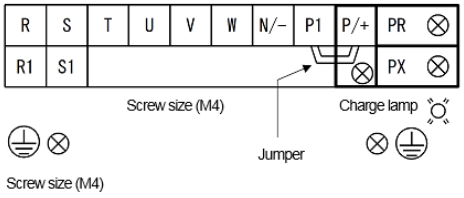
[200 V class]

A500 specification

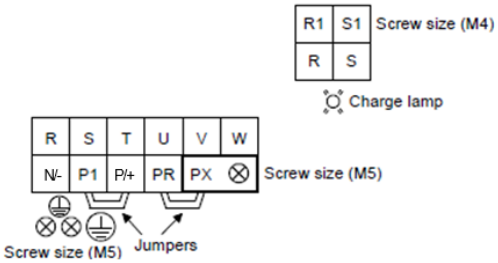
■ FR-B-750
FR-B3-(N)400, 750



■ FR-B-1500, 2200, 3700
FR-B3-(N)1500, 2200, 3700

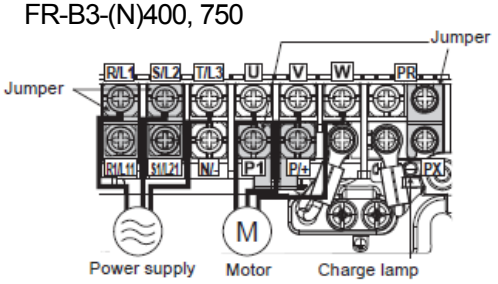


■ FR-B-5.5K, 7.5K
FR-B3-(N)5.5K, 7.5K

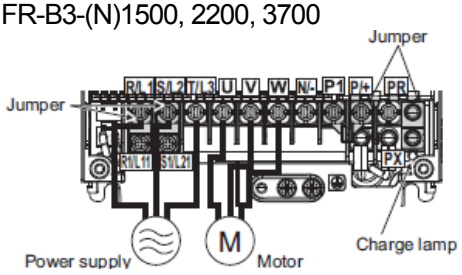


A800 specification

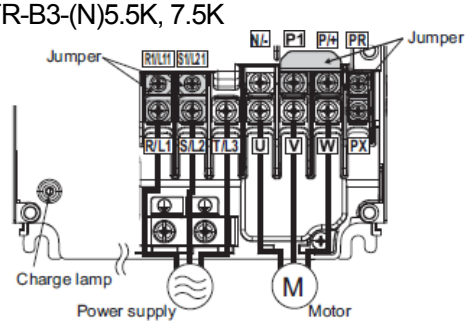
■ FR-B-750
FR-B3-(N)400, 750



■ FR-B-1500, 2200, 3700
FR-B3-(N)1500, 2200, 3700

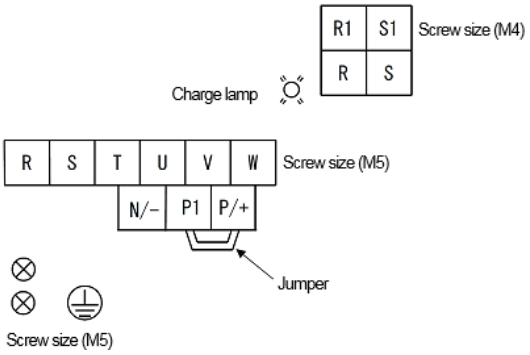


■ FR-B-5.5K, 7.5K
FR-B3-(N)5.5K, 7.5K

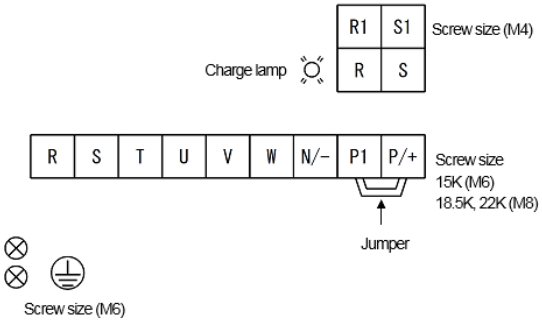


A500 specification

■ FR-B-11K
FR-B3-(N)11K

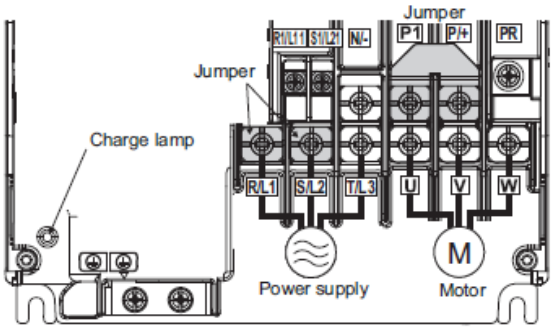


■ FR-B-15K, 22K
FR-B3-(N)15K, 18.5K, 22K

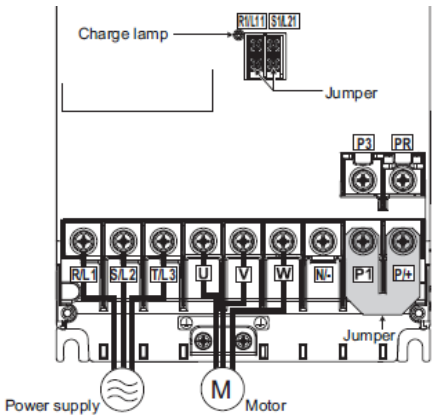


A800 specification

■ FR-B-11K
FR-B3-(N)11K

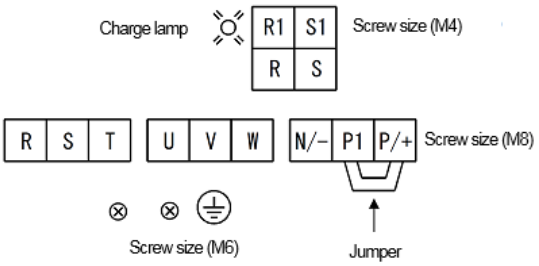


■ FR-B-15K, 22K
FR-B3-(N)15K, 18.5K, 22K

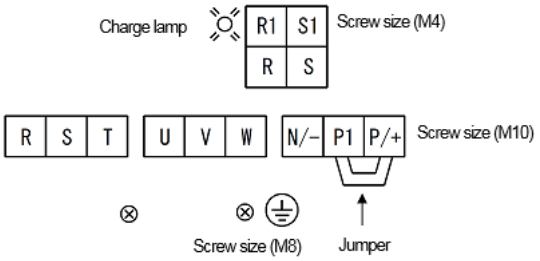


A500 specification

■ FR-B-30K
FR-B3-(N)30K

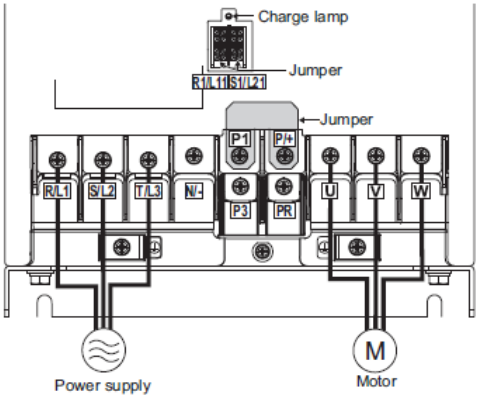


■ FR-B-37K, 45K
FR-B3-(N)37K

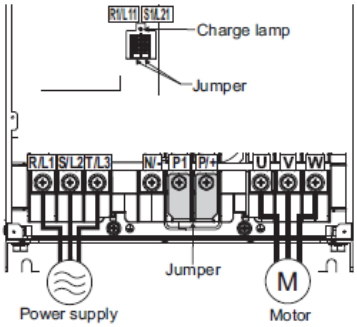


A800 specification

■ FR-B-30K
FR-B3-(N)30K



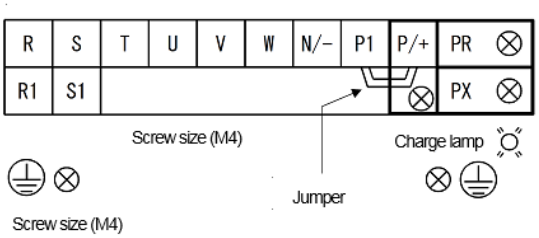
■ FR-B-37K, 45K
FR-B3-(N)37K



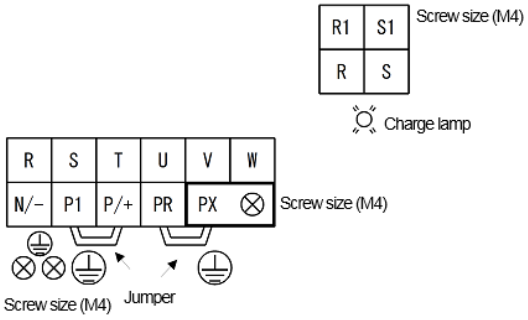
[400 V class]

A500 specification

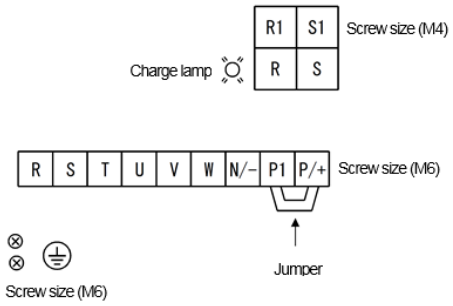
■ FR-B-750, 1500, 2200, 3700
FR-B3-(N)H400, H750, H1500, H2200, H3700



■ FR-B-7.5K
FR-B3-(N)H5.5K, H7.5K

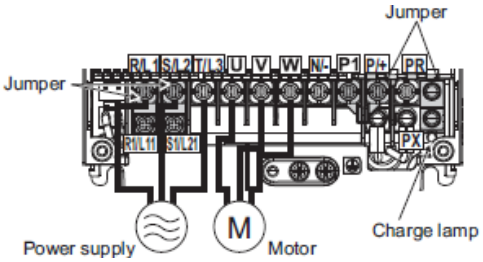


■ FR-B-15K, 22K
FR-B3-(N)H11K, H15K, H18.5K, H22K

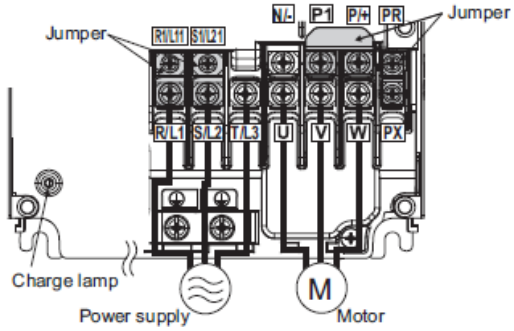


A800 specification

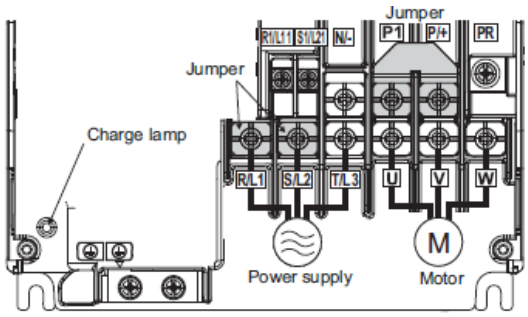
■ FR-B-750, 1500, 2200, 3700
FR-B3-(N)H400, H750, H1500, H2200, H3700



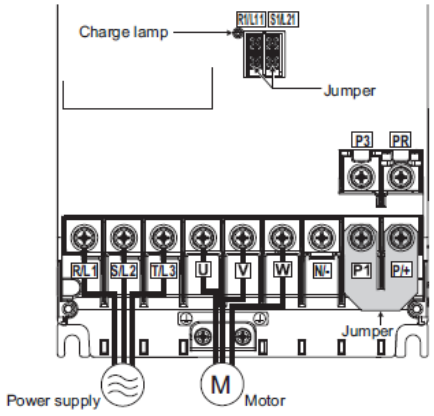
■ FR-B-7.5K
FR-B3-(N)H5.5K, H7.5K



■ FR-B-15K
FR-B3-(N)H11K, H15K

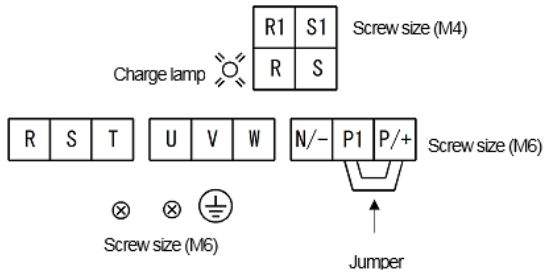


■ FR-B-22K
FR-B3-(N)H18.5K, H22K

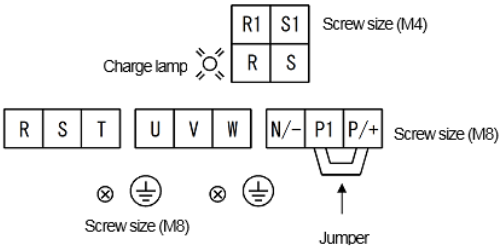


A500 specification

■ FR-B3-(N)H-30K

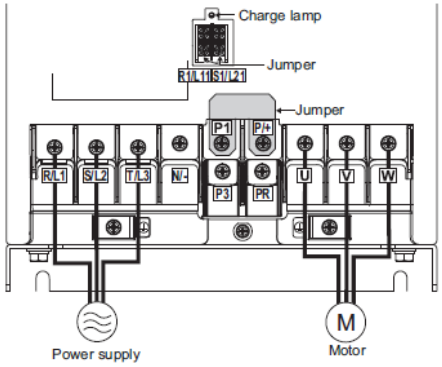


■ FR-B-37K, 55K
FR-B3-(N)H37K

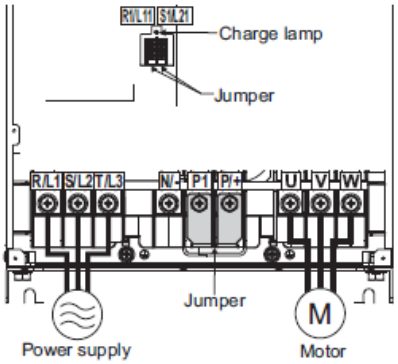


A800 specification

■ FR-B3-(N)H-30K



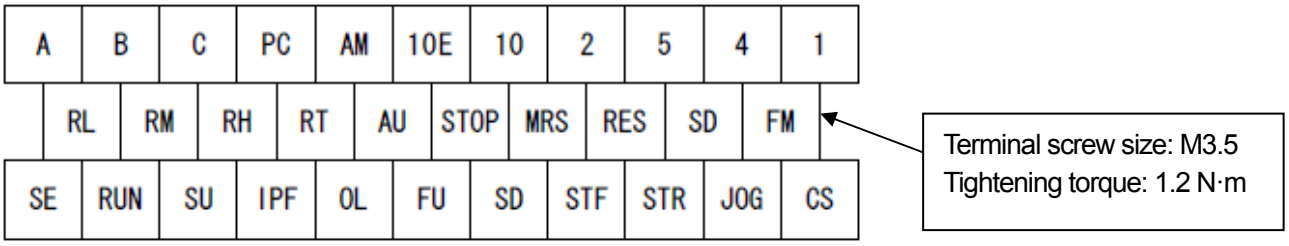
■ FR-B-37K, 55K
FR-B3-(N)H37K



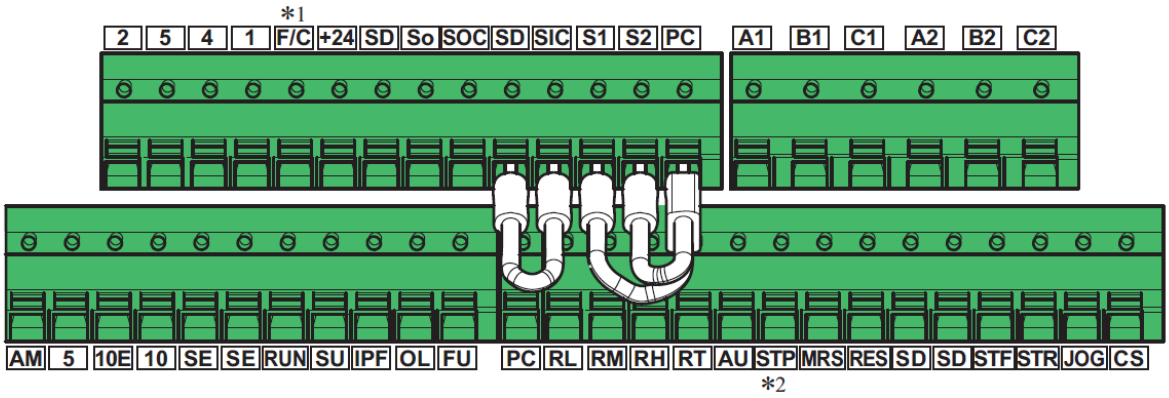
Control circuit terminal layout

The following shows the control circuit terminal layouts of the FR-B, B3 (A500 specification) series and FR-B, B3 (A800 specification) series.
The control circuit terminal layout differs between the FR-B, B3 (A500 specification) series and FR-B, B3 (A800 specification) series. Check the terminal names and locations before performing wiring.

■ Control circuit terminal layout of the FR-B, B3 (A500 specification) series



■ Control circuit terminal layout of the FR-B, B3 (A800 specification) series



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

The control circuit terminal block intercompatibility attachment (FR-A8TAT) can be used for installing control circuit terminal blocks of the FR-B, B3 (A500 specification) series. However, some restrictions apply for the installation. Refer to the FR-A8TAT Instruction Manual.

◆Wiring method

• Power supply connection

For the control circuit wiring, strip off the sheath of a cable, and use it with a blade terminal. For a single wire, strip off the sheath of the wire and apply directly.

Insert the blade terminal or the single wire into a socket of the terminal.

(1)Strip off the sheath for the below length. If the length of the sheath peeled is too long, a short circuit may occur with neighboring wires. If the length is too short, wires might come off.

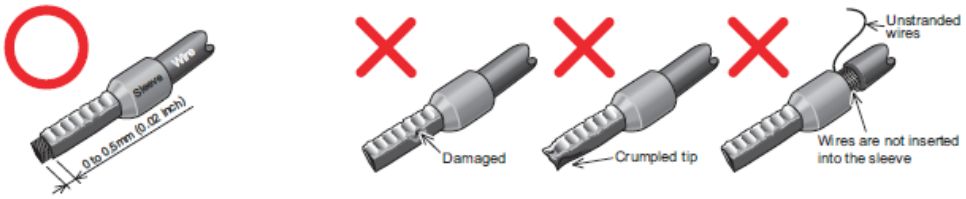
Wire the stripped cable after twisting it to prevent it from becoming loose. In addition, do not solder it.

Cable stripping size

(2)Crimp the blade terminal.

Insert wires to a blade terminal, and check that the wires come out for about 0 to 0.5 mm from a sleeve.

Check the condition of the blade terminal after crimping. Do not use a blade terminal of which the crimping is inappropriate, or the face is damaged.



• Blade terminals commercially available (as of February 2012)

Phoenix Contact Co., Ltd.

Cable gauge (mm^2)	Blade terminal model			Crimping tool name
	With insulation sleeve	Without insulation sleeve	For UL wire*1	
0.3	AI 0,5-10WH	—	—	CRIMPFOX 6
0.5	AI 0,5-10WH	—	AI 0,5-10WH-GB	
0.75	AI 0,75-10GY	A 0,75-10	AI 0,75-10GY-GB	
1	AI 1-10RD	A 1-10	AI 1-10RD/1000GB	
1.25, 1.5	AI 1,5-10BK	A 1,5-10	AI 1,5-10BK/1000GB*2	
0.75 (for two wires)	AI-TWIN 2 × 0,75-10GY	—	—	

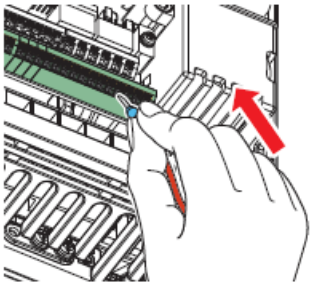
*1 A blade terminal with an insulation sleeve compatible with the MTW wire which has a thick wire insulation.

*2 Applicable for the terminal A1, B1, C1, A2, B2, C2.

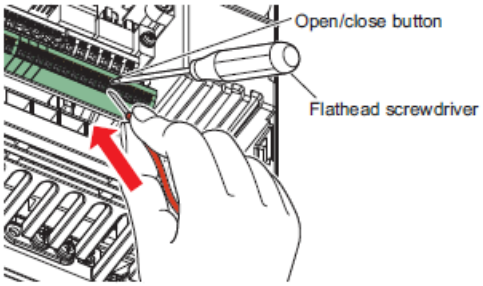
NICHIFU Co., Ltd.

Cable gauge (mm^2)	Blade terminal product number	Insulation product number	Crimping tool product number
0.3 to 0.75	BT 0.75-11	VC 0.75	NH 69

(3)Insert the wires into a socket.



When using a single wire or stranded wires without a blade terminal, push the open/close button all the way down with a flathead screwdriver, and insert the wire.



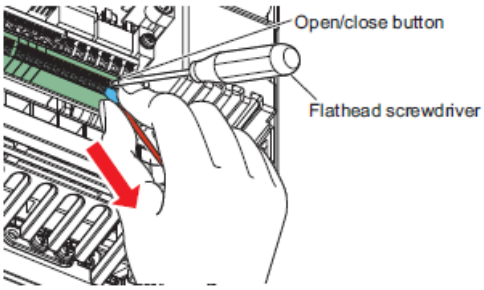
NOTE

• When using stranded wires without a blade terminal, twist enough to avoid short circuit with a nearby terminals or wires.

• Place the flathead screwdriver vertical to the open/close button. In case the blade tip slips, it may cause an inverter damage or injury.

• Wire removal

Pull the wire while pushing the open/close button all the way down firmly with a flathead screwdriver.



NOTE

- Pulling out the wire forcefully without pushing the open/close button all the way down may damage the terminal block.
- Use a small flathead screwdriver (tip thickness: 0.4 mm/tip width: 2.5 mm).
  If a flathead screwdriver with a narrow tip is used, terminal block may be damaged.
  Commercially available products (as of February 2012)

Name	Model	Manufacturer
Driver	SZF 0- 0,4 × 2,5	Phoenix Contact Co., Ltd.

- Place the flathead screwdriver vertical to the open/close button. In case the blade tip slips, it may cause an inverter damage or injury.

3. Parameter

3.1 Parameter list

Note that some parameter numbers and setting values differ. Refer to the following table to set the parameters.

List of FR-B, B3 (A800 specification) series parameters compatible with the FR-B, B3 (A500 specification) series

The following table shows the parameter settings required when replacing an FR-B, B3 (A500 specification) series inverter by an FR-B, B3 (A800 specification) series inverter.
When an FR-B, B3 (A500 specification) series parameter is set to a value other than the initial value, set the corresponding FR-B, B3 (A800 specification) series parameter according to the following table.
When an FR-B, B3 (A500 specification) series parameter is set to an initial value, it is usually not necessary to change the corresponding FR-B, B3 (A800 specification) series parameter setting.

The parameter number of the ▭ parameters differs from that of the FR-B, B3 (A500 specification) series.

Setting
◎: Use the same setting of the A500 specification model.
△: Change the setting of the A500 specification model as needed.
×: Adjust and set the A800 specification model parameters independently.

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
						0	Torque boost	0% to 30%		2% / 1.5%	6% / 4% / 3% / 2%		Do not change the setting.
1	Maximum frequency	0 to 120 Hz / 0 to 60 Hz	0 to 120 Hz	60 Hz	120 Hz	1	Maximum frequency	0 to 120 Hz		60 Hz	120 Hz	◎	FR-B: Set a value from 0 to 60 (Hz) in 30K or higher
2	Minimum frequency	0 to 120 Hz / 0 to 60 Hz	0 to 120 Hz	0 Hz		2	Minimum frequency	0 to 120 Hz		0 Hz		◎	
						3	Base frequency	0 to 590 Hz		60 Hz			Do not change the setting.
4	Multi-speed setting (high speed)	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	60 Hz		4	Multi-speed setting (high speed)	0 to 590 Hz		60 Hz		◎	
5	Multi-speed setting (middle speed)	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	30 Hz		5	Multi-speed setting (middle speed)	0 to 590 Hz		30 Hz		◎	
6	Multi-speed setting (low speed)	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	10 Hz		6	Multi-speed setting (low speed)	0 to 590 Hz		10 Hz		◎	
7	Acceleration time	0 to 3600 s / 0 to 360 s		5 s / 15 s		7	Acceleration time	0 to 3600 s		5 s / 15 s		◎	Changing Pr.21 after setting this parameter will change the set value.
8	Deceleration time	0 to 3600 s / 0 to 360 s		5 s / 15 s		8	Deceleration time	0 to 3600 s		5 s / 15 s		◎	Changing Pr.21 after setting this parameter will change the set value.
9	Electronic thermal O/L relay	0 to 500 A		Rated output current		9	Electronic thermal O/L relay	0 to 500 A		Rated output current		◎	Set the rated motor current.
10	DC injection brake operation frequency	—	0 to 120 Hz, 9999	—	3 Hz	10	DC injection brake operation frequency	0 to 120 Hz, 9999		3 Hz	3 Hz		FR-B: Do not change the setting.
11	DC injection brake operation time	0, 0.5 s	0 to 10 s, 8888	0.5 s		11	DC injection brake operation time	0 to 10 s, 8888		0.5 s	0.5 s	◎	FR-B: Select "0.5 s" or "0 s".
12	DC injection brake voltage	—	0% to 30%	—	4% / 2%	12	DC injection brake operation voltage	0% to 30%		4% / 2%	4% / 2%		FR-B: Do not change the setting.
13	Starting frequency	0 to 60 Hz		0.5 Hz		13	Starting frequency	0 to 60 Hz		0.5 Hz		◎	
						14	Load pattern selection	0 to 5, 12 to 15		0			Do not change the setting.
15	Jog frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	5 Hz		15	Jog frequency	0 to 590 Hz		5 Hz		◎	
16	Jog acceleration/deceleration time	0 to 3600 s / 0 to 360 s		0.5 s		16	Jog acceleration/deceleration time	0 to 3600 s		0.5 s		◎	Changing Pr.21 after setting this parameter will change the set value.
17	MRS input selection	0, 2		0		17	MRS input selection	0, 2, 4		0		◎	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
						18	High speed maximum frequency	0 to 590 Hz		60 Hz (30K or higher)	120 Hz		Do not change the setting. FR-B: Maximum 60 Hz in 30K or higher
						19	Base frequency voltage	0 to 1000 V, 8888, 9999		220/440 V	9999		Do not change the setting.
20	Acceleration/deceleration reference frequency	1 to 120 Hz / 1 to 60 Hz	1 to 400 Hz	60 Hz		20	Acceleration/deceleration reference frequency	1 to 590 Hz		60 Hz		◎	
21	Acceleration/deceleration time increments	0, 1		0		21	Acceleration/deceleration time increments	0, 1		0		◎	
22	Stall prevention operation level	0% to 200%, 9999		150%		22	Stall prevention operation level	0% to 400%		150%		◎	When "9999" is set in A500 specification model, set Pr.858 and Pr.868 in A800 specification model.
23	Stall prevention operation level compensation factor at double speed	0% to 200%, 9999		9999		23	Stall prevention operation level compensation factor at double speed	0% to 200%, 9999		9999		◎	
24	Multi-speed setting (speed 4)	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		24	Multi-speed setting (speed 4)	0 to 590 Hz, 9999		9999		◎	
25	Multi-speed setting (speed 5)	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		25	Multi-speed setting (speed 5)	0 to 590 Hz, 9999		9999		◎	
26	Multi-speed setting (speed 6)	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		26	Multi-speed setting (speed 6)	0 to 590 Hz, 9999		9999		◎	
27	Multi-speed setting (speed 7)	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		27	Multi-speed setting (speed 7)	0 to 590 Hz, 9999		9999		◎	
28	Multi-speed input compensation	0, 1		0		28	Multi-speed input compensation selection	0, 1		0		◎	
29	Acceleration/deceleration pattern selection	0, 1, 2, 3		0		29	Acceleration/deceleration pattern selection	0 to 6		0		◎	
30	Regenerative function selection	—	0, 1, 2	—	0	30	Regenerative function selection	0 to 2, 10, 11, 20, 21, 100 to 102, 110, 111, 120, 121		0		△	The setting value must be within the setting range. FR-B: "0, 1, 100, 101" in 55K or lower FR-B3: "0, 1, 100, 101" (Do not set "2" since the A500 specification model has not passed an explosion-proof test when using the high power factor converter (FR-HC) or the power regeneration common converter (FR-CV).)
31	Frequency jump 1A	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		31	Frequency jump 1A	0 to 590 Hz, 9999		9999		◎	
32	Frequency jump 1B	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		32	Frequency jump 1B	0 to 590 Hz, 9999		9999		◎	
33	Frequency jump 2A	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		33	Frequency jump 2A	0 to 590 Hz, 9999		9999		◎	
34	Frequency jump 2B	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		34	Frequency jump 2B	0 to 590 Hz, 9999		9999		◎	
35	Frequency jump 3A	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		35	Frequency jump 3A	0 to 590 Hz, 9999		9999		◎	
36	Frequency jump 3B	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		36	Frequency jump 3B	0 to 590 Hz, 9999		9999		◎	
37	Speed display	0, 1 to 9998		0		37	Speed display	0, 1 to 9998		0		◎	When the machine speed display is selected in the parameter frequency setting, select the frequency display to change the setting. After the setting, select the machine speed display again.

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
41	Up-to-frequency sensitivity	0% to 100%		10%		41	Up-to-frequency sensitivity	0% to 100%		10%		◎	
42	Output frequency detection	0 to 120 Hz / 0 to 60 Hz	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 120 Hz / 0 to 60 Hz, 9999	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		44	Second acceleration/deceleration time	0 to 3600 s		5 s		◎	Changing Pr.21 after setting this parameter will change the set value.
45	Second deceleration time	0 to 3600 s / 0 to 360 s, 9999		9999		45	Second deceleration time	0 to 3600 s, 9999		9999		◎	Changing Pr.21 after setting this parameter will change the set value.
						46	Second torque boost	0% to 30%, 9999		9999			Do not change the setting.
						47	Second V/F (base frequency)	0 to 590 Hz, 9999		9999			Do not change the setting.
48	Second stall prevention operation current	0% to 200%		150%		48	Second stall prevention operation level	0% to 400%		150%		◎	
49	Second stall prevention operation frequency	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	0 Hz		49	Second stall prevention operation frequency	0 to 590 Hz, 9999		0 Hz		◎	
50	Second output frequency detection	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	30 Hz		50	Second output frequency detection	0 to 590 Hz		30 Hz		◎	
52	DU/PU main display data selection	0 to 20, 22, 23, 24, 25, 100		0		52	Operation panel main monitor selection	0, 5 to 14, 17 to 20, 22 to 35, 38, 40 to 45, 50 to 57, 61, 62, 64, 67, 87 to 98, 100		0		◎	
53	PU level display data selection	0 to 3, 5 to 14, 17, 18		1		—	—	—	—	—	—	×	This function was deleted for the A800 specification model.
54	FM terminal function selection	1 to 3, 5 to 14, 17, 18, 21		1		54	FM/CA terminal function selection	1 to 3, 5 to 14, 17, 18, 21, 24, 32 to 34, 50, 52, 53, 61, 62, 67, 70, 87 to 90, 92, 93, 95, 97, 98		1		◎	
55	Frequency monitoring reference	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	60 Hz		55	Frequency monitoring reference	0 to 590 Hz		60 Hz		◎	
56	Current monitoring reference	0 to 500 A		Rated output current		56	Current monitoring reference	0 to 500 A / 0 to 3600 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		◎	If the CS signal is not assigned to any input terminal, the restart operation is enabled at all times by setting Pr.57 in the A800 specification model.
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		◎	
						60	Energy saving control selection	0, 4, 9		0			Do not change the setting.
60	Intelligent mode selection	—	0 to 8	—	0	292	Automatic acceleration/deceleration	0, 1, 3, 5 to 8, 11		0		△	FR-B: Do not change the setting. FR-B3: Lift operation (Pr.292 ="5 or 6") is disabled. Pr.639, Pr.640, and Pr.641 settings for the A800 specification model must be the initial values to perform the same operation as the one of the A500 specification model when Pr.292 = "7 or 8" (brake sequence mode). "2" is not available for the A800 specification model. Set Pr.62 and Pr.63.

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
61	Reference I for intelligent mode	—	0 to 500 A, 9999	—	9999	61	Reference current	0 to 500 A, 9999		9999		◎	FR-B3: Set Pr.292.
62	Ref. I for intelligent mode accel.	—	0% to 200%, 9999	—	9999	62	Reference value at acceleration	0% to 400%, 9999		9999		◎	
63	Ref. I for intelligent mode decel.	—	0% to 200%, 9999	—	9999	63	Reference value at deceleration	0% to 400%, 9999		9999		◎	
65	Retry selection	0 to 5		0		65	Retry selection	0 to 5		0		◎	
66	Stall prevention operation level reduction starting frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	60 Hz		66	Stall prevention operation reduction starting frequency	0 to 590 Hz		60 Hz		◎	
67	Number of retries at alarm occurrence	0 to 10, 101 to 110		0		67	Number of retries at fault occurrence	0 to 10, 101 to 110		0		◎	
68	Retry waiting time	0 to 10 s		1 s		68	Retry waiting time	0 to 600 s		1 s		◎	
69	Retry count display erasure	0		0		69	Retry count display erase	0		0		◎	
70	Special regenerative brake duty	—	0% to 15% / 0% to 30% 0%	—	0%	70	Special regenerative brake duty	0% to 100%		0%		△	Do not change the setting to perform the same operation as the one of the FR-B (A500 specification).
71	Applied motor	0, 1	0 to 8, 13 to 18, 20, 23, 24	0		71	Applied motor	0 to 6, 13 to 16, 20, 23, 24, 30, 33, 34, 40, 43, 44, 50, 53, 54, 70, 73, 74, 330, 333, 334, 8090, 8093, 8094, 9090, 9093, 9094		0	13	△	The setting value must be within the setting range. FR-B: "0, 1" FR-B3: Do not change the setting.
						72	PWM frequency selection	0 to 15		1	2: FR-B3 15: FR-B3N	◎	The setting value must be within the setting range. FR-B: "1 to 15" in 55K or lower. The setting is fixed at the initial value even when "2 to 15" is set. FR-B3: Do not change the setting.
73	0-5V/0-10V selection	0 to 5, 10 to 15		1		73	Analog input selection	0 to 7, 10 to 17		1		◎	
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		◎	
76	Alarm code output selection	0, 1, 2, 3		0		76	Fault code output selection	0, 1, 2		0		△	"3" (output during programmed operation) cannot be set for the A800 specification model.
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 8		0		79	Operation mode selection	0 to 4, 6 to 7		0		△	When "8" is set for the A500 specification model, set "0" for the A800 specification model.
80	Motor capacity	—	0.4 to 55 kW, 9999	—	9999	80	Motor capacity	0.4 to 55 kW, 9999		9999	Inverter capacity		Do not change the setting.
81	Number of motor poles	—	2, 4, 6, 12, 14, 16, 9999	—	9999	81	Number of motor poles	2, 4, 6, 8, 10, 12, 9999		9999	4		Do not change the setting.
82	Motor exciting current	—	0 to , 9999	—	9999	82	Motor excitation current	0 to 500 A, 9999		9999	Tuning data		Do not change the setting.

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
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		◎	FR-B3: When "9999" is set, the rated motor frequency is determined by Pr.3 setting (initial setting: 60 Hz).
						85	Excitation current break point	0 to 400 Hz, 9999		9999	Tuning data		Do not change the setting
						86	Excitation current low-speed scaling factor	0% to 300%, 9999		9999			
89	Speed control gain	—	0% to 200.0%	—	100%	89	Speed control gain	0% to 200%, 9999		9999			
90	Motor constant (R1)	—	0 to , 9999	—	9999	90	Motor constant (R1)	0 to 50 Ω, 9999		9999			Do not change the setting.
91	Motor constant (R2)	—	0 to , 9999	—	9999	91	Motor constant (R2)	0 to 50 Ω, 9999		9999			
92	Motor constant (L1)	—	0 to , 9999	—	9999	92	Motor constant (L1)	0 to 50 Ω (0 to 1000 mH), 9999		9999			
93	Motor constant (L2)	—	0 to , 9999	—	9999	93	Motor constant (L2)	0 to 50 Ω (0 to 1000 mH), 9999		9999			
94	Motor constant (X)	—	0 to , 9999	—	9999	94	Motor constant (X)	0% to 100%, 9999		9999			
						95	Online auto tuning selection	0 to 2		0			Do not change the setting.
96	Auto tuning setting/status	—	0, 1, 101	—	0	96	Auto tuning setting/status	0, 1, 11, 101		0		◎	When using the FR-B3, perform offline auto tuning with motor rotation and drive the motor under Advanced magnetic flux vector control. FR-B: Do not change the setting. **FR-B3: Set "101" to perform tuning.**
						100 to 109	Adjustable 5 points V/F	0 to 590 Hz, 9999, 0 to 1000 V		Depending on capacity			Do not change the setting. The adjustable 5 points V/F is enabled regardless of Pr.71 setting.
110	Third acceleration/deceleration time	0 to 3600 s / 0 to 360 s, 9999		9999		110	Third acceleration/deceleration time	0 to 3600 s, 9999		9999		◎	Changing Pr.21 after setting this parameter will change the set value.
111	Third deceleration time	0 to 3600 s / 0 to 360 s, 9999		9999		111	Third deceleration time	0 to 3600 s, 9999		9999		◎	Changing Pr.21 after setting this parameter will change the set value.
						112	Third torque boost	0% to 30%, 9999		9999			Do not change the setting.
						113	Third V/F (base frequency)	0 to 590 Hz, 9999		9999			Do not change the setting.
114	Third stall prevention operation current	0% to 200%		150%		114	Third stall prevention operation level	0% to 400%		150%		◎	
115	Third stall prevention operation frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	0		115	Third stall prevention operation frequency	0 to 590 Hz		0		◎	
116	Third output frequency detection	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 400 Hz, 9999	9999		116	Third output frequency detection	0 to 590 Hz		60 Hz		△	The initial value has been changed to 60 Hz for the A800 specification.
117	Station number	0 to 31		0		117	PU communication station number	0 to 31		0		◎	
118	Communication speed	48, 96, 192		192		118	PU communication speed	48, 96, 192, 384		192		◎	
119	Stop bit length	0, 1, 10, 11		1		119	PU communication stop bit length / data 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		9999		◎	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
123	Waiting time setting	0 to 150 ms, 9999		9999		123	PU communication waiting time setting	0 to 150 ms, 9999		9999		◎	
124	CR·LF presence/absence selection	0, 1, 2		1		124	PU communication CR/LF selection	0, 1, 2		1		◎	
128	PID action selection	10, 11, 20, 21		10		128	PID action selection	0, 10, 11, 20, 21, 40 to 43, 50, 51, 60, 61, 70, 71, 80, 81, 90, 91, 100, 101, 1000, 1001, 1010, 1011, 2000, 2001, 2010, 2011		0		△	When "14" (X14 signal) is not set in any parameter from Pr.178 to Pr.189, or when PID control is not used even if "14" (X14 signal) is set in any parameter from Pr.178 to Pr.189 in the A500 specification model, set "0" in Pr.128 in the A800 specification model. Even if the X14 signal is not assigned to any input terminal, the PID control is enabled by setting Pr.128 in the A800 specification model.
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		◎	
133	PID action set point for PU operation	0% to 100%		0%		133	PID action set point	0% to 100%, 9999		9999		△	
134	PID differential time	0.01 to 10.00 s, 9999		9999		134	PID differential time	0.01 to 10.00 s, 9999		9999		◎	
						135	Electronic bypass sequence selection	0, 1		0			Do not change the setting.
140	Backlash acceleration stopping frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	1.00 Hz		140	Backlash acceleration stopping frequency	0 to 590 Hz		1.00 Hz		◎	
141	Backlash acceleration stopping time	0 to 360 s		0.5 s		141	Backlash acceleration stopping time	0 to 360 s		0.5 s		◎	
142	Backlash deceleration stopping frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz	1.00 Hz		142	Backlash deceleration stopping frequency	0 to 590 Hz		1.00 Hz		◎	
143	Backlash deceleration stopping time	0 to 360 s		0.5 s		143	Backlash deceleration stopping time	0 to 360 s		0.5 s		◎	
144	Speed setting switchover	0, 2, 4, 6, 8, 10, 102, 104, 106, 108, 110		4		144	Speed setting switchover	0, 2, 4, 6, 8, 10, 12, 102, 104, 106, 108, 110, 112		4		◎	
148	Stall prevention level at 0V input	0% to 200%		150%		148	Stall prevention level at 0 V input	0% to 400%		150%		◎	
149	Stall prevention level at 10V input	0% to 200%		200%		149	Stall prevention level at 10 V input	0% to 400%		200%		◎	
150	Output current detection level	0% to 200%		150%		150	Output current detection level	0% to 400%		150%		◎	
151	Output current detection period	0 to 10 s		0		151	Output current detection signal delay time	0 to 10 s		0		◎	
152	Zero current detection level	0% to 200.0%		5.0%		152	Zero current detection level	0% to 400%		5.0%		◎	
153	Zero current detection period	0 to 1 s		0.5 s		153	Zero current detection time	0 to 10 s		0.5 s		◎	
154	Voltage reduction selection during stall prevention operation	0, 1		1		154	Voltage reduction selection during stall prevention operation	0, 1, 10, 11		1		◎	
155	RT signal activated condition	0, 10		0		155	RT signal function validity condition selection	0, 10		0		◎	
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 waiting time	0 to 25 s, 9999		0		157	OL signal output timer	0 to 25 s, 9999		0		◎	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
158	AM terminal function selection	1 to 3, 5 to 14, 17, 18, 21		1		158	AM terminal function selection	1 to 3, 5 to 14, 17, 18, 21, 24, 32 to 34, 50, 52 to 54, 61, 62, 67, 70, 87 to 90, 91 to 98		1		◎	
160	User group read selection	0, 1, 10, 11		0		160	User group read selection	0, 1, 9999		0		△	"10, 11" (user group 2) are not available for the A800 specification model.
162	Automatic restart after instantaneous power failure selection	0, 1		0		162	Automatic restart after instantaneous power failure selection	0 to 3, 10 to 13		0		◎	
163	First cushion time for restart	0 to 20 s		0 s		163	First cushion time for restart	0 to 20 s		0 s		◎	
164	First cushion voltage for restart	0% to 100%		0%		164	First cushion voltage for restart	0% to 100%		0%		◎	
165	Restart stall prevention operation level	0% to 200%		150%		165	Stall prevention operation level for restart	0% to 400%		150%		◎	
170	Watt-hour meter clear	0		0		170	Watt-hour meter clear	0, 10, 9999		9999		◎	
171	Actual operation hour meter clear	0		0		171	Operation hour meter clear	0, 9999		0		◎	
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		—	—	—		—		×	The user group 2 is not available for the A800 specification model.
176	User group 2 deletion	0 to 999, 9999		0		—	—	—		—		×	
180	RL terminal function selection	0 to 99, 9999		0		180	RL terminal function selection	0 to 20, 22 to 28, 37, 42 to 47, 50, 51, 62, 64 to 74, 76 to 80, 87, 92, 93, 9999		0		◎	FR-B3: Do not assign the X18 signal to any terminals.
181	RM terminal function selection	0 to 99, 9999		1		181	RM terminal function selection			1		◎	
182	RH terminal function selection	0 to 99, 9999		2		182	RH terminal function selection			2		◎	
183	RT terminal function selection	0 to 99, 9999		3		183	RT terminal function selection			3		◎	
184	AU terminal function selection	0 to 99, 9999		4		184	AU terminal function selection			4		◎	
185	JOG terminal function selection	0 to 99, 9999		5		185	JOG terminal function selection			5		◎	
186	CS terminal function selection	0 to 99, 9999		6		186	CS terminal function selection			6		◎	
190	RUN terminal function selection	0 to 199, 9999		0		190	RUN terminal function selection	0 to 8, 10 to 20, 22, 25 to 28, 30 to 36, 38 to 54, 56, 57, 60, 61, 63, 64, 68, 70, 79, 84, 85, 90 to 99, 100 to 108, 110 to 116, 120, 122, 125 to 128, 130 to 136, 138 to 154, 156, 157, 160, 161, 163, 164, 168, 170, 179, 184, 185, 190 to 199, 200 to 208, 300 to 308, 9999		0		◎	
191	SU terminal function selection	0 to 199, 9999		1		191	SU terminal function selection			1		◎	
192	IPF terminal function selection	0 to 199, 9999		2		192	IPF terminal function selection			2		◎	
193	OL terminal function selection	0 to 199, 9999		3		193	OL terminal function selection			3		◎	
194	FU terminal function selection	0 to 199, 9999		4		194	FU terminal function selection			4		◎	
195	A, B, C terminal function selection	0 to 199, 9999		99		195	ABC1 terminal function selection			99		◎	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
199	User's initial value setting	0 to 999, 9999		0		—	—	—	—	—	—	×	This function was deleted for the A800 specification model.
200	Programmed operation minute/second selection	0, 2: Minute, second 1, 3: Hour, minute		0		—	—	—	—	—	—	×	
201 to 210	Program set 1, 1 to 10	0 to 2: Rotation direction	0 to 2: Rotation direction	0		—	—	—	—	—	—	×	
		0 to 120 Hz / 0 to 60 Hz, 9999: Frequency	0 to 400 Hz, 9999: Frequency	9999									
		0 to 99.59: Time	0 to 99.59: Time	0									
211 to 220	Program set 2, 11 to 20	0 to 2: Rotation direction	0 to 2: Rotation direction	0		—	—	—	—	—	—	×	
		0 to 120 Hz / 0 to 60 Hz, 9999: Frequency	0 to 400 Hz, 9999: Frequency	9999									
		0 to 99.59: Time	0 to 99.59: Time	0									
221 to 230	Program set 3, 21 to 30	0 to 2: Rotation direction	0 to 2: Rotation direction	0		—	—	—	—	—	—	×	
		0 to 120 Hz / 0 to 60 Hz, 9999: Frequency	0 to 400 Hz, 9999: Frequency	9999									
		0 to 99.59: Time	0 to 99.59: Time	0									
231	Timer setting	0 to 99.59		0		—	—	—	—	—	—	×	This function was deleted for the A800 specification model.
232	Multi-speed setting (speed 8)	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz, 9999	9999		232	Multi-speed setting (speed 8)	0 to 590 Hz, 9999		9999		◎	
233	Multi-speed setting (speed 9)			9999		233	Multi-speed setting (speed 9)			9999		◎	
234	Multi-speed setting (speed 10)			9999		234	Multi-speed setting (speed 10)			9999		◎	
235	Multi-speed setting (speed 11)			9999		235	Multi-speed setting (speed 11)			9999		◎	
236	Multi-speed setting (speed 12)			9999		236	Multi-speed setting (speed 12)			9999		◎	
237	Multi-speed setting (speed 13)			9999		237	Multi-speed setting (speed 13)			9999		◎	
238	Multi-speed setting (speed 14)			9999		238	Multi-speed setting (speed 14)			9999		◎	
239	Multi-speed setting (speed 15)			9999		239	Multi-speed setting (speed 15)			9999		◎	
240	Soft-PWM setting	—	0, 1	—	1	240	Soft-PWM operation selection	0, 1		0	1		Do not change the setting.
244	Cooling fan operation selection	0, 1		0		244	Cooling fan operation selection	0, 1, 101 to 105		1		△	The initial value has been changed to "1" for the A800 specification.
						245	Rated slip	0% to 50%, 9999		9999			Do not change the setting.
250	Stop selection	0 to 100 s, 9999		9999		250	Stop selection	0 to 100 s, 1000 to 1100 s, 8888, 9999		9999		◎	
251	Output phase failure protection selection	0, 1		1		251	Output phase loss protection selection	0, 1		1		◎	
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%		◎	
						260	PWM frequency automatic switchover	0, 1		1			Do not change the setting.
261	Power failure stop selection	0, 1		0		261	Power failure stop selection	0, 1, 2, 11, 12, 21, 22		0		◎	
262	Subtracted frequency at deceleration start	0 to 20 Hz		3 Hz		262	Subtracted frequency at deceleration start	0 to 20 Hz		3 Hz		◎	
263	Subtraction starting frequency	0 to 120 Hz / 0 to 60 Hz, 9999	0 to 120 Hz, 9999	60 Hz		263	Subtraction starting frequency	0 to 590 Hz, 9999		60 Hz		◎	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
264	Power-failure deceleration time 1	0 to 3600 s / 0 to 360 s		5 s		264	Power-failure deceleration time 1	0 to 3600 s		5 s		◎	Changing Pr.21 after setting this parameter will change the set value.
265	Power-failure deceleration time 2	0 to 3600 s / 0 to 360 s, 9999		9999		265	Power-failure deceleration time 2	0 to 3600 s, 9999		9999		◎	Changing Pr.21 after setting this parameter will change the set value.
266	Power failure deceleration time switchover frequency	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz, 9999	60 Hz		266	Power failure deceleration time switchover frequency	0 to 590 Hz, 9999		60 Hz		◎	
270	Stop-on contact/load torque high-speed frequency control selection	0, 2	0, 1, 2, 3	0		270	Stop-on contact/load torque high-speed frequency control selection	0, 1, 2, 3, 11, 13		0		◎	FR-B: The stop-on-contact function is disabled.
271	High-speed setting maximum current	0% to 200%		50%		271	High-speed setting maximum current	0% to 400%		50%		◎	
272	Mid-speed setting minimum current	0% to 200%		100%		272	Middle-speed setting minimum current	0% to 400%		100%		◎	
273	Current averaging range	0 to 120 Hz / 0 to 60 Hz	0 to 400 Hz, 9999	9999		273	Current averaging range	0 to 590 Hz, 9999		9999		◎	
274	Current averaging filter constant	1 to 4000		16		274	Current averaging filter time constant	1 to 4000		16		◎	
275	Stop-on contact exciting current low-speed multiplying factor	—	0% to 1000%, 9999	—	9999	275	Stop-on contact excitation current low-speed scaling factor	50% to 300%, 9999		9999		◎	Disabled in the FR-B.
						276	PWM carrier frequency at stop-on contact	0 to 9, 9999		9999			Do not change the setting.
278	Brake opening frequency	—	0 to 30 Hz	—	3 Hz	278	Brake opening frequency	0 to 30 Hz		3 Hz		◎	FR-B3: Set Pr.292.
279	Brake opening current	—	0% to 200%	—	130%	279	Brake opening current	0% to 400%		130%		◎	
280	Brake opening current detection time	—	0 to 2 s	—	0.3 s	280	Brake opening current detection time	0 to 2 s		0.3 s		◎	
281	Brake operation time at start	—	0 to 5 s	—	0.3 s	281	Brake operation time at start	0 to 5 s		0.3 s		◎	
282	Brake operation frequency	—	0 to 30 Hz	—	6 Hz	282	Brake operation frequency	0 to 30 Hz		6 Hz		◎	
283	Brake operation time at stop	—	0 to 5 s	—	0.3 s	283	Brake operation time at stop	0 to 5 s		0.3 s		◎	
284	Deceleration detection function selection	—	0, 1	—	0	284	Deceleration detection function selection	0, 1		0		◎	
285	Overspeed detection frequency	—	0 to 30 Hz, 9999	—	9999	285	Overspeed detection frequency	0 to 30 Hz, 9999		9999		◎	
286	Droop gain	—	0% to 100%	—	0%	286	Droop gain	0% to 100%		0%		◎	Disabled in the FR-B.
287	Droop filter constant	—	0.00 to 1.00 s	—	0.3 s	287	Droop filter time constant	0.00 to 1.00 s		0.3 s		◎	
342	E2PROM write yes/no	—	0, 1	—	0	342	Communication EEPROM write selection	0, 1		0		◎	
						450	Second applied motor	0, 1, 3 to 6, 13 to 16, 20, 23, 24, 30, 33, 34, 40, 43, 44, 50, 53, 54, 70, 73, 74, 330, 333, 334, 8090, 8093, 8094, 9090, 9093, 9094, 9999		9999			Do not change the setting.
						451	Second motor control method selection	10 to 14, 20, 110 to 114, 9999		9999			Do not change the setting.
503	Capacitor life timer	—	—	—	—	503	Maintenance timer 1	0 (1 to 9998)		0		×	

FR-B, B3 (A500 specification) parameter						FR-B, B3 (A800 specification) compatible parameter						Description about parameter setting	
Pr.	Name	Setting range		Initial value		Pr.	Name	Setting range		Initial value		Setting	Remarks
		FR-B	FR-B3	FR-B	FR-B3			FR-B	FR-B3	FR-B	FR-B3		
504	Capacitor life alarm output setting time	—	0 to 9998, (9999)	—	876	504	Maintenance timer 1 warning output set time	0 to 9998, 9999		9999		△	
611	Restart acceleration time	—	0 to 3600 s, 9999	—	5.0 s	611	Acceleration time at a restart	0 to 3600 s, 9999		9999		△	
						617	Reverse rotation excitation current low-speed scaling factor	0% to 300%, 9999		9999			Do not change the setting.
						660	Increased magnetic excitation deceleration operation selection	0, 1		0			Do not change the setting.
						673	SF-PR slip amount adjustment operation selection	2, 4, 6, 9999		9999			Do not change the setting.
						800	Control method selection	0 to 6, 9 to 14, 20, 100 to 106, 109 to 114		20			Do not change the setting.
						859	Torque current/Rated PM motor current	0 to 500 A, 9999		9999	Tuning data		Do not change the setting.
						864	Torque detection	0% to 400%		150%			Disabled in the FR-B.
						866	Torque monitoring reference	0% to 400%		150%			Disabled in the FR-B.
900	FM terminal calibration	—		—		C0 (900)	FM/CA terminal calibration	—		—		×	The calibration method differs between inverters in both series.
901	AM terminal calibration	—		—		C1 (901)	AM terminal calibration	—		—		×	The calibration method differs between inverters in both series.
902	Frequency setting voltage bias	0 to 10 V	0 to 60 Hz	0 V	0 Hz	C2 (902)	Terminal 2 frequency setting bias frequency	0 to 590 Hz		0 Hz		×	The calibration method differs between inverters in both series.
						C3 (902)	Terminal 2 frequency setting bias	0% to 300%		0%			
903	Frequency setting voltage gain	0 to 10 V	0 to 10 V	5 V	60 Hz	125 (903)	Terminal 2 frequency setting gain frequency	0 to 590 Hz		60 Hz		×	The calibration method differs between inverters in both series.
		1 to 120 Hz / 1 to 60 Hz	1 to 400 Hz			C4 (903)	Terminal 2 frequency setting gain	0% to 300%		100%			
904	Frequency setting current bias	0 to 20 mA	0 to 60 Hz	4 mA	0 Hz	C5 (904)	Terminal 4 frequency setting bias frequency	0 to 590 Hz		0 Hz		×	The calibration method differs between inverters in both series.
						C6 (904)	Terminal 4 frequency setting bias	0% to 300%		20%			
905	Frequency setting current gain	0 to 20 mA	0 to 20 mA	20 mA	60 Hz	126 (905)	Terminal 4 frequency setting gain frequency	0 to 590 Hz		60 Hz		×	The calibration method differs between inverters in both series.
		1 to 120 Hz / 1 to 60 Hz	1 to 400 Hz			C7 (905)	Terminal 4 frequency setting gain	0% to 300%		100%			
990	Buzzer control	0, 1		1		990	PU buzzer control	0, 1		1		◎	
						998	PM parameter initialization	0, 3003, 3103, 8009, 8109, 9009, 9109		0			Do not change the setting.
						999	Automatic parameter setting	1, 2, 10, 11, 12, 13, 20, 21, 9999		9999			Do not change the setting.

3. 2. Compatibility of the Terminal Response Speed

The I/O terminals of the FR-B, B3 (A800 specification) respond more quickly than those of the FR-B, B3 (A500 specification). Operation timing of the device may differ depending on the usage.
In this case, set Pr.289 (Inverter output terminal filter) and Pr.699 (Input terminal filter) to adjust the terminal response time.
Set "15 to 20 ms" in Pr.289 and Pr.699 and adjust according to the system.

4. Option

The following table shows the comparison of options between the FR-B, B3 (A500 specification) series inverters and the FR-B, B3 (A800 specification) series inverters.

Name		Option model	
		FR-B, B3 (A500 specification)	FR-B, B3 (A800 specification)
Plug-in type	12-bit digital input	FR-A5AX	FR-A8AX (16 bits)
	Digital output / Additional analog output	FR-A5AY	FR-A8AY
	Relay output	FR-A5AR	FR-A8AR
	Orientation / Encoder / Pulse train input	FR-A5AP	FR-A8AP (The pulse train input is a built-in function of the inverter.)
	Computer link	FR-A5NR	Built-in function of the inverter (RS-485 terminals, relay output 2 terminals)
	Profibus-DP	FR-A5NP	FR-A8NP
	Device Net	FR-A5ND	FR-A8ND
	CC-Link	FR-A5NC	FR-A8NC
	Modbus Plus	FR-A5NM	—
Stand-alone type	Parameter unit	FR-PU04	FR-PU07 Some function restricted (parameter copy, operable parameters, etc.)
	Parameter unit connection cable	FR-CB201, 203, 205	Compatible Prepare FR-ADP for installing the operation panel on the enclosure surface.
	Panel through attachment	FR-A5CN	FR-A8CN1[][], FR-A8CN[][] **Enclosure cut dimensions are compatible except for some capacities.** **The depths inside and outside the enclosure differ. For details, refer to the Instruction Manual of the FR-A8CN1[][] or the FR-A8CN[][].**
	Totally enclosed structure specification attachment	FR-A5CV	—
	Attachment for conduit connection	FR-A5FN	—
	Intercompatibility attachment	FR-AAT	FR-AAT
	EMC Directive compliant noise filter	SF[][]	Built-in function of the inverter (EN 61800-3 2nd Environment compatible)
	Power factor improving DC reactor	FR-BEL-(H)	Compatible
	Power factor improving AC reactor	FR-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(2)-(H)	Compatible
	Resistor unit	FR-BR-(H)	Compatible
	FR-RC type power regeneration converter	FR-RC-(H)	Compatible
	High-duty brake resistor	FR-ABR	Compatible
Manual controller / speed controller	Manual controller	FR-AX	Compatible
	DC tach. follower	FR-AL	Compatible
	Three speed selector	FR-AT	Compatible
	Motorized speed setter	FR-FK	Compatible
	Ratio setter	FR-FH	Compatible
	Speed detector	FR-FP	Compatible
	Master controller	FR-FG	Compatible
	Soft starter	FR-FC	Compatible
	Deviation detector	FR-FD	Compatible
	Preamplifier	FR-FA	Compatible
Others	Pilot generator	QVAH-10	Compatible
	Deviation sensor	YVGC-500W-NS	Compatible
	Frequency setting potentiometer	WA2W 1 kΩ	Compatible
	Frequency meter	YM206NRI 1 mA	Compatible
	Calibration resistor	RV24YN 10 kΩ	Compatible

5. Main differences between the FR-B, B3 (A500 specification) and FR-B, B3 (A800 specification)

Item		FR-B, B3 (A500 specification)	FR-B, B3 (A800 specification)
Model	200 V class	FR-B-750 to 45K (12 models)	FR-B-750 to 75K (14 models)
		FR-B3-(N)-400 to 37K (13 models)	FR-B3-(N)-400 to 37K (13 models)
	400 V class	FR-B-750 to 55K (9 models)	FR-B-750 to 110K (12 models)
		FR-B3-(N)-H400 to H37K (13 models)	FR-B3-(N)-H400 to H37K (13 models)
Control method		High carrier frequency PWM V/F control (for FR-B-[]) Advanced magnetic flux vector control (for FR-B3-(N)-[])	High carrier frequency PWM V/F control (for FR-B-[]) Advanced magnetic flux vector control (for FR-B3-(N)-[])
Overload capability		150% 60 s, 200% 0.5 s (inverse-time characteristics)	ND rating: 150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C
Output frequency		FR-B: 0 to 60 Hz / 0 to 120 Hz, FR-B3: 0 to 120 Hz	FR-B: 0 to 60 Hz / 0 to 120 Hz, FR-B3: 0 to 120 Hz
Frequency setting signal	Analog input	Terminal 2: 0 to 5 VDC, 0 to 10 VDC (voltage input only). Terminal 1: Selectable between the range from 0 to ±5 V and the range from 0 to ±10 V. Terminal 4: 4 to 20 mA (current input only).	Terminal 2: Selectable among the range from 0 to 5 VDC, the range from 0 to 10 VDC, and the range from 4 to 20 mA. Terminal 1: Selectable between the range from 0 to ±5 V and the range from 0 to ±10 V.
	Digital input	3-digit BCD or 12-bit binary using the operation panel or parameter unit (when the option FR-A5AX is used)	4-digit BCD or 16-bit binary using the setting dial on the operation panel or the parameter unit (when the option FR-A8AX is used)
Frequency setting resolution	Analog input	0.015 Hz / 0 to 60 Hz (Terminal 2: 12 bits / 0 to 10 V) 0.03 Hz / 0 to 60 Hz (Terminal 2: 11 bits / 0 to 5 V, Terminal 4: 11 bits / 0 to 20 mA, Terminal 1: 11 bits / -10 to +10 V) 0.06 Hz / 0 to 60 Hz (Terminal 1: 10 bits / -5 to +5 V)	0.015 Hz / 0 to 60 Hz (Terminal 2, 4: 12 bits / 0 to 10 V) 0.03 Hz / 0 to 60 Hz (Terminal 2, 4: 11 bits / 0 to 5 V, 0 to 20 mA, Terminal 1: 12 bits / -10 to +10 V) 0.06 Hz / 0 to 60 Hz (Terminal 1: 11 bits / -5 to +5 V)
Input signal	Terminal function		<Additional functions> PTC thermistor input (PTC), PID forward/reverse action switchover (X64), PU/NET operation switchover (X65), Command source switchover (X67), Second brake sequence open completion (BRI2), Trace trigger input (TRG), Trace sampling start/end (TRC), Sequence start (SQ), Fault clear (X51), Second PID P control switchover (X73), Pre-charge end command (X77), Second pre-charge end command (X78), Second PID forward/reverse action switchover (X79), Second PID control valid (X80), etc.
	Terminal function selection	Pr.180 to Pr.186 (Input terminal function selection)	Pr.178 (STF), Pr.179 (STR), Pr.187 (MRS), Pr.188 (STOP), Pr.189 (RES), etc. are added.
	Pulse train input	100k pulses/s (FR-A5AP is required)	100k pulses/s (Terminal JOG)

Item		FR-B, B3 (A500 specification)	FR-B, B3 (A800 specification)
Operational functions		1) Automatic restart after instantaneous power failure operation (frequency search selection)	1) Continuous operation function at instantaneous power failure added 2) PID control functions added PID output shutoff, PID automatic switchover, Measured value input (selectable between current input and voltage input), Forward action / reverse action switchover 3) Operation command sources added NET mode operation command source, PU mode operation command source 4) Regeneration avoidance function added 5) Program operation function deleted 6) Thermal protection Surrounding air temperature reflection is added to the transistor protection function. 7) Intelligent mode (for FR-B3) Second brake sequence function is added. 8) Second PID control functions added Second PID function, PID pre-charge function, Dancer control and easy dancer control 9) PLC function added 10) 24 V power supply input function added for control circuits
Output signal	Terminal function		<Additional functions> Low speed output (LS), Inverter running and start command ON (RUN3), During deceleration at occurrence of power failure (Y46), During PID control activated (PID), During retry (Y64), PID output interruption (SLEEP), Life alarm (Y90), Fault output 3 (Y91), Fault output 2 (ALM2), Maintenance timer signal (Y95), Remote output (REM), Alarm output 2 (ER), Second brake opening request (BOF2), PID deviation limit (Y48), During pre-charge operation (Y49), During second pre-charge operation (Y50), Pre-charge time over (Y51), Second pre-charge time over (Y52), Pre-charge level over (Y53), Second pre-charge level over (Y54), 24 V external power supply operation (EV), Control circuit capacitor life (Y86), Main circuit capacitor life (Y87), Cooling fan life (Y88), Inrush current limit circuit life (Y89), Second PID lower limit (FDN2), Second PID upper limit (FUP2), Second PID forward/reverse rotation output (RL2), During second PID control activated (PID2), During second PID output shutoff (SLEEP2), Second PID deviation limit (Y205), etc.
		Programmed mode (PRG), Overspeed detection (Y29)	<Deleted functions>
	Terminal function selection	Pr.190 to Pr.195 (Output terminal function selection)	Pr.196 (ABC2 terminal function selection) is added.
	Pulse train output	—	50k pulses/s (via terminal FM)

Item		FR-B, B3 (A500 specification)	FR-B, B3 (A800 specification)
	Monitor item		<Additional functions> Motor load factor, Motor output, Power saving effect, PID set point, PID measured value, PID deviation, Motor thermal load factor, Inverter thermal load factor, PID measured value 2, Remote output value 1 to 4, PID manipulated amount, Second PID set point, Second PID measured value, Second PID deviation, Second PID measured value 2, Second PID manipulated amount, Dancer main speed setting, etc.
Protective function			<Additional functions> Input phase loss, PTC thermistor operation, Parameter storage device fault, Abnormal output current detection, Inrush current limit circuit fault, Communication fault, Analog input fault, Internal circuit fault, USB communication fault, Maintenance timer alarm, Parameter write error, Copy operation error, Operation panel lock, Parameter copy, Pre-charge fault, PID signal fault, etc.
Operation panel	Standard equipment	The operation panel FR-DU04 is equipped as standard. (Setting with keys)	The operation panel FR-DU08 is equipped as standard. (Setting with the setting dial)
	Option	Parameter unit FR-PU04	Parameter unit FR-PU07 LCD operation panel FR-LU08 (Some functions are unavailable.)
Control terminal block	Shape of terminal block	Screw type	Spring clamp (insertion screw type)
	Wiring end	Round crimp terminal (screw size: M3.5)	Blade terminal
	Removal	Available	Available
	Compatibility	None (The option can be used to install the terminal block to the A500 specification model.)	
Plug-in option	No. of options	3	3
	Compatibility	None	

Precautions when replacing the FR-B, B3 (A500 specification)

Item		FR-B, B3 (A500 specification)	FR-B, B3 (A800 specification)
Outline dimension	200 V class	Compatible	
	400 V class	FR-B-15K, FR-B3-(N)H11K and H15K are not compatible. Models other than the above are compatible.	
Installation dimension	200 V class	Compatible	
	400 V class	Compatible (except for FR-B-15K, FR-B3-(N)H11K and H15K) An intercompatibility attachment can be used for the FR-B-15K, FR-B3-(N)H11K and H15K.	
Main circuit terminal block / Terminal screw size		Compatible except for some capacities	
Control circuit terminal block / Terminal screw size		Screw type (screw size: M3.5)	Spring clamp (insertion screw type)
Availability of option brake resistor		FR-B-750 to 7.5K (200 V class / 400 V class) FR-B3-(N)(H)400 to 7.5K	FR-B-750 to 22K (200 V class), FR-B-750 to 55K (400 V class) FR-B3-(N)(H)400 to 22K (200 V class), FR-B3-(N)(H)400 to 37K (400 V class)
Parameter unit	FR-DU08	Not available	Available
	FR-DU04	Available	Not available
	FR-PU07	Not available	Available (with restrictions)
	FR-PU04	Available	Not available
Parameter unit connection cable	FR-CB2	Available	Available To connect FR-DU08 and the connection cable, the operation panel connection connector (FR-ADP) is required.
Dedicated plug-in option		Not compatible because options are dedicated and plug-in type. (Installation dimensions are different.)	
		FR-A5AX, FR-A5AY, FR-A5AR, FR-A5NR, FR-A5NP, FR-A5ND, FR-A5NC, FR-A5NM, FR-A5AP	FR-A8AP, FR-A8AX, FR-A8AY, FR-A8AR, FR-A8NC, FR-A8ND, FR-A8NP
Terminal block type of plug-in option		Screw type terminal block	Insertion type terminal block
Dedicated option (attachment, etc.)		Not compatible (compatible for some capacities)	
External common option (noise filter, reactor, etc.)		Compatible	
Parameters for the explosion-proof specifications		Not disclosed	Disclosed Do not change the settings. For details, refer to the Instruction Manual.