

Information for Replacement of FR-CV Series with FR-XC Series

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

1. Size

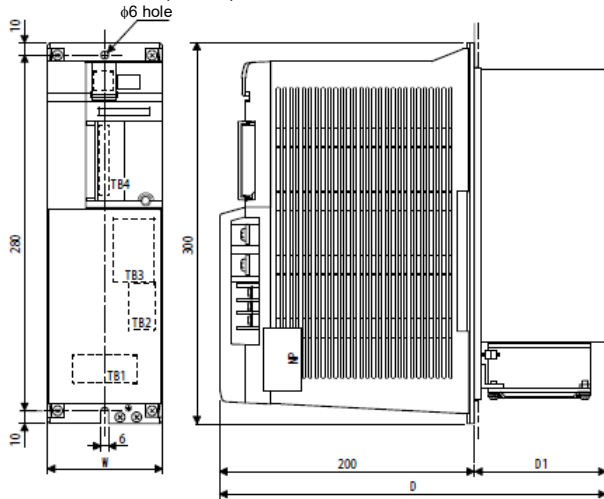
The following table shows the installation size required when replacing the FR-CV series converter with the FR-XC series converter in common bus regeneration mode (FR-CV compatible) with harmonic suppression disabled.

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

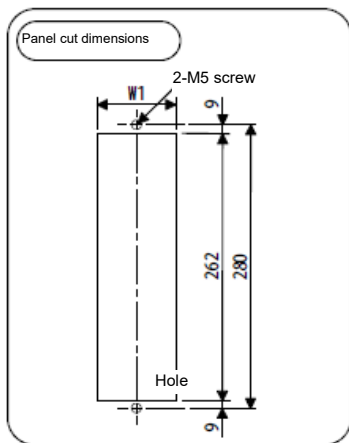
Power supply voltage	Existing		Replacing		Installation size		
	Power regeneration common converter	Dedicated stand-alone reactor	Multifunction regeneration converter (FR-CV compatible) with harmonic suppression disabled	Dedicated stand-alone reactor	Converter	Dedicated stand-alone reactor	Panel cut dimensions
Three-phase 200 V	FR-CV-7.5K	FR-CVL-7.5K	FR-XC-7.5K	FR-XCL-7.5K	Same	Same	Same
	FR-CV-7.5K-AT		FR-XC-7.5K FR-XCCP01		Same		
	FR-CV-11K	FR-CVL-11K	FR-XC-11K	FR-XCL-11K	Same	Same	Same
	FR-CV-11K-AT		FR-XC-11K FR-XCCP01		Same		
	FR-CV-15K	FR-CVL-15K	FR-XC-15K	FR-XCL-15K	Same	Same	Same
	FR-CV-15K-AT		FR-XC-15K FR-XCCP02		Same		
	FR-CV-22K	FR-CVL-22K	FR-XC-22K	FR-XCL-22K	Same	Same	Same
	FR-CV-22K-AT		FR-XC-22K FR-XCCP03		Same		
	FR-CV-30K	FR-CVL-30K	FR-XC-30K	FR-XCL-30K	Same	Same	Same
	FR-CV-30K-AT		FR-XC-30K FR-XCCP03		Same		
FR-CV-37K	FR-CVL-37K	FR-XC-37K	FR-XCL-37K	Different	Same	Different	
FR-CV-55K	FR-CVL-55K	FR-XC-55K	FR-XCL-55K	Different	Same	Different	
Three-phase 400 V	FR-CV-H7.5K	FR-CVL-H7.5K	FR-XC-H7.5K	FR-XCL-H7.5K	Different	Different	Different
	FR-CV-H7.5K-AT		FR-XC-H7.5K FR-XCCP01		Different		
	FR-CV-H11K	FR-CVL-H11K	FR-XC-H11K	FR-XCL-H11K	Different	Different	Different
	FR-CV-H11K-AT		FR-XC-H11K FR-XCCP01		Different		
	FR-CV-H15K	FR-CVL-H15K	FR-XC-H15K	FR-XCL-H15K	Same	Different	Same
	FR-CV-H15K-AT		FR-XC-H15K FR-XCCP02		Same		
	FR-CV-H22K	FR-CVL-H22K	FR-XC-H22K	FR-XCL-H22K	Same	Different	Same
	FR-CV-H22K-AT		FR-XC-H22K FR-XCCP03		Same		
	FR-CV-H30K	FR-CVL-H30K	FR-XC-H30K	FR-XCL-H30K	Same	Different	Same
	FR-CV-H30K-AT		FR-XC-H30K FR-XCCP03		Same		
FR-CV-H37K	FR-CVL-H37K	FR-XC-H37K	FR-XCL-H37K	Different	Different	Different	
FR-CV-H55K	FR-CVL-H55K	FR-XC-H55K	FR-XCL-H55K	Different	Different	Different	

Outline dimension drawings (Unit: mm)
[200 V class converter]
Protruded heat sink model

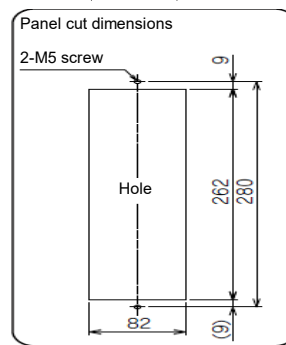
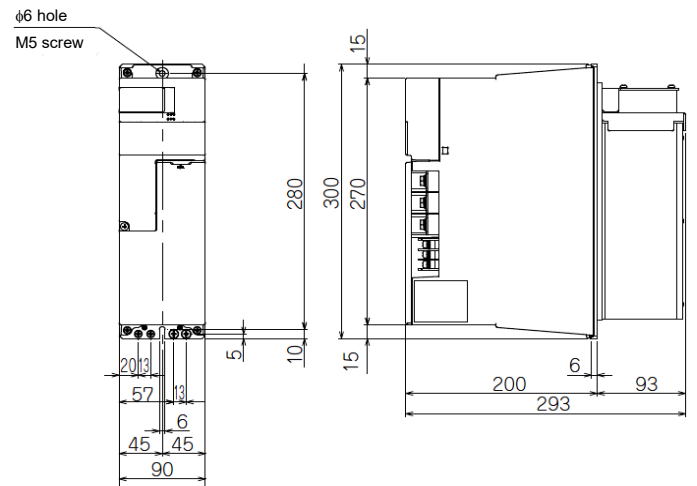
■FR-CV-7.5K, 11K, 15K



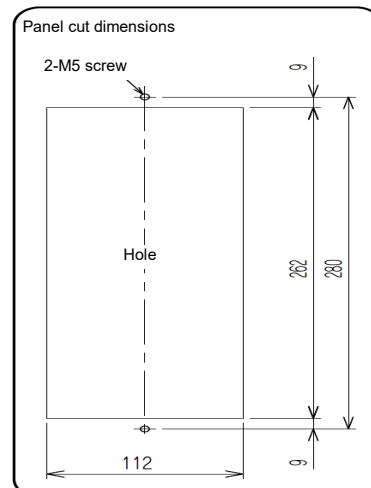
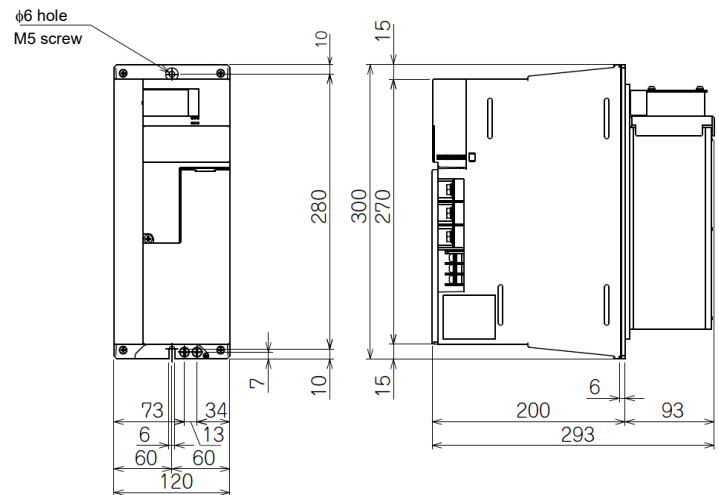
Converter model	W	D	D1	W1
FR-CV-7.5, 11K	90	303	103	82
FR-CV-15K	120	305	105	112



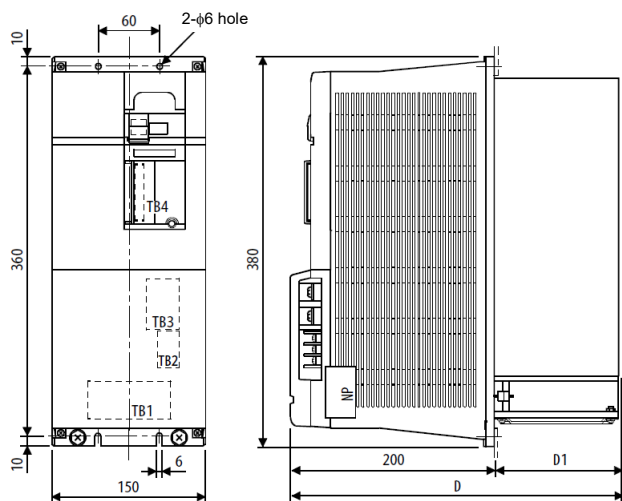
■FR-XC-7.5K, 11K



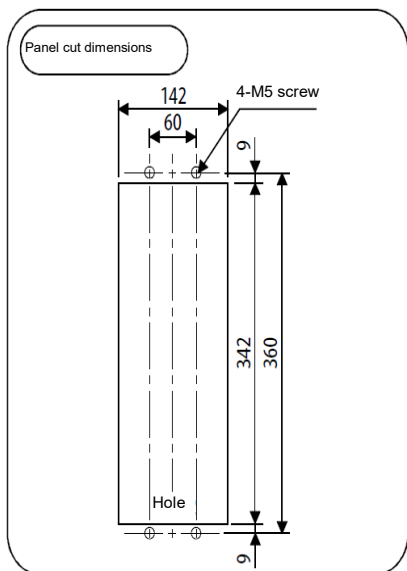
■FR-XC-15K



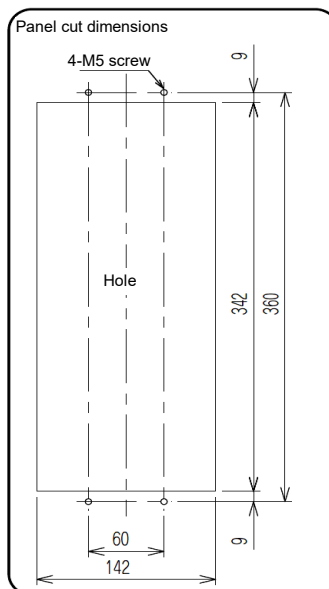
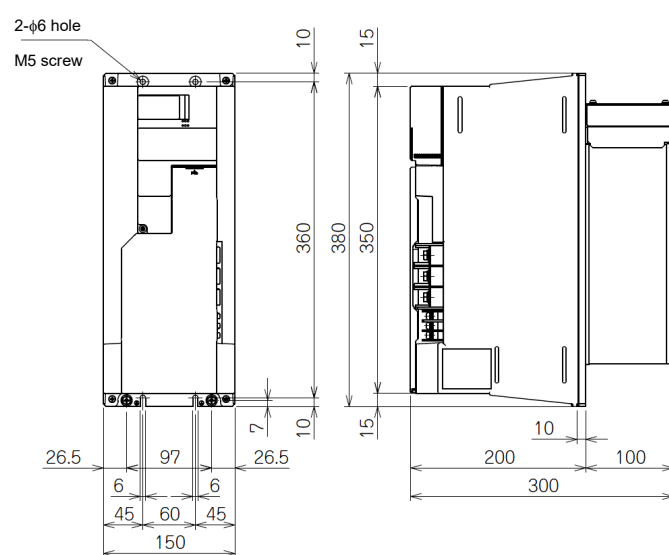
■FR-CV-22K, 30K



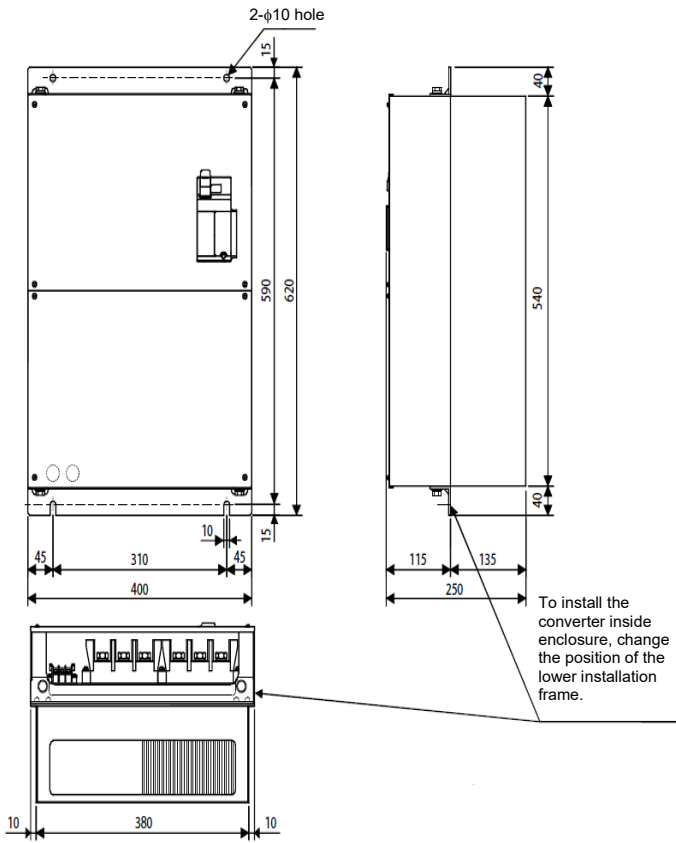
Converter model	D	D1
FR-CV-22K, 30K	322	122



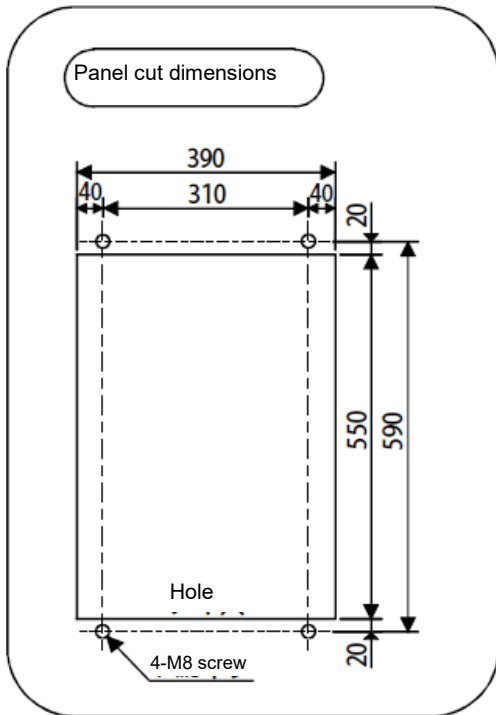
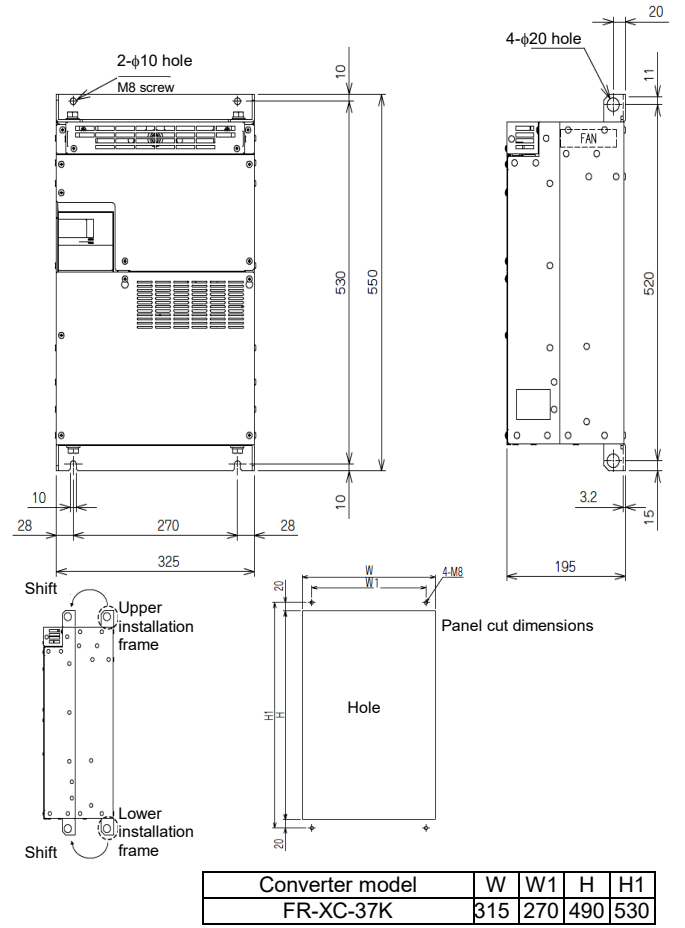
■FR-XC-22K, 30K



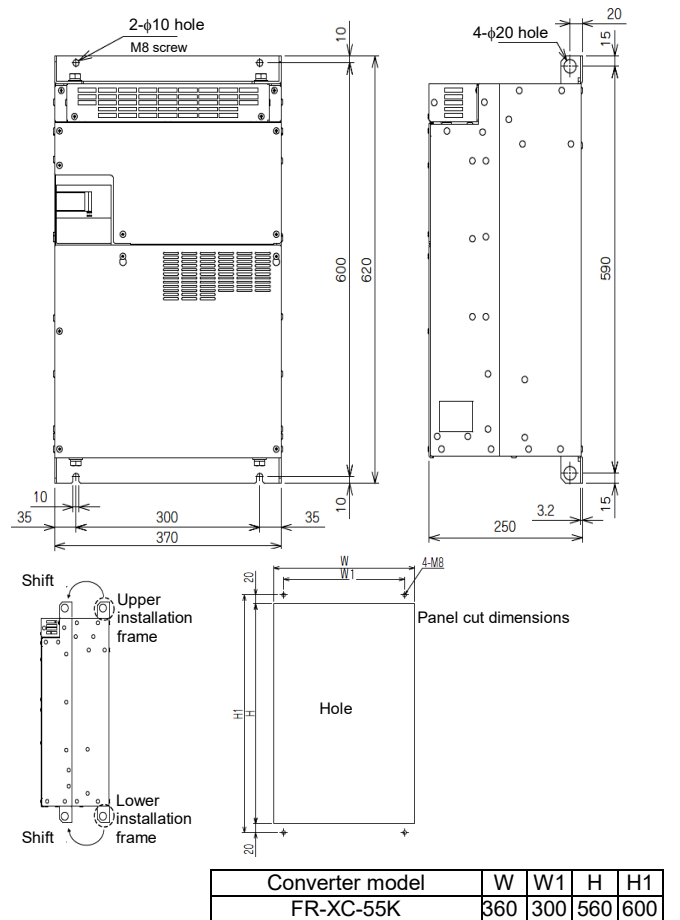
■FR-CV-37K, 55K



■FR-XC-37K

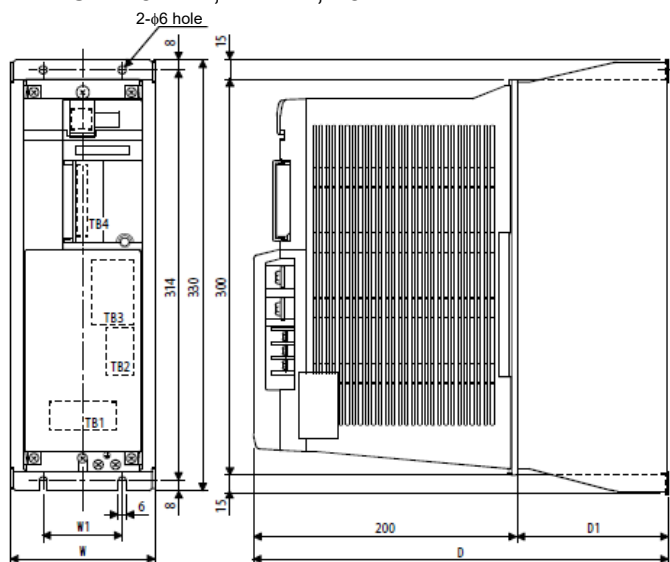


■FR-XC-55K



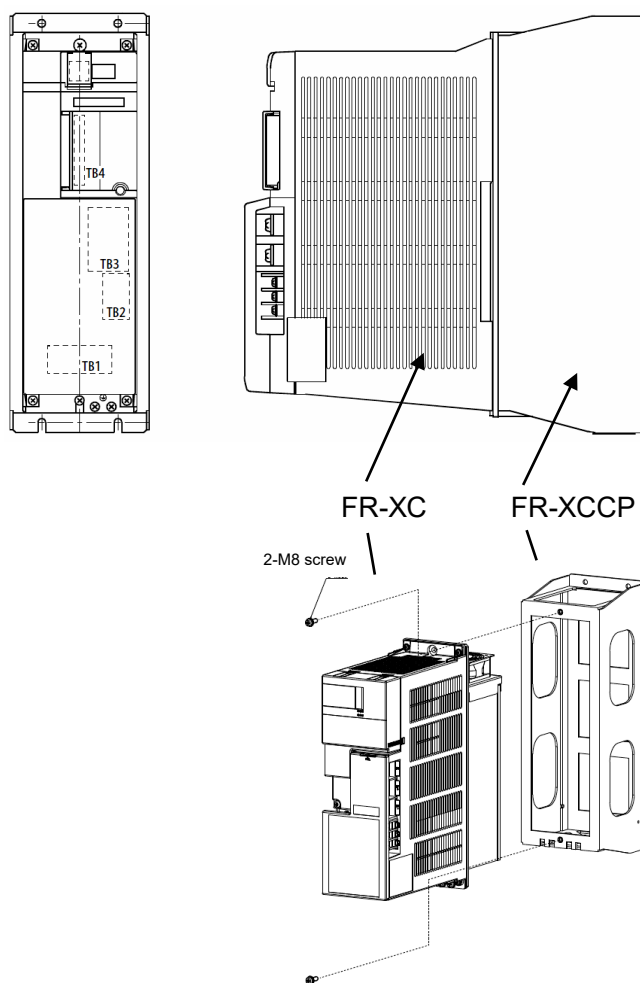
Enclosure-encased heat sink model

■FR-CV-7.5K-AT, 11K-AT, 15K-AT



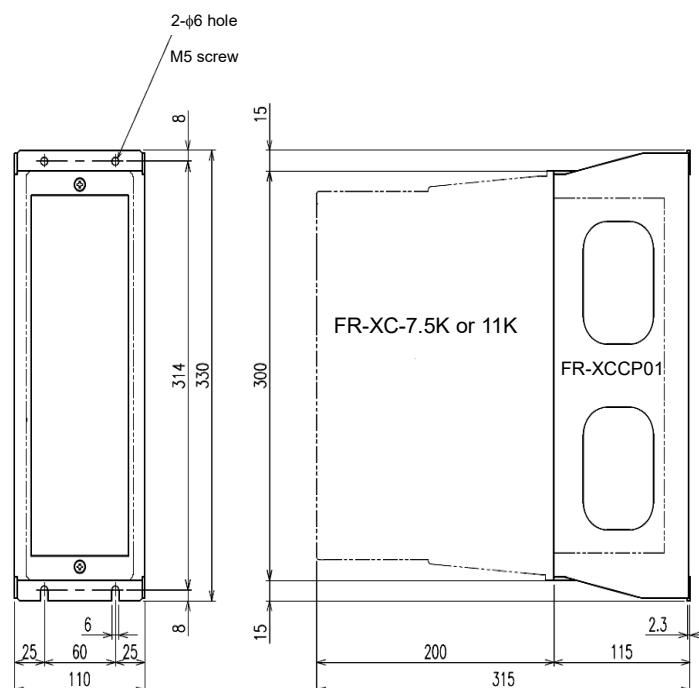
Converter model	W	W1	D	D1
FR-CV-7.5K-AT, 11K-AT	110	60	315	115
FR-CV-15K-AT	130	90	320	120

Use the FR-XCCP, converter installation attachment for enclosure (option), to install the multifunction regeneration converter inside the enclosure.



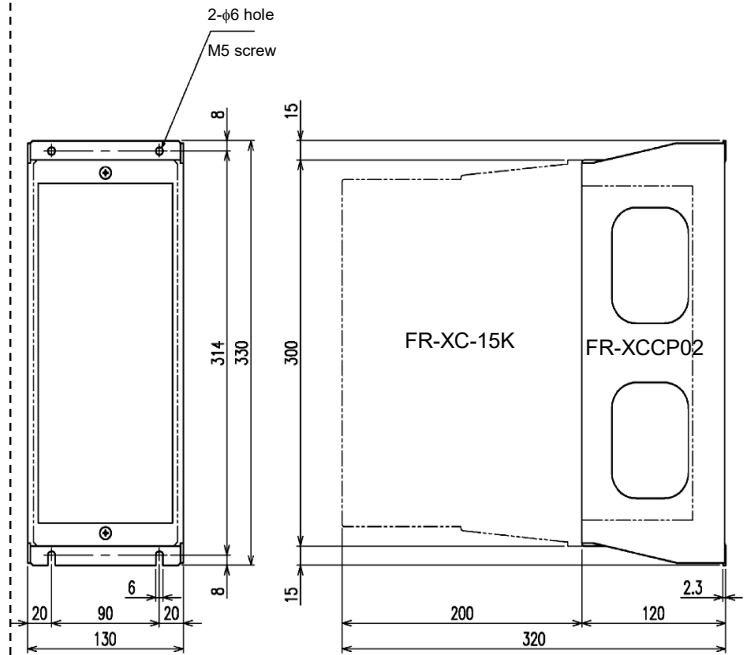
■FR-XC-7.5K, 11K with FR-XCCP01

Fit the FR-XCCP01 (optional converter installation attachment for enclosure) to the back of the FR-XC-7.5K or 11K.

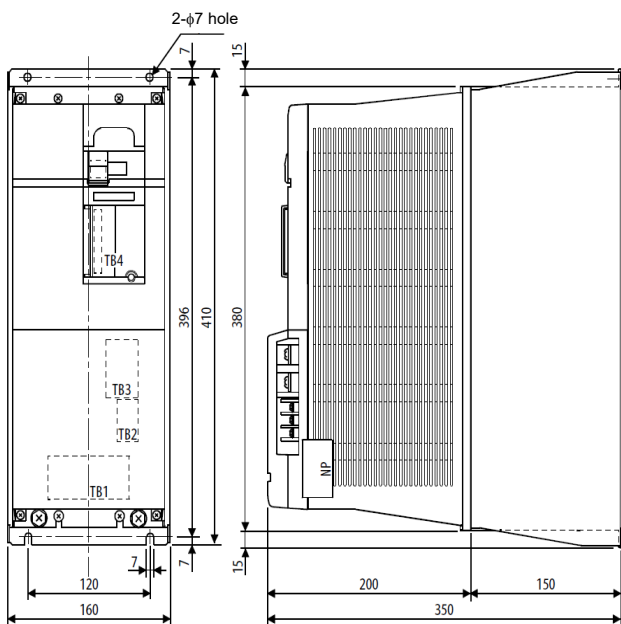


■FR-XC-15K with FR-XCCP02

Fit the FR-XCCP02 (optional converter installation attachment for enclosure) to the back of the FR-XC-15K.

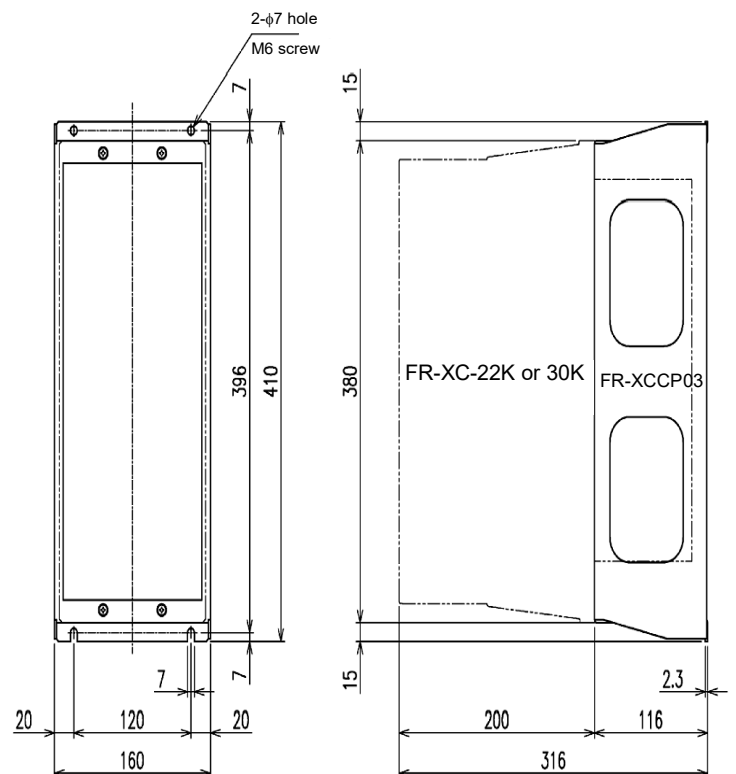


■FR-CV-22K-AT, 30K-AT



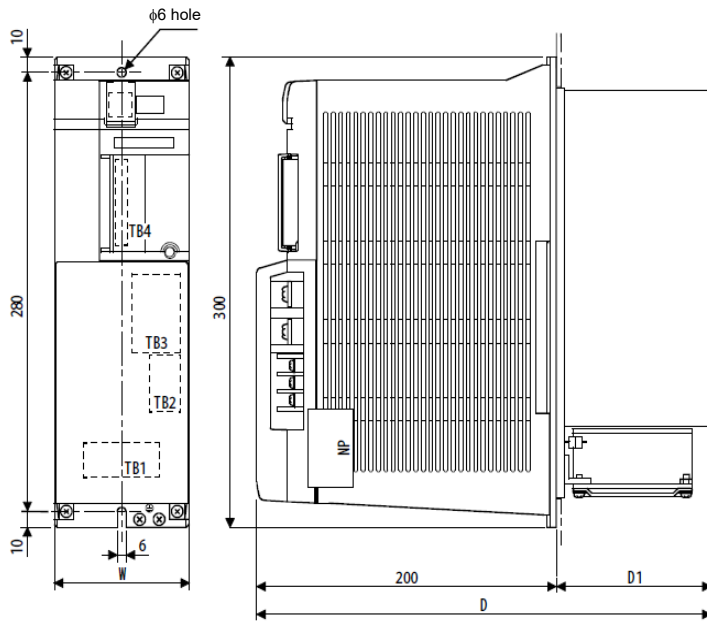
■FR-XC-22K, 30K with FR-XCCP03

Fit the FR-XCCP03 (optional converter installation attachment for enclosure) to the back of the FR-XC-22K or 30K.



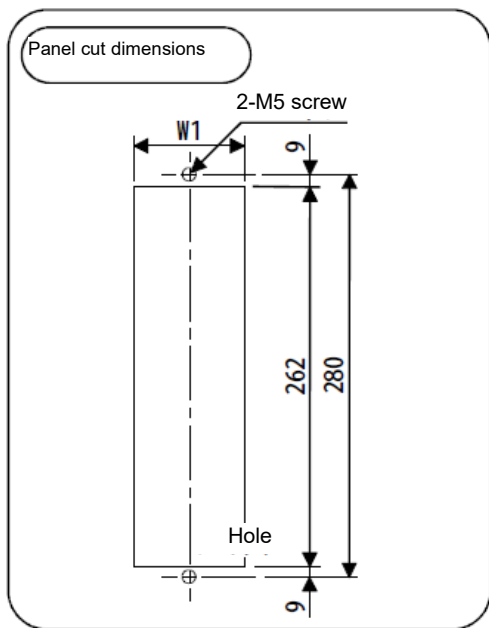
**[400 V class converter]
Protruded heat sink model**

■FR-CV-H7.5K, H11K, H15K

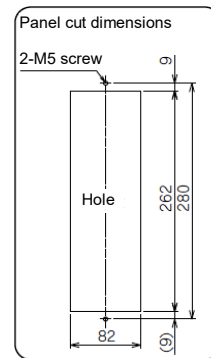
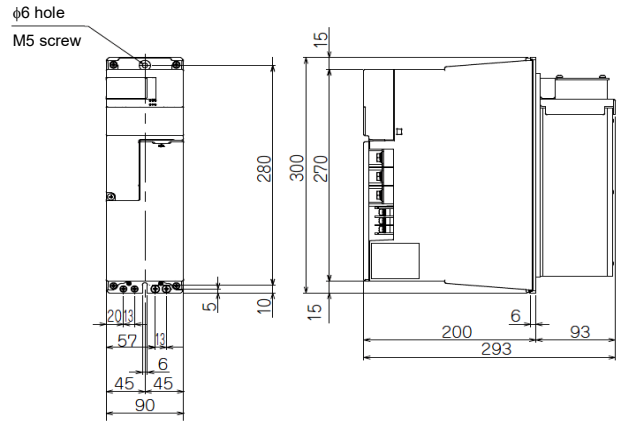


Note: FR-CV-H7.5K is not provided with the cooling fan.

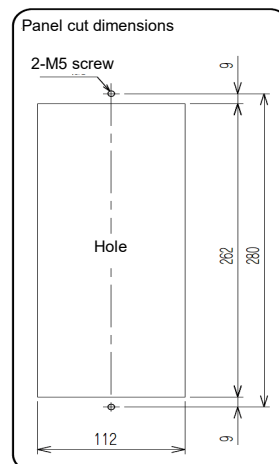
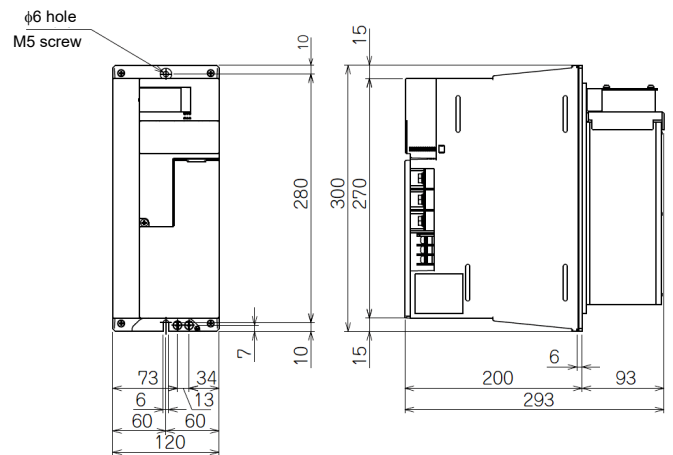
Converter model	W	D	D1	W1
FR-CV-H7.5K, 11K, H15K	120	305	105	112



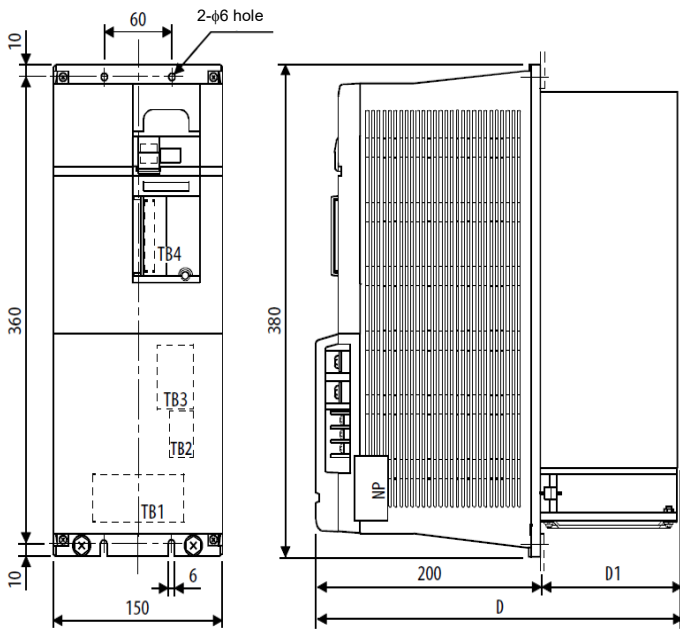
■FR-XC-H7.5K, H11K



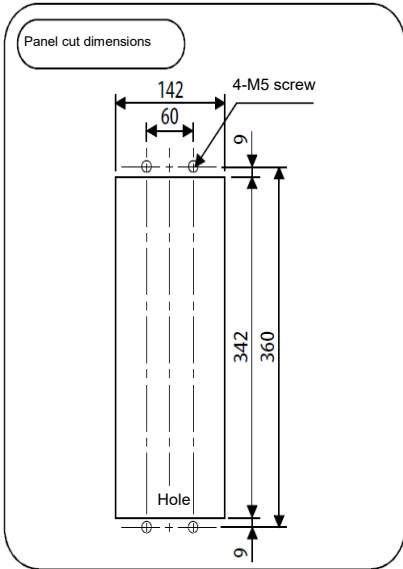
■FR-XC-H15K



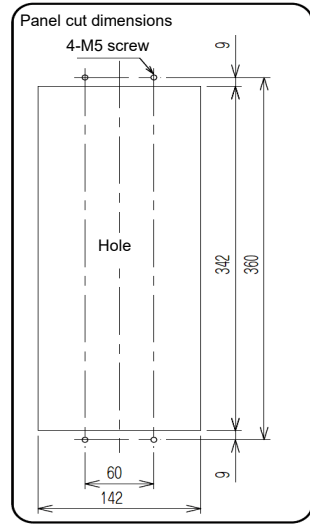
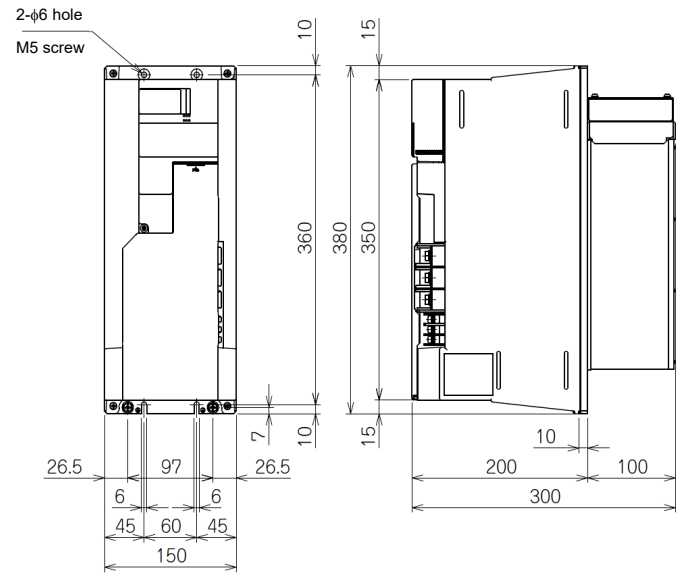
■FR-CV-H22K, H30K



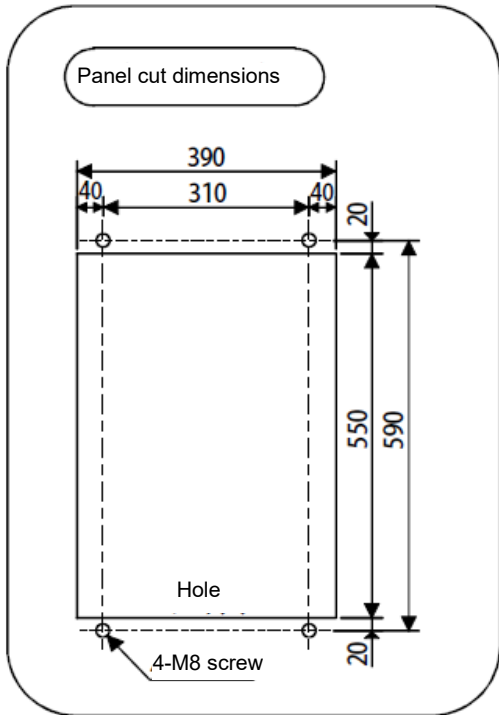
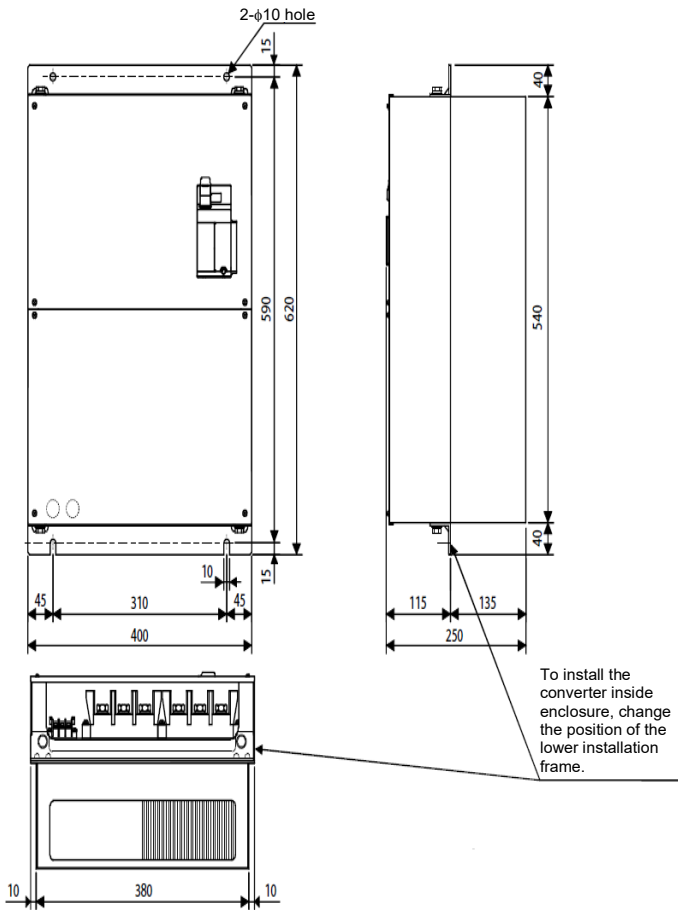
Converter model	D	D1
FR-CV-H22K, 30K	305	105



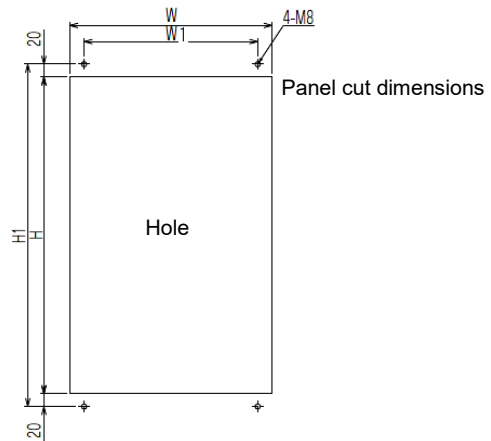
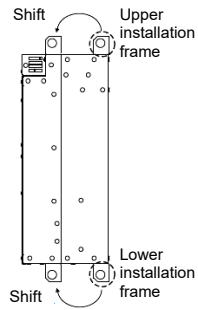
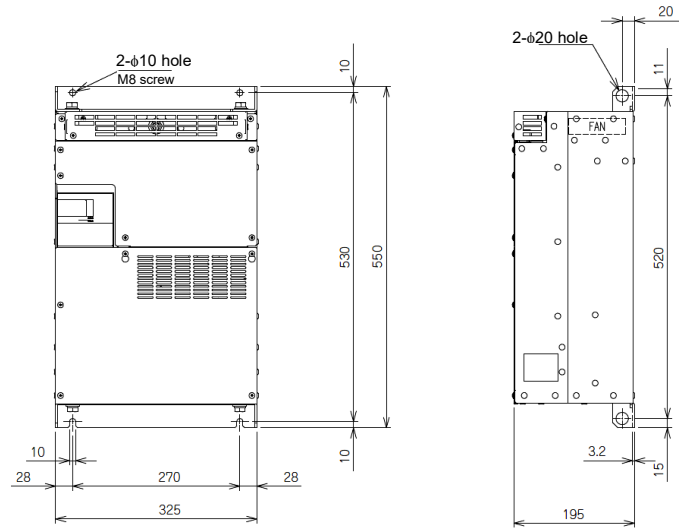
■FR-XC-H22K, H30K



■FR-CV-H37K, H55K



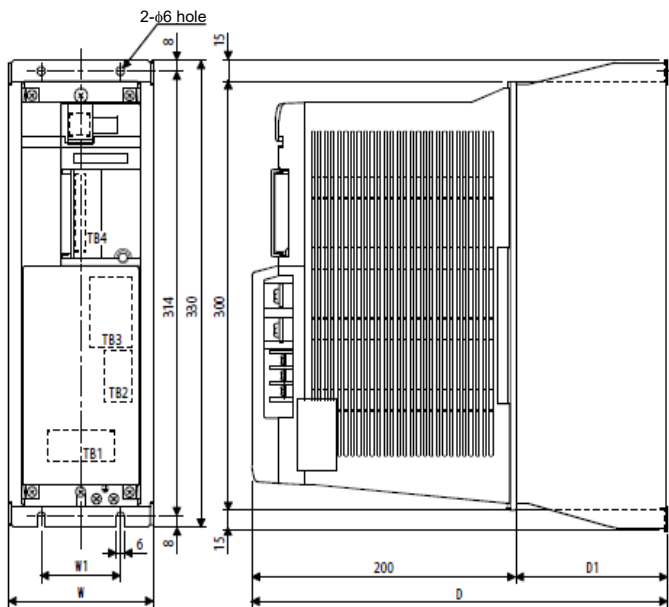
■FR-XC-H37K, H55K



Converter model	W	W1	H	H1
FR-XC-H37K, FR-XC-H55K	315	270	490	530

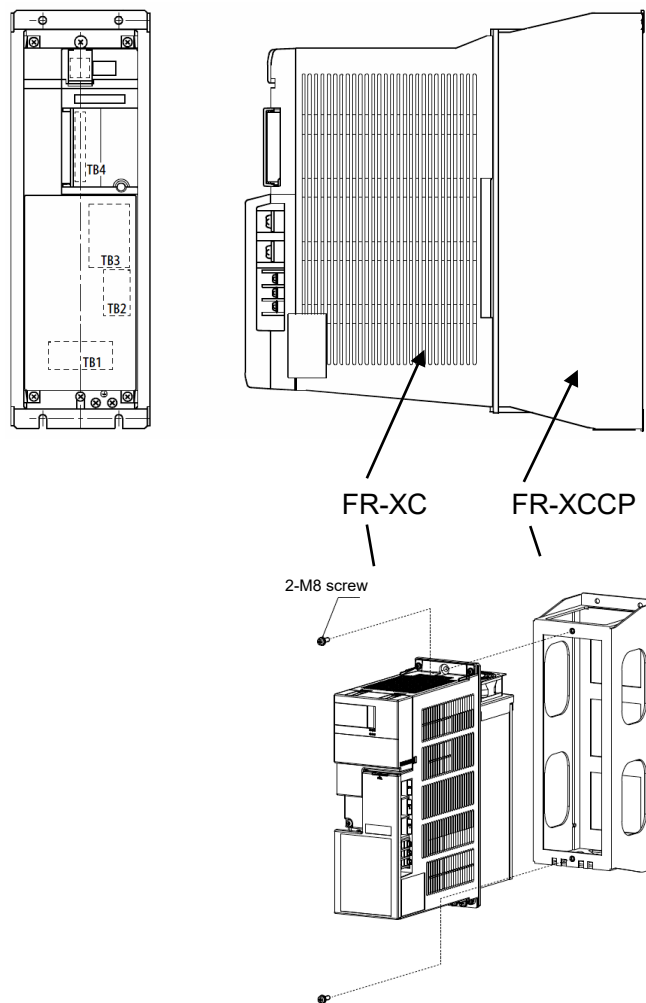
Enclosure-encased heat sink model

■FR-CV-H7.5K-AT, H11K-AT, H15K-AT



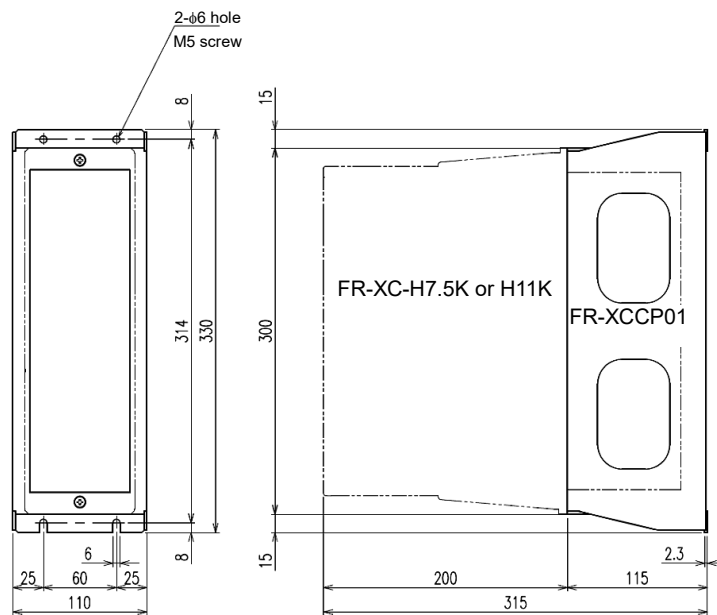
Converter model	W	W1	D	D1
FR-CV-H7.5K-AT, H11K-AT, H15K-AT	130	90	320	120

Use the FR-XCCP, converter installation attachment for enclosure (option), to install the multifunction regeneration converter inside the enclosure.



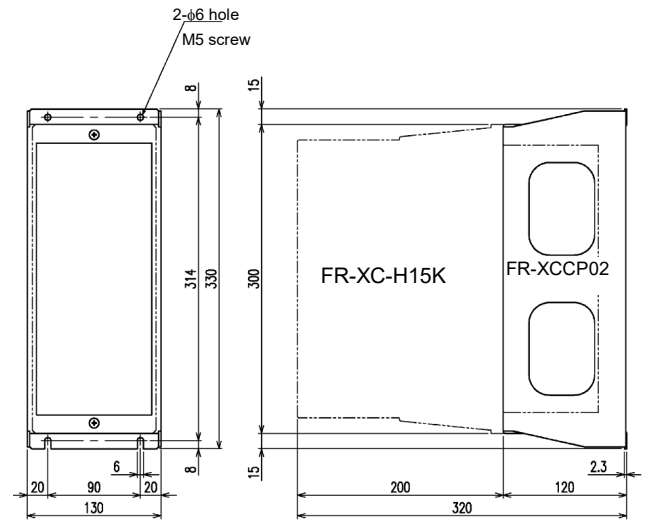
■ FR-XC-H7.5K, H11K with FR-XCCP01

Fit the FR-XCCP01 (optional converter installation attachment for enclosure) to the back of the FR-XC-H7.5K or 11K.

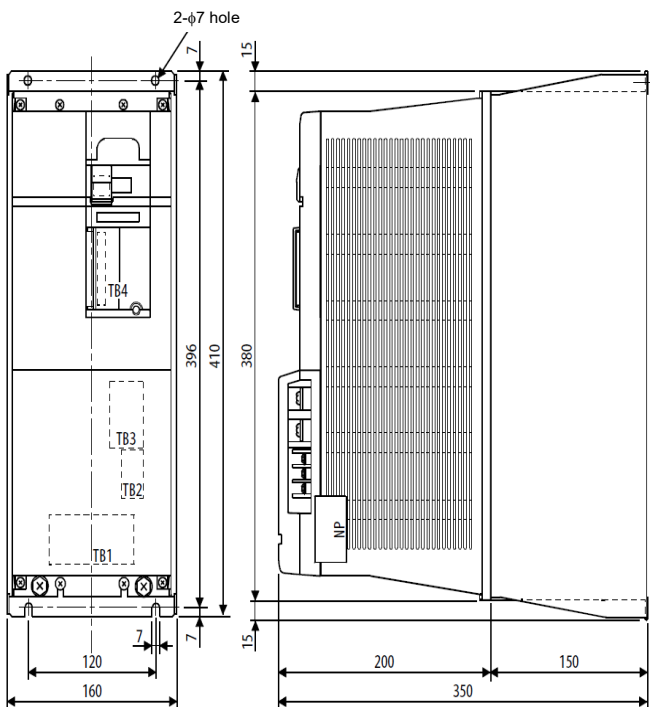


■FR-XC-H15K with FR-XCCP02

Fit the FR-XCCP02 (optional converter installation attachment for enclosure) to the back of the FR-XC-H15K.

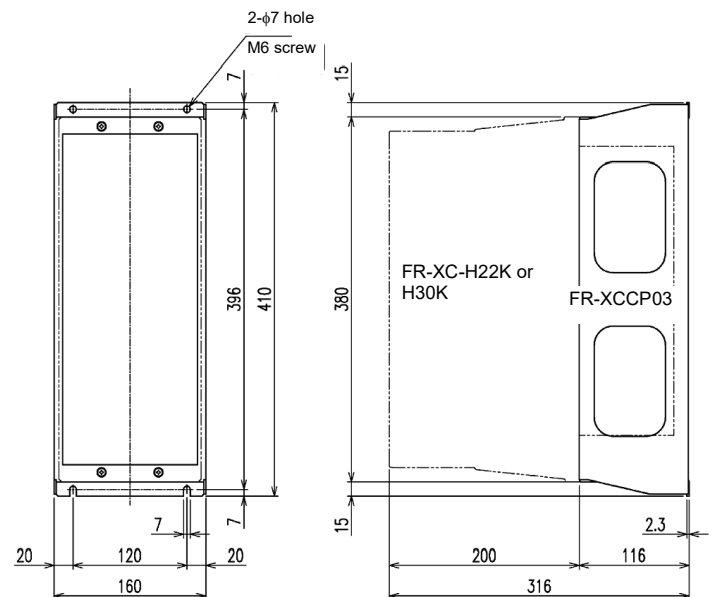


■FR-CV-H22K-AT, H30K-AT



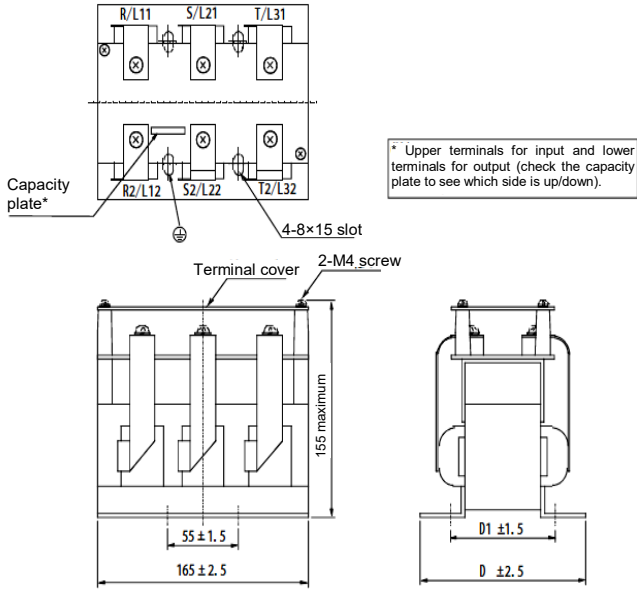
■FR-XC-H22K, H30K with FR-XCCP03

Fit the FR-XCCP03 (optional converter installation attachment for enclosure) to the back of the FR-XC-22K or 30K.



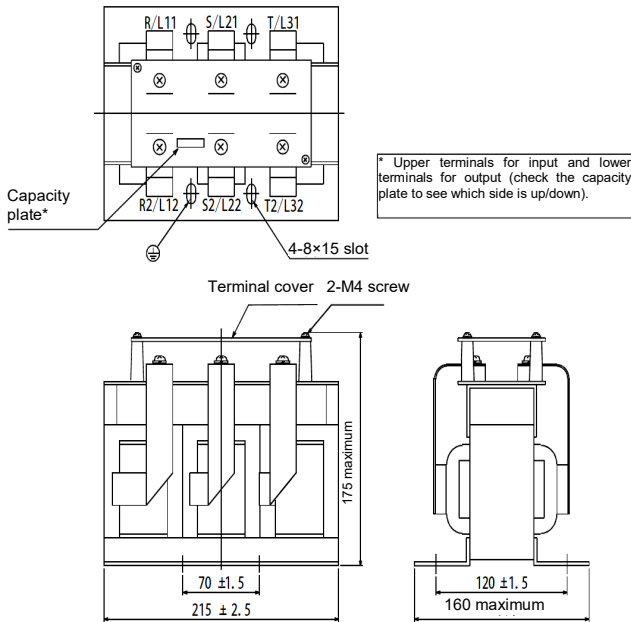
[200 V class dedicated stand-alone reactor]

■FR-CVL-7.5K, 11K, 15K, 22K

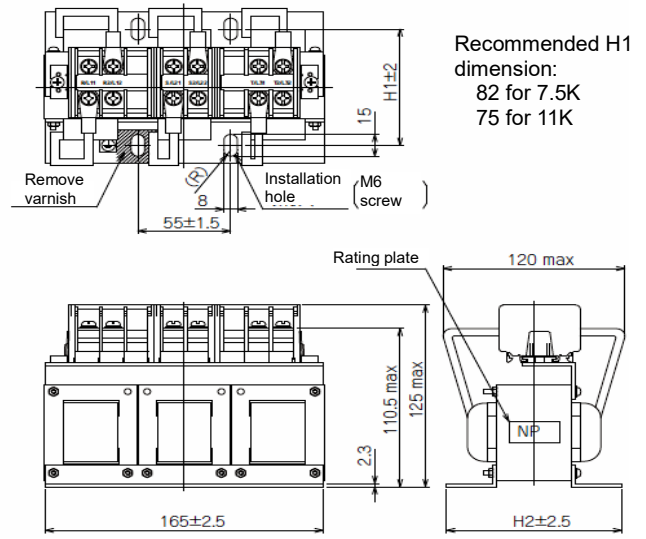


Reactor model	D	D1
FR-CVL-7.5K	130 maximum	82
FR-CVL-11K	130 maximum	75
FR-CVL-15K	130 maximum	105
FR-CVL-22K	140 maximum	110

■FR-CVL-30K

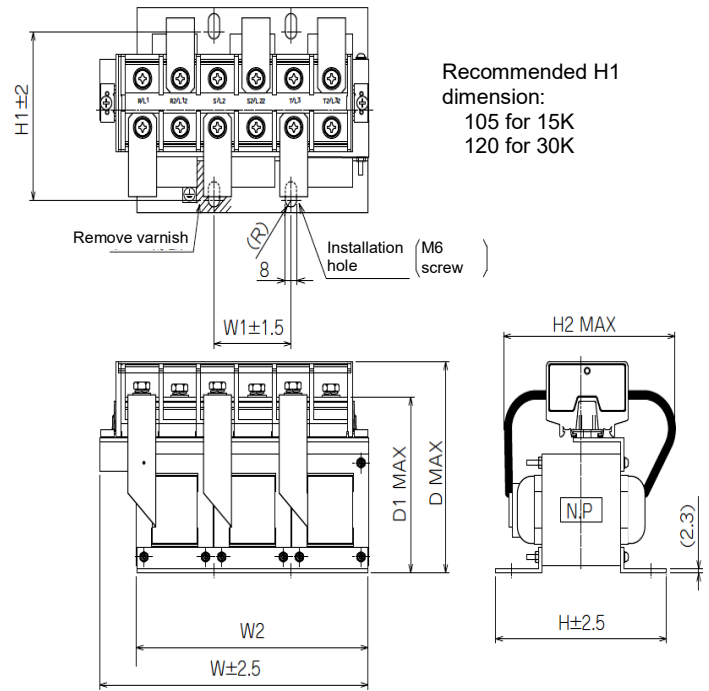


■FR-XCL-7.5K, 11K



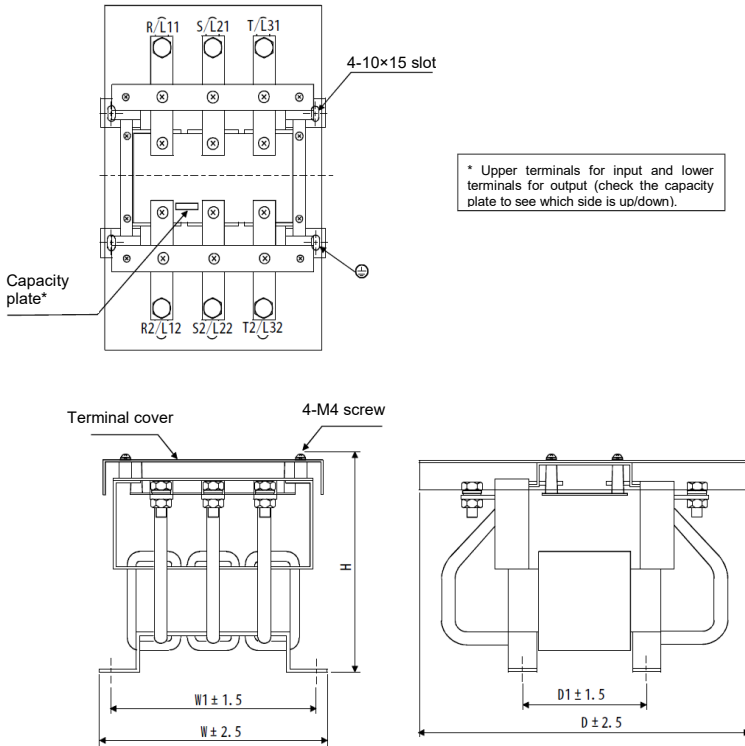
Reactor model	H1	H2
FR-XCL-7.5K	80	104
FR-XCL-11K	73	97

■FR-XCL-15K, 22K, 30K



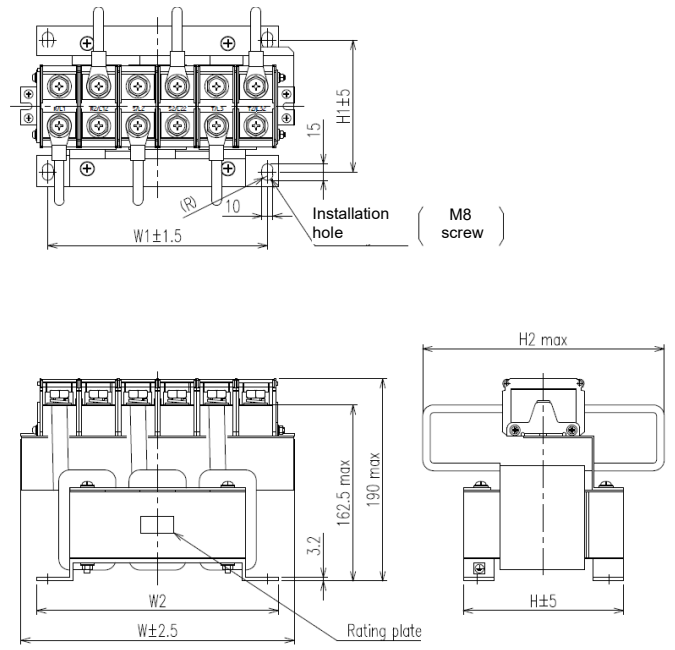
Model	W	W1	W2	H	H1	H2	D	D1
FR-XCL-15K	192	55	165	122	100	130	130	110.5
FR-XCL-22K	190	55	165	132	110	140	130	110.5
FR-XCL-30K	240	70	215	145	119	160	150	125.5

■FR-CVL-37K, 55K



Reactor model	D	D1	W	W1	H
FR-CVL-37K	320	120	220	200	200 maximum
FR-CVL-55K	335	135	250	225	225 maximum

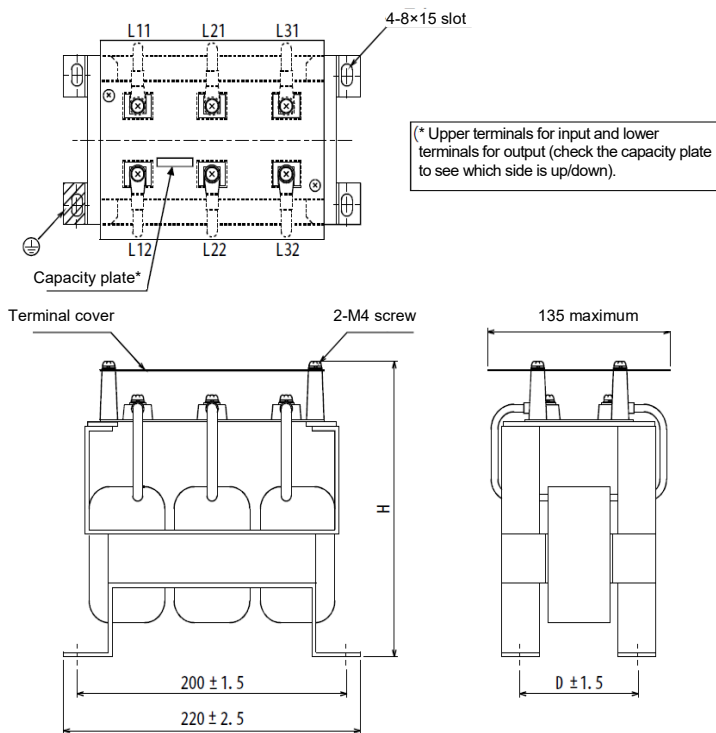
■FR-XCL-37K, 55K



Reactor model	Dimensions					
	W	W1	W2	H	H1	H2
37K	248	200	220	146	120	240
55K	250	225	250	173	135	260

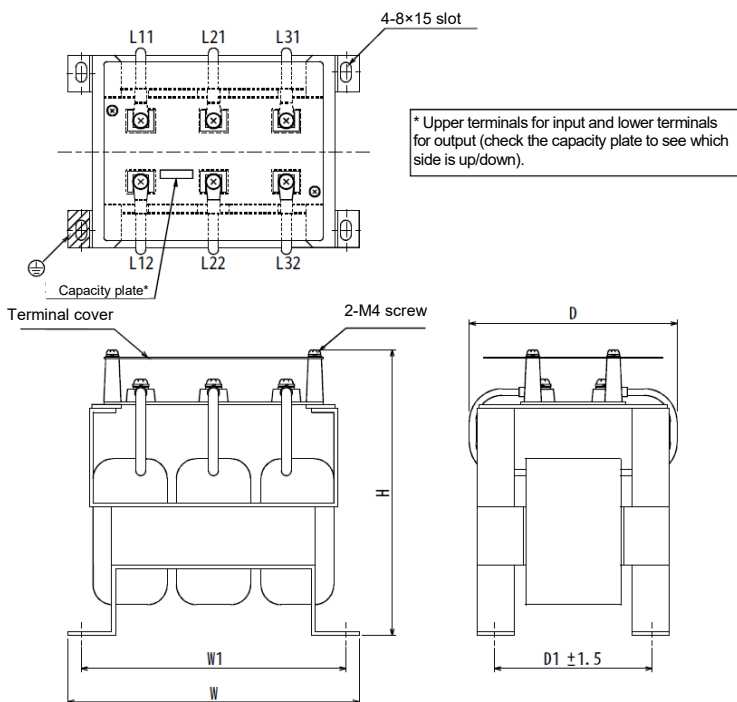
[Dedicated stand-alone reactor: 400 V class]

■FR-CVL-H7.5K, H11K, H15K



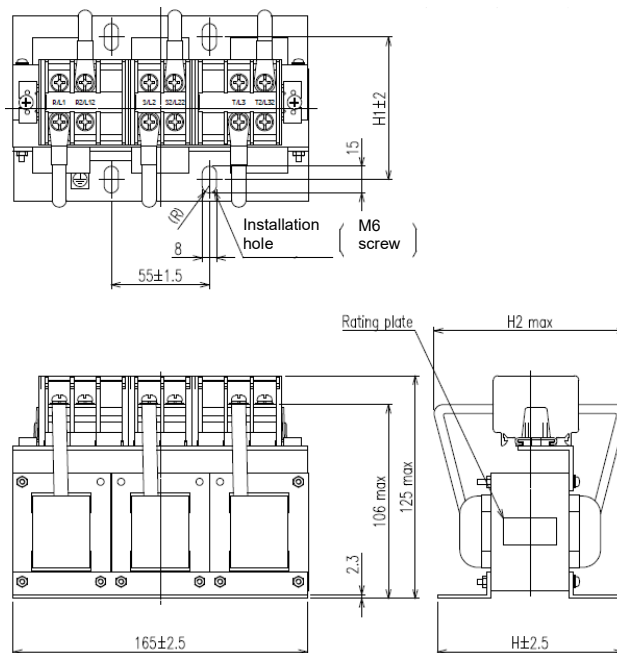
Reactor model	H	D
FR-CVL-7.5K	200 maximum	88
FR-CVL-11K	200 maximum	98
FR-CVL-15K	205 maximum	98

■FR-CVL-H22K, H30K



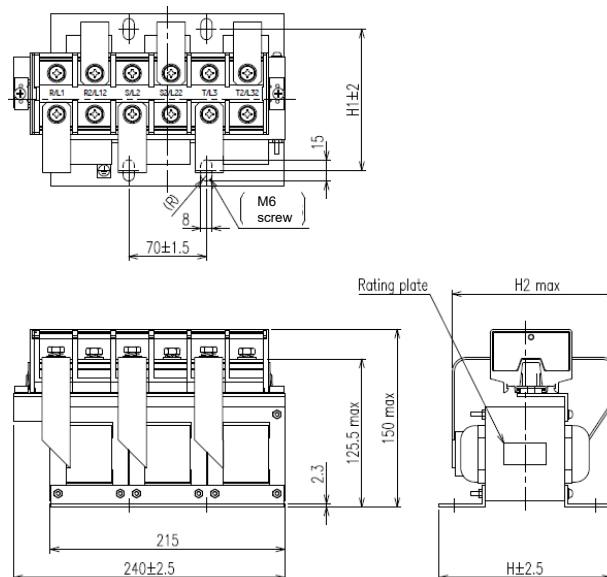
Reactor model	D	D1	W	W1	H
FR-CVL-H22K	150	113	220	200	215 maximum
FR-CVL-H30K	185	125	245	225	220 maximum

■FR-XCL-H7.5K, H11K, H15K



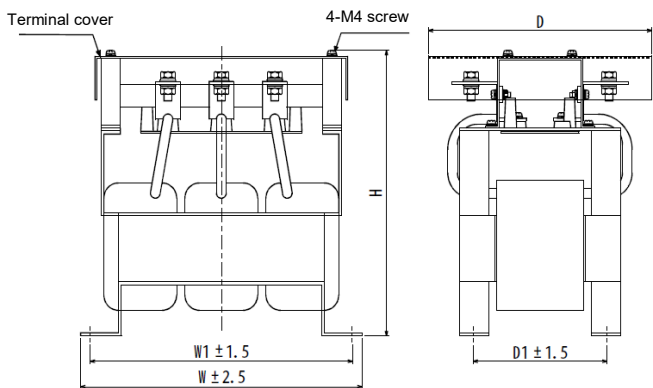
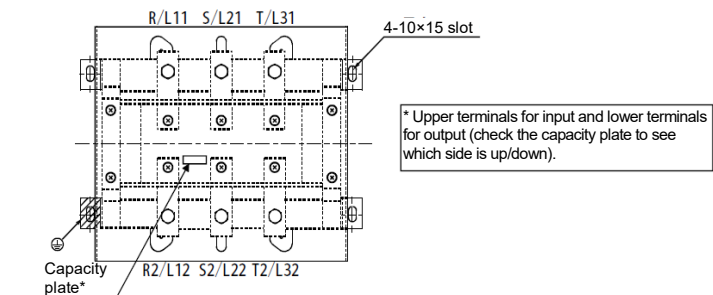
Reactor model	Dimensions		
	H	H1	H2
H7.5K	97	73	120
H11K	104	80	120
H15K	132	110	135

■FR-XCL-H22K, H30K



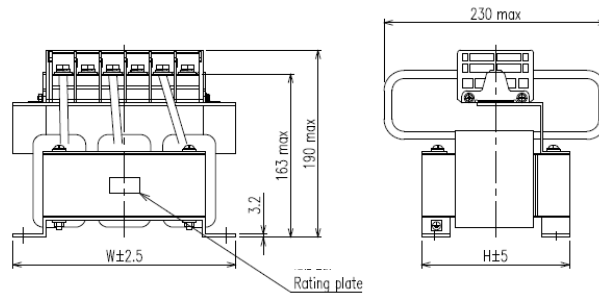
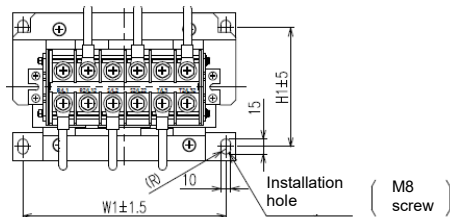
Reactor model	Dimensions		
	H	H1	H2
H22K	135	109	150
H30K	155	129	170

■FR-CVL-H37K, H55K



Reactor model	D	D1	W	W1	H
FR-CVL-H37K	230	125	245	225	265 maximum
FR-CVL-H55K	230	138	290	270	280 maximum

■FR-XCL-H37K, H55K



Reactor model	Dimensions			
	W	W1	H	H1
H22K	220	200	146	120
H30K	250	225	173	135

2. Wiring

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

Power regeneration common converter	Type	FR-CV terminal name	Compatible terminal name of FR-XC in common bus regeneration mode (FR-CV compatible mode) with harmonic suppression disabled	Remarks									
	Main circuit	R2/L1, S2/L2, T2/L3	R2/L12, S2/L22, T2/L32										
		P/L+, N/L-	P/+, N/-										
		R/L11, S/L21, T/MC1	R/L1, S/L2, T/L3										
			R1/L11, S1/L21	These terminals are connected to the phase detection terminals R/L1 and S/L2 in the initial status.									
	Control circuit input signal	Contact											
			P24		The FR-XC has a 24 VDC 0.1 A power supply.								
			RES	RES									
			SD	SD									
	Control circuit output signal	Relay	ABC	ABC									
Open collector			RDYA	RYA									
		RDYB	RYB										
RSO		RSO											
SE	SE												
LED display indication	7-segment LED in one digit	7-segment LED in two digits for the operating status display	FR-CV	<table border="1"> <tr> <td>LED Display</td> <td></td> <td></td> </tr> <tr> <td>Converter status</td> <td>During driving operation (During stop)</td> <td>During regenerative operation When the regeneration converter performs switching operation, the bottom segment flickers.</td> </tr> </table>	LED Display			Converter status	During driving operation (During stop)	During regenerative operation When the regeneration converter performs switching operation, the bottom segment flickers.			
	LED Display												
Converter status	During driving operation (During stop)	During regenerative operation When the regeneration converter performs switching operation, the bottom segment flickers.											
			FR-XC	<table border="1"> <tr> <td>LED display indication</td> <td>Input value is displayed as a percent.</td> <td>Input Regenerative drive indication</td> </tr> <tr> <td>Converter status</td> <td>During power driving. (During stop)</td> <td>During regenerative driving. The regenerative drive indication (a decimal point LED is ON during operation).</td> </tr> </table> <p>* An example of the indications of power value.</p>	LED display indication	Input value is displayed as a percent.	Input Regenerative drive indication	Converter status	During power driving. (During stop)	During regenerative driving. The regenerative drive indication (a decimal point LED is ON during operation).			
LED display indication	Input value is displayed as a percent.	Input Regenerative drive indication											
Converter status	During power driving. (During stop)	During regenerative driving. The regenerative drive indication (a decimal point LED is ON during operation).											
Function selection switch		SW2	<table border="1"> <thead> <tr> <th>Switch</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ON Common bus regeneration mode (FR-CV compatible) OFF Power regeneration mode (FR-RC compatible)</td> </tr> <tr> <td>2</td> <td>For manufacturer setting. (Do not change from ON)</td> </tr> <tr> <td>3</td> <td>ON Surrounding air temperature of 50°C rating OFF Surrounding air temperature of 40°C rating</td> </tr> <tr> <td>4</td> <td>For manufacturer setting. (Do not change from ON)</td> </tr> </tbody> </table> <p>Do not change the switch settings from the initial state.</p>	Switch	Function	1	ON Common bus regeneration mode (FR-CV compatible) OFF Power regeneration mode (FR-RC compatible)	2	For manufacturer setting. (Do not change from ON)	3	ON Surrounding air temperature of 50°C rating OFF Surrounding air temperature of 40°C rating	4	For manufacturer setting. (Do not change from ON)
Switch	Function												
1	ON Common bus regeneration mode (FR-CV compatible) OFF Power regeneration mode (FR-RC compatible)												
2	For manufacturer setting. (Do not change from ON)												
3	ON Surrounding air temperature of 50°C rating OFF Surrounding air temperature of 40°C rating												
4	For manufacturer setting. (Do not change from ON)												
Dedicated stand-alone reactor	Type	FR-CVL terminal name	FR-XCL terminal name	Remarks									
	Main circuit	R/L11, S/L21, T/L31	R/L1, S/L2, T/L3										
		R2/L12, S2/L22, T2/L32	R2/L12, S2/L22, T2/L32										

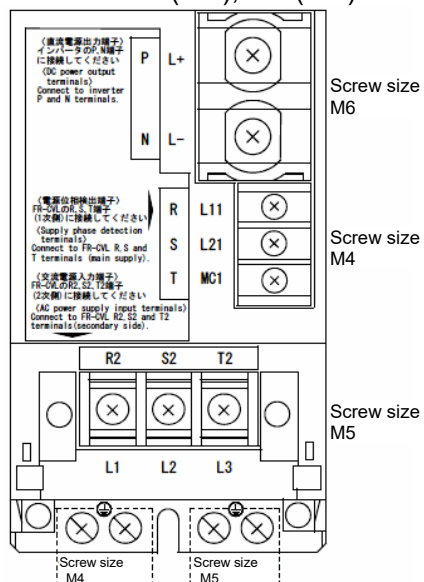
Main circuit terminal layout

The following shows the main circuit terminal layouts of the FR-CV series converters and the FR-XC series converters in common bus regeneration mode (FR-CV compatible) with harmonic suppression disabled. 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.

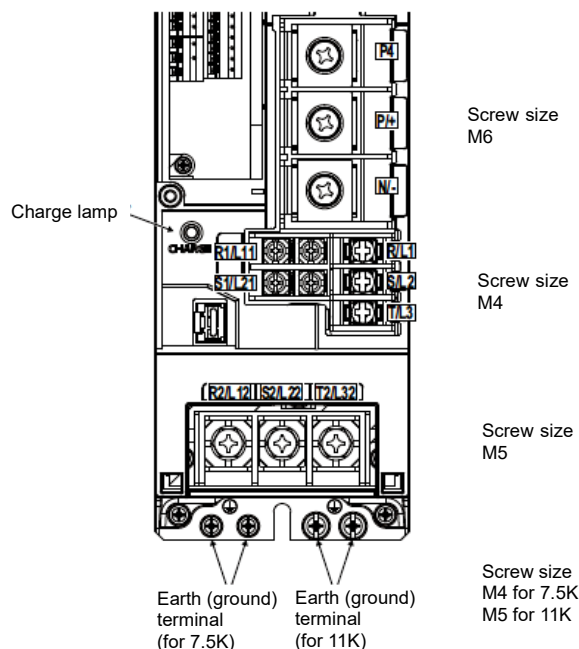
When cables used for the FR-CV series are not long enough for wiring of the FR-XC series converters, prepare longer ones.

[200 V class converter]

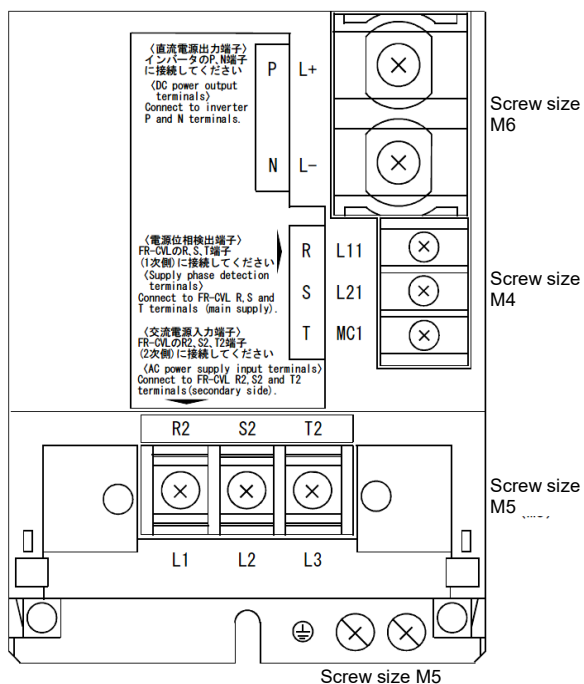
■FR-CV-7.5K(-AT), 11K(-AT)



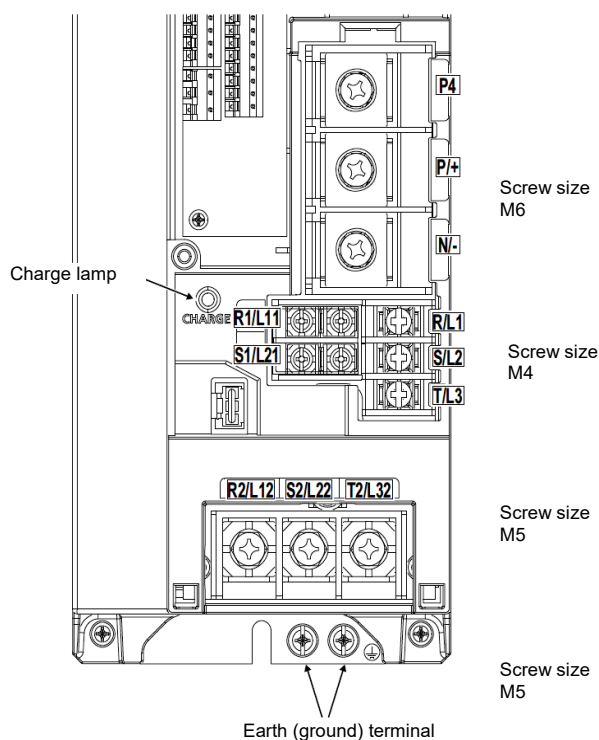
■FR-XC-7.5K, 11K



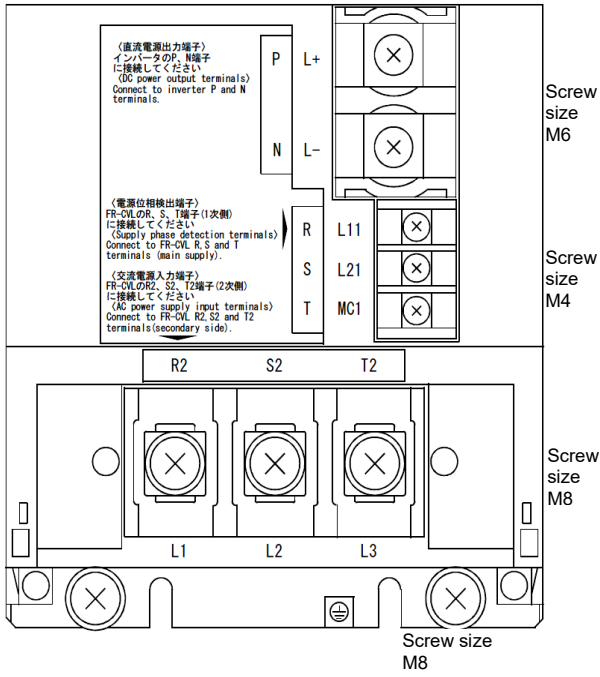
■FR-CV-15K(-AT)



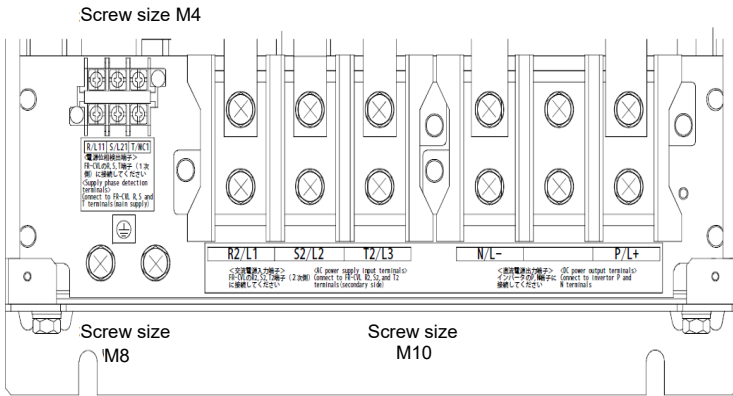
■FR-XC-15K



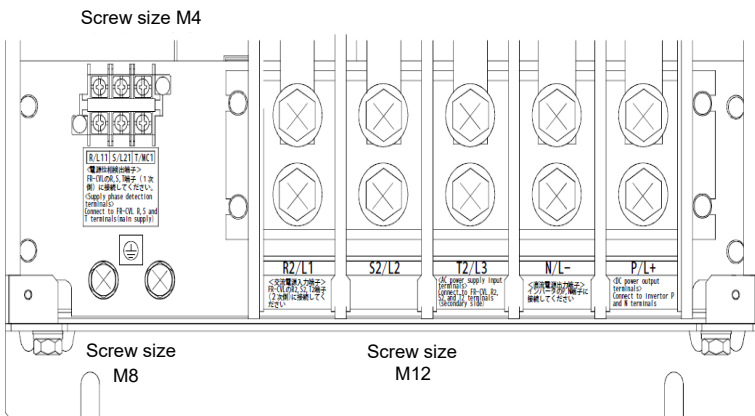
■FR-CV-22K(-AT), 30K(-AT)



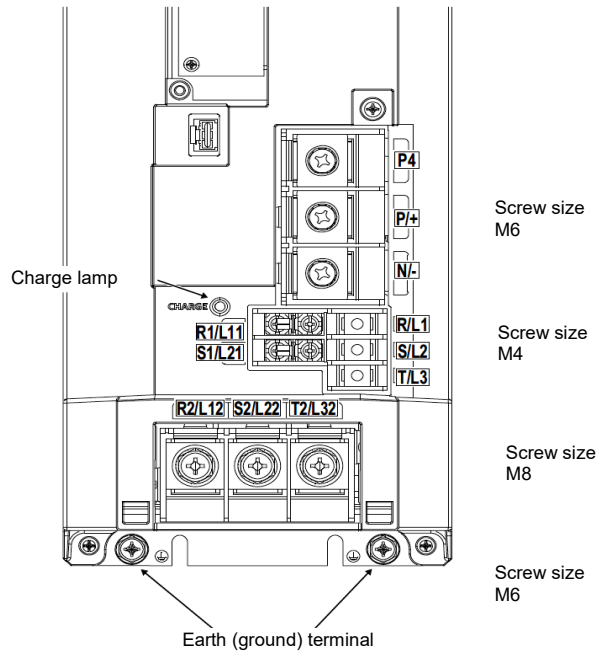
■FR-CV-37K



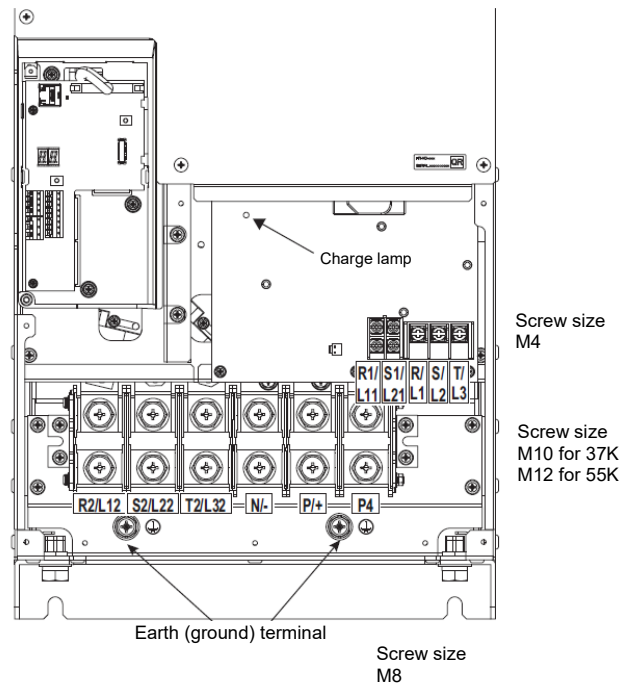
■FR-CV-55K



■FR-XC-22K, 30K

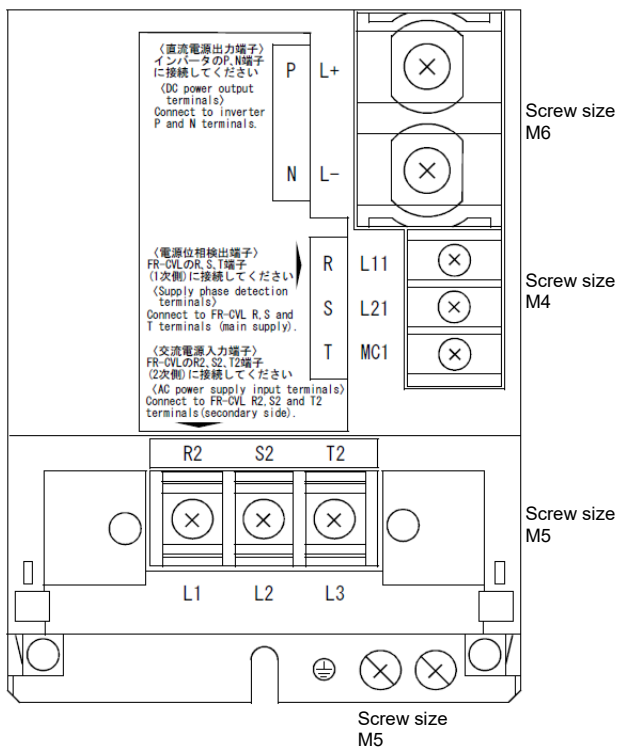


■FR-XC-37K, 55K

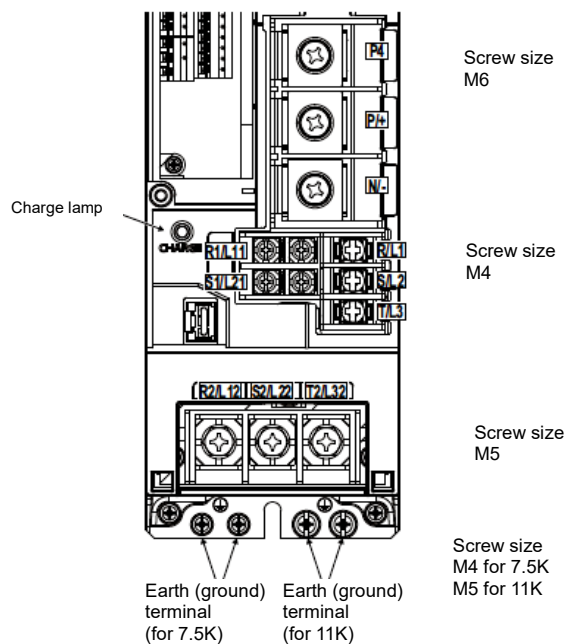


[400 V class converter]

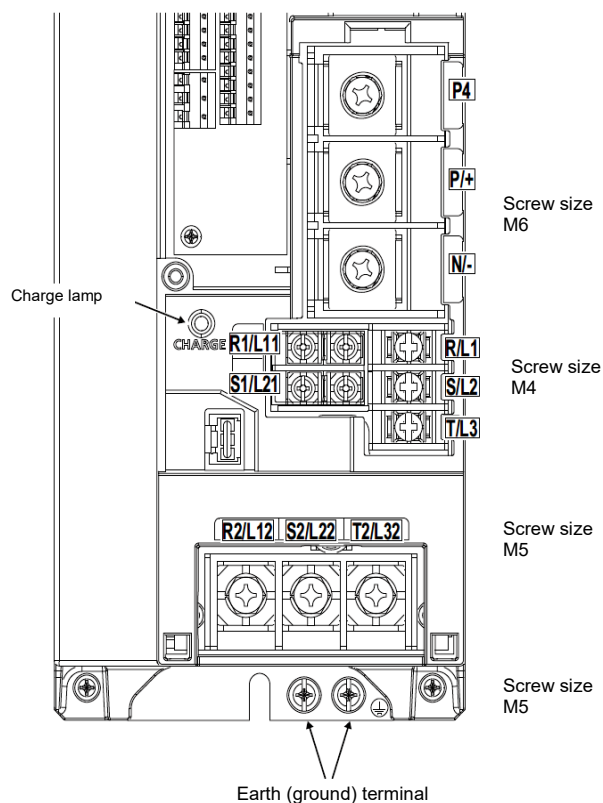
■FR-CV-H7.5K(-AT), H11K(-AT), H15K(-AT)



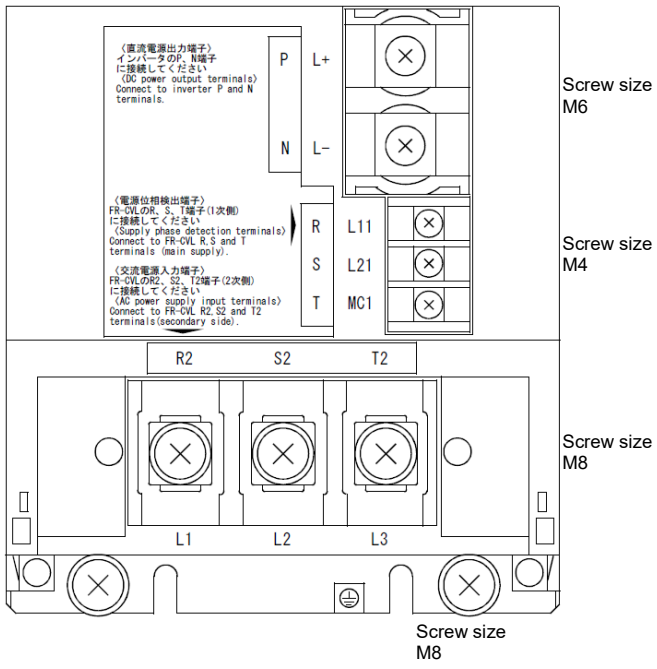
■FR-XC-H7.5K, H11K



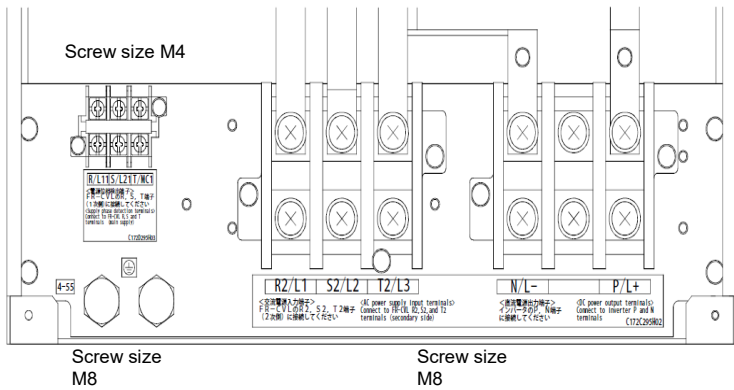
■FR-XC-H15K



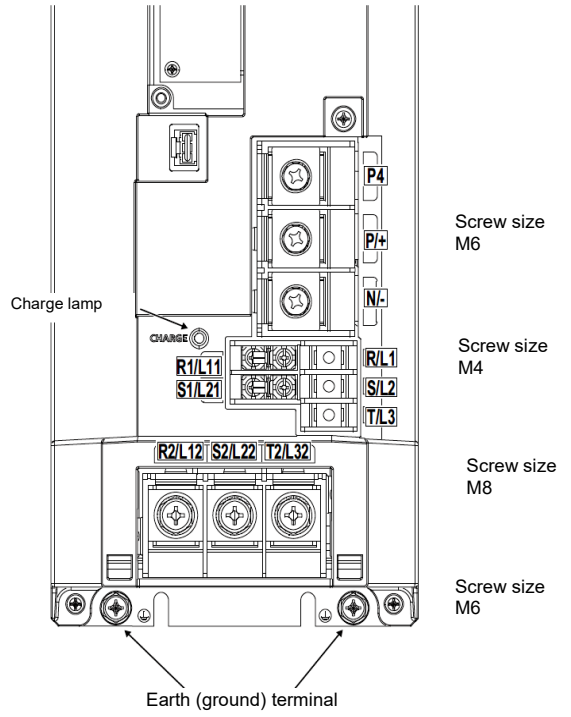
■FR-CV-H22K(-AT), H30K(-AT)



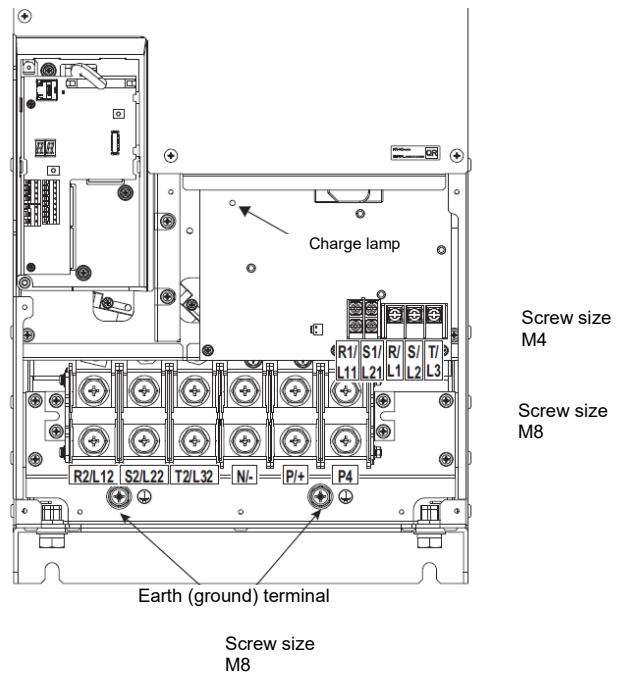
■FR-CV-H37K, H55K



■FR-XC-H22K, H30K

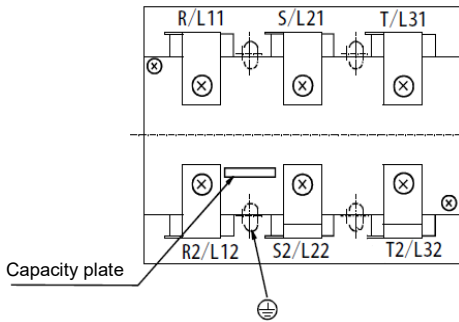


■FR-XC-H37K, H55K



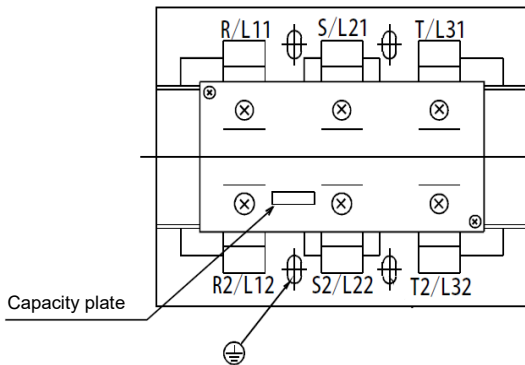
[200 V class dedicated stand-alone reactor]

■FR-CVL-7.5K, 11K, 15K, 22K



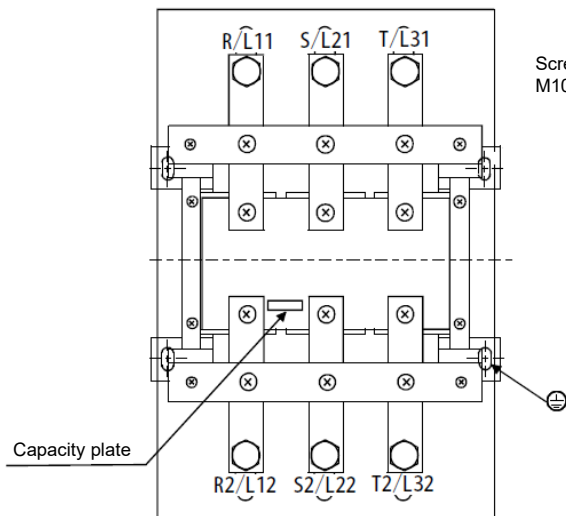
Screw size
M5 for 7.5K and
11K
M6 for 15K
M6 for 22K

■FR-CVL-30K



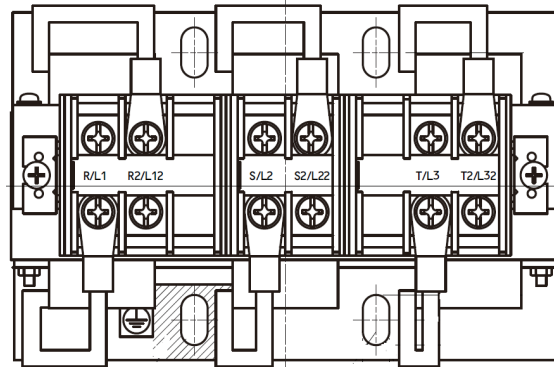
Screw size
M6

■FR-CVL-37K, 55K



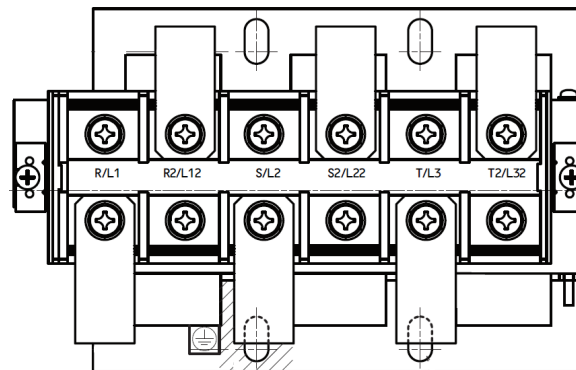
Screw size
M10

■FR-XCL-7.5K, 11K



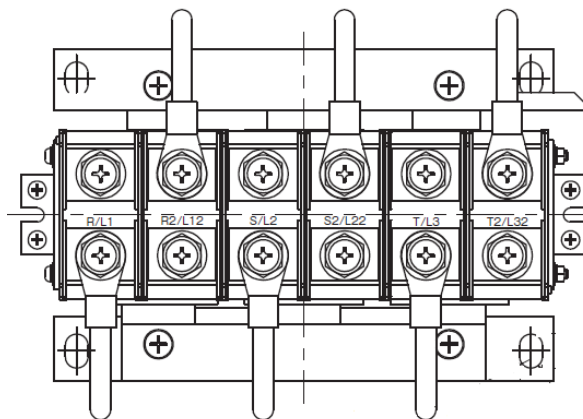
Screw size
M5

■FR-XCL-15K, 22K, 30K



Screw size
M6

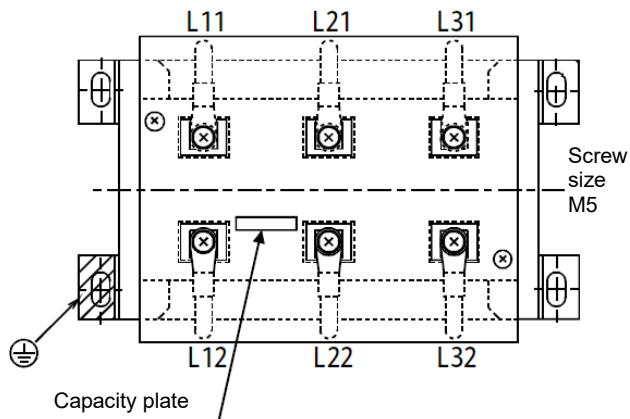
■FR-XCL-37K, 55K



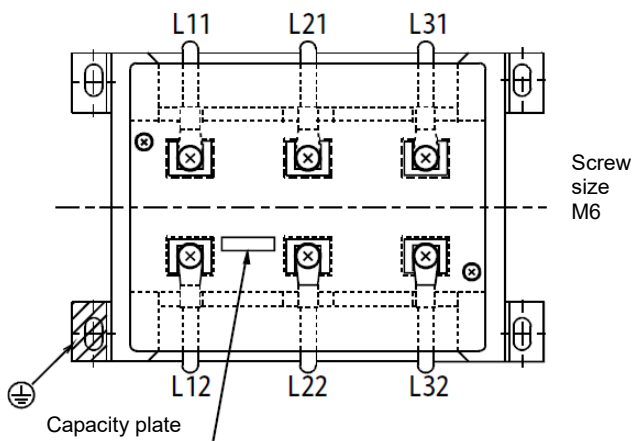
Screw size
M10

[400 V class dedicated stand-alone reactor]

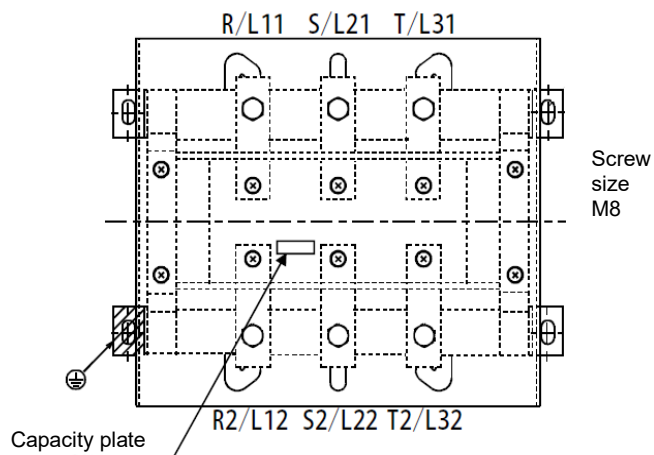
■FR-CVL-H7.5K, H11K, H15K



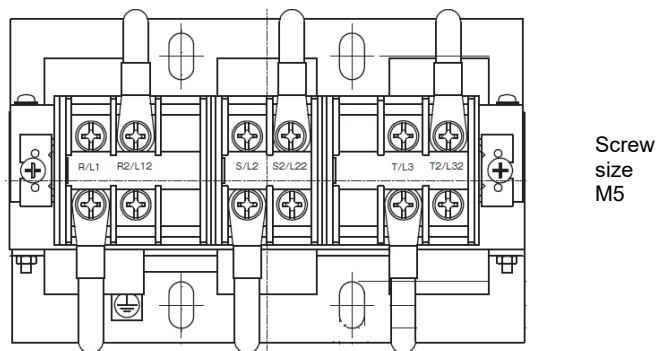
■FR-CVL-H22K, H30K



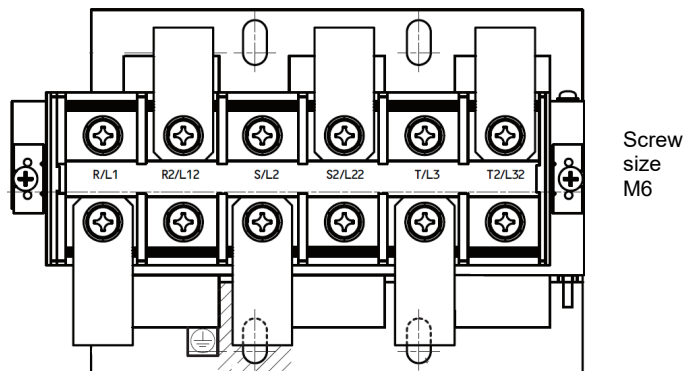
■FR-CVL-H37K, H55K



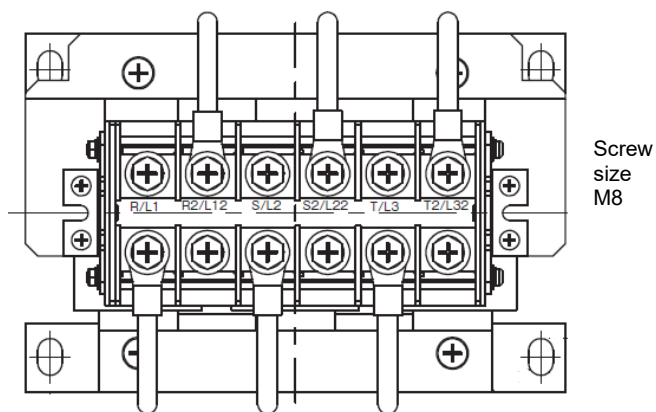
■FR-XCL-H7.5K, H11K, H15K



■FR-XCL-H22K, H30K



■FR-XCL-H37K, H55K



Control circuit terminal layout

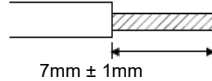
The following shows the control circuit terminal layouts of the FR-CV series converters and the FR-XC series converters in common bus regeneration mode (FR-CV compatible) with harmonic suppression disabled. The control circuit terminal layout of the FR-CV series converters differs from that of the FR-XC series converters. Check the terminal names and positions before performing wiring.

■FR-CV series converters

The recommended wire gauge is 0.3 to 0.75 mm²

A
B
C
P24
RES
SD
SD
RDYB
RSO
RDYA
SE

- 1) For the wiring of the control circuit, strip the sheaths of the wires and use them as they are. Over-stripping may cause a short circuit with the neighboring cable. Under-stripping may cause wire disconnection.



- 2) When using bar terminals or solid wires for wiring, use those of not more than 0.9 mm in diameter. If the diameter is greater than 0.9 mm, the screw threads may be damaged when tightened.
- 3) Loosen the terminal screw and insert the cable into the terminal.
- 4) Tighten the screw to the specified torque. Undertightening can cause cable disconnection or malfunction. Overtightening can cause the screw or unit to be damaged, resulting in a short circuit or malfunction. Tightening torque: 0.25 N·m to 0.49 N·m

*Use a screwdriver of No. 0.

Note: Twist the stripped end of wires to prevent them from fraying.

■FR-XC series converters

The recommended wire gauge is 0.3 to 1.25 mm²

RVB	RSO	RYA	SE
PC	LOH	SOE	RES
SD	SD	SD	PC
A	B	C	

Wire insertion

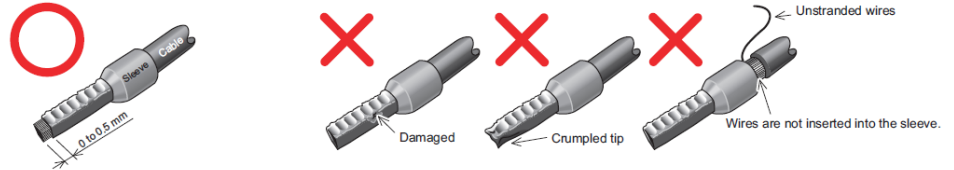
Use crimp terminals and stripped wire for the control circuit wiring. For single wire, the stripped wire can be used without crimp terminal. Connect the end of wires (crimp terminal or stranded wire) to the terminal block.

- (1) Strip the signal wires as shown below. If too much of the wire is stripped, a short circuit may occur with neighboring wires.

If not enough of the wire is fraying, wires may become loose and fall out. Twist the stripped end of wires to prevent them from fraying. Do not solder it.



- (2) Use appropriate crimp terminals (ferrules, blade terminals, etc.). Insert wires to the crimp terminal, and check that the wires come out for about 0 to 0.5 mm from a sleeve. Check the condition of the crimp terminals after crimping. Do not use the crimp terminals of which the crimping is inappropriate, or the face is damaged.



- Crimp terminals commercially available (as of January 2017)

Phoenix Contact Co., Ltd.

Wire gauge (mm ²)	Ferrule part No.			Crimping tool model No.
	With insulation sleeve	Without insulation sleeve	For UL wire*1	
0.3	AI 0,34-10TQ	—	—	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 (two-wire product)	AI-TWIN 2×0,75-10GY	—	—	

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

*2 Applicable for terminals A, B, and C.

NICHIFU Co., Ltd.

Wire gauge (mm ²)	Blade terminal part No.	Insulation cap part No.	Crimping tool model No.
0.3 to 0.75	BT 0.75-11	VC 0.75	NH 69

- (3) Insert each wire into the terminal. When using single wire or stranded wires without a crimp terminal, push the open/close button all the way down with a flathead screwdriver, and insert the wire.

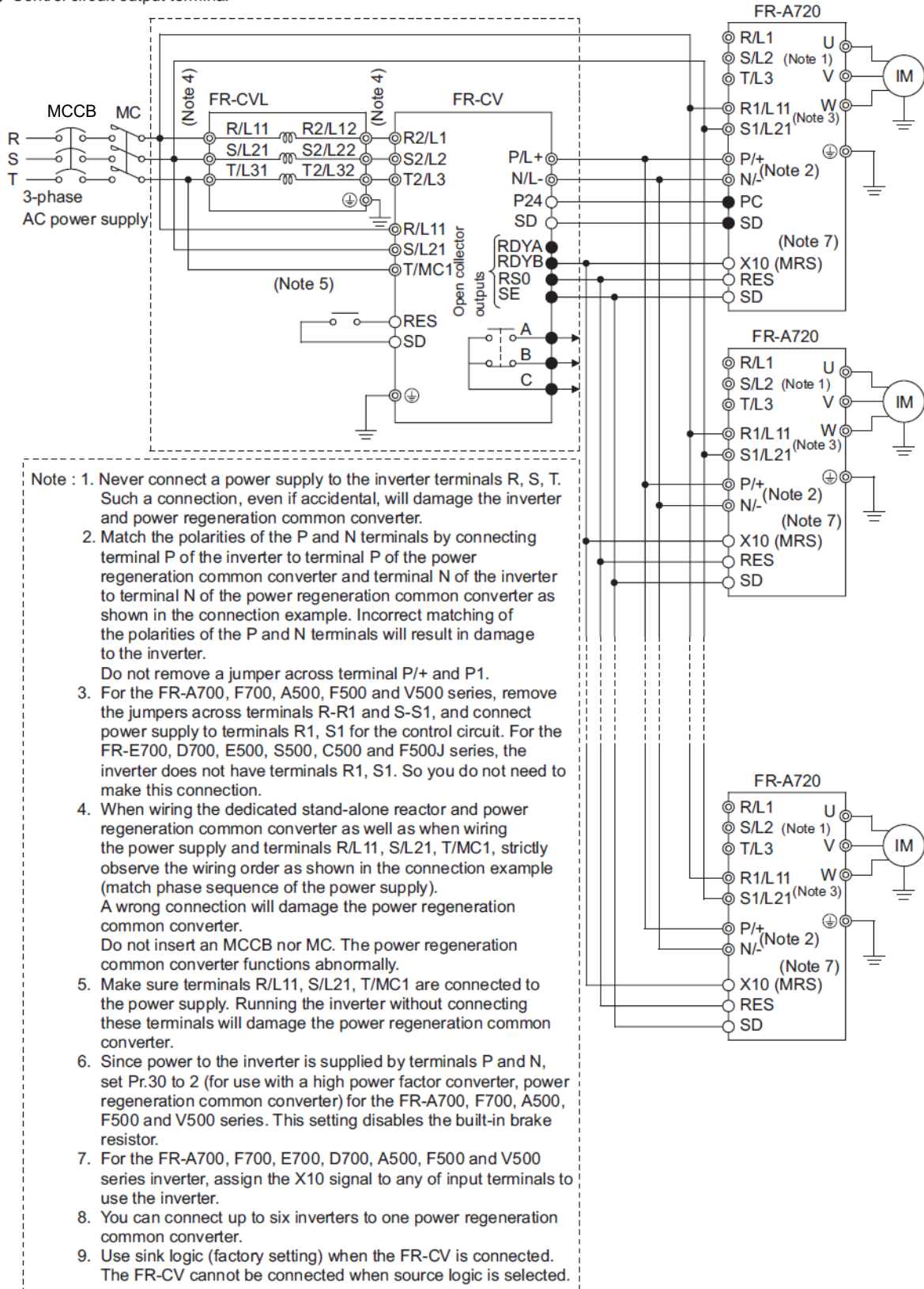
Wiring of main circuit

The following shows the connection diagram examples of the FR-CV series converters and the FR-XC series converters in common bus regeneration mode (FR-CV compatible) with harmonic suppression disabled. Note that some of the wiring are different.

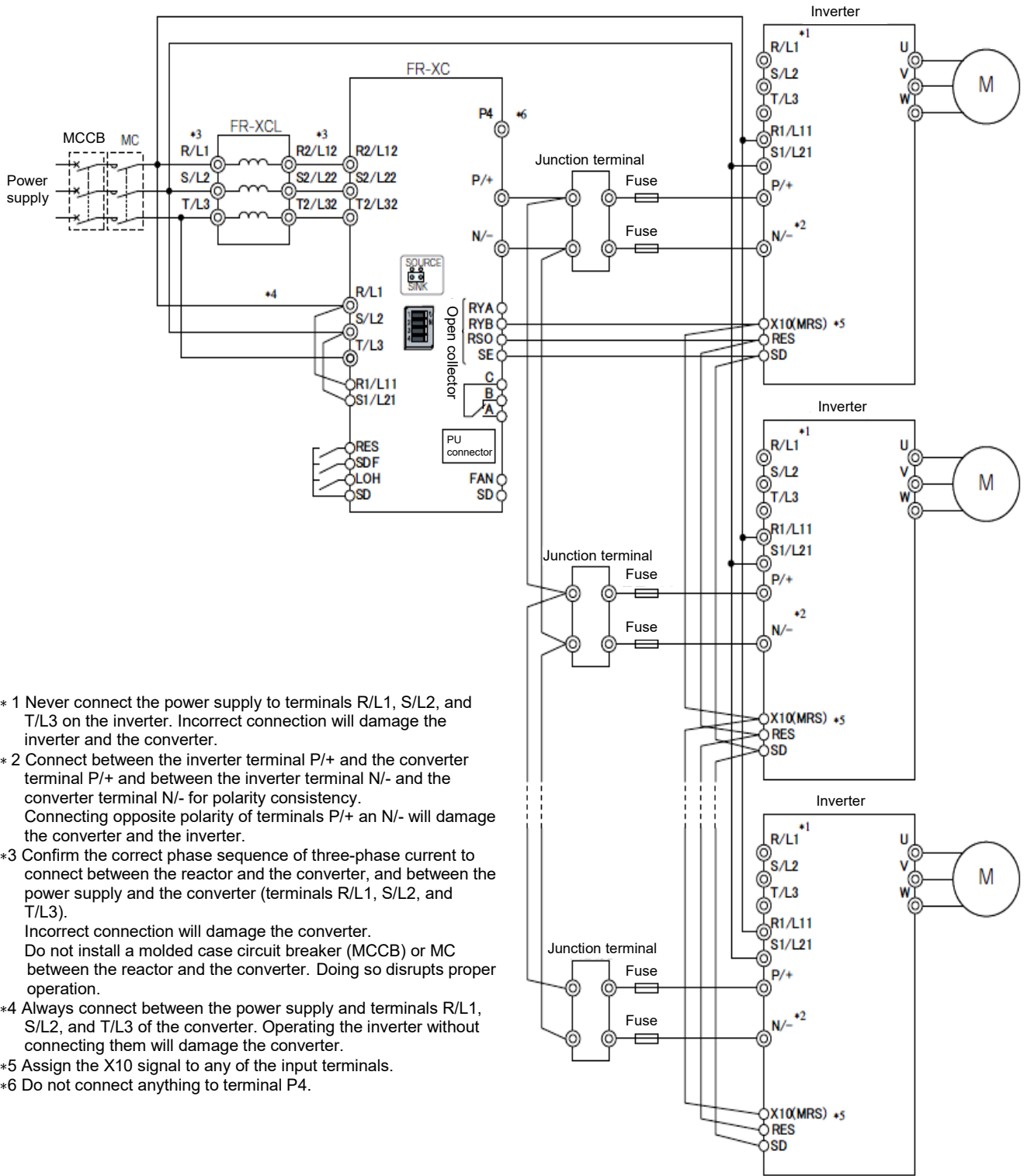
Additionally, the wiring varies depending on the series of the inverter used with the converter. Before wiring, check the wiring shown on the Instruction Manual of the inverter.

■ Connection example of the FR-CV series converter

- ⊙ Main circuit terminal
- Control circuit input terminal
- Control circuit output terminal



■ Connection example of the FR-XC series converter in common bus regeneration mode (FR-CV compatible) with harmonic suppression disabled



- * 1 Never connect the power supply to terminals R/L1, S/L2, and T/L3 on the inverter. Incorrect connection will damage the inverter and the converter.
- * 2 Connect between the inverter terminal P/+ and the converter terminal P/+ and between the inverter terminal N/- and the converter terminal N/- for polarity consistency. Connecting opposite polarity of terminals P/+ and N/- will damage the converter and the inverter.
- * 3 Confirm the correct phase sequence of three-phase current to connect between the reactor and the converter, and between the power supply and the converter (terminals R/L1, S/L2, and T/L3). Incorrect connection will damage the converter. Do not install a molded case circuit breaker (MCCB) or MC between the reactor and the converter. Doing so disrupts proper operation.
- * 4 Always connect between the power supply and terminals R/L1, S/L2, and T/L3 of the converter. Operating the inverter without connecting them will damage the converter.
- * 5 Assign the X10 signal to any of the input terminals.
- * 6 Do not connect anything to terminal P4.

3. Parameters

No parameters need to be set in the FR-CV series converters.

When replacing the FR-CV series converter with the FR-XC series converter, the parameter settings in the FR-XC series converter are not necessary to be changed from the initial values.

FR-XC compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Setting	Remarks
0	Simple mode selection	0, 9999	0		
1	Maximum power supply frequency	60 Hz (Read only)	60 Hz		
2	Minimum power supply frequency	50 Hz (Read only)	50 Hz		
3	LOH terminal function selection	0, 3 to 5, 9999	5		
4	SOF terminal function selection		0		
7	RES terminal function selection		3		
8	SOF input selection	0, 1, 2	0		
9	OH input selection	0, 1	0		
11	RSO terminal function selection	0 to 4, 6 to 11, 14 to 18, 98, 99, 101 to 104, 106 to 111, 114 to 118, 198, 199, 9999	1		
12	RYA terminal function selection		0		
16	ABC terminal function selection		99		
22	Current limit level	0 to 190%	150		
23	Current limit level (regenerative)	0 to 190%, 9999	9999		
31	Life alarm status display	0, 1, 4, 5, 8, 9, 12, 13 (Read only)	0		
32	Inrush current limit circuit life display	0 to 100% (Read only)	100		
33	Control circuit capacitor life display	0 to 100% (Read only)	100		
34	Maintenance timer	0 (1 to 9998)	0		
35	Maintenance timer warning output set time	0 to 9998, 9999	9999		
44	Instantaneous power failure detection signal clear	0, 9999	9999		
46	Watt-hour meter clear	0, 10, 9999	9999		
47	Energization time carrying-over times	Read only	0		
48	Cumulative power monitor digit shifted times	0 to 4, 9999	9999		
52	PU main monitor selection	0, 5 to 10, 25, 28	0		
57	Restart selection	0, 9999	9999		
58	Free parameter 1	0 to 9999	9999		
59	Free parameter 2	0 to 9999	9999		
61	Key lock operation selection	0, 10	0		
65	Retry selection	0 to 4	0		
67	Number of retries at fault occurrence	0 to 10, 101 to 110, 1001 to 1010, 1101 to 1110	0		
68	Retry waiting time	0.1 to 600 s	1		
69	Retry count display erase	0	0		

FR-XC compatible parameter				Description about parameter setting	
Pr.	Name	Setting range	Initial value	Setting	Remarks
75	Reset selection / disconnected PU detection / PU stop selection	0 to 3, 14 to 17	14		
77	Parameter write selection	1, 2	2		
80	Voltage control proportional gain	0 to 1000%	100		
81	Voltage control integral gain	0 to 1000%	100		
82	Current control proportional gain	0 to 200%	100		
83	Current control integral gain	0 to 200%	100		
117	PU communication station number	0 to 31	0		
118	PU communication speed	48, 96, 192, 384	192		
119	PU communication stop bit length	0, 1, 10, 11	1		
120	PU communication parity check	0, 1, 2	2		
121	PU communication retry count	0 to 10, 9999	1		
123	PU communication waiting time setting	0 to 150 ms, 9999	9999		
124	PU communication CR/LF selection	0, 1, 2	1		
145	PU display language selection	0 to 7	0		
342	Communication EEPROM write selection	0, 1	0		
415	SW2 setting status	0 to 15 (Read only)	15		
416	Control method selection	0, 1, 9999	9999		Set "0" or "9999" to disable the harmonic suppression function.
500	Communication error execution waiting time	0 to 999.8 s	0		
501	Communication error occurrence count display	0	0		
502	Stop mode selection at communication error	0, 3	0		
542	Station number (CC-Link)	1 to 64	1		
543	Transmission speed selection (CC-Link)	0 to 4	0		
544	CC-Link extended setting	0, 1, 12	0		
896	Power unit cost	0 to 500	0		
990	PU buzzer control	0, 1	1		
991	PU contrast adjustment	0 to 63	58		

Pr.30 Regenerative function selection in the inverter parameters must be set.

To use the converter in the common bus regeneration mode, select the setting for a power regeneration common converter or high power factor converter (Example: Set "2" in Pr.30 in the FR-A800 inverters).