Chapter 5 Main Circuit Terminals

DANGER

- ☑ Tighten the screws in the main circuit terminal to prevent sparks caused by screws loosened due to vibration.
- ☑ If necessary, use an inductive filter only at the motor output terminals U/T1, V/T2, W/T3 of the AC motor drive. DO NOT use phase-compensation capacitors or L-C (Inductance-Capacitance) or R-C (Resistance-Capacitance), unless approved by Delta.
- ☑ DO NOT connect phase-compensation capacitors or surge absorbers at the output terminals of AC motor drives.
- ☑ DO NOT short circuit [+1, -], [+2, -], [+1/DC+, -/DC-] or connect brake resistors directly to any of them to prevent damage to the drive or to the brake resistors.
- ☑ Ensure proper insulation of the main circuit wiring in accordance with the relevant safety regulations.

CAUTION

Main input power terminals

- ☑ Do not connect three-phase model to single-phase power. R/L1, S/L2 and T/L3 have no phase-sequence requirement; they can be connected in any sequence.
- ☑ Add a magnetic contactor (MC) to the power input wiring to cut off power quickly and reduce malfunctions when the AC motor drive protection function activates. Both ends of the MC should have an R-C surge absorber.
- ☑ Use voltage and current within the specifications in Chapter 09. Refer to Chapter 09 Specifications for details.
- ☑ When using a general GFCI (Ground Fault Circuit Interrupter), select a current sensor with sensitivity of 200 mA or above and not less than 0.1-second operation time to avoid nuisance tripping.
- ☑ Use shielded wire or conduit for the power wiring and ground the two ends of the shield wire or conduit.
- ☑ DO NOT run and stop the AC motor drives by turning the power ON and OFF. Run and stop the AC motor drives by sending RUN and STOP commands through the control terminals or the keypad. If you still need to run and stop the AC motor drives by turning the power ON and OFF, do so no more often than ONCE per hour.
- ☑ To comply with UL standards, connect the drive to a three-phase three-wire or three-phase four-wire Wye system type of mains power system.

Output terminals of the main circuit

- ☑ Use well-insulated motor, suitable for inverter operation.
- ☑ When the AC drive output terminals U/T1, V/T2, and W/T3 are connected to the motor terminals U/T1, V/T2, and W/T3 respectively, the motor will rotate counterclockwise (as viewed on the shaft end of the motor, refer to the pointed direction in the figure below) upon a forward operation command is received. To permanently reverse the direction of motor rotation, switch over any of the two motor leads.

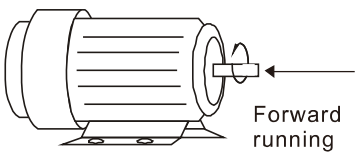


Figure 5-1

Terminals for connecting DC reactor, external brake resistor and DC circuit

☑ Use the terminals, as shown in Figure 5-2, to connect a DC reactor to improve the power factor and reduce harmonics. A jumper is connected to these terminals at the factory. Remove that jumper before connecting to a DC reactor.

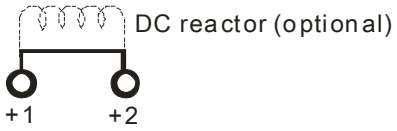


Figure 5-2

☑ Install an external brake resistor for applications in frequent deceleration to stop, short deceleration time (such as high frequency operation and heavy load operation), too low braking torque, or increased braking torque.

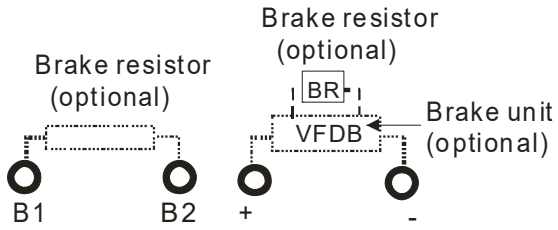


Figure 5-3

☑ The external brake resistor of Frame A, B and C should connect to the terminals (B1, B2) of AC motor drives.

☑ For those models without built-in brake resistor, please connect external brake unit and brake resistor (both of them are optional) to increase brake torque.

☑ When the terminals +1, +2 and - are not used, leave the terminals open.

☑ DC+ and DC- are connected by common DC bus, refer to Section 5-1 (Main Circuit Terminal) for the wiring terminal specification and the wire gauge information.

☑ Refer to the VFDB manual for more information on wire gauge when installing the brake unit.

5-1 Main Circuit Diagram

Wiring Diagram for Frame A~C

Input: 3-phase power

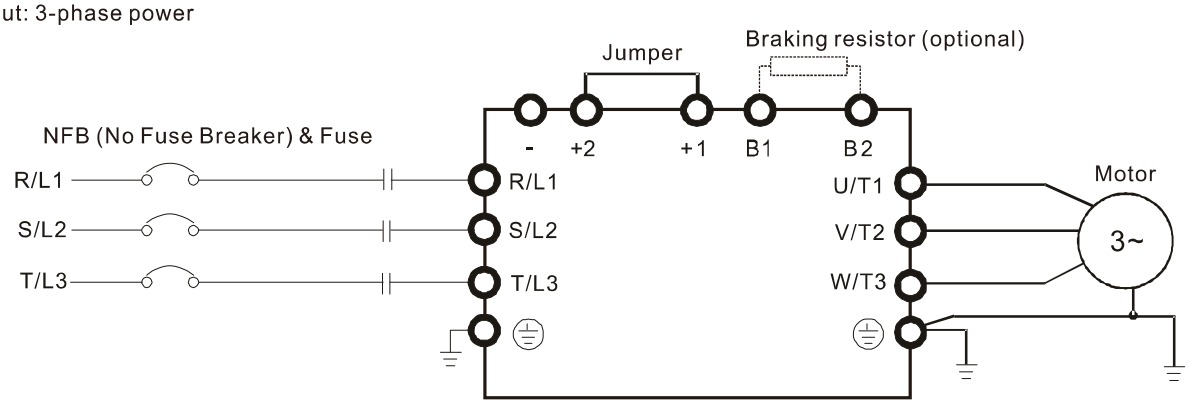


Figure 5-4

Wiring Diagram for Frame A~C

Input: 3-phase power

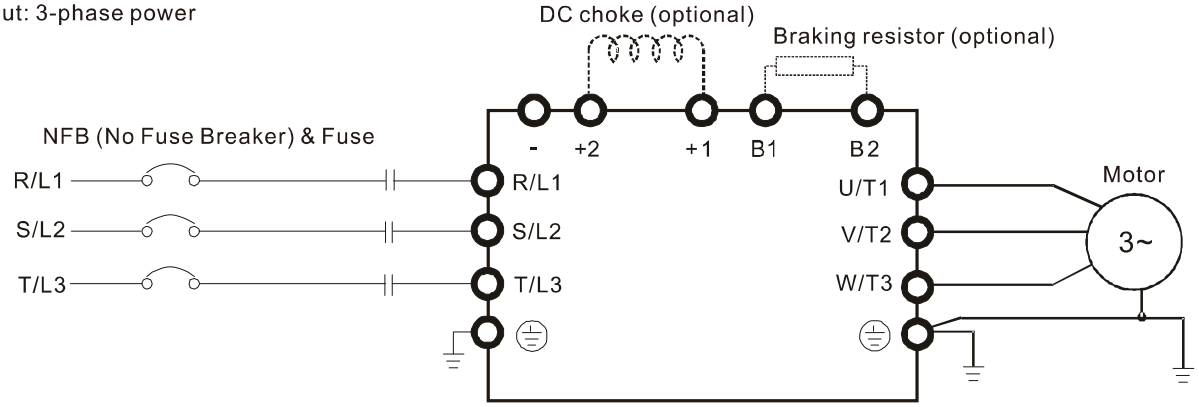


Figure 5-5

Wiring Diagram for Frame D~F

Input: 3-phase power

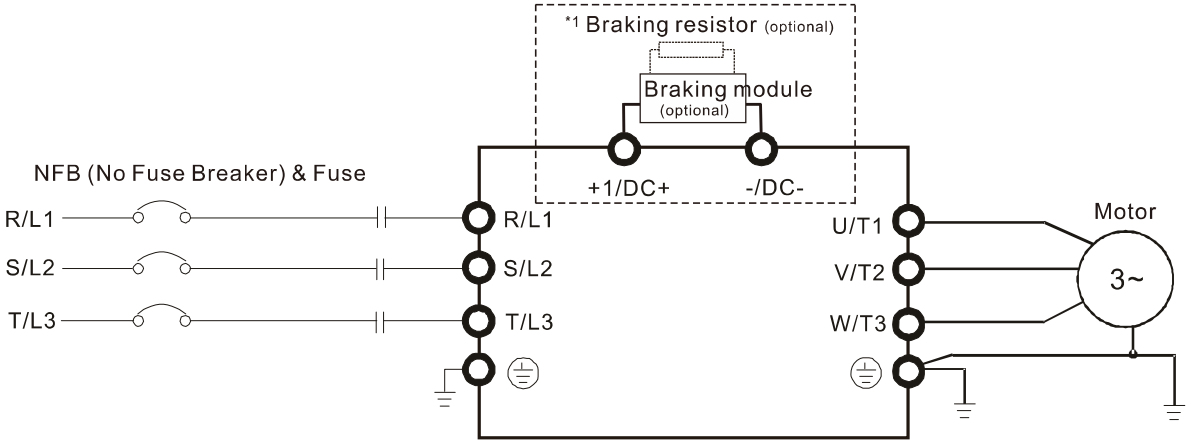


Figure 5-6

*1 Refer to Section 7-1 for more details of brake units.

Wiring Diagram for Frame G~H

Input: 3-phase power

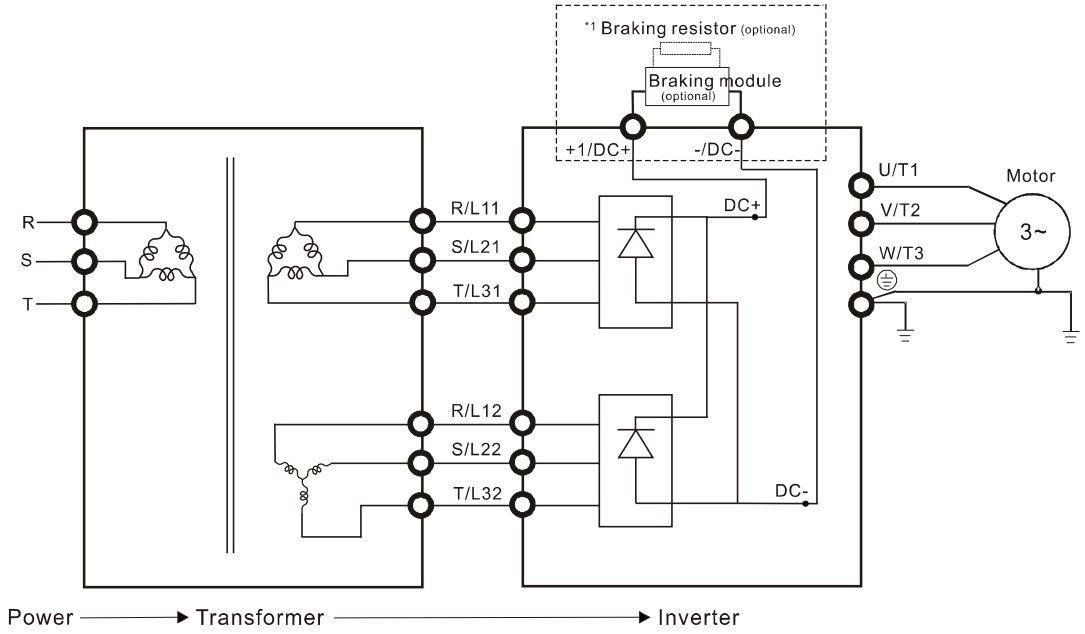


Figure 5-7

*1 Refer to Section 7-1 for brake units and resistors selection.

Note: When wiring for 12 pulse input, you should strictly follow the wiring diagram above.

NOTE

- If the wiring between motor drive and motor is over 75 meters, refer to Section 7-4 Specifications of limits for motor cable length.
- Frame G and H models use 12 pulse input, you should remove the short circuit plate (see the figure below). Consult with Delta before using 12 pulse input.

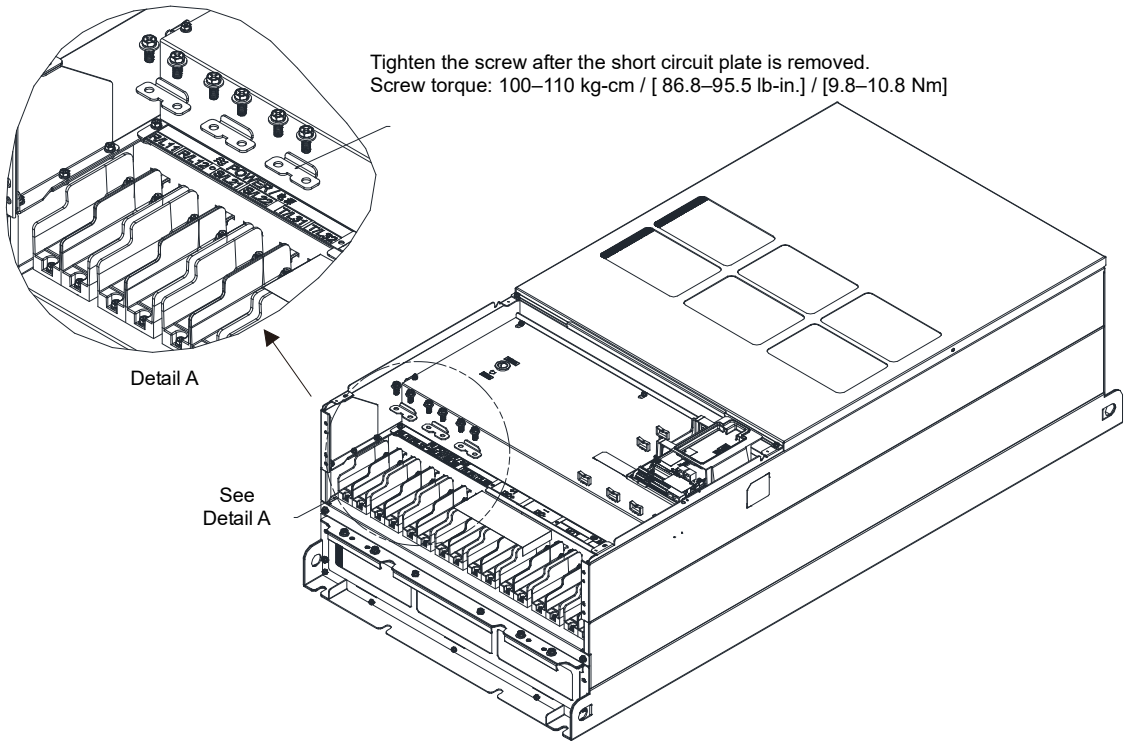


Figure 5-8

Terminals	Descriptions
R/L1, S/L2, T/L3	Mains input terminals (three-phase)
U/T1, V/T2, W/T3	AC motor drive output terminals for connecting three-phase induction motor
+1/DC+, +2/DC+	Applicable to frame A–C Connections for DC reactor to improve the power factor. Remove the jumper before installing a DC reactor.
+1/DC+, -/DC-	Connections for brake module (VFDB series) (for 230V models: ≤ 22 kW, built-in brake module) (for 460V models: ≤ 30 kW, built-in brake module) (for 690V models: ≤ 37 kW, built-in brake module) Common DC bus
B1, B2	Connections for brake resistor (optional). Refer to Section 7-1 for details.
⏚	Ground connection; comply with local regulations.

Table 5-1

5-2 Main Circuit Terminal Specifications

- Use the specified ring lug for main circuit terminal wiring. See figure 5-9 and figure 5-10 for ring lug specifications. For other types of wiring, use the wires that comply with the local regulations.
- After crimping the wire to the ring lug (must be UL approved), UL and CSA approved recognized component (YDPU2), install heat shrink tube rated at a minimum of 600V_{AC} insulation over the live part. Refer to figure 5-10 below.

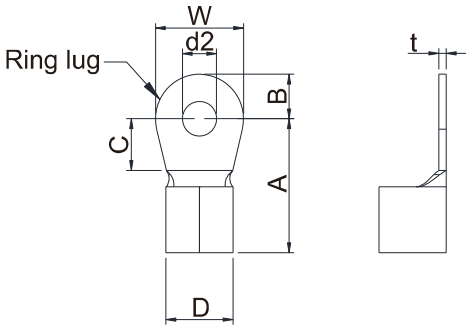


Figure 5-9

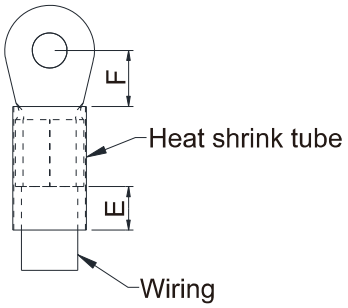


Figure 5-10

Terminal specification

The part number of the ring lugs (produced by K.S. Terminals Inc.) in the table below are for reference only. You can buy the ring lugs of your choice to match with different frame sizes.

Unit: mm

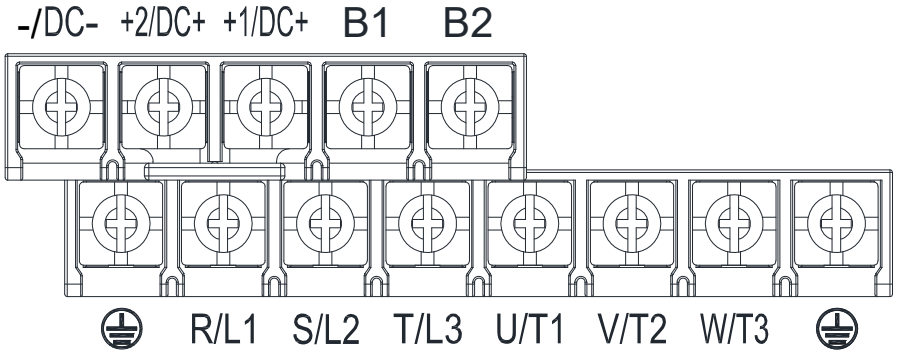
Frame	AWG[*1]	Kit P/N	A (MAX)	B (MAX)	C (MIN)	D (MAX)	d2 (MIN)	E (MIN)	F (MIN)	W (MAX)	t (MAX)
A	16	RNBL2-4	20.0	5.0	5.5	9.0	4.3	8.0	5.5	10.0	1.5
	14	RNBL2-4									
	12	RNBL5-4									
	10	RNBL5-4									
	8	RNBS8-4									
B	8	RNBM8-5	28.0	7.0	7.5	14.0	5.2	13.0	12.0	14.0	1.5
	6	RNB14-5									
	4	RNBS22-5									
C	6	RNB14-8	40.0	12.0	12.5	22.0	8.3	13.0	12.5	24.0	2.5
	4	RNB22-8									
	2	RNBS38-8									
	1/0	RNB60-8									
D0	4	RNB22-8	44.0	13.0	10.0	15.0	8.3	13.0	17.0	26.0	3.0
	2	RNBS38-8									
	1/0	SQNBS60-8	40.0	11.0	10.0	23.0	8.3	13.0	14.0[*2]	24.0	4.5
	2/0	SQNBS80-8									
D	4	RNB22-8	50.0	16.0	10.0	27.0	8.3	13.0	14.0	28.0	6.0
	2	RNBS38-8									
	1/0	RNB60-8									
	2/0	RNB70-8									
	3/0	RNB80-8									
	4/0	SQNBS100-8									
	250MCM	SQNBS150-8									
	300MCM	SQNBS150-8									

Frame	AWG*1	Kit P/N	A (MAX)	B (MAX)	C (MIN)	D (MAX)	d2 (MIN)	E (MIN)	F (MIN)	W (MAX)	t (MAX)
E	1/0	RNB60-8	53.0	16.0	17.0	26.5	8.4	13.0	17.0	31.0	5.0
	2/0	RNB70-8									
	3/0	RNB80-8									
	4/0	RNB100-8									
F	3/0	RNB80-8	55.0	15.0	10.0	27.0	8.3	13.0	17.5	31.0	6.0
	4/0	SQNBS100-8									
	300MCM	SQNBS150-8									
G	1/0	SQNBS60-8	54.0	15.5	18.0	26.5	8.2	13.0	18.0	31.0	3.5
	2/0	SQNBS80-8									
	3/0	SQNBS80-8									
	4/0	SQNBS100-8									
	250MCM	SQNBS150-8									
	300MCM	SQNBS180-12	70.0	21.0	27.0	32.7	12.2	13.0	27.0	42.0	4.0
	350MCM	SQNBS180-12									
	400MCM	SQNBS200-12									
	500MCM	SQNBS200-12									
H	3/0	SQNBS80-8	54.0	15.5	18.0	26.5	8.2	13.0	18.0	31.0	3.5
	4/0	SQNBS100-8									
	250MCM	SQNBS150-8									
	300MCM	SQNBS150-8									
	350MCM	SQNBS150-8									
	400MCM	SQNBS200-12	70.0	21.0	27.0	32.7	12.2	13.0	27.0	42.0	4.0
	500MCM	SQNBS200-12									

Table 5-2

*1. AWG: Refer to the following tables for the wire size specification for models in each frame.
*2: F(MAX)=16.5

Frame A

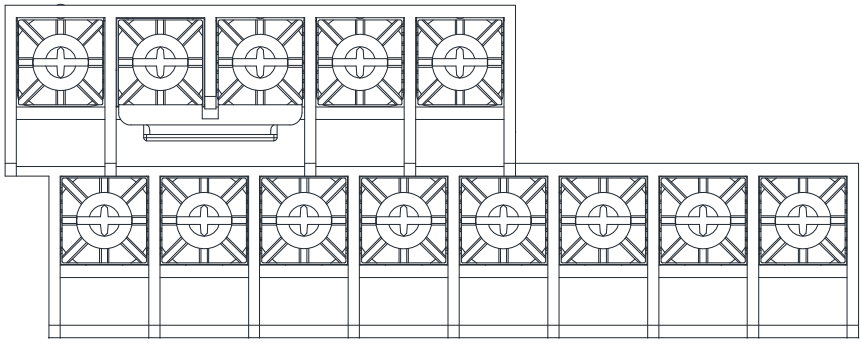


- If you install at Ta 50°C environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 50°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+、+2/DC+、B1、B2			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD007C23A-21	10 mm² [8 AWG]	2.5 mm² [14 AWG]	M4 20 kg-cm [17.4 lb-in.] [1.96 Nm]	2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	M4 20 kg-cm [17.4 lb-in.] [1.96 Nm]
VFD015C23A-21		4.0 mm² [12 AWG]		4.0 mm² [12 AWG]	4.0 mm² [12 AWG]	
VFD022C23A-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD037C23A-21		10.0 mm² [8 AWG]		10.0 mm² [8 AWG]	10.0 mm² [8 AWG]	
VFD007C43A-21		1.5 mm² [16 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD015C43A-21		1.5 mm² [16 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD022C43A-21		2.5 mm² [14 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD037C43A-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD040C43A-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD055C43A-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD007C4EA-21		1.5 mm² [16 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD015C4 EA-21		1.5 mm² [16 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD022C4 EA-21		2.5 mm² [14 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD037C4 EA-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD040C4 EA-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD055C4 EA-21		6.0 mm² [10 AWG]		6.0 mm² [10 AWG]	6.0 mm² [10 AWG]	
VFD015C53A-21		2.5 mm² [14 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD022C53A-21		2.5 mm² [14 AWG]		2.5 mm² [14 AWG]	2.5 mm² [14 AWG]	
VFD037C53A-21		4.0 mm² [12 AWG]		4.0 mm² [12 AWG]	4.0 mm² [12 AWG]	

Frame B

-/DC- +2/DC+ +1/DC+ B1 B2

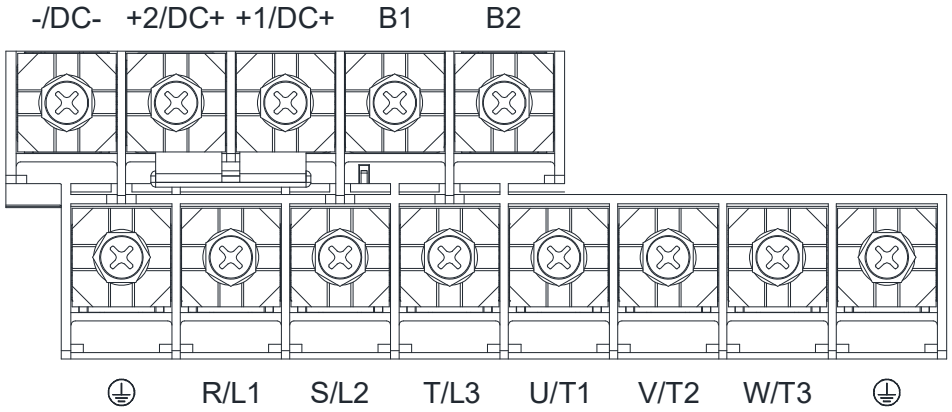


⏚ R/L1 S/L2 T/L3 U/T1 V/T2 W/T3 ⏚

- If you install at Ta 50°C environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 50°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- For VFD110C23A-21 models: if you install at Ta 45°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.
- +2/DC+ and +1/DC+: with 45 kg-cm / [39.0 lb-in] / [4.42 Nm] (±10%) torque

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+、+2/DC+、B1、B2			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD055C23A-21	25 mm² [4 AWG]	10 mm² [8 AWG]	M5 35 kg-cm [30.4 lb-in.] [3.43 Nm]	10 mm² [8 AWG]	10 mm² [8 AWG]	M5 35 kg-cm [30.4 lb-in.] [3.43 Nm]
VFD075C23A-21		16 mm² [6 AWG]		16 mm² [6 AWG]	16 mm² [6 AWG]	
VFD110C23A-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD075C43A-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD075C4EA-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD110C43A-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD110C4EA-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD150C43A-21		16 mm² [6 AWG]		16 mm² [6 AWG]	16 mm² [6 AWG]	
VFD150C4EA-21		16 mm² [6 AWG]		16 mm² [6 AWG]	16 mm² [6 AWG]	
VFD055C53A-21		6 mm² [10 AWG]		6 mm² [10 AWG]	6 mm² [10 AWG]	
VFD075C53A-21		6 mm² [10 AWG]		6 mm² [10 AWG]	6 mm² [10 AWG]	
VFD110C53A-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD150C53A-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	

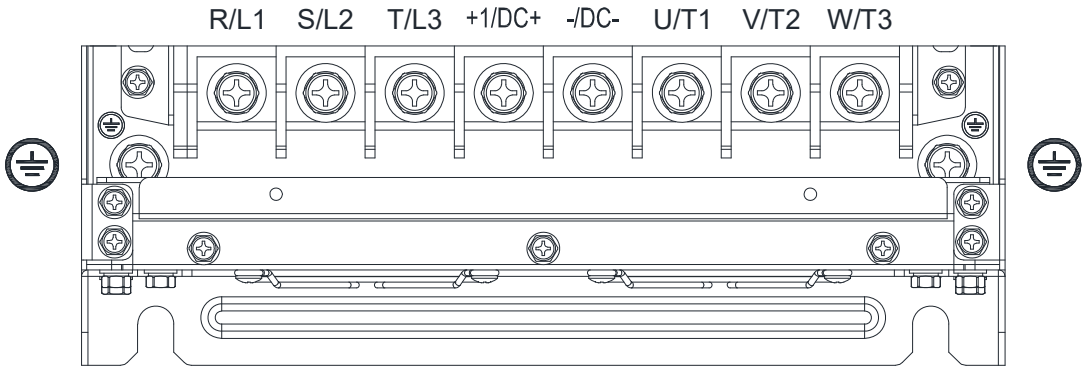
Frame C



- If you install at Ta 50°C environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 50°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- For VFD220C23A-21 models: if you insall at Ta 40°C above environment, use copper wires have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.
- +2/DC+ and +1/DC+: with 90 kg-cm / [78.2 lb-in] / [8.83 Nm] (±10%) torque

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+、+2/DC+、B1、B2			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD150C23A-21	50 mm² [1/0 AWG]	50 mm² [1 AWG]	M8 80 kg-cm [69.4 lb-in.] [7.84 Nm]	50 mm² [1 AWG]	25 mm² [4 AWG]	M8 80 kg-cm [69.4 lb-in.] [7.84 Nm]
VFD185C23A-21		50 mm² [1/0 AWG]		50 mm² [1/0 AWG]	25 mm² [4 AWG]	
VFD220C23A-21		50 mm² [1/0 AWG]		50 mm² [1/0 AWG]	25 mm² [4 AWG]	
VFD185C43A-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD220C43A-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD300C43A-21		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	
VFD185C4EA-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD220C4EA-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD300C4EA-21		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	
VFD185C63B-21		10 mm² [8 AWG]		10 mm² [8 AWG]	10 mm² [8 AWG]	
VFD220C63B-21		16 mm² [6 AWG]		16 mm² [6 AWG]	16 mm² [6 AWG]	
VFD300C63B-21		25 mm² [4 AWG]		25 mm² [4 AWG]	16 mm² [6 AWG]	
VFD370C63B-21		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	

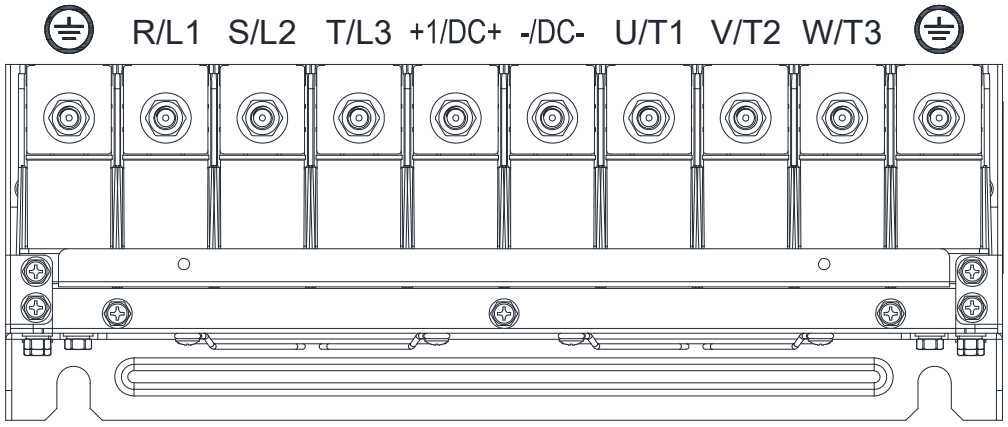
Frame D0



- If you install at Ta 40°C (for model names with last digit -21) / 50°C (for model names with last digit -00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for model names with last digit -21) / 50°C (for model names with last digit -00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD370C43S-00	70 mm^2 [2/0 AWG]	50 mm^2 [1/0 AWG]	M8 80 kg-cm [69.4 lb-in.] [7.84 Nm]	35 mm^2 [2 AWG]	25 mm^2 [4 AWG]	M8 80 kg-cm [69.4 lb-in.] [7.84 Nm]
VFD450C43S-00		70mm^2 [2/0 AWG]				
VFD370C43S-21		50 mm^2 [1/0 AWG]				
VFD450C43S-21		70mm^2 [2/0 AWG]				

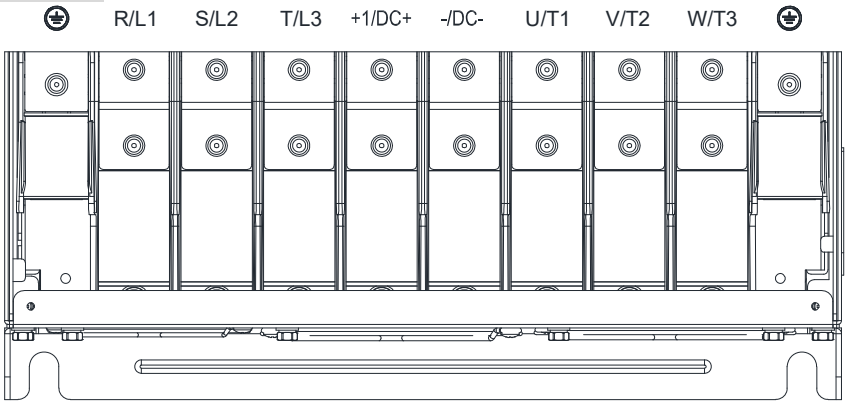
Frame D



- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) above environmnet, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD300C23A-00	150 mm² [300 MCM]	120 mm² [4/0 AWG]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]	120 mm² [4/0 AWG]	70 mm² [2/0 AWG]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD370C23A-00		120 mm² [250MCM]		120 mm² [250MCM]	70 mm² [2/0 AWG]	
VFD550C43A-00		95 mm² [3/0 AWG]		95 mm² [3/0 AWG]	50 mm² [1/0 AWG]	
VFD750C43A-00		150 mm² [300MCM]		150 mm² [300MCM]	95 mm² [3/0 AWG]	
VFD300C23A-21	120 mm² [4/0 AWG]	95 mm² [3/0 AWG]		95 mm² [3/0 AWG]	50 mm² [1/0 AWG]	
VFD370C23A-21		120 mm² [4/0 AWG]		120 mm² [4/0 AWG]	70 mm² [2/0 AWG]	
VFD550C43A-21		70 mm² [2/0 AWG]		70 mm² [2/0 AWG]	35 mm² [2 AWG]	
VFD750C43A-21		120 mm² [4/0 AWG]		120 mm² [4/0 AWG]	70 mm² [2/0 AWG]	
VFD450C63B-00	150 mm² [300 MCM]	35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	
VFD550C63B-00		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	
VFD450C63B-21		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	
VFD550C63B-21		35 mm² [2 AWG]		35 mm² [2 AWG]	16 mm² [6 AWG]	

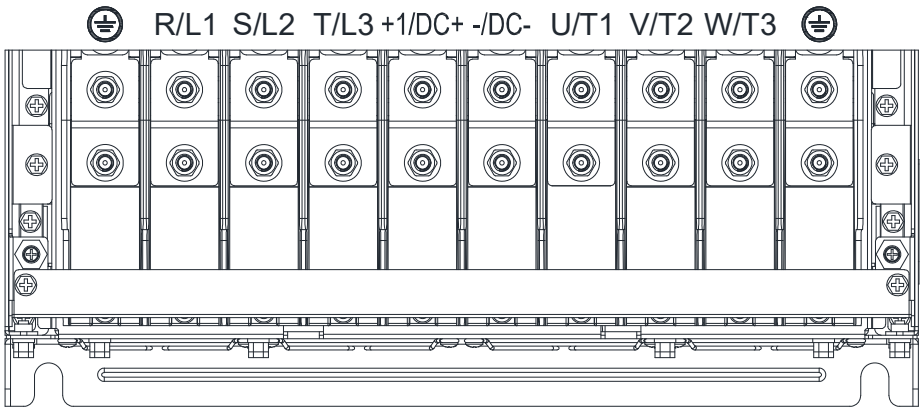
Frame E



- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD450C23A-00	120 mm²*2 [4/0 AWG*2]	50 mm²*2 [1/0 AWG*2]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]	50mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD550C23A-00		95 mm²*2 [3/0 AWG*2]		95mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	
VFD750C23A-00		120 mm²*2 [4/0 AWG*2]		120mm²*2 [4/0 AWG*2]	120 mm²*1 [4/0 AWG*1]	
VFD900C43A-00		50 mm²*2 [1/0 AWG*2]		50mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	
VFD1100C43A-00		95 mm²*2 [3/0 AWG*2]		95mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	
VFD450C23A-21		50 mm²*2 [1/0 AWG*2]		50mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	
VFD550C23A-21		70 mm²*2 [2/0 AWG*2]		70mm²*2 [2/0 AWG*2]	70 mm²*1 [2/0 AWG*1]	
VFD750C23A-21		95 mm²*2 [3/0 AWG*2]		95mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	
VFD900C43A-21		50 mm²*2 [1/0 AWG*2]		50mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	
VFD1100C43A-21		70 mm²*2 [2/0 AWG*2]		70mm²*2 [2/0 AWG*2]	70 mm²*1 [2/0 AWG*1]	
VFD750C63B-00		25 mm²*2 [4 AWG*2]		25 mm²*2[4 AWG*2]	25 mm²*1 [4 AWG*1]	
VFD900C63B-00		35 mm²*2 [2 AWG*2]		35 mm²*2 [2 AWG*2]	35 mm²*1 [2 AWG*1]	
VFD1100C63B-00		35 mm²*2 [2 AWG*2]		35 mm²*2 [2 AWG*2]	35 mm²*1 [2 AWG*1]	
VFD1320C63B-00		50 mm²*2 [1/0 AWG*2]		50 mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	
VFD750C63B-21		25 mm²*2 [4 AWG*2]		25 mm²*2 [4 AWG*2]	25 mm²*1 [4 AWG*1]	
VFD900C63B-21		35 mm²*2 [2 AWG*2]		35 mm²*2 [2 AWG*2]	35 mm²*1 [2 AWG*1]	
VFD1100C63B-21		35 mm²*2 [2 AWG*2]		35 mm²*2 [2 AWG*2]	35 mm²*1 [2 AWG*1]	
VFD1320C63B-21		50 mm²*2 [1/0 AWG*2]		50 mm²*2 [1/0 AWG*2]	50 mm²*1 [1/0 AWG*1]	

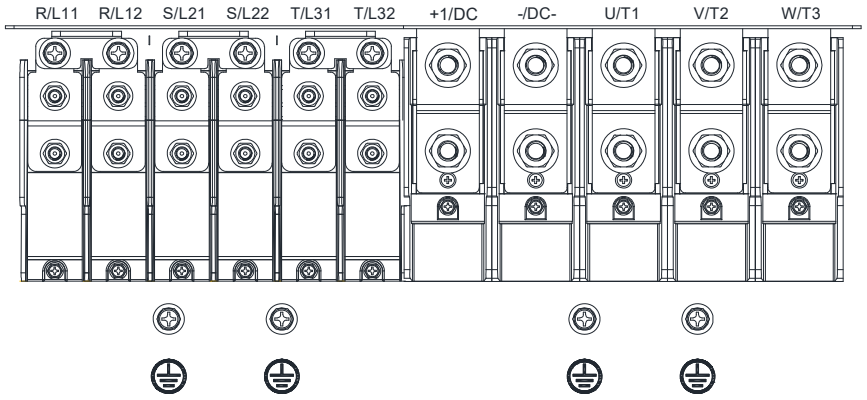
Frame F



- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for 230V / 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 230V / 460V model names with last digit -00; for 690V model names end with 63B-00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- For VFD900C23A-00 models: if you install at Ta 45°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- For VFD900C23E-21 models: if you install at Ta 30°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L1、S/L2、T/L3、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD900C23A-00	150 mm²*2 [300 MCM*2]	150 mm²*2 [300MCM*2]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]	150 mm²*2 [300 MCM*2]	150 mm²*1 [300 MCM*1]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD1320C43A-00		120 mm²*2 [4/0 AWG*2]		120 mm²*2 [4/0 AWG*2]	120 mm²*1 [4/0 AWG*1]	
VFD1600C43A-00		150 mm²*2 [300MCM*2]		150 mm²*2 [300 MCM*2]	150 mm²*1 [300 MCM*1]	
VFD900C23A-21	120 mm²*2 [4/0 AWG*2]	120 mm²*2 [4/0 AWG*2]		120 mm²*2 [4/0 AWG*2]	120 mm²*1 [4/0 AWG*1]	
VFD1320C43A-21		95 mm²*2 [3/0 AWG*2]		95 mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	
VFD1600C43A-21		120 mm²*2 [4/0 AWG*2]		120 mm²*2 [4/0AWG*2]	120 mm²*1 [4/0 AWG*1]	
VFD1600C63B-00	150 mm²*2 [300 MCM*2]	70 mm²*2 [2/0 AWG*2]		70 mm²*2 [2/0 AWG*2]	70 mm²*1 [2/0 AWG*1]	
VFD2000C63B-00		95 mm²*2 [3/0 AWG*2]		95 mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	
VFD1600C63B-21		70 mm²*2 [2/0 AWG*2]		70 mm²*2 [2/0 AWG*2]	70 mm²*1 [2/0 AWG*1]	
VFD2000C63B-21		95 mm²*2 [3/0 AWG*2]		95 mm²*2 [3/0 AWG*2]	95 mm²*1 [3/0 AWG*1]	

Frame G

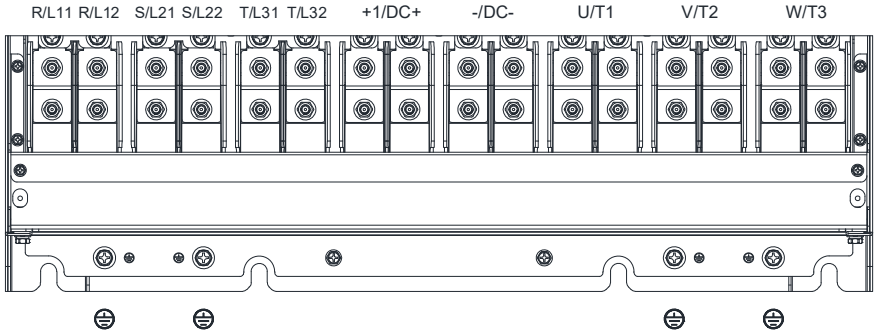


- If you install at Ta 40°C (for 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 460V model names with last digit -00; for 690V model names end with 63B-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 460V model names with last digit -00; for 690V model names end with 63B-00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- For VFD2200C43A-00, VFD2500C43A-00 (main circuit terminals U/T1, V/T2, W/T3, －/DC-, ＋/DC+) models: if you install at Ta 45°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L11、R/L12、S/L21、S/L22、T/L31、T/L32			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD1850C43A-00	120 mm²*4 [250MCM*4]	70 mm²*4 [2/0 AWG*4]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]	70 mm²*4 [2/0AWG*4]	70 mm²*2 [2/0 AWG*2]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD2000C43A-00		70 mm²*4 [2/0 AWG*4]		70 mm²*4 [2/0AWG*4]	70 mm²*2 [2/0 AWG*2]	
VFD2200C43A-00		70 mm²*4 [2/0 AWG*4]		70 mm²*4 [2/0AWG*4]	70 mm²*2 [2/0 AWG*2]	
VFD2500C43A-00		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD1850C43A-21		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD2000C43A-21		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD2200C43A-21		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD2500C43A-21		70 mm²*4 [2/0 AWG*4]		70 mm²*4 [2/0AWG*4]	70 mm²*2 [2/0 AWG*2]	
VFD2500C63B-00	150mm²*4 [300MCM*4]	50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0 AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD3150C63B-00		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0 AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD2500C63B-21		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0 AWG*4]	50 mm²*2 [1/0 AWG*2]	
VFD3150C63B-21		50 mm²*4 [1/0 AWG*4]		50 mm²*4 [1/0 AWG*4]	50 mm²*2 [1/0 AWG*2]	

Model Name	Main Circuit Terminals U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD1850C43A-00	240 mm²*2 [500MCM*2]	185 mm²*2 [350MCM*2]	M12 408 kg-cm [354.1 lb-in.] [39.98 Nm]	185 mm²*2 [350MCM*2]	185 mm²*1 [350MCM*1]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD2000C43A-00		240 mm²*2 [400MCM*2]		240 mm²*2 [400MCM*2]	240 mm²*1 [400MCM*1]	
VFD2200C43A-00		240 mm²*2 [500MCM*2]		240 mm²*2 [500MCM*2]	240 mm²*1 [500MCM*1]	
VFD2500C43A-00		240 mm²*2 [500MCM*2]		240 mm²*2 [500MCM*2]	240 mm²*1 [500MCM*1]	
VFD1850C43A-21		150 mm²*2 [300MCM*2]		150 mm²*2 [300MCM*2]	150 mm²*1 [300MCM*1]	
VFD2000C43A-21		150 mm²*2 [300MCM*2]		150 mm²*2 [300MCM*2]	150 mm²*1 [300MCM*1]	
VFD2200C43A-21		240 mm²*2 [400MCM*2]		240 mm²*2 [400MCM*2]	240 mm²*1 [400MCM*1]	
VFD2500C43A-21		240 mm²*2 [500MCM*2]		240 mm²*2 [500MCM*2]	240 mm²*1 [500MCM*1]	
VFD2500C63B-00		120 mm²*2 [250MCM*2]		120 mm²*2 [250MCM*2]	120 mm²*1 [250MCM*1]	
VFD3150C63B-00		150 mm²*2 [350MCM*2]		150 mm²*2 [350MCM*2]	150 mm²*1 [350MCM*1]	
VFD2500C63B-21		120 mm²*2 [250MCM*2]		120 mm²*2 [250MCM*2]	120 mm²*1 [250MCM*1]	
VFD3150C63B-21		150 mm²*2 [350MCM*2]		150 mm²*2 [350MCM*2]	150 mm²*1 [350MCM*1]	

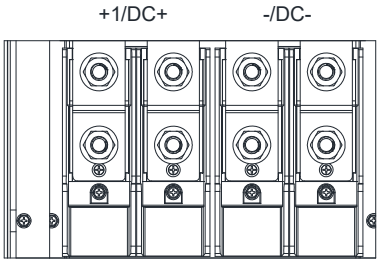
Frame H

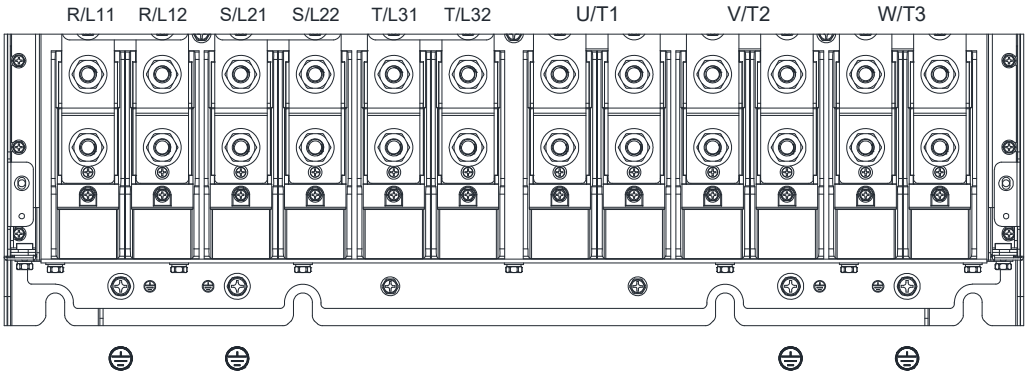


- If you install at Ta 40°C (for 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 460V model names with last digit -00; for 690V model names end with 63B-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (for 460V model names with last digit -21; for 690V model names end with 63B-21) / 50°C (for 460V model names with last digit -00; for 690V model names end with 63B-00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- For VFD4000C43A-00, VFD4500C43A-00 models: if you install at Ta 40°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L11、R/L12、S/L21、S/L22、T/L31、T/L32、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD2800C43A-00	185 mm²*4 [350 MCM*4]	120 mm²*4 [4/0 AWG*4]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]	120 mm²*4 [4/0AWG*4]	120 mm²*2 [4/0 AWG*2]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD3150C43A-00		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	
VFD3550C43A-00		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	
VFD4000C43A-00		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	
VFD4500C43A-00		185 mm²*4 [350 MCM*4]		185 mm²*4 [350 MCM*4]	185 mm²*2 [350 MCM*2]	
VFD2800C43C-21		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0 AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD3150C43C-21		120 mm²*4 [4/0 AWG*4]		120 mm²*4 [4/0 AWG*4]	120 mm²*2 [4/0 AWG*2]	
VFD3550C43C-21		120 mm²*4 [250 MCM*4]		120 mm²*4 [250 MCM*4]	120 mm²*2 [250 MCM*2]	
VFD4000C43A-21		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	
VFD4500C43C-21		185 mm²*4 [350 MCM*4]		185 mm²*4 [350 MCM*4]	185 mm²*2 [350 MCM*2]	
VFD4000C63B-00		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD4500C63B-00		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD5600C63B-00		120 mm²*4 [250 MCM*4]		120 mm²*4 [250 MCM*4]	120 mm²*2 [250 MCM*2]	
VFD6300C63B-00		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	
VFD4000C63B-21		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0 AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD4500C63B-21		95 mm²*4 [3/0 AWG*4]		95 mm²*4 [3/0 AWG*4]	95 mm²*2 [3/0 AWG*2]	
VFD5600C63B-21		120 mm²*4 [250 MCM*4]		120 mm²*4 [250 MCM*4]	120 mm²*2 [250 MCM*2]	
VFD6300C63B-21		150 mm²*4 [300 MCM*4]		150 mm²*4 [300 MCM*4]	150 mm²*2 [300 MCM*2]	

Frame H





- If you install at Ta 40°C (model names with last digit C-21) / 50°C (model names with last digit A-00) environment, use copper wires have a voltage rating of 600V and are temperature resistance to 75°C or 90°C.
- If you install at Ta 40°C (model names with last digit C-21) / 50°C (model names with last digit A-00) above environment, use copper wires have a voltage rating of 600V and are temperature resistant ntance to 90°C or above.
- For VFD5000C43A-00 models: if you install at Ta 40°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- For VFD5600C43A-00, VFD5600C43C-21 models: if you install at Ta 30°C above environment, use copper wires that have a voltage rating of 600V and are temperature resistance to 90°C or above.
- To be UL installation compliant, you must use copper wires when installing. The wire gauge is based on temperature resistance of 75°C, in accordance with UL requirements and recommendations. Do not reduce the wire gauge when using high-temperature resistant wire.

Model Name	Main Circuit Terminals R/L11、R/L12、S/L21、S/L22、T/L31、T/L32、U/T1、V/T2、W/T3、-/DC-、+1/DC+			Terminal ⏚		
	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)	Max. Wire Gauge	Min. Wire Gauge	Screw Spec. and Torque (±10%)
VFD5000C43A-00	240 mm²*4 [500 MCM*4]	240 mm²*4 [400 MCM*4]	M12 408 kg-cm [354.1 lb-in.] [39.98 Nm]	240 mm²*4 [400 MCM*4]	240 mm²*2 [400 MCM*2]	M8 180 kg-cm [156.2 lb-in.] [17.65 Nm]
VFD5600C43A-00		240 mm²*4 [500 MCM*4]		240 mm²*4 [500 MCM*4]	240 mm²*2 [500 MCM*2]	
VFD5000C43C-21		240 mm²*4 [400 MCM*4]		240 mm²*4 [400 MCM*4]	240 mm²*2 [400 MCM*2]	
VFD5600C43C-21		240 mm²*4 [500 MCM*4]		240 mm²*4 [500 MCM*4]	240 mm²*2 [500 MCM*2]	