YASKAWA

Yaskawa Electric
Drives Division

A1000 for crane to CR700 Product Replacement Guide

TABLE OF CONTENTS

This document covers the difference between A1000 and CR700 for a successful retrofit. Be sure to also check any manuals (e.g. Technical Manual, etc.) for peripheral device

1. Applicable Drive Models

Previous Model: A1000
Models: CIMR-AA□A□□□□ Software No.: VSA90507□

New Model: CR700
Catalog code: CR70A□□□□

Capacities: 200 V class: 0.4 kW - 110 kW Heavy Duty (HD)
400 V class: 0.4 kW - 315 kW Heavy Duty (HD)

Please refer to the following table to check the correspondence between the conventional model (A1000) and the replacement model (CR700).

200 V class

A1000 Model	Rated Output Heavy Duty (HD) [A]		CR700 Catalog code	Rated Output [A]
CIMR-AA2A0004	3.2	⇒	CR70A2003	3.2
CIMR-AA2A0006	5	⇒	CR70A2005	5
CIMR-AA2A0008	6.9	⇒	CR70A2008	8
CIMR-AA2A0010	8			
CIMR-AA2A0012	11	⇒	CR70A2011	11
CIMR-AA2A0018	14	⇒	CR70A2014	14
CIMR-AA2A0021	17.5	⇒	CR70A2018	17.5
CIMR-AA2A0030	25	⇒	CR70A2025	25
CIMR-AA2A0040	33	⇒	CR70A2033	33
CIMR-AA2A0056	47	⇒	CR70A2047	47
CIMR-AA2A0069	60	⇒	CR70A2060	60
CIMR-AA2A0081	75	⇒	CR70A2075	75
CIMR-AA2A0110	85	⇒	CR70A2088	88
CIMR-AA2A0138	115	⇒	CR70A2115	115
CIMR-AA2A0169	145	⇒	CR70A2145	145
CIMR-AA2A0211	180	⇒	CR70A2180	180
CIMR-AA2A0250	215	⇒	CR70A2215	215
CIMR-AA2A0312	283	⇒	CR70A2283	283
CIMR-AA2A0360	346	⇒	CR70A2346	346
CIMR-AA2A0415	415	⇒	CR70A2415	415

400 V class

A1000 Model	Rated Output Heavy Duty (HD) [A]		CR700 Catalog code	Rated Output [A]
CIMR-AA4A0002	1.8	⇒	CR70A4002	1.8
CIMR-AA4A0004	3.4	⇒	CR70A4003	3.4
CIMR-AA4A0005	4.8	⇒	CR70A4005	4.8
CIMR-AA4A0007	5.5	⇒	CR70A4006	5.5
CIMR-AA4A0009	7.2	⇒	CR70A4007	7.2
CIMR-AA4A0011	9.2	⇒	CR70A4009	9.2
CIMR-AA4A0018	14.8	⇒	CR70A4015	14.8
CIMR-AA4A0023	18	⇒	CR70A4018	18
CIMR-AA4A0031	24	⇒	CR70A4024	24
CIMR-AA4A0038	31	⇒	CR70A4031	31
CIMR-AA4A0044	39	⇒	CR70A4039	39
CIMR-AA4A0058	45	⇒	CR70A4045	45
CIMR-AA4A0072	60	⇒	CR70A4060	60
CIMR-AA4A0088	75	⇒	CR70A4075	75
CIMR-AA4A0103	91	⇒	CR70A4091	91
CIMR-AA4A0139	112	⇒	CR70A4112	112
CIMR-AA4A0165	150	⇒	CR70A4150	150
CIMR-AA4A0208	180	⇒	CR70A4180	180
CIMR-AA4A0250	216	⇒	CR70A4216	216
CIMR-AA4A0296	260	⇒	CR70A4260	260
CIMR-AA4A0362	304	⇒	CR70A4304	304
CIMR-AA4A0414	370	⇒	CR70A4371	371
CIMR-AA4A0515	450	⇒	CR70A4453	453
CIMR-AA4A0675	605	⇒	CR70A4605	605

2. Replacement Checklist

Type	Item	Checkpoints	Checked
Hardware	Drive	**Verifying Installation Area of the Drive** Dimensions (W, H, D) and installation holes differ between A1000 and CR700. CR700 has a larger depth. Ensure the sufficient space for installation. More depth is required if using the installation attachment to match the same mounting holes used for A1000.	
		Verifying the Installation Location of the Keypad (Digital Operator) * Main device keypad (digital operator) Keypad dimensions and the mounting position differ between A1000 and CR700. If the control panel has been cut-out to accompany the previous drive, then either the panel cut out dimensions or the drive installation position should be changed. * Remote keypad (digital operator) Previous remote keypads (the A1000 remote digital operator) are not compatible with the newer models, so users will need to purchase a new keypad and to change the panel cut-out dimension. The keypad panel attachment (operator mounting bracket) for A1000 is not compatible with CR700, so users will also need to purchase the new attachment.	
		Verifying Specialized Specifications Check all specifications that may be unique to your drive, including the nameplate, modifications and special coating. This information can be found on the original invoice and product description.	
	Main Circuit	**Verifying Main Circuit Lines (Including Ground)** Location of the main circuit and its wiring configuration differ between A1000 and CR700. If there is no room for the main circuit wiring, then rearrange the wiring, or use longer wires.	
		Verifying Main Circuit Terminal Specifications CR700 (CR70A2003 to 2180 200V class 45kW or less, CR70A4002 to 4150 400V class 75kW or less) uses European terminals in the main circuit, so closed-loop crimp terminals cannot be connected. Remove crimp terminals and prepare the wire ends. Terminal shapes and sizes differ between A1000 and CR700. Refer to Section 3-1 for terminal input/output specifications.	
	Control Circuit	**Verifying Control Circuit Lines** Location of the control circuit terminal block and its wiring configuration differ between A1000 and CR700. If there is no room for the control circuit wiring, then rearrange the wiring, or use longer wires.	
		Verifying Control Circuit Terminal Blocks and Specifications CR700 uses European terminals in the control circuit, so closed-loop crimp terminals cannot be connected. Remove crimp terminals and prepare the wire ends. The number of terminals, terminal shapes, and terminal sizes differ between A1000 and CR700. Refer to Section 3-2 for terminal I/O specifications.	
Software	Software	**Verifying Custom Software** Check if the software currently being used is Yaskawa's software for crane. Contact Yaskawa and confirm the software number if it is not clear whether the software is standard or not.	
	Parameters	**Verifying Parameter Settings** Parameters do not all match between A1000 and CR700. After checking the parameters in the drive currently being used, follow the procedure in Section 5 to set the appropriate parameters to match the new drive. Contact Yaskawa if there are any parameters not covered in Section 5. The support tool "Drive Wizard" for CR700 offers a Drive Replacement function for converting parameter settings to CR700. (Available soon) DriveWizard is not the same as DriveWizard Plus.	

Type	Item	Checkpoints	Checked
Options Others	Options Card	**Verifying Option Cards** Option cards for A1000 are compatible with CR700. Note that the following option software versions and later versions with larger software numbers are compatible with CR700. - DeviceNet SI-N3 => PRG: 1114 - MECHATROLINK-II SI-T3 => PRG: 6108 - MECHATROLINK-III SI-ET3 => PRG: 6202	
	Peripherals	**Braking Resistor** Check if the drive currently being used has a braking resistor. If there is a braking resistor (ERF type) installed to the backside of the drive, then note the following: (1) The braking resistor installation attachment used for A1000 is not compatible with CR700. Although the overall dimensions are the same, CR700 requires a special attachment. (Refer to Section 4-4 for how to order the attachment and for its installation dimensions.) Standard vibration tolerance specifications may not be guaranteed if an installation attachment is used. Yaskawa recommends installing the braking resistor in a separate location if the drive is used in an area with a high degree of vibration. (2) If planning to use the same ERF-type braking resistor installed to A1000 in the new CR700 drive and the cable is too short, replace the cable with a longer one only if the wire specifications are the same. Ensure that the cable extension is properly insulated.	
		Braking Units The braking unit can be transferred to CR700 as-is without making any changes. If using a braking unit with catalog code CR70A2115 or below (200 V class), or catalog code CR70A4150 or below (400 V class), then set L8-55 = 0 [Internal Braking Transistor Protection = Disabled]. Note: If using a drive with a built-in braking transistor (catalog code CR70A2115 or below for 200 V class drives, or catalog code CR70A4150 or below for 400 V class drives), then connect the drive terminal B1 to the positive terminal of the braking unit, and connect the negative terminal of the drive and the negative terminal of the braking unit. Terminal B2 is not used in CR700.	
		AC or DC Reactor The AC or DC reactor can be transferred to CR700 as-is without making any changes.	
		Noise Filter The noise filter can be transferred to CR700 as-is without making any changes.	
		Fuse The fuses can be transferred to CR700 as-is without making any changes.	

- Refer to the instruction manual included with the product for replacing the drive.
- To request a catalog, user manual, pricing, or shipping dates, contact a Yaskawa sales representative.
- For any technical questions, contact Yaskawa Call Center (toll free: 0120-114616).

3. Terminal Compatibility Chart

Some terminal sizes and shapes differ between A1000 and CR700. (Refer to the table in Section 3-4)

3-1. Main Circuit Terminals

- Terminal functions are the same in A1000 and CR700 although terminal shapes are different.

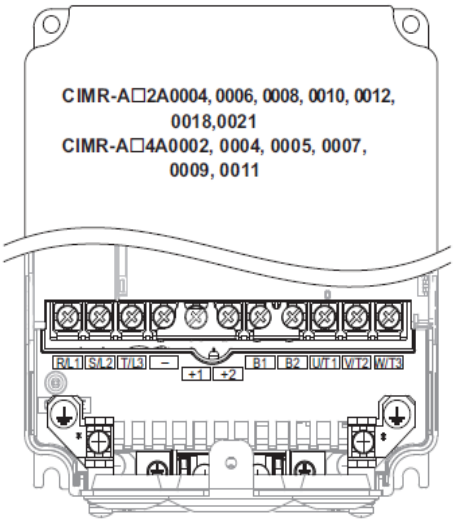
Main circuit terminals		Notes
A1000	CR700	
R/L1	R/L1	Main circuit power supply input
S/L2	S/L2	
T/L3	T/L3	
U/T1	U/T1	Drive output
V/T2	V/T2	
W/T3	W/T3	
B1	B1	Terminal connections for braking resistor or braking resistor units
B2	B2	
+1	+1	DC reactor, DC power input (+)
+2	+2	DC reactor
+3	+3	Braking units: (+)
-	-	DC power supply input: (-), Braking units: (-)
⏚ (x 2)	⏚ (x 2)	Grounding 200 V class: D class grounding (ground to 100 Ω or less) 400 V class: C class grounding (ground to 10 Ω or less)

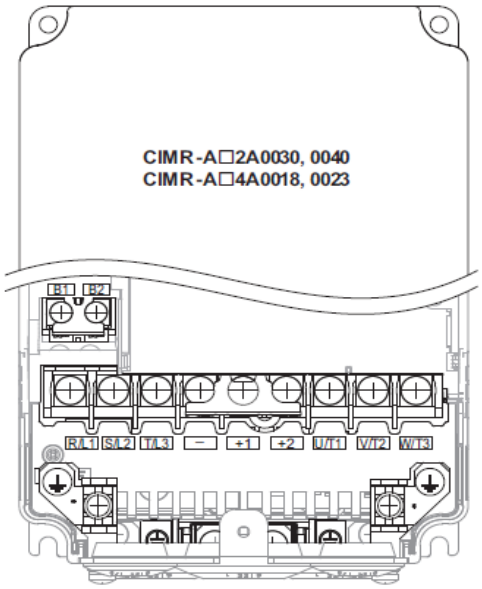
Note: For models with a built-in braking transistor (200 V class, catalog code: CR70A2115 or below, or 400 V class, catalog code CR70A4150 or below,) that also have a braking unit, connect terminal B1 to the positive terminal on the braking unit, and the negative terminal on the drive to the negative terminal on the braking unit. Terminal B2 is not used in CR700.

Note: If you use 200V class catalog code: CR70A2145, 2180 and would like to connect braking units (CDBR series) to negative terminal and + 3 terminal, the junction terminal is required.

Note: If you use 400V class catalog code: CR70A4112, 4150 and would like to connect braking resistor unit (LKEB series) to B1 terminal and B2 terminal, the junction terminal is required.

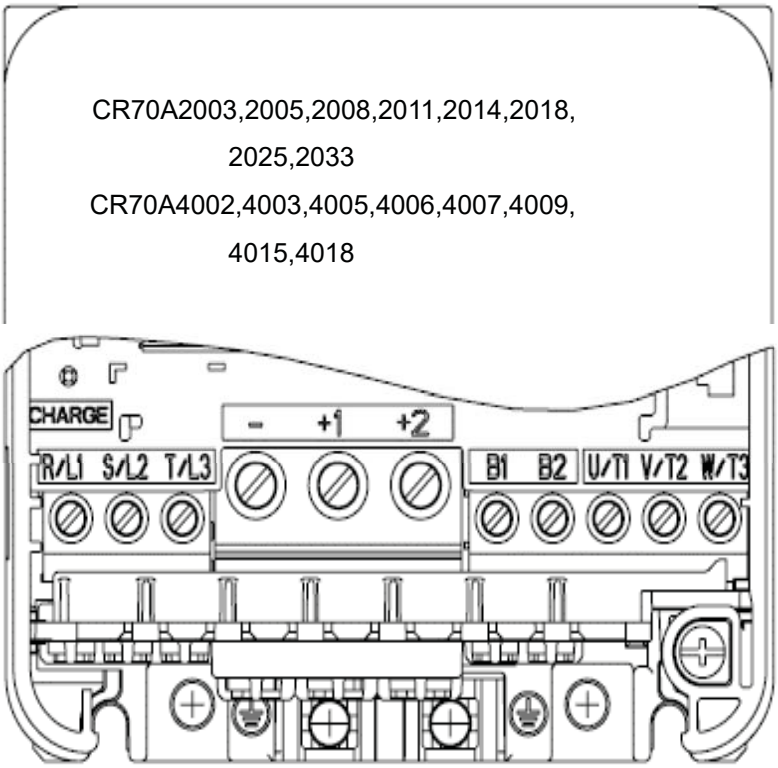
- A1000 Main Circuit Terminal Configuration



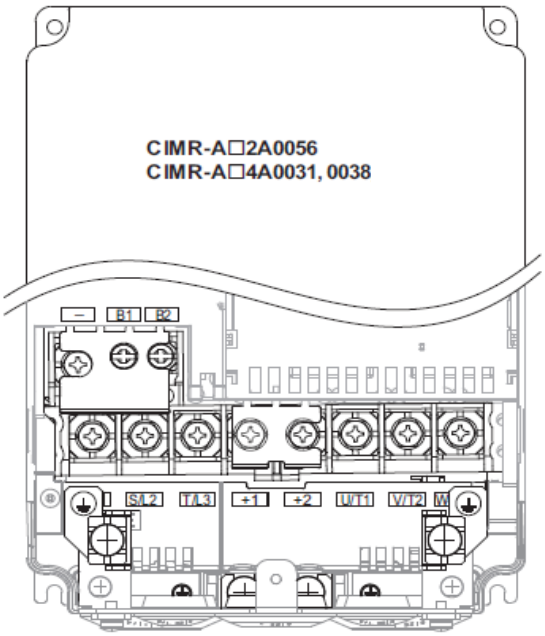


=>

- CR700 Main Circuit Terminal Configuration

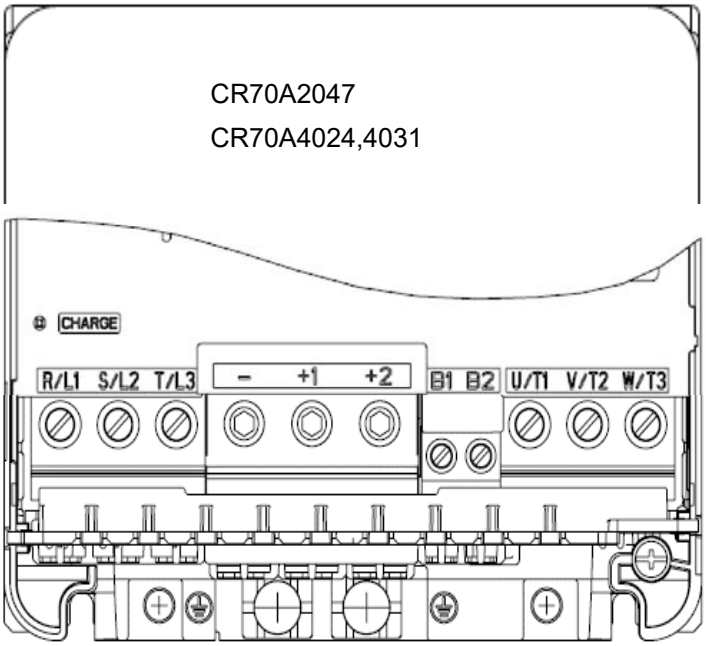


- A1000 Main Circuit Terminal Configuration

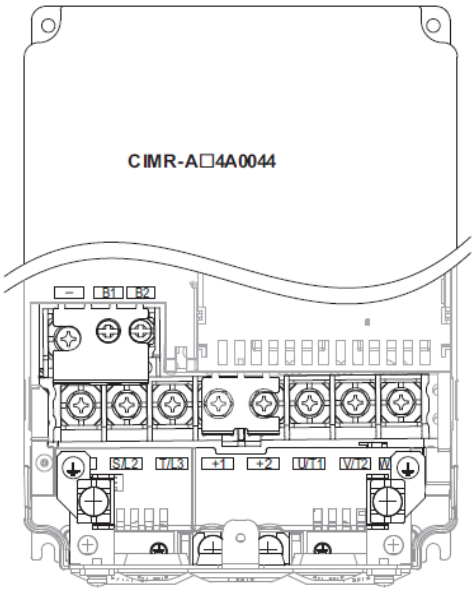


=>

- CR700 Main Circuit Terminal Configuration

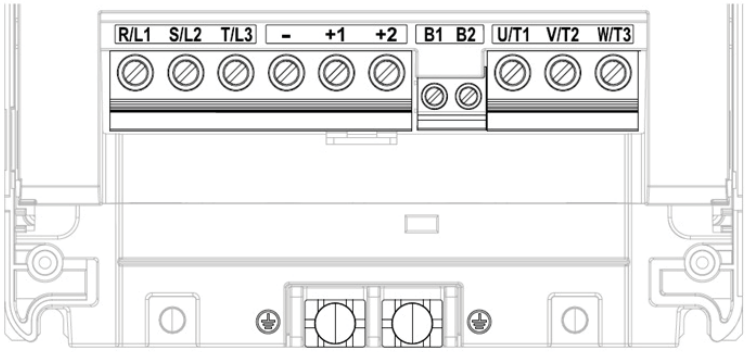


- A1000 Main Circuit Terminal Configuration

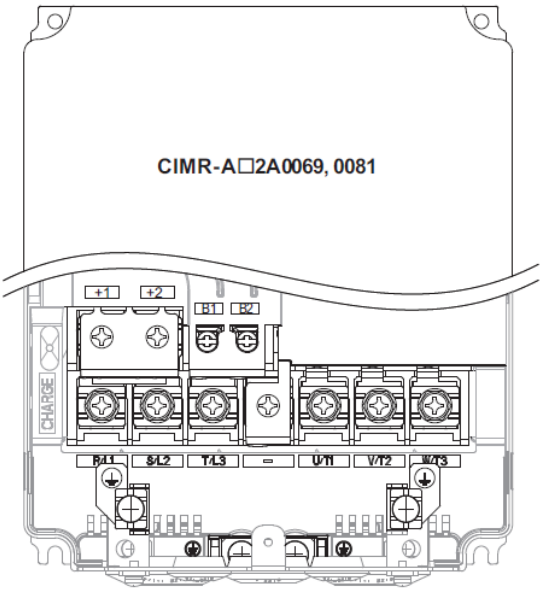


- CR700 Main Circuit Terminal Configuration

CR70A4039

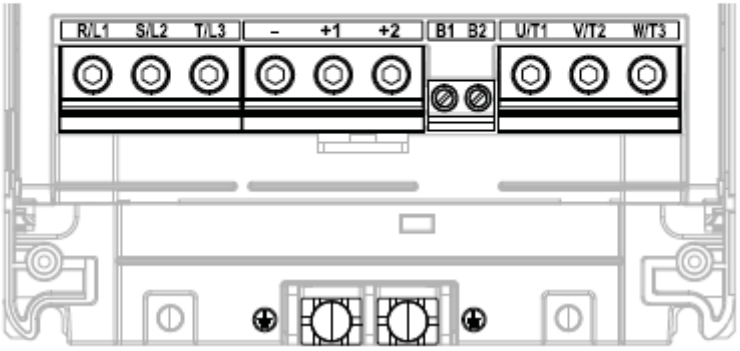


- A1000 Main Circuit Terminal Configuration

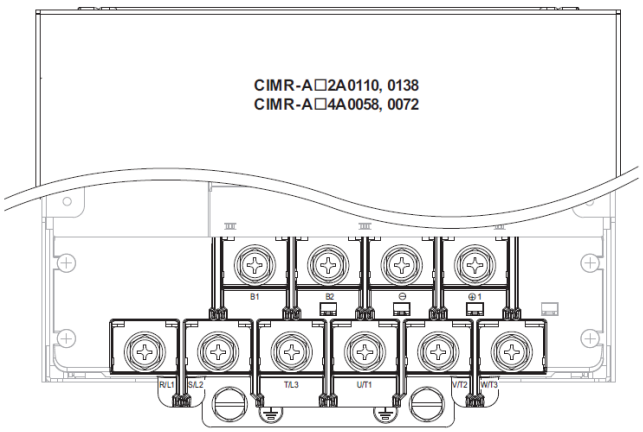


- CR700 Main Circuit Terminal Configuration

CR70A2060,2075

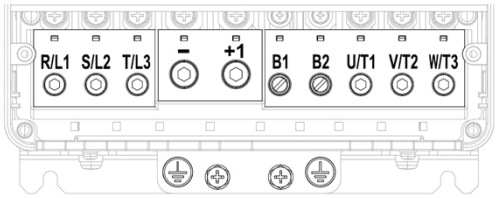


- A1000 Main Circuit Terminal Configuration

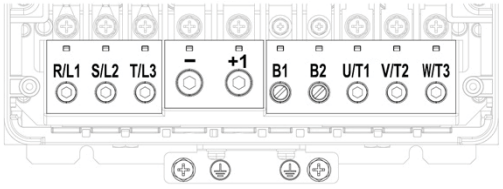


- CR700 Main Circuit Terminal Configuration

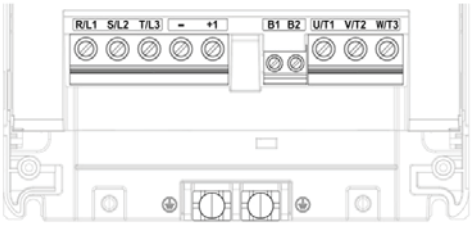
CR70A2088



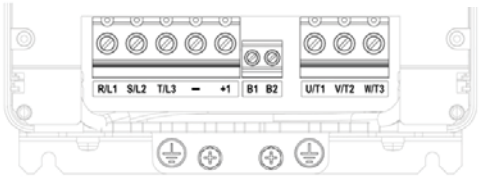
CR70A2115



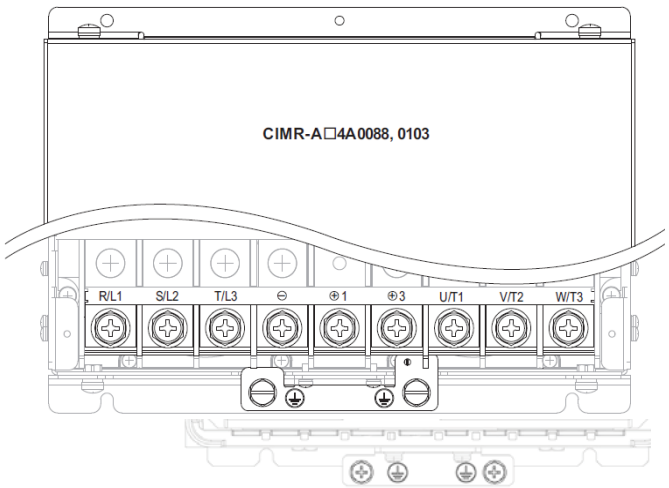
CR70A4045



CR70A4060

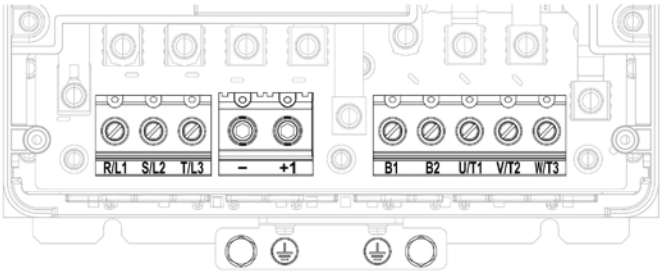


- A1000 Main Circuit Terminal Configuration

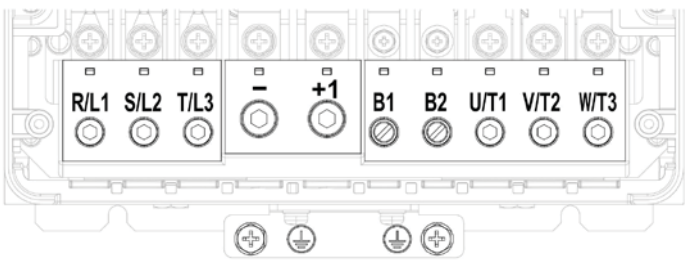


- CR700 Main Circuit Terminal Configuration

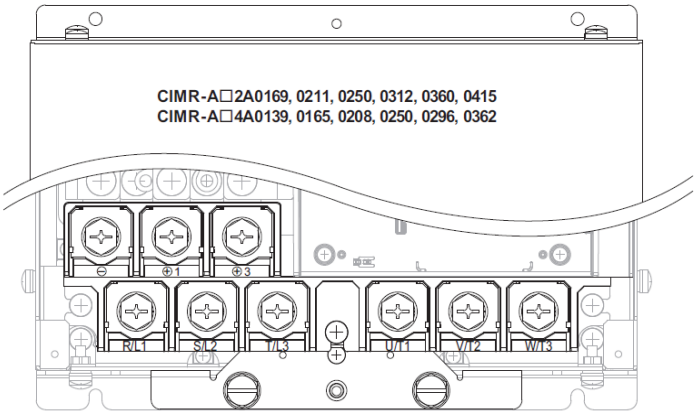
CR70A4075



CR70A4091



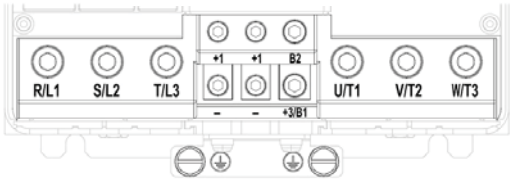
- A1000 Main Circuit Terminal Configuration



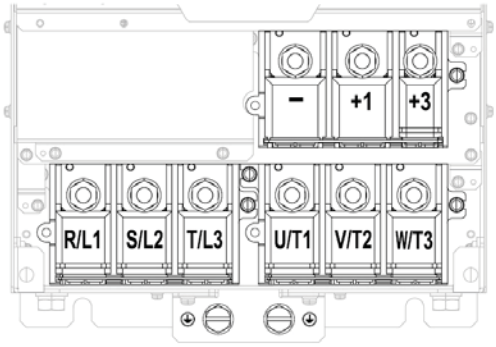
* The shape of the terminals are different in 2A0250 to 0415 and 4A0208 to 0362.

- CR700 Main Circuit Terminal Configuration

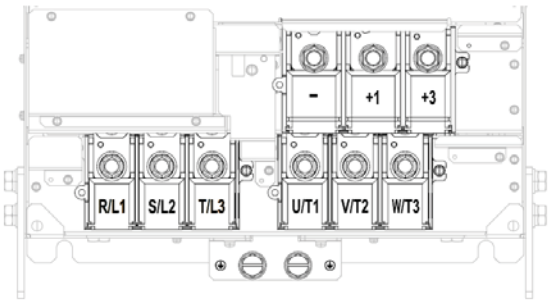
CR70A2145,2180
CR70A4112,4150



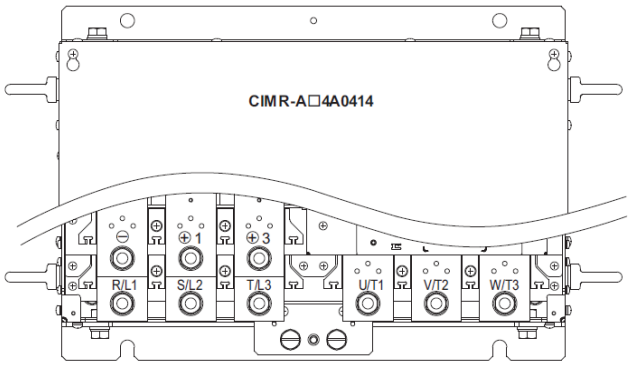
CR70A2215,2283
CR70A4180,4216,4260



CR70A2346,2415
CR70A4304

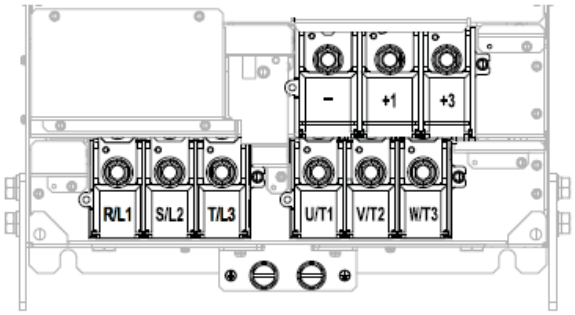


- A1000 Main Circuit Terminal Configuration

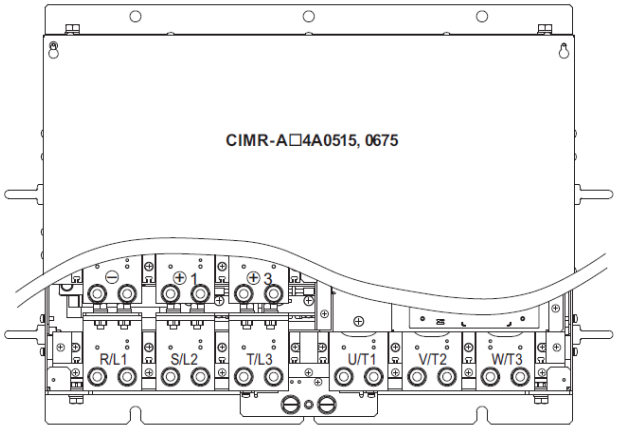


- CR700 Main Circuit Terminal Configuration

CR70A4371

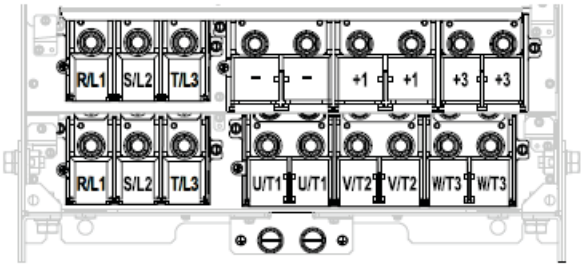


- A1000 Main Circuit Terminal Configuration



- CR700 Main Circuit Terminal Configuration

CR70A4453,4605



3-2. Control Circuit Terminals, Signal Levels

- Terminal function defaults differences between A1000 and CR700 are listed in the table below.

Control circuit terminals		Name	Signal Level	
A1000	CR700		A1000	CR700
S1	S1	Multi-function input 1 (Closed: Forward run, Open: Stop)	Photocoupler 24 Vdc, 8 mA	Photocoupler 24 Vdc, 6 mA
S2	S2	Multi-function input 2 (Closed: Reverse run, Open: Stop)		
S3	S3	Multi-function input 3 (External fault (N.O.))		
S4	S4	Multi-function input 4 (Fault reset)		
S5	S5	Multi-function input 5 (Brake release check)		
S6	S6	Multi-function input 6 (Multi-step speed reference 1)		
S7	S7	Multi-function input 7 (Multi-step speed reference 2)		
S8	S8	Multi-function input 8 (Baseblock command (N.C.))		
SC *1	SN	Digital input power supply 0 V	Photocoupler 24 Vdc, 8 mA	MFDI power supply, 24V (max. 150 mA) Note: Do not install a jumper between terminals SP and SN.
	SC	Multi-function input common		
	SP	Digital input power supply +24 Vdc		
RP		Multi-function pulse train input	Response frequency 0.5 - 32 kHz (3 kΩ)	-
+V	+V	Power supply for analog inputs	+10.5 V (allowable current 20 mA max.)	
-V	-V	Power supply for analog inputs	-10.5V (allowable current 20 mA max.)	
A1	A1	Multi-function analog input 1	0 - +10 V (20 kΩ) 0+/-10 V	0 - +10 Vdc (20 kΩ) 0+/-10 V 4 - 20 mA (250 Ω) 0 - 20 mA (250 Ω)
A2	A2	Multi-function analog input 2	0 - +10 Vdc (20 kΩ) 0+/-10 V 4 - 20 mA (250 Ω) 0 - 20 mA (250 Ω)	
A3	A3	Multi-function analog input 3	0 - +10 V (20 kΩ) 0+/-10 V	0 - +10 Vdc (20 kΩ) 0+/-10 V 4 - 20 mA (250 Ω) 0 - 20 mA (250 Ω) - Can be set for PTC input
AC	AC	Frequency reference common	0 V	
E (G)	E (G)	Ground for shielded lines and option cards	-	
H1	H1	Safe Disable input 1	24 Vdc, 8 mA Closed: Normal operation Open: Coasting motor Internal impedance 3.3 kΩ OFF time of at least 1 ms	24 Vdc, 6 mA Closed: Normal operation Open: Coasting motor Internal impedance 4.7 kΩ OFF time of at least 2 ms
H2	H2	Safe Disable input 2		
HC	HC	Safe Disable function common	Safe Disable function common	Safe Disable function common Note: Do not jumper or short terminals HC and SN.
DM+ *2		Safety monitor output	+48 Vdc 50 mA max.	Connect to Multi-function digital output, Multi-function photocoupler output
DM- *2		Safety monitor output		

<table>
<tr><th colspan="2">Control circuit terminals</th><th rowspan="2">Name</th><th colspan="2">Signal Level</th></tr>
<tr><th>A1000</th><th>CR700</th><th>A1000</th><th>CR700</th></tr>
<tr><td>MA</td><td>MA</td><td>N.O. output (Fault)</td><td colspan="2" rowspan="3">Fault relay output
30 Vdc 10 mA - 1A
250 Vac 10 mA - 1A</td></tr>
<tr><td>MB</td><td>MB</td><td>N.C. output (Fault)</td></tr>
<tr><td>MC</td><td>MC</td><td>Fault output common</td></tr>
<tr><td>M1</td><td>M1</td><td rowspan="2">Multi-function digital output (Brake Release Command)</td><td colspan="2" rowspan="5">Multi-function digital output
30 Vdc 10 mA - 1A
250 Vac 10 mA - 1A</td></tr>
<tr><td>M2</td><td>M2</td></tr>
<tr><td rowspan="2"></td><td>M3</td><td rowspan="2">Multi-function digital output (During run)</td></tr>
<tr><td>M4</td></tr>
<tr><td rowspan="2"></td><td>M5</td><td rowspan="2">Multi-function digital output (Frequency (Speed) Agree 1)</td></tr>
<tr><td>M6</td></tr>
<tr><td>P1</td><td>P1</td><td rowspan="2">Photocoupler output 1 (Zero speed)
Note: Default function differs between A1000 and CR700.
A1000: Zero Speed Control
CR700: Drive Ready
To change the function assigned to the terminal in CR700 to Zero Speed Control, change the parameter setting of CR700 so that H2-04 = 1 (default setting is H2-04 = 6).</td><td colspan="2" rowspan="4">Multi-function photocoupler output
+48 Vdc 2 - 50 mA</td></tr>
<tr><td></td><td>C1
*3</td></tr>
<tr><td>P2</td><td>P2</td><td>Photocoupler output 2 (Speed agree 1)
Note: Default function differs between A1000 and CR700.
A1000: Speed Agree 1
CR700: Minor Fault
To change the function assigned to the terminal in CR700 to Speed Agree 1, change the parameter setting of CR700 so that H2-05 = 2 (default setting is H2-05 = 10).</td></tr>
<tr><td></td><td>C2
*3</td></tr>
<tr><td>PC
*3</td><td></td><td>Photocoupler output common</td><td colspan="2">Multi-function photocoupler output
+48 Vdc 2 - 50 mA</td></tr>
<tr><td>MP</td><td></td><td>Pulse train output (Output frequency)</td><td>32 kHz (2.2 kΩ) max.</td><td>-</td></tr>
<tr><td>FM</td><td>FM</td><td>Analog monitor output 1 (Output frequency)</td><td rowspan="2">-10 - +10 Vdc
(max. current 2 mA)
Resolution: 1/1000</td><td rowspan="2">-10 - +10 Vdc
(max. current 2 mA)</td></tr>
<tr><td>AM</td><td>AM</td><td>Analog monitor output 2 (Output current)</td></tr>
<tr><td>AC</td><td>AC</td><td>Monitor common</td><td colspan="2">0 V</td></tr>
</table>

Terminal connections and drive settings

*1. Use the connection diagram on the following page when transferring the SC terminal wiring from A1000 to CR700.

*2. Transfer wiring from the DM+ and DM- terminals on A1000 to terminals M1 and M2 or to M3 and M4 on CR700.

Or, transfer wiring to the P1 and C1 terminals, or to the P2 and C2 terminals on CR700.

- Set H2-01 = 51 when using the M1 and M2 terminals.
- Set H2-02 = 51 when using the M3 and M4 terminals.
- Set H2-03 = 51 when using the P1 and C1 terminals.
- Set H2-04 = 51 when using the P2 and C2 terminals.

*3. Transfer wiring from terminal PC on A1000 to either terminal C1 or C2 on CR700.

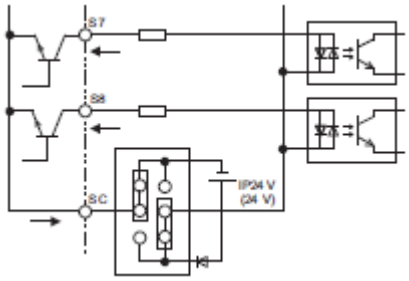
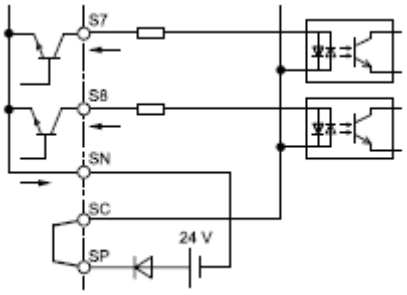
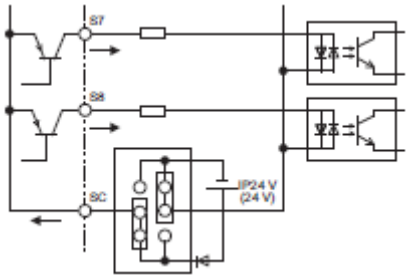
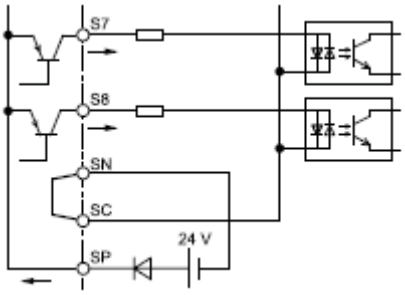
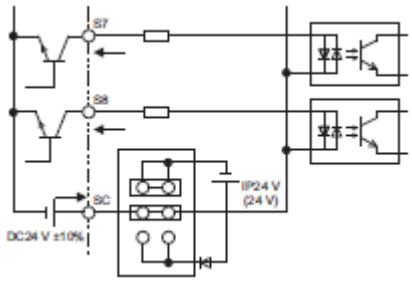
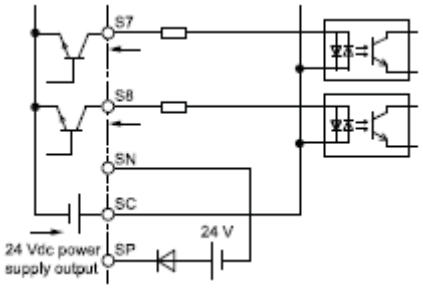
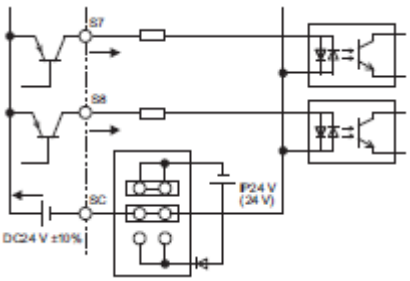
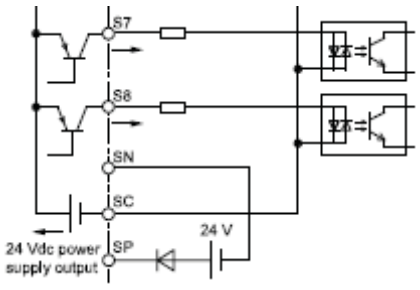
Control I/O Connections

◆ Sinking/Sourcing Mode for Digital Inputs

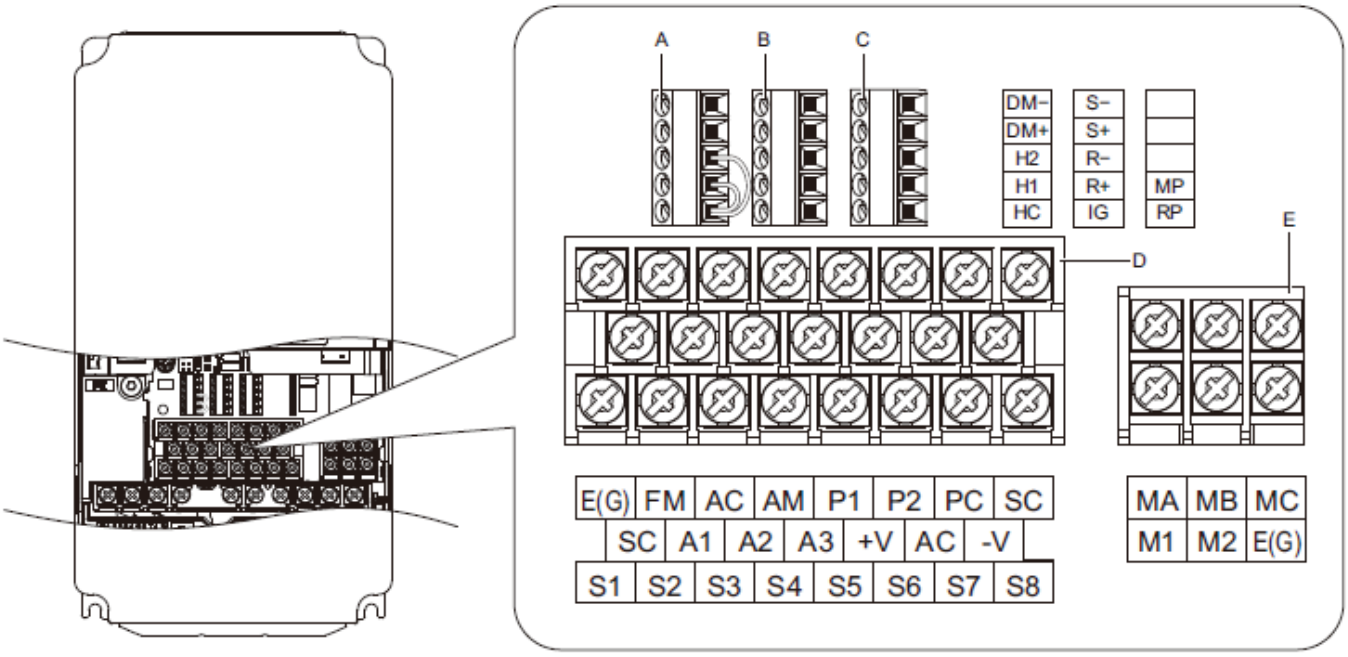
A1000 uses a jumper on the control board to set the sinking/sourcing mode and internal/external power supply. Meanwhile, CR700 uses terminals SN, SC, and SP.

Check how the jumper is set in A1000, then make corresponding changes in CR700.
The default setting in CR700 is for sinking mode and an internal power supply.

Note: Do not short terminals SP and SN.

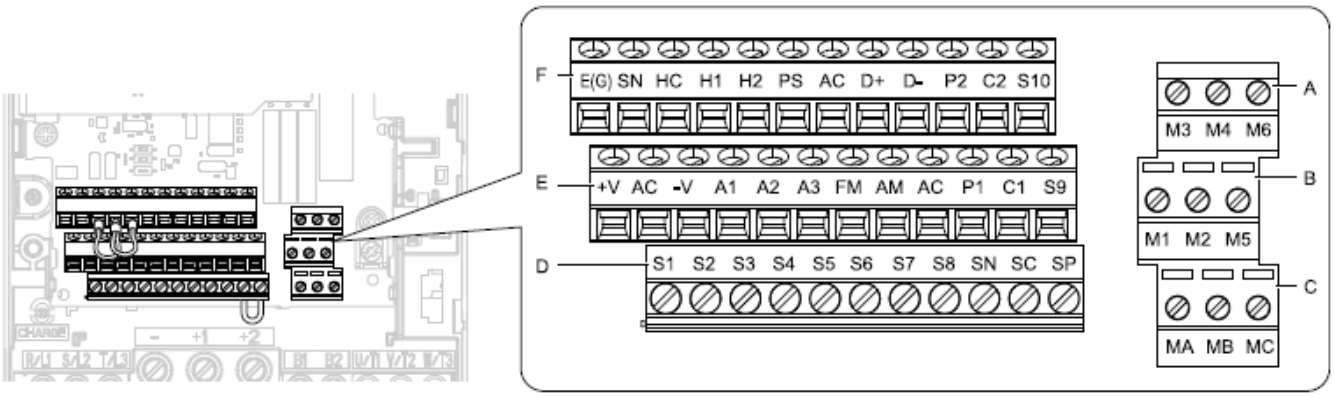
Mode/Power supply	A1000	CR700
Sinking Mode (NPN) Internal power supply		
Sourcing Mode (PNP) Internal power supply		
Sinking Mode (NPN) External power supply		
Sourcing Mode (PNP) External power supply		

- A1000 Control Circuit Terminal Configuration



A – Terminal Block (TB 6)
B – Terminal Block (TB 5)
C – Terminal Block (TB 4)
D – Terminal Block (TB 1)
E – Terminal Block (TB 2)

- CR700 Control Circuit Terminal Configuration



A - 端子台(TB2-3)
B - 端子台(TB2-2)
C - 端子台(TB2-1)
D - 端子台(TB1)
E - 端子台(TB3)
F - 端子台(TB4)

3-3. Serial Communication Terminals

Comm. terminal		Name	Signal Level	
A1000	CR700		A1000	CR700
R+	D+	A1000: Communications input (+) CR700: Communications input/output (+)	Differential input Photocoupler insulation Use an RS-485 or RS-422 cable to connect the drive.	Differential input Photocoupler insulation Use an RS-485 cable to connect the drive.
R-	D-	A1000: Communications input (-) CR700: Communications input/output (-)		
S+	D+	A1000: Communications output (+) CR700: Communications input/output (+)		
S-	D-	A1000: Communications output (-) CR700: Communications input/output (-)		
IG	AC	Shield ground	0 V	0 V

3-4. Terminal Sizes and Wire Gauge

Main Circuit Terminal Sizes and Wire Gauge

* Refer to the CR700 Technical Manual when checking the recommended wire gauge of CR700 and the IP20 applicable gauge.

200 V class

⏚ Indicates ground terminal

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA2A0004 CIMR-AA2A0006 CIMR-AA2A0008 CIMR-AA2A0010 CIMR-AA2A0012 CIMR-AA2A0018	R/L1,S/L2,T/L3	2 - 5.5	M4	Panhead (+)	1.2 - 1.5
		U/T1,V/T2,W/T3	2 - 5.5			
		-,+1,+2	2 - 5.5			
		B1,B2	2 - 5.5			
		⏚	2 - 5.5		+/- screw	
CR700	CR70A2003 CR70A2005 CR70A2008 CR70A2011 CR70A2014	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	2 - 8	M4	+/- screw	1.2 - 1.5
A1000	CIMR-AA2A0021	R/L1,S/L2,T/L3	3.5 - 5.5	M4	Panhead (+)	1.2 - 1.5
		U/T1,V/T2,W/T3	3.5 - 5.5			
		-,+1,+2	3.5 - 5.5			
		B1,B2	2 - 5.5			
		⏚	3.5 - 5.5		+/- screw	
CR700	CR70A2018	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	3.5 - 8	M4	+/- screw	1.2 - 1.5
A1000	CIMR-AA2A0030	R/L1,S/L2,T/L3	5.5 - 14	M4	Panhead (+)	2.1 - 2.3
		U/T1,V/T2,W/T3	5.5 - 14			
		-,+1,+2	5.5 - 14			
		B1,B2	2 - 5.5			
		⏚	5.5 - 8	M5	+/- screw	2.0 - 2.5
CR700	CR70A2025	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	5.5 - 8	M5	+/- screw	2.0 - 2.5

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA2A0040	R/L1,S/L2,T/L3	14	M4	Panhead (+)	2.1 - 2.3
		U/T1,V/T2,W/T3	8 - 14			
		-,+1,+2	14			
		B1,B2	3.5 - 5.5			
		⏚	5.5 - 8	M5	+/- screw	2.0 - 2.5
CR700	CR70A2033	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	5.5 - 8	M5	+/- screw	2.0 - 2.5
A1000	CIMR-AA2A0056	R/L1,S/L2,T/L3	14 - 22	M6	Hexagon bolt (with Phillips screwhead)	5.4 - 6.0
		U/T1,V/T2,W/T3	14 - 22			
		-,+1,+2	14 - 22			
		B1,B2	5.5 - 14	M5	Panhead (+)	2.7 - 3.0
		⏚	8 - 14	M6	+/- screw	5.4 - 6.0
CR700	CR70A2047	R/L1,S/L2,T/L3	2 - 22	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 38	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		B1,B2	2 - 14	M4	Slot (-)	1.5 - 1.7
		⏚	8 - 14	M6	+/- screw	5.4 - 6.0
A1000	CIMR-AA2A0069	R/L1,S/L2,T/L3	22 - 30	M8	Hexagon bolt (with Phillips screwhead)	9.9 - 11
		U/T1,V/T2,W/T3	14 - 30			
		-,+1,+2	22 - 30			
		B1,B2	8 - 14	M5	Panhead (+)	2.7 - 3.0
		⏚	8 - 22	M6	+/- screw	5.4 - 6.0
CR700	CR70A2060	R/L1,S/L2,T/L3	2 - 38	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		U/T1,V/T2,W/T3	2 - 22			
		-,+1,+2	2 - 50			
		B1,B2	2 - 14	M4	Slot (-)	1.5 - 1.7
		⏚	8 - 22	M6	+/- screw	5.4 - 6.0

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA2A0081	R/L1,S/L2,T/L3	30 - 38	M8	Hexagon bolt (with Phillips screwhead)	9.9 - 11
		U/T1,V/T2,W/T3	22 - 38			
		-,+1,+2	30 - 38			
		B1,B2	14	M5	Panhead (+)	2.7 - 3.0
		⏚	14 - 22	M6	+/- screw	5.4 - 6.0
CR700	CR70A2075	R/L1,S/L2,T/L3	2 - 50	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		U/T1,V/T2,W/T3	2 - 30			
		-,+1,+2	2 - 60			
		B1,B2	2 - 14	M4	Slot (-)	1.5 - 1.7
		⏚	14 - 22	M6	+/- screw	5.4 - 6.0
A1000	CIMR-AA2A0110	R/L1,S/L2,T/L3	30 - 50	M8	Hexagon bolt (with Phillips screwhead)	9.0 - 11
		U/T1,V/T2,W/T3	30 - 50			
		-,+1	38 - 60			
		B1,B2	14 - 50			
		⏚	14 - 38		Minus (-)	
CR700	CR70A2088	R/L1,S/L2,T/L3	22 - 38	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		U/T1,V/T2,W/T3	22 - 38			
		-,+1	30 - 60	M8	Hex socket cap (WAF: 6 mm)	10 - 12
		B1,B2	8 - 22	M6	Minus (-)	3 - 3.5
		⏚	14 - 38	M6	Hexagon bolt (+)	5.4 – 6.0
A1000	CIMR-AA2A0138	R/L1,S/L2,T/L3	50 - 60	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	50 - 60			
		-,+1	60 - 80			
		B1,B2	22 - 60			
		⏚	22 - 38	M8	Minus (-)	9.0 - 11
CR700	CR70A2115	R/L1,S/L2,T/L3	22 - 60	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		U/T1,V/T2,W/T3	22 - 60			
		-,+1	30 - 80	M8	Hex socket cap (WAF: 6 mm)	10 - 12
		B1,B2	8 - 30	M6	Minus (-)	3 - 3.5
		⏚	22 - 38	M6	Hexagon bolt (+)	5.4 – 6.0

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA2A0169	R/L1,S/L2,T/L3	60 - 100	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	60 - 100			
		-,+1	50 - 100			
		+3	50 - 100			
		⏚	22 - 60		Minus (-)	
CR700	CR70A2145	R/L1,S/L2,T/L3	50 - 100	M10	Hex socket cap (WAF: 8 mm)	12 - 14
		U/T1,V/T2,W/T3	50 - 125			
		-,-,+1,+1	22 - 50	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		+3	30 - 80	M8	Hex socket cap (WAF: 6 mm)	8 - 9
		⏚	22 - 60	M8	Hexagon bolt with slot	9.0 - 11
A1000	CIMR-AA2A0211	R/L1,S/L2,T/L3	80 - 100	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	50 - 100			
		-,+1	50 - 100			
		+3	60 - 100			
		⏚	22 - 60		Minus (-)	
CR700	CR70A2180	R/L1,S/L2,T/L3	50 - 100	M10	Hex socket cap (WAF: 8 mm)	12 - 14
		U/T1,V/T2,W/T3	50 - 125			
		-,-,+1,+1	22 - 50	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		+3	30 - 80	M8	Hex socket cap (WAF: 6 mm)	8 - 9
		⏚	22 - 60	M8	Hexagon bolt with slot	9.0 - 11
A1000	CIMR-AA2A0250	R/L1,S/L2,T/L3	38 - 150	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	38 - 150			
		-,+1	80 - 150			
		+3	30 - 150	M10		18 - 23
		⏚	22 - 150	M12	Minus (-)	32 - 40
CR700	CR70A2215	R/L1,S/L2,T/L3	22 - 100x2P	M10	Hexagon bolt and Nut	20
		U/T1,V/T2,W/T3	22 - 100x2P			
		-,+1	30 - 125x2P			
		+3	22 - 60x2P			
		⏚	22 - 200	M10	Hexagon bolt with slot	18 - 23

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA2A0312	R/L1,S/L2,T/L3	70 - 150	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	70 - 200			
		-,+1	80 - 150			
		+3	80 - 150	M10		18 - 23
		⏚	38 - 150	M12	Minus (-)	32 - 40
CR700	CR70A2283	R/L1,S/L2,T/L3	22 - 100x2P	M10	Hexagon bolt and Nut	20
		U/T1,V/T2,W/T3	22 - 100x2P			
		-,+1	30 - 125x2P			
		+3	22 - 60x2P			
		⏚	38 - 200	M10	Hexagon bolt with slot	18 - 23
A1000	CIMR-AA2A0360	R/L1,S/L2,T/L3	80 - 325	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	80 - 325			
		-,+1	125 - 325			
		+3	80 - 325	M10		18 - 23
		⏚	38 - 200	M12	Minus (-)	32 - 40
CR700	CR70A2346	R/L1,S/L2,T/L3	60 - 125x2P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 125x2P			
		-,+1	100 - 150x2P			
		+3	38 - 150x2P			
		⏚	38 - 200	M12	Hexagon bolt with slot	32 - 40
A1000	CIMR-AA2A0415	R/L1,S/L2,T/L3	100 - 325	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	125 - 325			
		-,+1	150 - 325			
		+3	80 - 325	M10		18 - 23
		⏚	60 - 200	M12	Minus (-)	32 - 40
CR700	CR70A2415	R/L1,S/L2,T/L3	60 - 125x2P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 125x2P			
		-,+1	100 - 150x2P			
		+3	38 - 150x2P			
		⏚	60 - 200	M12	Hexagon bolt with slot	32 - 40

400 V class

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0002 CIMR-AA4A0004 CIMR-AA4A0005 CIMR-AA4A0007 CIMR-AA4A0009 CIMR-AA4A0011	R/L1,S/L2,T/L3	2 - 5.5	M4	Panhead (+)	1.2 - 1.5
		U/T1,V/T2,W/T3	2 - 5.5			
		-,+1,+2	2 - 5.5			
		B1,B2	2 - 5.5			
		⏚	2 - 5.5		+/- screw	
CR700	CR70A4002 CR70A4003 CR70A4005 CR70A4006 CR70A4007 CR70A4009	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	2 - 8	M4	+/- screw	1.2 - 1.5
A1000	CIMR-AA4A0018	R/L1,S/L2,T/L3	2 - 14	M4	Panhead (+)	2.1 - 2.3
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 14			
		B1,B2	2 - 5.5			
		⏚	2 - 5.5	M5	+/- screw	2.0 - 2.5
CR700	CR70A4015	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	2 - 8	M4	+/- screw	1.2 - 1.5
A1000	CIMR-AA4A0023	R/L1,S/L2,T/L3	3.5 - 14	M4	Panhead (+)	2.1 - 2.3
		U/T1,V/T2,W/T3	3.5 - 14			
		-,+1,+2	3.5 - 14			
		B1,B2	2 - 5.5			
		⏚	3.5 - 5.5	M5	+/- screw	2.0 - 2.5
CR700	CR70A4018	R/L1,S/L2,T/L3	2 - 14	M4	Slot (-)	1.5 - 1.7
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22	M5		2.3 - 2.5
		B1,B2	2 - 5.5	M4		1.5 - 1.7
		⏚	3.5 - 8	M5	+/- screw	2.0 - 2.5

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0031	R/L1,S/L2,T/L3	5.5 - 14	M5	Hexagon bolt (with Phillips screwhead)	3.6 - 4.0
		U/T1,V/T2,W/T3	5.5 - 8			
		-,+1,+2	5.5 - 14			
		B1,B2	2 - 8	M5	Panhead (+)	2.7 - 3.0
		⏚	5.5 - 8	M6	+/- screw	5.4 - 6.0
CR700	CR70A4024	R/L1,S/L2,T/L3	2 - 22	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 38	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		B1,B2	2 - 14	M4	Slot (-)	1.5 - 1.7
		⏚	5.5 - 14	M6	+/- screw	5.4 - 6.0
A1000	CIMR-AA4A0038	R/L1,S/L2,T/L3	14	M5	Hexagon bolt (with Phillips screwhead)	3.6 - 4.0
		U/T1,V/T2,W/T3	8 - 14			
		-,+1,+2	14			
		B1,B2	3.5 - 8	M5	Panhead (+)	2.7 - 3.0
		⏚	5.5 - 14	M6	+/- screw	5.4 - 6.0
CR700	CR70A4031	R/L1,S/L2,T/L3	2 - 22	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 38	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		B1,B2	2 - 14	M4	Slot (-)	1.5 - 1.7
		⏚	5.5 - 14	M6	+/- screw	5.4 - 6.0
A1000	CIMR-AA4A0044	R/L1,S/L2,T/L3	14 - 22	M6	Hexagon bolt (with Phillips screwhead)	5.4 - 6.0
		U/T1,V/T2,W/T3	14 - 22			
		-,+1,+2	14 - 22			
		B1,B2	5.5 - 8	M5	Panhead (+)	2.7 - 3.0
		⏚	8 - 14	M6	+/- screw	5.4 - 6.0
CR700	CR70A4039	R/L1,S/L2,T/L3	2 - 14	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 14			
		-,+1,+2	2 - 22			
		B1,B2	2 - 8	M4		1.5 - 1.7
		⏚	8 - 22	M6	+/- screw	5.4 - 6.0

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0058	R/L1,S/L2,T/L3	14	M8	Hexagon bolt (with Phillips screwhead)	9.0 - 11
		U/T1,V/T2,W/T3	14			
		-,+1	14 - 38			
		B1,B2	8 - 14			
		⏚	8 - 14		Minus (-)	
CR700	CR70A4045	R/L1,S/L2,T/L3	2 - 14	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 14			
		-,+1	2 - 22			
		B1,B2	2 - 14	M4		1.5 - 1.7
		⏚	8 - 22	M6	Hexagon bolt (+)	5.4 – 6.0
A1000	CIMR-AA4A0072	R/L1,S/L2,T/L3	14 - 22	M8	Hexagon bolt (with Phillips screwhead)	9.0 - 11
		U/T1,V/T2,W/T3	14 - 22			
		-,+1	22 - 38			
		B1,B2	14 - 22			
		⏚	14 - 22		Minus (-)	
CR700	CR70A4060	R/L1,S/L2,T/L3	2 - 22	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 22			
		-,+1	2 - 30			
		B1,B2	2 - 14	M4		1.5 - 1.7
		⏚	14 - 38	M6	Hexagon bolt (+)	5.4 – 6.0
A1000	CIMR-AA4A0088	R/L1,S/L2,T/L3	22 - 60	M8	Hexagon bolt (with Phillips screwhead)	9.0 - 11
		U/T1,V/T2,W/T3	22 - 60			
		-,+1	30 - 60			
		+3	14 - 60			
		⏚	14 - 22		Minus (-)	
CR700	CR70A4075	R/L1,S/L2,T/L3	2 - 30	M5	Slot (-)	2.3 - 2.5
		U/T1,V/T2,W/T3	2 - 30			
		-,+1	2 - 38	M6	Hex socket cap (WAF: 5 mm)	5 - 5.5
		B1,B2	2 - 22	M5	Slot (-)	2.3 - 2.5
		⏚	14 - 38	M6	Hexagon bolt (+)	5.4 – 6.0
A1000	CIMR-AA4A0103	R/L1,S/L2,T/L3	30 - 60	M8	Hexagon bolt (with Phillips screwhead)	9.0 - 11
		U/T1,V/T2,W/T3	30 - 60			
		-,+1	30 - 60			
		+3	22 - 60			
		⏚	14 - 22		Minus (-)	
CR700	CR70A4091	R/L1,S/L2,T/L3	22 - 60	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		U/T1,V/T2,W/T3	22 - 60			
		-,+1	30 - 80	M8	Hex socket cap (WAF: 6 mm)	10 - 12
		B1,B2	8 - 30	M6	Minus (-)	3 - 3.5
		⏚	14 - 38	M6	Hexagon bolt (+)	5.4 – 6.0

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0139	R/L1,S/L2,T/L3	38 - 100	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	60 - 100			
		-,+1	60 - 100			
		+3	30 - 100			
		⏚	22		Minus (-)	
CR700	CR70A4112	R/L1,S/L2,T/L3	50 - 100	M10	Hex socket cap (WAF: 8 mm)	12 - 14
		U/T1,V/T2,W/T3	50 - 125			
		-,-,+1,+1	22 - 50	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		B1,B2	30 - 80	M8	Hex socket cap (WAF: 6 mm)	8 - 9
		⏚	22 - 60	M8	Hexagon bolt with slot	9.0 - 11
A1000	CIMR-AA4A0165	R/L1,S/L2,T/L3	60 - 100	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	80 - 100			
		-,+1	60 - 100			
		+3	60 - 100			
		⏚	22 - 30		Minus (-)	
CR700	CR70A4150	R/L1,S/L2,T/L3	50 - 100	M10	Hex socket cap (WAF: 8 mm)	12 - 14
		U/T1,V/T2,W/T3	50 - 125			
		-,-,+1,+1	22 - 50	M6	Hex socket cap (WAF: 5 mm)	8 - 9
		B1,B2	30 - 80	M8	Hex socket cap (WAF: 6 mm)	8 - 9
		⏚	22 - 60	M8	Hexagon bolt with slot	9.0 - 11
A1000	CIMR-AA4A0208	R/L1,S/L2,T/L3	30 - 150	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	30 - 150			
		-,+1	38 - 150			
		+3	22 - 80			
		⏚	22 - 150		Minus (-)	
CR700	CR70A4180	R/L1,S/L2,T/L3	22 - 100x2P	M10	Hexagon bolt and Nut	20
		U/T1,V/T2,W/T3	22 - 100x2P			
		-,+1	30 - 125x2P			
		+3	22 - 60x2P			
		⏚	22 - 200	M10	Hexagon bolt with slot	18 - 23

Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0250	R/L1,S/L2,T/L3	38 - 325	M10	Hexagon bolt (with Phillips screwhead)	18 - 23
		U/T1,V/T2,W/T3	38 - 325			
		-,+1	80 - 325			
		+3	38 - 325			
		⏚	22 - 200		Minus (-)	
CR700	CR70A4216	R/L1,S/L2,T/L3	22 - 100x2P	M10	Hexagon bolt and Nut	20
		U/T1,V/T2,W/T3	22 - 100x2P			
		-,+1	30 - 125x2P			
		+3	22 - 60x2P			
		⏚	22 - 200	M10	Hexagon bolt with slot	18 - 23
A1000	CIMR-AA4A0296	R/L1,S/L2,T/L3	80 - 325	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	80 - 325			
		-,+1	80 - 325			
		+3	38 - 325	M10		18 - 23
		⏚	30 - 200	M12	Minus (-)	32 - 40
CR700	CR70A4260	R/L1,S/L2,T/L3	22 - 100x2P	M10	Hexagon bolt and Nut	20
		U/T1,V/T2,W/T3	22 - 100x2P			
		-,+1	30 - 125x2P			
		+3	22 - 60x2P			
		⏚	30 - 200	M10	Hexagon bolt with slot	18 - 23
A1000	CIMR-AA4A0362	R/L1,S/L2,T/L3	80 - 325	M12	Hexagon bolt (with Phillips screwhead)	32 - 40
		U/T1,V/T2,W/T3	80 - 325			
		-,+1	100 - 325			
		+3	80 - 325	M10		18 - 23
		⏚	30 - 200	M12	Minus (-)	32 - 40
CR700	CR70A4304	R/L1,S/L2,T/L3	60 - 125x2P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 125x2P			
		-,+1	100 - 150x2P			
		+3	38 - 150x2P			
		⏚	30 - 200	M12	Hexagon bolt with slot	32 - 40
A1000	CIMR-AA4A0414	R/L1,S/L2,T/L3	80 - 150	M12	Hexagon bolt and Nut	32 - 40
		U/T1,V/T2,W/T3	80 - 150			
		-,+1	80 - 150			
		+3	80 - 150			
		⏚	38 - 100		Minus (-)	
CR700	CR70A4371	R/L1,S/L2,T/L3	60 - 125x2P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 125x2P			
		-,+1	100 - 150x2P			
		+3	38 - 150x2P			
		⏚	38 - 200	M12	Hexagon bolt with slot	32 - 40

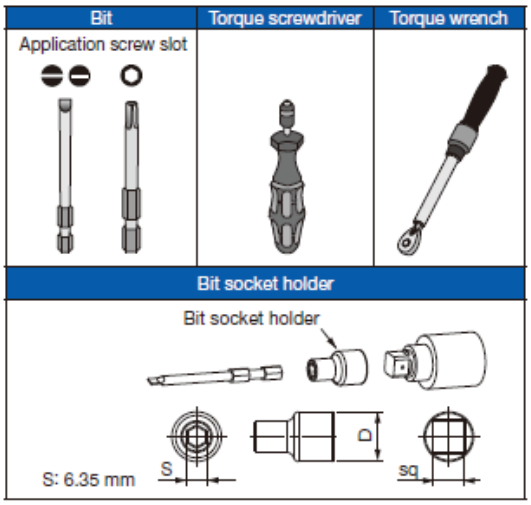
Model	Drive Capacity A1000: Model CR700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0515	R/L1,S/L2,T/L3	80 - 150	M12	Hexagon bolt and Nut	32 - 40
		U/T1,V/T2,W/T3	80 - 150			
		-,+1	60 - 150			
		+3	60 - 150			
		⏚	50 - 150		Minus (-)	
CR700	CR70A4453	R/L1,S/L2,T/L3 R1/L11,S1/L21,T1/L31	60 - 125x4P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 150x4P			
		-,+1	80 - 150x4P			
		+3	30 - 125x4P			
		⏚	60 - 150	M12	Hexagon bolt with slot	32 - 40
A1000	CIMR-AA4A0675	R/L1,S/L2,T/L3	80 - 150	M12	Hexagon bolt and Nut	32 - 40
		U/T1,V/T2,W/T3	80 - 150			
		-,+1	60 - 150			
		+3	60 - 150			
		⏚	70 - 150		Minus (-)	
CR700	CR70A4605	R/L1,S/L2,T/L3 R1/L11,S1/L21,T1/L31	60 - 125x4P	M12	Hexagon bolt and Nut	35
		U/T1,V/T2,W/T3	60 - 150x4P			
		-,+1	80 - 150x4P			
		+3	30 - 125x4P			
		⏚	60 - 150	M12	Hexagon bolt with slot	32 - 40

Caution when transferring wires to the new drive
Note the following points due to the European terminal block in CR700.
Refer to the CR700 instruction manual for other wiring-related matters.

- **The terminal block is not compatible with closed-loop crimp terminals. Remove crimp terminals and prepare the wire ends.**
  Crimp terminals can be used to connect to the ground terminal.
- **Expose the required length of bare wire by stripping back the shielding according to local electrical code.**
- **Do not use a wire with bent or crushed conductor.**
  If a deformed wire is used for connection, cut off the bent end of the wire before using it.
- **Do not use solder when connecting stranded wire.**
- **When using stranded wires, wire the lines so that there are no stray wires in the connection section.**
  Do not excessively twist the stranded wire.
- **Firmly insert the electric wire all the way into the European terminal block.**
  If the wire covering is removed to the recommended stripped wire length, the covering will fit into the terminal block.
- **Tighten screws according to the designated tightening torque listed below.**
- **A straight tip or hexagonal tool must be used when wiring the European terminal.**
- **Secure wires in the wiring section so that pressure is not applied to the terminal blocks.**
- **After connecting the wires, gently pull on the wires to check that they do not pull out.**
- **Regularly tighten any loose terminal block screws to their specified tightening torques**

Tools for Wiring European Style Terminal Blocks (Recommended product)

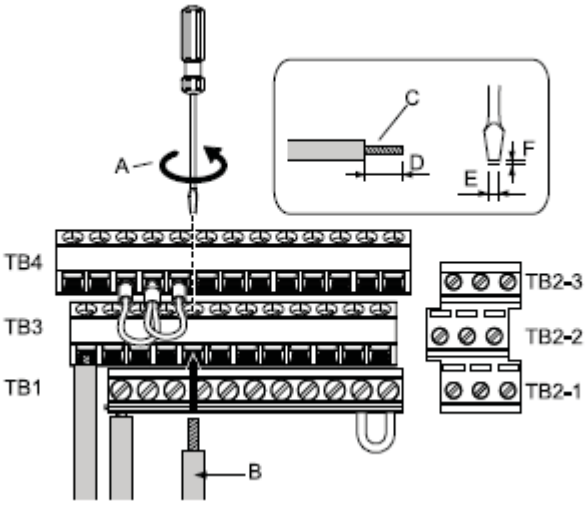
Screw size	Screw type	Recommended Product
M4	Slot	Prepare the following two tools. · Bit [PHOENIX CONTACT] Model: SF-BIT-SL 1,0X4,0-70 · Torque screwdriver [PHOENIX CONTACT] Model: TSD-M 3NM (1.2 to 3 N·m)
M5	Slot	When wiring drive models GA70□2056 and GA70□4089 or earlier models, be sure to correctly select tools based on the wire gauges. Wiring Gauge: ≤25 mm² or AWG10 · Bit [PHOENIX CONTACT] Model: SF-BIT-SL 1,2X6,5-70 · Torque screwdriver [PHOENIX CONTACT] Model: TSD-M 3NM (1.2 to 3 N·m) Wiring Gauge: ≥30 mm² or AWG8 · Torque wrench that includes a torque measurement range of 4.5 N·m · Bit socket holder of 6.35 mm
M6	Hex socket (WAF: 5)	Prepare the following three tools. · Bit [PHOENIX CONTACT] Model: SF-BIT-HEX 5-50 · Torque wrench that includes a torque measurement range of 9 N·m · Bit socket holder of 6.35 mm
	Minus	Prepare the following three tools for the models GA70□2110 to 2138, and GA70□4103. · Bit [PHOENIX CONTACT] Model: SF-BIT-SL 1,2X6,5-70 · Torque wrench that includes a torque measurement range of 3.5 N·m · Bit socket holder of 6.35 mm
M8	Hex socket (WAF: 6)	Prepare the following three tools. · Bit [PHOENIX CONTACT] Model: SF-BIT-HEX 6-50 · Torque wrench that includes a torque measurement range of 12 N·m · Bit socket holder of 6.35 mm
M10	Hex socket (WAF: 8)	Prepare the following three tools. · Bit [PHOENIX CONTACT] Model: SF-BIT-HEX 8-50 · Torque wrench that includes a torque measurement range of 14 N·m · Bit socket holder of 6.35 mm



Control Circuit Terminal Sizes and Wire Gauge

Power supply	Model	Capacity	Terminal Symbol	Terminal Screw	Tightening Torque (N•m)	Applicable Gauge (mm^2)	Recommended Gauge (mm^2)
200 V class 400 V class	A1000	All capacities	FM, AC, AM, P1, P2, PC, SC, A1, A2, A3, +V, -V, S1, S2, S3, S4, S5, S6, S7, S8, MA, MB, MC, M1, M2	M3.5	0.8 - 1.0	0.5 - 2.0	0.75
			MP, RP, R+, R-, S+, S-, IG DM+, DM-, H1, H2, HC	M2 Phoenix type	0.22 - 0.25	Stranded wire 0.25 - 1.0 Solid wire 0.25 - 1.5	0.75
			E(G)	M3.5	0.8 - 1.0	0.5 - 2.0	1.25
200 V class 400 V class	CR700	All capacities	FM, AC, AM, P1, C1, P2, C2, SN, SC, SP, A1, A2, A3, +V, -V, S1, S2, S3, S4, S5, S6, S7, S8,S9,S10, MA, MB, MC, M1, M2, M3, M4, MP, RP, D+, D-, H1, H2, HC, PS, E(G)	M3 Phoenix type	0.5 - 0.6	Stranded wire 0.2 - 1.0 Solid wire 0.2 - 1.5	0.75

Terminal Board Wiring Guide



A: Loosen the screws to insert the wire.
B: Single wire or stranded wire
C: Avoid fraying wire strands when stripping insulation from wire.
D: When crimp ferrules are not used, remove approximately 5.5 mm of the covering at the tip.
E: Blade width of 2.5 mm or less
F: Blade depth of 0.4 mm or less

4. Dimensions and Installation Attachments

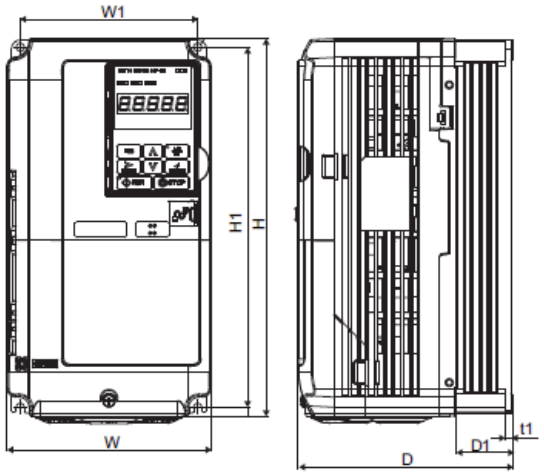
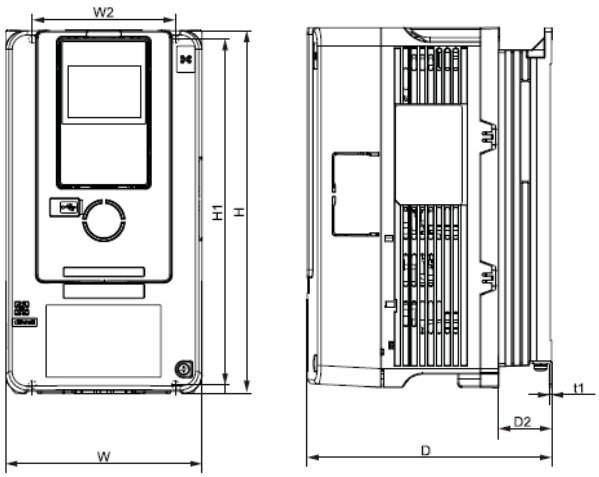
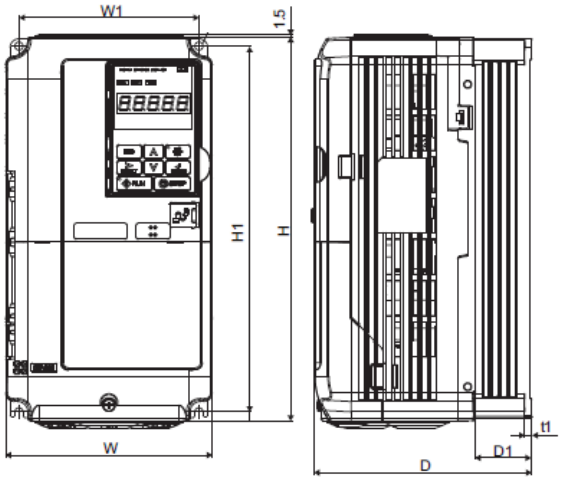
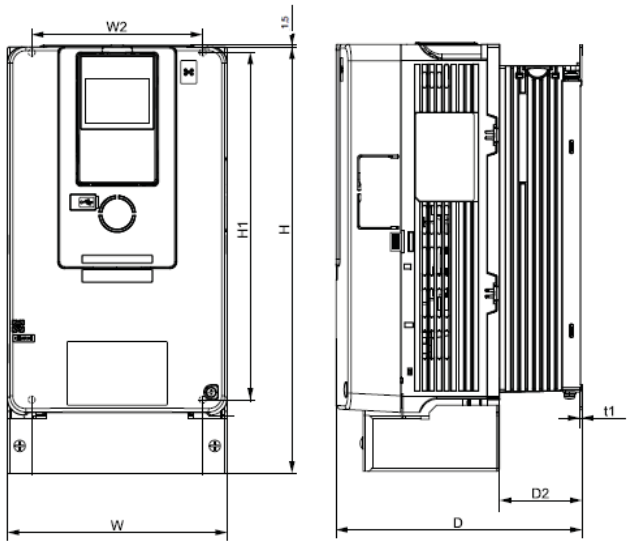
4-1. Exterior and Mounting Dimensions

Installation holes are not the same in A1000 and CR700.

The standard model A1000 (200/400V 22kW or less) is compliant for a wall-mount enclosure, while the standard model CR700 has an open-chassis design (IP20).

An option is required to install CR700 in a wall-mount enclosure.

A UL Type 1 kit needs to be installed to the open-chassis (IP20) CR700. (Refer to Section 4-2)

<table>
<tr><th>A1000</th><th>CR700</th></tr>
<tr><td>Open Type Enclosure (IP20): Remove the top cover for compliance
 
</td><td>Open Type Enclosure (IP20): Standard model is compliant
 
</td></tr>
<tr><td>Enclosed wall-mounted type (UL Type 1 enclosure): Standard model is compliant
 
</td><td>Enclosed wall-mounted type (UL Type 1 enclosure): Option required for compliance
 
</td></tr>
</table>

Refer to the table below for exterior and mounting dimensions.
The table below is shown with the type of A1000 and the 4 digits of CR700 catalog code.

Open Type Enclosure (IP20)

Note: A1000 with the following capacity (HD rating 18.5kW or less, ND rating 22kW or less) is IP00.
- CIMR-AA2A0081 and lower
- CIMR-AA4A0044 and lower

Voltage class	Dimensions (mm)																
	A1000								CR700								
	Model	W	H	D	W1	H1	D1	t1	Catalog code	W	H	D	W1	W2	H1	D2	t1
Three-phase 200 V class	0004	140	260	147	122	248	38	5	2003	140	260	176	102	102	248	38	1.6
	0006								2005								
	0008								2008								
	0010																
	0012								2011								
	0018			164			55		2014			211				73	
	0021								2018								
	0030			167					2025								
	0040								2033								
	0056	180	300	187	160	284	75		2047	180	300	202	140	140	284	68	
	0069	220	350	197	192	335	78		2060	220	350	227	192	192	335	87	2.3
	0081	220	365	197	192	335	78		2075	220	350	227	192	192	335	87	
	0110	250	400	258	195	385	100	2.3	2088	240	400	280	195	186	375	114	
	0138	275	450		220	435			2115	255	450	280	170	165	424	114	
	0169	325	550	283	260	535	110		2145	264	543	335	190	182	516	149	
	0211								2180								
	0250	450	705	330	325	680	130	3.2	2215	312	700	420	218	218	659	160	4.5
	0312								2283								
	0360	500	800	350	370	773	130	4.5	2346	440	800	472	370	370	757	218	
	0415								2415								
Three-phase 400 V class	0002	140	260	147	122	248	38	5	4002	140	260	176	102	102	248	38	1.6
	0004								4003								
	0005								4005								
	0007			164			55		4006			211				73	
	0009								4007								
	0011								4009								
	0018			167					4015								
	0023								4018								
	0031	180	300	187	160	284	75		4024	180	300	202	140	140	284	68	
	0038								4031								
	0044	220	350	197	192	335	78		4039	220	350	227	192	192	335	87	2.3
	0058	250	400	258	195	385	100	2.3	4045	220	350	246	192	192	335	106	
	0072	275	450		220	435			4060	240	400	280	195	186	375	114	
	0088	325	510	258	260	495	105		4075	255	450	280	170	165	424	114	
	0103								4091								
	0139	325	550	283	260	535	110		4112	264	543	335	190	182	516	149	
	0165								4150								
	0208	450	705	330	325	680	130	3.2	4180	312	700	420	218	218	659	160	4.5
	0250	500	800	350	370	773	130	4.5	4216								
	0296								4260								
	0362								4304	440	800	472	370	370	757	218	4.5
	0414	500	950	370	370	923	135		4371								
	0515	670	1140		440	1110	150		4553	510	1136	480	450	450	1093	220	
	0675								4605								

Enclosed Wall-mounted Type (UL Type 1 Enclosure)

Voltage class	Dimensions (mm)																
	A1000								CR700								
	Model	W	H	D	W1	H1	D1	t1	Catalog code	W	H	D	W1	W2	H1	D2	t1
Three-phase 200 V class	0004	140	260	147	122	248	38	5	2003	140	300	176	102	102	248	38	1.6
	0006								2005								
	0008								2008								
	0010																
	0012								2011								
	0018			164			55		2014			211				73	
	0021								2018								
	0030			167					2025								
	0040								2033								
	0056	180	300	187	160	284	75		2047	180	340	202	140	140	284	68	
	0069	220	350	197	192	335	78		2060	220	400	227	192	192	335	87	2.3
	0081	220	365	197	192	335	78		2075		435						
	0110	254	534	258	195	385	100	2.3	2088	244	500	280	195	186	375	114	
	0138	279	614		220	435			2115	259	580	280	170	165	424	114	
	0169	329	730	283	260	535	110		2145	268	700	335	190	182	516	149	
	0211								2180		770						
	0250	456	960	330	325	680	130	3.2	2215	316	915	420	218	218	659	160	4.5
	0312								2283								
	0360	504	1168	350	370	773	130	4.5	2346	444	1045	472	370	370	757	218	
Three-phase 400 V class	0002	140	260	147	122	248	38	5	4002	140	300	176	102	102	248	38	1.6
	0004								4003								
	0005								4005								
	0007			164			55		4006			211				73	
	0009								4007								
	0011								4009								
	0018			167					4015								
	0023								4018								
	0031	180	300	187	160	284	75		4024	180	340	202	140	140	284	68	
	0038								4031								
	0044	220	350	197	192	335	78		4039	220	400	227	192	192	335	87	2.3
	0058	254	465	258	195	385	100	2.3	4045			246				106	
	0072	279	515	258	220	435			4060	244	500	280	195	186	375	114	
	0088	329	630	258	260	495	105		4075	259	580	280	170	165	424	114	
	0103								4091								
	0139		730	283		535	110		4112	268	700	335	190	182	516	149	
	0165								4150								
	0208	456	960	330	325	680	130	3.2	4180	316	915	420	218	218	659	160	4.5
	0250	504	1168	350	370	773	130	4.5	4216								
	0296								4260								
	0362								4304	444	1045	472	370	370	757	218	

Note: A1000 which capacity is stated below does not correspond to enclosed wall-mounted type (UL Type1).
- CIMR-AA2A0415 and above
- CIMR-AA4A0414 and above

4-2. UL Type 1 Kit

200 V class

Voltage class	Catalog code	UL Type 1 Kit Model (Code No.)
Three-phase 200 V class	CR70A2003	900-192-121-001 (100-202-326)
	CR70A2005	
	CR70A2008	
	CR70A2011	
	CR70A2014	
	CR70A2018	
	CR70A2025	
	CR70A2033	
	CR70A2047	900-192-121-002 (100-202-327)
	CR70A2060	900-192-121-003 (100-202-328)
	CR70A2075	900-192-121-004 (100-202-329)
	CR70A2088	900-192-121-005 (100-202-330)
	CR70A2115	900-192-121-006 (100-208-526)
	CR70A2145	900-192-121-007 (100-208-527)
	CR70A2180	900-192-121-008 (100-208-528)
	CR70A2215	900-192-121-009 (100-208-529)
	CR70A2283	
	CR70A2346	900-192-121-010 (100-213-136)

400 V class

Voltage class	Catalog code	UL Type 1 Kit Model (Code No.)
Three-phase 400 V class	CR70A4002	900-192-121-001 (100-202-326)
	CR70A4003	
	CR70A4005	
	CR70A4006	
	CR70A4007	
	CR70A4009	
	CR70A4015	
	CR70A4018	
	CR70A4024	900-192-121-002 (100-202-327)
	CR70A4031	
	CR70A4039	900-192-121-003 (100-202-328)
	CR70A4045	
	CR70A4060	900-192-121-005 (100-202-330)
	CR70A4075	900-192-121-006 (100-208-526)
	CR70A4091	
	CR70A4112	900-192-121-007 (100-208-527)
	CR70A4150	
	CR70A4180	900-192-121-009 (100-208-549)
	CR70A4216	
	CR70A4260	
	CR70A4304	900-192-121-010 (100-213-136)

4-3. Drive Installation Attachment to Match Mounting Dimensions

Dimensions for the open type enclosure drives and enclosed wall-mounted type drives are shown below.
CR700 has a larger depth than A1000.
The attachment makes it possible to mount CR700 using the same mounting holes as A1000.
First mount the installation attachment to the holes that A1000 was using, and then mount CR700 to the attachment.
The installation depth increases due to the size of the attachment. The number in parenthesis indicates the dimension when using the attachments.

Open Type Enclosure (IP20) Table lists the Heavy Duty (HD) rating.

Voltage Class	Capacity (kW)	Dimensions (mm)						Drive Installation Attachment Code No.	
		A1000			CR700				
		W	H	D	W	H	D	Normal installation	External heatsink
Three-phase 200 V class	0.4	140	260	147	140	260	176 (189)	100-206-987	Contact Yaskawa.
	0.75								
	1.1								
	1.5								
	2.2								
	3			164			211 (224)		
	3.7								
	5.5			167					
	7.5								
	11	180	300	187	180	300	202 (215)	100-206-988	
	15	220	350	197	220	350	227	Contact Yaskawa.	
	18.5	220	365	197	220	350	227		
	22	250	400	258	240	400	280		
	30	275	450		255	450	280		
	37	325	550	283	264	543	335		
	45								
	55	450	705	330	312	700	420		
	75								
	90	500	800	350	440	800	472		
Three-phase 400 V class	0.4	140	260	147	140	260	176 (189)	100-206-987	Contact Yaskawa.
	0.75								
	1.5								
	2.2			164			211 (224)		
	3								
	3.7								
	5.5			167					
	7.5								
	11	180	300	187	180	300	202 (215)	100-206-988	
	15								
	18.5	220	350	197	220	350	227	Contact Yaskawa.	
	22	250	400	258	220	350	246		
	30	275	450		240	400	280		
	37	325	510	258	255	450	280		
	45								
	55	325	550	283	264	543	335		
	75								
	90	450	705	330	312	700	420		
	110	500	800	350					
	132								
	160				440	800	472		
	185	500	950	370					
	220	670	1140		510	1136	480		
	315								

Enclosed Wall-mounted Type (UL Type 1 enclosure) Table lists the Heavy Duty (HD) rating.

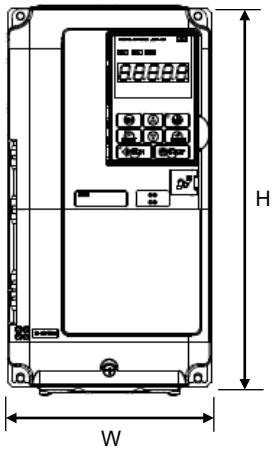
Voltage class	Capacity (kW)	Dimensions (mm)						Drive Installation Attachment Code No.
		A1000			CR700			
		W	H	D	W	H	D	Normal installation
Three-phase 200 V class	0.4	140	260	147	140	300	176 (189)	100-206-987
	0.75							
	1.1							
	1.5							
	2.2							
	3			164			211 (224)	
	3.7							
	5.5			167				
	7.5							
	11	180	300	187	180	340	202 (215)	100-206-988
	15	220	350	197	220	400	227	Contact Yaskawa.
	18.5	220	365	197		435		
	22	254	534	258	244	500	280	
	30	279	614		259	580	280	
	37	329	730	283	268	700	335	
	45					770		
	55	456	960	330	316	915	420	
	75							
	90	504	1168	350	444	1045	472	
Three-phase 400 V class	0.4	140	260	147	140	300	176 (189)	100-206-987
	0.75							
	1.1							
	1.5							
	2.2			164			211 (224)	
	3							
	3.7							
	5.5			167				
	7.5							
	11	180	300		180	340	202 (215)	100-206-988
	15			187				
	18.5	220	350	197	220	400	227	Contact Yaskawa.
	22	254	465	258	220	400	246	
	30	279	515	258	244	500	280	
	37	329	630	258	259	580	280	
	45							
	55		730	283	268	700	335	
	75							
	90	456	960	330	316	915	420	
	110	504	1168	350				
	132							
	160				444	1045	472	

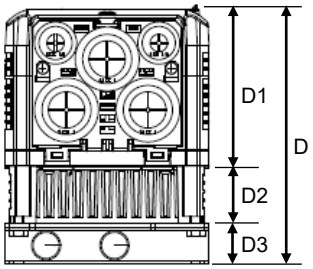
Note: Standard vibration tolerance specifications may not be guaranteed if an installation attachment is used. Yaskawa recommends installing the device directly to the drive in an area with a high degree of vibration.

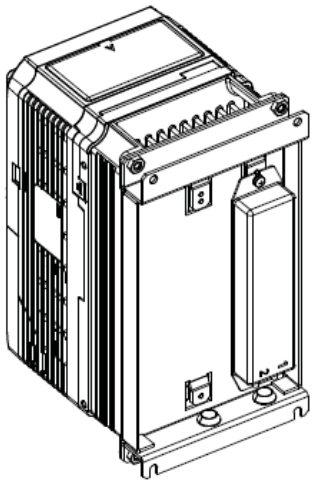
4-4. Braking Resistor Installation Attachment

The braking resistor installation attachment for A1000 is not the same as the one for CR700.
The dimensions are the same, but the braking resistor is installed to a different location.
To use the same braking resistor and braking installation attachment as A1000, the resistor terminal ends need to be prepared first.
The wire length changes depending on how the terminal ends have been prepared.

A1000 200 V class 0.4 kW example







Dimensions after installing the braking resistor installation attachment Table lists Heavy Duty (HD) ratings.

Voltage Class	Capacity (kW)	Dimensions (mm)												Difference in depth (mm)	Braking resistor installation attachment Model (catalog code)
		A1000						CR700							
		W	H	D1	D2	D3	D	W	H	D1	D2	D3	D		
Three-Phase 200 V Class	0.4	140	260	109	38	28	175	140	260	138	38	28	204	+29	A1000 EZZ020805A (100-048-123)
	0.75													+29	
	1.5													+29	
	2.2													+29	
	3.7				55		192				55		221	+29	
Three-Phase 400 V Class	0.4	140	260	109	38	28	175	140	260	138	38	28	204	+29	CR700 900-192-126-001 (100-202-333)
	0.75													+29	
	1.5													+29	
	2.2				55		192				55		221	+29	
	3.7													+29	

Note: Use of the braking resistor installation attachment may void certain vibration and shock requirements. Yaskawa recommends installing the braking resistor in a separate location if the drive is used in an area with a high degree of vibration.

5. Parameter Transition Guide

5-1. Parameter Setting Transition Instructions

(1) Prepare a record of all parameters that have been changed from their default settings.
Use the Verify Menu in A1000 if available to check which parameters have been changed.
Yaskawa recommends filling in your setting values to the row marked “User’s Setting” of the Parameter Compatibility Table in Section 5-3.

(2) Change the setting value of A1-01 [Access Level Selection] in CR700 from the default setting 2 to 3 (Expert Level).

(3) 1) Set the value of A1-02 [Control Method Selection] for A1000 to CR700.
2) Set E: motor parameter setting (changed value) for A1000 to CR700.
3) Perform Line-to-Line Resistance (T1-02 = 2).
4) Set E: parameter setting (changed value) other than motor parameter for A1000 to CR700 according to Parameter Compatibility Table in 5-3.

Note: Parameters for terminals P1 and P2 in A1000 shift by one parameter number in CR700.
- Function selection for terminal P1-PC is H2-02 in A1000, but in CR700, the function selection for terminal P1-C1 is H2-04.
- Function selection for terminal P2-PC is H2-03 in A1000, but in CR700, the function selection for terminal P2-C2 is H2-05.

5-2. Checking Modified Parameters with A1000 Verify Menu

- Energize the A1000.
- Use the Up or Down arrow key to scroll to the Verify Menu (vrFY flashing).
- Push the ENTER key.
- If the display shows “nonE,” then no parameters have been changed from their default settings.
- If there are parameters that have been changed from their default settings, then those parameters will flash.
- Press the ENTER key to display the value that the parameter has been set to.
- Make a note of the parameter setting.
- Press the ESC key. The display returns to the flashing parameter.
- Press the Up arrow key.
- If there are other parameters that have been changed from their default settings, then those parameters will flash, and appear in alphabetical order.
- After scrolling through all parameters that have been changed from the default setting, the display returns to the first parameter that was displayed.
- This step is complete once you have made a note of all the parameter setting changes.
- De-energize the A1000.

Note: A1-xx, A2-01 through A2-32 (except for A1-02 [Control Method Selection]) will not appear in the Verify Menu even if they have been changed from their default settings, so be sure to check those parameters separately.

5-3. Parameter Compatibility Table

The setting ranges and default settings for some parameters differ between A1000 and CR700.

Note: The parameter number for terminals P1 and P2 is different in CR700.

- H2-02 in A1000 matches H2-04 in CR700.
- H2-03 in A1000 matches H2-05 in CR700.

The following parameters have a different setting range or default setting in A1000 and CR700.

		A1000			CR700	
Parameter No.	Name	Default Setting	User's Setting	Setting Range	Default Setting	Setting Range
A1-01	Access Level Selection	2		0: Operation Only 1: User Parameters 2: Advanced Level	2	0: Operation Only 1: User Parameters 2: Advanced Level 3: Expert Level
b1-01	Frequency Reference Selection 1	1		0: Digital operator 1. Analog input terminals 2: MEMOBUS/Modbus Communications 3: Option card 4: Pulse input (terminal RP)	2	0: Digital operator 1. Analog input terminals 2: MEMOBUS/Modbus Communications 3: Option card
b1-15	Frequency Reference Selection 2	1		0: Digital operator 1. Analog input terminals 2: MEMOBUS/Modbus Communications 3: Option card 4: Pulse input (terminal RP)	1	0: Digital operator 1. Analog input terminals 2: MEMOBUS/Modbus Communications 3: Option card
C1-01	Acceleration Time 1	10.0		0.0 – 6000.0 sec	3.0	0.0 – 6000.0 sec
C1-02	Deceleration Time 1	10.0		0.0 – 6000.0 sec	3.0	0.0 – 6000.0 sec
C1-09	Fast Stop Time	10.0		0.0 – 6000.0 sec	2.0	0.0 – 6000.0 sec
H2-02	Terminal P1-PC Function Selection	0		0 - 192 Default 0:During run	6	1 - 1FF *Overwrites the value set to H2-04.
H2-03	Terminal P2-PC Function Selection	2		0 - 192 Default 2:Speed agree 1	10	0 - 1FF *Overwrites the value set to H2-05.
d4-04	Frequency Reference Bias Accel/Decel	0		0:Current Accel/Decel Time 1:Accel/Decel Time 4		
d4-05	Frequency Reference Bias Operation Mode Selection	0		0:Hold Bias Value 1:Reset Bias Value		
d4-06	Frequency Reference Bias	0.0		-99.9 – 100.0 %		
d4-07	Analog Frequency Reference Fluctuation Limit	1.0		1.0 - 100.0 %		
d4-08	Frequency Reference Bias Upper Limit	100.0		0.0 - 100.0 %		
d4-09	Frequency Reference Bias Lower Limit	0.0		-99.9 - 0.0 %		
d6-01	Field Weakening Level	80		0 - 100 %		

		A1000			CR700	
Parameter No.	Name	Default Setting	User's Setting	Setting Range	Default Setting	Setting Range
d6-02	Field Weakening Frequency Limit	0.0		0.0 - 400.0 Hz		
F1-07	Integration movement Selection During Acceleration And Deceleration	0		0: Disabled 1: Enabled		
H5-07	RTS Control ON/OFF	1		0: Disabled 1: Enabled		
H6-01	Pulse Train Input Terminal RP Function Selection	0		0:Frequency reference		
H6-02	Pulse Train Input Scaling	1440		1000 - 32000 Hz		
H6-03	Pulse Train Input Gain	100.0		0.0 - 1000.0 %		
H6-04	Pulse Train Input Bias	0.0		-100.0 - 100.0 %		
H6-05	Pulse Train Input Filter Time	0.10		0.00 - 2.00 sec		
H6-06	Pulse Train Monitor Selection	102				
H6-07	Pulse Train Monitor Scaling	1440		0 - 32000 Hz		
H6-08	Pulse Train Input Minimum Frequency	0.5		0.1 - 1000.0 Hz		
S2-04	At the time of the reverse, Speed Feedback Detection Restraint (AFR) Gain	0.00		0.00 – 10.00	1.00	0.00 – 10.00 *Overwrites the value set to n2-06.

6. Carrier Frequency and Rated Current Derating

Derating of the rated current varies depending on the Carrier Frequency Selection (C6-02).
Drive capacity may also make a difference in derating between A1000 and CR700.
In the case of CR700 has a rated current lower than A1000 (see text highlighted in yellow in the table below), either the carrier frequency should be lowered, or a larger capacity CR700 should be selected.

Comparing Rated Output Current in A1000 and CR700

200 V class

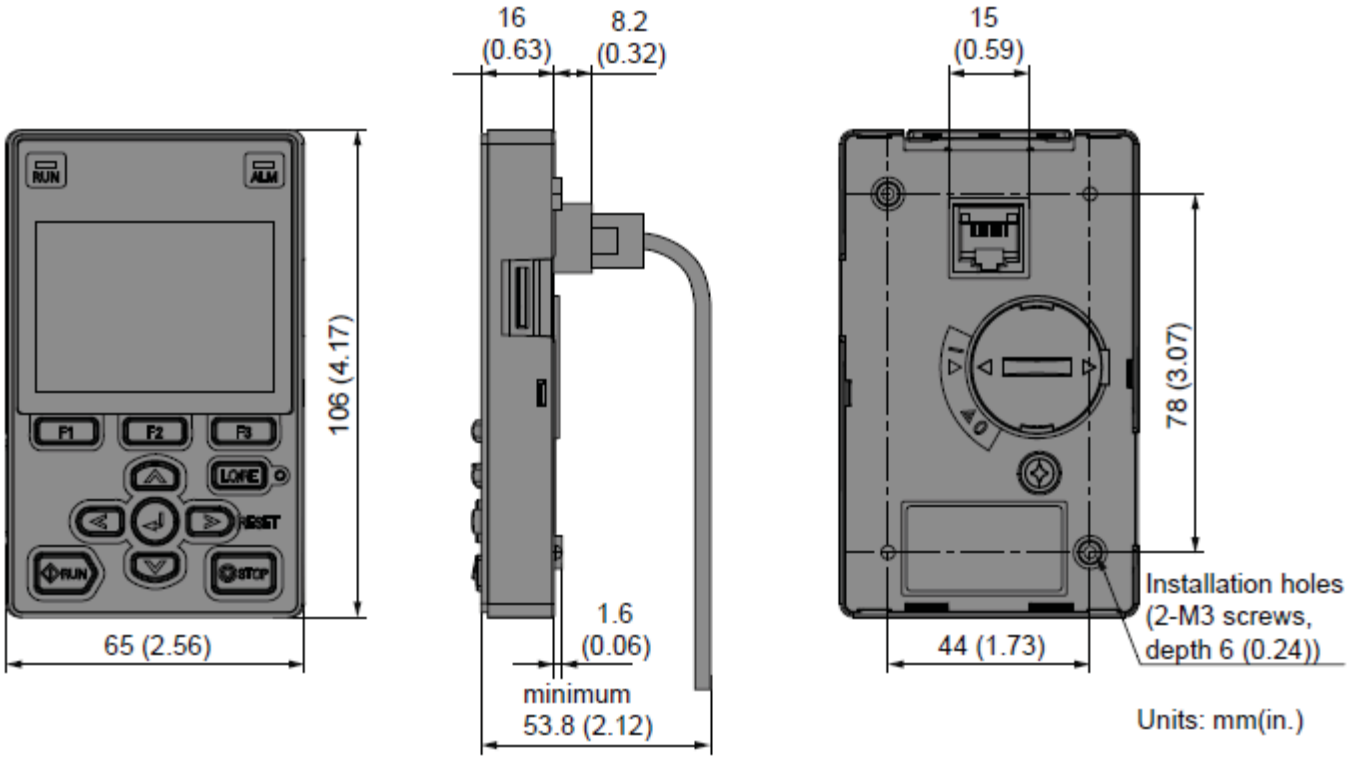
Heavy Duty (HD) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ CR70A _	Carrier Frequency 2 kHz	Carrier Frequency 5 kHz	Carrier Frequency 8 kHz	Carrier Frequency 10 kHz	Carrier Frequency 12.5 kHz	Carrier Frequency 15 kHz
0.4	2A0004	3.2	3.2	3.2	3.0	2.8	2.56
	2003	3.2	3.2	3.2	3.1	2.9	2.78
0.75	2A0006	5.0	5.0	5.0	4.7	4.4	4.0
	2005	5.0	5.0	5.0	4.8	4.6	4.3
1.1	2A0008	6.9	6.9	6.9	6.5	6.0	5.5
	2008	8.0	8.0	8.0	7.4	6.6	5.8
1.5	2A0010	8.0	8.0	8.0	7.5	7.0	6.4
	2008	8.0	8.0	8.0	7.4	6.6	5.8
2.2	2A0012	11.0	11.0	11.0	10.4	9.6	8.8
	2011	11.0	11.0	11.0	10.4	9.6	8.8
3	2A0018	14.0	14.0	14.0	13.2	12.2	11.2
	2014	14.0	14.0	14.0	12.6	10.8	9.1
3.7	2A0021	17.5	17.5	17.5	16.5	15.3	14.0
	2018	17.5	17.5	17.5	16.1	14.3	12.6
5.5	2A0030	25.0	25.0	25.0	23.6	21.8	20.0
	2025	25.0	25.0	25.0	23.0	20.5	18.0
7.5	2A0040	33.0	33.0	33.0	31.1	28.8	26.4
	2033	33.0	33.0	33.0	29.3	24.8	20.2
11	2A0056	47.0	47.0	47.0	44.3	41.0	37.6
	2047	47.0	47.0	47.0	43.4	38.9	34.4
15	2A0069	60.0	60.0	60.0	56.6	52.3	48
	2060	60.0	60.0	60.0	56.0	51.0	46
18.5	2A0081	75.0	75.0	75.0	68.6	60.5	53
	2075	75.0	75.0	75.0	68.6	60.5	53
22	2A0110	85.0	85.0	85.0	77.9	68.9	60
	2080	88.0	88.0	88.0	80.5	71.0	62
30	2A0138	115.0	115.0	115.0	105.1	92.8	81
	2115	115.0	115.0	115.0	105.1	92.8	81
37	2A0169	145.0	145.0	127.6	116.0	—	—
	2145	145.0	145.0	125.2	112.0	—	—
45	2A0211	180.0	180.0	158.4	144.0	—	—
	2180	180.0	180.0	155.2	138.6	—	—
55	2A0250	215.0	215.0	189.2	172.0	—	—
	2215	215.0	215.0	184.8	164.7	—	—
75	2A0312	283.0	283.0	248.8	226.0	—	—
	2283	283.0	283.0	249.0	226.4	—	—
90	2A0360	346.0	346.0	304.6	277.0	—	—
	2346	346.0	346.0	294.3	259.8	—	—
110	2A0415	415.0	415.0	365.2	332.0	—	—
	2415	415.0	415.0	365.2	332.0	—	—

400 V class

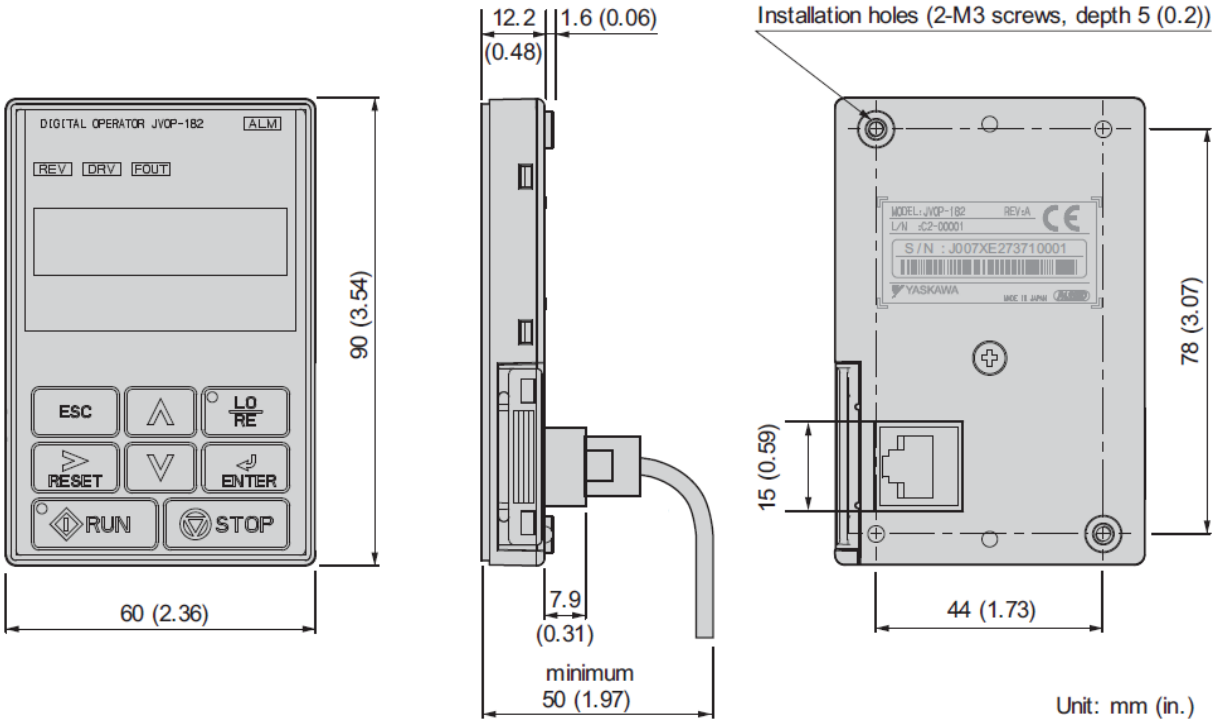
Heavy Duty (HD) Rating (kW)	C6-02 Capacity CIMR-AA _ CR70A _	1 Carrier Frequency 2 kHz	2 Carrier Frequency 5 kHz	3 Carrier Frequency 8 kHz	4 Carrier Frequency 10 kHz	5 Carrier Frequency 12.5 kHz	6 Carrier Frequency 15 kHz
0.4	4A0002	1.8	1.8	1.8	1.6	1.4	1.1
	4002	1.8	1.8	1.8	1.6	1.3	1.0
0.75	4A0004	3.4	3.4	3.4	3.0	2.5	2.0
	4003	3.4	3.4	3.4	2.9	2.3	1.7
1.5	4A0005	4.8	4.8	4.8	4.3	3.6	2.9
	4005	4.8	4.8	4.8	4.3	3.7	3.0
2.2	4A0007	5.5	5.5	5.5	4.9	4.1	3.3
	4006	5.5	5.5	5.5	4.9	4.1	3.2
3	4A0009	7.2	7.2	7.2	6.4	5.3	4.3
	4007	7.2	7.2	7.2	6.5	5.6	4.8
3.7	4A0011	9.2	9.2	9.2	8.1	6.8	5.5
	4009	9.2	9.2	9.2	8.1	6.8	5.4
5.5	4A0018	14.8	14.8	14.8	13.1	11.0	8.9
	4015	14.8	14.8	14.8	13.1	11.0	8.9
7.5	4A0023	18.0	18.0	18.0	15.9	13.4	10.8
	4018	18.0	18.0	18.0	15.9	13.4	10.8
11	4A0031	24.0	24.0	24.0	21.3	17.8	14.4
	4024	24.0	24.0	24.0	21.2	17.7	14.1
15	4A0038	31.0	31.0	31.0	27.5	23.0	18.6
	4031	31.0	31.0	31.0	27.5	23.0	18.6
18.5	4A0044	39.0	39.0	39.0	34.5	29.0	23.4
	4039	39.0	39.0	39.0	34.5	29.0	23.4
22	4A0058	45.0	45.0	45.0	39.9	33.4	27.0
	4045	45.0	45.0	45.0	39.1	31.8	24.4
30	4A0072	60.0	60.0	60.0	53.1	44.6	36.0
	4060	60.0	60.0	60.0	53.1	44.6	36.0
37	4A0088	75.0	75.0	75.0	66.4	55.7	45.0
	4075	75.0	75.0	75.0	66.4	55.7	45.0
45	4A0103	91.0	91.0	91.0	80.6	67.6	54.6
	4091	91.0	91.0	91.0	80.6	67.6	54.6
55	4A0139	112.0	112.0	91.6	78.0	—	—
	4112	112.0	112.0	91.8	78.4	—	—
75	4A0165	150.0	150.0	123.0	105.0	—	—
	4150	150.0	150.0	123.0	105.0	—	—
90	4A0208	180.0	180.0	147.6	126.0	—	—
	4180	180.0	180.0	147.6	126.0	—	—
110	4A0250	216.0	216.0	177.0	151.0	—	—
	4216	216.0	216.0	177.1	151.2	—	—
132	4A0296	260.0	260.0	213.2	182.0	—	—
	4260	260.0	260.0	213.2	182.0	—	—
160	4A0362	304.0	304.0	249.3	212.8	—	—
	4304	304.0	304.0	249.3	212.8	—	—
185	4A0414	370.0	370.0	303.4	259.0	—	—
	4371	371.0	371.0	304.2	259.7	—	—
220	4A0515	450.0	375.0	—	—	—	—
	4453	453.0	378.3	—	—	—	—
315	4A0675	605.0	504.0	—	—	—	—
	4605	605.0	505.2	—	—	—	—

Matching Keypad and Operator

- CR700 keypad (LCD keypad comes standard) * LED keypad also available
  Displays several lines of text at the same time.



- A1000 digital operator (LED operator comes standard)
  Uses up to 5 letters to display the frequency and parameter number.


DIGITAL OPERATOR JVOP-182
ALM
REV
DRV
FOUT
ESC
LO
RE
RESET
ENTER
RUN
STOP
90 (3.54)
60 (2.36)
12.2
(0.48)
1.6 (0.06)
7.9
(0.31)
minimum
50 (1.97)
Installation holes (2-M3 screws, depth 5 (0.2))
MODEL: JVOP-182
REV: A
S/N : J007XE273710001
YASKAWA
78 (3.07)
15 (0.59)
44 (1.73)
Unit: mm (in.)

Revision History

Revision No.	Date	Description of Change
First edition	2017.09.20	First edition
<1>	2018.07.18	Corrected the "5-1. Parameter Setting Transition Instructions" (3) in the chapter 5 on page 37.