YASKAWA

Yaskawa Electric
Drives Division

A1000 to GA700 Product Replacement Guide

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This document covers the difference between A1000 and GA700 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□□□□

New Model: GA700
Catalog code: GA70A□□□□

Capacities:
200 V class: 0.4 kW - 110 kW Heavy Duty (HD)
0.75 kW - 110 kW Normal Duty (ND)
400 V class: 0.4 kW - 560 kW Heavy Duty (HD)
0.75 kW - 630 kW Normal Duty (ND)

Please refer to the following table to check the correspondence between the conventional model (A1000) and the replacement model (GA700).

200 V class

A1000 Model	Rated Output Heavy Duty (HD)	Rated Output Normal Duty (ND)	GA700 Catalog code	Rated Output Heavy Duty (HD)	Rated Output Normal Duty (ND)
CIMR-AA2A0004	3.2A	3.5A	GA70A2004	3.2A	3.5A
CIMR-AA2A0006	5A	6A	GA70A2006	5A	6A
CIMR-AA2A0008	6.9A	8A	GA70A2008	6.9A	8A
CIMR-AA2A0010	8A	9.6A	GA70A2010	8A	9.6A
CIMR-AA2A0012	11A	12A	GA70A2012	11A	12.2A
CIMR-AA2A0018	14A	17.5A	GA70A2018	14A	17.5A
CIMR-AA2A0021	17.5A	21A	GA70A2021	17.5A	21A
CIMR-AA2A0030	25A	30A	GA70A2030	25A	30A
CIMR-AA2A0040	33A	40A	GA70A2042	33A	42A
CIMR-AA2A0056	47A	56A	GA70A2056	47A	56A
CIMR-AA2A0069	60A	69A	GA70A2070	60A	70A
CIMR-AA2A0081	75A	81A	GA70A2082	75A	82A
CIMR-AA2A0110	85A	110A	GA70A2110	88A	110A
CIMR-AA2A0138	115A	138A	GA70A2138	115A	138A
CIMR-AA2A0169	145A	169A	GA70A2169	145A	169A
CIMR-AA2A0211	180A	211A	GA70A2211	180A	211A
CIMR-AA2A0250	215A	250A	GA70A2257	215A	257A
CIMR-AA2A0312	283A	312A	GA70A2313	283A	313A
CIMR-AA2A0360	346A	360A	GA70A2360	346A	360A
CIMR-AA2A0415	415A	415A	GA70A2415	415A	415A

400 V class

A1000 Model	Rated Output Heavy Duty (HD)	Rated Output Normal Duty (ND)	GA700 Catalog code	Rated Output Heavy Duty (HD)	Rated Output Normal Duty (ND)
CIMR-AA4A0002	1.8A	2.1A	GA70A4002	1.8A	2.1A
CIMR-AA4A0004	3.4A	4.1A	GA70A4004	3.4A	4.1A
CIMR-AA4A0005	4.8A	5.4A	GA70A4005	4.8A	5.4A
CIMR-AA4A0007	5.5A	6.9A	GA70A4007	5.5A	7.1A
CIMR-AA4A0009	7.2A	8.8A	GA70A4009	7.2A	8.9A
CIMR-AA4A0011	9.2A	11.1A	GA70A4012	9.2A	11.9A
CIMR-AA4A0018	14.8A	17.5A	GA70A4018	14.8A	17.5A
CIMR-AA4A0023	18A	23A	GA70A4023	18A	23.4A
CIMR-AA4A0031	24A	31A	GA70A4031	24A	31A
CIMR-AA4A0038	31A	38A	GA70A4038	31A	38A
CIMR-AA4A0044	39A	44A	GA70A4044	39A	44A
CIMR-AA4A0058	45A	58A	GA70A4060	45A	59.6A
CIMR-AA4A0072	60A	72A	GA70A4075	60A	74.9A
CIMR-AA4A0088	75A	88A	GA70A4089	75A	89.2A
CIMR-AA4A0103	91A	103A	GA70A4103	91A	103A
CIMR-AA4A0139	112A	139A	GA70A4140	112A	140A
CIMR-AA4A0165	150A	165A	GA70A4168	150A	168A
CIMR-AA4A0208	180A	208A	GA70A4208	180A	208A
CIMR-AA4A0250	216A	250A	GA70A4250	216A	250A
CIMR-AA4A0296	260A	296A	GA70A4296	260A	296A
CIMR-AA4A0362	304A	362A	GA70A4371	304A	371A
CIMR-AA4A0414	370A *1	414A	GA70A4389	371A *1	389A
CIMR-AA4A0414	370A	414A *2	GA70A4453	414A	453A *2
CIMR-AA4A0515	450A	515A	GA70A4568	453A	568A
CIMR-AA4A0675	605A	675A	GA70A4675	605A	675A
CIMR-AA4A0930	810A	930A	GA70A4930	810A	930A
CIMR-AA4A1200	1090A	1200A	GA70A4H12	1090A	1200A

*1 Replace the HD rating of CIMR-AA4A0414 with the HD rating of GA70A4389.
*2 Replace the ND rating of CIMR-AA4A0414 with the ND rating of GA70A4453.

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 GA700. GA700 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 GA700. 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 GA700, 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 GA700. If there is no room for the main circuit wiring, then rearrange the wiring, or use longer wires.	
		Verifying Main Circuit Terminal Specifications GA700 (GA70A2004 to 2211 200V class 45kW（HD） or less, 55kW（ND） or less, GA70A4002 to 4168 400V class 75kW（HD） or less, 90kW（ND） 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 GA700. 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 GA700. 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 GA700 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 GA700. 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 standard software. 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 GA700. 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 GA700 offers a Drive Replacement function for converting parameter settings to GA700. (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 GA700. Note that the following option software versions and later versions with larger software numbers are compatible with GA700. - 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 GA700. Although the overall dimensions are the same, GA700 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 GA700 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 GA700 as-is without making any changes. If using a braking unit with catalog code GA70A2138 or below (200 V class), or catalog code GA70A4168 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 GA70A2138 or below for 200 V class drives, or catalog code GA70A4168 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 GA700.	
		AC or DC Reactor The AC or DC reactor can be transferred to GA700 as-is without making any changes.	
		Noise Filter The noise filter can be transferred to GA700 as-is without making any changes.	
		Fuse The fuses can be transferred to GA700 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 GA700. (Refer to the table in Section 3-4)

3-1. Main Circuit Terminals

- Terminal functions are the same in A1000 and GA700 although terminal shapes are different.

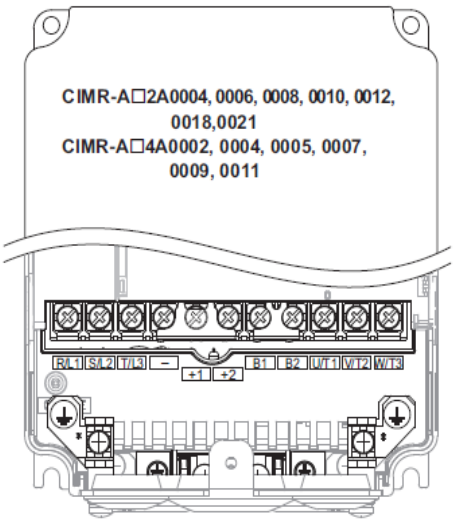
Main circuit terminals		Notes
A1000	GA700	
R/L1	R/L1	Main circuit power supply input
S/L2	S/L2	
T/L3	T/L3	
U/T1	U/T1	Drive output
V/T2	V/T2	
W/T3	W/T3	
B1	B1	Terminal connections for braking resistor or braking resistor units
B2	B2	
+1	+1	DC reactor, DC power input (+)
+2	+2	DC reactor
+3	+3	Braking 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)

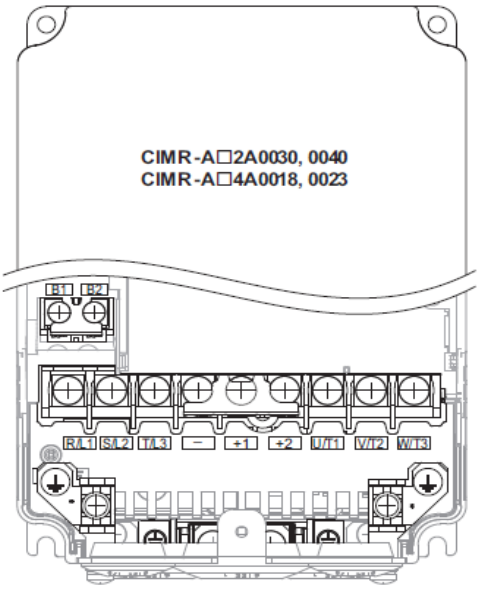
Note: For models with a built-in braking transistor (200 V class, catalog code: GA70A2138 or below, or 400 V class, catalog code GA70A4168 or below,) that also have a braking unit, connect terminal B1 to the positive terminal on the braking unit, and the negative terminal on the drive to the negative terminal on the braking unit. Terminal B2 is not used in GA700.

Note: If you use 200V class catalog code: GA70A2169, 2211 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: GA70A4140, 4188 and would like to connect braking resistor unit (LKEB series) to B1 terminal and B2 terminal, the junction terminal is required.

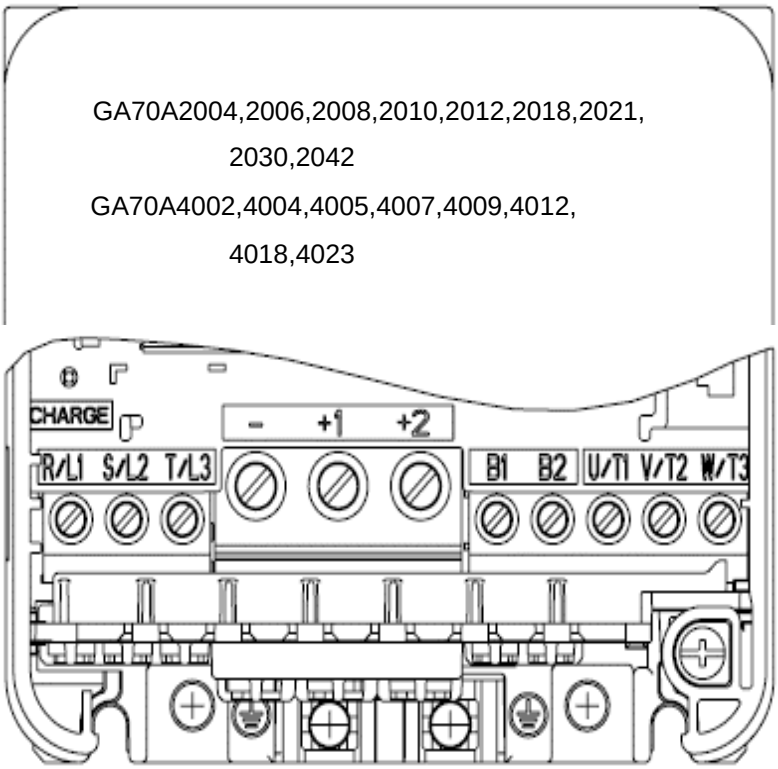
- A1000 Main Circuit Terminal Configuration



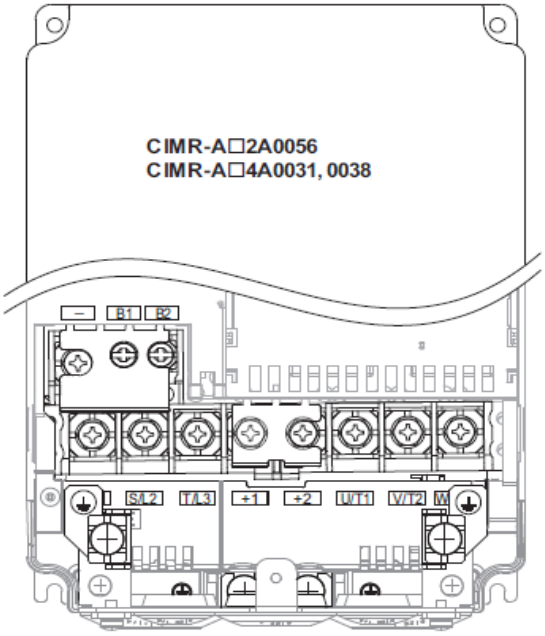


- GA700 Main Circuit Terminal Configuration

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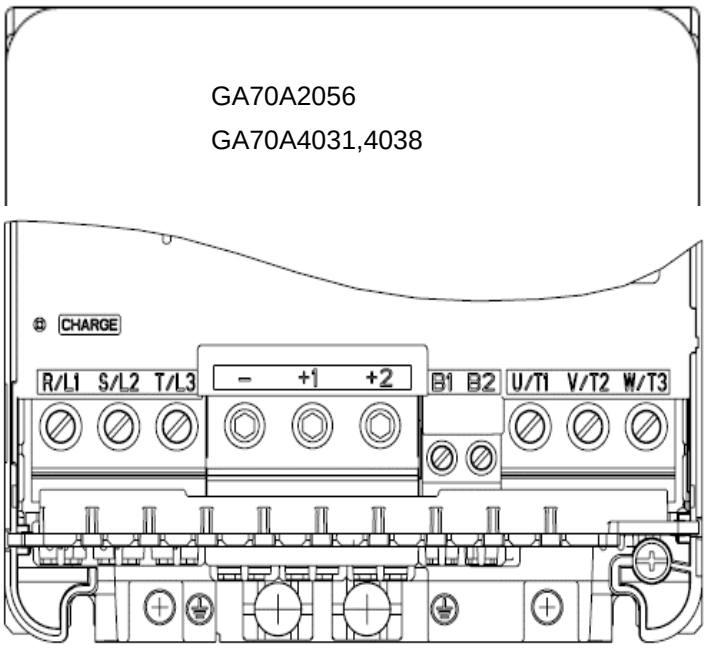


- A1000 Main Circuit Terminal Configuration

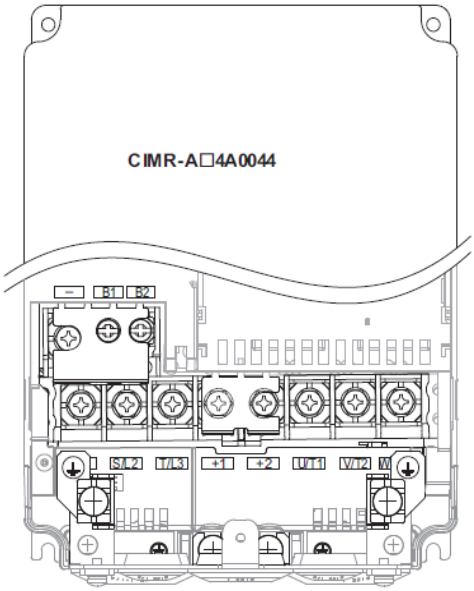


- GA700 Main Circuit Terminal Configuration

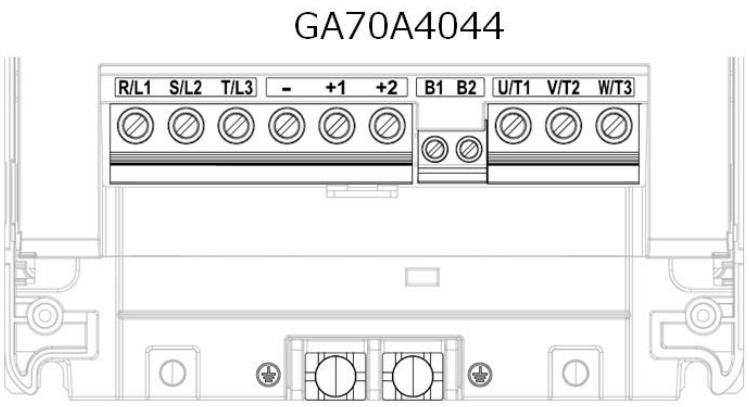
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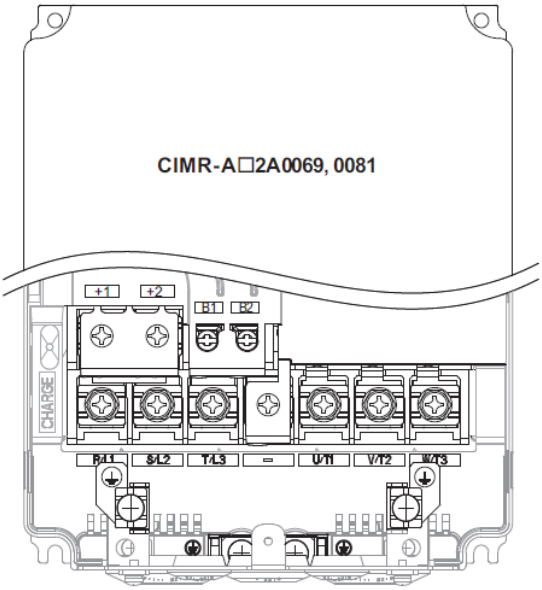
- A1000 Main Circuit Terminal Configuration



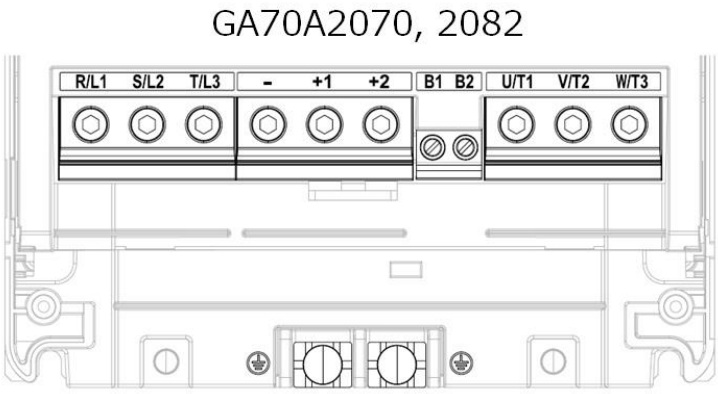
- GA700 Main Circuit Terminal Configuration



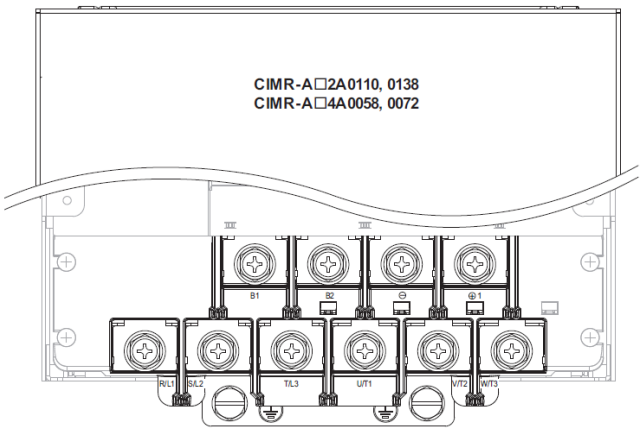
- A1000 Main Circuit Terminal Configuration



- GA700 Main Circuit Terminal Configuration

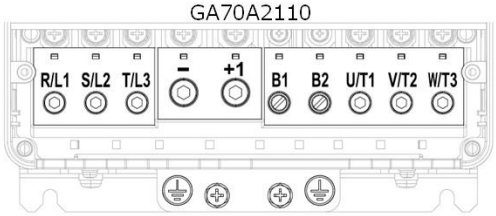


- A1000 Main Circuit Terminal Configuration

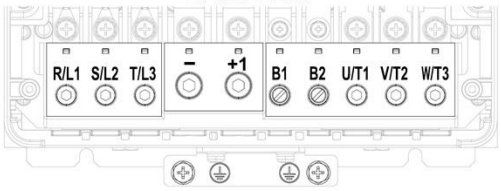


- GA700 Main Circuit Terminal Configuration

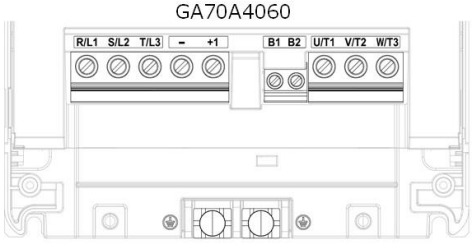
GA70A2110



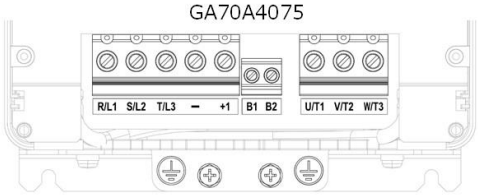
GA70A2138



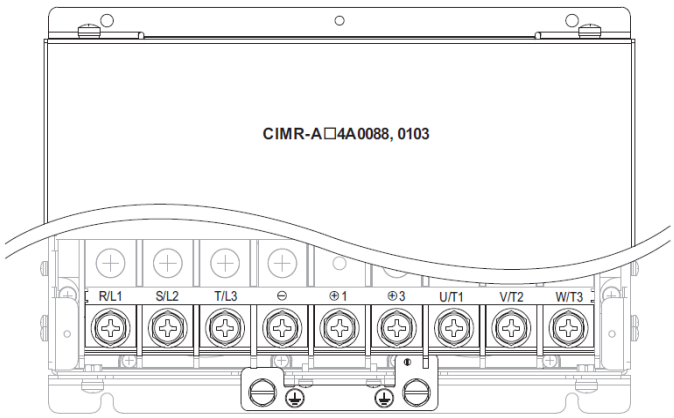
GA70A4060



GA70A4075

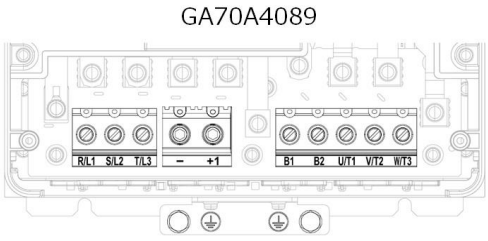


- A1000 Main Circuit Terminal Configuration

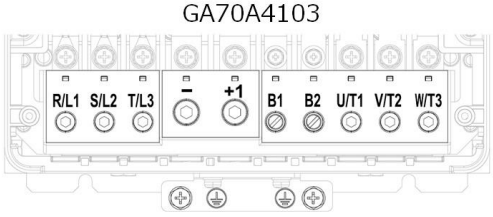


- GA700 Main Circuit Terminal Configuration

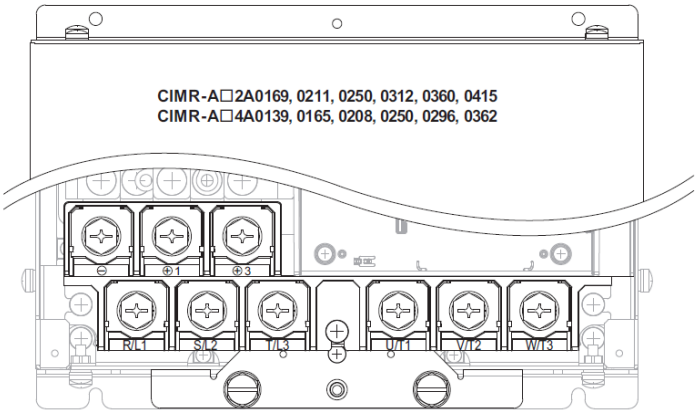
GA70A4089



GA70A4103



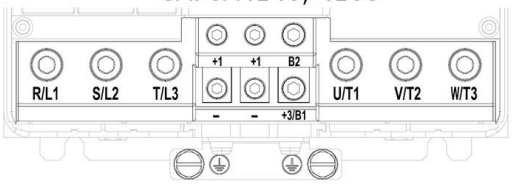
- A1000 Main Circuit Terminal Configuration



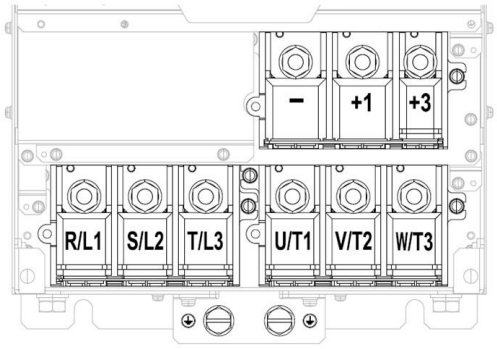
* The shape of the terminals are different in 2A0250 to 0415 and 4A0208 to 0362.

- GA700 Main Circuit Terminal Configuration

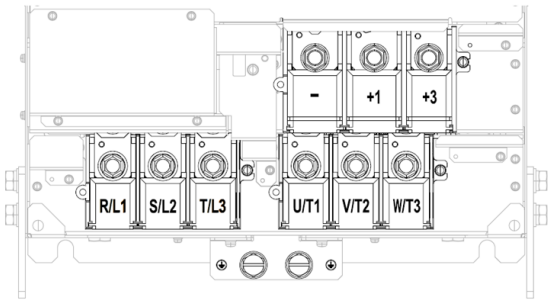
GA70A2169, 2211
GA70A4140, 4168



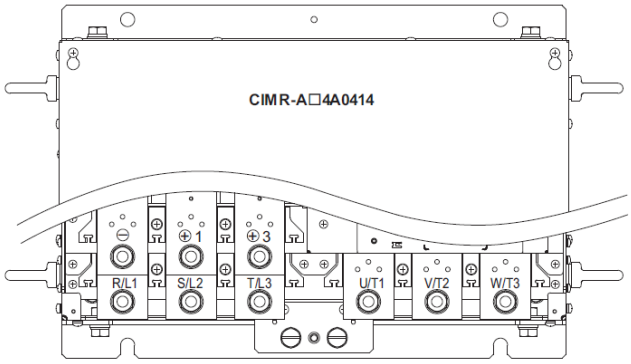
GA70A2257, 2313
GA70A4208, 4250,4296



GA70A2360, 2415
GA70A4371

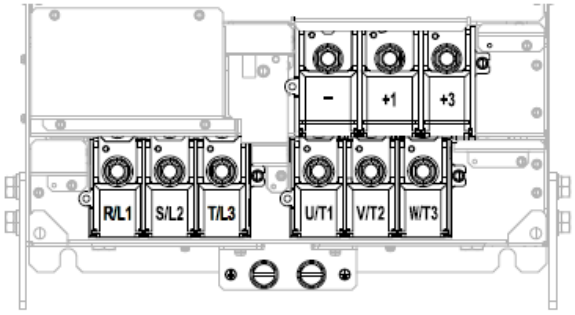


- A1000 Main Circuit Terminal Configuration

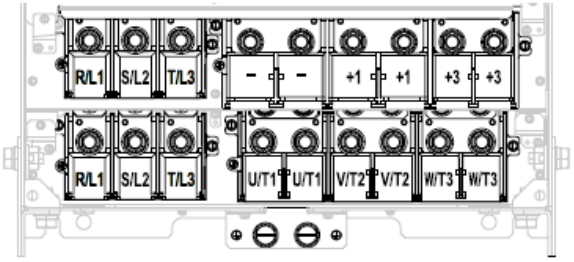


- GA700 Main Circuit Terminal Configuration

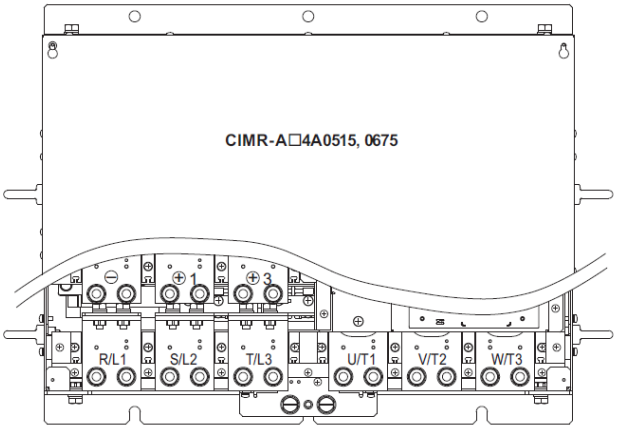
GA70A4389



GA70A4453

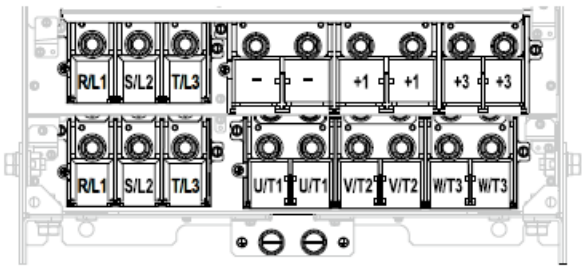


- A1000 Main Circuit Terminal Configuration

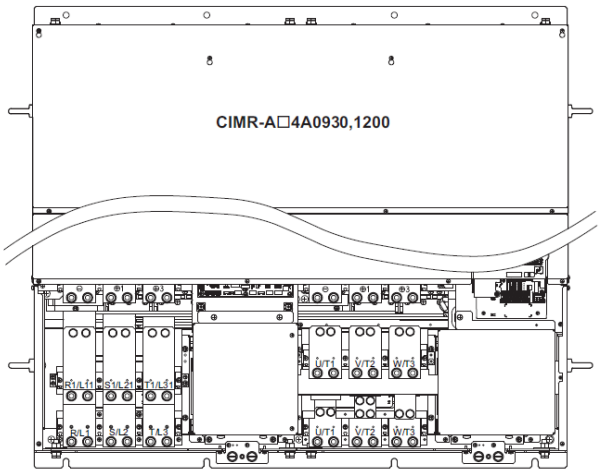


- GA700 Main Circuit Terminal Configuration

GA70A4568,4675

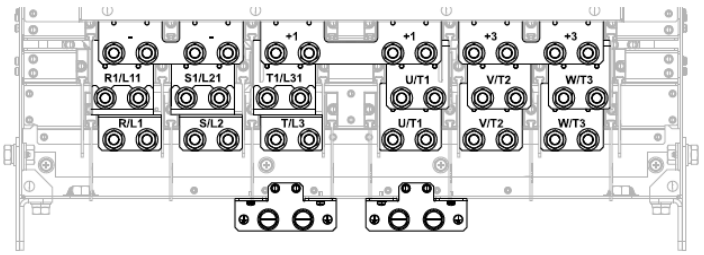


- A1000 Main Circuit Terminal Configuration



- GA700 Main Circuit Terminal Configuration

GA70A4930,4H12



3-2. Control Circuit Terminals, Signal Levels

- Terminal function defaults differences between A1000 and GA700 are listed in the table below.

Control circuit terminals		Name	Signal Level	
A1000	GA700		A1000	GA700
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	Terminal input 3 (External fault (N.O.))		
S4	S4	Multi-function input 4 (Fault reset)		
S5	S5	Multi-function input 5 (Multi-step speed reference 1)		
S6	S6	Multi-function input 6 (Multi-step speed reference 2)		
S7	S7	Multi-function input 7 (Jog reference)		
S8	S8	Multi-function input 8 (Baseblock command (N.O.))		
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	RP	Multi-function pulse train input	Response frequency 0.5 - 32 kHz (3 kΩ)	Response frequency 0.1 - 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		

Control circuit terminals		Name	Signal Level	
A1000	GA700		A1000	GA700
MA	MA	N.O. output (Fault)	Fault relay output 30 Vdc 10 mA - 1A 250 Vac 10 mA - 1A	
MB	MB	N.C. output (Fault)		
MC	MC	Fault output common		
M1	M1	Multi-function digital output (During run)	Multi-function digital output 30 Vdc 10 mA - 1A 250 Vac 10 mA - 1A	
M2	M2			
	M3	Multi-function digital output (Zero speed)		
	M4			
P1	P1	Photocoupler output 1 (Zero speed) Note: Default function differs between A1000 and GA700. A1000: Zero Speed Control GA700: Speed Agree 1 To change the function assigned to the terminal in GA700 to Zero Speed Control, change the parameter setting of GA700 so that H2-03 = 1 (default setting is H2-03 = 2).	Multi-function photocoupler output +48 Vdc 50 mA max.	
	C1 *3			
P2	P2	Photocoupler output 2 (Speed agree 1) Note: Default function differs between A1000 and GA700. A1000: Speed Agree 1 GA700: Through mode To change the function assigned to the terminal in GA700 to Speed Agree 1, change the parameter setting of GA700 so that H2-04 = 2 (default setting is H2-04 = F).		
	C2 *3			
PC *3		Photocoupler output common		
MP	MP	Pulse train output (Output frequency)	32 kHz (2.2 kΩ) max.	
FM	FM	Analog monitor output 1 (Output frequency)	-10 - +10 Vdc (max. current 2 mA) Resolution: 1/1000	-10 - +10 Vdc (max. current 2 mA) 4 - 20 mA Select voltage or current output.
AM	AM	Analog monitor output 2 (Output current)		
AC	AC	Monitor common	0 V	

Terminal connections and drive settings

*1. Use the connection diagram on the following page when transferring the SC terminal wiring from A1000 to GA700.

*2. Transfer wiring from the DM+ and DM- terminals on A1000 to terminals M1 and M2 or to M3 and M4 on GA700.

Or, transfer wiring to the P1 and C1 terminals, or to the P2 and C2 terminals on GA700.

- Set H2-01 = 21 when using the M1 and M2 terminals.
- Set H2-02 = 21 when using the M3 and M4 terminals.
- Set H2-03 = 21 when using the P1 and C1 terminals.
- Set H2-04 = 21 when using the P2 and C2 terminals.

*3. Transfer wiring from terminal PC on A1000 to either terminal C1 or C2 on GA700.

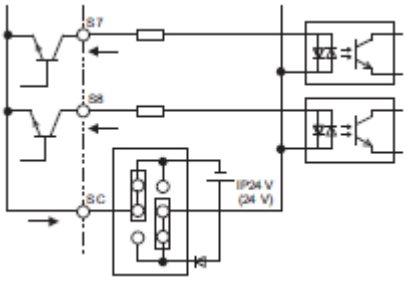
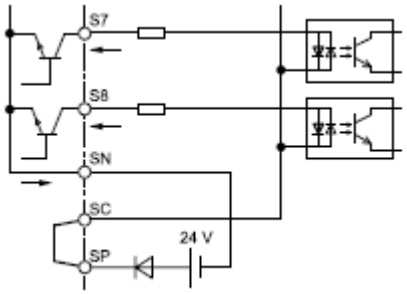
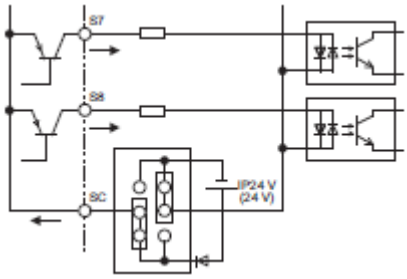
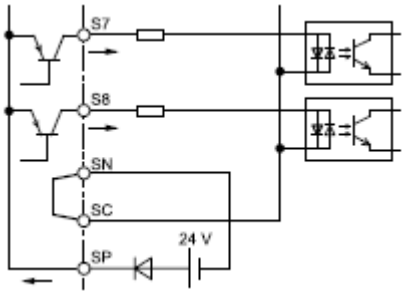
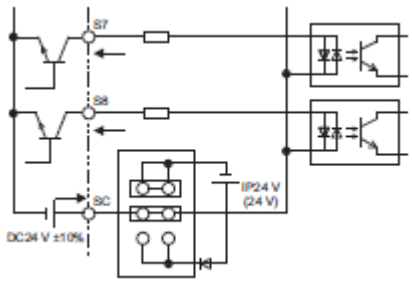
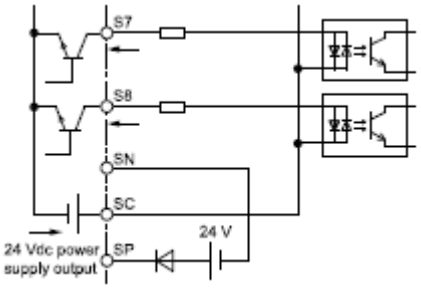
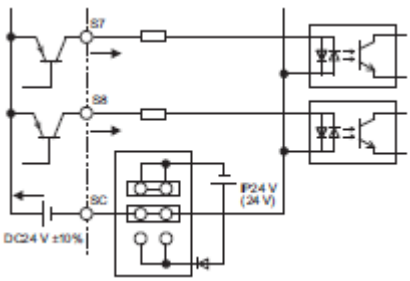
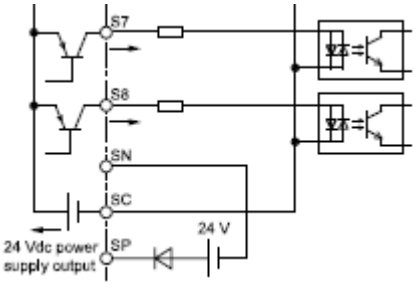
Control I/O Connections

◆ Sinking/Sourcing Mode for Digital Inputs

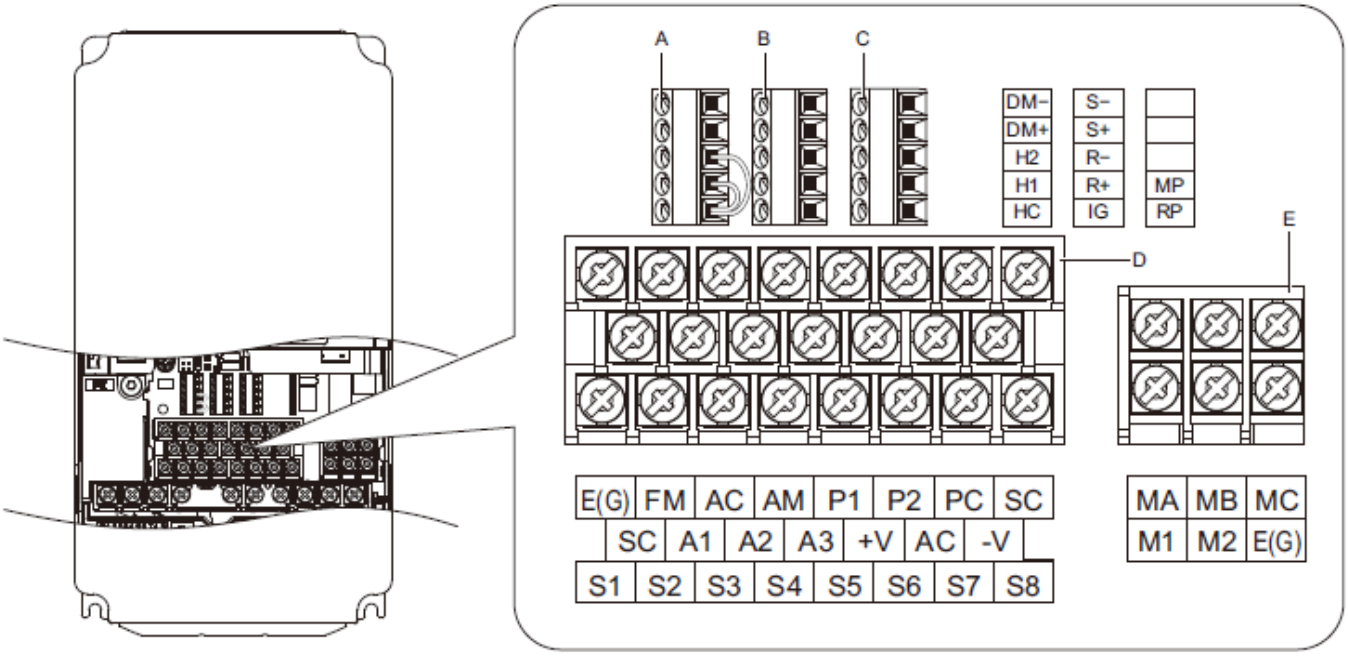
A1000 uses a jumper on the control board to set the sinking/sourcing mode and internal/external power supply. Meanwhile, GA700 uses terminals SN, SC, and SP.

Check how the jumper is set in A1000, then make corresponding changes in GA700.
The default setting in GA700 is for sinking mode and an internal power supply.

Note: Do not short terminals SP and SN.

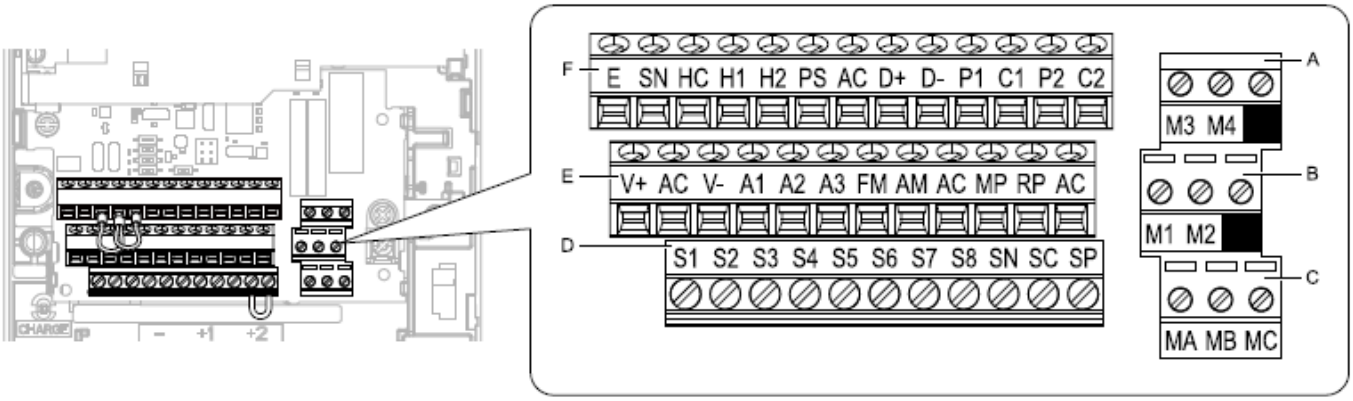
Mode/Power supply	A1000	GA700
Sinking Mode (NPN) Internal power supply		
Sourcing Mode (PNP) Internal power supply		
Sinking Mode (NPN) External power supply		
Sourcing Mode (PNP) External power supply		

- 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)

- GA700 Control Circuit Terminal Configuration



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

3-3. Serial Communication Terminals

Comm. terminal		Name	Signal Level	
A1000	GA700		A1000	GA700
R+	D+	A1000: Communications input (+) GA700: 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 (-) GA700: Communications input/output (-)		
S+	D+	A1000: Communications output (+) GA700: Communications input/output (+)		
S-	D-	A1000: Communications output (-) GA700: 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 GA700 Technical Manual when checking the recommended wire gauge of GA700 and the IP20 applicable gauge.

200 V class

⏚ Indicates ground terminal

Model	Drive Capacity A1000: Model GA700: 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	
GA700	GA70A2004 GA70A2006 GA70A2008 GA70A2010 GA70A2012 GA70A2018	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	
GA700	GA70A2021	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
GA700	GA70A2030	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 GA700: 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
GA700	GA70A2042	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
GA700	GA70A2056	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
GA700	GA70A2070	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 GA700: 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
GA700	GA70A2082	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 (-)	
GA700	GA70A2110	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
GA700	GA70A2138	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 GA700: 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 (-)	
GA700	GA70A2169	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 (-)	
GA700	GA70A2211	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
GA700	GA70A2257	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 GA700: 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
GA700	GA70A2313	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
GA700	GA70A2360	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
GA700	GA70A2415	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 GA700: 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	
GA700	GA70A4002 GA70A4004 GA70A4005 GA70A4007 GA70A4009 GA70A4012	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
GA700	GA70A4018	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
GA700	GA70A4023	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 GA700: 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
GA700	GA70A4031	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
GA700	GA70A4038	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
GA700	GA70A4044	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 GA700: 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 (-)	
GA700	GA70A4060	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 (-)	
GA700	GA70A4075	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 (-)	
GA700	GA70A4089	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 (-)	
GA700	GA70A4103	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 GA700: 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 (-)	
GA700	GA70A4140	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 (-)	
GA700	GA70A4168	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 (-)	
GA700	GA70A4208	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 GA700: 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 (-)	
GA700	GA70A4250	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
GA700	GA70A4296	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
GA700	GA70A4371	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 (-)	
GA700	GA70A4389	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 GA700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N•m
				Size	Shape	
A1000	CIMR-AA4A0414 (Heavy Duty)	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 (-)	
GA700	GA70A4453	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			
		⏚	50 - 150	M12	Hexagon bolt with slot	32 - 40
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 (-)	
GA700	GA70A4568	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 (-)	
GA700	GA70A4675	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

Model	Drive Capacity A1000: Model GA700: Catalog code	Terminal Symbol	Applicable Gauge mm^2	Terminal Screw		Tightening Torque N·m
				Size	Shape	
A1000	CIMR-AA4A0930	R/L1, S/L2,T/L3 R1/L11,1/L21,T1/L31	125～150	M12	Hexagon bolt and Nut	32～40
		U/T1, V/T2, W/T3	125～150			
		–,+1	100～150			
		+3	100～150			
		≒	80～125	M12	Minus (-)	
GA700	GA70A4930	R/L1, S/L2, T/L3	125～150×2P×2	M12	Hexagon bolt and Nut	35
		U/T1, V/T2, W/T3	125～150×2P×2			
		ー, +1, +2	100～150×4P×2			
		+3	100～150×4P			
		≒	80～125	M12	Hexagon bolt with slot	32～40
A1000	CIMR-AA4A1200	R/L1, S/L2, T/L3 R1/L11, S1/L21, T1/L31	100～150	M12	Hexagon bolt and Nut	35
		U/T1, V/T2, W/T3	100～150			
		–,+1	125～150			
		+3	100～150			
		≒	100～125	M12	Minus (-)	
GA700	GA70A4H12	R/L1, S/L2, T/L3	100～150×4P×2	M12	Hexagon bolt and Nut	
		U/T1, V/T2, W/T3	100～150×4P×2			
		ー, +1, +2	125～150×4P×2			
		+3	80～150×4P×2			
		≒	100～125	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 GA700.
Refer to the GA700 instruction manual for other wiring-related matters.

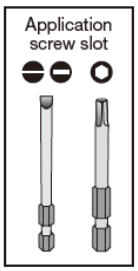
- **The terminal block is not compatible with closed-loop crimp terminals. Remove crimp terminals and prepare the wire ends.**
  Crimp terminals can be used to connect to the ground terminal.
- **Expose the required length of bare wire by stripping back the shielding according to local electrical code.**
- **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 Terminal Blocks (Recommended product)

Check the "Terminal size / Wire gauge" on the next page and prepare the tools for wiring.

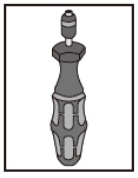
Screw size	Screw type	Recommended Product
M4	Slot ⊖	Prepare the following two tools. · Bit 【PHOENIX CONTACT】 Model: SF-BIT-SL 1,0X4,0-70 · Torque screwdriver 【PHOENIX CONTACT】 Model: TSD-M 3NM (1.2 to 3 N·m)
M5	Slot ⊖	When wiring drive models GA70A2056 and GA70A4089 or earlier models, be sure to correctly 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) 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 GA70A2110 to 2138, and GA70A4103. · 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) 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) 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

Bit



Model	Tip of Bit	Code No.
SF-BIT-SL 1,0X4,0-70	Slot Tip, M4	100-250-491
SF-BIT-SL 1,2X6,5-70	Slot Tip, M5	100-250-492
SF-BIT-HEX 5-50	Hexagon Tip, M6	100-250-488
SF-BIT-HEX 6-50	Hexagon Tip, M8	100-250-489
SF-BIT-HEX 8-50	Hexagon Tip, M10	100-250-490

Torque screwdriver

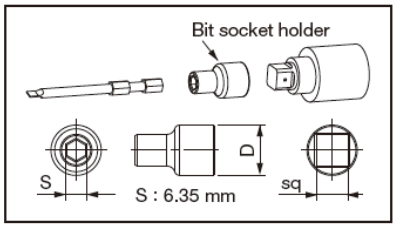


Model	Measurement Range	Code No.
TSD-M 3NM	1.2 to 3 N·m	100-250-493

Torque wrench



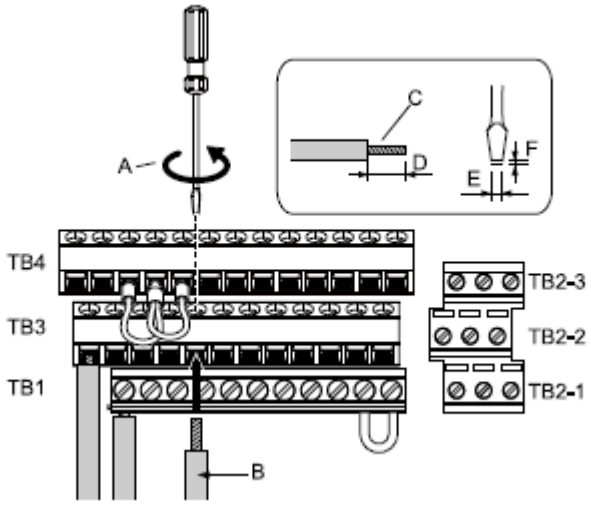
Bit socket holder



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	GA700	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, 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

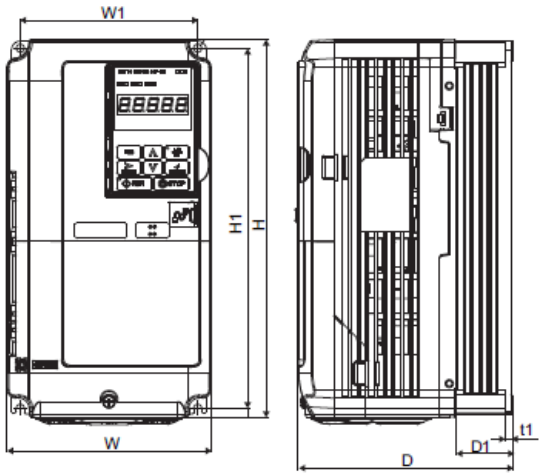
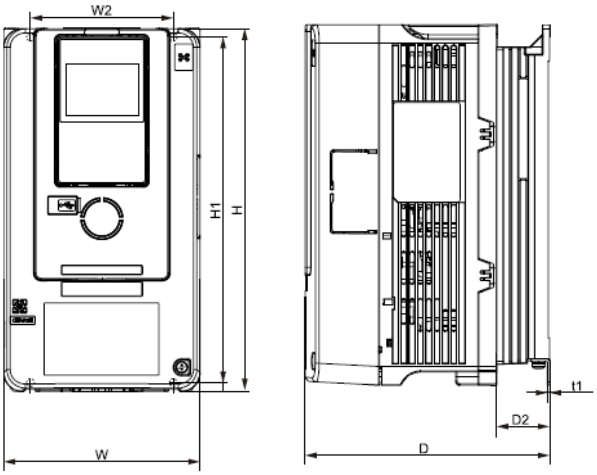
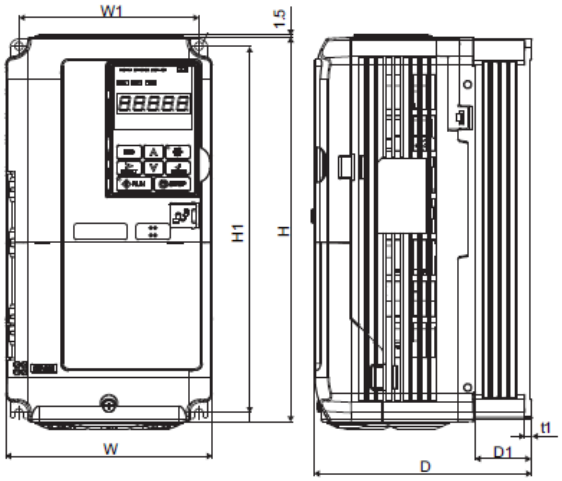
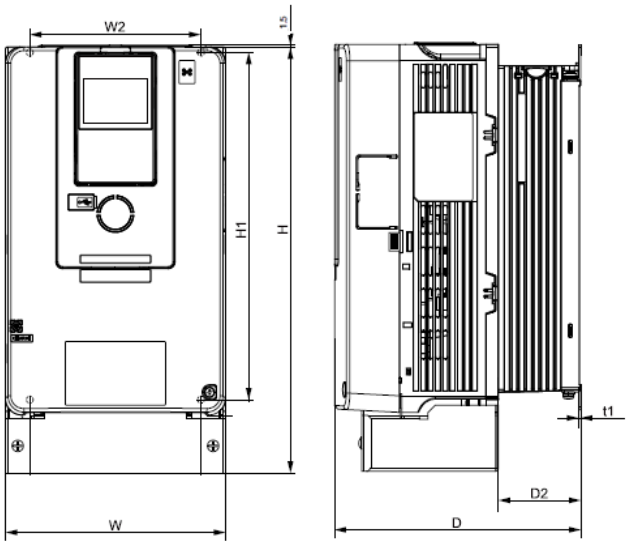
4-1. Exterior and Mounting Dimensions

Installation holes are not the same in A1000 and GA700.

The standard model A1000 (200/400V 22kW or less) is compliant for a wall-mount enclosure, while the standard model GA700 has an open-chassis design (IP20).

An option is required to install GA700 in a wall-mount enclosure.

A UL Type 1 kit needs to be installed to the open-chassis (IP20) GA700. (Refer to Section 4-2)

<table>
<tr><th>A1000</th><th>GA700</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 GA700 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								GA700								
	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	2004	140	260	176	102	102	248	38	1.6
	0006								2006								
	0008								2008								
	0010								2010								
	0012								2012								
	0018			164			55		2018			211				73	
	0021								2021								
	0030			167					2030								
	0040								2042								
	0056	180	300	187	160	284	75		2056	180	300	202	140	140	284	68	
	0069	220	350	197	192	335	78		2070	220	350	227	192	192	335	87	2.3
	0081	220	365	197	192	335	78		2082	220	350	227	192	192	335	87	
	0110	250	400	258	195	385	100	2.3	2110	240	400	280	195	186	375	114	
	0138	275	450		220	435			2138	255	450	280	170	165	424	114	
	0169	325	550	283	260	535	110		2169	264	543	335	190	182	516	149	
	0211								2211								
	0250	450	705	330	325	680	130	3.2	2257	312	700	420	218	218	659	160	4.5
	0312								2313								
	0360	500	800	350	370	773	130	4.5	2360	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								4004								
	0005								4005								
	0007			164			55		4007			211				73	
	0009								4009								
	0011								4012								
	0018			167					4018								
	0023								4023								
	0031	180	300	187	160	284	75		4031	180	300	202	140	140	284	68	
	0038								4038								
	0044	220	350	197	192	335	78		4044	220	350	227	192	192	335	87	2.3
	0058	250	400	258	195	385	100	2.3	4060	220	350	246	192	192	335	106	
	0072	275	450		220	435			4075	240	400	280	195	186	375	114	
	0088	325	510	258	260	495	105		4089	255	450	280	170	165	424	114	
	0103								4103								
	0139	325	550	283	260	535	110		4140	264	543	335	190	182	516	149	
	0165								4168								
	0208	450	705	330	325	680	130	3.2	4208	312	700	420	218	218	659	160	4.5
	0250	500	800	350	370	773	130	4.5	4250								
	0296								4296								
	0362								4371								
	*1 0414	500	950	370	370	923	135		*1 4389	440	800	472	370	370	757	218	4.5
	*2 0414	500	950		370	923	135		*2 4453	510	1136	480	450	450	1093	220	
	0515	670	1140		440	1110	150		4568	510	1136	480	450	450	1093	220	
	0675								4675								
	0930	1250	1380		1100	1345	150	4.5	4930	760	1367.5	440	680	336	1324	195	4.5
	1200								4H12								

*1 Replace the HD rating of CIMR-AA4A0414 with the HD rating of GA70A4389.

*2 Replace the ND rating of CIMR-AA4A0414 with the ND rating of GA70A4453.

Enclosed Wall-mounted Type (UL Type 1 Enclosure)

Voltage class	Dimensions (mm)																
	A1000								GA700								
	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	2004	140	300	176	102	102	248	38	1.6
	0006								2006								
	0008								2008								
	0010								2010								
	0012								2012								
	0018			164			55		2018			211				73	
	0021								2021								
	0030			167					2030								
	0040								2042								
	0056	180	300	187	160	284	75		2056	180	340	202	140	140	284	68	
	0069	220	350	197	192	335	78		2070	220	400	227	192	192	335	87	2.3
	0081	220	365	197	192	335	78		2082		435						
	0110	254	534	258	195	385	100	2.3	2110	244	500	280	195	186	375	114	
	0138	279	614		220	435			2138	259	580	280	170	165	424	114	
	0169	329	730	283	260	535	110		2169	268	700	335	190	182	516	149	
	0211								2211		770						
	0250	456	960	330	325	680	130	3.2	2257	316	915	420	218	218	659	160	4.5
	0312								2313								
	0360	504	1168	350	370	773	130	4.5	2360	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								4004								
	0005								4005								
	0007			164			55		4007			211				73	
	0009								4009								
	0011								4012								
	0018			167					4018								
	0023								4023								
	0031	180	300	187	160	284	75		4031	180	340	202	140	140	284	68	
	0038								4038								
	0044	220	350	197	192	335	78		4044	220	400	227	192	192	335	87	2.3
	0058	254	465	258	195	385	100	2.3	4060			246				106	
	0072	279	515	258	220	435			4075	244	500	280	195	186	375	114	
	0088	329	630	258	260	495	105		4089	259	580	280	170	165	424	114	
	0103								4103								
	0139		730	283		535	110		4140	268	700	335	190	182	516	149	
	0165								4168								
	0208	456	960	330	325	680	130	3.2	4208	316	915	420	218	218	659	160	4.5
	0250	504	1168	350	370	773	130	4.5	4250								
	0296								4296								
	0362								4371	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. Drive Installation Attachment to Match Mounting Dimensions

Dimensions for the open type enclosure drives and enclosed wall-mounted type drives are shown below. GA700 has a larger depth than A1000.
The attachment makes it possible to mount GA700 using the same mounting holes as A1000.
First mount the installation attachment to the holes that A1000 was using, and then mount GA700 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.

<table>
<tr><th rowspan="3">Voltage Class</th><th rowspan="3">Capacity (kW)</th><th colspan="6">Dimensions (mm)</th><th colspan="2" rowspan="2">Drive Installation Attachment Code No.</th></tr>
<tr><th colspan="3">A1000</th><th colspan="3">GA700</th></tr>
<tr><th>W</th><th>H</th><th>D</th><th>W</th><th>H</th><th>D</th><th>Normal installation</th><th>External heatsink</th></tr>
<tr><td rowspan="20">Three-phase 200 V class</td><td>0.4</td><td rowspan="9">140</td><td rowspan="9">260</td><td rowspan="5">147</td><td rowspan="9">140</td><td rowspan="9">260</td><td rowspan="3">176 (189)</td><td rowspan="9">100-206-987</td><td rowspan="20">Contact Yaskawa.</td></tr>
<tr><td>0.75</td></tr>
<tr><td>1.1</td></tr>
<tr><td>1.5</td></tr>
<tr><td>2.2</td></tr>
<tr><td>3</td><td rowspan="3">164</td></tr>
<tr><td>3.7</td><td rowspan="3">211 (224)</td></tr>
<tr><td>5.5</td><td rowspan="2">167</td></tr>
<tr><td>7.5</td></tr>
<tr><td>11</td><td>180</td><td>300</td><td>187</td><td>180</td><td>300</td><td>202 (215)</td><td>100-206-988</td></tr>
<tr><td>15</td><td>220</td><td>350</td><td>197</td><td>220</td><td>350</td><td>227</td><td rowspan="9">Contact Yaskawa.</td></tr>
<tr><td>18.5</td><td>220</td><td>365</td><td>197</td><td>220</td><td>350</td><td>227</td></tr>
<tr><td>22</td><td>250</td><td>400</td><td rowspan="2">258</td><td>240</td><td>400</td><td>280</td></tr>
<tr><td>30</td><td>275</td><td>450</td><td>255</td><td>450</td><td>280</td></tr>
<tr><td>37</td><td rowspan="2">325</td><td rowspan="2">550</td><td rowspan="2">283</td><td rowspan="2">264</td><td rowspan="2">543</td><td rowspan="2">335</td></tr>
<tr><td>45</td></tr>
<tr><td>55</td><td rowspan="2">450</td><td rowspan="2">705</td><td rowspan="2">330</td><td rowspan="2">312</td><td rowspan="2">700</td><td rowspan="2">420</td></tr>
<tr><td>75</td></tr>
<tr><td>90</td><td>500</td><td>800</td><td>350</td><td>440</td><td>800</td><td>472</td></tr>
<tr><td rowspan="23">Three-phase 400 V class</td><td>0.4</td><td rowspan="9">140</td><td rowspan="9">260</td><td rowspan="3">147</td><td rowspan="9">140</td><td rowspan="9">260</td><td rowspan="2">176 (189)</td><td rowspan="9">100-206-987</td><td rowspan="23">Contact Yaskawa.</td></tr>
<tr><td>0.75</td></tr>
<tr><td>1.5</td></tr>
<tr><td>2.2</td><td rowspan="3">164</td></tr>
<tr><td>3</td></tr>
<tr><td>3.7</td><td rowspan="4">211 (224)</td></tr>
<tr><td>5.5</td><td rowspan="3">167</td></tr>
<tr><td>7.5</td></tr>
<tr><td>11</td><td rowspan="2">180</td><td rowspan="2">300</td><td rowspan="2">180</td><td rowspan="2">300</td><td rowspan="2">202 (215)</td><td rowspan="2">100-206-988</td></tr>
<tr><td>15</td><td>187</td></tr>
<tr><td>18.5</td><td>220</td><td>350</td><td>197</td><td>220</td><td>350</td><td>227</td><td rowspan="14">Contact Yaskawa.</td></tr>
<tr><td>22</td><td>250</td><td>400</td><td rowspan="2">258</td><td>220</td><td>350</td><td>246</td></tr>
<tr><td>30</td><td>275</td><td>450</td><td>240</td><td>400</td><td>280</td></tr>
<tr><td>37</td><td rowspan="2">325</td><td rowspan="2">510</td><td rowspan="2">258</td><td rowspan="2">255</td><td rowspan="2">450</td><td rowspan="2">280</td></tr>
<tr><td>45</td></tr>
<tr><td>55</td><td rowspan="2">325</td><td rowspan="2">550</td><td rowspan="2">283</td><td rowspan="2">264</td><td rowspan="2">543</td><td rowspan="2">335</td></tr>
<tr><td>75</td></tr>
<tr><td>90</td><td>450</td><td>705</td><td>330</td><td rowspan="3">312</td><td rowspan="3">700</td><td rowspan="3">420</td></tr>
<tr><td>110</td><td rowspan="3">500</td><td rowspan="3">800</td><td rowspan="3">350</td></tr>
<tr><td>132</td></tr>
<tr><td>160</td><td rowspan="2">440</td><td rowspan="2">800</td><td rowspan="2">472</td></tr>
<tr><td>185</td><td>500</td><td>950</td><td rowspan="3">370</td></tr>
<tr><td>220</td><td rowspan="2">670</td><td rowspan="2">1140</td><td rowspan="2">510</td><td rowspan="2">1136</td><td rowspan="2">480</td></tr>
<tr><td>315</td></tr>
<tr><td>450</td><td rowspan="2">1250</td><td rowspan="2">1380</td><td rowspan="2">370</td><td rowspan="2">760</td><td rowspan="2">1368</td><td rowspan="2">440</td></tr>
<tr><td>560</td></tr>
</table>

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

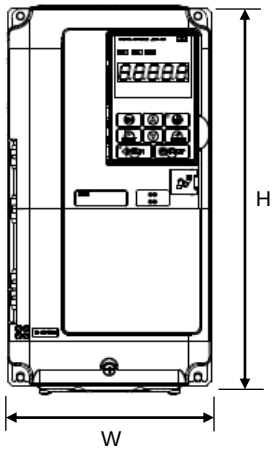
Voltage class	Capacity (kW)	Dimensions (mm)						Drive Installation Attachment Code No.
		A1000			GA700			
		W	H	D	W	H	D	Normal installation
Three-phase 200 V class	0.4	140	260	147	140	300	176 (189)	100-206-987
	0.75							
	1.1							
	1.5							
	2.2							
	3			164			211 (224)	
	3.7							
	5.5			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	

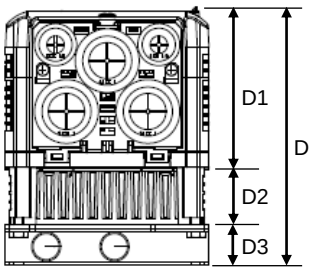
Note: Standard vibration tolerance specifications may not be guaranteed if an installation attachment is used. Yaskawa recommends installing the device directly to the drive in an area with a high degree of vibration.

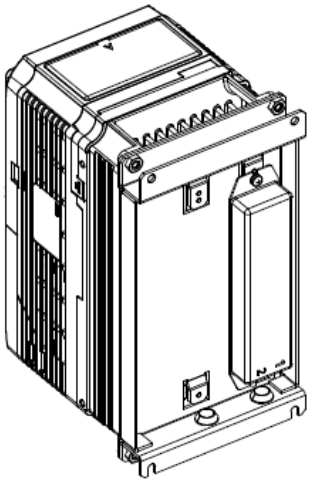
4-3. Braking Resistor Installation Attachment

The braking resistor installation attachment for A1000 is not the same as the one for GA700.
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						GA700							
		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	GA700 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(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 GA700 from the default setting 2 to 3 (Expert Level).

(3) When an induction motor (IM) is used:
1) Set the value of A1-02 [Control Method Selection] for A1000 to GA700.
2) Set E: motor parameter setting (changed value) for A1000 to GA700.
3) Perform Line-to-Line Resistance (T1-02 = 2).
4) Set E: parameter setting (changed value) other than motor parameter for A1000 to GA700 according to Parameter Compatibility Table in 5-3.

When an induction motor (IM) is not used:
Set the parameter settings (changed value) for A1000 to GA700 according to Parameter Compatibility Table in 5-3.

Note: Parameters for terminals P1 and P2 in A1000 shift by one parameter number in GA700.
- Function selection for terminal P1-PC is H2-02 in A1000, but in GA700, the function selection for terminal P1-C1 is H2-03.
- Function selection for terminal P2-PC is H2-03 in A1000, but in GA700, the function selection for terminal P2-C2 is H2-04.

5-1(2). Parameter replacement procedure using the support tool DriveWizard (automatic conversion)

DriveWizard" is different from the conventional "DriveWizardPlus" used for A1000.

(1) Save the A1000 parameters in DriveWizardPlus.

(2) Start DriveWizard.
1) In "Open Project," select and open the A1000 parameters saved in DriveWizardPlus.
2) Confirm the A1000 information before parameter conversion on the parameter conversion setting screen, and select the inverter model, software version, and model after project conversion,
Select the inverter model, software version, and model after the project conversion, and click "Proceed".
3) When the conversion is completed, click "Yes" to confirm the converted parameters.
4) If there are no problems, click "Transfer converted data to active project.
5) The converted parameters will be displayed on the screen.Save it

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]), and E5-01 [Motor Code Selection (for PM Motors)] 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 GA700.

Note: The parameter number for terminals P1 and P2 is different in GA700.

- H2-02 in A1000 matches H2-03 in GA700.
- H2-03 in A1000 matches H2-04 in GA700.

The following parameters have a different setting range or default setting in A1000 and GA700.

		A1000			GA700	
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
A1-02	Control Method Selection	2		0: V/f Control 1. V/f Control with PG 2: Open Loop Vector Control 3: Closed Loop Vector Control 5: Open Loop Vector Control for PM 6: Advanced Open Loop Vector Control for PM 7: PM Closed Loop Vector Control	2	0: V/f Control 1: Closed Loop V/f Control 2: Open Loop Vector Control 3. Closed Loop Vector Control 4: Advanced Open Loop Vector Control 5: PM Open Loop Vector Control 6: PM Advanced Open Loop Vector 7: PM Closed Loop Vector Control 8: EZ Open Loop Vector Control
A1-03	Initialize Parameters	0		0: No initialization 1110: User Initialize 2220: 2-Wire initialization 3330: 3-Wire initialization 5550: oPE04 error reset	0	0: No initialization 1110: User initialization 2220: 2-Wire initialization 3330: 3-Wire initialization
b3-24	Speed Search Method Selection	0		0: Current Detection 1: Speed Estimation	2	1: Speed Estimation 2: Current Detection 2
b3-33	Speed Search Selection when Run Command is Given during Uv	0		0: Disabled 1: Enabled	1	0: Disabled 1: Enabled
b4-03	H2-01 ON Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b4-04	H2-01 OFF Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b4-05	H2-02 ON Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b4-06	H2-02 OFF Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b4-07	H2-03 ON Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b4-08	H2-03 OFF Delay Time	0		0 - 65535 ms	0	0 - 65000 ms
b5-15	PID Sleep Function Start Level	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
b6-01	Dwell Reference at Start	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
b6-03	Dwell Reference at Stop	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
b8-01	Energy Saving Control Selection	0		0: Disabled 1: Enabled	0	0: Disabled 1: Enabled 2: Search Enabled
C1-11	Accel/Decel Time Switching Frequency	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
C3-16	Output Voltage Limit Operation Start Level (Percentage Modulation)	85.0		70.0 - 90.0%	90.0	70.0 - 90.0%

		A1000			GA700	
Parameter No.	Name	Default Setting	User's Setting	Setting Range	Default Setting	Setting Range
C3-17	Maximum Output Voltage Limit Level (Percentage Modulation)	90.0		85.0 - 100.0%	100.0	85.0 - 100.0%
C3-18	Output Voltage Limit Level	90.0		30.0 - 100.0%	90.0	50.0 - 100.0%
C5-07	ASR Gain Switching Frequency	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
C5-27	Motor 2 ASR Gain Switching Frequency	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
d1-01 - d1-16	Frequency Reference 1 - Frequency Reference 16	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
d1-17	Jog Frequency Reference	6.0		0.0 - 400.0 Hz	6.0	0.0 - 590.0 Hz
d3-01	Jump Frequency 1	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
d3-02	Jump Frequency 2	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
d3-03	Jump Frequency 3	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
d6-02	Field Weakening Frequency Limit	0.0		0.0 - 400.0 Hz	0.0	0.0 - 590.0 Hz
H2-01	Terminal M1-M2 Function Selection (relay)	0		0 - 192	0	0 - 1A7
H2-02	Terminal P1-PC Function Selection (relay)	1		0 - 192		*Overwrites the value set to H2-03.
H2-03	Terminal P2-PC Function Selection (relay)	2		0 - 192		*Overwrites the value set to H2-04.
H5-07	RTS Control Selection	1		0: Disabled. 1: Enabled.		GA700 does not have H5-07 parameter (RTS control is valid)

6. Carrier Frequency and Rated Current Derating

Derating of the rated current varies depending on the Control Method Selection (A1-02), Drive Duty Selection (C6-01), and Carrier Frequency Selection (C6-02).
Drive capacity may also make a difference in derating between A1000 and GA700.
In the case of GA700 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 GA700 should be selected.

(1) Comparing Rated Output Current in A1000 and GA700
- A1-02 = 0, 1, 2, 3, 5, or 7
- C6-01 = 0 (Heavy Duty)

200 V class

Heavy Duty (HD) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	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
	2004	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
	2006	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	6.9	6.9	6.9	6.5	5.9	5.4
1.5	2A0010	8.0	8.0	8.0	7.5	7.0	6.4
	2010	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
	2012	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
	2018	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
	2021	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
	2030	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
	2042	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
	2056	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
	2070	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
	2082	75.0	75.0	75.0	68.6	60.5	53
22	2A0110	85.0	85.0	85.0	77.9	68.9	60
	2110	88.0	88.0	88.0	80.5	71.0	62
30	2A0138	115.0	115.0	115.0	105.1	92.8	81
	2138	115.0	115.0	115.0	105.1	92.8	81
37	2A0169	145.0	145.0	127.6	116.0	—	—
	2169	145.0	145.0	125.2	112.0	—	—
45	2A0211	180.0	180.0	158.4	144.0	—	—
	2211	180.0	180.0	155.2	138.6	—	—
55	2A0250	215.0	215.0	189.2	172.0	—	—
	2257	215.0	215.0	184.8	164.7	—	—
75	2A0312	283.0	283.0	248.8	226.0	—	—
	2313	283.0	283.0	249.0	226.4	—	—
90	2A0360	346.0	346.0	304.6	277.0	—	—
	2360	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	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	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	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
	4004	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
	4007	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
	4009	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
	4012	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
	4018	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
	4023	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
	4031	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
	4038	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
	4044	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
	4060	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
	4075	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
	4089	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
	4103	91.0	91.0	91.0	80.6	67.6	54.6
55	4A0139	112.0	112.0	91.6	78.0	–	–
	4140	112.0	112.0	91.8	78.4	–	–
75	4A0165	150.0	150.0	123.0	105.0	–	–
	4168	150.0	150.0	123.0	105.0	–	–
90	4A0208	180.0	180.0	147.6	126.0	–	–
	4208	180.0	180.0	147.6	126.0	–	–
110	4A0250	216.0	216.0	177.0	151.0	–	–
	4250	216.0	216.0	177.1	151.2	–	–
132	4A0296	260.0	260.0	213.2	182.0	–	–
	4296	260.0	260.0	213.2	182.0	–	–
160	4A0362	304.0	304.0	249.3	212.8	–	–
	4371	304.0	304.0	249.3	212.8	–	–
185	4A0414	370.0	370.0	303.4	259.0	–	–
	4389	371.0	371.0	304.2	259.7	–	–
220	4A0515	450.0	375.0	–	–	–	–
	4568	453.0	378.3	–	–	–	–
315	4A0675	605.0	504.0	–	–	–	–
	4675	605.0	505.2	–	–	–	–
450	4A0930	810.0	506.0	–	–	–	–
	4930	810.0	675.0	–	–	–	–
560	4A1200	1090.0	681.0	–	–	–	–
	4H12	1090.0	908.0	–	–	–	–

(2) Comparing Rated Output Current in A1000 and GA700
- A1-02 = 0, 1, 2, 3, 5, or 7
- C6-01 = 1 (Normal Duty)

200 V class

Normal Duty (ND) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	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
0.75	2A0004	3.5	3.4	3.2	3.0	2.8	2.56
	2004	3.5	3.3	2.9	2.7	2.4	2.1
1.1	2A0006	6.0	5.5	5.0	4.7	4.4	4.0
	2006	6.0	5.5	5.0	4.6	4.1	3.6
1.5	2A0008	8.0	7.5	6.9	6.5	6.0	5.5
	2008	8.0	7.5	6.9	6.5	5.9	5.4
2.2	2A0010	9.6	8.8	8.0	7.5	7.0	6.4
	2010	9.6	8.8	8.0	7.4	6.6	5.8
3	2A0012	12.0	11.5	11.0	10.4	9.6	8.8
	2012	12.0	11.5	11.0	10.5	9.9	9.3
3.7	2A0018	17.5	15.8	14.0	13.2	12.2	11.2
	2018	17.5	15.8	14.0	12.6	10.9	9.1
5.5	2A0021	21.0	19.3	17.5	16.5	15.3	14.0
	2021	21.0	19.0	17.0	15.7	14.1	12.5
7.5	2A0030	30.0	27.5	25.0	23.6	21.8	20.0
	2030	30.0	27.5	25.0	23.0	20.5	18.0
11	2A0040	40.0	36.5	33.0	31.1	28.8	26.4
	2042	42.0	37.5	33.0	29.4	24.9	20.4
15	2A0056	56.0	51.5	47.0	44.3	41.0	37.6
	2056	56.0	51.5	47.0	43.4	38.9	34.4
18.5	2A0069	69.0	64.5	60.0	56.6	52.3	48.0
	2070	70.0	66.0	60.0	56.0	51.0	46.0
22	2A0081	81.0	78.0	75.0	68.6	60.5	53.0
	2082	82.0	78.5	75.0	68.8	61.0	53.1
30	2A0110	110.0	97.5	85.0	77.7	68.6	60.0
	2110	110.0	101.0	92.0	84.3	75.2	66.0
37	2A0138	138.0	126.5	115.0	105.1	92.8	81.0
	2138	138.0	126.5	115.0	105.8	94.3	82.8
45	2A0169	169.0	145.0	127.6	116.0	–	–
	2169	169.0	152.7	128.3	112.0	–	–
55	2A0211	211.0	180.0	158.4	144.0	–	–
	2211	211.0	190.2	158.9	138.1	–	–
75	2A0250	250.0	215.0	189.2	172.0	–	–
	2257	257.0	230.4	190.5	163.9	–	–
90	2A0312	312.0	283.0	248.8	226.0	–	–
	2313	313.0	288.5	251.7	227.1	–	–
110	2A0360	360.0	346.0	304.6	277.0	–	–
	2360	360.0	330.8	287.6	258.8	–	–

400 V class

Normal Duty (ND) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	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
0.75	4A0002	2.1	2.0	1.8	1.6	1.4	1.1
	4002	2.1	2.0	1.8	1.7	1.5	1.4
1.5	4A0004	4.1	3.8	3.4	3.0	2.5	2.0
	4004	4.1	3.8	3.4	3.1	2.8	2.4
2.2	4A0005	5.4	5.1	4.8	4.3	3.6	2.9
	4005	5.4	5.1	4.8	4.6	4.3	3.9
3	4A0007	6.9	6.2	5.5	4.9	4.1	3.3
	4007	7.1	6.3	5.5	4.8	4.0	3.2
3.7	4A0009	8.8	8.0	7.2	6.4	5.3	4.3
	4009	8.9	8.1	7.2	6.5	5.6	4.8
5.5	4A0011	11.1	10.2	9.2	8.1	6.8	5.5
	4012	11.9	10.6	9.2	8.1	6.7	5.4
7.5	4A0018	17.5	16.2	14.8	13.1	11.0	8.9
	4018	17.5	16.2	14.8	13.1	11.0	8.9
11	4A0023	23.0	20.5	18.0	15.9	13.4	10.8
	4023	23.0	20.5	18.3	16.2	13.6	11.0
15	4A0031	31.0	27.5	24.0	21.3	17.8	14.4
	4031	31.0	27.5	24.0	21.1	17.6	14.1
18.5	4A0038	38.0	34.5	31.0	27.5	23.0	18.6
	4038	38.0	34.5	31.0	27.5	23.0	18.6
22	4A0044	44.0	41.5	39.0	34.5	29.0	23.4
	4044	44.0	43.6	37.5	33.5	28.4	23.4
30	4A0058	58.0	51.5	45.0	39.9	33.4	27.0
	4060	60.0	53.7	44.9	39.1	31.7	24.0
37	4A0072	72.0	66.0	60.0	53.1	44.6	36.0
	4075	75.0	73.8	62.9	55.6	46.5	37.0
45	4A0088	88.0	81.5	75.0	66.4	55.7	45.0
	4089	89.0	88.8	75.8	67.2	56.4	46.0
55	4A0103	103.0	97.0	91.0	80.6	67.6	54.6
	4103	103.0	103.0	90.3	80.1	67.3	54.2
75	4A0139	139.0	112.0	91.6	78.0	–	–
	4140	140.0	122.8	96.7	79.0	–	–
90	4A0165	165.0	150.0	123.0	105.0	–	–
	4168	168.0	150.5	124.4	107.0	–	–
110	4A0208	208.0	180.0	147.6	126.0	–	–
	4208	208.0	179.7	137.2	109.0	–	–
132	4A0250	250.0	216.0	177.0	151.0	–	–
	4250	250.0	221.8	179.4	151.0	–	–
160	4A0296	296.0	260.0	213.2	182.0	–	–
	4296	296.0	263.4	214.6	182.0	–	–
185	4A0362	362.0	304.0	249.3	212.8	–	–
	4371	371.0	327.2	261.6	218.0	–	–
220	4A0414	414.0	370.0	303.4	259.0	–	–
	4453	453.0	349.0	–	–	–	–
315	4A0515	515.0	397.0	–	–	–	–
	4568	568.0	437.0	–	–	–	–
355	4A0675	675.0	528.0	–	–	–	–
	4675	675.0	529.0	–	–	–	–
500	4A0930	930.0	449.0	–	–	–	–
	4930	930.0	716.0	–	–	–	–
630	4AH12	1200.0	610.0	–	–	–	–
	4H12	1200.0	938.0	–	–	–	–

(3) Comparing Rated Output Current (A) in A1000 and GA700

- A1-02 = 6

*** When using PM Advanced Open Loop Vector, the carrier frequency is different from other control methods.**

- C6-01 = 0 (Heavy Duty)

200 V class

Heavy Duty (HD) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	Carrier Frequency 2 kHz	Carrier Frequency 4 kHz	Carrier Frequency 6 kHz	Carrier Frequency 8 kHz	Carrier Frequency 10 kHz	Carrier Frequency 12 kHz
0.4	2A0004	3.2	3.2	3.0	2.8	2.5	2.3
	2004	3.2	3.2	3.1	3.0	2.8	2.6
0.75	2A0006	5.0	5.0	4.7	4.3	4.0	3.6
	2006	5.0	5.0	4.9	4.6	4.3	4.1
1.1	2A0008	6.9	6.9	6.4	5.9	5.4	4.9
	2008	6.9	6.9	6.7	6.0	5.4	4.7
1.5	2A0010	8.0	8.0	7.4	6.9	6.3	5.7
	2010	8.0	8.0	7.7	6.7	5.8	4.8
2.2	2A0012	11.0	11.0	10.2	9.5	8.7	7.9
	2012	11.0	11.0	10.7	9.8	8.8	7.9
3	2A0018	14.0	14.0	13.0	12.0	11.0	10.0
	2018	14.0	14.0	13.3	11.2	9.1	6.9
3.7	2A0021	17.5	17.5	16.3	15.0	13.8	12.5
	2021	17.5	17.5	16.8	14.7	12.6	10.4
5.5	2A0030	25.0	25.0	23.2	21.5	19.7	17.9
	2030	25.0	25.0	24.0	21.0	18.0	15.0
7.5	2A0040	33.0	33.0	30.7	28.3	26.0	23.6
	2042	33.0	33.0	31.2	25.7	20.2	14.7
11	2A0056	47.0	47.0	43.7	40.3	37.0	33.6
	2056	47.0	47.0	45.2	39.8	34.4	29.0
15	2A0069	60.0	60.0	55.8	51.5	47.3	43.0
	2070	60.0	60.0	58.0	52.0	46.0	40.0
18.5	2A0081	75.0	75.0	67.0	59.0	51.0	43.0
	2082	75.0	75.0	71.8	62.1	52.5	42.9
22	2A0110	85.0	85.0	76.0	67.0	58.0	49.0
	2110	88.0	88.0	84.2	72.9	61.6	50.3
30	2A0138	115.0	115.0	102.8	90.5	78.3	66.0
	2138	115.0	115.0	110.1	95.3	80.5	65.7
37	2A0169	145.0	139.0	121.7	104.3	87.0	–
	2169	145.0	138.4	118.6	98.8	78.9	–
45	2A0211	180.0	173.0	151.3	129.7	108.0	–
	2211	180.0	171.7	146.9	122.0	97.2	–
55	2A0250	215.0	206.0	180.3	154.7	129.0	–
	2257	215.0	204.9	174.7	144.5	114.3	–
75	2A0312	283.0	272.0	238.0	204.0	170.0	–
	2313	283.0	271.7	237.7	203.8	169.8	–
90	2A0360	346.0	332.0	290.7	249.3	208.0	–
	2360	346.0	328.8	277.0	225.3	173.6	–
110	2A0415	415.0	398.0	348.3	298.7	249.0	–
	2415	415.0	398.4	348.6	298.8	249.0	–

400 V class

Heavy Duty (HD) Rating (kW)	C6-02 Capacity CIMR-AA _ GA70A _	1 Carrier Frequency 2 kHz	2 Carrier Frequency 4 kHz	3 Carrier Frequency 6 kHz	4 Carrier Frequency 8 kHz	5 Carrier Frequency 10 kHz	6 Carrier Frequency 12 kHz
0.4	4A0002	1.8	1.8	1.6	1.3	1.1	0.8
	4002	1.8	1.8	1.7	1.3	1.0	0.6
0.75	4A0004	3.4	3.4	2.9	2.5	2.0	1.5
	4004	3.4	3.4	3.2	2.4	1.7	1.0
1.5	4A0005	4.8	4.8	4.1	3.5	2.8	2.1
	4005	4.8	4.8	4.5	3.8	3.0	2.3
2.2	4A0007	5.5	5.5	4.7	4.0	3.2	2.4
	4007	5.5	5.5	5.2	4.2	3.2	2.3
3	4A0009	7.2	7.2	6.2	5.2	4.1	3.1
	4009	7.2	7.2	6.9	5.8	4.8	3.8
3.7	4A0011	9.2	9.2	7.9	6.6	5.2	3.9
	4012	9.2	9.2	8.7	7.0	5.4	3.8
5.5	4A0018	14.8	14.8	12.7	10.6	8.4	6.3
	4018	14.8	14.8	14.0	11.4	8.9	6.3
7.5	4A0023	18.0	18.0	15.4	12.9	10.3	7.7
	4023	18.0	18.0	17.0	13.9	10.8	7.7
11	4A0031	24.0	24.0	20.6	17.2	13.7	10.3
	4031	24.0	24.0	22.6	18.4	14.1	9.9
15	4A0038	31.0	31.0	26.6	22.2	17.7	13.3
	4038	31.0	31.0	29.2	23.9	18.6	13.3
18.5	4A0044	39.0	39.0	33.4	27.9	22.3	16.7
	4044	39.0	39.0	36.8	30.1	23.4	16.7
22	4A0058	45.0	45.0	38.5	32.0	25.5	19.0
	4060	45.0	45.0	42.1	33.3	24.4	15.6
30	4A0072	60.0	60.0	51.5	43.0	34.5	26.0
	4075	60.0	60.0	56.6	46.3	36.0	25.7
37	4A0088	75.0	75.0	64.3	53.5	42.8	32.0
	4089	75.0	75.0	70.7	57.9	45.0	32.1
45	4A0103	91.0	91.0	78.0	65.0	52.0	39.0
	4103	91.0	91.0	85.8	70.2	54.6	39.0
55	4A0139	112.0	105.0	85.0	65.0	45.0	–
	4140	112.0	105.3	85.1	65.0	44.8	–
75	4A0165	150.0	141.0	114.0	87.0	60.0	–
	4168	150.0	141.0	114.0	87.0	60.0	–
90	4A0208	180.0	169.0	136.7	104.3	72.0	–
	4208	180.0	169.2	136.8	104.4	72.0	–
110	4A0250	216.0	203.0	164.0	125.0	86.0	–
	4250	216.0	203.0	164.2	125.3	86.4	–
132	4A0296	260.0	244.0	197.3	150.7	104.0	–
	4296	260.0	244.4	197.6	150.8	104.0	–
160	4A0362	304.0	286.0	231.3	176.7	122.0	–
	4371	304.0	285.8	231.0	176.3	121.6	–
185	4A0414	370.0	348.0	281.3	214.7	148.0	–
	4389	371.0	348.7	282.0	215.2	148.4	–
220	4A0515	450.0	338.0	–	–	–	–
	4568	453.0	340.7	–	–	–	–
315	4A0675	605.0	454.0	–	–	–	–
	4675	605.0	455.0	–	–	–	–
400	4A0930	810.0	608.0	–	–	–	–
	4930	810.0	607.0	–	–	–	–
560	4A1200	1090.0	818.0	–	–	–	–
	4H12	1090.0	817.0	–	–	–	–

(4) Comparing Rated Output Current in A1000 and GA700

- When A1-02 = 6

*** When using PM Advanced Open Loop Vector, the carrier frequency is different from other control methods.**

- C6-01 = 1 (Normal Duty)

200 V class

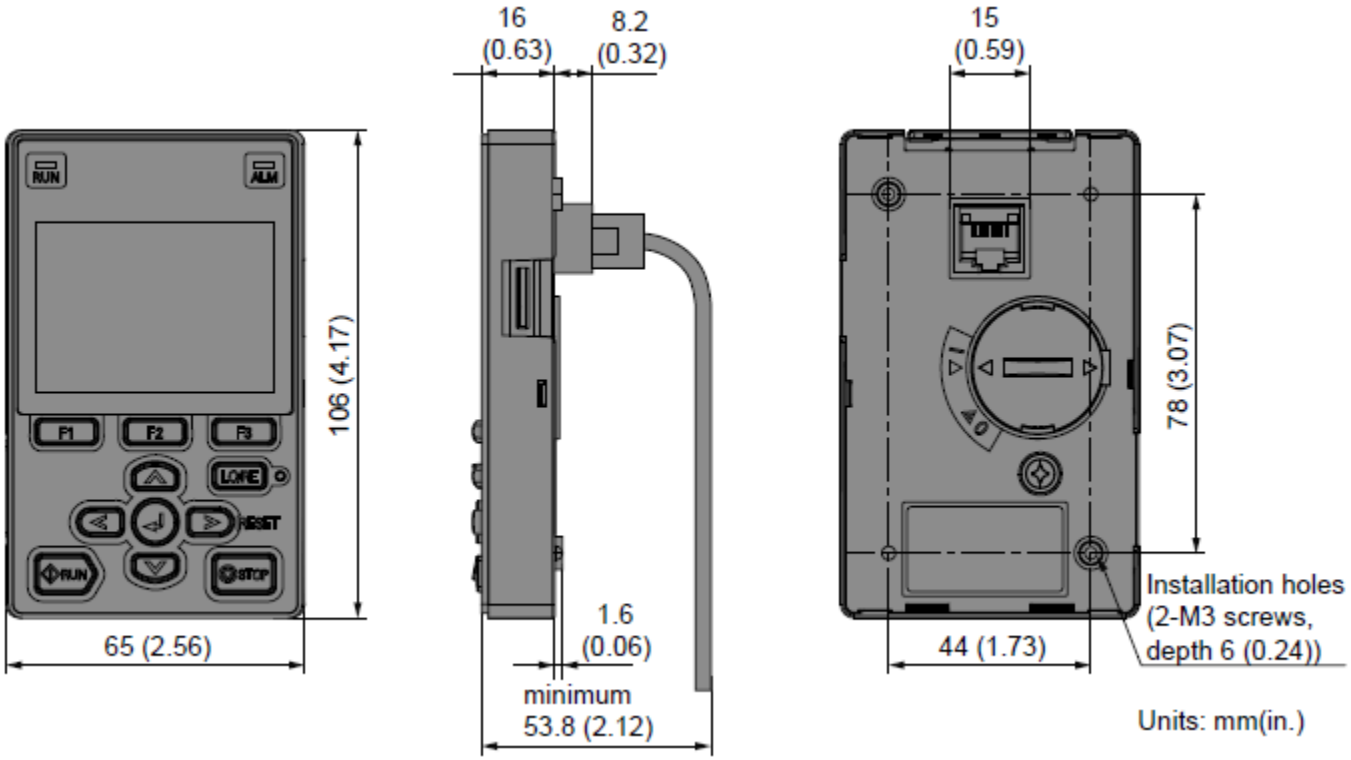
Normal Duty (ND) Rating (kW)	C6-02	1	2	3	4	5	6
	Capacity CIMR-AA _ GA70A _	Carrier Frequency 2 kHz	Carrier Frequency 4 kHz	Carrier Frequency 6 kHz	Carrier Frequency 8 kHz	Carrier Frequency 10 kHz	Carrier Frequency 12 kHz
0.75	2A0004	3.5	3.5	3.2	2.9	2.6	2.3
	2004	3.5	3.1	2.8	2.4	2.1	1.7
1.1	2A0006	6.0	5.6	5.1	4.6	4.0	3.5
	2006	6.0	5.4	4.8	4.2	3.6	3
1.5	2A0008	8.0	7.4	6.8	6.2	5.5	4.9
	2008	8.0	7.3	6.7	6.0	5.4	4.7
2.2	2A0010	9.6	8.8	8.0	7.2	6.4	5.6
	2010	9.6	8.6	7.7	6.7	5.8	4.8
3	2A0012	12.0	11.6	10.7	9.8	8.8	7.9
	2012	12.2	11.5	10.7	10.0	9.3	8.6
3.7	2A0018	17.5	15.9	14.3	12.8	11.2	9.6
	2018	17.5	15.4	13.3	11.2	9.1	6.9
5.5	2A0021	21.0	19.6	17.7	15.9	14.0	12.1
	2021	21.0	18.9	16.8	14.6	12.5	10.4
7.5	2A0030	30.0	27.5	25.0	22.5	20.0	17.5
	2030	30.0	27.0	24.0	21.0	18.0	15.0
11	2A0040	40.0	36.7	33.4	30.1	26.7	23.4
	2042	42.0	36.6	31.2	25.8	20.4	15.0
15	2A0056	56.0	51	46.5	42.0	37.5	33.0
	2056	56.0	50.6	45.2	39.8	34.4	29.0
18.5	2A0069	69.0	64.0	58.8	53.5	48.3	43.0
	2070	70.0	64.0	58.0	52.0	46.0	40.0
22	2A0081	81.0	80.0	70.8	61.5	52.3	43.0
	2082	82.0	81.4	72.0	62.6	53.1	43.7
30	2A0110	110.0	99.0	88.0	77.0	66.0	55.0
	2110	110.0	99.0	88.0	77.0	66.0	55.0
37	2A0138	138.0	124.0	109.5	95.0	80.5	66.0
	2138	138.0	124.2	110.4	96.6	82.8	69.0
45	2A0169	169.0	146.0	123.3	100.7	78.0	–
	2169	169.0	144.6	120.1	95.7	71.2	–
55	2A0211	211.0	182.0	153.3	124.7	96.0	–
	2211	211.0	179.7	148.5	117.2	86.0	–
75	2A0250	250.0	217.0	183.3	149.7	116.0	–
	2257	257.0	217.1	177.2	137.3	97.4	–
90	2A0312	312.0	275.0	238.3	201.7	165.0	–
	2313	313.0	276.2	239.4	202.6	165.8	–
110	2A0360	360.0	324.0	288.3	252.7	217.0	–
	2360	359.6	316.4	273.2	230.0	186.8	–
110	2A0415	415.0	379.0	343.7	308.3	273.0	–
	2415	415.0	415.0	–	–	–	–

400 V class

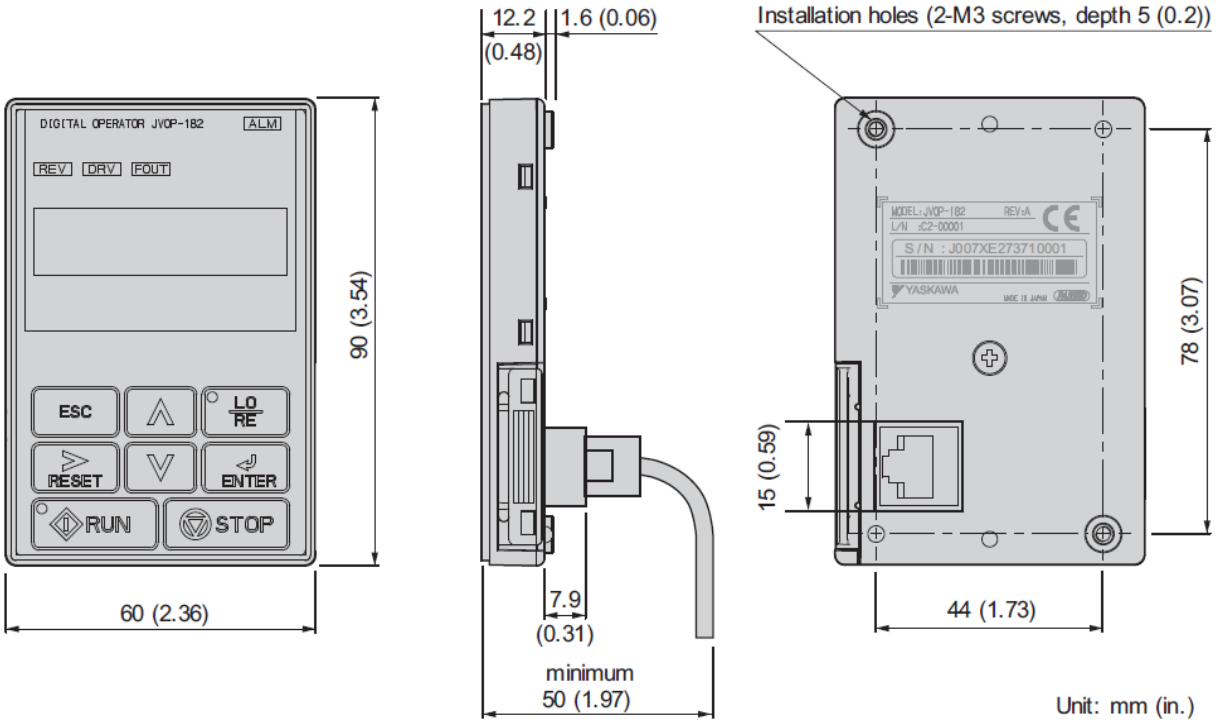
Normal Duty (ND) Rating (kW)	C6-02 Capacity CIMR-AA _ GA70A _	1 Carrier Frequency 2 kHz	2 Carrier Frequency 4 kHz	3 Carrier Frequency 6 kHz	4 Carrier Frequency 8 kHz	5 Carrier Frequency 10 kHz	6 Carrier Frequency 12 kHz
0.75	4A0002	2.1	2.0	1.7	1.4	1.1	0.8
	4002	2.1	1.9	1.7	1.6	1.4	1.2
1.5	4A0004	4.1	3.8	3.2	2.7	2.1	1.5
	4004	4.1	3.7	3.3	2.8	2.4	2.0
2.2	4A0005	5.4	5.3	4.5	3.7	2.9	2.1
	4005	5.4	5.0	4.7	4.3	3.9	3.6
3	4A0007	6.9	6.1	5.2	4.3	3.3	2.4
	4007	7.1	6.1	5.2	4.2	3.2	2.3
3.7	4A0009	8.8	8.0	6.8	5.6	4.3	3.1
	4009	8.9	7.9	6.8	5.8	4.8	3.7
5.5	4A0011	11.1	10.3	8.7	7.1	5.5	3.9
	4012	11.9	10.3	8.6	7.0	5.4	3.8
7.5	4A0018	17.5	16.5	14.0	11.4	8.9	6.3
	4018	17.5	16.5	14.0	11.4	8.9	6.3
11	4A0023	23.0	20.1	17.0	13.9	10.8	7.7
	4023	23.4	20.4	17.3	14.1	11.0	7.8
15	4A0031	30.9	26.7	22.6	18.5	14.4	10.3
	4031	31.0	26.8	22.6	18.3	14.1	9.9
18.5	4A0038	38.0	34.5	29.2	23.9	18.6	13.3
	4038	38.0	34.5	29.2	23.9	18.6	13.3
22	4A0044	44.0	41.6	35.5	29.5	23.4	17.3
	4044	44.0	41.6	35.5	29.5	23.4	17.3
30	4A0058	58.0	50.0	42.3	34.5	26.8	19.0
	4060	59.6	50.8	42.0	33.2	24.4	15.6
37	4A0072	72.0	67.0	56.8	46.5	36.3	26.0
	4075	74.9	70.2	59.3	48.4	37.5	26.5
45	4A0088	88.0	83.0	70.3	57.5	44.8	32.0
	4089	89.2	84.5	71.5	58.6	45.6	32.7
55	4A0103	103.0	100.0	84.8	69.5	54.3	39.0
	4103	103.0	100.5	85.2	69.9	54.6	39.3
75	4A0139	139.0	113.0	87.0	61.0	35.0	—
	4140	140.0	114.1	88.1	62.0	36.0	—
90	4A0165	165.0	139.0	113.3	87.7	62.0	—
	4168	168.0	141.8	115.6	89.5	63.3	—
110	4A0208	208.0	173.0	137.7	102.3	67.0	—
	4208	208.0	165.5	123.1	80.6	38.1	—
132	4A0250	250.0	208.0	165.7	123.3	81.0	—
	4250	250.0	207.7	165.3	123.0	80.6	—
160	4A0296	296.0	247.0	198.3	149.7	101.0	—
	4296	296.0	247.1	198.3	149.4	100.6	—
185	4A0362	362.0	298.0	234.0	170.0	106.0	—
	4371	371.0	305.3	239.7	174.0	108.3	—
220	4A0414	414.0	348.0	281.3	214.7	148.0	—
	4453	453.0	296.7	—	—	—	—
315	4A0515	515.0	338.0	—	—	—	—
	4568	568.0	372.0	—	—	—	—
355	4A0675	675.0	454.0	—	—	—	—
	4675	675.0	455.0	—	—	—	—
500	4A0930	930.0	609.0	—	—	—	—
	4930	930.0	609.0	—	—	—	—
630	4A1200	1200.0	807.0	—	—	—	—
	4H12	1200.0	807.0	—	—	—	—

Matching Keypad and Operator

- GA700 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.



Revision History

Revision No.	Date	Description of Change
First edition	2016.05.18	First edition
<1>	2017.07.20	Capacity Expansion (Add 200V HD：15kW－110kW、400V HD：18.5kW－315kW)
<2>	2018.07.18	Corrected the "5-1. Parameter Setting Transition Instructions" (3) in the chapter 5 on page 37.
<3>	2023.10.24	・UL Type1 Kit Delete code list P.32,33 ・H5-07 explanation added ・Capacity expansion (400V HD: 400kW-560kW added) ・Parameter replacement procedure by DriveWizard (automatic conversion) added.