



YASKAWA

FREQUENTLY ASKED QUESTIONS

AC Variable Frequency Drives

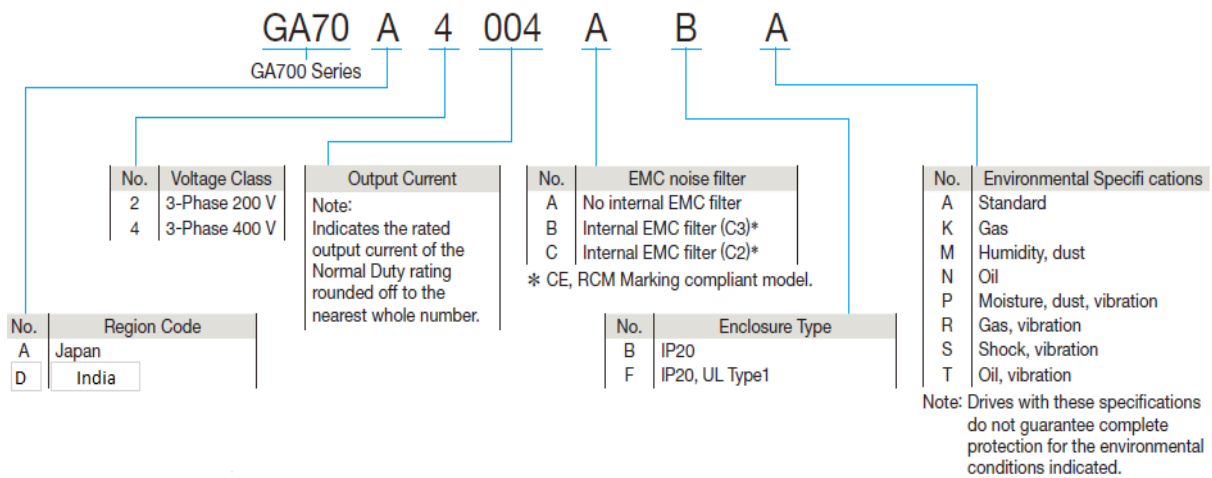
FAQ on GA700, Varispeed G7 and A1000 drives

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1. How to describe the GA700 model number?



2. What is the difference between LCD keypad and Bluetooth keypad?

Ans.

Function	Standard LCD keypad	Bluetooth keypad
Supported Drive	GA700	GA700
Bluetooth	no	yes (BT, BT LE)
SD card slot	yes	yes
USB connector	yes	yes
Languages	13	limited to 3 (later more)
Parameter backup	4 sets	no
Automatic parameter backup	yes	no
Real Time Clock	yes	yes
Standard keys and display	yes	yes

3. Up to what kW rating does GA700 support inbuilt braking transistor/Chopper?

Ans. Braking transistor is built-in, up to 75kW in heavy duty and 90kW in normal duty.

4. For the cloud, is it possible to share account data with other person, for instance in a company account?

Ans. No, currently there is no such method to share data.

5. Is Open Loop torque control possible in GA700, what is the control method?

Ans. Yes, open loop torque control is possible in advanced open loop method without encoder.

6. Is it possible to copy a DriveWorksEZ program using USB stick or other storage media?

Ans. No you cannot copy DWEZ programs using storage media.

7. Do we need the external +24V DC power supply for standby mode selection in GA700 to auto cut off input main contactor?

Ans. Yes, it is required.

8. What is the purpose of breakout panel in GA700 on the right side of the drive?
Ans. The breakout panel is used to connect instance 90° Profibus connectors to a Profibus card that is installed on the GA700. If straight connectors are used all wiring leaves the drives through the bottom so that there will not be any need to use this breakout section.
9. Up to which rating we can mount GA700 Side-by-side?
Ans. GA700 can be mounted side by side up to 18.5kW in Heavy Duty, 22kW in Normal Duty
10. Can all 3 AI (Analog input) terminals be set for 4-20mA in GA700?
Ans. Yes, all 3 AI can be set for 4-20mA input by changing dipswitch.
11. Which Modbus serial communication do we have as a standard in the GA700?
Ans. MODBUS RS-485 is standard in GA700.
12. When using one field bus option card for connecting five drives to a PLC, is it possible to connect another five with a second option card?
Ans. Yes, it is possible but the RS-485 channels of both branches should not be connected.
13. What is the altitude and temperature deration for GA700?
Ans. No deration is required for up to 1000m.
ALTITUDE: Derate the output current by 1% for every 100 m (328 ft.) to install the drive-in altitudes between 1000 m to 3000 m (3281 ft. to 9843 ft.).
TEMPERATURE: *IP20*- No derating upto 50°C, 2% of rated current per °C upto 60 °C.
NEMA – No derating upto 40°C, 1.5% of rated current per °C upto 60 °C.
14. Is there a GA700 of single phase planned?
Ans. No, there is no plan. However, 3 phase 200V units can be used with single phase supply if a derating is applied. Contact Yaskawa for more details.
15. What are the available software versions in GA700?
Ans. Currently the software's available are 1020 to 1026 (As on October 2018)
16. How many sets of parameter backup can be stored in GA700?
Ans. 4 sets of backup parameters can be stored in GA700.
17. Can A1000 option cards be used with GA700?
Ans. Yes, A1000 option cards can be used with GA700.
18. Which mobile devices are compatible with drive wizard mobile?
Ans. Currently Drive Wizard mobile is compatible with only with android devices running Android 5.0 and above. iOS support is planned in the future.
19. What is the Over-load capacity of GA700?
Ans. 150% for 60s in heavy duty (HD), 110% for 60s in normal duty (ND)

20. How do I connect my smartphone to GA700?

Ans. There are two ways to connect the GA700 and a smartphone or tablet.

1. Bluetooth

In this case an option Bluetooth keypad is required on the drive. Furthermore, the smartphone must support Bluetooth. Make sure to do the pairing in the DriveWizard Mobile app, NOT in the Android system directly. The pairing code is "1915" at default and can be changed in parameter A1-12.

2. USB

To take advantage of the USB connection function your device should support USB-OTG (USB on the go). For the connection an USB-OTG adapter appropriate for your device and a USB cable with mini-USB connector are required.

21. Does drive wizard mobile have OSCILLOSCOPE function?

Ans. No the oscilloscope function is not currently available on Drive Wizard mobile.

22. Does heatsink out of the back mounting require a mechanical adapter kit?

Ans. Up to 30 kW an additional mounting brackets are needed. However, this is not a ring kit, more a simple mounting adapter that is placed at the top of the drive. Every GA700 has a built in flange at the back which makes heatsink out the back mounting really simple. On larger drives the pre-installed wall mounting brackets have to be replaced in a different position, no additional part is required

23. How can the data on SD card be used?

Ans. The data on SD card is stored as worksheet (.csv) format and can be open with software tools like excel, sheets, etc.

24. What is the IP degree when using heatsink out the back mounting?

Ans. With a standard GA700 the IP degree with heat sink out the back mounting remains at IP20. The fan(s), the capacitor sealing, and on the larger units the DC chokes that are put in the back of the drive, are not prepared for any higher protection. If protection degree for the outside portion is needed the GA700 with IP55 rated back side should be chosen.

25. Do the cooling fans have to stay on the drive when using heatsink is out of the back mounting?

Ans. Fans have to remain at the drive unless there is other properly sized forced cooling applied. Taking off the fans and use external cooling is always done the users own risk.

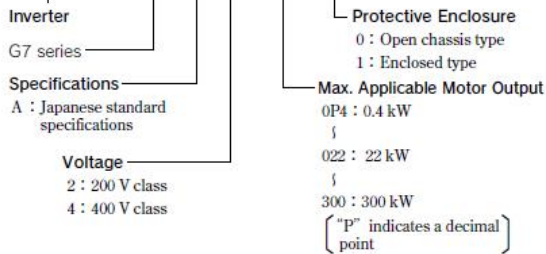
26. Can multiple users register one and the same drive in YASKAWA cloud?

Ans. Yes. Any user can register any drive in his personal cloud account. Parameter backups, pictures etc. can be stored then connected with the serial number of the registered drive. Any registered users can do this. However, if users A and B register the same drive in their accounts, A will not see the data B stored and vice versa

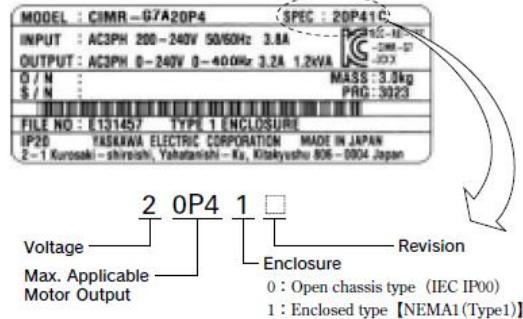
1. How to describe the G7 model number?

Model Designation

CIMR - G7 A 2 0P4 0

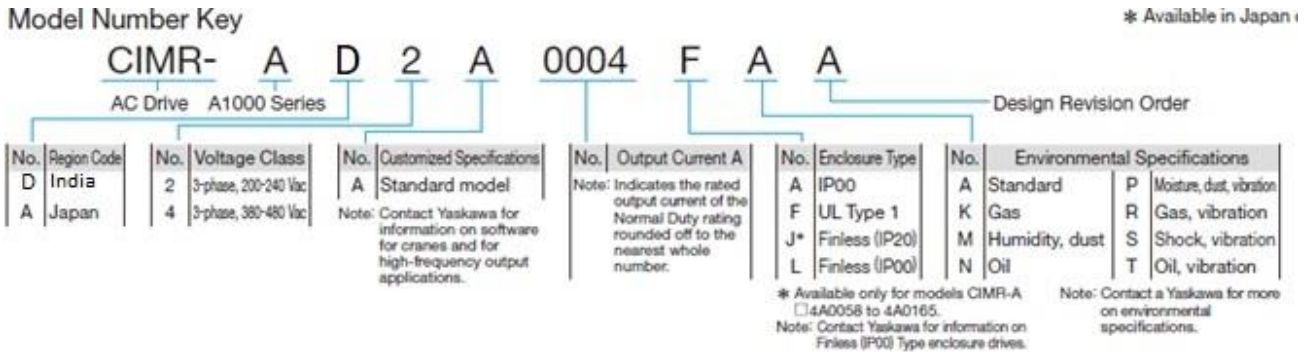


Name Plate Example



2. What is the maximum frequency that can achieved in G7 with standard software?
Ans. Maximum 400 Hz can be achieved depending on control method used.
3. Up to what kW rating G7 model supports inbuilt braking transistor/Chopper?
Ans. G7 has inbuilt braking transistor/chopper up to 15kW.
4. Is Open Loop torque control possible in G7, what is the control method?
Ans. Open loop control vector 2 is possible in G7. (A1-02=4)
5. How many digital and analog i/o ports are available in G7?
Ans. 12 digital inputs, 2 digital outputs (only 1 is configurable), 3 analog inputs and 2 analog output ports are available on the G7 drive.
6. Can all AI (Analog input) terminals be set for 4-20mA in G7?
Ans. No, only A2 terminal can be set for 4-20mA analog input in G7.
7. Which Modbus serial communication do we have as a standard in the G7?
Ans. MODBUS RS-485/422 is standard in G7.
8. What is the altitude deration for G7?
Ans. No deration is required for up to 1000m.
Derate the output current by 1% for every 100 m (328 ft.) from 1000m. Maximum altitude is 3000m.
9. Can A1000/GA700 option cards be used with G7?
Ans. No, A1000/GA700 option cards cannot be used with G7 and vice versa.
10. What is the Over-load capacity of G7?
Ans. 150% for 60s, 200% for 0.5s

1. How to describe the A1000 model number?



2. What is the maximum frequency that can be achieved in A1000 with standard software?

Ans. Maximum 400 Hz can be achieved depending on control method used.

3. Up to what kW rating does A1000 model support inbuilt braking transistor/Chopper?

Ans. Up to 30kW in heavy duty and 37kW in normal duty.

4. Is Open Loop torque control possible in A1000?

Ans. No, open loop torque control is not possible in A1000.

5. Which Modbus serial communication do we have as a standard in A1000?

Ans. MODBUS RS-422/485 can be used with A1000 for communication

6. Are A1000 option cards compatible with GA700?

Ans. Yes, A1000 option cards can be used with GA700.

7. What is the Over-load capacity of A1000?

Ans. 150% for 60s in heavy duty (HD), 120% for 60s in normal duty (ND)

8. What is the temperature derating and altitude derating of A1000?

Ans. Drive can be installed at altitudes up to 3000m. No derating is required for upto 1000m.

After 1000m Derate the output current by 1% for every 100 m (328 ft.) from 1000m. Maximum altitude is 3000m.

For temperature, IP20 type drive can be operated for upto 50degree Celsius without derating and UL type 1 can be operated upto 40 degree Celsius.

Above this upto 60 degrees, IP20 should be derated by 2% of rated output current per degree Celsius and UL type should be derated by 1.5% of rated output current per degree Celsius.

9. What is scanning time of A1000 drive?

Ans. Fastest scanning time is 1ms in A1000 drive

10. How to resolve 'bb' alarm during power on in crane software?

Ans. This is not a fault. Set the baseblock command of drive to NO (normally open) i.e., Set H1-08=08.

1. How to Copy parameters from the drive to keypad?
Ans. Copy function is O3-01. O3-02=1 is to enable keypad copy function. When O3-01 is selected as 1, parameters are copied to keypad from drive. 1 set of backup parameter can be stored.
2. How to change phase sequence in drive without changing wires physically?
Ans. To change phase sequence set b1-14=1 in VFD.
3. How to set and run in jog frequency?
Ans. Jog frequency can be set in d1-17. To operate in job mode set any digital input to jog reference selection (H1-xx= 6)
4. How to set multispeed reference. Show 2 speed example.
Ans. d1 group of parameters are for digital frequency reference.
Example: To set two speed reference. First set 4 digital inputs (H1-xx) to 3,4,5 and 32.
Disable frequency reference from analog input (if any).
Set d1-04=50Hz and d1-06=10Hz.
Referring to table 5.18 (Technical Manual – A1000), it can be seen that when H1-xx=3 and H1-xx=4 is set as high drive will run in 50Hz. When H1-xx=5 is set as high drive will run in 10Hz speed.
This how multi-speed reference can be set.
5. How to set motor 1 and motor 2 parameters?
Ans. Motor 1 parameters can be set in E1, E2 group.
Motor 2 parameters can be set in E3, E4 group.
6. How to set MOP function?
Ans. MOP function is used to speed increase and speed decrease command using digital input. This can be set as H1-xx=10 for speed increase and H1-xx=11 for speed decrease.
7. How to set upper and lower speed limit?
Ans. d2-01 for frequency upper limit and d2-02 for frequency lower limit.
8. How to change stopping method?
Ans. b1-03 is the parameter to change stopping method. It is ramp to stop by default.
9. How to disable reverse operation of drive?
Ans. b1-04=1 will disable reverse operation of drive.
10. How to toggle between drive ND (normal duty) and HD (heavy duty)?
Ans. C6-01 can be set to 0 for heavy duty and 1 for normal duty.
11. How to set speed to rpm instead of Hz?
Ans. o1-03=2 will show reference in rpm instead of Hz.

12. Which are constant torque operations and variable torque application?

Ans. **Constant Torque:** Lift, Crane, conveyor, crusher, etc.,
(Constant torque applications should be operated only in heavy duty (HD) mode)

Variable Torque: Pump, fan, compressor, etc.,
(PID is required for variable torque applications)

13. What are OPE 04,05,06 errors?

Ans. OPe04 is terminal board mismatch (control board and terminal board are interchanged). To solve this issue set A1-03=5550.

OPe05 is run command/frequency reference source error. To solve recheck b1-02 and b1-03
OPe06 is control method selection error. To solve recheck A1-02 parameter.

14. How to configure external 1 and external 2 configurations?

Ans. External 1 settings are set in b1-01 and b1-02, External 2 settings are set in b1-15 and b1-16.
To switch between these two settings set digital input H1-XX=2 or 102 and use to toggle.

15. What is CPF fault?

Ans. This is a communication fault between inverter and operator. Possible causes: Digital operator cable not securely connected, digital operator defective, control card defective.

16. Can GA700 be controlled and parameterized using Drive Wizard mobile and Bluetooth keypad?

Ans. Yes, we can perform all functions from mobile which can be performed on normal keypad if we connect with Bluetooth.

17. What is the difference between control modes?

Ans

	EZ Open Loop Vector Control	V/f Control	Closed Loop V/f Control	Open Loop Vector Control	Advanced Open Loop Vector	Closed Loop Vector	Open Loop Vector Control for PM	Advanced Open Loop Vector Control fro PM	Closed Loop Vector Control
Abbreviation	EZOLV	V/f	CL-V/f	OLV	AOLV	CLV	OLV/PM	AOLV/PM	CLV/PM
IM Motor	yes	yes	yes	yes	yes	yes	no	no	no
PM Motor	yes	yes	no	no	no	no	yes	yes	yes
SynRM	yes	no	no	no	no	no	yes	no	no
Encoder	no	no	yes	no	no	yes	no	no	yes
fmax	120	590	400	590	120	400	590	400	400
Applicable load	VT	CT/VT	CT/VT	CT/VT	CT/VT	CT/VT	VT	CT/VT	CT/VT
Autotuning	no need	no need	no need	static/rotating	static/rotating	static/rotating	static/rotating	static/rotating	static/rotating
Speed Control Range	1:100	1:40	1:40	1:200	1:200	1:1500	1:20	1:100	1:1500
Starting Torque	100% at 1% speed	150% at 3% speed	150% at 3% speed	200% at 0.3 Hz	200% at 0.3 Hz	200% at 0 rpm	100% at 5% peed	200% at 0 rpm	200% at 0 rpm
Torque Limits	yes	no	no	yes	yes	yes	no	yes	yes
Torque control	no	no	no	no	yes	yes	no	yes	yes

18. Is the control card removable and does it have backup memory?

Ans. Yes, control card can be removed but the parameters have to be saved in the keypad.

Comparison of YASKAWA AC Drives



	200V 3 phase	400V 3 phase	Max output frequency	Overload Tolerance	Digital I/O ports	Analog I/O ports
Varispeed G7	0.4kW to 110kW	0.4kW to 300kW	400Hz	150% of rated output current for 60s, 200% of rated output current for 0.5s	12 digital inputs, 2 digital output	3 analog inputs, 2 analog outputs
A1000	0.4kW to 110kW	0.4kW to 630kW	400Hz	ND: 120% of rated output current for 60s, HD: 150% of rated output current for 60s	8 digital inputs, 2 digital outputs	3 analog inputs, 2 analog outputs
GA700	0.4kW to 110kW	0.4kW to 355kW	590Hz	ND: 110% of rated output current for 60s, HD: 150% of rated output current for 60s	8 digital inputs, 2 digital outputs	3 analog inputs, 2 analog outputs

	DC reactor	12 pulse input	Allowable voltage fluctuation	Maximum output voltage	Braking Transistor
Varispeed G7	Provided for 18.5kW to 300kW, option in lower ratings	18.5kW to 300kW	-15% to +10%	380V to 480V (400V class)	Up to 15kW
A1000	Built-in from 30kW to 110kW(ND), option in lower ratings	N.A	-15% to +10%	380V to 480V (400V class)	Built in up to 37kW(ND), External option in higher ratings
GA700	Built-in from 30kW to 355kW(ND), option in lower ratings	N.A	-15% to +10%	380V to 480V (400V class)	Built in up to 90kW(ND), External option in higher ratings