

YASKAWA

GA700

For Building Automation



200V Class: 0.75 to 110 kW
400V Class: 0.75 to 355 kW

A Single Drive for all Your Building Automation Needs

The GA700 variable-speed drive is designed for Building Automation applications such as fans, pumps and cooling towers through 355 kW. The GA700 features Building Automation-specific application macros, an easy-to-read LCD keypad that provides Hand-Off-Auto interface, and a real time clock. These features make the GA700 perfect for all Building Automation applications that require reliable motor control.



GA700 Specifications: 200 V and 400 V

The GA700 variable-speed drive is engineered for use in Building Automation applications requiring reliable motor control.

The GA700 features Building Automation application-specific software macros, a Hand-Off-Auto LCD keypad, and a real time clock for system accuracy. Popular building automation communication protocols BACnet (BTL certified), and MEMOBUS/Modbus are embedded in the drive. Interface cards for LonWorks and EtherNet/IP communications are offered separately.

Performance Features

- VT Ratings:
 - 0.75 to 110 kW, 200V
 - 0.75 to 355 kW, 400V
- Overload capacity: 110% for 60 seconds (150% Peak)
 - DC Injection braking: at start or stop, adjustable, current limited (anti-windmilling)
- Motor preheat function
- Adjustable accel/decel: 0.1 to 6000 seconds
- Controlled speed range: 40:1
- Critical frequency rejection capability: 3 selectable, adjustable bands
- Torque limiting: 30 to 180%
- Power loss ride through: 2 seconds
- Auto restart after power loss or resettable fault, selectable, programmable
- Serial communications loss detection
- Up/down floating point control capability
- Stationary motor auto-tuning
- Remote speed reference (speed command) signal:
 - 0 to 10 VDC (20 K Ohm)
 - 4 to 20 mA DC (250 Ohm)
- 7 programmable multi-function input terminals (24 Vdc) providing 60+ programmable features, including:
 - Safety
 - BAS / Damper Interlock
 - Emergency Override
 - Preset Speed
 - PI control enable / disable
- 3 programmable multi-function output relays (Form C rated 2 amps @ 250 Vac & 30 Vdc), providing 50+ functions, including:
 - Damper control
 - Hand/Auto Status
 - Contactor Control for External Bypass
 - Overtorque/undertorque detection
- Auto standby mode (drive completely switches off by itself during no RUN command)
- MTPA - Max. Torque Per Ampere Delivering max. torque per unit current in variable torque applications for efficiency

Applications



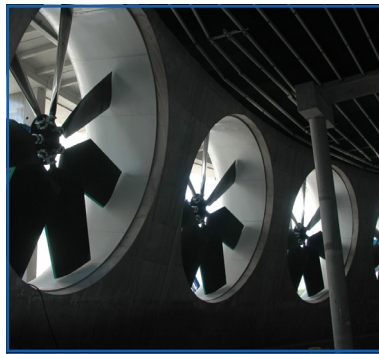
Booster Pumps



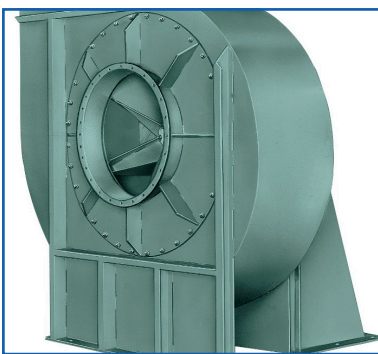
Chiller Compressors



Chilled Water Pump



Cooling Tower Fans



Supply Fans



Condensing Fans

GA700 Model Selection - 200V

| Catalog Code GA70D | Max Applicable Motor Power | Rated Output Current | Dimensions [mm] | | | Standard Enclosure |
|-----------------------|----------------------------|----------------------|-----------------|-----|-----|--------------------|
| | HD / ND [kW] | HD / ND [A] | H | W | D | |
| 2004 | 0.55 / 0.75 | 3.2 / 3.5 | 260 | 140 | 176 | 3.5 |
| 2006 | 0.75 / 1.1 | 5 / 6 | | | | |
| 2008 | 1.1 / 1.5 | 6.9 / 8 | | | | |
| 2010 | 1.5 / 2.2 | 8 / 9.6 | | | | |
| 2012 | 2.2 / 3 | 11 / 12.2 | | | | |
| 2018 | 3 / 3.7 | 14 / 17.5 | | | 211 | 3.9 |
| 2021 | 3.7 / 5.5 | 17.5 / 21 | | | | |
| 2030 | 5.5 / 7.5 | 25 / 30 | | | | |
| 2042 | 7.5 / 11 | 33 / 42 | | | | |
| 2056 | 11 / 15 | 47 / 56 | 300 | 180 | 202 | 6.0 |
| 2070 | 15 / 18.5 | 60 / 70 | 350 | 220 | 227 | 8.5 |
| 2082 | 18.5 / 22 | 75 / 82 | | | | 9.0 |
| 2110 | 22 / 30 | 88 / 110 | 400 | 240 | 280 | 20 |
| 2138 | 30 / 37 | 115 / 138 | 450 | 255 | | 35 |
| 2169 | 37 / 45 | 145 / 169 | 543 | 264 | 335 | 40 |
| 2211 | 45 / 55 | 180 / 211 | | | | |
| 2257 | 55 / 75 | 215 / 257 | 700 | 312 | 420 | 80 |
| 2313 | 75 / 90 | 283 / 313 | | | | |
| 2360 | 90 / 110 | 346 / 360 | 800 | 440 | 472 | 120 |
| 2415 | 110 / - | 415 / - | | | | |

GA700 Model Selection - 400V

| Catalog Code GA70D | 400 V Class | | Dimensions [mm] | | | Weight [kg] |
|-----------------------|----------------------|----------------------|-----------------|-----|-----|-------------|
| | Max Applicable Motor | Rated Output Current | H | W | D | |
| | HD / ND [kW] | HD / ND [A] | | | | |
| 4002 | 0.55 / 0.75 | 1.8 / 2.1 | 260 | 140 | 176 | 3.5 |
| 4004 | 0.75 / 1.5 | 3.4 / 4.1 | | | | |
| 4005 | 1.5 / 2.2 | 4.8 / 5.4 | | | | |
| 4007 | 2.2 / 3.0 | 5.5 / 7.1 | | | | |
| 4009 | 3.0 / 4.0 | 7.2 / 8.9 | | | | |
| 4012 | 3.7 / 5.5 | 9.2 / 11.9 | | | 211 | 3.9 |
| 4018 | 5.5 / 7.5 | 14.8 / 17.5 | | | | |
| 4023 | 7.5 / 11 | 18 / 23.4 | | | | |
| 4031 | 11 / 15 | 24 / 31 | | | | |
| 4038 | 15 / 18.5 | 31 / 38 | 300 | 180 | 202 | 6.0 |
| 4044 | 18.5 / 22 | 39 / 44 | 350 | 220 | 227 | 7.5 |
| 4060 | 22 / 30 | 45 / 59.6 | | | 246 | 13 |
| 4075 | 30 / 37 | 60 / 74.9 | 400 | 240 | 280 | 16 |
| 4089 | 37 / 45 | 75 / 89.2 | 450 | 255 | | 35 |
| 4103 | 45 / 55 | 91 / 103 | | | | |
| 4140 | 55 / 75 | 112 / 140 | 543 | 264 | 335 | 40 |
| 4168 | 75 / 90 | 150 / 168 | | | | |
| 4208 | 90 / 110 | 180 / 208 | 700 | 312 | 420 | 80 |
| 4250 | 110 / 132 | 216 / 250 | | | | |
| 4296 | 132 / 160 | 260 / 296 | | | | |
| 4296 | 160 / 200 | 304 / 371 | 800 | 440 | 472 | 120 |
| 4389 | 200 / 220 | 371 / 389 | | | | |
| 4453 | 220 / 250 | 414 / 453 | 1140 | 510 | 480 | 175 |
| 4568 | 250 / 315 | 453 / 568 | | | | |
| 4675 | 315 / 355 | 605 / 675 | | | | |

- Booster pump logic software and enhanced motor thermal protection
- Energy consumption monitor
 - single/ multi pump control
 - smart power saver
 - Single stage Fan/ Pump features
 - enhanced energy override (fire mode)

Design Features:

- Built in 5% line impedance for input harmonic reduction
- Displacement power factor of 0.98 throughout the motor speed range
- NEC rated input / output amps
- Internal EMI/RFI filter complies with IEC 61800-3 restricted distribution for first environment
- Built-In real time clock for time and date stamping events along with timer functions for starting, stopping and speed changes without the need for external controls
- Volt meter, ammeter, kilowatt meter elapsed run time meter and heat sink temperature monitoring functions
- Four PID functions. One PID for controlling output frequency of the inverter and other three can be used to control external system. As a standard two PIDs are available, additional two PIDs can be added using optional card.
- Drive internal PI closed loop control with selectable engineering units
- Independent PI control for use with external device
- Differential PI feedback feature
- Sleep function in both closed loop and open loop control
- Feedback signal loss detection and selectable response strategy
- Feedback signal inverse and square root capability
- Feedback signal low pass filter
- 24 Vdc, 150 ma transmitter power supply
- Input and output terminal status indication
- Diagnostic fault indication
- VFD efficiency: 98% at full-speed; 96% at half speed
- "S-curve" soft start / soft stop capability
- Serial communication loss detection and selectable response strategy
- Serial communication status
- No load detection (broken belt alert)
- One fixed "Fault" form C output relay
- Versatile motor control like induction, SPM & IPM, Synchronous reluctance motor for energy efficient systems. Drive wizard Mobile and QR code scanning for customer user friendly access. Drive Work EZ software for customization



Convenient setup and monitoring:

DriveWizard® Mobile app

- Quick and easy drive management apps for smart devices
- Easy USB OTG cable or Bluetooth® connection
- Drive registration via cloud by scanning QR code
- Paperless and easy access to latest online description of parameters and faults
- Single-click parameter and active troubleshooting tips
- Archive and retrieve parameter settings with comments on your smart device
- Worry-free data recovery: Parameter back-up/retrieval anytime via cloud service for registered drives

Yaskawa Drive Cloud Service

- Online manual
- Complimentary storage for parameter backup and organized record-keeping comments
- Convenient drive data storage accessible anywhere

YASKAWA

Contact Us

YASKAWA India Pvt. Ltd.,
17/A, 2nd Main, Electronic city, Phase 1
Hosur Road, Bangalore 560 100.

E-mail: sales@yaskawa.in
Phone: 080 4244 1900
Web: www.yaskawaindia.in