GA500
AC MICRODRIVE FOR INDUSTRIAL APPLICATIONS

IT'S PERSONAL
This microdrive is engineered to help you easily handle nearly any application. Sustainability, flexibility and ease of use are all designed into the drive, helping you make complicated tasks simple.

Making your day easier and leaving more time for other tasks by trusting the GA500 from Yaskawa.

**TIME & COST SAVINGS**
- Operates any motor on any network
- DriveWorksEZ® improves customization by eliminating a PLC and simplified wiring
- Integrated braking transistor
- Integrated EMC filter (optional)
- Integrated 24 VDC power supply supports use of external sensors without extra power supply

**EASY MACHINE DESIGN**
- Wide power and voltage range
- Coated PCBs for use in harsh environments
- Speed search
- Stall prevention and torque limit
- Meets global standards (UL, cUL, CE, TUV, RCM)
- Supports all major networks

**EASY INSTALLATION & SYSTEM INTEGRATION**
- Embedded functional safety (STO: SIL3, PLe)
- Embedded Modbus RTU
- Up to 5 drives with 1 network option card
- Side-by-side mounting
- Bottom cable entries, cage clamp terminals
- DIN rail mounting adapter
- DriveWizard® Mobile app for easy and convenient setup
- Optional LCD operator

**EASY TO USE & MAINTAIN**
- Reduce setup time with an intuitive keypad and setup wizards
- Simple parameter structure
- Maintain network communications during loss of main input power
- Access to main circuit without removing cover
QUICK AND EASY

Whether you are installing, wiring, programming, or troubleshooting, the GA500 has features that help simplify the task for you.

NO POWER? NO PROBLEM!

The GA500 can be programmed without any power supply connected, even while the drive is still in the box. Simply plug into one of your PC’s USB ports or any USB on-the-go device, start programming and enjoy the ease of commissioning.

SOLID HARDWARE

Reduce setup time to minutes using the setup wizard. Even without any drive parameter knowledge, the step-by-step wizard will guide you and get you up and running.

OPTIONAL LCD KEYPAD

Enhance your experience with the optional LCD keypad.

Advanced keypad navigation:

- High-resolution display
- Automatic backup function
- Copy function (4 parameter sets)
- Real-time clock
- Micro SD storage for data logging (up to 32 GB)
- Optional Bluetooth® version

Power Range
- 240 VAC, Single-Phase: 1/6 – 5 HP
- 240 VAC, Three-Phase: 1/6 – 30 HP
- 480 VAC, Three-Phase: 1/2 – 40 HP

Display
Easy-to-read LED display.

Keypad
Multi-directional buttons to help you intuitively navigate through drive menus and parameters. Tactile feel of the buttons lets you know when you’ve pressed a button.

Parameter Backup / Copy
Removable keypad allows you to back up and copy parameters to other drives.

24 VDC Power
Input for Controller
Simplify your wiring and keep your control system operating even during standby or power outage.

USB Port
Easily connect your PC or mobile device to program the drive with or without power.

LED Status Ring
You can determine the drive status with a quick glance at the LED status ring and know the GA500 is ready and operating.

Finger Safe Terminals
Easily access terminals to make the wiring process faster and easier. No need to remove the cover.

4 5
**EFFORTLESS NETWORK INTEGRATION**

Connect to your network in less than 60 seconds. GA500 drives support all the major industrial communications and connection topologies (ring, star, line, etc.) to adapt to various factory automation networks. Reduce wiring when connecting to an upper level controller or PLC through available built-in protocols or dedicated communication options.

**COST EFFECTIVE INTEGRATION**

Reduce the number of option cards up to 80%. Only a single communication option card is required to network up to 5 drives via the RS-485 terminals.

**EMBEDDED +24 VDC INPUT ACCESS**

Network communication can be maintained during loss of main input power utilizing the +24 VDC input. An external +24 VDC supply also allows you the ability to program the drive without main power.

**CONFIGURATIONS**

- **RING**
- **STAR**
- **LINE**

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**ONE FOR ALL**

The GA500 precisely controls induction, permanent magnet, and synchronous reluctance motors providing versatility to run a variety of applications with just one drive.

**AUTOMATIC ENERGY EFFICIENCY OPTIMIZER**

Energy usage is automatically optimized with the unique energy savings functions of the GA500. These functions minimize energy consumption through varying load and speed ranges, achieving power optimization for energy cost reduction. Maximize your energy usage by optimizing your motor torque per amp.

**Motor Control Benefits/Features:**

- **INDUCTION MOTORS**
- **PERMANENT MAGNET**
- **SYNCHRONOUS RELUCTANCE**

**ONE DRIVE FOR VARIOUS APPLICATIONS**

- 590 Hz output frequency (optional: up to 2000 Hz)
- Open loop zero speed and torque control of permanent magnet motors

**ENERGY SAVINGS**

- Automatic energy efficiency optimizer with GA500 energy saving functions

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**Typical Operating Range**

- **GA500**
- **CONVENTIONAL DRIVE**

With Permanent Magnet Motor

- Up to 2% More Savings

With Induction Motor

- Up to 6% More Savings
INTEGRATED FUNCTIONAL SAFETY
PLAY IT SAFE

With the built-in dual channel STO (safe torque off, SIL3/PLe), the GA500 provides the right tools for easy machine integration of emergency stop functions, even when elevated levels of risk reduction are required.

RUGGED

Designed for 10 years of maintenance-free operation, the GA500 is built tough to withstand harsh and demanding conditions.

WIDE AMBIENT TEMPERATURE RANGE
GA500 drives can be safely operated in ambient temperatures ranging from -10°C up to 60°C. In environments with conditions up to 50°C, no derating is necessary.

COATED CIRCUIT BOARD PROTECTION
Coated PCBs as standard protect the electronics from dust or humidity, while ensuring reliable operation even in harsh environments (IEC 60723-3-3, 3C2, 3S2).

FLEXIBLE INSTALLATION SOLUTIONS
The flexible package design of the GA500 enables reliable operation under a variety of environmental conditions. Regardless of whether you put the drive in a control cabinet, on a wall, in a clean environment, or in a harsh one.

BUILT-IN EMC FILTER
The GA500 is available both with and without an embedded EMC filter.

EASY EXTERNAL HEATSINK MOUNTING
With an optional ring kit, the GA500 offers easy installation for mounting the heatsink outside the cabinet to reduce cabinet size and cooling requirements.

SIDE-BY-SIDE MOUNTING
The GA500 can be mounted side-by-side with bottom entry wiring to reduce cabinet size.

DIN RAIL MOUNTING
GA500 drives up to 7.5 HP can be simply snapped onto a DIN rail using an optional attachment. This saves valuable time during installation.

UL TYPE 1 KIT
For installations that require UL Type 1, the GA500 can be simply converted with a mechanical kit.
If you are looking to keep a backup copy of your GA500’s parameter set or need to customize the drive’s functionality to match your application, the GA500 has the software tools to help.

**Powerful Software Tools**

**DriveWizard® Industrial**
- Manage your parameters online or offline
- Create configurations offline, then later connect and download them to the GA500
- Connect via USB, and interface with the GA500 even without main power
- Monitor using a dashboard of dynamic variables
- Create reports for exporting and emailing

**DriveWorkSez®**
- Create simple, custom logic and eliminate an external controller
- Drag-n-drop graphical interface
- 400+ function blocks
- Up to 100 connections
- Offline simulation mode for testing without the risk of an application malfunction
- Protection of intellectual property with locked projects

**Parameter Compatibility**

DriveWizard® makes it simple to transition from previous generation drives to the GA500.

**DriveWizard® Mobile App**

The DriveWizard® Mobile app turns your smartphone or tablet into an interface for your GA500 drive. All information for parameter setup and troubleshooting are in your pocket - anytime, anywhere. Scanning the drive QR code provides easy access to drive information and status. DriveWizard Mobile also provides:

- Intuitive parameter editing with help and search function
- Custom parameter and monitor lists
- Parameter backup/verify with or without main power applied to the drive
- Yaskawa Drive Cloud™ Service
- Export to DriveWizard® Industrial

**Yaskawa Manuals App**

You will have all drive information available, without carrying heavy manuals.

- Resize text for improved readability
- Search feature to find the information you need
- Access to the most up-to-date technical information (when connected online)
- Download manuals for use when an online connection isn’t available

**Yaskawa Drive Cloud™ Service**

The Yaskawa Drive Cloud service provides an easy and safe way to keep track of all of your drive data.

10 11
From the moment you wake in the morning to the moment your head hits the pillow at night, you have a lot going on in your mind.

At Yaskawa, we consider it our job to provide you the highest quality, most reliable variable frequency drive product and service – so every day in your life can be just a little bit easier.
### Ratings

**Power Output (HP)**

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<thead>
<tr>
<th>Normal Duty (ND)</th>
<th>Heavy Duty (HD)</th>
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<tbody>
<tr>
<td>IP20/Protected Chassis</td>
<td>IP20/UL Type 1 kit</td>
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</table>

**Catalog Code Designation**

- **A:** Standard
- **B:** No built-in filter
- **C:** Built-in EMC filter

**EMC Filter Option**
- **A:** Standard
- **B:** No built-in filter
- **C:** Built-in EMC filter

**Environmental Specifications**
- **A:** Standard
- **B:** No built-in filter
- **C:** Built-in EMC filter

**Approximate Dimensions**

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<th>Frame Size</th>
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<td>25.04 (500)</td>
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<td>Depth</td>
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<td>8.03 (204)</td>
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</table>

**Ratings**

- **B:** 240 V Single-phase
- **C:** 380 to 480 V, Three-phase
- **4:** 480 V, Three-phase

**Specifications**

- **Power Ratings**
  - 240 V: Single-phase: 1/6 to 5 HP (0.1 to 3.7 kW)
  - 240 V: Three-phase: 1/6 to 30 HP (0.1 to 22 kW)
  - 480 V: Three-phase: 1/6 to 40 HP (0.2 to 30 kW)
- **Input Frequency**
  - 50/60 Hz, +/-5%
- **Overload Capacity**
  - 110% (ND) or 150% (HD) at 60 Hz

**Additional Options**

- Bluetooth keypad, LCD keypad, Attachment for external heatsink, External EMC filters, AC reactors, DC chokes, Network communications adapter, LCD keypad attachment, braking resistors

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To learn more about the GA500 and see how it can make your day-to-day life easier, please visit [https://www.yaskawa.com/ga500](https://www.yaskawa.com/ga500).
Yaskawa is the leading global manufacturer of low and medium voltage variable frequency drives, servo systems, machine controllers and industrial robots. Our standard products, as well as tailor-made solutions, are well known and have a high reputation for outstanding quality and reliability.