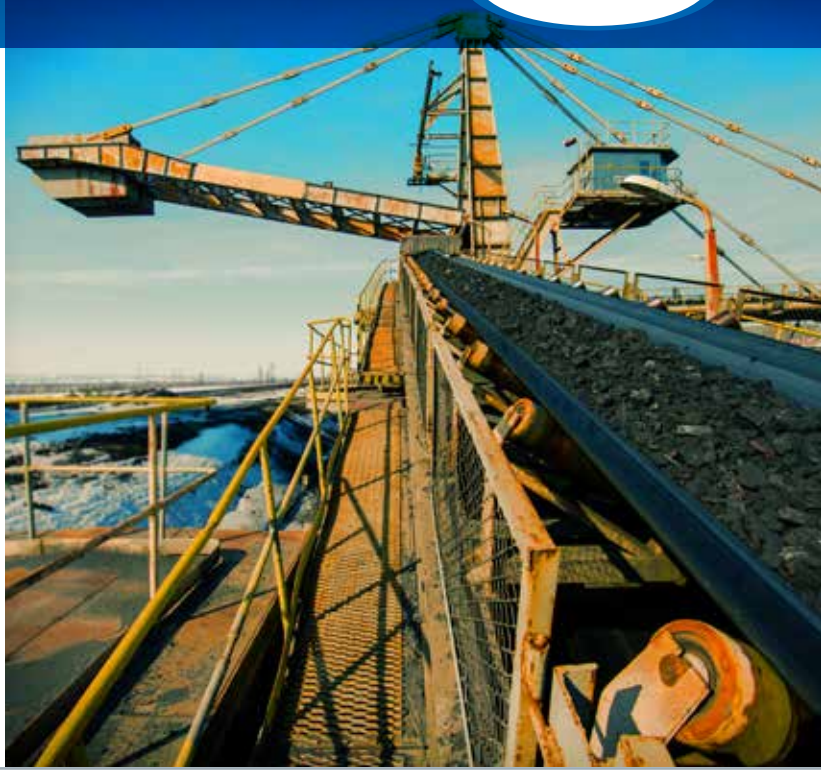
YASKAWA

Evolution MOTION SOLUTIONS

GA800

AC DRIVE FOR INDUSTRIAL APPLICATIONS

IT'S PERSONAL



GA800 AC DRIVE

EASY, POWERFUL & RELIABLE

At Yaskawa, we know your time is valuable. That's why we've designed this variable speed drive to exceed your expectations.

Offering world class Yaskawa quality, along with intuitive interaction and high flexibility, the GA800 delivers powerful torque and precise control. Look no further than GA800 for all your variable speed needs.

WORLD CLASS DESIGN

Designed to control traditional and emerging motor technologies through 1000 HP, the GA800 handles applications ranging from simple fans and pumps to high performance test dynamometers requiring precise regulation.

In addition to its robust and powerful design, the GA800 provides highly flexible network communications, embedded functional safety, and easy-to-use tools featuring mobile device connectivity.

OUR COMMITMENT TO YOU.

200 - 240 VAC: 1 - 150 HP
380 - 480 VAC: 1 - 1000 HP
600 VAC: 125 - 500 HP

Bluetooth® and the Bluetooth logo are registered trademarks of Bluetooth SIG, Inc. USA.

MAKING IT EASY FOR YOU

- Forget the learning curve. Let GA800 guide you through its Setup Wizard to get you up and running in a snap!
- Enjoy the GA800's intuitive keypad with a vivid display and a host of friendly features.
- Experience ultimate ease-of-use and flexibility with DriveWizard PC and Mobile tools featuring Bluetooth® connectivity and cloud services.

MAKING IT FLEXIBLE FOR YOU

- Easily and impressively control all major 3-phase motors.
- Connect and control the GA800 from your favorite network.
- Customize GA800 from its rich set of control features.

MAKING IT SUSTAINABLE FOR YOU

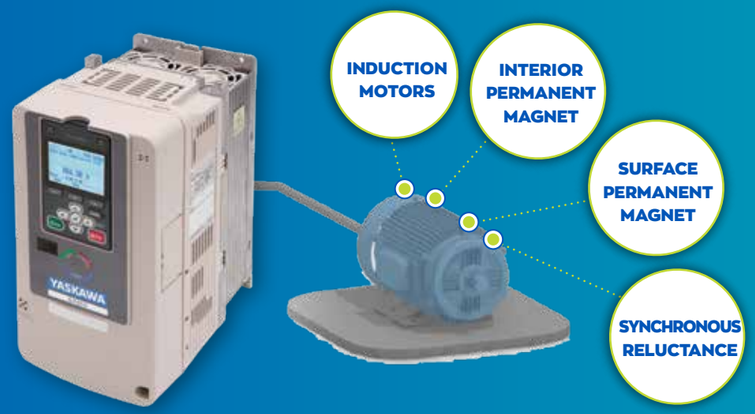
- Embedded Functional Safety reduces your down-time.
- Enjoy long life with conformal coated circuit boards and solutions for harsh environments.
- Electrical design that's friendly to your power system and surrounding equipment.
- Produced with materials responsible to our planet.

SIMPLICITY

ONE FOR ALL

The GA800 is the one drive you need for all types of motors. It precisely controls induction, permanent magnet and synchronous reluctance motors. Say goodbye to the days of complex motor setup!

Motor Control Benefits/Features:

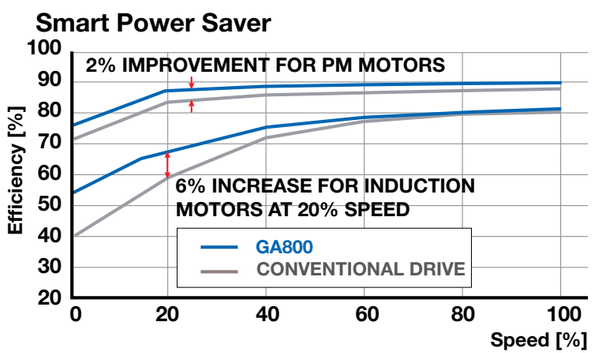


FLEXIBLE MOTOR CONTROL

- Controls traditional and emerging motor technologies
- Easy and accurate autotuning provides optimized performance for each connected motor
- Optimized control avoids tripping even with aggressive settings
- Impressive open loop vector control
- Precise and high response closed loop vector control 590Hz maximum frequency
- 110% normal duty overload
- 150% heavy duty overload
- Integrated brake transistor up to 125 HP (ND) / 100 HP (HD)

SAVE EVEN MORE ENERGY

Smart Power Saver mode reduces energy consumption at reduced speeds and loads for maximum efficiency and minimum operating costs



ANY WAY YOU WANT IT

Optimize your space, your way, by taking advantage of the GA800's installation flexibility.

INSTALL STANDARD (IP20) DRIVES IN CABINETS, SIDE-BY-SIDE

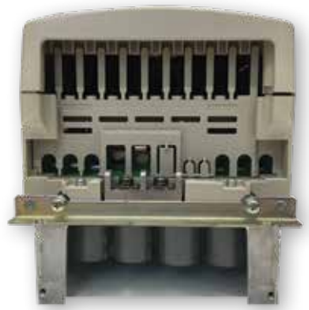
Small ratings capable of zero side clearance. See product instructions for details.

UTILIZE NEMA 1 KIT FOR CABINET-LESS INSTALLATIONS

INSTALL WITH HEATSINK EXPOSED FOR OPTIMIZED HEAT MANAGEMENT

Mounting for External Heatsink

Use standard drives with external heatsink for NEMA 1 environments



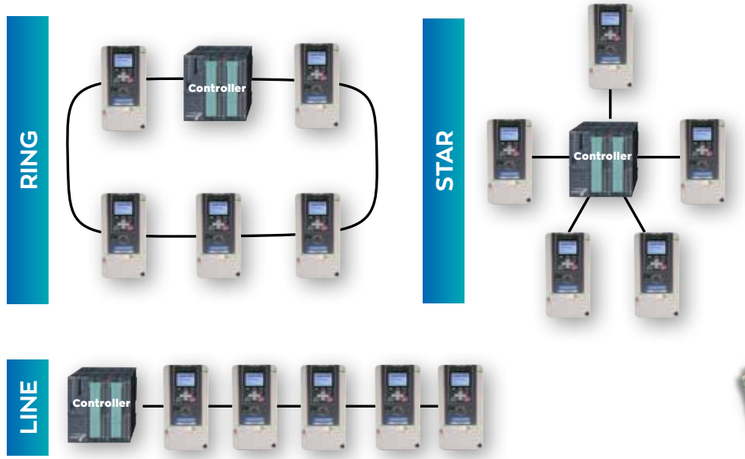
Use flange drives with external heatsink for NEMA 12 (dusty) environments

EFFORTLESS INTERFACE

GET CONNECTED

Whether you prefer discrete/analog control or high speed communication, GA800 covers all your needs for control interface and provides robust connections on all major networks.

CONFIGURATIONS



CONNECT WITH EASE

- Connect with standard network modules for conventional and robust star configurations
- Connect with dual port network modules and daisy-chain your connections for ring or line configurations. A great choice for decentralized drives
- Maintain control power with main power removed by supplying 24 VDC to the GA800's auxiliary input
- Connect up to 5 drives from a single network node by adding slave drives over the GA800's embedded RS-485

EMBEDDED FUNCTIONAL SAFETY

ZONE DEFENSE

When your application requires human interaction with mechanical dangers, the GA800 can help.

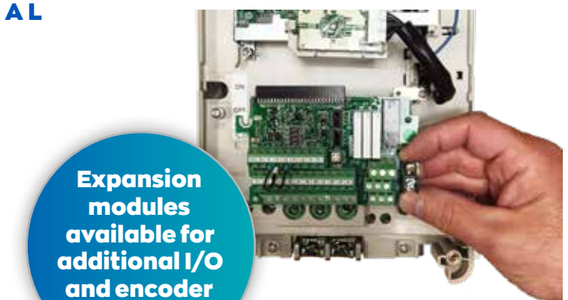
A standard feature of the GA800 is Safe Torque Off, which prevents torque production to the motor even while main input power remains applied. This minimizes your downtime when people enter your mechanical safety zone. Normal operation is resumed faster.

DeviceNet EtherNet/IP EtherCAT ETHERNET POWERLINK CC-Link CANopen Modbus MECHATROLINK PROFIBUS PROFINET

REMOVABLE STANDARD CONTROL TERMINAL BOARD FOR EASY WIRING CONNECTIONS

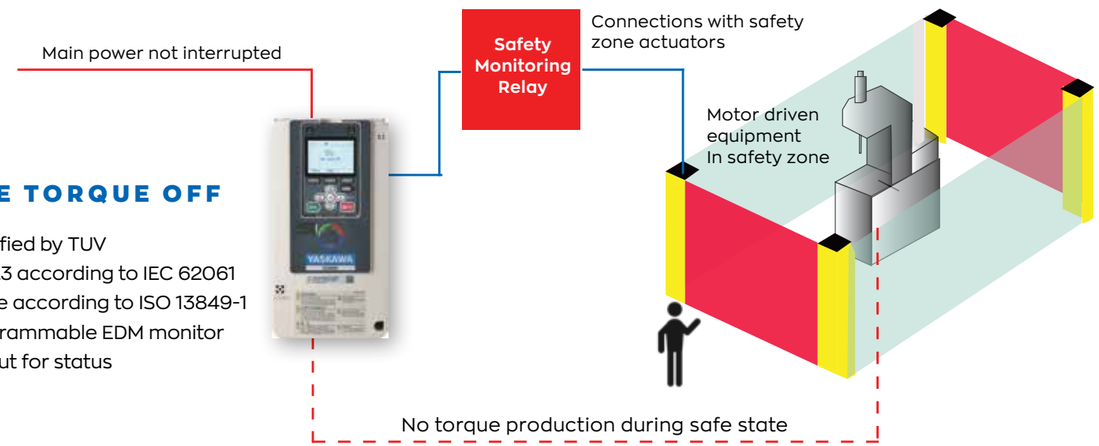
Standard Inputs:
- RS-485 Modbus RTU
- 8 digital, 3 analog, 1 pulse
- Safe Torque Off
- 24 VDC auxiliary power

Standard Outputs:
- 4 digital, 2 analog, 1 pulse
- 24 VDC supply for external sensors



SAFE TORQUE OFF

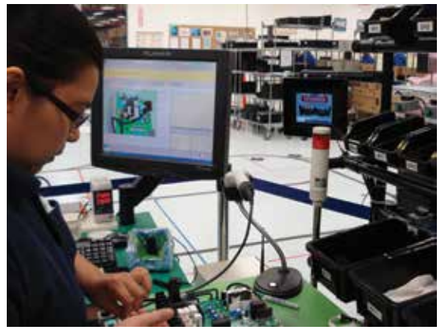
- Certified by TUV
  - SIL3 according to IEC 62061
  - PLe according to ISO 13849-1
- Programmable EDM monitor output for status



RUGGED AND LONG LASTING

FOR THE LONG HAUL

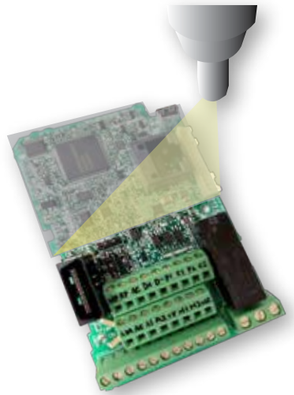
These are the cornerstones of Yaskawa, where we apply the latest proven technology and processes, to provide products you can trust.



PRODUCT TESTING RANGE

All Yaskawa products undergo rigorous testing during the design phase to ensure long life and problem-free operation.

- Maximum Temperature
- Maximum Load
- Maximum Voltage and Hi-Pot
- Electromagnetic Compatibility



COATED BOARD PROTECTION RANGE

In addition to an extremely robust design, we understand your environment may be less than perfect for electronics. That's why we've stacked the deck in your favor with conformal coating on all circuit boards to provide some "extra protection", meeting IEC 60721-3-3, 3C2, 3S3 levels.

PRODUCT CERTIFICATION

Designed to the most stringent electrothermal safety standards and certified with all major worldwide agencies

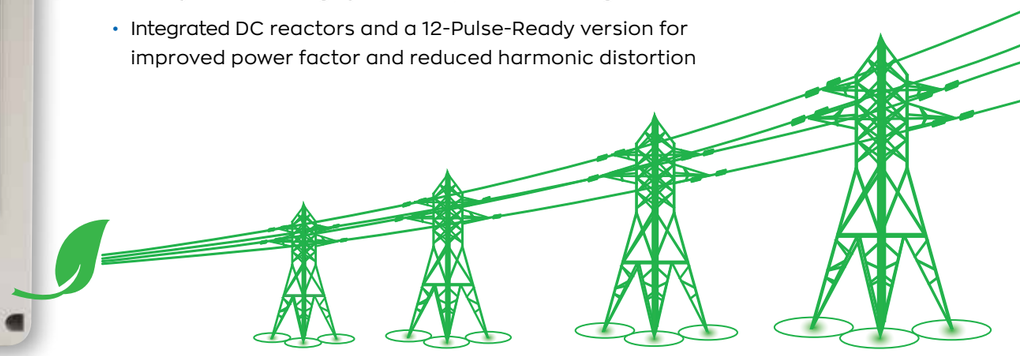
- UL and CSA
- TUV
- CE
- EAC
- RCM
- KCC
- SEMI-F47
- IEEE1668

PLANET FITNESS

Whether your concern is efficiency, power quality, or non-hazardous materials, Yaskawa products help you contribute to a healthy and sustainable environment.

YOUR POWER-FRIENDLY PARTNER

- Ability to control highly efficient permanent magnet motors
- Integrated DC reactors and a 12-Pulse-Ready version for improved power factor and reduced harmonic distortion



RoHS compliant

ZERO TOLERANCE

Rest assured that Yaskawa complies with strict environmental standards relative to use of hazardous substances.

Products are certified to the RoHS 2 Directive (2011/65/EU), which permits very small levels of lead, mercury, cadmium and others substances.

CONVENIENT AND EFFORTLESS

It’s so easy! Use the GA800’s resident keypad, your mobile device, or your personal computer. Whatever you choose, enjoy easy navigation and guided wizards for configuration, monitoring, and troubleshooting.

DRIVEWIZARD MOBILE

- Optional Bluetooth®-enabled keypad provides wireless connection to your smart-phone or tablet where you can experience colorful attractive dialog with the GA800.
- Alternatively, connect via USB, and interface with the GA800 even without main power!

LET US KEEP THAT SOMEWHERE SAFE FOR YOU!

Backup your drive settings by taking advantage of free cloud service from Yaskawa. Access the Yaskawa Drive Cloud from anywhere in the world via DriveWizard Mobile or from the web.

YASKAWA DRIVE CLOUD

- Scan the GA800’s QR code to locate existing cloud data or initiate new cloud data with drive identification pre-populated.
- Register, store and retrieve your personal drive configuration files unique to each serial number.
- Free storage of drive information including photos and other common file types.

STANDARD INTERFACE

PUSH MY BUTTONS!

The GA800 standard interface provides you with a crisp, large display that is intuitive and loaded with capability.

Copy Function
Multiple parameter sets can be stored and easily transferred to additional drives

High-Resolution Display
Large multi-language screen with contrast and backlight control

Automatic Back-up Function
Periodically copies parameters to keypad memory for safe keeping

Advanced Keypad Navigation
Fast scrolling, function keys, and shortcuts reduce your setup time

Micro SD Storage
Expandable memory (up to 32GB) for data logging storage

Real-Time Clock
For stamping your events with dates and times. Battery powered

Optional LCD Keypad With Bluetooth®
Wireless communication with your mobile device

SETUP WIZARD

Reduce configuration time using the setup wizard without any drive parameter knowledge.

POWERFUL MADE EASY

Unleash all that GA800 has to offer with Yaskawa's intuitive and flexible PC-based interface tools. Enjoy DriveWizard® Desktop for configuring, advanced monitoring, trending, and file storage. Create custom functions with DriveWorksEZ®.

DRIVEWIZARD® DESKTOP

- Connect via USB and interface with the GA800 even without main power!
- Create configurations offline, then later connect and download them to GA800.
- Monitor a dashboard of dynamic variables and discrete information.
- Chart your process with up to 6 channels of recorded data.
- Create reports for exporting and emailing.

DriveWorksEZ

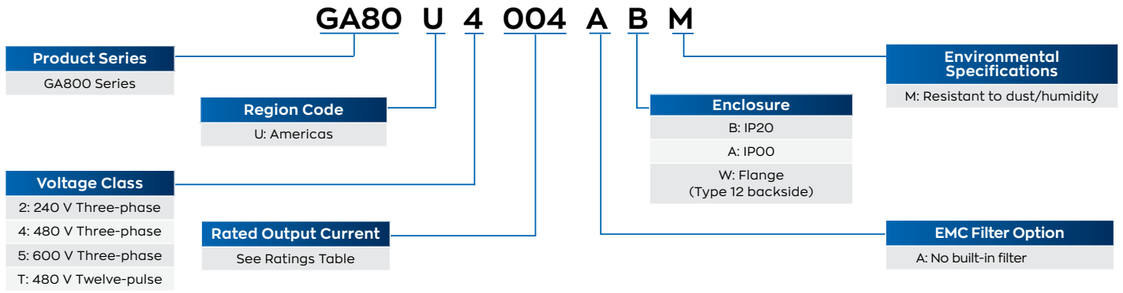
DriveWizard and DriveWorksEZ are registered trademarks of Yaskawa.

DRIVEWORKSEZ

- Drag-n-drop graphical interface
- Select from 280+ function blocks
- Logic/math functions
- Timers/counters
- Up to 200 connections, 400 blocks
- Constant scan cycle

SPECIFICATIONS

Catalog Code Designation



RATINGS

Power Output (HP)		240 V Models				480 V Models				600 V Models			
Normal Duty (ND)	Heavy Duty (HD)	Catalog Code GA80U □□□□□□□	Output Amps ND	Output Amps HD	Frame	Catalog Code GA80U □□□□□□□	Output Amps ND	Output Amps HD	Frame	Catalog Code GA80U □□□□□□□	Output Amps ND	Output Amps HD	Frame
1.0	0.75	2004ABM	4.2	3.5	1	4002ABM	2.1	1.8	1				
1.5	1	2006ABM	6	5	1								
2	1.5	2008ABM	8	6.9	1	4004ABM	4.1	3.4	1				
3	2	2010ABM	9.6	8	1	4005ABM	5.4	4.8	1				
4	3	2012ABM	12.2	11	1	4007ABM	7.1	5.5	1.5				
5	4	2018ABM	17.5	14	1.5	4009ABM	8.9	7.2	1.5				
7.5	5	2021ABM	21	17.5	1.5	4012ABM	11.9	9.2	1.5				
10	7.5	2030ABM	30	25	1.5	4018ABM	17.5	14.8	1.5				
15	10	2042ABM	42	33	1.5	4023ABM	23.4	18	1.5				
20	15	2056ABM	56	47	2	4031ABM	31	24	2				
25	20	2070ABM	70	60	3	4038ABM	38	31	2				
30	25	2082ABM	82	75	3	4044ABM	44	39	3				
40	30	2110ABM	110	88	4	4060ABM	59.6	45	3.5				
50	40	2138ABM	138	115	6	4075ABM	74.9	60	4				
60	50	2169ABM	169	145	7	4089ABM	89.2	75	6				
75	60	2211ABM	211	180	7	4103ABM*1	103	91	6				
100	75	2257ABM	257	215	9	4140ABM*1	140	112	7				
125	100	2313ABM	313	283	9	4168ABM*1	168	150	7				
150	125	2360ABM	360	346	10	4208ABM*1	208	180	9				
150	150	2415ABM	415	415	10								
200	150					4250ABM*1	250	216	9				
250	200					4302ABM*1	302	260	9				
300	250					4371ABM*1	371	304	10	5289ABM	289	242	10
350	300					4414ABM*1	414	371	10				
400	350					4477ABM*1	477	414	11	5382ABM	382	336	11
450	400					4568ABM*1	568	477	11	5412ABM	412	382	11
500	450					4605ABM*1	675	605	11	5472ABM	472	412	11
600	500					4720ABM*1	720	605	11				
700	600					4810AAM*2	810	720	12				
800	700					4930AAM*2	930	810	12				
900	800					4H11AAM*2	1090	930	12				
1000	900					4H12AAM*2	1200	930	12				

*1: 480V Twelve-Pulse versions are available as models T103AAM through T720AAM with the same current and power ratings as 4103ABM through 4720ABM)

*2: Models 4810AAM to 4H12AAM are user-configurable for either 6-Pulse (3-Phase) or 12-Pulse (6-Phase) input.

DIMENSIONS

Frame Size	Height	Width	Depth
1	10.2 (260)	5.51 (140)	6.93 (176)
1.5	10.2 (260)	5.51 (140)	8.31 (211)
2	11.8 (300)	7.09 (180)	7.95 (202)
3	13.8 (350)	8.66 (220)	8.94 (227)
3.5	13.8 (350)	8.66 (220)	9.69 (246)
4	15.7 (400)	9.45 (240)	11.0 (280)
6	17.7 (450)	10.0 (255)	11.0 (280)
7	21.4 (543)	10.4 (264)	13.2 (335)
9	27.6 (700)	12.3 (312)	16.5 (420)
10	31.5 (800)	17.3 (440)	18.6 (472)
11	44.72 (1136)	20.1 (510)	18.9 (480)
12	53.84 (1368)	29.92 (760)	17.32 (440)

Dimensions shown in inches (mm).

Information on this page represents Protected Chassis enclosures. For other enclosure types and enclosure adapters, please visit yaskawa.com.

SPECIFICATIONS

Item	Specification
Overload Capacity	150% for 60 sec. (HD), 110% for 60 sec. (ND)
Output Frequency	0 to 590 Hz
Control Methods	Open and Closed Loop Current Vector, Open and Closed Loop V/f
Motor Types	Induction, Surface Permanent Magnet, Interior Permanent Magnet, Synchronous Reluctance
Input Voltage & Frequency	**240V Class**: 200V -15% to 240V +10%, 50/60 Hz +/-5%, **480V Class**: 380V -15% to 480V +10%, 50/60 Hz +/-5%, **600V Class**: 480V -10% to 600V +10%, 50/60 Hz +/-5%, **All Voltage Classes**: Overvoltage Category III
Protective Design Types	IP20 (NEMA 1 kit available)
	Flange (Type 12 backside)
Contamination Resistance	Pollution degree 2 or less. Additionally, meets IEC 60721-3-3, Class 3C2 (chemical gases), Class 3S3 (solid particles)
Ambient Operating Temperature	-10 to +50°C (IP20 and flange types)
	-10 to +40°C (with NEMA 1 kit)
	Up to +60°C (with derate)
Storage Temperature	-40 to +70°C (short-term temperature during transportation)
Humidity	95% RH or less (non-condensing)
Altitude	Up to 1000 m without derating, up to 4000 m with derating
Vibration	10 Hz to 20 Hz: 1 G (9.8 m/s², 32.15 ft/s²) 20 Hz to 55 Hz: 2004 to 2211, 4002 to 4168: 0.6 G (5.9 m/s², 19.36 ft/s²) 2257 to 2415, 4208 to 4H12, 5125 to 5472: 0.2 G (2.0 m/s², 6.56 ft/s²)
Global Certifications	UL, CSA, CE, RCM, RoHS, SEMI-F47, IEEE1668
Functional Safety	Safe Torque Off, SIL3 according to IEC 62061, PLe according to ISO 13849-1 (600 V models pending, consult factory)
Standard I/O	(8) multi-function digital inputs (24Vdc)
	(3) multi-function analog inputs (0 +/- 10 VDC, 4-20 mA)
	(1) multi-function pulse inputs
	(2) Safe Torque Off inputs
	(1) fault relay output (form C)
	(3) multi-function relay outputs (form A)
	(2) multi-function analog output (0 +/- 10 VDC, 4-20mA)
	(1) multi-function pulse output
I/O Expansion	(3) Analog Inputs -10 to +10V, 13 bit plus sign, 4 to 20mA
	(16) Digital Inputs
	(2) Analog Outputs (-10 to +10V, 11 bit magnitude)
	(8) Digital Outputs (6 transistor, 2 relay)
Feedback (optional)	Incremental
	Absolute (Stegmann, Heidenhain, Resolver)
Network Communication	Standard: Modbus RTU, RS-485, 115 kbps
	Optional: EtherNet/IP, DeviceNet, Modbus TCP/IP, PROFINET, PROFIBUS-DP
Speed Control Range	1500:1 Closed Loop Vector (IM and PM Motors)
	200:1 Open Loop Vector (IM Motors)
	100:1 Open Loop Vector (PM Motors)
Speed Control Accuracy	≤ 0.02%: Closed Loop Vector; ≤ 0.2%: Open Loop Vector
Speed Response	≥ 50 Hz: Closed Loop Vector (Induction Motors)
	≥ 250 Hz: Closed Loop Vector (PM Motors)
	≥ 20 Hz: Open Loop Vector (Induction Motors)
	≥ 40 Hz: Open Loop Vector (PM Motors)
Function Block Diagrams	Up to 200 connections, 500 μs program scan time

YASKAWA.COM

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.

YASKAWA

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