

Commercial OEM Drive Products for AC and PM Motor Control



208V CLASS: 1/8 TO 150 HP
480V CLASS: 1/8 TO 500 HP
600V CLASS: 2 TO 250 HP



 **YASKAWA**

IT'S PERSONAL YASKAWA™

"It's Personal" means each Yaskawa associate is committed to providing you with a great experience every time you deal with us.

We train our people, we treat our customers, we design, engineer and manufacture our products in ways that say everything we do matters. And, when your job is to make sure that everything that matters is done well, you take that pretty personally.

We commit to that at Yaskawa. We can make it happen. Because to us, our relationship with you is personal.

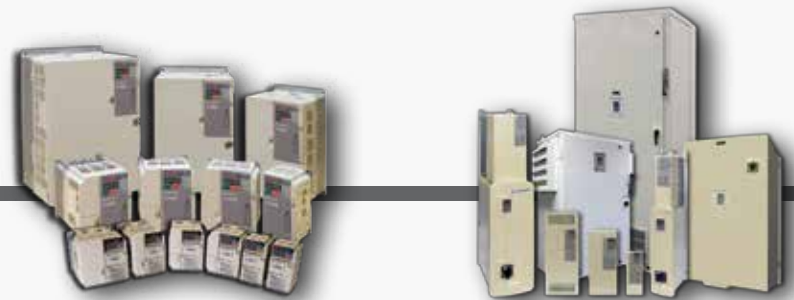


Providing an Exceptional Customer Experience...

Customers demand more flexibility, more control, more power, less downtime and more packaging options.

Yaskawa has provided North American drive solutions for applications of all types for more than 40 years and been manufacturing drives and building HVAC-type packages in the U.S. for the last 25 years. Over that time, we have worked to evolve our products and exceed industry standards, while ensuring an exceptional customer experience.

Our family of commercial HVAC drives combined with our compact, low-cost family of Microdrives provide a broad range of solutions for the Commercial OEM.



...With a Solid Foundation

As an HVAC OEM, in this ever-changing, increasingly government regulated world, the pressure to maintain focus and increase market share, as well as gross profit, is never ending.

As a manufacturer ourselves, we understand.

Companies like yours may have limited resources to determine if higher quality, increased flexibility, reduced costs, improved deliveries, and better support are possible.

Consider Yaskawa as a viable source for not only quality drives but also quality engineering, in-depth application experience, strong technical support and personable, efficient customer service before and after the sale.





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Top to Bottom Performance

Share with us your requirements and expectations. Let us see what we can do for you. Whether using AC or PM motors, Yaskawa drives offer the quality performance that OEMs need for a large range of applications:

- The Smallest Condenser Fans
- The Largest AHUs
- Pumps
- Compressors
- Cooling Towers
- Chiller Packages

Yaskawa has you covered.



Obsession with...

Quality

Our commitment to and obsession with quality has gained Yaskawa high marks in not only today's North American HVAC Industries, but in all industries throughout the world.

Reliability

Yaskawa's OEMs know our products and support are quietly working behind the scenes to keep their systems running efficiently.

Support

Yaskawa support is global, 24/7/365. As an integral part of an OEM's equipment, we understand the critical roles drives play in the OEM's ultimate business success. Our highly experienced sales force, backed by our application and design engineers, ensure best solutions and support for years of care-free operation with the lowest cost of product ownership.

Delivery

With over \$20M of finished goods in our midwest USA manufacturing and distribution facilities, we'd be hard-pressed not to meet your total drive and delivery requirements which are critical to your production schedules and revenue.

Value

While Drive costs are a part of determining value, most OEMs realize that quality, reliability, support, delivery and relationships are also fundamental keys to a successful partnership that can last a lifetime.

Environmental Considerations

Yaskawa maintains a corporate commitment to sustainability goals with an emphasis on the following environmental guidelines

RoHS

RESTRICTION OF HAZARDOUS
SUBSTANCES



LEADERSHIP IN ENERGY AND
ENVIRONMENTAL DESIGN



EPA PROGRAM TO PROMOTE
SUPERIOR ENERGY EFFICIENCY



ENERGY EFFICIENCY WITH
REDUCTION OF CARBON
FOOTPRINT

**Merging Green and
Technology**

Intelligent Building Design.

Our "Green" Future

It can be argued that variable frequency drives will become the most important technology to help intelligent buildings truly become intelligent.

Building owners continue to strive toward "green" energy efficiency goals that reduce carbon footprint and help meet corporate sustainability goals. **Yaskawa VFDs contribute toward LEED credits and certification.** It will also be a key technology to help buildings meet the requirements for Energy Star Certification.

The Heart of Your Systems

Air handling systems account for approximately 25% of electricity consumed by typical office buildings. Cooling systems account for about 14%. For a 100,000 sq. ft. building, total savings can range from \$10,000 to \$30,000 every year by using Yaskawa VFDs.

Drives are the heart of most HVAC systems built today. **With Yaskawa drives, you're guaranteed to a long and healthy life with respect to trouble-free and efficient operations while saving energy and reducing costs.**



AIR HANDLING SYSTEMS ACCOUNT
FOR APPROXIMATELY 25% AND
COOLING SYSTEMS FOR ABOUT 14%
OF THE ELECTRICITY CONSUMED BY
A TYPICAL OFFICE BUILDING.

Quantifying Yaskawa Quality.

Yaskawa commits to quality in all phases of its business, including:

- Research and development
- Supply chain management
- Production and quality control
- Sales and marketing
- Technical service and distribution

Yaskawa constantly tracks and measures product failures in time (FIT). The actual FIT data demonstrates a high quality and reliability rate that is the envy of our Industry.

Yaskawa's overall FIT is based on the failure reports received from the field for a period of time, monthly (including Warranty and Non-Warranty items), and is as follows:

- $FIT = \text{Qty of Failures} / [(30 \text{ days} \times 24 \text{ hours per day}) \times (\text{total qty of units shipped})] \times 10^9$. Our calculations follow the Bellcore TR-332 Standard.
- MTBF is defined for a repairable system and is calculated as the inverse number of FIT mentioned above ($MTBF = 1/FIT$).

We earned our quality numbers long ago and have been diligent in maintaining our record of unparalleled reliability and value.



With ISO 9001 certification, a Supplier Rating Program, and rigorous testing, Yaskawa ensures that quality and reliability are designed and built in.

Field data confirms that calculated MTBF (Mean Time Between Failure) targets are exceeded in actual production units. Yaskawa is the only manufacturer in the field of industrial automation to receive the Deming Prize for Quality.

INTERNAL ASSEMBLY FAILURE RATE



FIELD ASSEMBLY FAILURE RATE



Numbers only tell a part of our story.

At Yaskawa, Quality is more than numbers, more than awards – it's the **total experience** of purchasing and owning Yaskawa products and working with Yaskawa people.

What about?

- Innovative design.
- Knowledgeable and responsive application engineers who understand your business.
- Superior support and training.

Those crucial aspects of any business are what we call the Yaskawa Quality Experience.

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Yaskawa associates give us a significant advantage over our competitors. Knowledgeable. Quick to respond. Accountable. Committed to giving you the best service possible.

Yaskawa Drives Advantages



Exceptional Design

Yaskawa drives have demonstrated extremely high reliability with an average **MTBF of 28 years or more**. 1000 series drive products take reliability to the next level with a calculated design life that is twice as long as previous generations.

Highly Integrated Design results in fewer parts and interconnections, reducing the number of failure points.

Component Derating extends the life of any single part by selecting higher specifications (e.g., voltage, current) than what a circuit requires for normal operation.

Latest Generation IGBT Power Modules, capable of four times more thermal cycles than previous designs.

Enhanced Short Circuit Detection and Self Diagnostics provide additional protection against severe catastrophic conditions.

Inclusive power solutions on our Z1000 HVAC drives ensure protection and error free operation due to the use of integrated EMI/RFI filters, integrated line impedance, and integrated superior MOVs.



Thorough Product Qualification/Testing

No other manufacturer puts its products through as many tests, or as arduous a testing process as Yaskawa. All printed circuit boards are functionally tested while under power. All Yaskawa products are 100% tested under full current. Yaskawa conducts its own product qualification testing in its ISO certified test lab.

Products are tested not only under normal spec conditions, but also for the following:.



- Extreme Temperature/Humidity
- Vibration
- Package Drop
- Input Voltage Tolerance
- Noise Immunity
- Electrical Insulation Stress
- Under/Over-Voltage Protection
- Momentary Power Loss
- Output Short Circuit Protection
- Overload Protection
- Overload Protection
- Ground Fault Protection
- Washdown Test
- Input/Output Phase Loss Test
- Power ON/OFF & Start up Iterations

As a final step before release, Yaskawa drives and motion control products are installed in customer beta sites to perform application testing under actual conditions. Information learned during this process is incorporated into final product design before manufacturing begins. The result of this obsessive dedication to quality design – before we start to manufacture – is the certainty that we have it right. This process ensures improved performance, increases uptime, and lowers cost of ownership.

Cost Control in Manufacturing

Providing a high-quality product actually lowers manufacturing costs. Lean processes, rigorous inventory control, less defects and waste, fewer returns, and minimal repair/replacement translate to reduced costs that enable Yaskawa to offer a superior product at a very competitive price.

Yaskawa produces most of its commercial OEM drive products at its certified ISO 9001 manufacturing and distribution facilities in Buffalo Grove, IL and Oak Creek, WI. In order to control cost, some smaller HP units are manufactured in Japan for worldwide consumption.



Kaizen: Change for the Better

Yaskawa incorporates the Kaizen philosophy of continuous improvement into every facet of its operations. Kaizen literally means “change for the better”. By following this process, Yaskawa reduces waste and inefficiency, enhances process discipline and improves quality. The result? Our employees are actively involved in building teamwork, morale and product quality.



Defect Prevention

Yaskawa's manufacturing processes are designed to prevent defects. Production associates have paperless, on-line resources at their workstations, providing highly-detailed and up-to-date work instructions. Practice mechanisms are available in the Kaizen center for them to improve their assembly skills. Complex assemblies are made simple with the use of animations and video. These processes enable us to approach our ultimate goal of zero-defect manufacturing.



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Yaskawa Advantages

Technical Training

Both standard and customized courses are available to you with hands-on activities and demonstrations. Instruction is offered at Yaskawa locations, as well as traveling road shows across the country. This is supplemented by live web classes and on-demand e-Learning content to provide the right level of training to fit your needs. Trainers are degreed engineers with extensive industry experience.



Worldwide Services

Yaskawa offers worldwide support with application assistance, start-up, maintenance, troubleshooting and repair, as well as internet tools and telephone support. Sales and service offices are located around the world.



By visiting www.yaskawa.com, customers can access knowledge databases to obtain information, select products, and learn to maintain products. Our FAQs cover many facets of ownership and are derived from our field and telephone assistance with our customers.

In the Americas, telephone assistance is available 24/7/365 at 800-YASKAWA (927-5292). Our phone support group is product certified to assist you with current and legacy drive requirements.

Yaskawa's Field Service personnel and local Authorized Service Providers can provide on-site start-up assistance, troubleshooting, and repair. Same day exchange units or fast turnaround repairs are available.

**AVAILABLE
24/7/365**

Commercial OEM Drives

Product Lineup

Features	 J1000 Microdrive	 V1000 Microdrive	 Z1000 HVAC Drive
Voltage / HP Range	200-240V 1ph (1/8--3HP)	200-240V 1ph (1/4--5HP)	208V 3ph (3-150HP)
	200-240V 3ph (1/8--5HP)	200-240V 3ph (1/4--25HP)	480V 3ph (3-500HP)
	380-480V 3ph (1/2--7.5HP)	380-480V 3ph (1/2--25HP)	600V 3ph (3-500HP) ^{*1}
PM synchronous motor operation	No	Yes	Yes
Line Impedance (DC)	Optional (Separately mounted)	Optional (Separately mounted)	Built-in 5% Line Impedance (ALL HP's)
BACnet Communication	Not Available	Future Availability	Built-in (BTL Certified)
Real-time Clock	Not Available	Not Available	Standard w/ Timer functions
Power Supply	10.5Vdc; max 20ma	10.5Vdc; max 20ma	24Vdc,150ma for customer use
Analog Inputs	(0-10Vdc) or (4-20ma)	(0-10Vdc) and (0-10Vdc or 4-20ma)	(0-10Vdc) and (0-10Vdc or 4-20ma)
Analog Outputs	Qty-1 Programmable 0-10Vdc (2mA)	Qty-1 Programmable 0-10Vdc (2mA)	Qty-2 Programmable 0-10Vdc or 4-20ma
Digital Inputs	5 Programmable	7 Programmable	7 Programmable
Digital Outputs	Qty-1 Form "C" Fixed Fault Relay (Rated 250Vac/30Vdc; 1A)	Qty-1 Form "C" Fault Relay (rated 250Vac/30Vdc, 1A); Qty-2 Photo-Couplers (rated 48Vdc; 2-50ma)	Qty-1 Form "C" Fixed Fault Relay; Qty-3 Form "A" Programmable Relays; (Rated 250Vac/30Vdc; 2A)
Modbus RS485/422	Optional (RS-485/422) or (RS232C)	Standard	Standard
H-O-A Keypad	Standard	Standard	Standard
PI or PID Control	Not Available	PID Control	Drive PI Control & External PI Loop
Plenum Rated	Yes (requires NEMA 1 Kit) sold separately	Yes	Yes
RoHS Compliant	Yes	Yes	Yes
Internal Bypass Logic	Not Available	Not Available	Allows User ability to transfer to Bypass using Drive's logic/ digital output if Drive fails.
IQ Bypass Software	Not Available	Not Available	Allows User ability to transfer to Bypass when operating at 60Hz. Saves Energy / Reduces Harmonics
OSHDP/IBC Seismic Certification	No	No	Yes

*1: 600V models are not OSHDP/IBC certified. Built-in 5% line impedance, noise filter, and sealed heatsink are options on these models

Microdrives

J1000 Series Microdrives:

Great Things Come in Small Packages



- Capacity Range: 1/8 to 7.5 HP
- Low cost and compact PWM design provides low motor noise and high starting torque
- Copy function for convenient parameter storage and recall
- Current overload: 150% for 60s (heavy duty); 120% for 60 s (normal duty)
- Multi-function I/O (5 digital; 1 analog); Multi-function outputs (5 digital; 1 analog)
- Digital operator interface for easy and quick configuration
- Speed search function for automatic restart after power loss
- Compact design with side-by-side mounting
- Dynamic braking transistor standard
- RoHS compliant
- Swing PWM function to decrease noise at low carrier frequencies
- Optional RS-422/485 Modbus RTU serial communication port
- Ingenious pre-maintenance function

J1000 is the OEM's choice whenever low cost, simplicity, and micro-size drives are required.

V1000 Series Microdrives:

A World of Power in the Palm of Your Hand



- HP Range: 1/8 to 25 HP
- Permanent magnet synchronous motor (PM) operation
- Removable terminal block with parameter backup function
- Current overload: 150% for 60s (heavy duty); 120% for 60 s (normal duty)
- PID function with loss of feedback for process control without additional hardware
- Copy keypad function for convenient parameter uploading and downloading
- Compact design with side-by-side mounting
- Dynamic braking transistor standard
- RoHS compliant
- Application presets
- Super-fast 2ms scan rate with dual CPU
- Safe Torque Off minimizes downtime for applications requiring occasional intervention
- Modbus Communication up to 115 kbps
- Swing PWM function to decrease noise at low carrier frequencies
- Preventative maintenance function
- Available in NEMA-4X version with integral enclosure that meets NEMA type 4X/12 indoor use requirements, UL type 4X/12 standards, and the IP66 rating of IEC 529
- Accepts CASE software to add functionality to the drive by reconfiguring drive defaults, establishing presets for OEM equipment, and eliminating peripheral controls and PLCs.



V1000 is the best in class choice when performance, flexibility and compact size are required.

Z1000 HVAC Drives

Z1000 Variable Frequency Drives

Advanced Fan/Pump Control

- Capacity range: 3 to 500 HP
- Motor types: Squirrel-cage induction or interior permanent magnet (IPM)
- Current overload capacity: 110% for 60
- V/Hz control or open loop vector control for permanent magnet motors
- Standard I/O:
 - 7 multi-function programmable digital inputs (24VDC)
 - 2 multi-function programmable analog inputs (0-10VDC or 4-20mA)
 - 1 fault relay output (Form C - 2A at 250VAC max)
 - 3 multi-function programmable relay outputs (Form A - 2 A at 250VAC max)
 - 2 multi-function programmable analog outputs (0-10Vdc or 4-20mA)
 - 1 transducer or transmitter power supply (24 VDC, 150 mA) for customer use



Design Features for HVAC

- **Harmonic Mitigation**^{*1}: Built-in 5% line impedance for input harmonic reduction.
- **Noise Filter**^{*1}: On board EMI/RFI filter complies with IEC 61800-3 restricted distribution for first environment.
- **Serial Communications**: Embedded BACnet communications (BTL Certified), with Apogee, Metasys, Modbus/Memobus.
- **Building Communication Protocols** support more than 100 data points ensuring maximum flexibility
- **Integrated MOV protection** provides quick and reliable protection against surge events
- **Internal Phase Sensing** protects your Z1000 investment from premature failures.
- **Industry Compliance**: Plenum rated (UL 1995). Seismic rated (IBC 2012)^{*2}, OSHPD (OSP-0293-10)^{*2}, made with RoHS compliant materials
- **Internal Real-Time Clock**: Time and date stamping for events, along with timer controls for starting stopping and speed changes without the need for external controls.
- **PI Feature**: Maintains a set point for closed loop control of fans and pumps for pressure, flow or temperature regulation and eliminates the need for a closed loop output signal from a BAS. Independent PI to control an external device in the system.
- **LCD Operator**: 5-Line 16 character alpha-numeric, easy to read and understand display, with copy and Hand-Off-Auto functions.
- **Belt Break Indication** thru keypad, digital output or building's communication protocol indication of fan belt has failed.
- **Carrier Frequency**: 5 kHz carrier frequency with dynamic noise control for quiet motor operation.
- **Application Macros**: Choose from pre-configured set up macros to match the application for quick and easy set up.
- **Sealed Heatsink**^{*1}: Allows for drive to be mounted in a NEMA 12 enclosure with heatsink external.
- **Bypass and Configured Drive Packages** available in UL Type 1, 12, and 3R enclosures

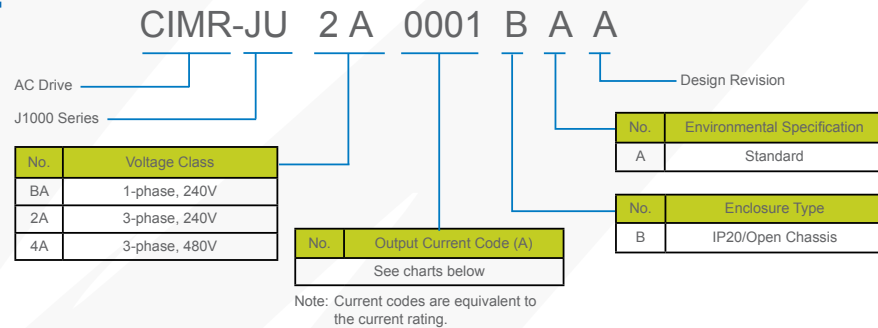


*1: Optional, 300-500HP and 600V Models

*2: Not applicable to 600V Models

J1000 Microdrive Models and Specifications

Model Number



240V Class

Single Phase Models

Model Number	Max Capacity (HP)		Rated Current (A)		J1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-JUBA0001	1/8 & 1/4	1/8	1.2	0.8	2.7	5.0	3.0
CIMR-JUBA0002	1/4	1/4	1.9	1.6	2.7	5.0	3.0
CIMR-JUBA0003	1/2 & 3/4	1/2	3.3	3.0	2.7	5.0	4.6
CIMR-JUBA0006	1 & 1.5	3/4 & 1	6.0	5.0	4.3	5.0	5.4
CIMR-JUBA0010	2 & 3	2	9.6	8.0	4.3	5.0	6.1

Three Phase Models

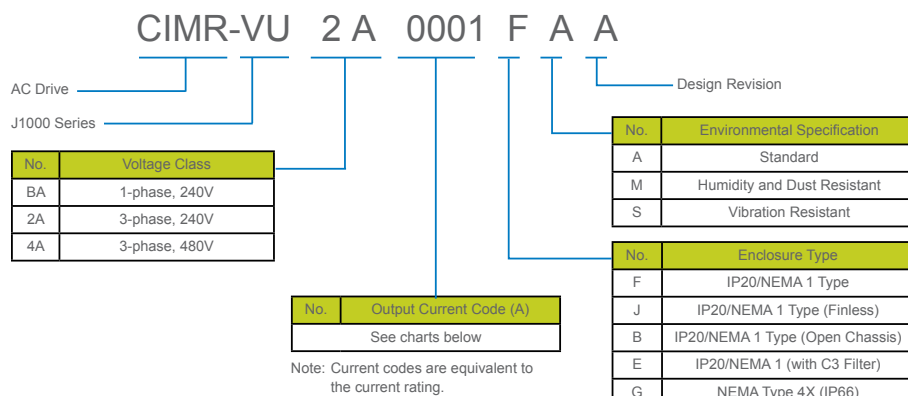
Model Number	Max Capacity (HP)		Rated Current (A)		J1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-JU2A0001	1/8 & 1/4	1/8	1.2	0.8	2.7	5.0	3.0
CIMR-JU2A0002	1/4	1/4	1.9	1.6	2.7	5.0	3.0
CIMR-JU2A0003	1/2 & 3/4	1/2	3.5	3.0	2.7	5.0	4.3
CIMR-JU2A0006	1 & 1.5	3/4 & 1	6.0	5.0	2.7	5.0	5.0
CIMR-JU2A0010	2 & 3	2	9.6	8.0	4.3	5.0	5.1
CIMR-JU2A0012	3	3	12.0	11.0	4.3	5.0	5.4
CIMR-JU2A0020	5	5	19.6	17.5	5.5	5.0	5.6

480V Class

Model Number	Max Capacity (HP)		Rated Current (A)		J1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-JU4A0001	1/2	1/2	1.2	1.2	4.3	5.0	3.2
CIMR-JU4A0002	3/4 & 1	3/4	2.1	1.8	4.3	5.0	3.9
CIMR-JU4A0004	2	2	4.1	3.4	4.3	5.0	5.4
CIMR-JU4A0005	3	3	5.4	4.8	4.3	5.0	6.1
CIMR-JU4A0007	4	3	6.9	5.5	4.3	5.0	6.1
CIMR-JU4A0009	5	4	8.8	7.2	4.3	5.0	6.1
CIMR-JU4A0011	7.5	5	11.1	9.2	5.5	5.0	5.6

V1000 Microdrive Models and Specifications

Model Number



240V Class Single Phase Models

Model Number	Max Capacity (HP)		Rated Current (A)		V1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-VUBA0001	1/4	1/8	1.2	0.8	2.68	5.04	2.99
CIMR-VUBA0002	1/4	1/4	1.9	1.6	2.68	5.04	2.99
CIMR-VUBA0003	3/4	1/2	3.3	3.0	2.68	5.04	4.65
CIMR-VUBA0006	1	1	6.0	5.0	4.25	5.04	5.41
CIMR-VUBA0010	3	2	9.6	8.0	4.25	5.04	6.06
CIMR-VUBA0012	3	3	12.0	11.0	5.51	5.04	6.42
CIMR-VUBA0018	5	5	17.5	17.5	6.69	5.04	7.09

Three Phase Models

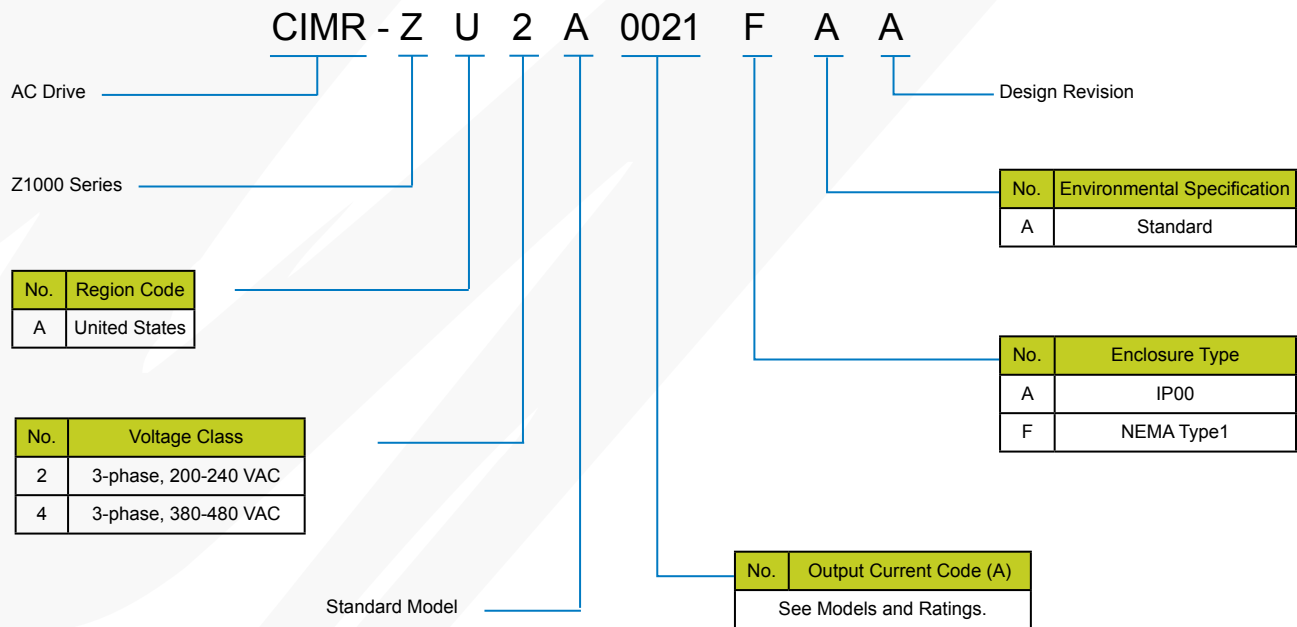
Model Number	Max Capacity (HP)		Rated Current (A)		V1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-VU2A0001	1/4	1/8	1.2	0.8	2.68	5.04	2.99
CIMR-VU2A0002	1/4	1/4	1.9	1.6	2.68	5.04	2.99
CIMR-VU2A0004	3/4	1/2	3.5	3.0	2.68	5.04	4.65
CIMR-VU2A0006	1	3/4 & 1	6.0	5.0	2.68	5.04	5.04
CIMR-VU2A0010	3	2	9.6	8.0	4.25	5.04	5.08
CIMR-VU2A0012	3	3	12.0	11.0	4.25	5.04	5.41
CIMR-VU2A0020	5	5	19.6	17.5	5.51	5.04	5.63
CIMR-VU2A0030	10	7.5	30	25	5.51	9.7	5.5
CIMR-VU2A0040	10	10	40	33	5.51	9.7	5.5
CIMR-VU2A0056	20	15	56	47	7.09	11.2	6.4
CIMR-VU2A0069	25	20	69	60	8.70	13.2	7.4

480V Class

Model Number	Max Capacity (HP)		Rated Current (A)		V1000 Dimensions (in.)		
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty	Height	Width	Depth
CIMR-VU4A0001	1/2	1/2	1.2	1.2	4.25	5.89	3.19
CIMR-VU4A0002	1	3/4	2.1	1.8	4.25	5.89	3.90
CIMR-VU4A0004	2	2	4.1	3.4	4.25	5.89	5.41
CIMR-VU4A0005	3	3	5.4	4.8	4.25	5.89	6.06
CIMR-VU4A0007	4	3	6.9	5.5	4.25	5.89	6.06
CIMR-VU4A0009	5	4	8.8	7.2	4.25	5.89	6.06
CIMR-VU4A0011	7.5	5	11.1	9.2	5.51	6.02	5.63
CIMR-VU4A0018	10	10	17.5	14.8	5.51	10.00	5.51
CIMR-VU4A0023	15	10	23	18	5.51	10.00	5.51
CIMR-VU4A0031	20	15	31	24	7.09	11.42	5.63
CIMR-VU4A0038	25	20	38	31	7.09	11.42	6.42

Z1000 HVAC Drive Models and Specifications

Model Number



208V Class

Model Number	Nominal HP	Rated Current (A)	Z1000 Dimensions (in.)			Weight (lb)
			Height	Width	Depth	
CIMR-ZU2A0011FAA	3	10.6	14.06	4.88	8.58	12.3
CIMR-ZU2A0017FAA	5	16.7	14.06	4.88	8.58	13.0
CIMR-ZU2A0024FAA	7.5	24.2	17.60	4.88	9.17	16.3
CIMR-ZU2A0031FAA	10	30.8	17.60	4.88	9.17	17.2
CIMR-ZU2A0046FAA	15	46.2	20.08	7.87	9.35	26.5
CIMR-ZU2A0059FAA	20	59.4	20.08	7.87	9.35	28.7
CIMR-ZU2A0075FAA	25	74.8	21.33	10.04	10.37	59.5
CIMR-ZU2A0088FAA	30	88.0	21.33	10.04	10.37	61.7
CIMR-ZU2A0114FAA	40	114	21.33	10.04	10.37	63.9
CIMR-ZU2A0143FAA	50	143	30.47	13.39	15.75	143.3
CIMR-ZU2A0169FAA	60	169	30.47	13.39	15.75	149.9
CIMR-ZU2A0211FAA	75	211	30.47	13.39	15.75	154.3
CIMR-ZU2A0273FAA	100	273	30.47	13.39	15.75	160.9
CIMR-ZU2A0343AAA	125	343	31.5	19.69	13.78	216
CIMR-ZU2A0396AAA	150	396	31.5	19.69	13.78	218

Z1000 HVAC Drive Models and Specifications

480V Class

Model Number	Nominal HP	Rated Current (A)	Z1000 Dimensions (in.)			Weight (lb)
			Height	Width	Depth	
CIMR-ZU4A0005FAA	3	4.8	14.06	4.88	8.58	11.9
CIMR-ZU4A0008FAA	5	7.6	14.06	4.88	8.58	12.6
CIMR-ZU4A0011FAA	7.5	11.0	14.06	4.88	8.58	13.4
CIMR-ZU4A0014FAA	10	14.0	17.60	4.88	9.17	16.1
CIMR-ZU4A0021FAA	15	21.0	17.60	4.88	9.17	16.8
CIMR-ZU4A0027FAA	20	27.0	17.60	4.88	9.17	18.5
CIMR-ZU4A0034FAA	25	34.0	20.08	7.87	9.35	28.7
CIMR-ZU4A0040FAA	30	40.0	20.08	7.87	9.35	28.7
CIMR-ZU4A0052FAB	40	52.0	20.08	7.87	9.35	28.7
CIMR-ZU4A0052FAA	40	52.0	21.33	10.04	10.37	59.5
CIMR-ZU4A0065FAA	50	65.0	21.33	10.04	10.37	63.9
CIMR-ZU4A0077FAA	60	77.0	21.33	10.04	10.37	68.3
CIMR-ZU4A0096FAA	75	96.0	21.33	10.04	10.37	70.5
CIMR-ZU4A0124FAA	100	124	27.56	10.87	11.38	101.4
CIMR-ZU4A0156FAA	125	156	30.47	13.39	15.75	160.9
CIMR-ZU4A0180FAA	150	180	30.47	13.39	15.75	167.6
CIMR-ZU4A0240FAA	200	240	30.47	13.39	15.75	174.2
CIMR-ZU4A0302FAA	250	302	41.14	17.91	18.90	286.6
CIMR-ZU4A0361AAA	300	361	31.50	19.70	13.78	236.0
CIMR-ZU4A0414AAA	350	414	37.40	19.70	14.57	275.0
CIMR-ZU4A0480AAA	400	480	44.88	26.38	14.57	476.0
CIMR-ZU4A0590AAA	500	590	44.88	26.38	14.57	487.0

600V Class

Model Number	Nominal HP	Rated Current (A)	Z1000 Dimensions (in.)			Weight (lb)
			Height	Width	Depth	
CIMR-ZU5A0003FAA	2	2.7	11.8	5.5	5.8	7.5
CIMR-ZU5A0004FAA	3	3.9	11.8	5.5	5.8	7.5
CIMR-ZU5A0006FAA	5	6.1	11.8	5.5	6.5	8.2
CIMR-ZU5A0009FAA	7.5	9.0	11.8	5.5	6.5	8.2
CIMR-ZU5A0011FAA	10	11	11.8	5.5	6.6	9.0
CIMR-ZU5A0017FAA	15	17.5	13.4	7.1	7.1	13.2
CIMR-ZU5A0022FAA	20	22	13.4	7.1	7.1	13.2
CIMR-ZU5A0027FAA	25	27	15.8	8.7	8.7	19.2
CIMR-ZU5A0032FAA	30	32	15.8	8.7	8.7	19.2
CIMR-ZU5A0041FAA	40	41	20.3	11.0	11.0	59.5
CIMR-ZU5A0052FAA	50	52	20.3	11.0	11.0	59.5
CIMR-ZU5A0062FAA	60	62	28.7	13.0	13.0	99.2
CIMR-ZU5A0077FAA	75	77	28.7	13.0	13.0	99.2
CIMR-ZU5A0099FAA	100	99	28.7	13.0	13.0	99.2
CIMR-ZU5A0125AAA	125	125	27.8	17.8	17.8	174.2
CIMR-ZU5A0145AAA	150	145	27.8	17.8	17.8	174.2
CIMR-ZU5A0192AAA	200	192	31.5	19.7	19.7	235.9
CIMR-ZU5A0242AAA	250	242	31.5	19.7	19.7	235.9

Drive Packages

Z1000 Bypass Package

Intelligent Bypass / Advanced BAS Interface

- Two Contactor Bypass
- 100K AIC Package Rating
- Input “Non-Fused” Disconnect
- Drive H-O-A Keypad used for Bypass
- Standard Digital Inputs (5): Run, Safety, BAS Interlock, Auto Transfer to Bypass, Smoke Purge; Programmable Digital Inputs (3); Form “C” Programmable Relays (4)
- All Bypass Functions Work with Serial Communications
- Phase Loss & Low Voltage Monitor – Protects Against Contactor Coil Burn-out
- Motor Amp Display in Bypass
- Duct Pressurization Function (Pre-run)
- Bypass Sync



Z1000 Configured Package

Custom Value Add Packages



- Lockable main input disconnect switch
- 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
- 24 Vdc, 150 mA transmitter power supply
- Input and output terminal status indication
- Built-in BACnet protocol (BTL certified), Apogee, Metasys, Modbus/Memobus accessible via RS-422/485 communication, which is standard
- LCD keypad: Hand/Off/Auto functions with built-in copy feature
- Flash upgradeable firmware
- “Bumpless” transfer between Hand and Auto modes
- Emergency override can be used as “smoke purge” function

V1000-4X Package

Washdown, Dust Tight

- Meets NEMA Type 4X/12 indoor use requirements; UL Type 4X/12 Standards; IP66 rating of IEC60529; RoHS Compliance
- Permanent magnet synchronous motor (PM) operation
- Open loop current vector control can deliver excellent starting torque and performance (200% at 0.5 Hz)
- On-line auto-tuning
- Function Block Diagram (FBD) programming via DriveWorksEZ®
- Removable terminal block with parameter backup function
- “One-touch” copy function with verify
- Super-fast 2 ms scan cycle with dual CPU
- Safe Torque Off minimizes downtime for applications requiring occasional intervention
- Communication options that support all major industrial networks



Enclosure Options

NEMA 1 Packages

Yaskawa offers a standard NEMA 1 (UL Type 1) package for Z1000 bypass and configured units. All units are UL rated, with the bypass and configured packages built to UL 508A (Industrial Control Panel) standards. Installation, setup, service, and quick delivery have all been considered in these package designs.



NEMA 12 Packages



Z1000 bypass and configured packages are available with a NEMA 12 (UL Type 12) enclosure option. Fans, when required are provided with Type 12 rated filters to maintain a Type 12 rating on the enclosure.

Standard Construction Features include:

- 12 Gauge Steel
- Whole Door Gasket
- Lifting Eyes
- Padlock Hasp
- Integral ¼ Turn Door Latches
- Removable Air Filter from Outside of Cabinet

NEMA 3R Packages

Z1000 bypass and configured packages are offered with a NEMA 3R (UL Type 3R) enclosure option.

Standard Construction Features include:

- 12 Gauge Steel
- Whole Door Gasket
- Brass Hinges
- Lifting Eyes
- Stainless Steel Hardware
- Padlock Hasp
- Integral ¼ Turn Door Latches
- UV/Type 3R Keypad Membrane
- Sun Reflective White Powder Coat Paint



Fully Engineered Packages



Both end users and OEM customers have come to rely on our fully-engineered products. These products are based off of our standard configurations but evolve into a customized package just for you.

Engineered packages include:

- Redundant Drive Packages
- 12 or 18 Pulse Configurations
- Soft Start Bypass Packages
- Integrated Trap Filter Packages
- Multiple Motor Configurations (2 motor “OR”, 2 motor “AND”, and fan array)

Engineered packages can be provided as NEMA 1, 12 or 3R. They are supported with custom engineered drawings and documentation.

Notes

We take quality personally at Yaskawa. Our drives and servo packages offer the highest MTBF in the world. The relationships we have with our customers ensure mutual benefits. The partnerships we cultivate with our distributors add value to the way we work with you. We hire great people and continuously train them to be able to serve your needs better. We deliver product on time. It works out of the box.

We answer questions promptly and never say, "we can't."

To us, quality means doing everything we can to make our customer, partner, and employee experiences great.

We commit to that philosophy every day. We make it happen. We can because, to us,
IT'S PERSONAL.



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