

YASKAWA

YASKAWA AC DRIVES

DMC

Drives Motors Controls



Yaskawa AC Drives
The Global Leader in Quality and Reliability

Certified for
ISO9001 and
ISO14001



JQA-QMA14913 JQA-EM0202

Always One Step Ahead

Global Standard: Yaskawa AC Drives

With world-leading quality and technology, Yaskawa delivers AC Drives that help preserve the environment, support comfortable lifestyles, and improve the efficiency and productivity of industrial machines all over the world.

F E A T U R E S



Environmentally Friendly Drives

Yaskawa offers an energy efficient drive that maximizes motor performance. We also provide a variety of environmentally friendly drives, including models fully compliant with the EU's RoHS directive.

We can help you to build eco-friendly systems with our strong lineup of general-purpose and application-specific AC Drives.



Safe and Reliable Drives

Yaskawa continues to improve AC Drive technology to minimize unpleasant electromagnetic noise, the effects of harmonic currents and noise on the power-supply line, as well as motor stress and current leakage that could result in degraded insulation or bearing corrosion. Yaskawa offers safe, reliable, and high-quality AC Drives compliant with global safety standards and loaded with a wide variety of safety features.



Easy-to-Use Drives

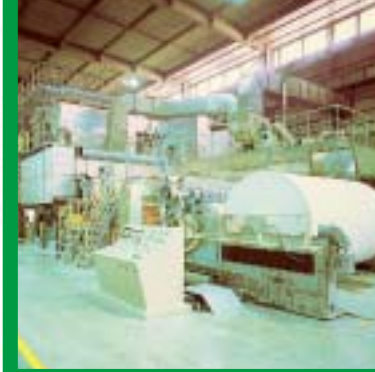
Yaskawa's technology is a product of our extensive knowledge and years of experience in various fields, giving us the flexibility to respond to all your application needs.

As part of Yaskawa's endless pursuit to make AC Drives more user-friendly, Yaskawa's AC Drives go beyond advanced performance and function. In addition to high-torque, ripple-less operation at low speeds and high-precision, high-speed response, Yaskawa AC Drives are also capable of restarting a coasting motor even in reverse, useful for restarting operation after momentary power loss. Our new product line is easier than ever to maintain, as well as impressively small and lightweight. With so many features focused on the user, Yaskawa AC Drives can be easily adopted to a wide range of applications.



Global Standard Drives

Yaskawa's AC Drives provide support for a variety of field network systems all over the world. This feature enables flexible system construction, expansion, efficient wiring, and connection to a host PLC. Yaskawa's AC Drives comply with UL, cUL, CE, and other international standards. Multi-language support is also available.



- Fans and pumps
- Construction and engineering machinery
- Machinery for paper processing and printing press
- Metallic processing machines and machine tools
- Textile machinery



Yaskawa AC Drives: The Global Leader in Quality and Reliability
Working Together for a Greener Environment

- Packing machinery
- Food processing machinery
- Handling machines
- Chemical processing machinery
- Machinery for the lumber industry



- Health, medical, and welfare-related devices
- Amusement rides, devices, and facilities
- Environment and lifestyle-related devices
- IT-related devices



Both General-Purpose and Application Specific Drives as well as System Solutions

Yaskawa Drives

Today's industrial needs for automated, labor saving, higher speed, and energy-efficient systems are greater than ever. This change has led to a diversification in demand for variable speed drives, resulting in rapid expansion in AC Drive applications because of their high reliability and maintainability.

Yaskawa's AC Drives, with a rich line-up to handle any demand from general-purpose to specialized applications, are ideal for FA and FMS.

Features

• Optimum drives

A wide range of products are available for each application: from general to specialized use, and from small to large capacity.

• More compact than ever

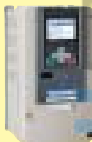





The most advanced design techniques in combination with large-scale integrated circuit technology allow for an impressively compact drive.

• Excellent reliability and maintainability

Product reliability has been improved across the board, with special emphasis placed on high-speed, high-performance trace-back functions for simplified maintenance and inspection.

• High-precision

The most advanced digital technology and high-performance vector operation provide total control and high-speed response for DC motors.

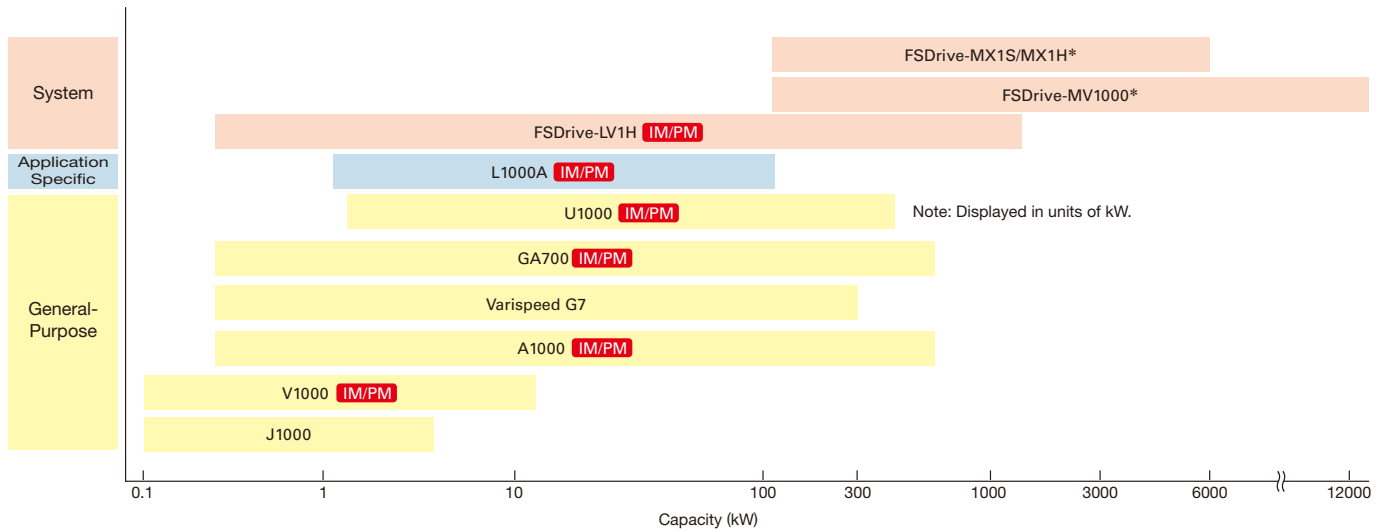
AC Drive		Features	Model	Max. Motor Output (kW)	Control		Braking		Speed Control			
					V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)		
General-Purpose		High Performance Drive	GA700 (V/f)		●	●			1 : 40			
			GA700 (V/f with PG)	0.4  110*1	●		●		1 : 40			
			GA700 (Open Loop Vector)			●	●		1 : 200 1 : 200*2	±0.2		
			GA700 (Closed Loop Vector)			●	●		1 : 1500	±0.02		
			GA700 (Advanced Open Loop Vector for PM)	0.4  630*1		●	●		1 : 20 1 : 100*3	±0.2		
			GA700 (Closed Loop Vector for PM)			●	●		1 : 1500	±0.02		
			GA700 (EZ Open Loop Vector Control)			●	●		1 : 100	±0.2		
		Low Harmonics Regenerative Matrix Converter	U1000 (V/f)		●		●		1 : 40	±2 to 3*5		
			U1000 (V/f with PG)		●		●		1 : 40	±0.03		
			U1000 (Open Loop Vector)	5.5  55*4		●		●		1 : 200	±0.2	
			U1000 (Closed Loop Vector)	2.2  500*4		●		●		1 : 1500	±0.02	
			U1000 (Advanced Open Loop Vector for PM)			●		●		1 : 20 1 : 100*3	±0.2	
			U1000 (Closed Loop Vector for PM)			●		●		1 : 1500	±0.02	

*1: Under development (To be released when available). Please contact your Yaskawa sales representative for details.

*2: When using Advanced Open Loop Vector Control *3: When using Advanced Open Loop Vector Control for PM

*4: Displayed in units of kW. The rated output current of the drive should be equal to or greater than the motor rated current. *5: Varies according to motor slip

AC Drive Series





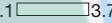








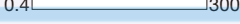












IM/PM Indicates drives can run both induction and permanent magnet motors.

* Max. motor output expressed in kVA for FSDrive-M products.
















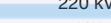

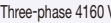
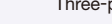

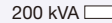
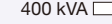

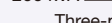
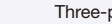
	Torque Control	Rated/Max. Freq. or Rated/Max. Speed	Global Safety Standards	Protective Design	Product Overview
	—				Catalog No. KAEP C710617 00
	—		CE*6 UL/cUL*6 ISO/ EN13849-1		<ul style="list-style-type: none"> Higher energy savings can be achieved with new functions that monitor power consumption for maximum energy efficiency. The new "EZ Open Loop Vector Control" function enables driving of all types of motors without the need for auto-tuning. Space-saving from horizontal placement. (GA700: 2004 to 2313, and GA700: 4002 to 4168)(under development) The interactive system ensures that initial settings can be completed easily by responding to questions. Maintainability has been noticeably improved from setting parameters using wireless connections, verifying the operating status, and using cloud-based parameter controls via smartphones. Control panels are no longer needed with the use of enclosures that satisfy IP55 standards. (under development) The GA700 are in compliance with international standards CE and UL, as well as shipping standards GL and NK. (under development)
	Yes	60/590 Hz When using an SSR1 Series motor	Cat.3 PLe, IEC/EN61508	Open chassis (IP20)	
	Yes	1750 r/min	SIL3*6 GL*7		
		1450 r/min	DNV*7		
	Yes	1150 r/min	ABS*7 NK*7 BV*7 CCS*7 KR*7		
	Yes				
	—		CE UL/cUL		Catalog No. KAEP C710636 02
	—				<ul style="list-style-type: none"> Drastically reduced power supply harmonics and improved harmonics environment. Uses power regeneration for even greater energy efficiency. The all-in-one design both reduces wiring and saves space. Capable of driving any kind of motor. U1000 runs not only induction motors, but also synchronous motors like IPM and SPM motors without speed sensors or pole sensors. Powerful torque at 0 Hz DriveWorksEZ customizes your drives. Included with all models. All models are fully compliant with the EU's RoHS directive. Switching to and from commercial power is possible without phase detectors, contactors, and other such peripheral devices.
	—	60/400Hz When using an SSR1 Series motor	Two Safe Disable inputs and 1EDM output according to ISO/ EN13849-1	Open chassis (IP00) and enclosed wall-mounted type (UL Type 1)	
	Yes	1750 r/min	Cat.3 PLe, IEC/ EN61508 SIL3		
		1450 r/min			
	—	1150 r/min			
	Yes				

*6: Approval pending for catalog codes GA700: 2169 to 2415, and GA700: 4371 to 4675. *7: Applying

AC Drive	Features	Model	Max. Motor Output (kW) 0.1 1 10 100 1000 10000	Control		Braking		Speed Control		
				V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)	
General-Purpose		A1000 (V/f)	0.4  110 Three-phase 200 V	●		●		1:40	± 2 to 3* ¹	
		A1000 (V/f with PG)		●		●		1:40	± 0.03	
		A1000 (Open Loop Vector)			●	●		1:200	± 0.2	
		A1000 (Closed Loop Vector)			●	●		1:1500	± 0.02	
		A1000 (Advanced Open Loop Vector for PM)			●	●		1:20 1:100* ²	± 0.2	
		A1000 (Closed Loop Vector for PM)			●	●		1:1500	± 0.02	
	 	V1000 (V/f)	0.1  3.7 Single-phase 200 V 0.1  18.5 Three-phase 200 V 0.2  18.5 Three-phase 400 V	●		●		1:20 to 1:40	± 2 to 3* ¹	
		V1000 (Open Loop Vector)			●	●		1:100	± 0.2	
		V1000 (Open Loop Vector for PM)			●	●		1:10 (variable torque)	± 0.2	
		J1000 (V/f)	0.1  2.2 Single-phase 200 V 0.1  5.5 Three-phase 200 V 0.2  5.5 Three-phase 400 V	●		●		1:20 to 1:40	± 2 to 3* ¹	
		Varispeed G7 (V/f)	0.4  110 Three-phase 200 V 0.4  300 Three-phase 400 V	●		●		1:20 to 1:40	± 2 to 3* ¹ (± 1* ³) ± 0.03* ⁴	
		Varispeed G7 (Open Loop Vector)			●	●		1:200	± 0.2	
		Varispeed G7 (Flux Loop Vector)			●	●		1:1000	± 0.02	
	 	V1000 (Open Loop Vector for PM)	0.4  15 Three-phase 200 V 0.4  15 Three-phase 400 V		●	●		1 : 10 (variable torque)	± 0.2	
		ECOiPM motor EMR1 Series								
	 	V1000 (Open Loop Vector for PM)	0.1  0.75 Three-phase 200 V		●	●		1 : 10 (variable torque)	± 0.2	
		V1000pico motors SMRD Series								
Application Specific		L1000A (V/f with PG)	1.5  110 Three-phase 200 V 1.5  110 Three-phase 400 V		●	●		1:1500	± 0.02	
		L1000A (Closed Loop Vector for PM)			●	●				

*1: Varies according to motor slip *2: When using an IPM motor *3: Slip compensation *4: With PG

	Torque Control	Rated/Max. Freq. or Rated/Max. Speed	Global Safety Standards	Protective Design	Product Overview
	—	60/400 Hz When using SSR1 Series motor 1750 r/min 1450 r/min 1150 r/min	CE, UL/cUL	Open-chassis (IP00) and enclosed (UL Type 1)	Catalog No. KAEP C710616 22
	—				
	—		Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat. 3 PLd, IEC/EN61508 SIL2		
	Yes				
	—				
	Yes				<ul style="list-style-type: none"> Capable of driving any kind of motor. A1000 runs not only induction motors, but also synchronous motors like IPM and SPM motors with high performance vector control. Amazing energy savings and an even more compact setup with a synchronous motor. Powerful torque at 0 Hz. Loaded with Auto-Tuning features. Easily adjust settings for connected machinery. Breeze-easy setup by simply selecting the appropriate application. Use DriveWorksEZ to customize your drive, included with all models. All models are fully compliant with the EU's RoHS directive.
	—	60/400 Hz When using SMRA Series motor 3600 r/min, 1800 r/min When using SMRD Series motor 3600 r/min, 1800 r/min When using EMR1 Series motor 3600 r/min, 1750 r/min 1450 r/min, 1150 r/min	CE, UL/cUL ISO/ EN13849-1 Cat.3 PLd, IEC/ EN61508 SIL2	Open chassis, enclosed wall-mounted (UL Type 1), finless type (no heatsink), and fully-enclosed waterproof type (NEMA Type 4X/IP66)	Catalog No. KAEP C710606 08
	—	60/400 Hz	CE, UL/cUL	Open chassis and finless type (no heatsink)	<ul style="list-style-type: none"> Compact, high-performance (Open Loop Vector Control) For both induction motors and synchronous motors (IPMM/SPMM) High starting torque of 200% at 0.5 Hz (using a 3.7 kW drive set for Heavy Duty with a Yaskawa induction motor). Torque limits also possible. Set main parameters automatically with Application Presets. Detachable terminal block with memory for easy maintenance. All models are fully compliant with the EU's RoHS directive.
	—	60/400 Hz	CE, UL/cUL	Open chassis and finless type (no heatsink)	Catalog No. KAEP C710606 24
	—	60/400 Hz	CE, UL/cUL	Open-chassis and enclosed (UL Type 1)	<ul style="list-style-type: none"> Compact design, easy operation Overexcitation braking enables emergency braking without the use of a braking resistor. Braking transistor standard in all models Side-by-side installation and DIN rail mounting. Hassle-free maintenance All models are fully compliant with the EU's RoHS directive.
	—	60/400 Hz	CE, UL/cUL	Open-chassis and enclosed (UL Type 1)	Catalog No. KAE-S616-60
	—	60/400 Hz When using Vector motors 1750/2100 r/min 1450/1740 r/min 1150/1380 r/min	CE, UL/cUL	Open-chassis and enclosed (UL Type 1)	<ul style="list-style-type: none"> The "3-level control method" solves micro surge problem for 400 V class drives. Open Loop Vector: over 150% torque at 0.3 Hz. Flux Loop Vector: 150% at 0 Hz. Removable control circuit terminals and cooling fan Various application software (cranes, hoist, energy-saving control, and more) Auto-Tuning function
	—	60/400 Hz	—	Open-chassis (models without heatsink also available) and enclosed (UL Type 1)	<ul style="list-style-type: none"> Grade higher than IE3 efficiency class saves energy during operation. V1000 drives combined with compact ECOiPM motors make more compact and lighter drive systems. Less maintenance because bearing grease life is approx. three times longer compared to use with induction motors. Improved reliability with elimination of an encoder of precision device.
	—	3600 r/min, 1750 r/min, 1450 r/min, 1150 r/min	—	IP44	
	—	60/400 Hz	—	Open-chassis (models without heatsink also available) and enclosed (UL Type 1)	<ul style="list-style-type: none"> V1000 drives combined with super compact V1000pico motors make more compact and lighter drive systems. Applicable in locations subject to water jets or abrasive powder with its protective enclosure rated IP65 or higher. Improved reliability with elimination of an encoder of precision device. Use of V1000 drives, which can control not only induction motors but also synchronous motors, brings the uniformity of your stock.
	—	SMRD Series:3600 r/min, 1800 r/min	—	SMRD Series: IP65	
	Yes	60/120 Hz	CE, UL/cUL Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat. 3 PLd, IEC/EN61508 SIL2	Open-chassis (IP00) and enclosed (UL Type 1)	<ul style="list-style-type: none"> Cutting-edge drive technology allows L1000A to run a newly installed gearless synchronous motor, or a refurbished geared induction motor. This minimizes equipment required for your application. Interfaces to match gearless, synchronous motors and every type of absolute encoder. Even without a load sensor, high-performance torque compensation and high-resolution absolute encoder eliminate rollback when the brake is released. Output interrupt Satisfies safety requirements and Ensures a reliable elevator system. Rescue Operation switches to backup battery or UPS in case of a power outage. All standard models are compliant with the Europe's RoHS directive.

AC Drive	Features	Model	Max. Motor Output (kW) 0.1 1 10 100 1000 10000	Control		Braking		Speed Control		
				V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)	
Energy-Saving Unit		Power regenerative converter	D1000	5.0  130*1 Three-phase 200 V				●	—	—
		Power regenerative unit	R1000	5.0  630*1 Three-phase 400 V				●	—	—
System		Low-voltage inverter for systems (Drawer type / Fixed type)	FSDrive-LV1HM/F (V/f)	0.4  22 Three-phase 200 V (FSDrive-LV1HM)	●		●		1:40	±2 to 3*3
			FSDrive-LV1HM/F (Open Loop Vector)	0.4  45 Three-phase 400 V (FSDrive-LV1HM)		●	●		1:120	±0.2
			FSDrive-LV1HM/F (Closed Loop Vector)	55  185 Three-phase 400 V (FSDrive-LV1HF)		●	●		1:1500	±0.01
		Low-voltage inverter for systems (Slim type)	FSDrive-LV1HS (V/f)	200  1000 Three-phase 400 V	●		●		1:20 to 1:40	±2 to 3*3 (±1*4) (±0.03*5)
			FSDrive-LV1HS (Open Loop Vector)	350  1750 Three-phase 690 V		●	●		1:100	±0.2
			FSDrive-LV1HS (Closed Loop Vector)			●	●		1:1500	±0.01
		Low-voltage converter for systems (Slim type)	FSDrive-LC1HS (Sine Wave PWM)	200  1000 Three-phase 400 V	—	—	—	●	—	—
				350  1750 Three-phase 690 V	—	—	—	●	—	—
		Super energy-saving medium-voltage AC drives	FSDrive-MV1000 (V/f)	220 kVA  2500 kVA Three-phase 2400 V (For use outside of Japan)	●				1:20	±2 to 3*3
			FSDrive-MV1000 (Open Loop Vector)	200 kVA  3700 kVA Three-phase 3300 V		●			1:100	±0.5
			FSDrive-MV1000 (Closed Loop Vector)	280 kVA  4500 kVA Three-phase 4160 V (For use outside of Japan)		●			1:1000	±0.02
			FSDrive-MV1000 (Closed Loop for SM)	400 kVA  7500 kVA Three-phase 6600 V		●			1:100	±0.5
		Super energy-saving medium-voltage matrix converter	FSDrive-MX1S (Open Loop Vector)	200 kVA  3000 kVA Three-phase 3300 V		●		●	1:100	±0.5
			FSDrive-MX1S (Closed Loop Vector)	400 kVA  6000 kVA Three-phase 6600 V		●		●	1:1000	±0.02
		Medium-voltage matrix converter for systems	FSDrive-MX1H (Open Loop Vector)	200 kVA  3000 kVA Three-phase 3300 V		●		●	1:100	±0.2
			FSDrive-MX1H (Closed Loop Vector)	400 kVA  6000 kVA Three-phase 6600 V		●		●	1:1000	±0.01

*1: Indicated in rated output capacity.

*2: Indicated in regeneration capacity.

*3: Varies according to motor slip

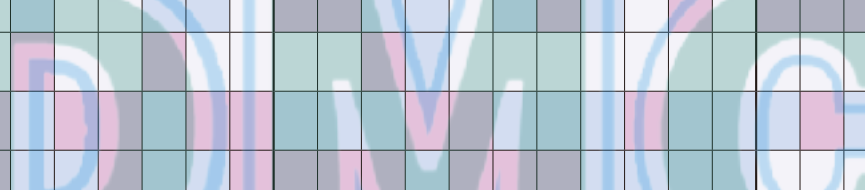
*4: Slip compensation

*5: With PG

	Torque Control	Rated/Max. Freq. or Rated/Max. Speed	Global Safety Standards	Protective Design	Product Overview
	—	—	CE, UL/cUL	Open-chassis (IP00, IP20)	<p>Catalog No. KAEP C710656 03</p> <ul style="list-style-type: none"> · Sine-wave PWM converter regenerates power supply. · Great energy-saving performance in combination with a drive. · Minimizes harmonic distortion. · High power factor enables more compact power supply equipment. · All standard products are fully compliant with the EU's RoHS directive.
	—	—	CE, UL/cUL	Open-chassis (IP00) and enclosed (UL Type 1)	<p>Catalog No. KAEP C710656 05</p> <ul style="list-style-type: none"> · Power regenerative unit with both braking and regenerative functions. · Combine with a motor drive for impressive energy-saving performance. · All standard products are fully compliant with the EU's RoHS directive.
—	—	60/400 Hz	—	Vertical self-stand type	<p>Catalog No. KAEP C710691 00</p> <ul style="list-style-type: none"> · High-performance, system-oriented inverter · Six control modes are available. · The high-performance processor of its PLC improves the processing capability for intelligent operations. · High speed, high response · Highly precise, wide-range speed control · Highly precise torque control · Smooth operation at low speed
—	—				
Yes	Yes				
—	—	60/400 Hz	—	Vertical self-stand type	<ul style="list-style-type: none"> · High-performance, system-oriented inverter · Six control modes are available. · The high-performance processor of its PLC improves the processing capability for intelligent operations. · High speed, high response · Highly precise, wide-range speed control · Highly precise torque control · Smooth operation at low speed
—	—				
Yes	Yes				
—	—	—	—	Vertical self-stand type	
—	—	60/120 Hz	CE UL/cUL	Vertical self-stand type	<p>Catalog No. KAEP C710687 02</p> <ul style="list-style-type: none"> · Significant downsizing helps this power cell facilitate transportation, installation, and maintenance. · High power factor (0.95% or more) and high efficiency (0.97% or more) · No harmonics with input sinusoidal waveforms · Applicable with existing motors because of quasi-sinusoidal waveforms · Products are compliant with major global standards.
—	—				
Yes	Yes				
—	—	60/120 Hz	—	Vertical self-stand type	<p>Catalog No. KAEP C710688 00</p> <ul style="list-style-type: none"> · Lightning-quick acceleration or deceleration with power regeneration function · High power factor (0.95% or more) · No harmonics with input sinusoidal waveforms · Applicable with existing motors because of quasi-sinusoidal waveforms
—	—				
—	—				
—	—	60/120 Hz	—	Vertical self-stand type	<ul style="list-style-type: none"> · Lightning-quick acceleration or deceleration with power regeneration function · High speed, quick response · Highly precise, wide-range speed control ($\pm 0.01\%$, 1: 1000) · Highly precise torque control (Linearity: $\pm 3\%$)
Yes	Yes				

Matching Drive and Application

Application			Fluids					Metal Processing / Machine Tools													Elevators					
			Pumps	Fans	Blowers	Compressors	Gear Pumps	Presses	Wire Drawing Machines	Centrifugal Casting Machines	Automatic Lathes	Lathes	Capstan Lathes	Machining Centers	Machining Magazine Drives	Grinding Machines	Board Drills	Board Routers	Slicers	Dicing Machines	Planers	Elevators (High-speed)	Elevators (Low-speed)	Elevator Doors	Automatic Parking Devices	
Load	Load Type	Friction Load					●		●		●				●	●	●	●	●	●		●	●		●	
		Gravitational Load																				●	●		●	
		Fluid Load	●	●	●	●																				
		Inertia Load						●		●																●
	Speed/Torque	Constant Torque				●	●	●	●			●		●	●	●	●	●	●	●	●	●	●	●	●	
		Constant Output									●		●								●					
		Variable Torque	●	●	●																					
		Variable Output									●	●		●							●					
Applicable AC Drive	General-Purpose	GA700 (V/f)	●	●	●	●	●	●			●	●			●	●	●		●							
		GA700 (Open Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●							
		GA700 (Closed Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●			●	●		●	
		U1000	●	●	●	●	●	●			●	●			●	●	●		●				●		●	
		A1000 (V/f)	●	●	●	●	●	●			●	●			●	●	●		●							
		A1000 (Open Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●							
		A1000 (Closed Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●			●	●		●	
		V1000	●	●	●	●	●	●			●	●			●	●	●		●				●		●	
		J1000	●	●	●	●	●	●			●	●			●	●	●		●				●		●	
		Varispeed G7 (V/f)	●	●	●	●	●	●			●	●			●	●	●		●						●	
		Varispeed G7 (Open Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●						●	
		Varispeed G7 (Flux Loop Vector)	●	●	●	●	●	●			●	●			●	●	●		●						●	
		ECOiPM Drive	●	●	●	●	●	●			●	●			●	●	●		●							
		V1000pico Drive	●	●	●	●	●	●			●	●			●	●	●		●					●		
	Application Specific	L1000A																				●	●		●	
		D1000	●	●	●	●	●	●														●	●		●	
		R1000	●	●	●	●	●	●														●	●		●	
	System	FSDrive-LV1HM																								
		FSDrive-LV1HF																								
		FSDrive-LV1HS																								
		FSDrive-LC1HS																								
		FSDrive-MV1000	●	●	●	●	●																			
		FSDrive-MX1S	●	●	●	●	●																			
		FSDrive-MX1H																								

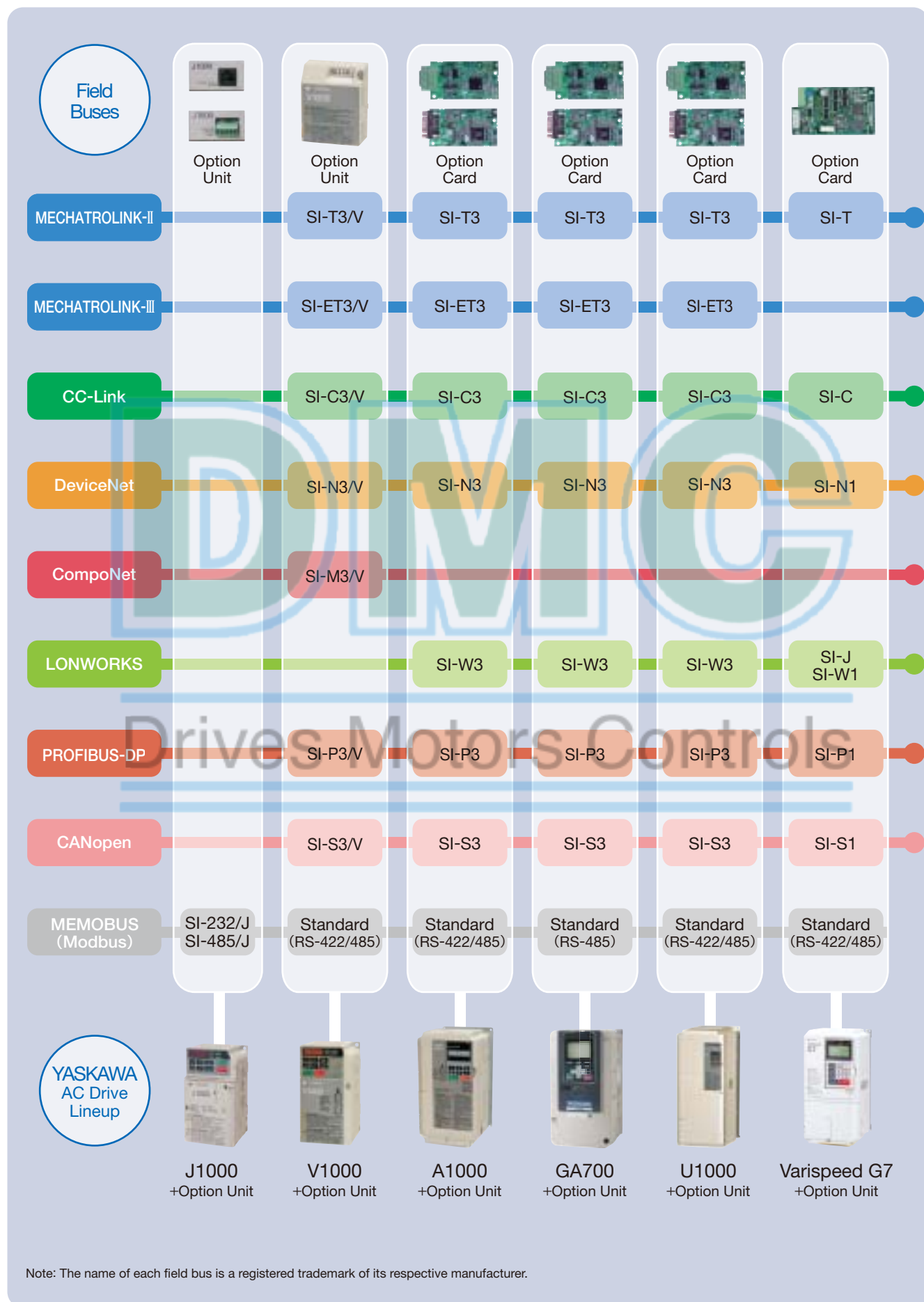


DMC

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Option cards and option units for communications provide support for all major field networks. Easily connect to hosts and PLCs, reduce wiring, and implement centralized management of production equipment.



Standard Specifications

General-Purpose

Compact V/f Control J1000

200 V Class

ND: Normal Duty, HD: Heavy Duty Catalog No. KAEP C710606 24

Model	Three-Phase CIMR-J□2A□□□□	0001	0002	0004	0006	0008 ☆	0010	0012	0018 ☆	0020
	Single-Phase*1 CIMR-J□BA□□□□	0001	0002	0003	0006	—	0010	—	—	—
Max. Applicable Motor Capacity*2	ND kW	0.2 HD	0.4 HD	0.75 HD	1.1 HD	1.5 HD	2.2 HD	3 HD	3.7 HD	5.5 HD
Output	Rated Output	ND*4	0.5	0.7	1.3	2.3	3.0	3.7	4.6	7.5
	Capacity*3 kVA	HD	0.3*6	0.6*6	1.1*6	1.9*6	2.6*7	3*7	4.2*7	6.7*7
	Rated Output	ND*4	1.2	1.9	3.5 (3.3)*5	6	8	9.6	12	17.5
	Current	A	HD	0.8*6	1.6*6	3*6	5*6	6.9*7	8*7	11*7
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s, HD Rating: 150% of rated output current for 60 s. (Derating may be required for repetitive loads)							
Power	Max. Output Voltage		Three-phase power supply: three-phase 200 to 240 V (relative to input voltage) Single-phase power supply: three-phase 200 to 240 V (relative to input voltage)							
	Max. Output Frequency		400 Hz (user-set)							
	Rated Voltage/Rated Frequency		Three-phase AC power supply: 200 to 240 V 50/60 Hz, Single-phase AC power supply: 200 to 240 V 50/60 Hz, DC power supply: 270 to 340 V*8							
	Allowable Voltage Fluctuation		-15 to +10%							
	Allowable Frequency Fluctuation		±5%							

400 V Class

☆These models are available in Japan only.

Model	CIMR-J□4A□□□□	0001	0002	0004	0005	0007	0009	0011
Max. Applicable Motor Capacity*9	ND kW	0.4 HD	0.75 HD	1.5 HD	2.2 HD	3 HD	3.7 HD	5.5 HD
Output	Rated Output	ND*4	0.9	1.6	3.1	4.1	5.3	6.7
	Capacity*10 kVA	HD*7	0.9	1.4	2.6	3.7	4.2	5.5
	Rated Output	ND*4	1.2	2.1	4.1	5.4	6.9	8.8
	Current	A	HD*7	1.2	1.8	3.4	4.8	5.5
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s, HD Rating: 150% of rated output current for 60 s. (Derating may be required for repetitive loads)					
Power	Max. Output Voltage		Three-phase 380 to 480 V (relative to input voltage)					
	Max. Output Frequency		400 Hz (user-set)					
	Rated Voltage/Rated Frequency		Three-phase AC power supply: 380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V*8					
	Allowable Voltage Fluctuation		-15 to +10%					
	Allowable Frequency Fluctuation		±5%					

Common Specifications

Item	Specifications
Control Method	V/f Control
Frequency Control Range	0.01 to 400 Hz
Frequency Accuracy (Temperature Fluctuation)	Digital reference: within ±0.01% of the max. output frequency (-10 to +50°C) Analog reference: within ±0.1% of the max. output frequency (25 ±10°C)
Frequency Setting Resolution	Digital reference: 0.01 Hz Analog reference: 1/1000 of max. output frequency
Output Frequency Resolution	20 bit resolution at maximum output frequency
Frequency Setting Signal	Main frequency reference: 0 to +10 Vdc (20 kΩ), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω)
Starting Torque	150% / 3 Hz
Speed Control Range	1:20 to 1:40
Accel/Decel Time	0.01 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
Braking Torque	① Instantaneous decel torque*11: over 150% for 0.1/0.2 kW, over 100% for 0.4/ 0.75 kW, over 50% for 1.5 kW, and over 20% for 2.2 kW and above. ② Continuous regen. torque: approx. 20% (approx. 125% with dynamic braking resistor option*12: 10% ED, 10 s, Internal braking transistor)
V/f Characteristics	User-selected programs, V/f preset patterns possible
Main Control Functions	Momentary power loss ride-thru, Speed search, 9-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Upper/lower limits for frequency reference, DC injection braking at start and stop, Overexcitation braking, Fault restart ...
Standards Compliant	· UL508C · IEC/EN61800-3, IEC/EN61800-5-1

*1: Drives with a single-phase power supply input have three-phase output. Single-phase motors cannot be used.

*2: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz, 200 V motor.

The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*3: Rated output capacity is calculated with a rated output voltage of 220 V.

*4: This value assumes a carrier frequency of 2 kHz. Increasing the carrier frequency requires a reduction in current.

*5: Value inside parenthesis is for a single-phase drive.

*6: This value assumes a carrier frequency of 10 kHz. Increasing the carrier frequency requires a reduction in current.

*7: This value assumes a carrier frequency of 8 kHz. Increasing the carrier frequency requires a reduction in current.

*8: Not compliant with the UL standards when using a DC power supply. To meet CE standards, fuses should be installed. For details, refer to the catalog for AC Drive J1000.

*9: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz, 400 V motor.

The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*10: Rated output capacity is calculated with a rated output voltage of 440 V.

*11: Momentary average deceleration torque refers to the deceleration torque from 60 Hz down to 0 Hz. This may vary depending on the motor.

*12: Parameter L3-04 should be disabled when a Braking Resistor or Braking Resistor Unit is connected, the motor may not stop within the specified deceleration time.

General-Purpose

Compact Vector Control V1000

200 V Class

ND: Normal Duty, HD: Heavy Duty

Model	Three-Phase CIMR-V□2A□□□□		0001	0002	0004	0006	0008★	0010	0012	0018★	0020	0030	0040	0056	0069
	Single-Phase*2 CIMR-V□BA□□□□		0001	0002	0003	0006	—	0010	0012	—	0018*1	—	—	—	—
Max. Applicable Motor Capacity*3	kW	ND	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5
		HD	0.1	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15
Output	Rated Output Capacity*4 kVA	ND*5	0.5	0.7	1.3	2.3	3	3.7	4.6	6.7	7.5	11.4	15.2	21.3	26.3
		HD	0.3*7	0.6*7	1.1*7	1.9*7	2.6*8	3*8	4.2*8	5.3*8	6.7*8	9.5*8	12.6*8	17.9*8	22.9*8
	Rated Output Current A	ND*5	1.2	1.9	3.5 (3.3)*6	6	8	9.6	12	17.5	19.6	30	40	56	69
		HD	0.8*7	1.6*7	3*7	5*7	6.9*8	8*8	11*8	14*8	17.5*8	25*8	33*8	47*8	60*8
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s. HD Rating: 150% of rated output current for 60 s. (Derating may be required for repetitive loads)												
	Max. Output Voltage		Three-phase power supply: Three-phase 200 to 240 V (proportional to input voltage) Single-phase power supply: Three-phase 200 to 240 V (proportional to input voltage)												
	Max. Output Frequency		400 Hz (user-set)												
Power	Rated Voltage/Rated Frequency		Three-phase AC power supply: 200 to 240 V 50/60 Hz, Single-phase AC power supply: 200 to 240 V 50/60 Hz, DC power supply: 270 to 340 V*9												
	Allowable Voltage Fluctuation		-15 to +10%												
	Allowable Frequency Fluctuation		±5%												

☆ These models are available in Japan only.

400 V Class

Model	Three-Phase CIMR-V□4A□□□□		0001	0002	0004	0005	0007	0009	0011	0018	0023	0031	0038
Max. Applicable Motor Capacity*3	kW	ND	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5
		HD	0.2	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15
Output	Rated Output Capacity*10 kVA	ND*5	0.9	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	23.6	29
		HD*8	0.9	1.4	2.6	3.7	4.2	5.5	7	11.3	13.7	18.3	23.6
	Rated Output Current A	ND*5	1.2	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23	31	38
		HD*8	1.2	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18	24	31
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s. HD Rating: 150% of rated output current for 60 s. (Derating may be required for repetitive loads)										
	Max. Output Voltage		Three-phase 380 to 480 V (proportional to input voltage)										
	Max. Output Frequency		400 Hz (user-set)										
Power	Rated Voltage/Rated Frequency		Three-phase AC power supply: 380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V*9										
	Allowable Voltage Fluctuation		-15 to +10%										
	Allowable Frequency Fluctuation		±5%										

*1: Heavy Duty (3.7 kW) only.

*2: Drives with a single-phase power supply input have three-phase output. Single-phase motors cannot be used.

*3: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz motor. The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*4: Rated output capacity is calculated with a rated output voltage of 220 V.

*5: This value assumes a carrier frequency of 2 kHz. Increasing the carrier frequency requires a reduction in current.

*6: Value inside parenthesis is for a single-phase drive.

*7: This value assumes a carrier frequency of 10 kHz. Increasing the carrier frequency requires a reduction in current.

*8: This value assumes a carrier frequency of 8 kHz. Increasing the carrier frequency requires a reduction in current.

*9: Not compliant with the UL standards when using a DC power supply. To meet CE standards, fuses should be installed. For details, refer to the catalog for AC Drive V1000.

*10: Rated output capacity is calculated with a rated output voltage of 440 V.

Common Specifications

Catalog No. KAEP C710606 08

Items		Specifications
Control Characteristics	Control Method	Open Loop Vector Control (Current Vector), V/f Control, Open Loop Vector Control for PM motors (for SPM and IPM motors)
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: within $\pm 0.01\%$ of the max. output frequency (-10 to $+50^{\circ}\text{C}$)
		Analog reference: within $\pm 0.1\%$ of the max. output frequency ($25 \pm 10^{\circ}\text{C}$)
	Frequency Setting Resolution	Digital reference: 0.01 Hz
		Analog reference: 1 / 1000 of max. frequency
	Output Frequency Resolution	20 bit of maximum output frequency (parameter E1-04 setting)
	Frequency Setting Signal	Main frequency reference: 0 to $+10$ Vdc ($20\text{ k}\Omega$), 4 to 20 mA ($250\ \Omega$), 0 to 20 mA ($250\ \Omega$)
		Main speed reference: Pulse Train Input max. 32 kHz
	Starting Torque	200% / 0.5 Hz (assumes Heavy Duty rating IM of 3.7 kW or less using Open Loop Vector Control), 50% / 6 Hz (assumes Open Loop Vector Control for PM motors)
	Speed Control Range	1:100 (Open Loop Vector Control), 1:20 to 40 (V/f Control), 1:10 (Open Loop Vector Control for PM motors)
	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control ($25 \pm 10^{\circ}\text{C}$) *11
	Speed Response	5 Hz in Open Loop Vector ($25 \pm 10^{\circ}\text{C}$) (excludes temperature fluctuation when performing Rotational Auto-Tuning)
	Torque Limit	Open Loop Vector Control allows separate settings in four quadrants.
	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	① Instantaneous decel torque*12: over 150% for 0.1/0.2 kW, over 100% for 0.4/0.75 kW, over 50% for 1.5 kW, and over 20% for 2.2 kW and above (overexcitation braking/High-Slip Braking: approx. 40%). ② Continuous regen. torque: approx. 20% (approx. 125% with dynamic braking resistor option*13: 10% ED, 10 s, Internal braking transistor)
	V/f Characteristics	User-selected programs, V/f preset patterns possible
	Main Control Functions	Momentary power loss ride-thru, Speed search, Overtorque detection, Torque limit, 17-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-Tuning (rotational, stationary tuning for resistance between lines), Dwell function, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Frequency upper/lower limit settings, DC injection braking at start/stop, Overexcitation braking High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS communication (RS-485/422 max. 115.2 kbps), Fault restart, Application presets, DriveWorksEZ (customization function), Removable terminal block with parameter backup function...
Standards Compliant		<ul style="list-style-type: none"> • UL508C • IEC/EN61800-3, IEC/EN61800-5-1 • ISO/EN13849-1 Cat.3 PLd, IEC/EN61508 SIL2
Protection Design		IP20 open-chassis, UL Type 1 enclosure

*11: Speed control accuracy may vary slightly depending on installation conditions or motor used.

*12: Momentary average deceleration torque refers to the deceleration torque from 60 Hz down to 0 Hz. This may vary depending on the motor.

*13: If L3-04 is enabled when using a braking resistor or braking resistor unit, the motor may not stop within the specified deceleration time.

General-Purpose

High Performance Vector Control A1000

200 V Class

ND: Normal Duty, HD: Heavy Duty

Model CIMR-A□2A□□□□		0004	0006	0008	0010	0012	0018	0021	0030	0040	0056	0069	0081	0110	0138	0169	0211	0250	0312	0360	0415
Max. Applicable	ND	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	110
	HD	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
Motor Capacity*1 kW	ND*	1.3	2.3	3	3.7	4.6	6.7	8	11.4	15.2	21	26	31	42	53	64	80	95	119	137	158
	HD	1.2*4	1.9*4	2.6*4	3*4	4.2*4	5.3*4	6.7*4	9.5*4	12.6*4	17.9*4	23*4	29*4	32*4	44*4	55*5	69*5	82*5	108*5	132*5	158*5
Rated Output Capacity*2 kVA	ND*	3.5	6	8	9.6	12	17.5	21	30	40	56	69	81	110	138	169	211	250	312	360	415
	HD	3.2*4	5*4	6.9*4	8*4	11*4	14*4	17.5*4	25*4	33*4	47*4	60*4	75*4	85*4	115*4	145*5	180*5	215*5	283*5	346*5	415*5
Rated Output Current A	ND*	3.2*4	5*4	6.9*4	8*4	11*4	14*4	17.5*4	25*4	33*4	47*4	60*4	75*4	85*4	115*4	145*5	180*5	215*5	283*5	346*5	415*5
	HD	3.2*4	5*4	6.9*4	8*4	11*4	14*4	17.5*4	25*4	33*4	47*4	60*4	75*4	85*4	115*4	145*5	180*5	215*5	283*5	346*5	415*5
Overload Tolerance	ND	Rating: 120% of rated output current for 60 s																			
	HD	Rating: 150% of rated output current for 60 s.(Derating may be required for repetitive loads)																			
Max. Output Voltage	Three-phase	200 to 240 V (relative to input voltage)																			
	Max. Output Frequency	400 Hz (user-set)																			
Rated Voltage/ Rated Frequency	Three-phase AC power supply	200 to 240 V 50/60 Hz, DC power supply: 270 to 340 V*6																			
	Allowable Voltage Fluctuation	-15% to +10%																			
Allowable Frequency Fluctuation	±5%																				

400 V Class

☆ These models are available in Japan only.

Model CIMR-A□4A□□□□		0002	0004	0005	0007	0009	0011	0018	0023	0031	0038	0044	0058	0072	0088	0103	0139	0165	0208	0250	0296	0362	0414	0515	0675	0930	1200
Max. Applicable	ND	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	250	355	500	630
	HD	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	315	450	560
Motor Capacity*1 kW	ND*	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	24	29	34	44	55	67	78	106	126	159	191	226	276	316	392	514	709	915
	HD	1.4*4	2.6*4	3.7*4	4.2*4	5.5*4	7*4	11.3*4	13.7*4	18.3*4	24*4	30*4	34*4	46*4	57*4	69*4	85*5	114*5	137*5	165*5	198*5	232*5	282*5	343*5	491*5	617*5	831*5
Rated Output Capacity*2 kVA	ND*	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23	31	38	44	58	72	88	103	139	165	208	250	296	362	414	515	675	930	1200
	HD	1.8*4	3.4*4	4.8*4	5.5*4	7.2*4	9.2*4	14.8*4	18*4	24*4	31*4	39*4	45*4	60*4	75*4	91*4	112*5	150*5	180*5	216*5	260*5	304*5	370*5	450*5	605*5	810*5	1090*5
Rated Output Current A	ND*	1.8*4	3.4*4	4.8*4	5.5*4	7.2*4	9.2*4	14.8*4	18*4	24*4	31*4	39*4	45*4	60*4	75*4	91*4	112*5	150*5	180*5	216*5	260*5	304*5	370*5	450*5	605*5	810*5	1090*5
	HD	1.8*4	3.4*4	4.8*4	5.5*4	7.2*4	9.2*4	14.8*4	18*4	24*4	31*4	39*4	45*4	60*4	75*4	91*4	112*5	150*5	180*5	216*5	260*5	304*5	370*5	450*5	605*5	810*5	1090*5
Overload Tolerance	ND	Rating: 120% of rated output current for 60 s																									
	HD	Rating: 150% of rated output current for 60 s.(Derating may be required for repetitive loads)																									
Max. Output Voltage	Three-phase	380 to 480 V (relative to input voltage)																									
	Max. Output Frequency	400 Hz (user-set)																									
Rated Voltage/ Rated Frequency	Three-phase AC power supply	380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V*6																									
	Allowable Voltage Fluctuation	-15% to +10%																									
Allowable Frequency Fluctuation	±5%																										

*1: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz motor. The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*2: Rated output capacity is calculated with a rated output voltage of 220 V.

*3: This value assumes a carrier frequency of 2 kHz. Increasing the carrier frequency requires a reduction in current.

*4: This value assumes a carrier frequency of 8 kHz. Increasing the carrier frequency requires a reduction in current.

*5: This value assumes a carrier frequency of 5 kHz. Increasing the carrier frequency requires a reduction in current.

*6: Not compliant with the UL standards when using a DC power supply. To meet CE standards, fuses should be installed. For details, refer to the catalog for AC Drive A1000.

*7: Rated output capacity is calculated with a rated output voltage of 440 V.

Common Specifications

Catalog No. KAEP C710616 22

Item		Specifications
Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control with PG, Open Loop Vector for PM, Closed Loop Vector for PM, Advanced Open Loop Vector for PM
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: within $\pm 0.01\%$ of the max. output frequency (-10 to $+40^{\circ}\text{C}$) Analog reference: within $\pm 0.1\%$ of the max. output frequency ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)
	Frequency Setting Resolution	Digital reference: 0.01 Hz Analog reference: 0.03 Hz / 60 Hz (11 bit)
	Output Frequency Resolution	0.001 Hz
	Frequency Setting Resolution	Main frequency reference: -10 to $+10$ Vdc, 0 to $+10$ Vdc ($20\text{ k}\Omega$), 4 to 20 mA ($250\ \Omega$), 0 to 20 mA ($250\ \Omega$) Main speed reference: Pulse train input (max. 32 kHz)
	Starting Torque	V/f Control 150% / 3 Hz Open Loop Vector Control 200% / 0.3 Hz*8 Open Loop Vector Control for PM 100% / 5% speed Closed Loop Vector Control for PM 200% / 0 min ⁻¹ *8 V/f Control with PG 150% / 3 Hz Closed Loop Vector Control 200% / 0 min ⁻¹ *8 Advanced Open Loop Vector Control for PM 200% / 0 min ⁻¹ *8, *9, *10
	Speed Control Range	V/f Control 1:40 Open Loop Vector Control 1:200 Open Loop Vector Control for PM 1:20 Closed Loop Vector Control for PM 1:1500 V/f Control with PG 1:40 Closed Loop Vector Control 1:1500 Advanced Open Loop Vector Control for PM 1:100*9, *10, *11
	Speed Control Accuracy*12	$\pm 0.2\%$ in Open Loop Vector Control ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$), 0.02% in Closed Loop Vector Control ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)
	Speed Response	10 Hz in Open Loop Vector ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$), 50 Hz in Closed Loop Vector Control ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$) (excludes temperature fluctuation when performing Rotational Auto-Tuning)
	Torque Limit	All Vector Control allows separate settings in four quadrants
	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	① Short-time decel torque*13: over 100% for 0.4/ 0.75 kW motors, over 50% for 1.5 kW motors, and over 20% for 2.2 kW and above motors (over excitation braking/High-Slip Braking: approx. 40%) ② Continuous regen. torque: approx. 20% (approx. 125% with dynamic braking resistor option*14: 10% ED, 10s)
	V/f Characteristics	User-selected programs and V/f preset patterns possible
	Main Control Functions	Torque control, Droop control, Speed/torque control switching, Feed forward control, Zero-servo control, Momentary power loss ride-thru, Speed search, Overtorque detection, Torque limit, 17-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-tuning (rotational, stationary), Dwell function, Online tuning, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Upper/lower limits for frequency reference, DC injection braking at start and stop, Overexcitation braking, High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS comm. (RS-485/422 max, 115.2 kbps), Fault restart, Application presets, DriveWork-sEZ (customization function), Removable terminal block with parameter backup function...
	Standards Compliant	· UL508C · IEC/EN61800-3, IEC/EN61800-5-1 · Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat. 3 PLd, IEC/EN61508 SIL2
	Protection Design	IP00 open-chassis, UL Type 1 enclosure*15

*8: Requires a drive with recommended capacity.

*9: Valid when high frequency injection is enabled (n8-57=1).

*10: Rotational Auto-Tuning must be performed to achieve the performance described with Advanced Open Loop Vector Control for PM.

*11: Contact your Yaskawa or nearest agent when not using SSR1 series or SST4 series motors manufactured by Yaskawa Motor Co., Ltd.

*12: Speed control accuracy may vary slightly depending on installation conditions or motor used. Contact Yaskawa for details.

*13: Momentary average deceleration torque refers to the deceleration torque from 60 Hz down to 0 Hz. This may vary depending on the motor.

*14: If L3-04 is enabled when using a braking resistor or braking resistor unit, the motor may not stop within the specified deceleration time.

Drives of 200/400 V 30 kW (CIMR-A□2A0138/A□4A0072) or less have a built-in braking transistor.

*15: Removing the top cover on the following models converts the UL Type 1 rating to IP20: CIMR-A□2A0004 to A□2A0081, CIMR-A□4A0002 to A□4A0044

High Performance Drive GA700

200 V Class

ND: Normal Duty, HD: Heavy Duty

Catalog Code GA70A2			004	006	008	010	012	018	021	030	042	056	070	082	110	138	169	211	257	313	360	415	
Max. Applicable Motor Capacity*1		kW	HD	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
			ND	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	—
Input	Rated Input Current*2	A	HD	3.6	4.8	6.7	8.9	12.7	17	20.7	30	40.3	58.2	78.4	96	82	111	136	164	200	271	324	394
			ND	4.8	6.7	8.9	12.7	17	20.7	30	40.3	52	78.4	96	114	111	136	164	200	271	324	394	—
Output	Rated Output Current	A	HD	3.2	5	6.9	8	11	14	17.5	25	33	47	60	75	88	115	145	180	215	283	346	415
			ND	3.5	6	8	9.6	12.2	17.5	21	30	42	56	70	82	110	138	169	211	257	313	360	—
	Overload Tolerance		• HD Rating: 150% of rated output current for 60 s • ND Rating: 110% of rated output current for 60 s Note: Derating may be required for applications that start and stop frequently.																				
	Carrier Frequency		Derating the output current enables a maximum of 15 kHz to be set. (Derating the output current is not necessary for an ND rating of 2 kHz and an HD rating up to 8 kHz.)															Derating the output current enables a maximum of 10 kHz to be set. (Derating the output current is not necessary for an ND rating of 2 kHz and an HD rating up to 5 kHz.)					
	Max. Output Voltage		Three-phase 200 to 240 V Note: The maximum output voltage is proportional to the input voltage.																				
	Max. Output Frequency		590 Hz The frequencies that can be set vary depending on the control mode used.																				
Power	Rated Voltage/ Rated Frequency		• Three-phase AC power supply 200 V to 240 V 50/60 Hz • DC power supply 270 V to 340 V																				
	Allowable Voltage Fluctuation		-15% to 10%																				
	Allowable Frequency Fluctuation		±5%																				
	Power Supply*3	kVA	HD	1.5	2.0	2.8	3.7	5.3	7.1	8.6	12.5	16.8	24.2	32.6	39.9	34.1	46.1	56.5	68.2	83.1	113	135	164
ND			2.0	2.8	3.7	5.3	7.1	8.6	12.5	16.8	21.6	32.6	39.9	47.4	46.1	56.5	68.2	83.1	113	135	164	—	

400 V Class

Catalog Code GA70A4			002	004	005	007	009	012	018	023	031	038	044	060	075	089	103	
Max. Applicable Motor Capacity*1	kW	HD	0.4	0.75	1.5	2.2	3.0	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
		ND	0.75	1.5	2.2	3.0	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	
Input	Rated Input Current*2	A	HD	1.9	3.5	4.7	6.7	8.9	11.7	15.8	21.2	30.6	41.3	50.5	43.1	58.3	71.5	86.5
		ND	2.5	4.7	6.7	8.9	11.7	15.8	21.2	30.6	41.3	50.5	59.7	58.3	71.5	86.5	105	
	Rated Output Current	A	HD	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18	24	31	39	45	60	75	91
		ND	2.1	4.1	5.4	7.1	8.9	11.9	17.5	23.4	31	38	44	59.6	74.9	89.2	103	
Output	Overload Tolerance		• HD Rating: 150% of rated output current for 60 s • ND Rating: 110% of rated output current for 60 s Note: Derating may be required for applications that start and stop frequently.															
	Carrier Frequency		Derating the output current enables a maximum of 15 kHz to be set. (Derating the output current is not necessary for an ND rating of 2 kHz and an HD rating up to 8 kHz.)															
	Max. Output Voltage		Three-phase 380 to 480 V Note: The maximum output voltage is proportional to the input voltage.															
	Max. Output Frequency		590 Hz The frequencies that can be set vary depending on the control mode used.															
Power	Rated Voltage/ Rated Frequency		• Three-phase AC power supply 380 V to 480 V 50/60 Hz • DC power supply 510 V to 680 V															
	Allowable Voltage Fluctuation		-15% to 10%															
	Allowable Frequency Fluctuation		±5%															
	Power Supply*4	kVA	HD	1.5	2.8	3.7	5.3	7.1	9.3	13	17	24	33	40	34	46	57	69
ND			2.0	3.7	5.3	7.1	9.3	13	17	24	33	40	48	46	57	69	84	
Catalog Code GA70A4			140	168	208	250	296	371	389	453	568	675						
Max. Applicable Motor Capacity*1	kW	HD	55	75	90	110	132	160	200	220	250	315						
		ND	75	90	110	132	160	200	220	250	315	355						
Input	Rated Input Current*2	A	HD	105	142	170	207	248	300	373	410	465	584					
		ND	142	170	207	248	300	373	410	465	584	657						
	Rated Output Current	A	HD	112	150	180	216	260	304	371	414	453	605					
		ND	140	168	208	250	296	371	389	453	568	675						
Output	Overload Tolerance		• HD Rating: 150% of rated output current for 60 s • ND Rating: 110% of rated output current for 60 s Note: Derating may be required for applications that start and stop frequently.															
	Carrier Frequency		Derating the output current enables a maximum of 10 kHz to be set. (Derating the output current is not necessary for an ND rating of 2 kHz and an HD rating up to 5 kHz.)										Derating the output current enables a maximum of 5 kHz to be set. (Derating the output current is unnecessary for ND/HD rating up to 2 kHz)					
	Max. Output Voltage		Three-phase 380 to 480 V Note: The maximum output voltage is proportional to the input voltage.															
	Max. Output Frequency		590 Hz The frequencies that can be set vary depending on the control mode used.															
Power	Rated Voltage/ Rated Frequency		• Three-phase AC power supply 380 V to 480 V 50/60 Hz • DC power supply 510 V to 680 V															
	Allowable Voltage Fluctuation		-15% to 10%															
	Allowable Frequency Fluctuation		±5%															
	Power Supply*4	kVA	HD	84	113	136	165	198	239	297	327	370	465					
ND			113	136	165	198	239	297	327	370	465	523						

*1: The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*2: The value displayed is the input current when operating standard Yaskawa motors at the maximum applicable capacity with the rated load at the rated motor speed. This value may fluctuate based on the power supply side impedance, as well as the input current, power supply transformer, input side reactor, and wiring conditions.

*3: Rated input capacity is calculated with a power line voltage of 240 V.

*4: Rated input capacity is calculated with a power line voltage of 480 V.

Common Specifications

Catalog No. KAEP C710617 00

Item		Specifications
Control Characteristics	Control Method	<ul style="list-style-type: none"> • V/f Control • Open Loop Vector Control • Advanced Open Loop Vector Control • Advanced Open Loop Vector Control for PM • EZ Open Loop Vector Control • Closed Loop V/f Control • Closed Loop Vector Control • Open Loop Vector Control for PM • Closed Loop Vector Control for PM
	Maximum Output Frequency	<ul style="list-style-type: none"> • Advanced Open Loop Vector Control, EZ Open Loop Vector Control: 120 Hz • Closed Loop V/f Control, Closed Loop Vector Control, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM: 400 Hz • V/f Control, Open Loop Vector Control, Open Loop Vector Control for PM: 590 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: within ± 0.01 of the max. output frequency (-10°C to $+40^{\circ}\text{C}$) Analog reference: within ± 0.1 % of the max. output frequency ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)
	Frequency Setting Resolution	Digital reference: 0.01 Hz Analog reference: 1/2048 of the maximum output frequency setting (11 bit plus sign)
	Output Frequency Resolution	0.001 Hz
	Frequency Setting Resolution	Main frequency reference: -10 to $+10$ Vdc, 0 to 10 Vdc (20 k Ω), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω) Main speed reference : Pulse train input (max. 32 kHz)
	Starting Torque	<ul style="list-style-type: none"> • V/f Control: 150%/3 Hz • Open Loop Vector Control: 200%/0.3 Hz • Advanced Open Loop Vector Control: 200%/0.3 Hz • Advanced Open Loop Vector Control for PM: 200%/0 min⁻¹ • EZ Open Loop Vector Control: 100%/1% speed • Closed Loop V/f Control: 150%/3 Hz • Closed Loop Vector Control: 200%/0 min⁻¹ • Open Loop Vector Control for PM: 100%/5% speed • Closed Loop Vector Control for PM: 200%/0 min⁻¹ <p>Note: Drive capacity must selected appropriately to obtain this starting torque under Open Loop Vector Control, Closed Loop Vector Control, Advanced Open Loop Vector Control, Advanced Open Loop Vector Control for PM, and Closed Loop Vector Control for PM.</p>
	Speed Control Range	<ul style="list-style-type: none"> • V/f Control 1:40 • Open Loop Vector Control 1:200 • Advanced Open Loop Vector Control 1:200 • Advanced Open Loop Vector Control for PM 1:100 • EZ Open Loop Vector Control 1:100 • Closed Loop V/f Control 1:40 • Closed Loop Vector Control 1:1500 • Open Loop Vector Control for PM 1:20 • Closed Loop Vector Control for PM 1:1500 <p>Note: • Advanced Open Loop Vector Control for PM is valid when high frequency injection is enabled (n8-57=1). • For Advanced Open Loop Vector Control for PM contact your Yaskawa or nearest agent when not using SSR1 series or SST4 series motors manufactured by Yaskawa Motor Co., Ltd.</p>
	Zero Speed Control	Possible in Closed Loop Vector Control, Advanced Open Loop Vector Control for PM, and Closed Loop Vector Control for PM.
	Torque Limit	Parameter settings allow separate limits in four quadrants in Open Loop Vector Control, Closed Loop Vector Control, Advanced Open Loop Vector Control, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM, and EZ Open Loop Vector Control.
	Accel/Decel Time	0.0 s to 6000.0 s The drive allows four selectable combinations of independent acceleration and deceleration settings.
	Braking Torque	<p>Approx. 20% Approx. 125% with a dynamic braking option</p> <ul style="list-style-type: none"> • Short-time average deceleration torque • Motor capacity 0.4/0.75 kW: over 100% • Motor capacity 1.5 kW: over 50% • Motors 2.2 kW and larger: over 20%, Overexcitation Braking / High Slip Braking allow for approx. 40% • Continuous regenerative torque: Approx. 20%. Dynamic braking option allows for approx. 125%, 10% ED, 10 s <p>Note: • Catalog codes GA70:2004 to 2138 and 4002 to 4168 have a built-in braking transistor. • Set L3-04 (Stall Prevention Selection during Deceleration) to 0 (Disabled) to disable Stall Prevention when using a regenerative converter, regenerative unit, dynamic braking unit, braking resistor, or braking resistor unit. The drive may not stop within the designated deceleration time if Stall Prevention is not disabled. • Short-time deceleration torque refers to the torque required to decelerate the motor (uncoupled from the load) from the rated speed to zero. Actual specifications may vary depending on motor characteristics. • Continuous regenerative torque and short-time deceleration torque for motors 2.2 kW and larger vary depending on motor characteristics.</p>
	V/f Characteristics	Select from 15 predefined V/f patterns, or a user-set V/f pattern.
	Main Control Functions	Torque Control, Droop Control, Speed/Torque Control switch, Feed Forward Control, Zero Servo Control, Momentary Power Loss Ride-Thru, Speed Search, Overtorque detection, torque limit, 17 Step Speed (max.), accel/decel switch, S-curve accel/decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell, cooling fan on/off switch, slip compensation, torque compensation, Frequency Jump, Upper/lower limits for frequency reference, DC Injection Braking at start and stop, Overexcitation Deceleration, High Slip Braking, PID control (with Sleep function), Energy Saving Control, MEMOBUS/Modbus communications. (RS-485/422, max. 115.2 kbps), Fault Restart, Application Presets, DriveWorksEZ (customized functions), Parameter Backup Function, Online Tuning, KEB, Overexcitation Deceleration, Inertia Tuning and ASR Tuning, Overvoltage Suppression, High Frequency Injection, etc.
Standards Compliance		<ul style="list-style-type: none"> • UL61800-5-1*1 • EN61800-3:2004+A1:2012*1 • IEC/EN61800-5-1*1 • Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat.3 Plc, IEC/EN61508 SIL3*1 Note: Used by setting functions to multi-function digital output terminals. • RCM*2 • EAC*2 • CSA*2 <p>[Vessel Standards] • Germanischer Lloyd*2 • DNV*2 • ABS*2 • NK*2 • BV*2 • CCS*2 • KR*2</p>
Protection Design		Open-chassis type (IP20), Enclosure panel (UL Type 1) Note: Installing the UL Type 1 kit to a drive in an open chassis type (IP20) makes the drive compliant with an enclosure panel (UL Type 1).

*1: Approval pending for catalog codes GA70:2169 to 2415, and GA70:4371 to 4675.

*2: Approval pending.

Note: Perform Rotational Auto-Tuning to achieve specifications listed for Open Loop Vector Control and Advanced Open Loop Vector Control.

General-Purpose

Low Harmonics Regenerative Matrix Converter U1000

200 V Class

ND: Normal Duty, HD: Heavy Duty

Model CIMR-UA:			2-0028	2-0042	2-0054	2-0068	2-0081	2-0104	2-0130	2-0154	2-0192	2-0248
Rated Input/Output	Rated Input	ND	25	38	49	62	74	95	118	140	175	226
	Current* ¹	A	20	25	38	49	62	74	95	118	140	175
	Rated Input	ND	12	17	22	28	34	43	54	64	80	103
	Capacity* ²	kVA	9	12	17	22	28	34	43	54	64	80
	Rated Output	ND	28	42	54	68	81	104	130	154	192	248
	Current* ⁴ * ⁵	A	22	28	42	54	68	81	104	130	154	192
Power	Overload Tolerance	HD Rating: 150% of rated output current for 60 s, ND Rating: 120% of rated output current for 60 s (Derating may be required for repetitive loads)										
	Carrier Frequency	4 kHz (User adjustable up to 10 kHz. Derating may be required.)										
	Max. Output Voltage	Depends on input voltage										
	Max. Output Frequency	400 Hz										
	Rated Voltage/Rated Frequency	Three-phase AC power supply: 200 to 240 Vac 50/60 Hz										
	Allowable Voltage Fluctuation	-15% to +10%										
	Allowable Frequency Fluctuation	±3% (Frequency fluctuation rate: 1 Hz/100 ms or less)										
	Allowable Power Voltage	less than 2%										
	Imbalance between Phases											
	Harmonic Current Distortion Rate* ⁶	5% or less (IEEE 519)										
	Input Power Factor	0.98 or more (for rated load)										

400 V Class

Model CIMR-UA			4-0011	4-0014	4-0021	4-0027	4-0034	4-0040	4-0052	4-0065	4-0077	4-0096	4-0124	4-0156
Rated Input/Output	Rated Input	ND	10	13	19	25	31	36	47	59	70	87	113	142
	Current* ¹	A	8.7	10	13	19	25	31	36	47	59	70	87	113
	Rated Input	ND	9	12	17	22	28	33	43	54	64	80	103	130
	Capacity* ³	kVA	8	9	12	17	22	28	33	43	54	64	80	103
	Rated Output	ND	11	14	21	27	34	40	52	65	77	96	124	156
	Current* ⁴ * ⁵	A	9.6	11	14	21	27	34	40	52	65	77	96	124
Model CIMR-UA			4-0180	4-0216	4-0240	4-0302	4-0361	4-0414	4-0477	4-0590	4-0720* ⁷	4-0900* ⁷	4-0930* ⁷	
Rated Input/Output	Rated Input	ND	164	197	218	275	329	377	434	537	655	819	846	
	Current* ¹	A	142	164	197	218	275	329	377	434	537	655	819	
	Rated Input	ND	150	180	200	251	300	344	396	490	598	748	773	
	Capacity* ³	kVA	130	150	180	200	251	300	344	396	490	598	748	
	Rated Output	ND	180	216	240	302	361	414	477	590	720	900	930	
	Current* ⁴ * ⁵	A	156	180	216	240	302	361	414	477	590	720	900	

Rated output	Overload Tolerance	HD Rating: 150% of rated output current for 60 s, ND Rating: 120% of rated output current for 60 s (Derating may be required for repetitive loads)										
	Carrier Frequency	CIMR-U-4-0011 to 4-0414: 4 kHz (User adjustable up to 6 kHz. Derating may be required.) CIMR-U-4-0477 to 4-0930: 3 kHz										
	Max. Output Voltage	Depends on input voltage										
	Max. Output Frequency	400 Hz										
Power	Rated Voltage/ Rated Frequency	Three-phase AC power supply (CIMR-U-4A-4P-): 380 to 500 Vac* ⁸ 50/60 Hz Three-phase AC power supply (CIMR-U-4E-4W-): 380 to 480 Vac 50/60 Hz										
	Allowable Voltage Fluctuation	-15% to +10%										
	Allowable Frequency Fluctuation	±3% (Frequency fluctuation rate: 1 Hz/100 ms or less)										
	Allowable Power Voltage	less than 2%										
	Imbalance between Phases											
Harmonic Current Distortion Rate* ⁶		5% or less (IEEE 519)										
Input Power Factor		0.98 or more (for rated load)										

*1 : Assumes operation at the rated output current. This value may fluctuate based on the power supply side impedance, as well as the input current, power supply transformer, and wiring conditions.

*2 : The rated input capacity is calculated by multiplying the power line voltage (240 V) by 1.1.

*3 : The rated input capacity is calculated by multiplying the power line voltage (480 V) by 1.1.

*4 : The rated output current of the drive should be equal to or greater than the motor rated current.

*5 : This value assumes a carrier frequency of 4 kHz for models CIMR-U-2-0028 to 2-0248, 4-0011 to 4-0414 and a carrier frequency of 3 kHz for models CIMR-U-4-0477 to 4-0930. Increasing the carrier frequency requires a reduction in current.

*6 : When the harmonic current distortion rate is 5% or less, the maximum output voltage is calculated by multiplying input power voltage by 0.87. You must also change the parameter from the default setting.

*7 : Models CIMR-U-4-0720 to 4-0930 need installation of standard configuration device (harmonic filter module).

*8 : Use a three-phase power supply of 380 to 480 Vac for models CIMR-U-4-0477 to 4-0930 with an EMC filter connected.

Common Specifications

Catalog No. KAEP C710636 02

Item		Specifications
Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, Open Loop Vector Control for PM, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital reference : within $\pm 0.01\%$ of the max. output frequency (-10 to $+40^{\circ}\text{C}$) Analog reference : within $\pm 0.1\%$ of the max. output frequency ($25 \pm 10^{\circ}\text{C}$)
	Frequency Setting Resolution	Digital reference : 0.01 Hz, Analog reference : 0.03 Hz / 60 Hz (11 bit)
	Output Frequency Resolution	0.001 Hz
	Frequency Setting Resolution	Main frequency reference : -10 to $+10$ Vdc, 0 to 10 Vdc (20 k), 4 to 20 mA (250), 0 to 20 mA (250) Main speed reference : Pulse train input (max. 32 kHz)
	Starting Torque	V/f Control 150%/3 Hz V/f Control with PG 150%/3 Hz Open Loop Vector Control 200%/0.3 Hz*1 Closed Loop Vector Control 200%/0 min ⁻¹ *1 Open Loop Vector Control for PM 100%/5% Speed Advanced Open Loop Vector Control for PM 200%/0 min ⁻¹ *1 Closed Loop Vector Control for PM 200%/0 min ⁻¹ *1
	Speed Control Range	V/f Control 1 : 40 V/f Control with PG 1 : 40 Open Loop Vector Control 1 : 200 Closed Loop Vector Control 1 : 1500 Open Loop Vector Control for PM 1 : 20 Advanced Open Loop Vector Control for PM 1 : 100 Closed Loop Vector Control for PM 1 : 1500
	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control ($25 \pm 10^{\circ}\text{C}$), $\pm 0.02\%$ in Closed Loop Vector Control ($25 \pm 10^{\circ}\text{C}$) *2
	Speed Response	10 Hz in Open Loop Vector Control ($25 \pm 10^{\circ}\text{C}$), 250 Hz in Closed Loop Vector Control ($25 \pm 10^{\circ}\text{C}$) (excludes temperature fluctuation when performing Rotational Auto-Tuning)
	Torque Limit	Parameters setting allow separate limits in four quadrants (available in OLV, CLV, AOLV/PM, CLV/PM)
	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	Same value as overload tolerance
	V/f Characteristics	User-selected programs and V/f preset patterns possible
	Main Control Functions	Torque Control, Droop Control, Speed/Torque Control switch, Feed Forward Control, Zero Servo Control, Momentary Power Loss Ride-Thru, Speed Search, Synchronous Transfer with Commercial Power Supply, Overtorque detection, torque limit, 17 Step Speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell function, cooling fan on/off switch, slip compensation, torque compensation, Frequency Jump, Upper/lower limits for frequency reference, DC Injection Braking at start and stop, High Slip Braking, PID control (with Sleep function), Energy Saving Control, MEMOBUS comm. (RS-485/422, max. 115.2 kbps), Fault Restart, Application Presets, DriveWorksEZ (customized functions), Removable Terminal Block with Parameter Backup, Online Tuning, Overexcitation Deceleration, Inertia (ASR) Tuning, High Frequency Injection, etc.
Standards Compliance		· UL508C · IEC/EN61800-3, IEC/EN61800-5-1 · Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat.3 Ple, IEC/EN61508 SIL3
Protection Design		IP00 open-chassis, UL Type 1 enclosure*3*4*5

*1 : Current derating is required.

*2 : Speed control accuracy may vary slightly depending on installation conditions or motor used. Contact Yaskawa for consultation.

*3 : Optional UL Type 1 kit is required.

*4 : Removing the top protective cover on an UL Type 1 enclosure drive converts this drive to an IP20 conformity.

*5 : The UL Type 1 enclosure does not support models CIMR-U400720 to 400930.

General-Purpose

Advanced Vector Control Inverter **Varispeed G7**

200 V Class

Catalog No. KAE-S616-60

Model CIMR-G7A□□□□			20P4	20P7	21P5	22P2	23P7	25P5	27P5	2011	2015	2018	2022	2030	2037	2045	2055	2075	2090	2110	
Max. Applicable Motor Capacity*1			kW	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
Output	Rated Output Capacity	kVA	1.2	2.3	3	4.6	6.9	10	13	19	25	30	37	50	61	70	85	110	140	160	
	Rated Output Current	A	3.2	6	8	12	18	27	34	49	66	80	96	130	160	183	224	300	358	415	
	Max. Output Voltage	Three-phase, 200/208/220/230/240 V (proportional to input voltage)																			
	Max. Output Frequency	400 Hz by parameter settings*2																			
Power	Rated Voltage/Rated Frequency	Three-phase AC power supply: 200/208/220/230/240 V, 50/60 Hz*3 DC power supply: 270 to 340 V*4																			
	Allowable Voltage Fluctuation	- 15 to +10%																			
	Allowable Frequency Fluctuation	±5%																			
Harmonic Suppression	DC Reactor	Optional										Standard									
	12-pulse Input	Not available										Available*5									

400 V Class

Model CIMR-G7A□□□□			40P4	40P7	41P5	42P2	43P7	45P5	47P5	4011	4015	4018	4022	4030	4037	4045	4055	4075	4090	4110	4132	4160	4185	4220	4300		
Max. Applicable Motor Capacity*1			kW	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	300	
Output	Rated Output Capacity		kVA	1.4	2.6	3.7	4.7	6.9	11	16	21	26	32	40	50	61	74	98	130	150	180	210	230	280	340	460	
	Rated Output Current		A	1.8	3.4	4.8	6.2	9	15	21	27	34	42	52	65	80	97	128	165	195	240	270	302	370	450	605	
	Max. Output Voltage		Three-phase, 380/400/415/440/460/480 V (proportional to input voltage)																								
	Max. Output Frequency		400 Hz by parameter settings*2*6																								
Power	Rated Voltage/Rated Frequency		Three-phase AC power supply: 380/400/415/440/460/480 V, 50/60 Hz DC power supply: 510 to 680 V*4																								
	Allowable Voltage Fluctuation		-15 to +10%																								
	Allowable Frequency Fluctuation		±5%																								
	Harmonic Suppression		DC Reactor	Optional										Standard													
		12-pulse Input	Not available										Available*5														

Common Specifications

Items		Specifications
Control Characteristics	Control Method	Sine wave PWM (Flux Loop Vector Control, Open Loop Vector Control 1 and 2*7, V/f Control, V/f with PG Control)
	Starting Torque	150% at 0.3 Hz (Open Loop Vector Control 2)*8, 150% at 0 r/min (Flux Loop Vector Control)*8
	Speed Control Range	1 : 200 (Open Loop Vector Control 2)*8, 1 : 1000 (Flux Loop Vector Control)*8
	Speed Control Accuracy	±0.2%*10 (Open Loop Vector Control 2 at 25±10°C), ±0.02% (Flux Loop Vector Control at 25±10°C)*8
	Speed Response	10 Hz (Open Loop Vector Control 2)*8, 40 Hz (Flux Loop Vector Control)*8
	Torque Limit	Vector Control allows separate settings in four quadrants.
	Torque Accuracy	±5%
	Frequency Control Range	0.01 to 400 Hz*2*6
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: ±0.01%, -10 to +40°C ; Analog reference: ±0.1%, 25±10°C
	Frequency Setting Resolution	Digital reference: 0.01 Hz; Analog reference: 0.03/60 Hz (11 bit signed)
	Output Frequency Resolution	0.001 Hz
	Overload Tolerance	150% of rated output current for 1 min., 200% of rated output current for 0.5 s
	Frequency Setting Signal	-10 to +10 V, 0 to 10 V, 4 to 20 mA, pulse train
	Accel/Decel Time	0.01 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	Approx. 20% (approx. 125% with dynamic braking resistor option)*9, 200/400 V 15 kW or less have an internal braking transistor.
Main Control Functions		Momentary power loss ride-thru, Speed search, Overtorque detection, Torque limit, 17-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell function, Cooling fan on/off switch, Slip compensation, Torque compensation, Frequency jump, Frequency upper/lower limit settings, DC injection braking at start/stop, High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS communication (RS-485/422 max. 19.2 kbps), Fault restart, Parameter copy, Droop control, Torque control, Speed/torque control switching, Feedforward control, Zero-servo control...

*1: The motor capacity (kW) refers to a Yaskawa 4-pole motor. The rated output current of the inverter output amps should be equal to or greater than the motor rated current.

Select a motor that does not exceed the maximum output specifications for the drive.

*2: The setting range for Open Loop Vector Control 2 is 0 to 66 Hz (for PROG: 103□, 0 to 132 Hz).

*3: The power supply for the cooling fan used in 200 V 30 kW inverters and larger is three-phase 200/208/220 V 50 Hz, and 200/208/220/230 V 60 Hz. Transformer is required for the cooling fan power supply in 230 V 50 Hz and 240 V 50/60 Hz units.

*4: Not compliant with UL or CE standards when using a DC power supply.

*5: A 3-winding transformer (option) is required at 12-pulse input.

*6: For 400 V class drives, the maximum output frequency value is limited by the carrier frequency setting and capacity. 90 to 110 kW: 250 Hz, 132 to 300 kW: 166 Hz. Contact your Yaskawa representative for details.

*7: Contact your Yaskawa representatives when using the Open Loop Vector Control 2 for an application with large regenerative power (hoists, etc.).

*8: Rotational Auto-Tuning must be performed prior to operating in Flux Loop Vector Control and Open Loop Vector Control 2 in order to ensure inverter performance.

*9: Stall Prevention must be disabled during deceleration (L3-04 = 0) when using any type of braking resistor.

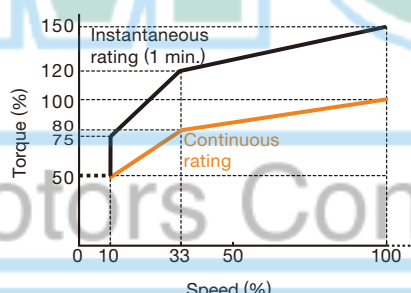
If enabled, the inverter will not be able to stop the motor within the designated time.

*10: The speed control accuracy depends on the installation conditions and type of motor used. Contact your Yaskawa representative for details.

General-Purpose

Compact and Energy Efficiency ECOiPM Drive

Motors

Output		kW		0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
Model EMR1- <div></div>												
(Example of 200 V class 1750 r/min)*1												
Frame No.	3600 r/min	20P4AFN-L	20P7AFN-L	21P5AFN-L	22P2AFN-S	23P7AFN-S	25P5AFN-S	27P5AFN-S	2011AFN-S	2015AFN-S		
	1750 r/min	56	56	63A	63B	71	80	90A	90B	100	112	
	1450 r/min	63A	63B	71	80	90A	90B	100	112			
	1150 r/min	63A	63B	71	80	90A	—	—	—	—		
Mounting		Flange-mounted type: Frame numbers up to 63B, Foot-mounted type: Frame numbers over 71										
Enclosure		Totally-enclosed externally fan-cooled (IP44)										
Rated Speed*2		3600/1750/1450/1150 r/min										
No. of Poles		10										
Speed Control Range		1:10 (variable torque) Note: Contact your Yaskawa representative for constant torque applications.										
Time Rating		Continuous										
Insulation Class		B: Frame numbers up to 80, F: Frame numbers from 90A										
Encoder		Without PG										
Environment	Ambient Temperature	−20 to +40°C										
	Ambient Humidity	90% RH or less (no condensation)										
	Area of Use	Indoors, non-explosion proof area (free from corrosive or explosive gas or vapor)										
	Altitude	Up to 1000 meters										
Rotation Direction		Counter clockwise from coupling (bidirectional possible)										
Coupling		Direct drive coupling or V-belt coupling Note: Contact your Yaskawa representative to learn about V-belt coupling when using a 3600 r/min motor.										
Coating		Munsell N1.5 (for indoor use)										
Standards Compliance		JEC-2100										
Options		With thermostat (for protection against overheating)										
Allowable Motor Load Characteristics		<div></div> <div>Note: The bold dotted line indicates an instantaneous operating zone.</div>										

*1: The model designation depends on the voltage class and rated speed.

For motors in the 400 V class or of a rated speed other than those listed, contact your Yaskawa representative.

*2: For the operations at the speed higher than 3600 r/min, contact your Yaskawa representative.

Drives

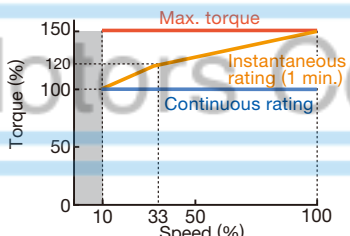
	Model CIMR-VA2A□□□□	0004	0006	0010	0012	0020	0030	0040	0056	0069
		0003	0006	0010	0012	0018	—	—	—	—
200 V Class	Rated Output Current (Heavy Duty) A	3.0	5.0	8.0	11.0	17.5	25.0	33.0	47.0	60.0
	Rated Voltage/Rated Frequency	Three-phase AC power supply: 200 to 240 V 50/60 Hz, Single-phase AC power supply: 200 to 240 V 50/60 Hz, DC power supply: 270 to 340 V								
	Allowable Voltage Fluctuation	−15 to +10%								
	Allowable Frequency Fluctuation	±5%								
	Power Supply (Heavy Duty) kVA	1.3	2.7	3.4	5.0	8.6	11.0	17.0	24.0	31.0
400 V Class	Model CIMR-VA4A□□□□	0001	0004	0005	0007	0011	0018	0023	0031	0038
	Rated Output Current (Heavy Duty) A	1.2	3.4	4.8	5.5	9.2	14.8	18.0	24.0	31.0
	Rated Voltage/Rated Frequency	Three-phase AC power supply: 380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V								
	Allowable Voltage Fluctuation	−15 to +10%								
	Power Supply (Heavy Duty) kVA	1.1	2.9	4.0	5.5	9.5	14.0	18.0	27.0	36.0

Note: For details on the drive specifications, refer to the catalog for AC Drive V1000 (catalog no. KAEPC71060608).

General-Purpose

Super Compact and Environmentally V1000pico Drive

Motors

Rated Output kW		0.1	0.2	0.4	0.2	0.4	0.75
Model	SMRD-□□□□□	20P1AE	20P2AE	20P4AE	20P2BE	20P4BE	20P7BE
Rated Speed	r/min	1800			3600		
Rated Current	A	0.64	1.0	1.9	1.5	2.6	4.2
No. of Poles		6					
Speed Control Range		1 : 10					
Time Rating		Continuous					
Insulation Class		B					
Insulation Tolerance		1500 Vac for one minute					
Insulation Resistance		500 Vdc 10 MΩ min.					
Encoder		Without PG					
Mounting		Flange-mounted type					
Protective Design		IP65 (excluding shaft opening and motor leads)					
Cooling Method		Totally enclosed self-cooled (includes heat dissipation from the flange surface toward the connected machine)					
Environment	Ambient Temperature	0 to +40°C					
	Ambient Humidity	20 to 80% RH (no condensation)					
	Area of Use	Indoors					
	Altitude	Up to 1000 meters					
	Vibration Resistance	49.0 m/s ² or below					
Vibration Class		V15 at rated speed Note: The drive must be adjusted.					
Allowable Radial Load*1		N	245	245	245	245	245
Allowable Thrust Load*1		N	74	74	147	74	147
Motor Inertia (×10 ⁻⁴)		kg·m ²	0.255	0.438	1.57	0.255	0.438
Allowable Load Motor Inertia*2			For variable torque application: 50 times max.				
(Motor shaft conversion)			For constant torque application: 5 times max.				
Torque Characteristics	Rated Torque	N·m	0.531	1.06	2.12	0.531	1.06
	Max. Starting Torque*3	N·m	0.796	1.59	3.18	0.796	1.59
	Allowable Load Characteristics*3		 <p>Note: Outputs the torque at start in the shaded area.</p>				

*1: If the value of shaft end load exceeds either the allowable radial load or allowable thrust load, or if an unbalanced rotating load occurs, contact your Yaskawa representative.

*2: If the load motor inertia exceeds the allowable value, contact your Yaskawa representative.

*3: Users are required to select a drive whose maximum load current is 150% or less of the drive rated current and to set the drive parameter for maximum torque (at high starting or low constant speed).

If a high starting torque is required, use a motor with an acceleration time of 3 seconds minimum and a load motor inertia (converted at the motor shaft) of 5 times maximum.

Notes: 1. The motor frame temperature must be 95°C or less.

2. To allow sufficient cooling, be sure to secure at least the following heat dissipation surface area on the motor connected machine side.

· Aluminum plate of 250 × 250 × 6 mm (or of dimensions that add up to a total surface area of 0.127 m²)

Drives

Model	Three-phase 200 V		CIMR-VA2A□□□□	0001	0002	0004	0006
	Single-phase 200 V		CIMR-VABA□□□□	0001	0002	0003	0006
Max. Applicable Motor Capacity (Heavy Duty) kW				0.1	0.2	0.4	0.75
Rated Output Current (Heavy Duty) A				0.8	1.6	3	5
Power	Rated Voltage/Rated Frequency			Three-phase AC power supply: 200 to 240 V 50/60 Hz Single-phase AC power supply: 200 to 240 V 50/60 Hz			
	Allowable Voltage Fluctuation			- 15 to +10%			
	Allowable Frequency Fluctuation			±5%			
	Power Supply (Heavy Dutc) kVA	Three-phase		0.3	0.7	1.3	2.7
		Single-phase		0.4	0.7	1.5	2.9

Note: For details on the drive specifications, refer to the catalog for AC Drive V1000 (catalog no. KAEPC71060608).

Elevator applications L1000A

200 V Class

Model		CIMR-LT2A□□□□																
		0008	0011	0018	0025	0033	0047	0060	0075	0085	0115	0145	0180	0215	0283	0346	0415	
Max. Applicable Motor Capacity*1		kW	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
Output	Rated Output Capacity*2	kVA	3*3	4.2*3	6.7*3	9.5*3	12.6*3	17.9*3	23*3	29*3	32*3	44*3	55*4	69*4	82*4	108*4	132*4	158*4
	Rated Output Current	A	8*3	11*3	17.5*3	25*3	33*3	47*3	60*3	75*3	85*3	115*3	145*4	180*4	215*4	283*4	346*4	415*4
	Overload Tolerance	150% of rated output current for 60 s																
	Max. Output Voltage	Three-phase 200 to 240 V (proportional to input voltage)																
	Max. Output Frequency	120 Hz (user adjustable)																
Power	Rated Voltage/Rated Frequency	Three-phase 200 to 240 Vac 50/60 Hz 270 to 340 Vdc																
	Allowable Voltage Fluctuation	− 15 to +10%																
	Allowable Frequency Fluctuation	±5%																

400 V Class

Model		CIMR-LT4A					0005	0006	0009	0015	0018	0024	0031	0039	0045	0060	0075	0091	0112	0150	0180	0216
Max. Applicable Motor Capacity*1		kW	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110				
Output	Rated Output Capacity*5	kVA	3.7*3	4.2*3	7*3	11.3*3	13.7*3	18.3*3	24*3	30*3	34*3	48*3	57*3	69*3	85*4	114*4	137*4	165*4				
	Rated Output Current	A	4.8*3	5.5*3	9.2*3	14.8*3	18*3	24*3	31*3	39*3	45*3	60*3	75*3	91*3	112*4	150*4	180*4	216*4				
	Overload Tolerance	150% of rated output current for 60 s																				
	Max. Output Voltage	Three-phase 380 to 480 V (proportional to input voltage)																				
	Max. Output Frequency	120 Hz (user adjustable)																				
Power	Rated Voltage/Rated Frequency	Three-phase 380 to 480 Vac 50/60 Hz										510 to 680 Vdc										
	Allowable Voltage Fluctuation	-15 to +10%																				
	Allowable Frequency Fluctuation	±5%																				

Common Specifications

Item	Specification
Control Method	V/f Control, Open Loop Vector Control, Closed Loop Vector Control, Closed Loop Vector Control for PM
Frequency Control Range	0.01 to 120 Hz
Frequency Accuracy (Temperature Fluctuation)	Digital reference: within ±0.01% of the max. output frequency (-10 to +40°C) Analog reference: within ±0.1% of the max. output frequency (25±10°C)
Output Frequency Resolution	0.001 Hz
Frequency Setting Resolution	Main frequency reference: -10 to +10 Vdc (20 kΩ), 0 to +10 Vdc (20 kΩ), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω)
Starting Torque	150% / 3 Hz (V/f Control) 200% / 0 r/min (Closed Loop Vector Control) 200% / 0.3 Hz (Open Loop Vector Control)*6 200% / 0 r/min (Closed Loop Vector Control for PM)
Speed Control Range	1 : 40 (V/f Control) 1 : 1500 (Closed Loop Vector Control) 1 : 200 (Open Loop Vector Control)*6 1 : 1500 (Closed Loop Vector Control for PM)
Speed Control Accuracy	±0.2% in Open Loop Vector Control (25±10°C)*6 *7, ±0.02% in Closed Loop Vector Control (25±10°C)
Speed Response	10 Hz in Open Loop Vector Control (25±10°C)*6, 50 Hz in Closed Loop Vector Control (25±10°C) (excludes temperature fluctuation when performing Rotational Auto-Tuning)
Torque Limit	All vector control modes allow separate settings in four quadrants
Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
Braking Torque	Approximately 125% when using a braking resistor option
V/f Characteristics	User-selected programs and V/f preset patterns possible
Main Control Functions	Torque compensation at start (with or without sensors), Auto-Tuning (for motor and encoder offset), braking sequence, Feed Forward, Short Floor, Rescue Operation using back-up power supply, Light Load Direction Search, Removable Terminal Block with Parameter Backup...
Standards Compliant	· UL508C · IEC/EN61800-3, IEC/EN61800-5-1 · Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat. 3 PLd, IEC/EN61508 SIL2
Protective Design	IP00 open-chassis, UL Type 1 enclosure*8

*1: The motor capacity (kW) refers to a Yaskawa 4-pole induction motor (200 V, 60 Hz). The rated output current of the drive output amps should be equal to or greater than the motor rated current.

*2: Rated output capacity is calculated with a rated output voltage of 220 V.

*3: Carrier frequency is set to 8 kHz. Current derating is required in order to raise the carrier frequency.

*4: Carrier frequency is set to 5 kHz. Current derating is required in order to raise the carrier frequency.

*5: Rated output capacity is calculated with a rated output voltage of 440 V.

*6: Auto-Tuning must be performed prior to operating in Open Loop Vector Control to achieve the performance specifications listed above.

*7: Speed control accuracy may vary slightly depending on installation conditions or motor used. Contact Yaskawa for details.

*8: Removing the top cover on the following models converts the UL Type 1 rating to IP20: CIMR-LA2A0008 to 2A0075, CIMR-LA4A0005 to 4A0039

Power regenerative converter D1000

D1000 Energy-saving Unit

Catalog No. KAEP C710656 03

Voltage		200 V Class								400 V Class												
Model CIMR-DA- $\frac{A}{A}$		0005	0010	0020	0030	0050	0065	0090	0130	0005	0010	0020	0030	0040	0060	0100	0130	0185	0270	0370	0630	
Max. Applicable Motor Capacity kW		3.7	7.5	15	22	37	55	75	110	3.7	7.5	15	22	30	45	75	110	160	220	315	560	
Rating	Rated Output Capacity*2 kW	5	10	20	30	50	65	90	130	5	10	20	30	40	60	100	130	185	270	370	630	
	Rated Output Current(DC) A	15	30	61	91	152	197	273	394	8	15	30	45	61	91	152	197	280	409	561	955	
	Rated Input Current(AC) A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	410	560	1040	
	Rated Output Voltage	330 Vdc									660 Vdc											
Input	Rated Voltage/Rated Frequency	200 to 240 Vac 50/60 Hz									380 to 480 Vac 50/60 Hz											
	Allowable Voltage Fluctuation	-15 to +10%																				
Control Characteristics	Allowable Frequency Fluctuation	$\pm 2\%$																				
	Control Method	Sine-wave PWM control																				
	Input Power Factor	Input power factor of 0.99 min. (for rated operation)																				
	Output Voltage Accuracy	$\pm 5\%$																				
	Overload Protection	Unit stops after 60 s at 150% of rated output current or after 3 s at 200% of rated output current.																				
	Voltage Reference Range	300 to 360 Vdc									600 to 730 Vdc											
	Carrier Frequency	6 kHz				4 kHz				6 kHz						4 kHz				2 kHz		
	Main Control Functions	Current Limit, Cooling Fan on/off Switch, Removable Terminal Block with Parameter Backup Function, MEMOBUS/Modbus Comm. (RS-422/RS-485 max, 115.2 kbps)																				
Protection Functions	Momentary Overcurrent Protection	Unit stops when input current exceeds 250%.																				
	Fuse burnout	Operation stops if the fuse burns out.																				
	Overloads	Operation stops after 60 s at 150% of rated output current. Operation stops after 3 s at 200% of rated output current. (electrical operation and regeneration)																				
		Output	Stops when DC bus voltage exceeds approx. 410 Vdc									Stops when DC bus voltage exceeds approx. 820 Vdc										
	Protection	Input	Stops when input voltage exceeds approx. 227 Vac									Stops when input voltage exceeds approx. 554 Vac										
	Undervoltage	Output	Stops when DC bus voltage falls below approx. 190 Vdc									Stops when DC bus voltage falls below approx. 380 Vdc										
	Protection	Input	Stops when input voltage falls below approx. 150 Vac									Stops when input voltage falls below approx. 300 Vac										
	Momentary Power Loss	Immediately stops after Momentary Power Loss is detected.																				
	Power Supply Frequency Fault	Operation stops for a deviation of ± 6 Hz or more from the rated input frequency.																				
	Heatsink Overheat Protection	Protection by thermistor																				
Environment	Ground Fault Protection*3	Protection by electronic circuit																				
	Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V																				
	Area of Use	Indoors																				
	Ambient Temperature	-10 to +50°C (IP00/IP20/Open Type enclosure)																				
	Humidity	95% RH or less (no condensation)																				
	Shock	(2A0005 to 2A0050, 4A0005 to 4A0100) 10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 5.9 m/s ² (2A0065 to 2A0130, 4A0130 to 4A0370) 10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 2.0 m/s ² (4A0630) 10 to 20 Hz : 5.9 m/s ² , 20 to 55 Hz : 2.0 m/s ²																				
		Storage Temperature	-20 to +60°C (short-term temperature during transportation)																			
		Altitude	Up to 1000 meters (derating required at altitudes from 1000 m to 3000 m)																			
	Protection Design	IP00/IP20/Open Type enclosure																				
	Safety Standard	UL508C, IEC61800-5-1, IEC61800-3																				

*1 : This number indicates the voltage class (2: 200 V class, 4: 400 V class).

*2 : For the 200 V class, rated output capacity is calculated with a rated output voltage of 220 V. For the 400 V class, values are given for an input voltage of 440 V.

*3 : Protection may not be provided under the following conditions as the motor windings are grounded internally during run:

- Low resistance to ground from the drive cable or terminal block.
- Drive already has a short-circuit when the power is turned on.

Note: You must install a harmonic filter module and input AC reactor 1 for a D1000 of 5 to 185 kW.

You must install a reactor for the harmonic filter, a capacitor for the harmonic filter, and input AC reactors 1 and 2 for a D1000 of 270 to 630 kW.

D1000 Standard Configuration Devices

Voltage		200 V								400 V											
Model CIMR-DA- $\frac{A}{A}$		0005	0010	0020	0030	0050	0065	0090	0130	0005	0010	0020	0030	0040	0060	0100	0130	0185	0270	0370	0630
Harmonic Filter Module	Rated Current A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	—	—	—
	Rated Current A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	410	560	560
Input AC Reactor 1	Inductance mH	2.45	1.27	0.64	0.44	0.26	0.18	0.14	0.09	9.19	4.59	2.45	1.71	1.27	0.85	0.51	0.35	0.25	0.18	0.13	0.13
Input AC Reactor 2	Rated Current A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	410	560	1140
	Inductance mH	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.06	0.05	0.02
Reactor for Harmonic Filter	Rated Current A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	64	87	177
	Inductance mH	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.022	0.0158	0.0079
Condenser for Harmonic Filter	Rated Capacity μ F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	290	402	800

* : This number indicates the voltage class (2: 200 V class, 4: 400 V class).

Note: CIMR-DA-4A0630 requires two units of input AC reactor 1.

Energy-Saving Unit

Power Regenerative Unit R1000

R1000 Energy-saving Unit

Catalog No. KAEP C710656 05

Voltage		200 V Class												400 V Class															
Model CIMR-RA* ¹ A* ²		03P5	0005	0007	0010	0014	0017	0020	0028	0035	0053	0073	0105	03P5	0005	0007	0010	0014	0017	0020	0028	0035	0043	0053	0073	0105	0150	0210	0300
Max. Applicable Motor Capacity kW		3.7	5.5	7.5	11	15	18.5	22	30	37	55	75	110	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	110	160	220	315
Rating	Regeneration Capacity kW	3.5	5	7	10	14	17	20	28	35	53	73	105	3.5	5	7	10	14	17	20	28	35	43	53	73	105	150	210	300
	Rated Output Current (DC) A	14	20	27	41	55	68	81	112	138	207	282	413	7	11	15	22	30	36	43	58	73	89	109	149	217	320	440	629
	Rated Input Current (AC) A	10	15	20	30	41	50	60	83	102	153	209	306	5	8	11	16	22	27	32	43	54	66	81	110	161	237	326	466
Input	Rated Voltage/Rated Frequency	200 to 240Vac 50/60Hz												380 to 480Vac 50/60Hz															
	Allowable Voltage Fluctuation	- 15 to + 10%																											
	Allowable Frequency Fluctuation	±2%																											
Control Characteristics	Control Method	120° excitation method																											
	Input Power Factor	0.9 min. (for rated load)																											
	Overload Protection	30 s at approx. 150% of rated current.																											
	Regenerative Torque	150% 30 s, 100% 25% ED 60 s, 80% continuous																											
	Main Control Functions	Cooling Fan on/off Switch, Removable Terminal Block with Parameter Backup, MEMOBUS/Modbus Comm. (RS-422/RS-485 max, 115.2 kbps)																											
Protection Functions	Momentary Overcurrent Protection	Operation stops for approx. 250% or higher of the rated power supply current.																											
	Fuse burnout	Operation stops if the fuse burns out.																											
	Overloads	Operation stops for 150% of the rated power supply current for 30 s.																											
	Overvoltage Protection	Output	Stops when DC bus voltage exceeds approx. 410 Vdc												Stops when DC bus voltage exceeds approx. 820 Vdc														
		Input	Stops when input voltage exceeds approx. 227 Vac												Stops when input voltage exceeds approx. 554 Vac														
	Undervoltage Protection	Output	Stops when DC bus voltage falls below approx. 190 Vdc												Stops when DC bus voltage falls below approx. 380 Vdc														
		Input	Stops when input voltage falls below approx. 150 Vac												Stops when input voltage falls below approx. 300 Vac														
	Momentary Power Loss	Immediately stops after Momentary Power Loss is detected.																											
	Power Supply Frequency Fault	Operation stops for a deviation of ± 6 Hz or more from the rated input frequency.																											
	Heatsink Overheat Protection	Protection by thermistor																											
	Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V																											
Environment	Area of Use	Indoors (Protected from corrosive gases and dust)																											
	Ambient Temperature	-10 to +40°C (UL Type1), -10 to +50°C (IP00, IP20)																											
	Humidity	95% RH or less (no condensation)																											
	Shock	(2A03P5 to 2A0053, 4A03P5 to 4A0073)10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 5.9 m/s ² (2A0073 to 2A0105, 4A0105 to 4A0300)10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 2.0 m/s ²																											
	Storage Temperature	-20 to +60°C (short-term temperature during transportation)																											
	Altitude	Up to 1000 meters (derating required at altitudes from 1000 to 3000 m)																											
Protection Design		Open Type enclosure (IP00) Enclosed Wall-Mounted (IP20/UL Type1)*2																											
Safety Standard		UL508C, IEC/EN61800-5-1, IEC/EN61800-3																											

*1 : This number indicates the voltage class (2: 200 V class, 4: 400 V class).

*2 : IP20 protection applies if the top cover is removed from a IP20/UL Type1 Unit (CIMR-RA2A03P5 to CIMR-RA2A0028 or CIMR-RA4A03P5 to CIMR-RA4A0028).

R1000 Standard Configuration Devices

Voltage		200 V Class												400 V Class															
Model CIMR-RA* ¹ A* ²		03P5	0005	0007	0010	0014	0017	0020	0028	0035	0053	0073	0105	03P5	0005	0007	0010	0014	0017	0020	0028	0035	0043	0053	0073	0105	0150	0210	0300
Power Coordinating Reactor	Rated Current A	20	30	40	60	80	90	120	160	200	280	360	500	10	15	20	30	40	50	60	80	90	120	150	200	250	330	490	660
	Inductance mH	0.53	0.35	0.265	0.18	0.13	0.12	0.09	0.07	0.05	0.038	0.026	0.02	2.2	1.42	1.06	0.7	0.53	0.42	0.36	0.26	0.24	0.18	0.15	0.11	0.09	0.06	0.04	0.03
Current Suppression Reactor	Rated Current A	15	15	20	40	40	50	60	80	100	153	209	306	7.5	7.5	10	15	25	25	30	40	50	60	75	100	161	237	326	466
	Inductance mH	0.31	0.31	0.15	0.1	0.1	0.06	0.05	0.04	0.03	0.02	0.015	0.01	1.2	1.2	0.6	0.4	0.3	0.3	0.2	0.15	0.12	0.1	0.08	0.06	0.04	0.03	0.02	0.013
Fuse	Rated Current A	20	25	32	50	63	80	100	125	160	200	350	500	16	16	16	25	40	40	50	63	80	100	125	160	250	350	500	630

* : This number indicates the voltage class (2: 200 V class, 4: 400 V class).

System Solutions

Low-voltage Inverter Drive for Systems FSDrive-LV1HM (Drawer type, 400 V Class) Catalog No. KAEP C710691 00

Model	CIMR-LV1HMD□4□□□	0P4	0P7	1P5	2P2	3P0	3P7	5P5	7P5	011	015	018	022	030	037	045	
Max. Applicable Motor Capacity*1	kW	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
Rated Input Current*2	A	1.8	3.2	4.4	6	8.2	10.4	15	20	29	39	44	43	58	71	86	
Rated Input Voltage		510 VDC to 720 VDC															
Output	Rated Output Capacity*3	kVA	1.4	2.6	3.7	4.2	5.5	7	11.3	13.7	18.3	24	30	34	46	57	69
	Rated Output Current*4	A	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18	24	31	39	45	60	75	91
	Overload Tolerance	150% of rated output current for 60 s															
	Max. Output Voltage	Three-phase 380 V to 480 V (relative to input voltage)															
	Max. Output Frequency	400 Hz (user-set)															
Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, EMS Control, Open Loop Vector Control for PM, and Closed Loop Vector Control for PM															
	Frequency Control Range	0.01 Hz to 400 Hz															
	Frequency Accuracy (Temperature Fluctuation)	Digital reference : within ±0.01% of the max. output frequency (–10°C to +40°C) Analog reference: within ±0.1% of the max. output frequency (25°C±10°C)															
	Frequency Setting Resolution	Digital reference: 0.01 Hz Analog reference: 0.03 Hz/60 Hz (11 bit)															
	Output Frequency Resolution	0.001 Hz															
	Speed Control Range	1:1500 (Closed Loop Vector Control and Closed Loop Vector Control for PM) 1:200 (Open Loop Vector Control) 1:40 (V/f Control and V/f Control with PG) 1:20 (Open Loop Vector Control for PM) 1:100 (Advanced Open Loop Vector Control for PM)															
	Speed Control Accuracy	±0.2% in Open Loop Vector Control (25°C±10°C), 0.01% in Closed Loop Vector Control (25°C±10°C)															
	Speed Response	10 Hz in Open Loop Vector Control (25°C±10°C), 50 Hz in Closed Loop Vector Control (25°C±10°C) (excludes temperature fluctuation when performing rotational autotuning)															
	Accel/Decel Time	0.00 s to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)															
	Main Control Functions	Torque control, Droop control, speed/torque control switch, feed forward control, load torque observer control, momentary power loss ride-thru, speed search, overtorque detection, torque limit, autotuning, Dwell function, slip compensation, torque compensation, energy saving control, etc.															

*1: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz, 400 V motor.

The rated output current of the inverter output amps should be equal to or greater than the motor rated current.

*2: Value displayed is for operating at the rated output current. This value may fluctuate based on power supply side impedance, as well as the power supply transformer, input side reactor, and wiring.

*3: Rated output capacity is calculated with a rated output voltage of 440 VAC.

*4: Carrier frequency is set to 2 kHz.

Note: For details on 200 V class drives, refer to the catalog for Low-Voltage AC Drive for Systems FSDrive-LV1H Series (catalog no. KAEP C71069100).

System Solutions

Low-voltage Inverter Drive for Systems FSDrive-LV1HF (Fixed type) Catalog No. KAEP C710691 00

Model CIMR-LV1HFD□4□□□		055	075	090	110	132	160	185	
Max. Applicable Motor Capacity*1		kW	55	75	90	110	132	160	185
Rated Input Current*2		A	105	142	170	207	248	300	346
Rated Input Voltage		510 VDC to 720 VDC							
Output	Rated Output Capacity*3	kVA	85	114	137	165	198	232	282
	Rated Output Current*4	A	112	150	180	216	260	304	370
	Overload Tolerance	150% of rated output current for 60 s							
	Max. Output Voltage	Three-phase 380 V to 480 V (relative to input voltage)							
	Max. Output Frequency	400 Hz (user-set)							
Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, EMS Control, Open Loop Vector Control for PM, and Closed Loop Vector Control for PM							
	Frequency Control Range	0.01 Hz to 400 Hz, 55 kW to 160 kW: 0.01 Hz to 150 Hz, 185 kW							
	Frequency Accuracy (Temperature Fluctuation)	Digital reference : within ±0.01% of the max. output frequency (–10°C to +40°C) Analog reference: within ±0.1% of the max. output frequency (25°C±10°C)							
	Frequency Setting Resolution	Digital reference : 0.01 Hz Analog reference: 0.03 Hz/60 Hz (11 bit)							
	Output Frequency Resolution	0.001 Hz							
	Speed Control Range	1:1500 (Closed Loop Vector Control and Closed Loop Vector Control for PM) 1:200 (Open Loop Vector Control) 1:40 (V/f Control and V/f Control with PG) 1:20 (Open Loop Vector Control for PM) 1:100 (Advanced Open Loop Vector Control for PM)							
	Speed Control Accuracy	±0.2% in Open Loop Vector Control (25°C±10°C), 0.01% in Closed Loop Vector Control (25°C±10°C)							
	Speed Response	10 Hz in Open Loop Vector Control (25°C±10°C), 50 Hz in Closed Loop Vector Control (25°C±10°C) (excludes temperature fluctuation when performing rotational autotuning)							
	Accel/Decel Time	0.00 s to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)							
	Main Control Functions	Torque control, Droop control, speed/torque control switch, feed forward control, load torque observer control, momentary power loss ride-thru, speed search, overtorque detection, torque limit, autotuning, Dwell function, slip compensation, torque compensation, energy saving control, etc.							

*1: The motor capacity (kW) refers to a Yaskawa 4-pole, 60 Hz, 400 V motor.

The rated output current of the inverter output amps should be equal to or greater than the motor rated current.

*2: Value displayed is for operating at the rated output current. This value may fluctuate based on power supply side impedance, as well as the power supply transformer, input side reactor, and wiring.

*3: Rated output capacity is calculated with a rated output voltage of 440 VAC.

*4: Carrier frequency is set to 2 kHz.

Low-voltage Inverter Drive for Systems **FSDrive-LV1HS** (Slim type)

Catalog No. KAEP C710691 00

Model		CIMR-LV1HSR□4□□□ (400 V)					CIMR-LV1HSR□6□□□ (690 V)						
		200	400	600	800	10C	350	700	10C	14C	17C		
Max. Applicable Motor Capacity*1 kW		200	400	600	800	1000	350	700	1050	1400	1750		
Rated Input Current*2 A		373	739	1104	1467	1830	410	814	1216	1618	2019		
Rated Input Voltage		510 VDC to 720 VDC					810 VDC to 1040 VDC						
Output	Rated Output Capacity*3 kVA	320	610	920	1220	1530	440	840	1260	1680	2100		
	Rated Output Current*4 A	414	800	1200	1600	2000	360	700	1050	1400	1750		
	Overload Tolerance	150% of rated output current for 60 s											
	Career Frequency	2 kHz											
	Max. Output Voltage*5	Three-phase 380 V to 480 V (relative to input voltage)					Three-phase 600 V to 690 V (proportional to input voltage)						
	Max. Output Frequency	150 Hz											
Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, EMS Control											
	Frequency Control Range	0.01 Hz to 150 Hz											
	Frequency Accuracy (Temperature Fluctuation)	Digital reference : within ±0.01% of the max. output frequency (–10°C to +40°C) Analog reference: within ±0.1% of the max. output frequency (25°C±10°C)											
	Frequency Setting Resolution	Digital reference : 0.01 Hz Analog reference: 0.03 Hz/60 Hz (11 bit)											
	Output Frequency Resolution	0.001 Hz											
	Starting Torque	150%/3 Hz (V/f Control) 150%/3 Hz (V/f Control with PG) 200%/0.3 Hz (Open Loop Vector Control) 200%/0 min ⁻¹ (Closed Loop Vector Control)											
		Speed Control Range	1:40 (V/f Control) 1:40 (V/f Control with PG) 1:200 (Open Loop Vector Control) 1:1500 (Closed Loop Vector Control)										
			Speed Control Accuracy	±0.2% in Open Loop Vector Control (25°C±10°C), 0.01% in Closed Loop Vector Control (25°C±10°C)									
			Speed Response	5 Hz (25±10°C) (Open Loop Vector Control)									
	Accel/Decel Time		0.00 s to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)										
	Voltage/Frequency Characteristics	User-selected programs and V/f preset patterns possible											
	Main Control Functions	Torque control, Droop control, speed/torque control switch, feed forward control, load torque observer control, momentary power loss ride-thru, speed search, overtorque detection, torque limit, autotuning, Dwell function, slip compensation, torque compensation, energy saving control, etc.											

*1: The rated output current of the inverter drive output amps should be equal to or greater than the motor rated current.

*2: Value displayed is for operating at the rated output current. This value may fluctuate based on power supply side impedance, as well as the power supply transformer, input side reactor, and wiring.

*3: The rated output capacity is calculated with a rated output voltage of 440 VAC or 690 VAC.

*4: Carrier frequency is set to 2 kHz.

*5: Varies by the type of input power supply and inverter drive capacity.

Low-voltage Converter for Systems **FSDrive-LC1HS** (Slim type)

Catalog No. KAEP C710691 00

Model		CIMR-LC1HSR□4□□□ (400 V)					CIMR-LC1HSRA6□□□ (690 V)				
		200	400	600	800	10C	350	700	10C	14C	17C
Max. Applicable Inverter Drive Capacity kW		200	400	600	800	1000	350	700	1050	1400	1750
Rated Input Current A		414	800	1200	1600	2000	360	700	1050	1400	1750
Output	Rated Output Capacity kW	250	500	750	1000	1250	380	760	1140	1520	1900
	Rated Output Current A	380	760	1140	1520	1900	370	740	1110	1480	1850
	Rated Output Voltage	660 VDC					1020 VDC				
	Overload Tolerance	150% of rated input current for 60 s									
	Career Frequency	2 kHz									
	Max. Output Voltage	720 VDC					1040 VDC				
Power Supply	Rated Voltage and Rated Frequency	Three-phase 380 VAC to 480 VAC, 50/60 Hz					Three-phase 600 VAC to 690 VAC, 50/60 Hz				
	Allowable Voltage Fluctuation	−15% ~ +10%									
	Allowable Frequency Fluctuation	±3%/300 ms (free phase rotation)									
	Power Supply Equipment Capacity kVA	Power supply capacity greater than the rated input capacity									
Control Characteristics	Control Method	Sine Wave PWM*									
	Input Power Factor	0.99 min. (at rated current)									
	Output Voltage Accuracy	±5%									

* The FSDrive-LC1HS conforms to the conditions for self-excited three-phase bridges ($K_s = 0$) outlined by the "Japanese Guidelines for Reduction of Harmonic Emission" published by the Ministry of Economy, Trade and Industry in Japan. These bridges generate no harmonics, but the harmonics are not completely eliminated.

Super Energy-saving Medium-voltage AC Drive **FSDrive-MV1000**

Catalog No. KAEP C710687 02

3 kV Class	Model CIMR-MV2AC*CA□□□□		035	050	070	100	140	200	260	330	400	520	650	
	Nominal Capacity		kVA	200	285	400	570	800	1150	1500	1900	2300	3000	3700
	Max. Applicable Motor Capacity		kW	132	200	315	450	630	900	1250	1500	1800	2500	3000
	Output	Rated Output Current	A	35	50	70	100	140	200	260	330	400	520	650
	Rating	Rated Output Voltage	V	Three-phase, 3000/3300 V (sinusoidal wave, proportional to input voltage)										
Power Supply	Main Circuit		Three-phase, 3000 V (50 Hz ± 5%) or 3300 V (50/60 Hz ± 5%) –20% to +10%											
6 kV Class	Model CIMR-MV2AF*FA□□□□		035	050	070	100	140	200	260	330	400	520	650	
	Nominal Capacity		kVA	400	570	800	1150	1600	2300	3000	3800	4600	6000	7500
	Max. Applicable Motor Capacity		kW	250	400	630	900	1250	1800	2500	3000	3600	5000	6000
	Output	Rated Output Current*	A	35	50	70	100	140	200	260	330	400	520	650
	Rating	Rated Output Voltage	V	Three-phase, 6000/6600 V (sinusoidal wave, proportional to input voltage)										
Power Supply	Main Circuit		Three-phase, 6000 V (50 Hz ± 5%) or 6600 V (50/60 Hz ± 5%) –20% to +10%											
11 kV Class	Model CIMR-MV2AH*HA□□□□		035	050	070	100	140	200	260	330	400	520	650	
	Nominal Capacity		kVA	660	950	1300	1900	2650	3800	5000	6200	7600	9900	12000
	Max. Applicable Motor Capacity		kW	530	760	1070	1520	2130	3050	3960	5030	6100	7930	9910
	Output	Rated Output Current	A	35	50	70	100	140	200	260	330	400	520	650
	Rating	Rated Output Voltage	V	Three-phase, 10000 V, 10500 V or 11000 V (sinusoidal wave, proportional to input voltage)										
Power Supply	Main Circuit		Three-phase, 10000 V, 10500 V or 11000 V (50/60 Hz ± 5%) –20% to +10%											
Common Specifications	Efficiency		Approx. 97% (At rated motor speed, 100% load)											
	Power Factor		Min. 0.95 (At motor rated speed, 100% load)											
	Cooling Method		Forced air-cooling by fan (with failure detection of exhaust fan)											
	Control Specifications	Control Method	Open-loop vector control, Closed loop vector control, V/f control (for multiple motor operation), Closed loop control for SM (option)											
		Main Circuit	Voltage-type PWM control with multiple outputs connected in series (power cell: 3-level output)											

*: Derating may be required for products that meet NK certification to maintain an ambient temperature of 45°C.

Contact your Yaskawa representative for details.

Notes 1: Contact your Yaskawa representative for 2.4 kV/4.16 kV class models.

2: Asterisk indicates input frequency (5: 50 Hz, 6: 60 Hz).

Super Energy-saving Medium-voltage Matrix Inverter **FSDrive-MX1S**Medium-voltage Matrix Converter for Systems **FSDrive-MX1H**

Catalog No. KAEP C710688 00

Voltage Class			3 kV									6 kV									
Model	CIMR-MX1S*A□□□□ (3 kV)		132	200	315	450	630	900	13C	18C	25C	250	400	630	900	13C	18C	25C	36C	50C	
	CIMR-MX1S*C□□□□ (6 kV)																				
	CIMR-MX1H*A□□□□ (3 kV)																				
	CIMR-MX1H*C□□□□ (6 kV)																				
Output Rating	Max. Applicable Motor Capacity*1 kW		132	200	315	450	630	900	1250	1800	2500	250	400	630	900	1250	1800	2500	3600	5000	
	Nominal Capacity kVA		200	285	400	570	800	1150	1500	2300	3000	400	570	800	1150	1600	2300	3000	4600	6000	
	Rated Output	100%	35	50	70	100	140	200	260	400	520	35	50	70	100	140	200	260	400	520	
		Current A																			Continuous
	Rated Voltage		Three-phase, 3/3.3 kV (sine wave)									Three-phase, 6/6.6 kV (sine wave)									
Rated Frequency		50/60 Hz																			
Power	Main Circuit (Input Voltage)*2		Three-phase, 3/3.3 kV ±10%, 50/60 Hz ±5%									Three-phase, 6/6.6 kV ±10%, 50/60 Hz ±5%									
	Control Circuit		Three-phase, 200/220 V 380/400/440 V ±10%, 50/60 Hz ±5%, 3 kVA or more																		
Matrix Converter Efficiency			Efficiency: Approx. 98% (input transformer not included)*5																		
Matrix Converter Power Factor			0.95 or more																		
Cooling Method			Forced air-cooling with operation check switch																		
Control Characteristics	Control Method		Open Loop Vector Control, Flux Loop Vector Control																		
	Main Circuit		Matrix converter with multi-output connected in a series																		
	Frequency Control Range		0.01 to 120 Hz																		
	Speed Control Accuracy		±0.5% (Open Loop Vector Control) ±0.02% (Flux Loop Vector Control)*4																		
	Analog Input Resolution		0.03 Hz																		
	Accel/Decel Time		0.1 to 6000 s																		
	Main Control Functions		Restart after momentary power loss*3, Torque limit, Accel/decel stall prevention, Catching the coast, Operation prohibition at specified speeds, S-curve accel/decel, Multi-step speed operation, Torque control*4																		
Protective Functions			Overcurrent, Overvoltage, Undervoltage, Output ground fault, Output open-phase, Cooling-fan error, Overload, Motor overheat...																		
Communication (Optional)			Modbus, CP-215, CP-218 (Ethernet), CP-261 (PROFIBUS-DP), and other communications																		

*1: The motor capacity (kW) refers to a Yaskawa 4-pole motor.

*2: The capacity (kVA) of the power supply must be larger than the nominal capacity (kVA) of the matrix converter. The maximum percent impedance of the power supply is 5%.

Insufficient capacity of the power supply or distortions of voltage waveforms may cause problems. If you need to connect the matrix converter to a generator or to a thyristor that is connected to the same power supply system as the matrix converter, contact your Yaskawa representative for more information.

*3: When the restart function for the momentary power loss is used, an uninterruptive power supply unit for the control power supply is needed optionally.

*4: When using FSDrive-MX1H, speed control accuracy may fluctuate ±0.01% in Flux Loop Vector Control. Torque control also possible.

*5: The efficiency will be approx. 97% when the input transformer is included.

Note: Asterisk indicates input voltage and frequency (A: 3 kV class 60 Hz, B: 3 kV class 50 Hz, C: 6 kV class 60 Hz, D: 6 kV class 50 Hz).

Yaskawa AC Drive Series Discontinued Products and Recommended Replacements

Series Name	Release Date	Discontinuation Date	Recommended Replacements	Remarks
VS-616HII	1985. 9	1995. 6	A1000, Varispeed G7	
VS-676	1986. 6	1995. 6	Varispeed G7	
VS-616GII	1987. 5	1992. 9	A1000, Varispeed G7	
Juspeed-F S ₂	1988	1995. 9	V1000, J1000	
VS-616GII LN	1988. 5	1992. 9	A1000, Varispeed G7	
VS-866 (including converter unit)	1988.10	2002. 9	Large-capacity servo	
VS-616G3	1990. 3	1997. 9	A1000, Varispeed G7	
VS-676VG3	1990.10	2004. 9	Varispeed G7	
VS-676VH3	1990.10	2004. 6	Varispeed G7	
VS-616H3	1990.11	1998. 3	A1000, Varispeed G7	
VS-606PB3	1991. 9	2004. 9	V1000, J1000	
VS-626VM3	1992	2004. 9	Σ-V-SD analog interface type	Contact your Yaskawa representative for details.
VS-656DC3 (excluding 400 V 300 kW)	1992	2008. 3	D1000	Production of 400 V 300 kW was discontinued in July 2012.
VS-606PC3 (excluding NEMA4)	1992. 9	2000. 3	V1000, J1000	
VS-626VM3C	1993	2004. 9	Σ-V-SD analog interface type	Contact your Yaskawa representative for details.
Juspeed-F S300	1993	2004.10	V1000, J1000, A1000	
Juspeed-F P300	1993	2004.10	V1000, J1000, A1000	
VS-616R3	1993. 1	2005. 9	A1000+R1000, Varispeed G7+R1000	
VS-606PC3 (NEMA4)	1993. 8	2010. 3	V1000 (NEMA4X/IP66 type)	
VS mini C (excluding single-phase 100 V)	1994.11	2005. 9	V1000, J1000	Production of inverters for single-phase 100 V class was discontinued in September 2013.
Juspeed-F X3000	1995	2004.10	A1000 (with PG card)	
Juspoint III	1995	2004.10	AC servo (Σ series)	
VS-616G5	1995. 7	2005.12	A1000, Varispeed G7	
VS-616PC5/P5	1995. 7	2003. 9	A1000, V1000	
VS-686SS5	1997. 4	2010. 3	A1000	
VS-626M5/VS-656MR5	1997. 9	2011.12	Σ-V-SD analog interface type	Contact your Yaskawa representative for details.
VS-676GL5 (excluding CIMR-L5S□□□□ and L5H□□□□)	1997.10	2010. 9	L1000A, L1000S	Production of the CIMR-L5S and L5H was discontinued in November 2013.
VS-606V7	1998. 6	2010. 3	V1000	
VS-616G5 (large-capacity slim type)	1998. 9	2012. 9	A1000HHP	
VS mini J7	1998.10	2010. 3	J1000	
VS-656RC5	1999	2014. 9	R1000	
VS-626MC5	2000. 1	2013. 9	A1000 (dedicated software)	Contact your Yaskawa representative for details.
Varispeed F7 (excluding safety-enhanced explosion-proof model)	2000. 6	2010. 3	A1000, V1000	Production of explosion-proof models was discontinued in September 2012.
Varispeed MX/MRX	2001.10	2015. 3	Σ-V-SD analog interface type	Contact your Yaskawa representative for details.
VS-656DC5	2002	2014. 3	D1000	
Varispeed V7 for DeviceNet communications	2002. 7	2010. 9	V1000+Option Unit (SI-N3/V)	
Varispeed V7 for CC-Link communications	2003. 5	2010. 9	V1000+Option Unit (SI-C3/V)	
Varispeed F7S (excluding safety-enhanced explosion-proof model)	2003.10	2010. 3	A1000	Production of explosion-proof models was discontinued in September 2012.
Varispeed L7	2003.11	2012. 3	L1000A	
Varispeed V7 pico	2005. 7	2008. 3	V1000pico Drive	
Varispeed AC	2006. 1	2016. 3.20	U1000	
VS-646HF5	2007. 6	2013. 3	A1000 high frequency software (2000 Hz or less)	
V1000pico drive (combined with a SMRA motor)	2010. 5	2015. 9	—	

The recommended replacement products listed above may display some differences from the discontinued products they replace in terms of functions, performance, and installation. Should you have any questions or concerns, please contact your Yaskawa representative. Yaskawa's product and technical information website (<https://www.e-mechatronics.com>).

Yaskawa AC Drive Series Catalogs

The following documents can be viewed at the Yaskawa product and technical information website (e-mechatronics.com).

[] Document number appears in brackets. * Documents not provided by e-mechatronics.com. If required, please contact your Yaskawa representative.

General-Purpose			
			
GA700 [KAEP C710617 00]	U1000 [KAEP C710636 02]	A1000 [KAEP C710616 22]	V1000 [KAEP C710606 08]
General-Purpose		Energy-Saving Unit	
			
J1000 [KAEP C710606 24]	Varispeed G7 [KAE-S616-60]	D1000 [KAEP C710656 03]	R1000 [KAEP C710656 05]
Application Specific	System		
			
L1000A* [EZZ021066]	FSDrive-LV1H [KAEP C710691 00]	FSDrive-MV1000 [KAEP C710687 02]	FSDrive-MX1S [KAEP C710688 00]



For catalogs of Yaskawa products, visit our website at www.e-mechatronics.com and click on "AC Drives".

Click "AC Drives"



www.e-mechatronics.com



Global Service Network



Region	Service Area	Service Location	Service Agency	Telephone/Fax
North America	U.S.A.	Chicago (HQ) Los Angeles San Francisco New Jersey Boston Ohio North Carolina	① YASKAWA AMERICA INC.	Headquarters ☎ +1-847-887-7000 FAX +1-847-887-7370
	Mexico	Mexico City	② PILLAR MEXICANA. S.A. DE C.V.	☎ +52-555-660-5553 FAX +52-555-651-5573
South America	Brazil	São Paulo	③ YASKAWA ELÉTRICO DO BRASIL LTDA.	☎ +55-11-3585-1100 FAX +55-11-3585-1187
	Colombia	Bogota	④ VARIADORES LTD.A.	☎ +57-1-795-8250
Europe	Europe, South Africa	Frankfurt	⑤ YASKAWA EUROPE GmbH	☎ +49-6196-569-300 FAX +49-6196-569-398
Asia	Japan	Tokyo, offices nationwide	⑥ YASKAWA ELECTRIC CORPORATION (Manufacturing, sales)	☎ +81-3-5402-4502 FAX +81-3-5402-4580
			⑦ YASKAWA ELECTRIC ENGINEERING CORPORATION (After-sales service)	☎ +81-4-2931-1810 FAX +81-4-2931-1811
	South Korea	Seoul	⑧ YASKAWA ELECTRIC KOREA CORPORATION (Sales)	☎ +82-2-784-7844 FAX +82-2-784-8495
			⑨ YASKAWA ENGINEERING KOREA CORPORATION (After-sales service)	☎ +82-2-3775-0337 FAX +82-2-3775-0338
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	Taiwan	Taipei	⑪ YASKAWA ELECTRIC TAIWAN CORPORATION	☎ +886-2-8913-1333 FAX +886-2-8913-1513
	Singapore	Singapore	⑫ YASKAWA ELECTRIC (SINGAPORE) PTE. LTD.	☎ +65-6282-3003 FAX +65-6289-3003
	Thailand	Bangkok	⑬ YASKAWA ELECTRIC (THAILAND) CO., LTD.	☎ +66-2-017-0099 FAX +66-2-017-0090
	Vietnam	Ho Chi Minh	⑭ YASKAWA ELECTRIC VIETNAM CO., LTD.	☎ +84-8-3822-8680 FAX +84-8-3822-8780
		Hanoi		☎ +84-4-3634-3953 FAX +84-4-3654-3954
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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply. Specifications are subject to change without notice for ongoing product modifications and improvements.

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