YASKAWA

YASKAWA AC DRIVES



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

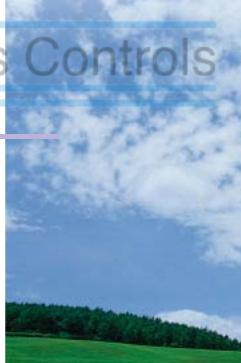
Yaskawa's technology is a product of our extensive knowledge and years of experience in various fields, giving us the flexibility to respond to all your application needs.

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.





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

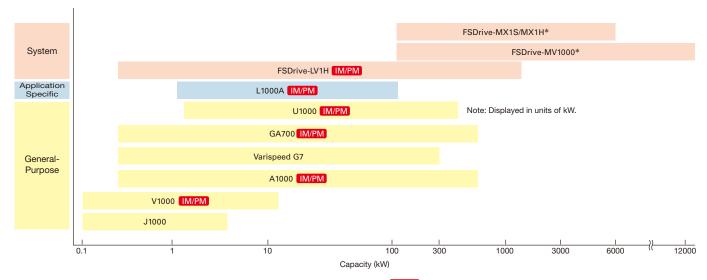
The most advanced digital technology and high-performance vector operation provide total control and high-speed response for DC motors.

					Co	ntrol	Bra	king	Speed	Control	
	AC Drive	Features	Model	Max. Motor Output (kW) 0.1 1 10 100 1000 10000	V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)	
			GA700 (V/f)		•		•		1:40		
			GA700 (V/f with PG)	0.4110*1	•		•		1:40		
		riv.	GA700 (Open Loop Vector)	Three-phase 200 V		•	•		1:200 1:200*2	±0.2	
		High Performance Drive	GA700 (Closed Loop Vector)	Votors C	/(•			1:1500	±0.02	
			GA700 (Advanced Open Loop Vector for PM)	0.4 630*1 Three-phase		•	•		1:20 1:100* ³	±0.2	
esod			GA700 (Closed Loop Vector for PM)	400 V		•	•		1:1500	±0.02	
General-Purpose			GA700 (EZ Open Loop Vector Control)			•	•		1:100	±0.2	
Ger			U1000 (V/f)		•			•	1:40	±2 to 3*5	
			U1000 (V/f with PG)		•			•	1:40	±0.03	
		Low Harmonics Regenerative	U1000 (Open Loop Vector)	5.5 55*4 Three-phase 200 V		•		•	1:200	±0.2	
		Matrix Converter	U1000 (Closed Loop Vector)	2.2 500*4 Three-phase 400 V		•		•	1:1500	±0.02	
	-		U1000 (Advanced Open Loop Vector for PM)			•		•	1:20 1:100* ³	±0.2	
	Index development /To		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. *3: When using Advanced Open Loop Vector Control for PM

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	P <mark>rot</mark> ective Design	Product Overview
_		CE*6		Catalog No. KAEP C710617 00 Higher energy savings can be achieved with new functions that monitor power
 _		UL/cUL*6 ISO/ EN13849-1		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. (GA70::::2004 to 2313, and GA70:::4002
 Yes	60/590 Hz When using an SSR1 Series motor	Cat.3 PLe, IEC/EN61508 SIL3*6	Open chassis	to 4168)(under development) The interactive system ensures that initial settings can be completed easily by responding to questions.
 Yes	1750 r/min 1450 r/min 1150 r/min	GL* ⁷ DNV* ⁷ ABS* ⁷	(IP20)	Maintainability has been noticeably improved from setting parameters using wireless connections, verifying the operating status, and using cloud-based parameter controls via smartphones.
 Yes		NK*7 BV*7 CCS*7 KR*7		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)
_		CE		Catalog No. KAEP C710636 02 • Drastically reduced power supply harmonics and improved harmonics environment.
-	60/4001 I-	UL/cUL Two Safe	On an abassis	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.
_	60/400Hz When using an SSR1 Series motor 1750 r/min	Disable inputs and 1EDM output	Open chassis (IP00) and enclosed wall-mounted	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
 Yes	1450 r/min 1150 r/min	according to ISO/ EN13849-1	type (UL Type 1)	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,
 -		Cat.3 Ple, IEC/ EN61508 SIL3		contactors, and other such peripheral devices.
Yes				

					_						
				Max. Motor Output (kW)	Con	itrol	Bral		Speed	Control	
	AC Drive	Features	Model	0.1 1 10 100 1000 10000	V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)	
			A1000 (V/f) A1000	0.4110 Three-phase	•		•		1:40	±2 to 3*1 ±0.03	
			(V/f with PG) A1000 (Open Loop Vector)	0.4 L Inree-pnase 200 V		•	•		1:200	± 0.03	
	1 Mary 1	High performance vector control	A1000 (Closed Loop Vector)			•	•		1:1500	± 0.02	
			A1000 (Advanced Open Loop Vector for PM)	0.4 630 Three-phase		•	•		1:20 1:100* ²	± 0.2	
			A1000 (Closed Loop Vector for PM)	400 V		•	•		1:1500	± 0.02	
	100		V1000 (V/f)		•		•		1:20 to 1:40	±2 to 3*1	
		Compact vector control	V1000 (Open Loop Vector)	0.1 3.7 Single-phase 200 V 0.1 18.5 Three-phase 200 V 0.2 18.5 Three-phase 400 V		•	•		1:100	± 0.2	
esc			V1000 (Open Loop Vector for PM)	V		•			1:10 (variable torque)	±0.2	
General-Purpose		Compact V/f control	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	
	47 m		Varispeed G7 (V/f)		•		•		1:20 to 1:40	$\pm 2 \text{ to } 3^{*1}$ $\begin{pmatrix} \pm 1^{*3} \\ \pm 0.03^{*4} \end{pmatrix}$	
		High-function fully vector control	Varispeed G7 (Open Loop Vector)	0.4 110 Three-phase 200 V				ïľ	1:200	± 0.2	
			Varispeed G7 (Flux Loop Vector)	0.4 300 Three-phase 400 V		•	•		1:1000	± 0.02	
		Compact and energy efficiency drives	V1000 (Open Loop Vector for PM)	0.415		•	•		1 : 10 (variable torque)	± 0.2	
	C	Super compact and environmentally	V1000 (Open Loop Vector for PM)	0.1 Three-phase 200 V		•	•		1 : 10 (variable torque)	±0.2	
		drives	V1000pico motors SMRD Series								
Application Specific		Elevator applications	L1000A (V/f with PG) L1000A (Closed Loop Vector for PM)	1.5 110 Three-phase 200 V 1.5 110 Three-phase 400 V		•	•		1:1500	± 0.02	

^{*1:} Varies according to motor slip

Torque Control	Rated/Max. Freq. or Rated/Max. Speed	Global Safety Standards	Protective Design	Product Overview
- Yes	60/400 Hz When using SSR1 Series motor 1750 r/min 1450 r/min 1150 r/min	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)	Catalog No. KAEP C710616 22 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.
l	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 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.
1	60/400 Hz	CE, UL/cUL	Open chassis and finless type (no heatsink)	Catalog No. KAEP C710606 24 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	0	1/10+	Catalog No. KAE-S616-60 • 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.
 – Yes	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)	Removable control circuit terminals and cooling fan Various application software (cranes, hoist, energy-saving control, and more) Auto-Tuning function
	60/400 Hz 3600 r/min, 1750 r/min, 1450 r/min, 1150 r/min	-	Open-chassis (models without heatsink also available) and enclosed (UL Type 1)	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.
-	60/400 Hz SMRD Series:3600 r/ min, 1800 r/min	-	Open-chassis (models without heatsink also available) and enclosed (UL Type 1) SMRD Series: IP65	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.
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)	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.

_						_		_		
				Mary Master Output (IVM)	Cor	ntrol	_	aking	Speed	Control
	AC Drive	Features	Model	Max. Motor Output (kW) 0.1 1 10 100 1000 10000	V/f	Vector	Resistance	Regeneration	Range	Accuracy (%)
Energy-Saving Unit		Power regenerative converter	D1000	5.0130*1 Three-phase 200 V 5.0630*1 Three-phase 400 V				•	_	-
Energy-S		Power regenerative unit	R1000	3.5 105*2 Three-phase 200 V 3.5 300*2 Three-phase 400 V				•	_	-
		Low-voltage	FSDrive-LV1HM/F (V/f)	0.4 22 Three-phase 200 V (FSDrive-LV1HM)	•		•		1:40	±2 to 3*3
		inverters for systems (Drawer type /	FSDrive-LV1HM/F (Open Loop Vector)	0.4 45 Three-phase 400 V (FSDrive-LV1HM)		•	•		1:120	±0.2
		Fixed type)	FSDrive-LV1HM/F (Closed Loop Vector)	55 185 Three-phase 400 V (FSDrive-LV1HF)			•		1:1500	±0.01
		Low-voltage inverters	FSDrive-LV1HS (V/f)	200 1000 Three-phase 400 V	•				1:20 to 1:40	±2 to 3*3 (±1*4 ±0.03*5)
		for systems (Slim type)	FSDrive-LV1HS (Open Loop Vector) FSDrive-LV1HS	350 1750 Three-phase 690 V		•	•		1:100	±0.2
			(Closed Loop Vector)						1:1500	±0.01
tem	D	Low-voltage converter for systems (Slim type)	FSDrive-LC1HS (Sine Wave PWM)	200 1000 Three-phase 400 V 350 1750 Three-phase 690 V	,(1(1	• tr	ols	-
System			FSDrive-MV1000 (V/f)	220 kVA 2500 kVA Three-phase 2400 V (For use outside of Japan)	•				1:20	±2 to 3*3
		Super energy- saving	FSDrive-MV1000 (Open Loop Vector)	200 kVA 3700 kVA Three-phase 3300 V 280 kVA 4500 kVA		•			1:100	±0.5
		medium-voltage AC drives	FSDrive-MV1000 (Closed Loop Vector)	Three-phase 4160 V (For use outside of Japan) 400 kVA 7500 kVA Three-phase 6600 V		•			1:1000	±0.02
			FSDrive-MV1000 (Closed Loop for SM)	660 kVA □□□□□ 12000 kVA Three-phase 11000 V		•			1:100	±0.5
		Super energy- saving	FSDrive-MX1S (Open Loop Vector)	200 kVA 3000 kVA Three-phase 3300 V		•		•	1:100	±0.5
		medium-voltage matrix converter	FSDrive-MX1S (Closed Loop Vector)	400 kVA 6000 kVA Three-phase 6600 V		•		•	1:1000	±0.02
	The state of the s	Medium-voltage matrix converter	FSDrive-MX1H (Open Loop Vector)	200 kVA 3000 kVA Three-phase 3300 V		•		•	1:100	±0.2
		for systems	FSDrive-MX1H (Closed Loop Vector)			•		•	1:1000	±0.01
4-4	Indicated in rated outpu	ut conceity NO.	Indicated in roac	eneration capacity. *3: Varies according to	motor	slin	* 4:	Slinc	compensation	★5: With PG

Torque Control	Rated/Max. Freq. or Rated/Max. Speed	Global Safety Standards	Protective Design	Product Overview
П	-	CE, UL/cUL	Open-chassis (IP00, IP20)	Catalog No. KAEP C710656 03 · 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)	Catalog No. KAEP C710656 05 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.
_				Catalog No. KAEP C710691 00
-	60/400 Hz	-	Vertical self-stand type	
Yes				
_			Vertical self-stand	 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
 _	60/400 Hz	<i>,</i>	type	Highly precise, wide-range speed control Highly precise torque control Smooth operation at low speed
Yes				Shiboth opsitation at low spood
ı	Driv	/es	Vertical self-stand type	ors Controls
_				Catalog No. KAEP C710687 02
Yes	60/120 Hz	CE UL/cUL	Vertical self-stand type	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.
				Catalog No. KAEP C710688 00
-	60/100 ! !-		Vertical self-stand	Lightning-quick acceleration or deceleration with power regeneration function Continuous Continuous
-	60/120 Hz		type	High power factor (0.95% or more) No harmonics with input sinusoidal waveforms Applicable with existing motors because of quasi-sinusoidal waveforms
-			Vertical self-stand	Lightning-quick acceleration or deceleration with power regeneration function High speed, quick response
Yes	60/120 Hz		type	Highly precise, wide-range speed control (±0.01%, 1: 1000) Highly precise torque control (Linearity: ±3%)

Matching Drive and Application

					Fluids	3						Meta	l Proc	essing	g / Ma	chine	Tools						Elev	ators		
		Application	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	
	Ф	Friction Load							•							•		•	•					•		
	Load Type	Gravitational Load																				•	•			
	Loa	Fluid Load Inertia Load																								
Load	e e	Constant Torque																								
	Torqu	Constant Output																								
	Speed/Torque	Variable Torque			•																					
	Ϋ́	Variable Output												•												
		GA700 (V/f) GA700																								
		(Open Loop Vector) GA700										7														
		(Closed Loop Vector)										H				-	4									
		U1000 A1000				1	Н				V				Н	4							1			
		(V/f) A1000					Н			A					Н								7			
	rpose	(Open Loop Vector) A1000														1										
	General-Purpose	(Closed Loop Vector) V1000					ı			Λ					ш											
	Ge	J1000																								
		Varispeed G7 (V/f)						. /											_			L				
ive		Varispeed G7 (Open Loop Vector)	1	/ (2;	5		V	1)	.(ا (60	5)(\cup		IL	I (13	5			
Applicable AC Drive		Varispeed G7 (Flux Loop Vector)																								
pplicable		ECOiPM Drive																								
∢	E 0	V1000pico Drive																								
	Application Specific	L1000A																								
	Energy-Saving Unit Specific	D1000																								
	Energy	R1000																								
		FSDrive-LV1HM																								
		FSDrive-LV1HF																								
	em	FSDrive-LV1HS																								
	System	FSDrive-LC1HS																								
		FSDrive-MV1000 FSDrive-MX1S																								
		FSDrive-MX15																								
		, ODITVE WIXTH																								

																			ost s	suita	ble								
lola)				Mater	ial Ha	andling	9	cal)	(e)					Gei	neral-		/lachii	nes					Fiber		La	rge-s	cale S	ysten	าร
Automatic Parking Garage (Gondola)	Conveyors	Bucket Conveyors	Cranes (Hoist)	Cranes (Gantry, Lathe)	Hoists	Hoists (Trolley)	Carriage	Automated Storage (Vertical)	Automated Storage (Traverse)	Feeder	Agitators	Extruders	Centrifugal Separators	Sugar Centrifuge	Food Processing	Industrial Washing Machine	Printing Press	Injection Molding	Agricultural	Winder	Wood Working (Router)	Spinning Machines	Textile Machines	Knitting Machines	Paper Processing	Film Line	Processing Line	Blowers	Pumps
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Global Field Networks

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

Made	Three-Phase CIMF	R-J_2A	0001	0002	0004	0006	0008★	0010	0012	0018 🛨	0020
Mode	Single-Phase*1 CIM	R-J BA	0001	0002	0003	0006	_	0010	_	_	_
Max	. Applicable Motor	ND	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5
Cap	acity*2 kW	HD	0.1	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7
	Rated Output	ND*4	0.5	0.7	1.3	2.3	3.0	3.7	4.6	6.7	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	5.3*7	6.7*7
	Rated Output	ND*4	1.2	1.9	3.5 (3.3)*5	6	8	9.6	12	17.5	19.6
Ħ	Current A	HD	0.8*6	1.6*6	3*6	5*6	6.9*7	8*7	11*7	14*7	17.5* ⁷
utput	Overload Tolerand		ND Rating: 1	20% of rated	output current	for 60 s, HD F	Rating: 150%	of rated outpu	t current for 60) s.	
O	Overload Tolerani	ce	(Derating ma	y be required	for repetitive lo	oads)					
	Max. Output Volta	200	Three-phase	power supply	: three-phase	200 to 240 V (relative to inpu	ıt voltage)			
	wax. Output voite	age	Single-phase	power supply	y: three-phase	200 to 240 V	(relative to inp	ut voltage)			
	Max. Output Fred	quency	400 Hz (user-	-set)							
	Rated Voltage/Ra	ited	Three-phase	AC power sup	oply: 200 to 24	10 V 50/60 Hz,	Single-phase	AC power sup	oply: 200 to 24	40 V 50/60 Hz,	
wer	Frequency		DC power su	pply: 270 to 3	340 V*8						
Po	Allowable Voltage	Fluctuation	-15 to +10%	,)	•	•	•		•	•	
	Allowable Frequence	cy Fluctuation	±5%								

400 V Class

☆ These models are available in Japan only.

Мо	del CIMR-J	4A	0001	0002	0004	0005	0007	0009	0011
Max	. Applicable Motor	ND	0.4	0.75	1.5	2.2	3	3.7	5.5
Cap	acity*9 kW	HD	0.2	0.4	0.75	1.5	2.2	3	3.7
	Rated Output	ND*4	0.9	1.6	3.1	4.1	5.3	6.7	8.5
	Capacity*10 kVA	HD*7	0.9	1.4	2.6	3.7	4.2	5.5	7
l	Rated Output	ND*4	1.2	2.1	4.1	5.4	6.9	8.8	11.1
utput	Current A	HD* ⁷	1.2	1.8	3.4	4.8	5.5	7.2	9.2
Out	Overload Toleran		ND Rating: 120%	of rated output of	current for 60 s, HD	Rating: 150% of	rated output curre	ent for 60 s.	
	Overload Tolerani	ce	(Derating may be	required for repet	titive loads)				
	Max. Output Volta	age	Three-phase 380	to 480 V (relative	to input voltage)	\ \			
	Max. Output Fred	quency	400 Hz (user-set)						
70	Rated Voltage/Rat	ed Frequency	Three-phase AC	power supply: 380	0 to 480 V 50/60 H	z, DC power supp	oly: 510 to 680 V*8		
ower	Allowable Voltage	Fluctuation	-15 to +10%						
ď	Allowable Frequen	cy Fluctuation	±5%						

Common Specifications

	Item	Specifications
	Control Method	V/f Control
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy	Digital reference: within ±0.01% of the max. output frequency (−10 to +50°C)
	(Temperature Fluctuation)	Analog reference: within ±0.1% of the max. output frequency (25 ±10℃)
	Frequency Setting Resolution	Digital reference: 0.01 Hz
တ္တ	Frequency Setting Resolution	Analog reference: 1/1000 of max. output frequency
istic	Output Frequency Resolution	20 bit resolution at maximum output frequency
cteristics	Frequency Setting Signal	Main frequency reference: 0 to +10 Vdc (20 k Ω), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω)
arac	Starting Torque	150% / 3 Hz
Charac	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)
ontrol		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
O	Braking Torque	above.
		@ 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
		Momentary power loss ride-thru, Speed search, 9-step speed (max), Accel/decel time switch, S-curve accel/decel, 3-wire
	Main Control Functions	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
Sto	indards Compliant	· UL508C
Ole	induras sompliant	· 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.
- \star 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.

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 CIMP	R-V_BA	0001	0002	0003	0006	_	0010	0012	_	0018*1	-	_	_	_
Ma	x. Applicable Motor	ND	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5
Ca	pacity*3 kW	HD	0.1	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15
	Rated Output	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
	Capacity*4 kVA	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	ND*5	1.2	1.9	3.5 (3.3)*6	6	8	9.6	12	17.5	19.6	30	40	56	69
l Ħ	Current A	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
Output	Overload Tolera	anaa	ND Rat	ing: 120	% of rate	ed outpu	ıt current	for 60 s	. HD Ra	ting: 150	% of rate	ed outpu	ut curren	t for 60 s	S.
0	Overload Tolera	ance	(Deratir	ng may b	oe require	ed for re	petitive l	oads)							
	Max. Output Vo	oltago	Three-p	hase po	ower sup	ply: Thre	e-phase	200 to 2	240 V (pi	roportion	al to inp	ut voltag	je)		
	Max. Output vo	Jilage	Single-	phase p	ower sup	ply: Thr	ee-phase	e 200 to	240 V (p	roportio	nal to inp	ut volta	ge)		
	Max. Output Fr	requency	400 Hz	(user-se	et)										
	Rated Voltage/F	Rated	Three-p	hase AC	power s	upply: 20	00 to 240	V 50/60	Hz, Sing	le-phase	AC power	er supply	: 200 to 2	240 V 50	/60 Hz,
	Frequency		DC pow	er supp	y: 270 to	340 V*9									
Power	Allowable Volta	age	_15 to	±100⁄											
Fluctuation -15 to +10%															
	Allowable Frequ	ency	±5%												
	Fluctuation	_	±370												

400 V Class

☆ These models are available in Japan only.

Mode	Three-Phase CIMR	-V_4A	0001	0002	0004	0005	0007	0009	0011	0018	0023	0031	0038
Ma	x. Applicable Motor	ND	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5
Ca	pacity*3 kW	HD	0.2	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15
	Rated Output	ND*5	0.9	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	23.6	29
	Capacity*10 kVA	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	ND*5	1.2	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23	31	38
Output	Current A	HD*8	1.2	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18	24	31
Out	Overload Toler	anaa	ND Ratin	ıg: 120% ı	of rated or	utput curre	ent for 60	s. HD Ra	ating: 1509	% of rated	output cu	rrent for 6	60 s.
	Overload Toler	ance	(Derating	may be r	equired fo	r repetitiv	e loads)						
	Max. Output V	oltage	Three-ph	ase 380 t	o 480 V (p	roportion	al to input	voltage)					
	Max. Output F	requency	400 Hz (ı	user-set)	ΝЛ	\sim t/) ro	S (, 0	nt	ro		
	Rated Voltage/I	Rated	Thron ph	000 AC n	ower outpr	shr: 200 to	490 V 50	/60 H= D/	C power s	upply: 510) to 690 \/:	*9	
	Frequency		Tillee-bi	iase AC p	ower supp	лу. 300 to	400 1 30	00 Hz, D	o power s	ирріу. Этс	7 to 000 V		
Power	Allowable Volta	age	-15 to +	100/									
Po	Fluctuation		-13 to +	1070									
	Allowable Frequ	iency	±5%		·	·		·				·	
	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 Method	Open Loop Vector Control (Current Vector), V/f Control, Open Loop Vector Control for PM motors (for SPM
	Control Method	and IPM motors)
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy	Digital reference: within ±0.01% of the max. output frequency (−10 to +50°C)
	(Temperature Fluctuation)	Analog reference: within ±0.1% of the max. output frequency (25 ±10°C)
	Frequency Setting	Digital reference: 0.01 Hz
	Resolution	Analog reference: 1 / 1000 of max. frequency
	Output Frequency	20 bit of maximum output frequency (parameter E1-04 setting)
	Resolution	20 bit of maximum output nequency (parameter ET 04 setting)
	Frequency Setting Signal	Main frequency reference: 0 to +10 Vdc (20 k Ω), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω)
	r requericy Setting Signal	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),
ιχ	Otarting Torque	50% / 6 Hz (assumes Open Loop Vector Control for PM motors)
Characteristics	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)
ster	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control (25 $\pm 10^{\circ}$ C) *11
arac	Speed Response	5 Hz in Open Loop Vector (25 \pm 10°C) (excludes temperature fluctuation when performing Rotational
S	opeca response	Auto-Tuning)
Control	Torque Limit	Open Loop Vector Control allows separate settings in four quadrants.
Son	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
		①Instantaneous 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 Torque	Braking: approx. 40%).
		②Continuous 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
		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
	Main Control Functions	compensation, Frequency jump, Frequency upper/lower limit settings, DC injection braking at start/stop,
	Driv	Overexcitation braking High slip braking, PID control (with sleep function), Energy saving control,
	DIIV	MEMOBUS communication (RS-485/422 max. 115.2 kbps), Fault restart, Application presets,
		DriveWorksEZ (customization function), Removable terminal block with parameter backup function
		· UL508C
Sta	andards Compliant	· IEC/EN61800-3, IEC/EN61800-5-1
		· ISO/EN13849-1 Cat.3 PLd, IEC/EN61508 SIL2
	otection 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.

High Performance Vector Control A1000

200 V Class

ND: Normal Duty, HD: Heavy Duty

Mo	del CIMR-A 2A		0004	0006	0008×	0010	0012	0018	0021	0030	0040	0056	0069	0081	0110	0138	0169	0211	0250	0312	0360	0415
Ma	x. 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
Мо	tor 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
	Rated Output	ND*3	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
	Capacity*2 kVA	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	ND*3	3.5	6	8	9.6	12	17.5	21	30	40	56	69	81	110	138	169	211	250	312	360	415
	Current A	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
but	Overload ND Rating: 120% of rated output current for 60 s																					
Out	Tolerance		HD R	ating:	150%	of rat	ted ou	tput c	urrent	for 60) s.(De	rating	may l	be req	uired	for rep	etitive	loads	3)			
	Max. Outpu	t	Throc	nhac	200	+0 24	0 V (ro	lativo	to inn	ut volt	.000)											
	Voltage		Three	e-pnas	se 200	10 24	o v (re	elative	to inp	ut voit	.age)											
	Max. Output		400 L	J- (110)	er-set)																	
	Frequency		400 1	72 (US	er-set)																	
	Rated Voltage	e/	Throc	nhaa	se AC	noutor	ou unn	h. 200) +o 2/	10 V 5	0/60 L	1- DC	2011	מווס	alv: 07	70 +o 2	40 \/*	6				
	Rated Freque	ency	mee	-рпас	se AC	power	supp	iy. 200	J 10 22	10 V 31	U/0U F	12, DC	powe	s sup	Diy. Zi	0 10 3	40 V					
Wer	Allowable Vol	tage	_150	% to +	100/																	
Po	Fluctuation		- 13%	% lO +	10%																	
	Allowable Frequency	uency	±5%																			
	Fluctuation		13%																			

☆ These models are available in Japan only.

del 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
x. 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
tor Capacity*1 kW	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
Rated Output	ND*3	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
Capacity*7 kVA	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*3	491*3	617*3	831*3
Rated Output	ND*3	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
Current A	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*3	605*3	810*3	1090*3
Overload 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)																											
Tolerance		HD	Ratir	ng: 1	50%	of ra	ated	outp	ut cu	ırren	t for	60 s.	(Dera	ating	may	/ be r	equi	red f	or re	petit	ive Ic	ads))				
Max. Outpu	t	Thre	00 5	haaa	200	+0.49	O 1/	(rolo	tivo t	o inr	+	oltog	٥)													inpu	t V×
Voltage	П	THE	e-bi	liase	300	10 40	OU V	(reia	live i	O II IĻ	Jul V	onag	e)	r		- ('	N I		÷,		¬. I	6	`	0.9	95
Max. Output	ш	400	⊔ → (LICOR	-cot)	77	2	п	V	К	J	Ц	J	П	7	_ \		ľ	Л	п	u	-(IJ	7			
Frequency		400	ΠΖ (user	-501)			_	_									_		_							
Rated Voltage	e/	Thre	-n	haca	۸	0014/0	r CLI	anly:	380	to 1	20 V	50/6	:n ⊔-	, DC	' nov	vor ci	ınnlı	,· 51	0 to 1	22A 1	\ / *6						
Rated Freque	ncy	11116	e-pi	nase	AU	powe	Su	opiy.	300	10 4	00 V	30/0	10 112	., DC	pov	VEI SI	uppi	y. J1	0 10 1	500	V						
Allowable Vol	tage	_15	:0/ +/	- ⊥10	10/																						
Fluctuation		- 15	70 10	J + IC	70																						
Allowable Freq	uency	+50																									
Fluctuation		159	'U																								
	x. Applicable tor Capacity*1 kW Rated Output Capacity*7 kVA Rated Output Current A Overload Tolerance Max. Output Voltage Max. Output Frequency Rated Voltage Rated Freque Allowable Vol Fluctuation Allowable Freq	tor Capacity*1 kW HD Rated Output ND*3 Capacity*7 kVA HD Rated Output ND*3 Current A HD Overload Tolerance Max. Output Voltage Max. Output Frequency Rated Voltage/ Rated Frequency Allowable Voltage Fluctuation Allowable Frequency	X. Applicable	ND 0.75 1.5	ND 0.75 1.5 2.2	ND 0.75 1.5 2.2 3	ND 0.75 1.5 2.2 3 3.7	ND 0.75 1.5 2.2 3 3.7 5.5	ND 0.75 1.5 2.2 3 3.7 5.5 7.5	ND 0.75 1.5 2.2 3 3.7 5.5 7.5 11	ND 0.75 1.5 2.2 3 3.7 5.5 7.5 11 15	ND 0.75 1.5 2.2 3 3.7 5.5 7.5 11 15 18.5 15 15 15 15 15 15 15	ND 0.75 1.5 2.2 3 3.7 5.5 7.5 11 15 18.5 22 22 3 3.7 5.5 7.5 11 15 18.5 22 3 3.7 5.5 7.5 11 15 18.5 22 3 3.7 5.5 7.5 11 15 18.5 22 3 3.7 5.5 7.5 11 15 18.5 3.5 3.5 3.7 3.5	ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND	ND ND ND ND ND ND ND ND	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	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	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	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	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	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 tor Capacity*1 kW 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 tor Capacity*1 kW 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 Rated Output ND*3 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 Capacity*7 kVA 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 Rated Output ND*3 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 Current A HD 1.8*4 3.4*4 4.8*4 5.5*4 7.2*4 9.2*4 14.8*4 18*4 18*4 24*4 31*4 39*4 45*4 60*4 75*4 11.2*5 150*5 180*5 160*5 260*5 304*5 370*5 Overload Tolerance HD Rating: 150% 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 Max. Output Frequency Rated Voltage/ Rated Voltage/ Rated Frequency Allowable Voltage In three-phase AC power supply: 380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V*6 -15% to +10% ### 15% ### 1	A 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 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW 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 76 90 110 132 160 185 220 250 tor Capacity*! kW HD 0.4 0.5 18.5 220 250 250 250 250 250 250 250 250 25	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 tor Capacity*! kW 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 90 110 132 160 185 220 250 355 tor Capacity*! kW 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 Rated Output ND*3 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 Capacity*? kVA 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 13.7*4 18.3*4 24*4 30*4 34*4 46*4 57*4 69*4 85*5 11.4*5 137*5 165*5 189*5 232*5 282*3 343*3 491*5 Rated Output ND*3 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 Current A 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*3 605*3 450*3 605*3 450*	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 tor Capacity*1 kW 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 90 110 132 160 185 220 250 355 500 tor Capacity*1 kW 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 Application and the complex of th

- *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

	пппоп орос	
	Item	Specifications
	Cantral Mathad	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control with PG, Open Loop Vector
	Control Method	for PM, Closed Loop Vector for PM, Advanced Open Loop Vector for PM
	Frequency Control Range	0.01 to 400 Hz
	Frequency Accuracy	Digital reference: within ±0.01% of the max. output frequency (-10 to +40°C)
	(Temperature Fluctuation)	Analog reference: within $\pm 0.1\%$ of the max. output frequency (25°C ± 10 °C)
	Frequency Setting	Digital reference: 0.01 Hz
	Resolution	Analog reference: 0.03 Hz / 60 Hz (11 bit)
	Output Frequency Resolution	0.001 Hz
	Frequency Setting	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)
	Resolution	Main speed reference: Pulse train input (max. 32 kHz)
		V/f Control 150% / 3 Hz V/f Control with PG 150% / 3 Hz
		Open Loop Vector Control 200% / 0.3 Hz*8 Closed Loop Vector Control 200% / 0 min ^{-1*8}
	Starting Torque	Open Loop Vector Control for PM 100% / 5% speed Advanced Open Loop Vector Control for PM 200% / 0 min ^{-1*8} , *9, *10
		Closed Loop Vector Control for PM 200% / 0 min ^{-1*8}
tics		V/f Control 1:40 V/f Control with PG 1:40
eris	Speed Control	Open Loop Vector Control 1:200 Closed Loop Vector Control 1:1500
act	Range	Open Loop Vector Control for PM 1:20 Advanced Open Loop Vector Control for PM 1:100*9, *10, *11
har		Closed Loop Vector Control for PM 1:1500
Control Characteristics	Speed Control	
ontr	Accuracy*12	±0.2% in Open Loop Vector Control (25°C ±10°C), 0.02% in Closed Loop Vector Control (25°C±10°C)
ŏ	Speed	10 Hz in Open Loop Vector (25°C ±10°C), 50 Hz in Closed Loop Vector Control (25°C±10°C) (excludes temperature
	Response	fluctuation when performing Rotational Auto-Tuning)
l -	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)
		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
	Braking Torque	kW and above motors (over excitation braking/High-Slip Braking: approx. 40%)
		© 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
		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 far
	Main Control	on/off switch, Slip compensation, Torque compensation, Frequency jump, Upper/lower limits for frequency reference
	Functions	DC injection braking at start and stop, Overexcitation braking, High slip braking, PID control (with sleep function), En-
		ergy 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
		· UL508C
Sta	ndards Compliant	· 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
Pro	tection Design	IP00 open-chassis, UL Type 1 enclosure*15
		and the commence of the commence

^{*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 I3-04 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

																					•		
Cata	alog Code GA7	'0A2		004	006	008	010	012	018	021	030	042	056	070	082	110	138	169	211	257	313	360	415
Max. At	pplicable		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 C	Capacity*1	kW	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	_
	Rated Input		HD	3.6	4.8	6.7	8.9	12.7	_	20.7	30	_		78.4	96		111	136		200	271	324	394
Input	Current*2	Α	ND	4.8	6.7	8.9	12.7		20.7		40.3		78.4	96	114		136	164		271	324	394	_
			HD	3.2	5	6.9	8	11		17.5	25		47	60	75		115	145				346	415
	Rated Output Current	Α			6		_					_					_						413
	Current		ND	3.5		8	9.6				30	42	56	70	82	110	138	169	211	257	313	360	
	Overland Tale											for 60											
	Overload Tole	erance	€									for 60 tions tl		tort o	nd at	an fra	au ont	ds z					
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				Three	-pha	se 20	00 to 2	240 V													- 1		,
	Max. Output '	Volta	ge						t volta	aae is	prop	ortiona	al to	the in	put v	oltage							
	Max. Output F	reque	encv								<u> </u>	y depe			•			e use	d				
	Rated Voltage		31109									240 V			11100	0111101	mou	0 400	<u> </u>				
	Rated Freque							70 V t			V 10 2	v	00/0	0 1 12									
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Power	Allowable Frequence											_	±5		, .								
		y i lucti		15	2.0	20	27	52	71	0.6	12 5	16.8			30.0	2/1	16 1	56 E	68.2	92 1	110	105	161
	Power Supply*3	kVA	HD	1.5	2.0	2.8	3.7	5.3	7.1	0.0	16.0	21.6	24.2	20.0	47.4	46.1	+0. I	60.0	00.2	110	110	100	164
	Supply		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																						
	alog Code GA7	70A4		002	00	04	005	007	00	9	012	018	02	23	031	038	04	4	060	075	30	39	103
	pplicable		HD	0.4			1.5	2.2	3.		3.7	5.5	7.		11	15	18		22	30	3		45
	Capacity*1	kW	ND	0.75	_	_	2.2	3.0	3.	_	5.5	7.5	1	_	15	18.5	2	-	30	37	4		55
IVIOLOI					_	_			_						_			_			_		
Input	Rated Input	Α	HD	1.9	3.		4.7	6.7	8.		11.7	15.8	21		30.6	41.3	50		43.1	58.3			86.5
'	Current*2		ND	2.5	4.		6.7	8.9	11		15.8	21.2			41.3	50.5	59		58.3	71.5		_	105
	Rated Output	i A	HD	1.8	3.		4.8	5.5	7.		9.2	14.8	1		24	31	3	_	45	60	7		91
	Current		ND	2.1	4.		5.4	7.1	8.		11.9	17.5		5.4	31	38	4	4 5	59.6	74.9	89).2	103
				· HD	Ratin	ig: 15	0% o	f rated	d outp	out cu	ırrent	for 60	S										
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Output												tions tl					quent	ly.					
Carpar	Carrier Freque	encv										mum d										\	
	ouor . roqu	,							it is no	ot ned	cessa	ry for a	an Ni) ratii	ng of	2 kHz	and	an HL) ratin	ig up	to 8 k	(Hz.)	
	Max. Output	Voltad	ae				30 to 4																
		<u> </u>										ortiona								-			
	Max. Output F		ency									y depe			the c	ontrol	mod	e use	d.	ΔL			
	Rated Voltage		-11	• Thre	ee-ph	nase /	AC po	wer s	upply	380	V to 4	180 V	50/6	0 Hz	ノ\			ш		л.	\supset		
	Rated Freque			• DC	powe	er sup	oply 5	10 V t	0 680) V				_					_				
Power	Allowable Voltage	Fluot	ation									_ 1	5% 1	100	%								
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	Allowable Frequence							1					±5	%									
	Allowable Frequence Power	cy Fluct	HD	1.5	2.	_	3.7	5.3	7.	_	9.3	13	±5	7	24	33	4	_	34	46	5	_	69
	Allowable Frequence			1.5	2.	_	3.7 5.3	7.1	9.	_	9.3 13		±5	7		33 40	4	_	34 46	46 57	5	_	69 84
Cata	Allowable Frequence Power	kVA	HD		3.	.7			9.	_	13	13	±5	7	24		4	_	46		6	9	
	Allowable Frequence Power Supply*4 Alog Code GA7	kVA 60A4	HD	2.0	3.	.7	5.3	7.1	9.	.3	13 50	13 17	±5 1 2	7 4	24 33 71	40	9	8	46 53	57	688	9 6	84
Max. A	Allowable Frequence Power Supply*4	kVA	HD ND	2.0 14	3. 40 5	.7	5.3 68	7.1 20	9. 08 0	.3	13 50 10	13 17 29	±5 1 2 6 2	7 4 37	24 33 71 80	40 38	9 0	8 45	46 53 20	57 56	6 88 50	9 6	84 75
Max. Ap Motor C	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1	kVA /OA4 kW	HD ND HD ND	2.0 14 5:	3. 40 5 5	.7 10 7	5.3 68 75	7.1 20 9	9. 0 0	3 25 11	13 50 10 32	13 17 290 132	±5 1 2 6 2 0	7 4 37 16 20	24 33 71 60	40 38 20 22	9 0 0	8 45 22 25	46 53 20 50	57 56 25 31	6 88 50	9 6 3 3	84 75 15 55
Max. A	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input	kVA 60A4	HD ND HD ND HD	2.0 14 5: 7:	3. 40 5 5 5	.7 10 7 9 14	5.3 68 75 90 42	7.1 20 9 11 17	9. 08 0 0 70	3 25 11 13 20	13 50 10 32 07	13 17 290 132 160 248	±5 1 2 6 2 0 8	7 4 37 16 20	24 33 71 60 00	40 38 20 22 37	9 0 0 3	8 45 22 25 41	46 53 20 50	57 56 25 31 46	6 88 50 5 5 5 5 5	9 6 3 3 5	84 75 15 55 34
Max. Ap Motor C	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2	kVA 70A4 kW	HD ND HD ND HD	2.0 14 55 75 10	3. 40 5 5 5 05 42	.7 10 7 9 14	5.3 68 75 90 42 70	7.1 20 9 11 17 20	9. 08 0 0 0 70	.3 25 11 13 20 24	13 50 10 32 07 48	13 17 290 132 160 248 300	±5 1 2 6 2 0 8 0	% 7 4 37 16 20 30 37	24 33 71 60 00 00	40 38 20 22 37 41	9 0 0 3 0	8 45 22 25 41 46	46 53 20 50 10 55	57 56 25 31 46 58	6 88 50 5 5 85 84	9 6 3: 3: 5: 6: 6:	84 75 15 55 34 57
Max. Ap Motor C	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output	kVA 70A4 kW	HD ND HD ND HD ND	2.0 14 59 79 10 14 11	3. 40 5 5 5 05 42 12	.7 10 7 9 14 11 15	5.3 68 75 90 42 70 50	7.1 20 9 11 17 20 18	9. 08 0 10 70 07 80	.3 25 11 13 20 24 21	13 50 10 32 07 48	13 17 290 132 160 244 300 260	±5 2 6 2 0 8 0 0	37 4 37 16 20 30 37 30	24 33 71 60 00 00 73	40 38 20 22 37 41 37	9 0 0 3 0	8 45 22 25 41 46 41	46 53 20 50 10 55	57 56 25 31 46 58 45	6 58 50 55 55 34 53	9 6 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	84 75 15 55 34 57
Max. Ap Motor C	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2	kVA 70A4 kW	HD ND HD ND HD	2.0 14 59 79 10 14 11	3. 40 5 5 5 05 42 12	.7 10 7 9 14 15 15 16 16 16 16 16 16	5.3 68 75 90 42 70 50	7.1 20 90 11 17 20 18 20	9. 0 10 70 07 80	3 25 11 13 20 24 21 25	13 50 10 32 07 48 16	13 17 290 132 160 240 300 260 290	±5 2 6 2 0 8 0 0 6	% 7 4 37 16 20 30 37	24 33 71 60 00 00 73	40 38 20 22 37 41	9 0 0 3 0	8 45 22 25 41 46	46 53 20 50 10 55	57 56 25 31 46 58	6 58 50 55 55 34 53	9 6 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	84 75 15 55 34 57
Max. Ap Motor C	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current	kVA 70A4 kW A	HD ND HD ND HD ND HD	2.0 14 55 10 14 11 14 • HD	3. 40 5 5 5 05 42 12 40 Ratin	.7 10 7 9 9 14 11 10 10 10 10 10 10	5.3 68 75 90 42 70 50 68	7.1 20 91 11 17 20 18 20 f rated	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 25 11 13 20 24 21 25 20 20 21	13 50 10 32 07 48 16 50	13 17 290 132 160 240 300 260 290 for 60	±5 1 2 6 2 0 8 0 0 6 s	37 4 37 16 20 30 37 30	24 33 71 60 00 00 73	40 38 20 22 37 41 37	9 0 0 3 0	8 45 22 25 41 46 41	46 53 20 50 10 55	57 56 25 31 46 58 45	6 58 50 55 55 34 53	9 6 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	84 75 15 55 34 57
Max. Ap Motor C	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output	kVA 70A4 kW A	HD ND HD ND HD ND HD	2.0 14 55 10 14 11 14 • HD • ND	3. 40 5 5 5 05 42 12 40 Ratin Ratin	.7 10 7 9 14 15 16 16 17 17 17 17 17 17	5.3 68 75 90 42 70 50 68 60% o 0% o	7.1 20 9 11 17 20 18 20 f rated	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 25 11 13 20 24 21 25 out cu	13 50 10 32 07 48 16 50 urrent	13 17 29(132 16(24(30) 26(29(for 60) for 60	±5 1 2 6 2 0 8 0 0 6 s s	37 16 20 37 30 37	24 33 71 60 00 00 73 04 71	40 38 20 22 37 41 37 38	44 9 0 0 0 3 0 1 1 9	8 45 22 25 41 46 41 45	46 53 20 50 10 55	57 56 25 31 46 58 45	6 58 50 55 55 34 53	9 6 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	84 75 15 55 34 57
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current	kVA 70A4 kW A	HD ND HD ND HD ND HD	2.0 14 55 75 10 14 11 14 • HD • ND Note:	3. 40 5 5 5 5 12 12 40 Ratin Ratin : Dera	.7 10 7 9 14 15 15 15 15 15 15 15	5.3 68 75 90 42 70 50 68 60% o 0% o may b	7.1 20 90 111 17 20 18 20 f rated f rated pe require	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 25 11 13 20 24 21 25 20ut cuput cu	13 50 10 32 07 48 16 50 urrent urrent	13 17 29(132 16(24(30) 26(29(for 60 for 60 tions the	±5 1 2 6 2 0 8 0 0 6 s s hat s	7 37 4 20 30 37 30 37	24 33 71 60 00 00 73 04 71	40 38 20 22 37 41 37 38	4 9 0 0 0 0 3 0 1 9 9 quent	8 45 22 25 41 46 45 sty.	46 53 20 50 10 85 14	57 56 25 31 46 58 45	688 500 55 55 34 53 58	9 6 3 3; 56 6; 66	84 75 15 55 34 57
Max. Ap Motor C	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole	kVA 70A4 kW A A erance	HD ND HD ND HD ND HD	2.0 14 55 75 10 14 11 14 • HD • ND Note:	3. 40 5 5 5 5 12 12 40 Ratin Ratin : Dera	.7 10 7 9 14 15 15 15 15 15 15 15	5.3 68 75 90 42 70 50 68 60% o 0% o may b	7.1 20 90 111 17 20 18 20 f rated f rated pe require	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 25 11 13 20 24 21 25 20ut cuput cu	13 50 10 32 07 48 16 50 urrent urrent	13 17 29(132 16(24(30) 26(29(for 60) for 60	±5 1 2 6 2 0 8 0 0 6 s s hat s	7 37 4 20 30 37 30 37	24 33 71 60 00 00 73 04 71	40 38 20 22 37 41 37 38 op fred Derati	4: 9 0 0 3 0 1 9 quent	8 45 22 25 41 46 45 sty. e out	46 53 20 50 10 85 14 53	57 56 25 31 46 58 45 56	688 500 15 55 34 53 58	9 6 3 3; 56 6; 66	84 75 15 55 34 57
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current	kVA 70A4 kW A A erance	HD ND HD ND HD ND HD	2.0 14 53 79 10 14 11 14 • HD • ND Note: Derat set.	3. 40 5 5 5 05 42 12 40 Ratin Ratin Control Co	.7 16 7 9 14 15 16 16 17 17 18 17 18 18 18 18	5.3 68 75 90 42 70 50 68 60% o 0% o may b	7.1 20 90 11 17 20 18 20 f rated f rated be requestirent	9. 00 00 00 070 070 080 08 04 output doutput enab	25 11 13 20 24 21 25 25 20 21 25 20 20 21 25 20 20 21 20 20 20 20 20 20 20 20 20 20 20 20 20	13 50 10 32 07 48 16 50 urrent urrent oplica maxi	13 17 299 132 160 240 260 290 for 60 for 60 tions the	±5 1 2 6 2 0 8 0 0 6 s shat s of 10	37 16 20 37 30 37 4 tart a	24 33 71 60 00 00 73 04 71	40 38 20 22 37 41 37 38 op fred Derati maxin	4: 9 0 0 3 0 1 9	8 45 22 25 41 46 41 45 style e out of 5 kl	46 53 20 50 10 85 14 53	57 56 25 31 46 58 45 56	68860 505 55 34 53 58	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole	kVA 70A4 kW A A erance	HD ND HD ND HD ND HD	2.0 14 53 79 10 14 11 14 • HD • ND Note: Derat set. (Dera	3. 40 5 5 5 95 42 12 40 Ratin Ratin Control Co	.7 10 7 9 9 14 11 15 16 16 17 18 16 17 18 16 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	5.3 68 75 90 42 70 50 68 60% o 0% o may b	7.1 20 90 11 17 20 18 20 f rated frated be requirement current	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 11 13 20 24 21 25 Dut cubut	13 50 10 32 07 48 16 50 urrent urrent oplica maxi	13 17 29(132 16(24(30) 26(29(for 60 for 60 tions the	±5 1 2 6 2 0 8 0 0 6 s shat s of 10	37 16 20 37 30 37 4 tart a	24 33 71 80 00 00 73 04 71 nd sto	40 38 20 22 37 41 37 38 op fred Derati maxin (Derat	4: 9 0 0 3 0 1 9 quent ng th num c ing th	45 22 25 41 46 41 45 1ly. e outpof 5 kine out	46 53 20 50 10 65 14 53 out cu	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence	kVA 70A4 kW A a erance	HD ND ND ND HD ND HD ND	2.0 14 55 10 14 11 14 · HD · ND Note: Derat set. (Dera 2 kHz	3. 40 5 5 5 95 42 12 40 Ratin Ratin : Derating thating that and	.7 10 7 9 14 15 16 16 17 18 17 18 18 18 18 18	5.3 68 75 90 42 70 50 68 60% o may b tput o	7.1 20 90 11 17 20 18 20 f rated frated be requirement current	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 11 13 20 24 21 25 Dut cubut	13 50 10 32 07 48 16 50 urrent urrent oplica maxi	13 17 299 132 160 240 260 290 for 60 for 60 tions the	±5 1 2 6 2 0 8 0 0 6 s shat s of 10	37 16 20 37 30 37 4 tart a	24 33 71 80 00 00 73 04 71 nd sto	40 38 20 22 37 41 37 38 op fred Derati maxin	4: 9 0 0 3 0 1 9 quent ng th num c ing th	45 22 25 41 46 41 45 1ly. e outpof 5 kine out	46 53 20 50 10 65 14 53 out cu	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole	kVA 70A4 kW A a erance	HD ND ND ND HD ND HD ND	2.0 14 55 10 14 11 14 · HD · ND Note: Derat set. (Dera 2 kHz	3. 40 5 5 5 12 12 40 Ratin Ratin Rating thating that and e-phase	.7	5.3 68 75 90 42 70 50 68 60% o may b tput o	7.1 20 90 11 17 20 18 20 f rated for requirement current	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 11 13 20 24 21 25 out cu out cu for ap oles a ot neckHz.)	13 50 10 32 07 48 16 50 urrent urrent oplica maxi	13 17 299 132 160 244 300 260 290 for 60 for 60 tions the	±5 1 2 6 2 0 8 8 0 0 6 s s hat so of 10	77 4 37 16 20 37 30 37 31 4 4 4 4 4 4 4 4 4	24 33 71 60 00 00 73 04 71 and sto	40 38 20 22 37 41 37 38 Op free Derati maxin (Derat for NE	44990000000000000000000000000000000000	45 22 25 41 46 41 45 1ly. e outpof 5 kine out	46 53 20 50 10 65 14 53 out cu	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence Max. Output	kVA kW A t A errance	HD ND ND ND HD ND ND ND	2.0 14 55 75 10 14 11 14 • HD • ND Note: Derat set. (Dera 2 kHz Three Note:	3. 40 5 5 5 12 40 Ratin Ratin Rating thating the strong that and e-phase The	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 60% o may b toput o utput o utput o utput o mum	7.1 20 91 111 177 20 18 20 f rated frated be required current	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 11 13 20 21 25 out cu for apoles a ot neckHz.)	13 50 10 32 07 48 16 50 urrent urrent pplica maxi	13 17 299 132 160 244 300 260 290 for 60 for 60 tions the mum of the second of the sec	±5 1 2 6 2 0 8 0 0 6 s s hat s of 10 al to	7 4 37 16 20 37 30 37 4 4 4 4 4 4 4 4 4	24 33 71 660 000 07 73 04 71 nd sto be	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	99 0 0 0 0 33 0 1 1 99	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 50 10 55 14 53 out cu Hz to l	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence Max. Output F Max. Output F	kVA kW A t A ency Fluctor kVOltage	HD ND ND ND HD ND ND ND	2.0 14 55 75 10 14 11 14 • HD • NO Note: Derat set. (Dera 2 kHz Three Note: 590 H	3. 40 5 5 5 05 42 12 40 Ratin Ratin: Derating that and e-pha: The	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 60% o may b tout o utput o utput o mum quenc	7.1 20 91 111 17 20 18 20 f rated frated be required current current current current supplies that the current supplies the current supplies that the current supplies the current supplies that the current supplies that the current supplies the c	9. 08 0 0 70 07 80 08 d outpuired tenabut is not 5 ket to	25 20 24 21 25 25 25 26 27 27 27 27 27 28 29 20 21 20 20 21 20 20 20 20 20 20 20 20 20 20 20 20 20	13 50 10 32 07 48 16 50 urrent urrent pplica maxi cessa	13 17 299 132 160 244 300 260 290 for 60 for 60 tions to mum of	±55 1 2 2 0 0 8 0 0 0 6 s s hat s of 10 an NI	7 4 37 16 20 37 30 37 4 2 2 2 2 2 2 2 2 2	24 33 71 660 000 07 73 04 71 nd sto be	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	99 0 0 0 0 33 0 1 1 99	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 50 10 55 14 53 out cu Hz to l	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence Max. Output I Rated Voltage	kVA kW A A A Berance ency Volta Freque e/ kW	HD ND ND ND HD ND ND ND	2.0 14 53 73 10 14 11 14 · HD · ND Note: Derat set. (Derat set. (Derac 2 kHz Three Note:	3.3.40 55 55 505 42 12 440 Ratin Rating the string the	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 90% o 0% o o o o o o o o o o o o o o o o	7.1 20 90 11 17 20 18 20 f rated frated rated rated rated by the requirement our render the remaining up 480 V outputies that ower s	9.08 00 00 00 00 00 00 00 00 00 00 00 00 0	25 25 26 21 11 13 20 24 21 25 25 25 25 25 25 25 25 25 25 25 25 25	13 50 10 32 07 48 16 50 urrent urrent pplica maxi cessa	13 17 299 132 160 244 300 260 290 for 60 for 60 tions the mum of the second of the sec	±55 1 2 2 0 0 8 0 0 0 6 s s hat s of 10 an NI	7 4 37 16 20 37 30 37 4 2 2 2 2 2 2 2 2 2	24 33 71 660 000 07 73 04 71 nd sto be	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	99 0 0 0 0 33 0 1 1 99	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 50 10 55 14 53 out cu Hz to l	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence Max. Output I Rated Voltage Rated Voltage Rated Frequence	kVA kVA kW A A errance	HD ND ND HD ND HD ND	2.0 14 53 73 10 14 11 14 · HD · ND Note: Derat set. (Derat set. (Derac 2 kHz Three Note:	3.3.40 55 55 505 42 12 440 Ratin Rating the string the	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 90% o 0% o o o o o o o o o o o o o o o o	7.1 20 91 111 17 20 18 20 f rated frated be required current current current current supplies that the current supplies the current supplies that the current supplies the current supplies that the current supplies that the current supplies the c	9.08 00 00 00 00 00 00 00 00 00 00 00 00 0	25 25 26 21 11 13 20 24 21 25 25 25 25 25 25 25 25 25 25 25 25 25	13 50 10 32 07 48 16 50 urrent urrent pplica maxi cessa	13 17 299 132 160 244 300 260 290 for 60 for 60 tions ti mum or ry for a	±50 1 1 2 2 0 0 8 8 0 0 0 6 s s shat sof 10 an NI al to endir 50/6	7 4 37 16 20 37 37 37 37 37 37 37 3	24 33 71 60 00 00 73 04 71 md steto be	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	99 0 0 0 0 33 0 1 1 99	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 50 10 55 14 53 out cu Hz to l	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. Ap Motor C Input	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Freque Max. Output I Max. Output I Rated Voltage Rated Freque Allowable Voltage	kVA kW A kW A ency ency ency elication kw	HD ND	2.0 14 53 73 10 14 11 14 · HD · ND Note: Derat set. (Derat set. (Derac 2 kHz Three Note:	3.3.40 55 55 505 42 12 440 Ratin Rating the string the	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 90% o 0% o o o o o o o o o o o o o o o o	7.1 20 90 11 17 20 18 20 f rated frated rated rated rated by the requirement our render the remaining up 480 V outputies that ower s	9.08 00 00 00 00 00 00 00 00 00 00 00 00 0	25 25 26 21 11 13 20 24 21 25 25 25 25 25 25 25 25 25 25 25 25 25	13 50 10 32 07 48 16 50 urrent urrent pplica maxi cessa	13 17 299 132 160 244 300 260 290 for 60 for 60 tions ti mum or ry for a	±55 1 1 2 2 0 8 8 0 0 0 6 s s hat s of 10 an NI al to endir 50/6	7 4 37 16 20 31 37 37 37 37 37 37 37	24 33 71 60 00 00 73 04 71 md steto be	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	99 0 0 0 33 0 1 1 99	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 50 10 55 14 53 out cu Hz to l	57 56 25 31 46 58 45 56	68860 505 5534 5388 enabl	9 6 3 3 5 6 6 6 6 6 6	84 75 15 55 34 57 05 75
Max. And Motor Control	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Frequence Max. Output I Rated Voltage Rated Freque Allowable Frequence Allowable Frequence	kVA kW A kW A ency ency ency elication kw	HD ND	2.0 144 55 75 100 144 111 144 115 145 145 145 145 145 145	3. 40 5 5 5 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 688 75 00 42 70 50 68 0% o o may b ttput o D rati 30 to b 42 10 10 10 10 10 10 10 10 10 10 10 10 10	7.1 20 99 111 177 20 188 20 f ratece e requirement current current current suppose that suppose the suppose that suppose t	9.08 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 111 13 20 22 21 25 25 25 25 25 25 25 25 25 25 25 25 25	13 50 10 32 57 48 16 50 Irrent urrent pplica maxi	13 17 299 132 160 244 300 260 290 for 60 for 60 frions the mum of the second of the se	±5 11 20 66 2 00 88 00 00 66 s s shat s of 10 al to 50/6 5% 1 ±5	77 44 37 166 200 310	24 33 71 60 00 00 73 04 71 md steto be put ve	40 388 20 22 37 41 37 38 Derati maxin (Derat for NE Noltage ontrol	4 4 9 0 0 0 0 0 3 0 0 1 1 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45 45 45 45 45 45 45 45 45 45 45 45 45 4	46 53 20 60 10 65 14 63 63 63 64 63 64 64 64 64 64 64 64 64 64 64 64 64 64	57 56 22 31 46 58 45 56 56	68 60 55 65 63 68 enabl t. is un	9 6 3 3 3 3 5 6 6 6 6 6 es a	84 75 15 55 34 57 05 775
Max. Ap Motor Control Input Output	Allowable Frequence Power Supply*4 Alog Code GA7 pplicable Capacity*1 Rated Input Current*2 Rated Output Current Overload Tole Carrier Freque Max. Output I Max. Output I Rated Voltage Rated Freque Allowable Voltage	kVA kW A kW A ency ency ency elication kw	HD ND	2.0 14 53 73 10 14 11 14 · HD · ND Note: Derat set. (Derat set. (Derac 2 kHz Three Note:	3. 40 5 5 5 5 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8	10 10 10 10 10 10 10 10 10 10 10 10 10 1	5.3 68 75 90 42 70 50 68 90% o 0% o o o o o o o o o o o o o o o o	7.1 20 90 11 17 20 18 20 f rated frated rated rated rated by the requirement our render rated by the rate of the rated by the rate of the rated by the rate of the rated	9. 00 00 07 07 07 07 08 09 01 01 01 01 01 01 01 01 01 01 01 01 01	25 25 26 21 11 13 20 24 21 25 25 25 25 25 25 25 25 25 25 25 25 25	13 50 10 32 37 48 16 50 Irrent Irrent Irrent Explica maxi Expropet val	13 17 299 132 160 244 300 260 290 for 60 for 60 tions ti mum or ry for a	±5 11 20 60 20 00 88 00 00 66 8 s shatts of 10 all to endirf 50/6 5% 1 ±58	7 4 37 16 20 31 37 37 37 37 37 37 37	24 33 71 60 00 00 73 04 71 md stet to be put we the co	40 38 20 22 37 41 37 38 op free Derati maxin (Derat for NE	4 4 9 0 0 0 0 0 3 0 0 1 1 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 45 22 25 41 46 41 45 Ely. e outpof 5 kine outrating	46 53 20 60 10 10 65 14 33	57 56 25 31 46 58 45 56	68 60 55 65 64 63 68 enabl t.t. is un z)	9 6 3 3 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	84 75 15 55 34 57 05 75

^{*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

Common Specification	ns Catalog No. KAEP C710617 00
Item	Specifications
Control Method	 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 Vector Control for PM Closed Loop Vector Control for PM Closed Loop Vector Control for PM
Maximum Output Frequency	 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 $+40$ °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: 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	 V/f Control: 150%/3 Hz Open Loop Vector Control: 200%/0.3 Hz Advanced Open Loop Vector Control: 200%/0.3 Hz Closed Loop Vector Control: 200%/0 min⁻¹ Open Loop Vector Control for PM: 200%/0 min⁻¹ EZ Open Loop Vector Control: 100%/1% speed Note: Drive capacity must selected appropriately to obtain this starting torque under Open Loop Vector Control, Closed Loop Vector Control for PM.
Characteristics Speed Control Range	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 for PM 1:100 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.
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.
Driv	Approx. 20% Approx. 125% with a dynamic braking option • 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
Braking Torque	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.
V/f Characteristics Main Control Functions	Select from 15 predefined V/f patterns, or a user-set V/f pattern. 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	 · 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 Ple, IEC/EN61508 SIL3*1 Note: Used by setting functions to multi-function digital output terminals. · RCM*2 · EAC*2 · CSA*2 · KR*2
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.

Low Harmonics Regenerative Matrix Converter U1000

200 V Class ND: Normal Duty, HD: Heavy Duty

M	odel CIMR-UA		2:::0028	2:::0042	2:::0054	2:::0068	2:::0081	2:::0104	2::::0130	2:::0154	2:::0192	2:::0248	
	Rated Input	ND	25	38	49	62	74	95	118	140	175	226	
	Current*1 A	HD	20	25	38	49	62	74	95	118	140	175	
1	Rated Input	ND	12	17	22	28	34	43	54	64	80	103	
I타	Capacity*2 kVA	HD	9	12	17	22	28	34	43	54	64	80	
Q	Rated Output	ND	28	42	54	68	81	104	130	154	192	248	
Input/Output	Current*4*5 A	HD	22	28	42	54	68	81	104	130	154	192	
	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)												
<u>س</u>	Carrier Frequenc	СУ			4 kHz (Us	ser adjustak	ole up to 10	kHz. Derati	ng may be	required.)			
	Max. Output Vol	tage					Depends on	input voltag	е				
	Max. Output Frequ	iency					400) Hz					
	Rated Voltage/Rated Fre	quency			Three	-phase AC	power supp	oly: 200 to 2	240 Vac 50/	60 Hz			
<u>~</u>	Allowable Voltage Fluc	tuation					−15% t	o +10%					
ower	Allowable Frequency Fluo	tuation			±3%	6 (Frequenc	y fluctuatio	n rate: 1 Hz	/100 ms or	less)			
	Allowable Power Volt	age					loop th	an 2%					
	Imbalance between F	hases					less tri	all 270					
Hai	monic Current Distortion	Rate*6					5% or less	(IEEE 519)					
In	out Power Factor					0.9	98 or more (for rated loa	ad)				

400 V Class

M	odel CIMR-U	Α		4:::0011	40014	40021	4:::0027	4:::0034	40040	400	52 400	65 4:::00	77 4:::009	6 4:::0124	40156
put	Rated Input		ND	10	13	19	25	31	36	47	59	70	87	113	142
ΙĦ	Current*1	Α	HD	8.7	10	13	19	25	31	36	47	59	70	87	113
nf/	Rated Input		ND	9	12	17	22	28	33	43	54	64	80	103	130
l du	Capacity*3	κVA	HD	8	9	12	17	22	28	33	43	54	64	80	103
Rated	Rated Outpu	t	ND	11	14	21	27	34	40	52	65	77	96	124	156
Ra	Current*4*5	Α	HD	9.6	11	14	21	27	34	40	52	65	77	96	124
M	odel CIMR-U	Α:		40180	40216	6 4 024	40 403	02 40	361 4	0414 4	10477	40590	40720* ⁷	4::0900* ⁷	4::::0930* ⁷
but	Rated Input		ND	164	197	218	275	32	9 3	77	434	537	655	819	846
JE	Current*1	Α	HD	142	164	197	218	27	5 3	29	377	434	537	655	819
nt/	Rated Input	н	ND	150	180	200	251	30	0 3	44	396	490	598	748	773
l d	Capacity*3 k	κVA	HD	130	150	180	200	25	1 3	00	344	396	490	598	748
Rated	Rated Outpu	t	ND	180	216	240	302	36	1 4	14	477	590	720	900	930
Ra	Current*4*5	Α	HD	156	180	216	240	30:	2 3	61	414	477	590	720	900

put	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)
Rated output	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
Rat	Max. Output Voltage	Depends on input voltage
	Max. Output Frequency	400 Hz
	Rated Voltage/	Three-phase AC power supply (CIMR-U:::4A:::/4P:::): 380 to 500 Vac*8 50/60 Hz
	Rated Frequency	Three-phase AC power supply (CIMR-U[]]4E[]]/4W[]): 380 to 480 Vac 50/60 Hz
Power	Allowable Voltage Fluctuation	-15% to +10%
Po	Allowable Frequency Fluctuation	±3% (Frequency fluctuation rate: 1 Hz/100 ms or less)
	Allowable Power Voltage	less than 2%
	Imbalance between Phases	less triair 270
Hai	monic Current Distortion Rate*6	5% or less (IEEE 519)
In	out 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:::14:::0477 to 4:::0930 with an EMC filter connected.

Common Specifications

Catalog No. KAEP C710636 02

	Item	Specifications
	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	Digital reference: within ±0.01% of the max. output frequency (-10 to +40°C)
	(Temperature Fluctuation)	Analog reference : within $\pm 0.1\%$ of the max. output frequency (25 $\pm 10^{\circ}$ 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}
Control Characteristics	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
100	Speed Control Accuracy	\pm 0.2% in Open Loop Vector Control (25 \pm 10°C), \pm 0.02% in Closed Loop Vector Control (25 \pm 10°C) *2
Contro	Speed Response	10 Hz in Open Loop Vector Control (25 \pm 10°C), 250 Hz in Closed Loop Vector Control (25 \pm 10°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,
	Driv	DriveWorksEZ (customized functions), Removable Terminal Block with Parameter Backup, Online Tuning, Overexcitation Deceleration, Inertia (ASR) Tuning, High Frequency Injection, etc.
St	andards 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
Pr	rotection 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-U:::4:::0720 to 4:::0930.

Advanced Vector Control Inverter Varispeed G7

200 V Class Catalog No. KAE-S616-60

																		_			
Mo	del CIMR-	G7A□□□□		20P4	20P7	21P5	22P2	23P7	25P5	27P5	2011	2015	2018	2022	2030	2037	2045	2055	2075	2090	2110
	x. Applicat otor Capaci		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
	Rated Ou	tput Capacity	kVA	1.2	2.3	3	4.6	6.9	10	13	19	25	30	37	50	61	70	85	110	140	160
Output	Rated Ou	tput Current	Α	3.2	6	8	12	18	27	34	49	66	80	96	130	160	183	224	300	358	415
Of I	Max. Out	put Voltage		Three	-phase	, 200/2	08/220	/230/2	40 V (p	roportio	onal to	input vo	oltage)								
Max. Output Frequency 400 Hz by parameter settings*2																					
	Rated Vo	Itage/Rated		Three	-phase	AC po	wer su	oply: 20	00/208/	220/23	0/240	V, 50/60) Hz*3	DC pov	ver sup	ply: 27	0 to 34	0 V*4			
Power	Allowable Fluctuation		-15 t	o +10%	6																
Allowable Frequency Fluctuation ±5%																					
На	rmonic					(Optiona	ıl							S	Standar	ď				
Su	ppression	12-pulse Inpu	ut				No	t availa	ble							A	vailable	*5			

400 V Class

Mo	del 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
	x. Applicable tor 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
	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
put	Rated Output Current	Α	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
Output	Max. Output Voltage		Thre	e-pha	ase, 3	80/40	00/41	5/440	/460/	480 V	(prop	ortior	nal to	input	volta	ge)						V .			
	Max. Output Frequency 400 Hz by parameter settings*2*6															11									
	Rated Voltage/Rated Frequency	П	Thre	ee-pha	ase A	C pov	ver su	pply:	380/4	100/4	15/44	0/460	/480	V, 50/	′60 Hz	DC p	ower	supp	ly: 51	0 to 6	80 V	¢4	1		
Power	Allowable Voltage Fluctuation		-15	to +1	0%						Ú					U				Г			7		
	Fluctuation Allowable Frequency Fluctuation ±5%														П	V			٦	4					
На	rmonic DC Reactor					0	ption	al				М				1	_ ¬	Stan	dard			1			
Su	opression 12-pulse Input	t				Not	availa	able										Availa	able*5						

Common Specifications

	Items	Specifications
	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.
S	Torque Accuracy	±5%
tics	Frequency Control Range	0.01 to 400 Hz*2*6
acteristic	Frequency Accuracy (Temperature Fluctuation)	Digital reference: ±0.01%, −10 to +40°C ; Analog reference: ±0.1%, 25±10°C
Char	Frequency Setting Resolution	Digital reference: 0.01 Hz; Analog reference: 0.03/60 Hz (11 bit signed)
0	Output Frequency Resolution	0.001 Hz
ontrol	Overload Tolerance	150% of rated output current for 1 min., 200% of rated output current for 0.5 s
ပိ	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
- 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 of 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.

Compact and Energy Efficiency ECOiPM Drive

Motors

	utput kW	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
_	odel EMR1-	0.4	0.75	1.5	۷.۷	0.1	5.5	7.5	11	13
	ample of 200 V class 1750 r/min)*1	20P4AFN-L	20P7AFN-L	21P5AFN-L	22P2AFN-S	23P7AFN-S	25P5AFN-S	27P5AFN-S	2011AFN-S	2015AFN-S
0.	3600 r/min	56	56	63A	63B	71	80	90A	90B	100
N N	1750 r/min	56	63A	63B	71	80	90A	90B	100	112
Frame No.	1450 r/min	63A	63B	71	80	90A	90B	100	112	-
F	1150 r/min	63A	63B	71	80	90A	-	-	_	-
М	ounting	Flange-mo	unted type: F	rame numbe	ers up to 63E	B, Foot-mour	ted type: Fra	ame number	s over 71	
Er	nclosure	Totally-enc	losed externa	ally fan-coole	ed (IP44)					
Ra	ated Speed*2	3600/1750	/1450/1150	r/min						
No	o. of Poles	10								
Sp	peed Control Range	1:10 (varial	ole torque) N	lote: Contact y	our Yaskawa re	epresentative for	or constant tor	que application	ns.	
Tii	me Rating	Continuous	3							
In	sulation Class	B: Frame n	umbers up to	o 80, F: Fram	e numbers f	rom 90A				
Er	ncoder	Without Po	ì							
ant	Ambient Temperature	-20 to +40	°C							
nme	Ambient Humidity	90% RH or	less (n <mark>o</mark> cor	densation)						
Environment	Area of Use	Indoors, no	n-explosion	proof area (f	ree f <mark>rom corr</mark>	rosive or exp	losive gas or	vapor)		
핍	Altitude	Up to 1000	meters							
Ro	otation Direction	Counter clo	ockwise from	coupling (bi	directional p	ossible)				
Co	oupling			V-belt coupl a representativ		ıt V-belt coupli	ng when using	a 3600 r/min	motor.	
Co	pating	Munsell N1	.5 (for indoo	r use)						
St	andards Compliance	JEC-2100								
O	otions	With therm	ostat (for pro	tection agair	nst overheati	ng)				
	lowable Motor Load naracteristics	ves	s N	150 120 %) 100 93 57 50 E 50	rating (1 mi	Continuous rating	100		bold dotted lin cates an instan	
						Speed (%)		opei	rating zone.	

*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
(0)	IVIOUEI CIIVIN-VAZALILILILI	0003	0006	0010	0012	0018	_	-	_	_
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 A	C power supply:	200 to 240 V 50)/60 Hz, Single-p	hase AC power	supply: 200 to 2	40 V 50/60 Hz, I	DC power supply	v: 270 to 340 V
200	Allowable Voltage Fluctuation	-15 to +10	%							
100	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
	Model CIMR-VA4A	0001	0004	0005	0007	0011	0018	0023	0031	0038
SSI	Rated Output Current (Heavy Duty) A	1.2	3.4	4.8	5.5	9.2	14.8	18.0	24.0	31.0
Class	Rated Voltage/Rated Frequency	Three-phas	e AC power	supply: 380	to 480 V 50/	60 Hz, DC p	ower supply:	510 to 680	V	
0 <	Allowable Voltage Fluctuation	-15 to +10	%							
400	Allowable Frequency Fluctuation	±5%								
	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).

Super Compact and Environmentally V1000pico Drive

Motors

R	ated Output kW	0.1	0.2	0.4	0.2	0.4	0.75									
Model	SMRD-	20P1AE	20P2AE	20P4AE	20P2BE	20P4BE	20P7BE									
R	ated Speed r/min		1800			3600										
R	ated Current A	0.64	1.0	1.9	1.5	2.6	4.2									
N	o. of Poles	6														
S	peed Control Range	1:10														
Ti	me Rating	Continuous														
In	sulation Class	В														
In	sulation Tolerance	1500 Vac for one	minute													
In	sulation Resistance	500 Vdc 10 M Ω n	nin.													
E	ncoder	Without PG														
M	lounting	Flange-mounted t	уре													
Р	rotective Design	IP65 (excluding sh	naft opening and m	otor leads)												
С	ooling Method	Totally enclosed s	elf-cooled (includes	s heat dissipation fr	om the flange surfa	ce toward the conr	nected machine)									
l ±	Ambient Temperature	0 to +40°C														
Environment	Ambient Humidity	20 to 80% RH (no	condensation)	~ /												
00.	Area of Use	Up to 1000 meters														
N.	Altitude Up to 1000 meters Vibration Resistance 49.0 m/s² or below															
Ш	Vibration Resistance	pration Resistance 49.0 m/s² or below														
Vi	bration Class	ration Resistance 49.0 m/s² or below on Class V15 at rated speed Note: The drive must be adjusted.														
Al	lowable Radial Load*1 N	245	245	245	245	245	245									
Al	lowable Thrust Load*1 N	74	74	147	74	74	147									
M	lotor Inertia (×10 ⁻⁴) kg·m ²	0.255	0.438	1.57	0.255	0.438	1.57									
Al	lowable Load Motor Inertia*2	For variable torqu	e application: 50 tir	nes max.												
(N	lotor shaft conversion)	For constant torqu	ue application: 5 tin	nes max.												
	Rated Torque N · m	0.531	1.06	2.12	0.531	1.06	1.99									
S	Max. Starting Torque*3 N ⋅ m	0.796	1.59	3.18	0.796	1.59	2.985									
Torque Characteristics	Allowable Load Characteristics*3	rives	- \	Contin	Instantaneous rating (1 min.) uous rating	ntro										
24.4			wable radial load or allow	0 10 33 50 Speed (100	ote: Outputs the torquishaded area.										

- *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.

- 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.
 - \cdot Aluminum plate of 250 \times 250 \times 6 mm (or of dimensions that add up to a total surface area of 0.127 m²)

Drives

	1000					
Model	Three-phase 200 V	CIMR-VA2A	0001	0002	0004	0006
Mo	Single-phase 200 V	CIMR-VABA	0001	0002	0003	0006
Ma	ax. Applicable Motor Capa	city (Heavy Duty) kW	0.1	0.2	0.4	0.75
Ra	ated Output Current (H	eavy Duty) A	0.8	1.6	3	5
	Rated Voltage/Rated	Eroguenov.	Three-phase	AC power sup	ply: 200 to 240	V 50/60 Hz
	nateu voitage/nateu	rrequency	Single-phase	AC power sup	ply: 200 to 240	0 V 50/60 Hz
Power	Allowable Voltage Flu	ctuation	-15 to +10%	ı		
Po	Allowable Frequency	Fluctuation	±5%			
	Power Supply kV/	Three-phase	0.3	0.7	1.3	2.7
	(Heavy Duty)	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).

^{*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.

Application Specific

Elevator applications L1000A

200 V Class

М	odel CIMR-LT2A	8000	0011	0018	0025	0033	0047	0060	0075	0085	0115	0145	0180	0215	0283	0346	0415
Max	x. 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
	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
l =	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
Output	Overload Tolerance	150%	of rate	ed outp	out curr	ent for	60 s										
0	Max. Output Voltage Three-phase 200 to 240 V (proportional to input voltage)																
	Max. Output Frequency	120 F	Iz (use	r adjus	table)												
<u></u>	Rated Voltage/Rated Frequency	Three	-phase	200 to	240 V	ac 50/	60 Hz	270) to 34	O Vdc							
Power	Allowable Voltage Fluctuation	-15 t	o +109	6													
۵	Allowable Frequency Fluctuation	±5%															

400 V Class

Mo	odel CIMR-LT4A	0005	0006	0009	0015	0018	0024	0031	0039	0045	0060	0075	0091	0112	0150	0180	0216
Max	c. Applicable Motor Capacity*1kW	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
	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
Ħ	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
Output	Overload Tolerance	150%	of rate	ed outp	out cur	rent for	60 s										
0	wax. Output voltage																
	Max. Output Voltage Max. Output Frequency 120 Hz (user adjustable)																
in in	Rated Voltage/Rated Frequency	Three	-phase	380 to	480 V	/ac 50/	60 Hz	510	0 to 68	0 Vdc							
ower	Allowable Voltage Fluctuation	-15 t	o +109	%			V.A										
Д	Allowable Frequency Fluctuation	±5%															
Со	mmon Specification	ns				N				$ \setminus $		1			IJ		

	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	Digital reference: within ±0.01% of the max. output frequency (-10 to +40°C)
	(Temperature Fluctuation)	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 k Ω), 0 to $+10$ Vdc (20 k Ω), 4 to 20 mA (250 Ω), 0 to 20 mA (250 Ω)
ics	Ctarting Targue	150% / 3 Hz (V/f Control) 200% / 0 r/min (Closed Loop Vector Control)
rist	Starting Torque	200% / 0.3 Hz (Open Loop Vector Control)*6 200% / 0 r/min (Closed Loop Vector Control for PM)
acte	On and Onether Design	1:40 (V/f Control) 1:1500 (Closed Loop Vector Control)
Characteristics	Speed Control Range	1:200 (Open Loop Vector Control)*6 1:1500 (Closed Loop Vector Control for PM)
5	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)
Control	On and Danier	10 Hz in Open Loop Vector Control (25±10°C)*6, 50 Hz in Closed Loop Vector Control (25±10°C)
S	Speed Response	(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
		Torque compensation at start (with or without sensors), Auto-Tuning (for motor and encoder offset), braking
	Main Control Functions	sequence, Feed Forward, Short Floor, Rescue Operation using back-up power supply, Light Load Direction
		Search, Removable Terminal Block with Parameter Backup
		· UL508C
Sta	andards Compliant	· 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
Pro	tective Design	IP00 open-chassis, UL Type 1 enclosure*8
		V

^{*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

Energy-Saving Unit

Power regenerative converter D1000

D1000 Energy-saving Unit

Catalog No. KAEP C710656 03

Volta	nge					200 V	Class									400 V	Class					
	I CIMR-DA[*1]A	ACCECTOR IN	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
	Rated Output Co	apacity*2 kW	5	10	20	30	50	65	90	130	5	10	20	30	40	60	100	130	185	270	370	630
Rating	Rated Output Co	urrent(DC) A	15	30	61	91	152	197	273	394	8	15	30	45	61	91	152	197	280	409	561	955
Rat	Rated Input Cu	ırrent(AC) A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	410	560	1040
	Rated Outpo	ut Voltage			•	330	Vdc					•	•	•		660	Vdc		•	•		
+	Rated Voltage/Rat	ted Frequency			200 to	240 V	ac 50/	60 Hz							380 to	o 480 V	/ac 50/	60 Hz				
Input	Allowable Voltag	e Fluctuation	-15 to	o +10%	6																	
	Allowable Frequer	ncy Fluctuation	±2%																			
S	Control Met	thod	Sine-\	wave P	WM co	ntrol																
ərist	Input Power	Factor		power	factor	of 0.99	min. (f	or rate	d opera	ation)												
acte	Output Voltag	e Accuracy	±5%																			
Control Characteristics	Overload Pr	rotection	Unit s	tops af	ter 60	s at 15	0% of	rated o	utput c	urrent	or afte	r 3 s at	200%	of rate	d outp	ut curre	ent.					
	Voltage Refere					00 to 3	860 Vd								6	600 to 7	730 Vd					
l tr	Carrier Fred			6 k					Hz					ΚHz				4 kHz			2 kHz	
ŏ	Main Control	Functions								inal Bloc	k with P	arameter	r Backup	Functio	n, MEMO	DBUS/M	odbus C	omm. (R	S-422/R	S-485 m	ax, 115.2	2 kbps)
	Momentary Overcu	rrent Protection		tops w					250%.													
	Fuse burno	ut	Opera	tion st	ops if t	he fuse	burns	out.														
				ation st																		
ဟ	Overloads			ation st					ed out	put cur	rrent.											
ţi				rical op			_								_/							
Protection Functions	Overvoltage	Output		when [Stops v	_						_		
l F	Protection	Input		when ii							44		Stops v									
l ig	Undervoltage	Output		when D		-							Stops v				_				С	
) tec	Protection	Input		when i						_	7	_	Stops v	vhen in	put vol	tage ta	ills belo	w app	rox. 30	0 Vac		
Pa	Momentary P			diately	_									_			-			_		
	Power Supply Fre		_				ation o	† ± 6 H	z or m	ore from	m the r	ated in	put free	quency				_				
	Heatsink Overhe			ction by		_	i.k					-		-	-					•		
	Ground Fault F			ction by e LED				uo bos	fallon	holow	annray	, FO V		-	\rightarrow	`-				_		
	Charge LED Area of Use		Indoo		remain	S III UII	ווו טכיוו	us nas	lalleri	below	approx	t. 50 V		-								
	Ambient Ter			o +50°C	: (IPOO	/IP20/C	nen Ti	ne en	losure)												
+	Humidity	riperature		RH or l				•	JIOSUI C	<u>'</u>												
l e	Tiurnaity								10 to	20 Hz	· 9 8 m	/s² 2N	to 55 H	-lz · 5 0	m/s ²							
Į į	Shock												to 55 l									
Environment	OHOOK	_		30) 10								73,20	10 00 1	12 . 2.0	/11//3		_					
Ш	Storage Ten	nperature	-	o +60°C			_==			_		20		f^{-}	~ ~	V I	٠ +	W/	~ 1			
	Altitude	- F Grataro			-	_					_	-	000 m)		/() i	11	1 (-)	,		
Prote	ection Design	n	-	P20/O	_													_				
	ty Standard			BC, IEC				00-3														
	This number								/ -1													

^{*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					20	0 V									4	100 V					
Model CIMR-I	DAI*:A::::::	0005	0010	0020	0030	0050	0065	0090	0130	0005	0010	0020	0030	0040	0060	0100	0130	0185	0270	0370	0630
Harmonic	Rated	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300		_	
Filter Module	Current	15	29	37	00	140	200	210	400	0	10	30	43	56	00	140	210	300			
Input AC	Rated Current A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	410	560	560
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	Rated Current A							_							_				410	560	1140
Reactor 2	Inductance mH																		0.06	0.05	0.02
Reactor for	Rated Current A				_		_	_		_				_	_		_		64	87	177
Harmonic Filter	Inductance mH																		0.022	0.0158	0.0079
Condenser for	Rated u.F																		290	402	800
Harmonic Filter	Capacity µ F																		290	402	300

^{*:} 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

Max. Applicable Most Oscillate (July 2016) Max. Applicable Mos	Volta	age					2	00 V	Clas	s											4	00 V	Clas	ss						
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 38 101 120 30 41 50 68 81 112 138 207 282 413 7 11 15 22 30 36 43 58 73 89 109 149 217 320 440 68 68 40 68 70 70 70 70 70 70 70 7	Mode	I CIMR-RA[*1]A[[]][]	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
Rated Output Current (DC)A	Max. A	pplicable 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
Rate Unique Head Protection Repensative Torque Repensative Torqu	ō	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
Rate Unique Head Protection Repensative Torque Repensative Torqu	atin	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
Allowable Voltage Fluctuation — 15 to + 10% Allowable Fraguercy Euclation — 25 to + 10% Allowable Fraguercy Eu	ш	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
Allowable Frequency Pucluston 12% Control Method 120" excitation method 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150.2 kbps 1	=	Rated Voltage/Rated Frequency				200) to 2	240Va	ac 5	0/60	Hz									38	0 to 4	480Va	ac 5	50/60	Hz					
Allowable Frequency Pucluston 12% Control Method 120" excitation method 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150% 30 s. 100% 25% ED 60 s. 80% continuous 150.2 kbps 1	nbr	Allowable Voltage Fluctuation	- 1	5 to -	+ 109	%																								
Input Power Factor 150% 30 s. 100% 25% ED 60 s. 80% continuous	_	Allowable Frequency Fluctuation	±29	6																										
Overload Protection Main Control Functions Main Control Functions Mannetary Overurent Protection Overloads Overloads Output Protection Input Stops when DC bus voltage exceeds approx. 250 Vac Womentary Power Loss Prover Lops Protection Input Stops when DC bus voltage falls below approx. 150 Vac Momentary Power Loss Power Supply Fequency Faul Charge LED Area of Use Area of Us		Control Method																												
Momentary Overcurent Protection Operation stops for approx. 250% or higher of the rated power supply current.	_s	Input Power Factor	0.9	min.	(for r	ated I	oad)																							
Momentary Overcurent Protection Operation stops for approx. 250% or higher of the rated power supply current.	risti	Overload Protection	30 s	at a	ppro	x. 150)% o	f rate	d cu	rrent.																				
Momentary Overcurent Protection Operation stops for approx. 250% or higher of the rated power supply current.	Col	Regenerative Torque	_																											
Fuse burnout Operation stops if the fuse burns out. Overloads Operation stops for 150% of the rated power supply current for 30 s. Overvoltage Output Stops when DC bus voltage exceeds approx. 410 Vdc Stops when DC bus voltage exceeds approx. 554 Vac 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 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 Charge LED Charge LED remains lit until DC bus has fallen below approx. 50 V 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/s², 20 to 55 Hz : 5.9 m/s² (2A0073 to 2A0105, 4A0105 to 4A0300)10 to 20 Hz : 9.8 m/s², 20 to 55 Hz : 2.0 m/s² 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)	Chara	Momentary Overcurrent Protection Operation stops for approx. 250% or higher of the rated power supply current.															nax,													
Overloads Operation stops for 150% of the rated power supply current for 30 s. Overvoltage Output Stops when DC bus voltage exceeds approx. 227 Vac Input Stops when input voltage exceeds approx. 227 Vac Undervoltage Output Stops when input voltage exceeds approx. 190 Vdc Input Stops when input voltage falls below approx. 190 Vdc Input Stops when input voltage falls below approx. 150 Vac Input Stops when input 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 Heatsink Overheat Protection Charge LED Charge LED remains lit until DC bus has fallen below approx. 50 V 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 Shock (2A03P5 to 2A0053, 4A03P5 to 4A0073)10 to 20 Hz : 9.8 m/s², 20 to 55 Hz : 5.9 m/s² (2A0073 to 2A0105, 4A0105 to 4A0300)10 to 20 Hz : 9.8 m/s², 20 to 55 Hz : 2.0 m/s² 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)		Momentary Overcurrent Protection Operation stops for approx. 250% or higher of the rated														sup	ply c	urren	t.											
Overvoltage 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 Charge LED Charge LED remains lit until DC bus has fallen below approx. 50 V 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/s², 20 to 55 Hz : 5.9 m/s² (2A0073 to 2A0105, 4A0105 to 4A0300)10 to 20 Hz : 9.8 m/s², 20 to 55 Hz : 2.0 m/s² 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)		Fuse burnout Operation stops if the fuse burns out.																												
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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)	invi		(2A)	0073	to 2/	40105	5, 4A	0105	to 4	4030	0)10	to 20	Hz:	9.8	m/s²,	20 t	o 55	Hz:	2.0 n	n/s²										
Destruction Desires Once Two and leaves (IDOO) Foolered Mell Manufact (IDOO/III Two 4)*2																														
		ection Design	<u> </u>										unte	d (IP2	20/UI	_ Тур	e1)*2	!												
Safety Standard UL508C, IEC/EN61800-5-1, IEC/EN61800-3	Safe	ty Standard	UL5	08C,	IEC/	/EN61	800-	5-1,	IEC/	EN61	800-	3																		

R1000 Standard Configuration Devices

Voltage	Voltage 200 V Class															4	00 V	Clas	s											
Model CIMR-	-RA[*]A[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	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	
Coordinating Reactor	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	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	
Suppression Reactor	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).

^{*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).

System Solutions

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

Mod	lel CIMR-LV1HMD 4 00	0P4	0P7	1P5	2P2	3P0	3P7	5P5	7P5	011	015	018	022	030	037	045
	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
	ed Input Current*2 A	1.8	3.2	4.4	6	8.2	10.4	15	20	29	39	44	43	58	71	86
	<u> </u>		 C to 720		0	0.2	10.4	15	20	29	39	44	43	36	/ 1	00
Rai	ed Input Voltage				4.0		7	110	10.7	10.0	0.4	00	0.4	40		60
	Rated Output Capacity*3 kVA	1.4	2.6	3.7	4.2	5.5	/	11.3	13.7	18.3	24	30	34	46	57	69
utput	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
T H	Overload Tolerance				irrent for											
0	Max. Output Voltage				30 V (rela	tive to in	put volta	ge)								
	Max. Output Frequency		(user-se													
	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, EMS Control, Open Loop Vector														
	Control Metriod	Control	ontrol for PM, and Closed Loop Vector Control for PM													
	Frequency Control Range	0.01 Hz	1 Hz to 400 Hz													
	Frequency Accuracy	Digital ı	ital reference : within ±0.01% of the max. output frequency (-10°C to +40°C)													
	(Temperature Fluctuation)	Analog	nalog reference: within ±0.01% of the max. output frequency (25°C±10°C)													
ics	Frequency Setting Resolution	Digital ı	reference	: 0.01 H	z Anal	og refere	nce: 0.00	3 Hz/60 I	-lz (11 bi	t)						
Characteristics	Output Frequency Resolution	0.001 F	Ηz													
cte		1:1500	(Closed	Loop Ve	ctor Con	trol and	Closed L	oop Vect	or Contr	ol for PN	1)					
lare	Speed Control Range	1:200 (Open Lo	op Vecto	r Contro)	1:40 (V/	f Control	and V/f	Control v	vith PG)					
Ò		1:20 (O	pen Loo	p Vector	Control 1	for PM)	1:100 (A	dvanced	l Open L	oop Vect	or Contr	ol for PM	1)			
Control	Speed Control Accuracy	±0.2%	in Open	Loop Ve	ctor Con	trol (25°C	2±10°C),	0.01% ir	n Closed	Loop Ve	ctor Con	trol (25°C	C±10°C)			
E		10 Hz ii	n Open L	oop Ved	tor Conti	rol (25°C	±10°C), 5	0 Hz in (Closed Lo	oop Vect	or Contro	ol (25°C±	10°C) (ex	xcludes t	emperat	ure
	Speed Response				ning rotat			r =		1					•	
	Accel/Decel Time				ectable c		<u> </u>	depende	ent accel	eration a	nd decel	eration s	ettinas)			
					ntrol, spe		_			_				ontrol. mo	mentary	power
	Main Control Functions				rch, overt											
	Wall Colline Lancions				ving conf		receion, i	orque IIII	iii, aatott	annig, DV	on functi	on, one c	Cilipolise	ation, tor	440	
		Compe	isation, t	nergy Sa	wing com	iroi, 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. KAEPC71069100).

System Solutions

Low-voltage Inverter Drive for Systems FSDrive-LV1HF (Fixed type)

Catalog No. KAEP C710691 00

Mod	del CIMR-LV1HFD 4 000	055	075	090	110	132	160	185						
Max.	Applicable Motor Capacity*1 kW	55	75	90	110	132	160	185						
Rate	ed Input Current*2 A	105	142	170	207	248	300	346						
Rate	ed Input Voltage	510 VDC to 720 V	DC											
	Rated Output Capacity*3 kVA	85	114	137	165	198	232	282						
=	Rated Output Current*4 A	112	150	180	216	260	304	370						
Output	Overload Tolerance	150% of rated ou	tput current for 60)s										
Ō	Max. Output Voltage	Three-phase 380	V to 480 V (relativ	e to input voltage)										
	Max. Output Frequency 400 Hz (user-set)													
	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													
	Frequency Accuracy	Digital reference : within ±0.01% of the max. output frequency (-10°C to +40°C)												
	(Temperature Fluctuation)													
tics	Frequency Setting Resolution	Digital reference:	0.01 Hz Analog	g reference: 0.03 H	z/60 Hz (11 bit)									
erisi	Output Frequency Resolution	0.001 Hz												
acte		1:1500 (Closed L	oop Vector Contro	ol and Closed Loop	Vector Control for	r PM)								
har	Speed Control Range	1:200 (Open Loo	Vector Control)	1:40 (V/f Co	ntrol and V/f Con	trol with PG)								
		1:20 (Open Loop	Vector Control for	PM) 1:100 (Adva	nced Open Loop	Vector Control for F	PM)							
Control Characteristics	Speed Control Accuracy	±0.2% in Open L	oop Vector Contro	ol (25°C±10°C), 0.0°	1% in Closed Loo	p Vector Control (25	5°C±10°C)							
S	Speed Response	10 Hz in Open Lo	op Vector Control	(25°C±10°C), 50 H	z in Closed Loop	Vector Control (25°0	C±10°C) (excludes	temperature						
	Speed nesponse	fluctuation when	performing rotatio	nal autotuning)										
	Accel/Decel Time 0.00 s to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)													
	Torque control, Droop control, speed/torque control switch, feed forward control, load torque observer control, momentary power													
	Main Control Functions	loss ride-thru, spe	ed search, overto	rque detection, torq	ue limit, autotunin	g, Dwell function, sl	lip compensation,	torque						
		compensation, er	ergy saving contro	ol, 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.

System Solutions

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

Catalog No. KAEP C710691 00

Mod			CIMR-LV	IHSR□4□□	□ (400 V)			CIMR-LV	1HSR□6□□	□ (690 V)						
IVIOC	lei	200	400	600	800	10C	350	700	10C	14C	17C					
Max.	Applicable Motor Capacity*1kW	200	400	600	800	1000 350 700 1050 1400 1 1830 410 814 1216 1618 2										
Rate	ed Input Current*2 A	373	739	1104	1467	1830	410	814	1216	1618	2019					
Rate	ed Input Voltage		510	VDC to 720 '	VDC			810	VDC to 1040	VDC						
	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					
Output	Overload Tolerance	150% of rat	ted output cu	rrent for 60 s	3											
Out	Career Frequency	2 kHz														
	Max. Output Voltage*5	Three-p	ohase 380 V 1	o 480 V (rela	tive to input	/oltage)	Three-pha	ase 600 V to	690 V (propo	rtional to inpu	ut voltage)					
	Max. Output Frequency	150 Hz														
	Control Method	V/f Control,	Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, EMS Control													
	Frequency Control Range		01 Hz to 150 Hz													
	Frequency Accuracy	Digital refer	gital reference : within ±0.01% of the max. output frequency (-10°C to +40°C)													
	(Temperature Fluctuation)	Analog refe	alog reference: within ±0.1% of the max. output frequency (25°C±10°C)													
	Frequency Setting Resolution	Digital refer	gital reference : 0.01 Hz Analog reference: 0.03 Hz/60 Hz (11 bit)													
	Output Frequency Resolution	0.001 Hz														
		150%/3 Hz	(V/f Control)													
l is	Starting Torque		(V/f Control v	- ,												
eris	Otarting forque	l	łz (Open Loo	•	,											
Control Characteristics			n-1 (Closed Lo	oop Vector Co	ontrol)											
har		1:40 (V/f Co														
	Speed Control Range		ontrol with PG													
ıţı	opood Control Hango		n Loop Vecto													
ပိ			sed Loop Ve													
	Speed Control Accuracy					0.01% in Clo	sed Loop Ve	ctor Control ((25°C±10°C)							
	Speed Response		0°C) (Open Lo													
	Accel/Decel Time					dependent a	cceleration a	nd decelerati	on settings)							
	Voltage/Frequency Characteristics	User-selected programs and V/f preset patterns possible														
		Torque control, Droop control, speed/torque control switch, feed forward control, load torque observer control, momentary power														
	Main Control Functions					torque limit, a	autotuning, D	well function,	slip compens	sation, torque						
		compensati	on, energy sa	ving 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.

Motors Controls

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

Catalog No. KAEP C710691 00

Mod	ol.		CIMR-LC	1HSR□4□□	□ (400 V)			CIMR-LC	C1HSRA6 □□	□ (690 V)	· /								
IVIOC	ei	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								
Rate	ed Input Current A	414	800	1200	1600	2000	360	700	1050	1400	1750								
	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								
Output	Rated Output Voltage			660 VDC					1020 VDC										
Out	Overload Tolerance	150% of ra	0% of rated input current for 60 s																
	Career Frequency	2 kHz	Hz																
	Max. Output Voltage		720 VDC 1040 VDC																
<u> </u>	Rated Voltage and Rated Frequency	Th	Three-phase 380 VAC to 480 VAC, 50/60 Hz Three-phase 600 VAC to 690 VAC, 50/60 Hz																
flddn	Allowable Voltage Fluctuation	-15% ~ +1	10%																
ဟ	Allowable Frequency Fluctuation	±3%/300 n	ns (free phase	e rotation)															
Power	Power Supply Equipment Capacity kVA	Power supp	oly capacity g	reater than th	ne rated input	capacity													
stics	Control Method	Sine Wave	PWM*																
Control Characteristics	Input Power Factor	0.99 min. (a	9 min. (at rated current)																
Cha	Output Voltage Accuracy	±5%	±5%																

^{*} The FSDrive-LC1HS conforms to the conditions for self-excited three-phase bridges (Ks = 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

System Solutions

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

Catalog No. KAEP C710687 02

	Model C	IMR-M	V2AC*CA□□		035	050	070	100	140	200	260	330	400	520	650
	Nominal	Capac	ity	kVA	200	285	400	570	800	1150	1500	1900	2300	3000	3700
Class	Мах. Арр	olicable N	Motor Capacity	kW	132	200	315	450	630	900	1250	1500	1800	2500	3000
	Output	Rated	Output Current	Α	35	50	70	100	140	200	260	330	400	520	650
3 K	Rating	Rated	Output Voltage	V	Three-ph	ase, 3000/3	3300 V (sin	usoidal wa	ve, proport	ional to inp	ut voltage)				
	Power Supply	Main (Circuit		Three-ph	ase, 3000 \	/ (50 Hz ±	5%) or 330	0 V (50/60	Hz ± 5%) -	-20% to +1	10%			
	Model C	IMR-M	V2AF ≭ FA□□□]	035	050	070	100	140	200	260	330	400	520	650
	Nominal	Capac	ity	kVA	400	570	800	1150	1600	2300	3000	3800	4600	6000	7500
Class	Мах. Арр														
	Output	put 1 2 1 2 1 2 2 1 2 2 2 2 2 2 2													
% ≥	Rating	ar a same a													
	Power Supply	Power Supply Main Circuit Three-phase, 6000 V (50 Hz ± 5%) or 6600 V (50/60 Hz ± 5%) –20% to +10%													
	Supply										650				
ဟ	Nominal	Capac	ity	kVA	660	950	1300	1900	2650	3800	5000	6200	7600	9900	12000
Class	Мах. Арр	olicable N	Motor Capacity	kW	530	760	1070	1520	2130	3050	3960	5030	6100	7930	9910
%	Output	Rated	Output Current	Α	35	50	70	100	140	200	260	330	400	520	650
11 KV	Rating	Rated	Output Voltage	V	Three-ph	ase, 10000	V, 10500 \	/ or 11000	V (sinusoid	lal wave, pr	oportional	to input vo	Itage)		
	Power Supply	Main (Circuit		Three-ph	ase, 10000	V, 10500 \	/ or 11000	V (50/60 H	z ± 5%) –2	0% to +10	%			
suc	Efficienc	у			Approx. 9	97% (At rate	ed motor s	peed, 1009	% load)						
catic	Power F	Power Factor Min. 0.95 (At motor rated speed, 100% load)													
<u>#</u>	Cooling Method Forced air-cooling by fan (with failure detection of exhaust fan)														
					Open-loop vector control, Closed loop vector control, V/f control (for multiple motor operation), Closed loop control for SM (option)										
mon Sp	Control		Control Metho	od		_			ctor contro	I, V/f contro	ol (for multi	ple motor o	peration),	-	
Common Specifications	Control Specification	ations		od	Closed lo	op control	for SM (op	tion)	ctor contro					1	

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

System Solutions

Medium-voltage Matrix Converter for Systems

Super Energy-saving Medium-voltage Matrix Inverter FSDrive-MX1S FSDrive-MX1H

Catalog No. KAEP C710688 00

	Voltage Class				- 10	3 kV					- 4				6 kV				
Model	CIMR-MX1S*A (3 kV) CIMR-MX1S*C (6 kV) CIMR-MX1H*A (3 kV) CIMR-MX1H*C (6 kV)	132	200	315	450	630	900	13C	18C	25C	250	400	630	900	13C	18C	25C	36C	50C
Max.	Applicable Motor Capacity*1 kW	132	200										5000						
ور	Nominal Capacity kVA	200	285 400 570 800 1150 1500 2300 3000 400 570 800 1150 1600 2300 3000 4600 60									6000							
Output Rating	Rated Output 100% Current A Continuous	35	50	70	100	140	200	260	400	520	35	50	70	100	140	200	260	400	520
l g	Rated Voltage			Three-	phase,	3/3.3 k	V (sine	wave)					Three-	phase,	6/6.6 k	κV (sine	wave)		
	Rated Frequency	50/60	Hz																
Power	Main Circuit (Input Voltage)*2		Three-	phase,	3/3.3 l	κV ±10	0%, 50	60 Hz	±5%			Three	-phase,	6/6.6	κV ±10	0%, 50	/60 Hz	±5%	
Po	Control Circuit	Three-	-phase,	200/22	20 V 38	80/400/	′440 V	±10%,	50/60	Hz ±5	%, 3 k\	/A or m	ore						
Mati	rix Converter Efficiency	Efficie	ncy: Ap	prox. 9	98% (in	put trar	nsforme	r not in	cluded)* ⁵									
Mati	rix Converter Power Factor	0.95 c	r more																
Coo	ling Method	Force	d air-cc	oling w	ith ope	eration o	check s	witch											
တ္ပ	Control Method	Open	Loop V	ector C	ontrol,	Flux Lo	op Ved	tor Cor	ntrol										
Characteristics	Main Circuit				n multi-	-output	connec	ted in	a series										
ster	Frequency Control Range		o 120 F																
arac	Speed Control Accuracy	±0.5%	6 (Oper	Loop	Vector	Control) ±0.0)2% (FI	ux Loo	p Vecto	r Contr	ol)*4							
Š	Analog Input Resolution	0.03 F	łz																
2	Accel/Decel Time	0.1 to	to 6000 s																
Control	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								fied									
Prot	ective Functions	Overc	urrent,	Overvol	tage, U	Indervo	ltage, C	utput g	round f	ault, Ou	itput op	en-pha	se, Co	oling-fa	n error,	Overloa	ad, Moto	or overh	neat
Con	nmunication (Optional)	Modb	us, CP-	215, C	P-218	(Ethern	et), CP-	261 (PI	ROFIBL	JS-DP),	and ot	her con	nmunic	ations					

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

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).

^{*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	Discontinuation	Recommended Replacements	Remarks
	Date	Date		1101110
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-616GIILN	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	
			A1000+R1000,	
VS-616R3	1993. 1	2005. 9	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	$\Sigma ext{-V-SD}$ analog interface type	Contact your Yaskawa representative for details.
VS-676GL5	1007.10	0010 0	110004 110005	Production of the CIMR-L5S and L5H
(excluding CIMR-L5S	1997.10	2010. 9	L1000A, L1000S	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	2000 6	2010. 3	A1000, V1000	Production of explosion-proof models
(excluding safety-enhanced explosion-proof model)	2000. 6	2010. 3	A 1000, V 1000	was discontinued in September 2012.
Varispeed MX/MRX	2001.10	2015. 3	$\Sigma ext{-V-SD}$ 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	2003.10	2010. 3	A1000	Production of explosion-proof models
(excluding safety-enhanced explosion-proof model)	2003.10	2010. 3	A1000	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.





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



Global Service Network



Region	Service Area	Service Location	Service Agency	Т	elephone/Fax
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America	Colombia	Bogota	OVARIADORES LTD.A.		+57-1-795-8250
Europe	Europe, South Africa	Frankfurt	6 YASKAWA EUROPE GmbH	☆ FAX	+49-6196-569-300 +49-6196-569-398
	Japan	Tokyo, offices nationwide	(Manufacturing, sales) (YASKAWA ELECTRIC ENGINEERING CORPORATION (After colorantics)	FAX	+81-3-5402-4502 +81-3-5402-4580 +81-4-2931-1810
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	South Rolea	Seoul		☎ FAX	+82-2-3775-0337 +82-2-3775-0338
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	Taiwan	Taipei	(1) YASKAWA ELECTRIC TAIWAN CORPORATION	☎ FAX	+886-2-8913-1333 +886-2-8913-1513
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	Vietnam	Hanoi	WYASKAWA ELECTRIC VIETNAM CO., LTD.	☎ FAX	+84-4-3634-3953 +84-4-3654-3954
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	Indonesia	Jakarta	®PT. YASKAWA ELECTRIC INDONESIA	☎ FAX	+62-21-2982-6470 +62-21-2982-6471
Oceania	Australia		Contact to service agency in U.S.A. (1).		

YASKAWA AC DRIVES

DRIVE CENTER (INVERTER PLANT)

2-13-1, Nishimiyaichi, Yukuhashi, Fukuoka, 824-8511, Japan Phone +81-930-25-2548 Fax +81-930-25-3431 http://www.yaskawa.co.jp

YASKAWA ELECTRIC CORPORATION

New Pier Takeshiba South Tower, 1-16-1, Kaigan, Minatoku, Tokyo, 105-6891, Japan Phone +81-3-5402-4502 Fax +81-3-5402-4580 http://www.yaskawa.co.jp

YASKAWA AMERICA, INC. 2121, Norman Drive South, Waukegan, IL 60085, U.S.A. Phone +1-800-YASKAWA (927-5292) or +1-847-887-7000 Fax +1-847-887-7310 http://www.vaskawa.com

YASKAWA ELÉTRICO DO BRASIL LTDA.

777. Avenida Piraporinha, Diadema, São Paulo, 09950-000, Brasil Phone +55-11-3585-1100 Fax +55-11-3585-1187 http://www.yaskawa.com.br

YASKAWA EUROPE GmbH

http://www.yaskawa.co.kr

185, Hauptstraβe, Eschborn, 65760, Germany Phone +49-6196-569-300 Fax +49-6196-569-398 http://www.yaskawa.eu.com

YASKAWA ELECTRIC KOREA CORPORATION

35F, Three IFC, 10 Gukjegeumyung-ro, Yeongdeungpo-gu, Seoul, 07326, Korea Phone +82-2-784-7844 Fax +82-2-784-8495

YASKAWA ELECTRIC (SINGAPORE) PTE. LTD.

151, Lorong Chuan, #04-02A, New Tech Park 556741, Singapore Phone +65-6282-3003 Fax +65-6289-3003 http://www.yaskawa.com.sg

YASKAWA ELECTRIC (THAILAND) CO., LTD.

59, 1st-5th Floor, Flourish Building, Soi Ratchadapisek 18, Ratchadapisek Road, Huaykwang, Bangkok 10310, Thailand Phone: +66-2-017-0099 Fax: +66-2-017-0799

PT. YASKAWA ELECTRIC INDONESIA

Secure Building-Gedung B Lantai Dasar & Lantai 1 Jl. Raya Protokol Halim Perdanakusuma, Jakarta 13610, Indonesia Phone +62-21-2982-6470 Fax +62-21-2982-6471 http://www.vaskawa.co.id/

YASKAWA ELETRIC VIETNAM CO., LTD HO CHI MINH OFFICE
Suite 1904A, 19th Floor Centec Tower, 72-74 Nguyen Thi Minh Khai Street, Ward 6, District 3, Ho Chi Minh City, Vietnam Phone +84-8-3822-8680 Fax +84-8-3822-8780

YASKAWA ELETRIC VIETNAM CO., LTD HA NOI OFFICE

2nd Floor, Somerset Hoa Binh Hanoi, No. 106, Hoang Quoc Viet Street, Cau Giay District, Hanoi, Vietnam Phone +84-4-3634-3953 Fax +84-4-3654-3954

YASKAWA ELECTRIC (CHINA) CO., LTD.

22F, One Corporate Avenue, No.222, Hubin Road, Shanghai, 200021, China Phone +86-21-5385-2200 Fax +86-21-5385-3299

YASKAWA ELECTRIC (CHINA) CO., LTD. BEIJING OFFICE

Room 1011, Tower W3 Oriental Plaza, No.1 East Chang An Ave. Dong Cheng District, Beijing, 100738, China

Phone +86-10-8518-4086 Fax +86-10-8518-4082

YASKAWA ELECTRIC TAIWAN CORPORATION

9F, 16, Nanking E. Rd., Sec. 3, Taipei, 104, Taiwar Phone +886-2-2502-5003 Fax +886-2-2505-1280 http://www.yaskawa-taiwan.com.tw

YASKAWA INDIA PRIVATE LIMITED

http://www.vaskawa.com.cn

#17/A, Electronics City, Hosur Road, Bangalore, 560 100 (Karnataka), India Phone +91-80-4244-1900 Fax +91-80-4244-1901 http://www.vaskawaindia.in



YASKAWA ELECTRIC CORPORATION

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