

## Specifications

### 200 V Class

Model CIMR-AA2A□□□□		0004	0006	0008	0010	0012	0018	0021	0030
Max. Applicable	Normal Duty	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5
Motor Capacity <sup>*1</sup> kW	Heavy Duty	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5
Input	Rated Input	4.8	6.7	8.9	12.7	17.0	20.7	30	40
	Current <sup>*2</sup> A	2.8	4.8	6.7	8.9	12.7	17	20.7	30
Output	Rated Output	1.3	2.3	3	3.7	4.6	6.7	8	11.4
	Capacity <sup>*3</sup> kVA	Heavy Duty	1.2 <sup>*5</sup>	1.9 <sup>*5</sup>	2.6 <sup>*5</sup>	3 <sup>*5</sup>	4.2 <sup>*5</sup>	5.3 <sup>*5</sup>	6.7 <sup>*5</sup>
Output	Rated Output	3.5	6	8	9.6	12	17.5	21	30
	Current A	Heavy Duty	3.2 <sup>*5</sup>	5 <sup>*5</sup>	6.9 <sup>*5</sup>	8 <sup>*5</sup>	11 <sup>*5</sup>	14 <sup>*5</sup>	17.5 <sup>*5</sup>
Overload Tolerance		Normal Duty Rating: 120% of rated output current for 60s Heavy Duty Rating: 150% of rated output current for 60s (Derating may be required for repetitive loads)							
Carrier Frequency		2 to 15kHz (user-set)							
Max. Output Voltage		Three-phase 200 to 240V (relative to input voltage)							
Max. Output Frequency		400Hz(user-set)							
Rated Voltage/Rated Frequency		Three-phase 200 to 240Vac 50/60Hz 280 to 330Vdc							
Allowable Voltage Fluctuation		-15% to +10%							
Power Allowable Frequency Fluctuation		±5%							
Power Supply	Normal Duty	2.2	3.1	4.1	5.8	7.8	9.5	14	18
	Heavy Duty	1.3	2.2	3.1	4.1	5.8	7.8	9.5	14
Model CIMR-AA2A□□□□		0040	0056	0069	0081	0110	0138	0169	0211 <sup>Note</sup>
Max. Applicable	Normal Duty	11	15	18.5	22	30	37	45	55
Motor Capacity <sup>*1</sup> kW	Heavy Duty	7.5	11	15	18.5	22	30	37	45
Input	Rated Input	58	78	96	114	111	136	164	200
	Current <sup>*2</sup> A	40	58	78	96	82	111	136	164
Output	Rated Output	15.2	21	26	31	42	53	64	80
	Capacity <sup>*3</sup> kVA	Heavy Duty	12.6 <sup>*5</sup>	17.9 <sup>*5</sup>	23 <sup>*5</sup>	29 <sup>*5</sup>	32 <sup>*5</sup>	44 <sup>*5</sup>	55 <sup>*5</sup>
Output	Rated Output	40	56	69	81	110	138	169	211
	Current A	Heavy Duty	33 <sup>*5</sup>	47 <sup>*5</sup>	60 <sup>*5</sup>	75 <sup>*5</sup>	85 <sup>*5</sup>	115 <sup>*5</sup>	145 <sup>*5</sup>
Overload Tolerance		Normal Duty Rating: 120% of rated output current for 60s Heavy Duty Rating: 150% of rated output current for 60s (Derating may be required for repetitive loads)							

	Carrier Frequency	2 to 15kHz (user-set)								
	Max. Output Voltage	Three-phase 200 to 240V (relative to input voltage)								
	Max. Output Frequency	400Hz(user-set)								
	Rated Voltage/Rated Frequency	Three-phase 200 to 240Vac 50/60Hz 280 to 330Vdc								
	Allowable Voltage Fluctuation	-15% to +10%								
Power	Allowable Frequency Fluctuation	±5%								
	Power Supply	Normal Duty	27	36	44	52	51	62	75	91
	kVA	Heavy Duty	18	27	36	44	37	51	62	75

Note :CIMR-AA2A0250 to CIMR-AA2A0415 are under development.

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

2 :Value displayed is for when operating 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, input side reactor, and wiring conditions.

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

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

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

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

#### 400 V Class

Model	CIMR-AA4A□□□□	0002	0004	0005	0007	0009	0011	0018	0023	
Max. Applicable	Normal Duty	0.75	1.5	2.2	3	3.7	5.5	7.5	11	
Motor Capacity *1	Heavy Duty	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	
Input	Rated Input	2.5	4.7	6.7	8.9	10.9	15.8	21.2	31	
	Current *2	1.5	2.5	4.7	6.7	8.9	10.9	16	21	
Output	Rated Output	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	
	Capacity *3	1.4*5	2.6*5	3.7*5	4.2*5	5.5*5	7*5	11.3*5	13.7*5	
Rated Output	Normal	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23	
	Heavy Duty	1.8*5	3.4*5	4.8*5	5.5*5	7.2*5	9.2*5	14.8*5	18*5	
Overload Tolerance	Normal Duty Rating:	120% of rated output current for 60s								
	Heavy Duty Rating:	150% of rated output current for 60s (Derating may be required for repetitive loads)								
Carrier Frequency		2 to 15kHz (user-set)								

	Max. Output Voltage		Three-phase 380 to 480V (relative to input voltage)								
	Max. Output Frequency		400Hz (user-set)								
	Rated Voltage/Rated Frequency		Three-phase 380 to 480Vac 50/60Hz 560 to 660Vdc								
	Allowable Voltage Fluctuation		-15% to +10%								
Power	Allowable Frequency Fluctuation		±5%								
	Power Supply kVA	Normal Duty	2.3	4.3	6.1	8.1	10	14.4	19.4	28.4	
Heavy Duty		1.4	2.3	4.3	6.1	8.1	10	14.6	19.2		
Model CIMR-AA4A□□□□			0031	0038	0044	0058	0072	0088	0103	0139	0165 <sup>Note</sup>
Max. Applicable Motor Capacity <sup>*1</sup> kW	Normal Duty		15	18.5	22	30	37	45	55	75	90
	Heavy Duty		11	15	18.5	22	30	37	45	55	75
Input	Rated Input Current <sup>*2</sup> A	Normal Duty	41	51	60	58	71	86	105	142	170
		Heavy Duty	31	41	51	43	58	71	86	105	142
	Rated Output Capacity <sup>*3</sup> kVA	Normal Duty <sup>*4</sup>	24	29	34	44	55	67	78	106	126
		Heavy Duty	18.3 <sup>*5</sup>	24 <sup>*5</sup>	30 <sup>*5</sup>	34 <sup>*5</sup>	48 <sup>*5</sup>	57 <sup>*5</sup>	69 <sup>*5</sup>	85 <sup>*5</sup>	114 <sup>*6</sup>
Output	Rated Output Current A	Normal Duty <sup>*4</sup>	31	38	44	58	72	88	103	139	165
		Heavy Duty	24 <sup>*5</sup>	31 <sup>*5</sup>	39 <sup>*5</sup>	45 <sup>*5</sup>	60 <sup>*5</sup>	75 <sup>*5</sup>	91 <sup>*5</sup>	112 <sup>*5</sup>	150 <sup>*6</sup>
	Overload Tolerance		Normal Duty Rating: 120% of rated output current for 60s Heavy Duty Rating: 150% of rated output current for 60s (Derating may be required for repetitive loads)								
	Carrier Frequency		2 to 15kHz (user-set)								
	Max. Output Voltage		Three-phase 380 to 480V (relative to input voltage)								
	Max. Output Frequency		400Hz (user-set)								
	Rated Voltage/Rated Frequency		Three-phase 380 to 480Vac 50/60Hz 560 to 660Vdc								
	Allowable Voltage Fluctuation		-15% to +10%								
Power	Allowable Frequency Fluctuation		±5%								
	Power Supply kVA	Normal Duty	37.5	46.6	54.9	53	64.9	78.6	96	129.9	155.5
Heavy Duty		28.4	37.5	46.6	39.3	53	64.9	78.6	96	129.9	

Note :CIMR-AA4A0208 to CIMR-AA4A1200 are under development.

1 :The motor capacity (kW) refers to a Yaskawa 4-pole, 60Hz, 400V motor. The rated output current of the drive output amps should be equal to or greater than the motor rated current.

2 :Value displayed is for when operating 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, input

side reactor, and wiring conditions.

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

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

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

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

### Common Specifications

Control Characteristics	Control Method	V/f Control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control with PG, Open Loop Vector for PM, Closed Loop Vector for PM, Advanced Open Loop Vector for PM
	Frequency Control Range	0.01 to 400Hz
	Frequency Accuracy(Temperature Fluctuation)	Digital reference: within $\pm 0.01\%$ of the max. output frequency (-10 to +40°C) Analog reference: within $\pm 0.1\%$ of the max. output frequency (25°C $\pm 10^\circ\text{C}$ )
	Frequency Setting Resolution	Digital reference: 0.01Hz Analog reference: 0.03Hz / 60Hz (11 bit)
	Output Frequency Resolution	0.001Hz
	Frequency Setting Resolution	-10 to +10V, 0 to +10V, 4 to 20mA, Pulse Train
	Starting Torque	150%/3Hz (V/f Control and V/f Control with PG), 200%/0.3Hz <sup>*1</sup> (Open Loop Vector Control), 200%/0r/min <sup>*1</sup> (Closed Loop Vector Control, Closed Loop Vector Control for PM, and Advanced Open Loop Vector Control for PM), 100%/5%speed (Open Loop Vector Control for PM)
	Speed Control Range	1:1500 (Closed Loop Vector Control and Closed Loop Vector for PM) 1:200 (Open Loop Vector Control) 1:40 (V/f Control and V/f Control with PG) 1:20 (Open Loop Vector for PM) 1:100 (Advanced Open Loop Vector for PM)
	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control (25°C $\pm 10^\circ\text{C}$ ) <sup>*2</sup> , 0.02% in Closed Loop Vector Control (25°C $\pm 10^\circ\text{C}$ )
	Speed Response	10Hz in Open Loop Vector (25°C $\pm 10^\circ\text{C}$ ), 50Hz in Closed Loop Vector Control (25°C $\pm 10^\circ\text{C}$ ) (excludes temperature fluctuation when performing Rotational Auto-Tuning)

	Torque Limit	All Vector Control allows separate settings in four quadrants
	Accel/Decel Time	0.00 to 6000.0s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	Drives of 200/400V 30kW or less have a built-in braking transistor. 1. Short-time decel torque <sup>*3</sup> : over 100% for 0.4/ 0.75kW motors, over 50% for 1.5kW motors, and over 20% for 2.2kW and above motors (over excitation braking/High-Slip Braking: approx. 40%) 2. Continuous regen. torque :approx. 20%(approx. 125% with dynamic braking resistor option <sup>*4</sup> : 10% ED,10s, internal braking transistor)
	V/f Characteristics	User-selected programs and V/f preset patterns possible
	Main Control Functions	Torque control, Droop control, Speed/torque control switching, Feedforward 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), Online tuning, 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 braking, High slip braking, PID control (with sleep function), Energy saving control, MEMOBUS comm. (RS-485/422 max, 115.2 kbps), Fault restart, Application presets, DriveWorksEZ (customized function), Removable terminal block with parameter backup function...
Protection Function	Motor Protection	Motor overheat protection based on output current
	Momentary Overcurrent Protection	Drive stops when output current exceeds 200% of Heavy Duty Rating
	Overload Protection	Drive stops after 60s at 150% of rated output current (Heavy Duty Rating) <sup>*5</sup>
	Overvoltage Protection	200V class: Stops when DC bus exceeds approx. 410V, 400V class: Stops when DC bus exceeds approx. 820V
	Undervoltage Protection	200V class: Stops when DC bus exceeds approx. 190V, 400V class: Stops when DC bus exceeds approx. 380V
	Momentary Power Loss Ride-Thru	Immediately stop after 15 ms or longer power loss (default). Continuous operation during power loss than 2s (standard) <sup>*6</sup>
	Heatsink Overheat Protection	Thermistor
	Braking Resistance Overheat Protection	Overheat sensor for braking resistor (optional ERF-type, 3% ED)
	Stall	Stall prevention during acceleration/deceleration and constant

	Prevention	speed operation
	Ground Fault Protection	Protection by electronic circuit *7
	Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50V
	Area of Use	Indoors
	Ambient Temperature	-10 to +50°C (open chassis), -10 to +40°C (NEMA Type 1)
	Humidity	95% RH or less (no condensation)
Operating Environment	Storage Temperature	-20 to +60°C (short-term temperature during transportation)
	Altitude	Up to 1000 meters
	Shock	10Hz to 20Hz, 9.8m/s <sup>2</sup> max. 20Hz to 55Hz, 5.9m/s <sup>2</sup> (200V: 45kW or more, 400V: 55kW or more) or 2.0 m/s <sup>2</sup> max. (200V: 55kW or less, 400V: 75kW or less)
Safety Standard		UL508C, EN954-1 Cat. 3, IEC/EN61508 SIL2
Protection Design		IP00 open-chassis, NEMA Type 1 enclosure

1 :Requires a drive with recommended capacity.

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

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

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

5 :Overload protection may be triggered when operating with 150% of the rated output current if the output frequency is less than 6Hz.

6 :Varies in accordance with drive capacity and load. Drives with a capacity of smaller than 11kW in the 200V (model: CIMR-AA0056) or 400V (model: CIMR-AA0031) require a separate Momentary Power Loss Recovery Unit to continue operating during a momentary power loss of 2s or longer.

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

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