

# Standard Specifications

## 200 V Class

Note: Models below 2.2 kW and above 55 kW are awaiting release

Item		Specifications										
Model	CIMR-LT2A <sup>1</sup>	0018	0025	0033	0047	0060	0075	0085	0115	0145	0180	
Max. Applicable Motor Capacity <sup>1</sup>	kW	3.7	5.5	7.5	11	15	18.5	22	30	37	45	
Input	Rated Input Current <sup>2</sup>	A	18.9	28	37	52	68	80	82	111	136	164
Output	Rated Output Capacity <sup>3</sup>	kVA	6.7	9.5	12.6	17.9	23	29	32	44	55	69
	Rated Output Current	A	17.5 <sup>4</sup>	25 <sup>4</sup>	33 <sup>4</sup>	47 <sup>4</sup>	60 <sup>4</sup>	75 <sup>4</sup>	85 <sup>4</sup>	115 <sup>4</sup>	145 <sup>5</sup>	180 <sup>5</sup>
	Overload Tolerance	150% of rated output current for 60 s										
	Carrier Frequency	User adjustable from 2 to 15 kHz									User adjustable from 2 to 10 kHz	
	Max. Output Voltage	Three-phase 200 to 240 V (proportional to input voltage)										
Max. Output Frequency	120 Hz (user adjustable)											
Power	Rated Voltage/Rated Frequency	Three-phase 200 to 240 Vac 50/60 Hz					270 to 340 Vdc					
	Allowable Voltage Fluctuation	-15 to 10%										
	Allowable Frequency Fluctuation	±5%										
	Power Supply	kVA	9.5	14	18	27	36	44	37	51	62	75
Harmonics Suppression	DC Reactor	Option					Built-in					
Braking Function	Braking Resistor	Built-in								Option		

- \* 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: 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 220 V.
- \* 4: Carrier frequency is set to 8 kHz. Current derating is required in order to raise the carrier frequency.
- \* 5: Carrier frequency is set to 5 kHz. Current derating is required in order to raise the carrier frequency.

## 400 V Class

Note: Models below 2.2 kW and above 90 kW are awaiting release

Item		Specifications												
Model	CIMR-LT4A <sup>1</sup>	0009	0015	0018	0024	0031	0039	0045	0060	0075	0091	0112	0150	
Max. Applicable Motor Capacity <sup>1</sup>	kW	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	
Input	Rated Input Current <sup>2</sup>	A	10.4	15	20	29	39	44	43	58	71	86	105	142
Output	Rated Output Capacity <sup>3</sup>	kVA	7	11.3	13.7	18.3	24	30	34	48	57	69	85	114
	Rated Output Current	A	9.2 <sup>4</sup>	14.8 <sup>4</sup>	18 <sup>4</sup>	24 <sup>4</sup>	31 <sup>4</sup>	39 <sup>4</sup>	45 <sup>4</sup>	60 <sup>4</sup>	75 <sup>4</sup>	91 <sup>4</sup>	112 <sup>5</sup>	150 <sup>5</sup>
	Overload Tolerance	150% of rated output current for 60 s												
	Carrier Frequency	User adjustable from 2 to 15 kHz										User adjustable from 2 to 10 kHz		
	Max. Output Voltage	Three-phase 380 to 480 V (proportional to input voltage)												
Max. Output Frequency	120 Hz (user adjustable)													
Power	Rated Voltage/Rated Frequency	Three-phase 380 to 480 Vac 50/60 Hz					510 to 680 Vdc							
	Allowable Voltage Fluctuation	-15 to 10%												
	Allowable Frequency Fluctuation	±5%												
	Power Supply	kVA	10.0	14.6	19.2	28.4	37.5	46.6	39.3	53.0	64.9	78.6	96.0	129.9
Harmonics Suppression	DC Reactor	Option					Built-in							
Braking Function	Braking Resistor	Built-in								Option				

- \* 1: The motor capacity (kW) refers to a Yaskawa 4-pole induction motor (400 V, 60 Hz). 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 440 V.
- \* 4: Carrier frequency is set to 8 kHz. Current derating is required in order to raise the carrier frequency.
- \* 5: Carrier frequency is set to 5 kHz. Current derating is required in order to raise the carrier frequency.

## Common Specifications

Note: Specifications regarding Open Loop Vector Control capabilities require Rotational Auto-Tuning.  
 L1000 must be used in acceptable environmental conditions to ensure the expected performance life of all drive components.

	Item	Specification
Control Characteristics	Control Method	Use drive parameters to select from the following control modes: V/f Control, Open Loop Vector Control, Closed Loop Vector Control, Closed Loop Vector Control for PM
	Frequency Control Range	0.01 to 120 Hz
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: within $\pm 0.01\%$ of the max. output frequency (-10 to +40°C) Analog reference: within $\pm 0.1\%$ of the max. output frequency (25°C $\pm$ 10°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	-10 to 10 V, 0 to 10 V
	Starting Torque	150% / 3 Hz (V/f Control)                      200% / 0 r/min (Closed Loop Vector Control) 200% / 0.3 Hz (Open Loop Vector Control)    200% / 0 r/min (Closed Loop Vector Control for PM)
	Speed Control Range	1:40 (V/f Control)                                1:1500 (Closed Loop Vector Control) 1:200 (Open Loop Vector Control)          1:1500 (Closed Loop Vector Control for PM)
	Speed Control Accuracy	$\pm 0.2\%$ in Open Loop Vector Control (25°C $\pm$ 10°C) <sup>*1</sup> , $\pm 0.02\%$ in Closed Loop Vector Control (25°C $\pm$ 10°C)
	Speed Response	10 Hz in Open Loop Vector Control (25°C $\pm$ 10°C), 50 Hz in Closed Loop Vector Control (25°C $\pm$ 10°C) (excludes temperature fluctuation when performing Rotational Auto-Tuning)
	Torque Limit	All vector control modes allow separate settings in four quadrants
	Torque Accuracy	$\pm 5\%$
	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)
	Braking Torque	Approximately 125% when using a braking resistor option
V/f Characteristics	User-selected programs and V/f preset patterns possible	
Main Control Functions	Torque compensation at start (with or without sensors), Auto-Tuning (for motor and encoder offset), braking sequence, Feed Forward, Short Floor, Rescue Operation using back-up power supply, Light Load Direction Search, Removable Terminal Block with Parameter Backup...	
Protection Functions	Motor Protection	Thermistor
	Momentary Overcurrent Protection	Drive stops when output current exceeds 200% of rated output current
	Overload Protection	Drive stops after 60 s at 150% of rated output current <sup>*2</sup>
	Overvoltage Protection	200 V class: Stops when DC bus exceeds approx. 410 V 400 V class: Stops when DC bus exceeds approx. 820 V
	Undervoltage Protection	200 V class: Stops when DC bus exceeds approx. 190 V 400 V class: Stops when DC bus exceeds approx. 380 V
	Heatsink Overheat Protection	Thermistor
	Stall Prevention	Stall prevention during acceleration
	Ground Fault Protection	Protection by electronic circuit <sup>*3</sup>
	Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V
Environment	Area of Use	Indoors
	Ambient Temperature	-10 to 40°C (open-chassis), -10 to 50°C (NEMA Type 1)
	Humidity	95% RH or less (no condensation)
	Storage Temperature	-20 to 60°C (short-term temperature during transportation)
	Altitude	Up to 1000 meters
	Shock	10 Hz to 20 Hz, 9.8 m/s <sup>2</sup> max.    20 Hz to 55 Hz, 5.9 m/s <sup>2</sup> max.
Standards Compliant	UL508C, EN61800-3, EN61800-5-1, EN954-1 Cat. 3, ISO13849-1 (Cat. 3, PLd), IEC/EN61508 SIL2	
Protective Design	IP00 open-chassis, NEMA Type 1 enclosure <sup>*4</sup>	

\* 1: Speed control accuracy may vary slightly depending on installation conditions or motor used. Contact Yaskawa for details.

\* 2: Overload protection may be triggered when operating for 60 s with 150% of the rated output current if the output frequency is less than 6 Hz.

\* 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 motor cable or terminal block.
- Drive already has a short-circuit when the power is turned on.

\* 4: Removing the cover from a NEMA Type 1 model drive (models CIMR-LT2A0018 to 2A0075, CIMR-LT4A0009 to 4A0039) converts the enclosure rating to IP20.