

Elevator Drive



L1000A

For High Performance Elevator Applications

200V / 400V Class

Power Range: 1.5kW to 110kW

30+ years of experience and application oriented innovation, YASKAWA's L1000A drive incorporates innovative technology and uses special hardware designed for more than 70,000 hours of maintenance free operation. It provides advanced control functions to run Induction and PM (Permanent Magnet) motor applications in geared and gearless elevator systems.

L1000A is known for its simplicity, energy efficiency and robustness.

The L1000A Drive Series is a dedicated drive for elevator applications suitable for both modernization projects and new installations.

- · Advanced motor and drive technology for gearless PM motor control
- · Features to reduce floor-to-floor times
- Low carrier frequency based current ratings for quiet operation
- · Various types of auto-tuning for induction and gearless permanent magnet motors (uncouples/coupled)
- Built-in braking transistor for all models up to 30kW
- Torque compensation at start without load sensor (anti-rollback)
- Simple and efficient brake sequence
- Input voltage sensors for phase loss detection
- De-magnetization protection for PM motor
- New light load function for UPS (Uninterrupted Power Supply)
- · Rescue operation function
- · ON/OFF and Temperature controlled cooling fan
- Removable multi-function terminal board with parameter back up function



Standard Specifications

Application Specific

200 V Class

Model CIMR-LT2A		8000	0011	0018	0025	0033	0047	0060	0075	0085	0115	0145	0180	0215	0283	0346	0415
Max. Applicable Motor Capacity 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 kVA	3	4.2	6.7	9.5	12.6	17.9	23	29	32	44	55	69	82	108	132	158
=	Rated Output Current A	8	11	17.5	25	33	47	60	75	85	115	145	180	215	283	346	415
Output	Overload Tolerance	150% of rated output current for 60 s															
	Max. Output Voltage	Three-phase 200 to 240 V (proportional to input voltage)															
	Max. Output Frequency	120 Hz (user adjustable)															
Power	Rated Voltage/Rated Frequency	Three-phase 200 to 240 Vac 50/60 Hz 270 to 340 Vdc															
	Allowable Voltage Fluctuation	- 15 to +10%															
	Allowable Frequency Fluctuation	± 5%															

400 V Class

Model CIMR-LT4A		0005	0006	0009	0015	0018	0024	0031	0039	0045	0060	0075	0091	0112	0150	0180	0216
Max. Applicable Motor Capacity 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 kVA	3.7	4.2	7	11.3	13.7	18.3	24	30	34	48	57	69	85	114	137	165
=	Rated Output Current A	4.8	5.5	9.2	14.8	18	24	31	39	45	60	75	91	112	150	180	216
Output	Overload Tolerance	150% of rated output current for 60 s															
	Max. Output Voltage	Three-phase AC 380 to 480 V (proportional to input voltage)															
	Max. Output Frequency	120 Hz (user adjustable)															
	Rated Voltage/Rated Frequency	Three-phase 380 to 480 Vac 50/60 Hz 540 to 680 Vdc															
Power	Allowable Voltage Fluctuation	- 15 to +10%															
L.	Allowable Frequency Fluctuation	± 5%															

Common Specifications

Items		Specifications									
	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 200Hz									
	Frequency Accuracy (Temperature Fluctuation)	Digital reference: within ± 0.01% of the max. output frequency (- 10 to +40°C) Analog reference: within ± 0.1% of the max. output frequency (25 ± 10°C)									
· γ	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)									
Characteristics	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)									
harac	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)									
9	Speed Control Accuracy	± 0.2% in Open Loop Vector Control (25 ± 10°C), ±0.02% in Closed Loop Vector Control (25±10°C)									
Control	Speed Response	10 Hz in Open Loop Vector Control (25 ± 10°C), 50 Hz in Closed Loop Vector Control (25±10°C) (excludes temperature fluctuation when performing Rotational Auto-Tuning)									
	Torque Limit	All vector control modes allow separate settings in four quadrants									
	Accel/Decel Time	0.00 to 6000.0 s (4 selectable combinations of independent acceleration and deceleration settings)									
	Braking Torque	Approximately 125% when using a braking resistor option									
	V/f Characteristics	User-selected programs and V/f preset patterns possible									
	Main Control Functions	Torque compensation at start (with or without sensors), Auto-Tuning (for motor and encoder offset), braking sequence, Feed Forward, Short Floor, Rescue Operation using back-up power supply, Light Load Direction Search, Removable Terminal Block with Parameter Backup									
Standards Compliant		 UL508C IEC/EN61800-3, IEC/EN61800-5-1 Two Safe Disable inputs and 1EDM output according to ISO/EN13849-1 Cat. 3 PLd, IEC/EN61508 SIL2 									
Protective Design		IP00 open-chassis									
Ambient Temperature		-10 to 50°C; derating above 50 to 60°C at 2% per 1°C									
Standard I/O		(8) multi-function digital inputs (2) multi-function analog inputs (4) 1 fault relay and 3 multi function relay	/s	(2) multi-function photo-coupler outputs (2) multi-function 0-10 VDC analog output (2) Hardware baseblock							