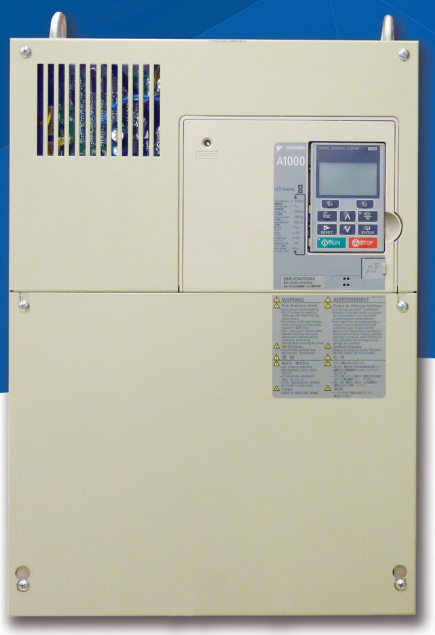
YASKAWA

High Performance Vector Control Drive



A1000

Single Drive for all your needs with Outstanding Performance

400V Class
Power Range: 0.75kW to 630kW

200V Class
Power Range: 0.75kW to 110kW

The A1000 is a full featured drive, providing outstanding quality, performance, flexibility, and environmental friendliness through 630kW. Enjoy network communications, feedback, and expandable I/O to control anything from simple fans and pumps to complex machines. For new installations or retrofits, the A1000 provides a single robust solution, regardless of your application.

Specifications

Item	Specifications
Control Methods	Open and Closed Loop Current Vector for IM & PM
	Open and Closed Loop V/f
Motor Types	Induction
	Surface Permanent Magnet
	Interior Permanent Magnet
Protective Design	IP00/NEMA1
Ambient Operating Temperature	-10 to +50°C (Chassis Installation) -10 to +40°C (Chassis with zero side clearance, or Type 1)
Braking Transistor	Standard through 37kW (ND), 30kW (HD)
Global Certification	UL, CSA, CE, C-Tick, RoHS
Standard I/O	(8) multi-function digital inputs (24Vdc) (3) multi-function analog inputs (0 +/- 10 VDC, 4-20 mA) (1) multi-function pulse inputs (1) fault relay output (form C) (3) multi-function relay outputs (1 Relay, 2 Photocouplers) (2) multi-function analog outputs (0 +/- 10 VDC) (1) multi-function pulse outputs
I/O Expansion	3 Analog Inputs -10 to +10V, 13 bit plus sign, 4 to 20mA - AI-A3 16 Digital Inputs (+24V for BCD speed reference) - DI-A3 2 Analog Outputs (-10 to +10V, 11 bit magnitude) - AO-A3 8 Digital Outputs (6 transistor, 2 relay) - DO-A3
Feedback	Incremental - PG-B3, PG-X3
	Absolute (Stegmann, Heidenhain EnDat) (PG-F3) (Resolver) (PG-RT3)
Network Communication	Built-in: Modbus RTU, RS-422/485, 115 kbps
	Optional: DeviceNet, EtherCAT, EtherNet/IP, MECHATROLINK-II, MECHATROLINK-III, Modbus TCP/IP, PROFIBUS-DP, PROFINET,
Speed Control Range	1500:1 Closed Loop Vector (IM and PM Motors)
	200:1 Open Loop Vector (IM Motors)
	100:1 Open Loop Vector (PM Motors)
Speed Control Accuracy	≤ 0.02%: Closed Loop Vector; ≤ 0.2%: Open Loop Vector
Speed Response	≥ 50 Hz: Closed Loop Vector; ≥ 10 Hz: Open Loop Vector
Torque Response	≥ 300 Hz: Closed Loop Vector

Features

- Closed or open loop vector control for outstanding regulation, torque production, and position control capability.
- Continuous Auto-tuning optimizes performance by compensating for changes in motor temperature.
- High Frequency Injection enables high precision open loop control of Interior Permanent Magnet Motors.
- Fast acting current and voltage limiters help achieve continuous drive operation during periods of excessive demand.
- High Slip Braking reduces installation cost and the need for dynamic braking resistors.
- Communication options for all major industrial networks provides high speed control and monitoring, reducing installation cost.
- Drive Wizard+ computer software and Application Sets for easy configuration
- Auxiliary Control Power Unit maximizes production time and efficiency by maintaining network communication while main power is removed.
- Embedded Safe Torque Off minimizes downtime for applications requiring occasional intervention (SIL CL2, PLd, Category 3).
- Keypad configuration storage provide speed and convenience for duplicate configuration of multiple drives.
- Removable terminal board with configuration storage provides convenience of configuration backup.
- Made with RoHS compliant materials.
- Ambient Operating Temperature -10 to 60 °C*.

*Derating required, please contact Yaskawa for details.

Standard Specifications

General-Purpose

200V Class

Model CIMR-A□2A□□□			0004	0006	0008	0010	0012	0018	0021	0030	0040	0056	0069	0081	0110	0138	0169	0211	0250	0312	0360	0415
Max. Applicable Motor Capacity 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	110
		HD	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
Output	Rated Output Capacity kVA	ND	1.3	2.3	3	3.7	4.6	6.7	8	11.4	15.2	21	26	31	42	53	54	80	95	119	1.37	158
		HD	1.2	1.9	2.6	3	4.2	5.3	6.7	9.5	12.6	17.9	23	29	32	44	55	69	82	108	132	158
	Rated Output Current A	ND	3.5	6	8	9.6	12	17.5	21	30	40	56	69	81	110	138	169	211	250	312	360	415
		HD	3.2	5	6.9	8	11	14	17.5	25	33	47	60	75	85	115	145	180	215	283	346	415
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s HD Rating: 150% of rated output current for 60 s.(Derating may be required for repetitive loads)																			
	Carrier Frequency		1 to 15 kHz															1 to 10 kHz				
	Max. Output Voltage		Three-phase 200 to 240 V (relative to input voltage)																			
	Max. Output Frequency		400 Hz (user-set)																			
Power	Rated Voltage/ Rated Frequency		Three-phase AC power supply: 200 to 240 V 50/60 Hz, DC power supply: 270 to 340 V																			
	Allowable Voltage Fluctuation		−15 to +10%																			
	Allowable Frequency Fluctuation		±5%																			
Harmonic Suppression	DC Reactor		Option															Built-in				
Braking Function	Braking Transistor		Built-in															option				

400V Class

Model CIMR-A□4A□□□			0002	0004	0005	0007	0009	0011	0018	0023	0031	0038	0044	0058	0072	0088	0103	0139	0165	0208	0250	0296	0362	0414	0515	0675	0930	1200
Max. Applicable Motor Capacity kW		ND	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	250	355	500	630
		HD	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	185	220	315	450	560
Output	Rated Output Capacity kVA	ND	1.6	3.1	4.1	5.3	6.7	8.5	13.3	17.5	24	29	34	44	55	67	78	106	126	159	191	226	276	316	392	514	709	915
		HD	1.4	2.6	3.7	4.2	5.5	7	11.3	13.7	18.3	24	30	34	46	57	69	85	114	137	165	198	232	282	343	491	617	831
	Rated Output Current A	ND	2.1	4.1	5.4	6.9	8.8	11.1	17.5	23	31	38	44	58	72	88	103	139	165	208	250	296	362	414	515	675	930	1200
		HD	1.8	3.4	4.8	5.5	7.2	9.2	14.8	18	24	31	39	45	60	75	91	112	150	180	216	260	304	370	450	605	810	1090
	Overload Tolerance		ND Rating: 120% of rated output current for 60 s HD Rating: 150% of rated output current for 60 s.(Derating may be required for repetitive loads)																									
	Max. Output Voltage		Three-phase 380 to 480 V (relative to input voltage)																								input V × 0.95	
	Max. Output Frequency		400 Hz (user-set)																									
Power	Rated Voltage/Rated Frequency		Three-phase AC power supply: 380 to 480 V 50/60 Hz, DC power supply: 510 to 680 V																									
	Allowable Voltage Fluctuation		−15 to +10%																									
	Allowable Frequency Fluctuation		±5%																									
Harmonic Suppression	DC Reactor		Option															Built-in										
Braking Function	Braking Transistor		Built-in															Option										