



INVERTER DRIVE A1000 MARINE DRIVES FOR MARINE AND OFFSHORE



A1000 - Frequency Inverter for Marine Applications



For almost 100 years YASKAWA has been supplying mechatronic products and is one of the leading companies for motion control products worldwide.

YASKAWA develops and manufactures Inverter Drives, Servo Drives and Motion Controllers which are well known for their outstanding quality and reliability, no matter if used in machines, building automation, in production industries or even in harsh environments like those on open sea. The

A1000 Series frequency inverters from YASKAWA are suitable for drive solutions in marine applications. Vibrations, heat and humidity which are common conditions on board of ships coupled with the necessity of ultimate reliability are demanding technical requirements. Here, the A1000 inverter is in its element. Robust design and many clever functionalities make this inverter the means of choice for drives in marine.



What makes the YASKAWA A1000 first choice for offshore and ship usage?

- ▶ Standard devices are certified for marine applications (Germanischer Lloyd, more possible)
- ▶ Substantial energy savings and thereby fuel savings compared to unregulated drives
- ▶ High flexibility in drive dimensioning
- ▶ High efficiency
- ▶ Easy adaption to any motor and application
- ▶ Proven YASKAWA reliability and durability
- ▶ Worldwide availability and service



Overview - A1000 characteristics and advantages

Induction and Permanent Magnet Motor Control

- 200% rated torque at 0 rpm
- Open loop position control of PM motors without encoders.

Functional Safety built in

- Safe Torque Off (STO) in compliance with EN ISO 13849-1, Cat. 3, PLd, IEC/EN61508 SIL2
- External Device Monitor (EDM) to observe the Safety Status

Quick and Easy Start-up

- Application parameter presets
- Screwless control terminals for quick wiring and reliable connections
- Auto-Tuning for motor parameter
- Parameter copy function
- PC tool DriveWizard Plus for parameter management

Drive Design & Functions

- Minimized dimensions
- Space saving side-by-side mounting
- Dual Rating for cost & space saving

Reliable Operation

- Overload capacity: 150% of rated current for 1 minute
- Performance life diagnostics for preventive maintenance

Efficiency and Environment

- Unique PWM function reduces audible noise
- Minimum power loss
- Outstanding product quality
- Highly efficient motor operation and minimized energy consumption
- Designed for 10 years of maintenance-free operation
- Long performance life





Application

Requirements

YASKAWA Solutions



Separator

Less energy consumption

Advanced energy saving functionality



Pump

Braking without resistors

High flux braking



Thruster

Flying Start

Speed search



Steering Gear

High torque
High starting torque

200% rated torque at 0 rpm



Fan

Accurate positioning

Positioning software



Winch

Reducing noise

Unique PWM function reduces audible noise



Compressor

Reaction on torque variations

Motor Auto-Tuning features



Hoist/Lift/Crane

Brake control

Dedicated crane software



Worldwide Service and Support

Wherever in the world you are, no matter which harbour is next, YASKAWA's global sales and support network is always close to you.

- ▶ More than 60 subsidiaries worldwide
- ▶ Global technical support with shortest reaction time
- ▶ Service partners in all 5 continents



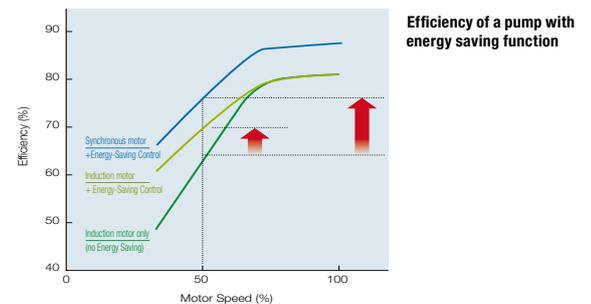
All Major Serial Communication Protocols

- ▶ RS-422/485 (MEMOBUS/Modbus at 115.2 kbps) standard on all models
- ▶ Option cards available for all major fieldbuses used across the globe



Energy Saving Technology

- ▶ Lower energy consumption than conventional motor drive saves fuel and allows smaller generators
- ▶ Operation of induction and permanent magnet motors with maximum efficiency under any load and speed conditions



Available in Enclosures from IP00 to IP54

The A1000 Inverter available in IP00 and IP20 enclosures but also as IP54 Wall Mount or as IP54 Ready version, offering freedom in choosing the installation location.

- ▶ IP00/20 for standard enclosures
- ▶ IP54 Wall Mount for decentral installation, no extra panel required
- ▶ IP54 Ready for heat sink out the back mounting, perfect for installation of multiple drives in a small panel



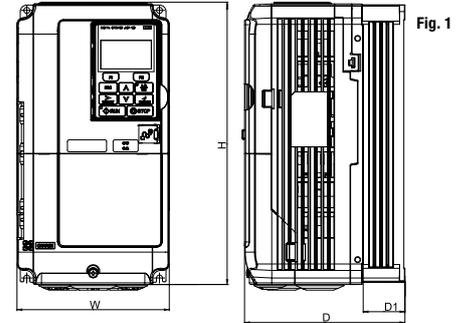


Dimensions

Enclosure IP20 and IP00*

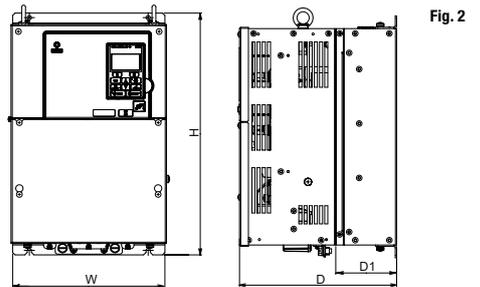
200 V Class

Model CIMR-AC2A □□□□	Current (AMP)		Power (kW)		Figure	Dimensions in mm				Weight (kg)
	HD	ND	HD	ND		W	H	D	D1	
0004	2.9	3.9	0.55	0.75	Fig. 1	140	260	147	38	3.1
0006	5.8	7.3	0.75	1.5						
0010	7.5	10.8	1.5	2.2				164	55	3.2
0012	11	13.9	2.2	3						
0021	18.9	24	4.0	5.5				167	75	3.5
0030	28	37	5.5	7.5						
0040	37	52	7.5	11				187	187	5.6
0056	52	68	11	15						
0069	68	80	15	18.5				197	78	8.7
0081	80	96	18.5	22						
0110	82	111	22	30	250	400	258	100	21	
0138	111	136	30	37						
0169	136	164	37	45	275	450	283	110	25	
0211	164	200	45	55						
0250	200	271	55	75	325	550	283	110	37	
0312	271	324	75	90						
					450	705	330	130	76	



400 V Class

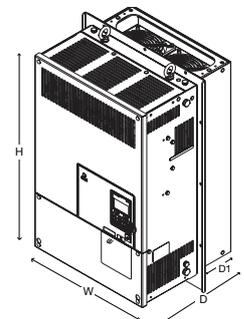
Model CIMR-AC4A □□□□	Current (AMP)		Power (kW)		Figure	Dimensions in mm				Weight (kg)
	HD	ND	HD	ND		W	H	D	D1	
0002	1.8	2.1	0.55	0.75	Fig. 1	140	260	147	38	3.2
0004	3.2	4.3	1.1	1.5						
0005	4.4	5.9	1.5	2.2				164	55	3.4
0007	6	8.1	2.2	3						
0009	8.2	9.4	3	4.0				167	75	3.5
0011	10.4	14	4.0	5.5						
0018	15	20	5.5	7.5				187	187	5.4
0023	20	24	7.5	11						
0031	29	38	11	15				197	78	5.7
0038	39	44	15	18.5						
0044	44	52	18.5	22	250	400	100	8.3		
0058	43	58	22	30						
0072	58	71	30	37	275	450	258	105	21	
0088	71	86	37	45						
0103	86	105	45	55	325	510	283	110	36	
0139	105	142	55	75						
0165	142	170	75	90	325	550	283	110	42	
0208	170	207	90	110						
0250	207	248	110	132	450	705	330	130	79	
0296	248	300	132	160						
0362	300	346	160	185	500	800	350	130	96	
0414	346	410	185	220						
0515	410	465	220	250	670	1140	370	135	102	
0675	584	657	315	355						
					670	1140	370	150	150	216



A1000 IP54 Ready*

For IP54 cabinet.
(Heat sink mount through)

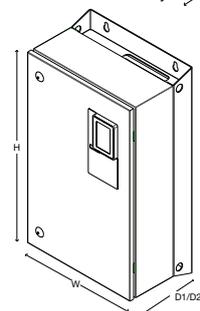
CIMR-AC	Current (AMP)		Power (kW)		Dimensions in mm				Weight
	HD	ND	HD	ND	W	H	D	D1	kg
4A0044WAA	39	44	18.5	22	275	402	197	75.6	11
4A0058WAA	45	58	22	30	300	455	275	102	21
4A0072WAA	60	72	30	37	325	505			25
4A0088WAA	75	88	37	45	370	565	283	105	36
4A0103WAA	91	103	45	55					36
4A0139WAA	112	139	55	75	285	110	285	110	41
4A0165WAA	150	165	75	90					42



A1000 IP54 Wall Mount

(No cabinet required)

CIMR-AC	Current (AMP)		Power (kW)		Dimensions in mm				Weight
	HD	ND	HD	ND	W	H	D1	D2*	kg
4A0044TAA-0098	39	44	18.5	22	400	700	260	292	35
4A0058TAA-0098	45	58	22	30	465	750	300	331	50
4A0072TAA-0098	60	72	30	37					55
4A0088TAA-0098	75	88	37	45	555	950	325	375	74
4A0103TAA-0098	91	103	45	55					85
4A0139TAA-0098	112	139	55	75	150	165	75	90	85
4A0165TAA-0098	150	165	75	90					



* For compliance with requirements of Germanischer Lloyd, A1000 drives have to be installed with EMC filters of series HLD810-500 and HLD803-500 manufactured by BLOCK.



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