

Regenerative Converter

D1000

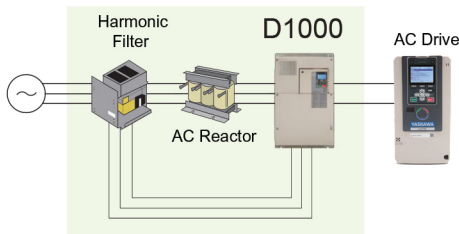


Looking for a fully regenerative and clean power solution for your multi-drive or single drive system? Look no further. D1000 is your answer.

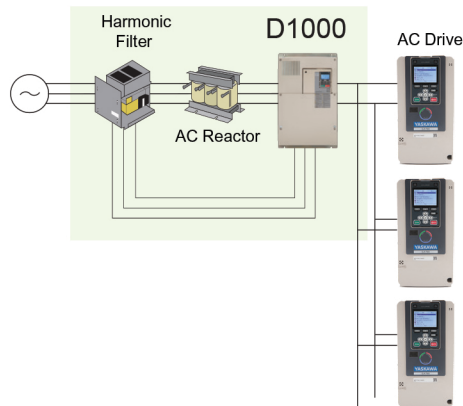
Unlike passive rectifiers which can only supply power from source to load, the D1000 is capable of delivering power in both directions, and is most beneficial to supply multi-drive or single drive common bus systems that experience significant regeneration. Additionally, the D1000 system includes input harmonic filtering, achieving low distortion levels and improved power factor, which further reduces energy costs and stress on power systems. This clean power solution is achieved without the use of expensive multi-pulse components.

- 400V Class
POWER: 5kW to 630kW
- 200V Class
POWER: 5kW to 130kW
- AMBIENT OPERATING TEMP
-10°C to 50°C (OPEN TYPE IP00)
Up to 60°C with Current Derating
- CERTIFICATIONS
UL, CE, RoHS

Active Front End System (Stand Alone)



Active Front End System (Common DC Bus)



Highlights

- Compatible with all conventional drives having full power access to DC bus
- Overload capability of 150% for 60 seconds, 200% for 3 seconds
- 0.99 True Power Factor at full load
- Ability to compensate for low voltage (boost function)
- Overcurrent and Overheat Protection

Typical Applications

- Centrifuges
- Paper winders
- Film winders
- Sawmill systems
- Test stands

- STANDARD I/O
(8) Digital Inputs
(2) Relay Outputs
(2) Photo-Couple Outputs
(2) Analog Outputs
- STANDARD COMMUNICATIONS
Modbus RTU
- CONTROL OPTIONS
EtherNet/IP
Modbus TCP/IP
DeviceNet
Profibus DP
Profinet
- MECHANICAL OPTIONS
External Heatsink Kit

Standard Specifications

Energy-Saving Unit

D1000 Energy-saving Unit

Voltage		200 V Class								400 V Class											
Model CIMR-DD□A□□□□		0005	0010	0020	0030	0050	0065	0090	0130	0005	0010	0020	0030	0040	0060	0100	0130	0185	0270	0370	0630
Max. Applicable Motor Capacity kW		3.7	7.5	15	22	37	55	75	110	3.7	7.5	15	22	30	45	75	110	160	220	315	560
Output	Rated Output Capacity kVA	5	10	20	30	50	65	90	130	5	10	20	30	40	60	100	130	185	270	370	630
	Rated Output Current (DC) A	15	30	61	91	152	197	273	394	8	15	30	45	61	91	152	197	280	409	561	955
	Rated Input Current (AC) A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	410	560	1040
	Rated Output Voltage	330 Vdc								660 Vdc											
Input	Rated Voltage/Rated Frequency	200 to 240 Vac 50/60 Hz								380 to 480 Vac 50/60 Hz											
	Allowable Voltage Fluctuation	- 15 to +10%																			
	Allowable Frequency Fluctuation	± 2%																			
Control Characteristics	Allowable Frequency Fluctuation	± 5%																			
	Control Method	Sine-wave PWM control																			
	Input Power Factor	Input power factor of 0.99 min. (for rated operation)																			
	Output Voltage Accuracy	± 5%																			
	Overload Protection	Unit stops after 60 s at 150% of rated output current or after 3 s at 200% of rated output current.																			
	Voltage Reference Range	300 to 360 Vdc								600 to 730 Vdc											
	Carrier Frequency	6 kHz				4 kHz				6 kHz				4 kHz				2 kHz			
	Main Control Functions	Current Limit, Cooling Fan on/off Switch, Removable Terminal Block with Parameter Backup Function, MEMOBUS/Modbus Comm. (RS-422/RS-485 max, 115.2 kbps)																			
	Protection Functions	Momentary Overcurrent Protection	Unit stops when input current exceeds 250%.																		
		Fuse burnout	Operation stops if the fuse burns out.																		
Overloads		Operation stops after 60 s at 150% of rated output current. Operation stops after 3 s at 200% of rated output current. (electrical operation and regeneration)																			
Overvoltage Protection		Output	Stops when DC bus voltage exceeds approx. 410 Vdc								Stops when DC bus voltage exceeds approx. 820 Vdc										
		Input	Stops when input voltage exceeds approx. 227 Vac								Stops when input voltage exceeds approx. 554 Vac										
Undervoltage Protection		Output	Stops when DC bus voltage falls below approx. 190 Vdc								Stops when DC bus voltage falls below approx. 380 Vdc										
		Input	Stops when input voltage falls below approx. 150 Vac								Stops when input voltage falls below approx. 300 Vac										
Momentary Power Loss		Immediately stops after Momentary Power Loss is detected.																			
Power Supply Frequency Fault		Operation stops for a deviation of ± 6 Hz or more from the rated input frequency.																			
Heatsink Overheat Protection		Protection by thermistor																			
Ground Fault Protection	Protection by electronic circuit																				
Charge LED	Charge LED remains lit until DC bus has fallen below approx. 50 V																				
Environment	Area of Use	Indoors																			
	Ambient Temperature	-10 to 50 deg C; derating above 50 to 60 deg C at 2% per 1 deg C																			
	Humidity	95% RH or less (no condensation)																			
	Shock	(2A0005 to 2A0050, 4A0005 to 4A0100) 10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 5.9 m/s ² (2A0065 to 2A0130, 4A0130 to 4A0370) 10 to 20 Hz : 9.8 m/s ² , 20 to 55 Hz : 2.0 m/s ² (4A0630) 10 to 20 Hz : 5.9 m/s ² , 20 to 55 Hz : 2.0 m/s ²																			
	Storage Temperature	- 20 to +60°C (short-term temperature during transportation)																			
Protection Design	IP00/IP20/Open Type enclosure																				
Safety Standard	UL508C, IEC61800-5-1, IEC61800-3																				

D1000 Standard Configuration Devices

Voltage		200 V Class								400 V Class											
Model CIMR-DD□A□□□□		0005	0010	0020	0030	0050	0065	0090	0130	0005	0010	0020	0030	0040	0060	0100	0130	0185	0270	0370	0630
Harmonic Filter Module	Rated Current A	15	29	57	83	140	200	270	400	8	16	30	43	58	86	145	210	300	–	–	–
	Inductance mH	2.45	1.27	0.64	0.44	0.26	0.18	0.14	0.09	9.19	4.59	2.45	1.71	1.27	0.85	0.51	0.35	0.25	0.18	0.13	0.13
Input AC Reactor 1	Rated Current A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	410	560	1140
	Inductance mH	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.06	0.05	0.02
Reactor for Harmonic Filter	Rated Current A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	64	87	177
	Inductance mH	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.022	0.0158	0.0079
Condenser for Harmonic Filter	Rated Capacity μF	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	290	402	800