

Power Regenerative Unit

R1000

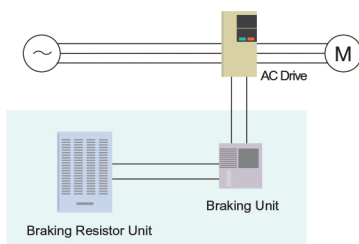
Looking for a smart and efficient solution to save energy?
Look no further. The R1000 Regenerative Unit is your answer.



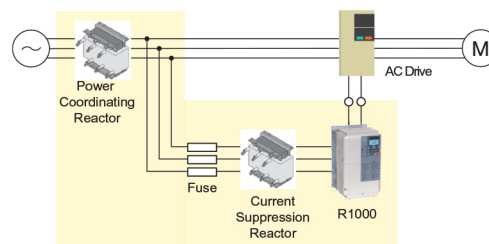
Dynamic braking dissipates all the braking energy in the form of heat, the R1000 avoids wasted energy by delivering it back to your power source for use by other loads. Since the R1000 only transfers power during regeneration it is very economical for regenerative applications, and return on investment is often less than 1 year. Not only does this save energy and money, but it also eliminates the need to safely locate braking resistors.

- 200V Class
Power: 3.5kW to 105kW
- 400V Class
Power: 3.5kW to 300kW
- AMBIENT OPERATING TEMP
-10°C to 50°C (OPEN TYPE IP00)
Up to 60°C with Current Derating
- CERTIFICATIONS
UL, CE, RoHS, CSA B44.1

Dynamic Braking System (Energy is Wasted)



Regenerative Braking System (Energy is Reused)



Highlights

- Compatible with all conventional drives having full power access to DC bus
- Rated for 100% power, 25% duty cycle (60 second maximum on time), or 80% continuous
- Overload capability of 150% for 30 seconds
- 0.9 Power Factor at full load
- Overcurrent and Overheat Protection

Typical Applications

Stopping

- Elevators and Lifts
- Crane - Main Hoists/Axillary Hoists
- Centrifuges
- Saws
- Large Fans
- Machine Tool Spindles

Eccentric

- Presses
- Dryers
- Vibratory Equipment

Continuous

- Regeneration
- Winders
- Downhill Conveyors
- Dynamometers

- STANDARD I/O
(8) Digital Inputs
(2) Relay Outputs
(2) Photo-Coupler 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

R1000 Energy-Saving Unit

Voltage		200 V Class												400 V Class															
Model CIMR-R □□□□□□		03P5	0005	0007	0010	0014	0017	0020	0028	0035	0053	0073	0105	03P5	0005	0007	0010	0014	0017	0020	0028	0035	0043	0053	0073	0105	0150	0210	0300
Max. Applicable Motor Capacity kW		3.7	5.5	7.5	11	15	18.5	22	30	37	55	75	110	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	110	160	220	315
Rating	Rated Output Capacity kVA	3.5	5	7	10	14	17	20	28	35	53	73	105	3.5	5	7	10	14	17	20	28	35	43	53	73	105	150	210	300
	Rated Output Current (DC) A	14	20	27	41	55	68	81	112	138	207	282	413	7	11	15	22	30	36	43	58	73	89	109	149	217	320	440	629
	Rated Input Current (AC) A	10	15	20	30	41	50	60	83	102	153	209	306	5	8	11	16	22	27	32	43	54	66	81	110	161	237	326	466
Input	Rated Voltage/Rated Frequency	200 to 240Vac 50/60Hz												380 to 480Vac 50/60Hz															
	Allowable Voltage Fluctuation	-15 to + 10%																											
	Allowable Frequency Fluctuation	± 2%																											
Control	Control Method	120°excitation method																											
	Input Power Factor	0.9 min. (for rated load)																											
	Overload Protection	30 s at approx. 150% of rated current.																											
	Regenerative Torque	150% 30 s, 100% 25% ED 60 s, 80% continuous																											
	Main Control Functions	Cooling Fan on/off Switch, MEMOBUS/Modbus Comm. (RS-422/RS-485 max, 115.2 kbps)																											
Protection Functions	Momentary Overcurrent Protection	Operation stops for approx. 250% or higher of the rated power supply current.																											
	Fuse burnout	Operation stops if the fuse burns out.																											
	Overloads	Operation stops for 150% of the rated power supply current for 30 s.																											
	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	(2A03P5 to 2A0053, 4A03P5 to 4A0073)10 to 20 Hz: 9.8 m/s ² , 20 to 55 Hz: 5.9 m/s ² (2A0073 to 2A0105, 4A0105 to 4A0300)10 to 20 Hz: 9.8 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	Open Type enclosure (IP00) Enclosed Wall-Mounted [NEMA Type1(IP20)]																												
Safety Standard	UL508C, IEC/EN61800-5-1, IEC/EN61800-3																												

R1000 Standard Configuration Devices

Voltage		200 V Class												400 V Class															
Model CIMR-R □□□□□□		03P5	0005	0007	0010	0014	0017	0020	0028	0035	0053	0073	0105	03P5	0005	0007	0010	0014	0017	0020	0028	0035	0043	0053	0073	0105	0150	0210	0300
Power Coordinating Reactor	Rated Current A	20	30	40	60	80	90	120	160	200	280	360	500	10	15	20	30	40	50	60	80	90	120	150	200	250	330	490	660
	Inductance mH	0.53	0.35	0.265	0.18	0.13	0.12	0.09	0.07	0.05	0.038	0.026	0.02	2.2	1.42	1.06	0.7	0.53	0.42	0.36	0.26	0.24	0.18	0.15	0.11	0.09	0.06	0.04	0.03
Current Suppression Reactor	Rated Current A	15	15	20	40	40	50	60	80	100	153	209	306	7.5	7.5	10	15	25	25	30	40	50	60	75	100	161	237	326	466
	Inductance mH	0.31	0.31	0.15	0.1	0.1	0.06	0.05	0.04	0.03	0.02	0.015	0.01	1.2	1.2	0.6	0.4	0.3	0.3	0.2	0.15	0.12	0.1	0.08	0.06	0.04	0.03	0.02	0.013
Fuse	Rated Current A	20	25	32	50	63	80	100	125	160	200	350	500	16	16	16	25	40	40	50	63	80	100	125	160	250	350	500	630