

Low Harmonics Regenerative Matrix Converter

U1000

ENVIRONMENTALLY
FRIENDLY WAYS
TO

SAVE
ENERGY



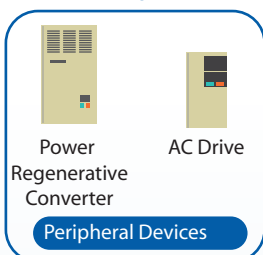
TÜV SÜD PSB
LIC NO.: 00053G

Leader

1

Compact

ALL-IN-ONE



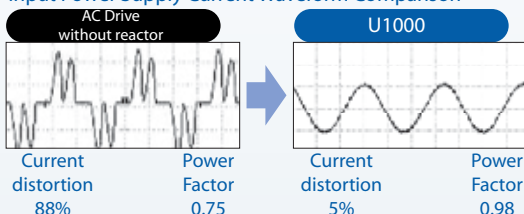
- . Footprint reduced by 65%
- . Wiring reduced by 70% (20 to 6)
- . Weight reduced by 81%

* Example for 400V 30kW

2

High Power Factor and Power Supply Harmonic Suppression

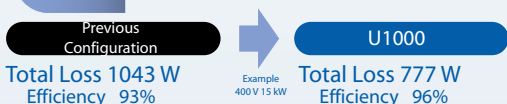
Input Power Supply Current Waveform Comparison



- . Current Distortion < 5%
- . Power Factor > 0.98
- . Conforms to IEEE 519

3

Greater Efficiency



- . 29% less power loss
- . 3% increased efficiency

Application
Examples

Lift applications with heavy repetitive loads and regenerative power



CE RoHS Compliant

High Power Factor and
Power Supply Harmonic Suppression



YASKAWA

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Certified for
ISO9001 and
ISO14001



JQA- 0422



JQA-EM0498



2015
Grand Prize for
Excellence in Energy
Efficiency and
Conservation

(Product Category &
Business Model
Category)

Sponsor: The Energy
Conservation Center,
Japan

平成27年度
省エネ大賞
(製品・ビジネスモデル部門)
主催：一般財団法人省エネセンター

■ U 1000 Standard Specifications

200 V Class

ND = Normal Duty, HD = Heavy Duty

Model CIMR -UT 2A			0028	0042	0054	0068	0081	0104	0130	0154	0192	0248	
Rated Input/Output	Rated Output Current	*1 ND	28	42	54	68	81	104	130	154	192	248	
		A HD	22	28	42	54	68	81	104	130	154	192	
	Rated Input Capacity	kVA ND	12	17	22	28	33	43	54	64	80	103	
		HD	9	12	17	22	28	33	43	54	64	80	
	Rated Input Current	ND	25	38	49	62	73	95	118	140	175	226	
		A HD	20	25	38	49	62	73	95	118	140	175	
	Max. Output Voltage		Depends on input voltage										
Max. Output Frequency		400 Hz											
Power Supply Characteristics	Rated Voltage/Rated Frequency		Three-phase AC power supply : 200 to 240 Vac 50/60 Hz										
	Allowable Voltage Fluctuation		-15% to +10%										
	Allowable Frequency Fluctuation		±3% (Frequency fluctuation rate: 1 Hz/ 100 ms or less)										
	Allowable Power Voltage Imbalance between Phases		less than 2%										
	Control Method		Sine-wave PWM [V/f control, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, Open Loop Vector Control for PM, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM (switched by parameter setting)]										
Control Characteristics	Harmonic Current Distortion Rate *2		5% or less (IEEE 519)										
	Input Power Factor		0.98 or more (for rated load)										
	Overload Tolerance		HD Rating : 150% of rated output current for 60s, ND Rating: 120% of rated output current for 60s (Derating may be required for repetitive loads)										
Status Output			1 C -relay output at failures, 1 a contact output (multi-function) during operation, 2 multi-function PHC outputs selectable at alarms, 2 multi-function analog outputs selectable for analog outputs, Pulse train output: 1 (multi-function)										

400 V Class

Model CIMR -UT 4A			0011	0014	0021	0027	0034	0040	0052	0065	0077	0096	0124	0156	0180	0216	0240	0302	0361	0414	0477	0590	0720	0900	0930	
Rated Input/Output	Rated Output Current	*1	ND	11	14	21	27	34	40	52	65	77	96	124	156	180	216	240	302	361	414	477	590	720	900	930
		A	HD	9.6	11	14	21	27	34	40	52	65	77	96	124	156	180	216	240	302	361	414	477	590	720	900
	Rated Input Capacity		ND	9	12	17	22	28	33	43	54	64	80	103	130	150	180	200	251	300	344	396	490	598	748	773
		kVA	HD	8	9	12	17	22	28	33	43	54	64	80	103	130	150	180	200	251	300	344	396	490	598	748
	Rated Input Current		ND	10	13	19	25	31	36	47	59	70	87	113	142	164	197	218	275	329	377	434	537	655	819	846
		A	HD	8.7	10	13	19	25	31	36	47	59	70	87	113	142	164	197	218	275	329	377	434	537	655	819
Power Supply Characteristics	Max. Output Voltage		Depends on input voltage																							
	Max. Output Frequency		400 Hz																							
	Rated Voltage/Rated Frequency		Three-phase AC power supply : 380 to 480 Vac 50/60 Hz																							
	Allowable Voltage Fluctuation		-15% to +10%																							
	Allowable F requency Fluctuation		±3% (Frequency fluctuation rate: 1 Hz/ 100 ms or less)																							
	Allowable Power Voltage Imbalance between Phases		less than 2%																							
Control Characteristics	Cont rol Method		Sine -wave PWM [V/f cont rol, V/f Control with PG, Open Loop Vector Control, Closed Loop Vector Control, Open Loop Vector Control for PM, Advanced Open Loop Vector Control for PM, Closed Loop Vector Control for PM (switched by parameter setting)]																							
	Harmonic Current Distortion Rate *2		5% or less (IEEE 519)																							
	Input Power Factor		0.98 or more (for rated load)																							
	Overload Tolerance		HD Rating : 150% of rated output current for 60s, ND Rating : 120% of rated output current for 60s (Derating may be required for repetitive loads)																							
Status Output			1 C -relay output at failures, 1 a contact output (multi-function) during operation, 2 multi-function PHC outputs selectable at alarms, 2 multi-function analog outputs selectable for analog outputs, Pulse train output: 1 (multi-function)																							

*1 : The rated output current of the drive should be equal to or greater than the motor rated current.

*2 : When the harmonic current distortion rate is 5% or less, the maximum output voltage is calculated by input power voltage × 0.87.

■ U 1000 Dimensions mm

Voltage Class			200 V Class												400 V Class																				
Model CIMR - UT 			0028	0042	0054	0068	0081	0104	0130	0154	0192	0248	0011	0014	0021	0027	0034	0040	0052	0065	0077	0096	0124	0156	0180	0216	0240	0302	0361	0414	0477	0590	0720	0900	0930
Open-Chassis (IP00)	Width (W)	250	264	264	264	264	264	264	415	415	490	250	250	250	250	250	264	264	264	264	264	264	264	415	415	490	490	695	695	695	1070	1070	1210	1210	1070
	Height (H)	480	650	650	650	650	816	816	990	990	1132	480	480	480	480	480	650	650	650	650	816	816	990	990	1132	1132	1132	1132	1132	1132	1350	1595	1835	1835	1835
	Depth (D)	360	420	420	420	420	450	450	403	403	450	360	360	360	360	360	360	420	420	420	420	450	450	403	403	450	450	450	450	450	445	445	445	445	445

* : This number indicates the voltage class (2: 200 V class, 4: 400 V class).

Note: Optional NEMA Type 1 kit is required for Enclosed Wall-Mounted (NEMA Type 1) models.

Model	EUJ7118	00	10	20
U1000 Standard Configuration	Width (W)	700	700	700
Devices (Harmonic Filter Module)	Height (H)	1350	1350	1350
	Depth (D)	432	432	432

Model Number Key

CIMR - U T 4 A 0011 A A A										Design Revision Order			
U1000 Series													
No.	Region Code	No.	Voltage Class	No.	Customized Specifications	No.	Output Current A	No.	Enclosure Type	No.	Environmental Specifications		
T	Asia	2	3-phase, 200-240 Vac	A	Standard model		Note : Indicates the rated output current of the Normal Duty rating rounded off to the nearest whole number.	A	IP00	A	Standard		
		4	3-phase, 380-480 Vac	E	EMC Noise Filter Built-in			F	NEMA Type1	K	Gas		
				P	24 V Power Supply Unit Built-in					M	Humidity, dust		
				W	EMC Noise Filter and 24 V Power Supply Unit Built-in					N	Oil		
										S	Shock, vibration		

Note: Contact Yaskawa for more on environmental specifications.